序号	标题	摘要	申请人	申请号	申请日
1	Rope type mooring line underwater cleaning robot	The rope-type mooring line underwater cleaning robot of the present invention is a plurality of frames arranged to wrap around the rope-type mooring line and connected to each other; A plurality of links that are removably connected between the plurality of frames; A drive mounted on the frame to move the frame on the mooring line; A blade that is rotatable mounted on the frame to scrape and clean foreign objects attached to the mooring line; And a waterjet device for spraying water toward the mooring line installed in the frame.	한국로봇융합연구원	KR1020200093058	2020/7/27
2	RECOVERY SYSTEMS AND METHODS FOR UNMANNED UNDERWATER VEHICLES	Embodiments described herein A highly reliable unmanned submarine (UUV) salvage system and method is provided that utilizes a plurality of independent release mechanisms that are capable of separating loads, allowing the UUV to float above the water surface. The unmanned submarine (UUV) salvage system and method are highly reliable. Japanese embodiments are fishing systems for unmanned submarines (UUVs). The fishing system includes a separable load that provides neutral buoyancy to an unmanned submersible (UUV) in water. The salvage system further includes a plurality of desorption mechanisms that provide unmanned submersible (UUV) separation loads with positive buoyancy in water. The release mechanism includes first, second, and third release mechanisms. The first demodulating mechanism separates the load in response to the command signal. The second unlocking mechanism separates the load by a critical time responsive	더 보잉 컴파니	KR1020150125528	2015/9/4

3	APPARATUS AND METHOD FOR MEASURING THE SPEED OF AN UNDERWATER ROBOT IN A NON-CONTACT MANNER	One embodiment of the present invention provides a technique for quantitatively measuring the speed of an underwater motor body, such as an underwater robot, to improve the speed measurement accuracy of the underwater motor. A non-contact speed measuring apparatus of an underwater motor according to an embodiment of the present invention, a housing in which one site is formed to be immersed in hand; Located inside of the housing, a laser unit for irradiation the laser underwater; Located inside the housing, performs a image of an underwater motor body, an object that passes through the laser line of the laser portion by exercising the underwater, and the image of the image that the frame per second can be changed; And receiving the speed information set in the underwater muctor, and the control unit for transmitting the	한국생산기술연구원	KR1020200118133	2020/9/15
4	A LIGHTWEIGHT ROBOT THAT PERFORMS UNDERWATER INSPECTIONS WITH A STREAMLINED OUTER SHELL AND AN INTEGRAL INTERNAL SKELETON STRUCTURE	One embodiment of the present invention provides an underwater inspection robot that is designed compactly while having a plurality of instruments. A lightweight underwater inspection robot having a streamlined shell and an integral endoskeleton structure according to an embodiment of the present invention, an upper press having a streamlined shape; An internal pressure vessel that is installed inside the upper frame to provide space inside; The main frame that is coupled to the inner side of the upper frame, and coupled with an pressure-resistant container to support a fixed pressure container; Buoyancy that is formed between the upper frame and the main frame, and generates buoyancy underwater; The lower frame formed on the lower part of the upper frame and coupled with the main frame, supporting the main frame; Equipment frame supporting the sensor unit performing an inspection of the underwater structure and combining with the lower frame; Multiple vertical propellers that combine with the	한국생산기술연구원	KR1020200120776	2020/9/18

5	An external pressure test apparatus capable of micro pressure control	The present invention includes a link coupled with a pressure tank rod located outside of the pressure tank rod and a pressure tank rod that exerts an external force on the water located inside the pressure tank, at least part of the pressure tank, a test tank unit for accepting water, a pressure tank to accommodate water, at least some of it is located inside the pressure tank, in an external pressure pressure test device for the pressure design of the underwater robot, Pressure tank unit located adjacent to the test tank unit, euro portion connecting the test tank unit and the pressure tank part, the power transmission unit that connects to the link and transmits power to the pressure tank unit, at least part of the power sensor is inserted into the inside of the test tank unit to measure the internal pressure of the test tank unit and electrically connected to the power supply and pressure sensor unit to include the control unit to control the operation of the power transfer unit and the pressure sensor. The pressure tank rod provides an external pressure test device capable of fine pressure control, characterized in that it controls the internal	한국생산기술연구원	KR1020200113986	2020/9/7
6	UNDER WATER CABLE INSTALLING APPARATUS USING BARGE AND UNDER WATER CABLE INSTALLING METHOD	Underwater cable installation device according to one aspect of the present invention is to put an underwater robot in the water using a barge and perform the installation work underwater, a barge that can be moved underwater by the water-capable barge, an underwater robot that can be moved underwater by the barge, a crane that moves the underwater robot, a hook that is fixed to the crane and coupled to the underwater robot, a communication cable that connects to the underwater robot to supply power and signals, It may include a cable control unit for pulling the communication cable, and a	KOREA INST ROBOT CONVERGENCE	KR1020200095130	2020/7/30

7	Solar charging system for underwater robots	The present invention relates to a photovoltaic charging system for underwater robots, more specifically, it is possible to charge the battery through a charger and a solar cell inside the battery management unit of the water controller adjusting the underwater robot is disposed of in a vessel or dock for the continuous operation of the underwater robot, and the concern about the supply of power of the underwater robot controlled by the water control machine is removed and reliably relates to the solar charging system for the underwater robot that is sufficiently available underwater for the time	DAEYANG ELECTRIC CO LTD	KR1020200092279	2020/7/24
8	REMOTELY OPERATED VEHICLE LAYING A PIPE	In a buried robot doing buriing work on the seabed, Guide arm unit for detecting the direction of movement in contact with the object located on the seabed, is introduced into the lower ground of the object to form a buried space on the lower side of the object by discharging high-pressure water, pressurizing the object to the lower side of the object to be formed so that the object is buried and rotated on the ground, an underwater buriing robot comprising a mobile part that can be moved	KOREA INST ROBOT CONVERGENCE	KR1020200093584	2020/7/28
9	APPARATUS AND METHOD FOR DETECTING BUOYANCY CENTER OF OBJECT	The present invention provides a measuring device and method for accurately and easily measuring the actual buoyancy center after producing an underwater robot, a submersible, etc. The measuring apparatus according to the present invention includes a load measuring unit for measuring the load at each of the four points installed in the base portion, and a inclination transition portion to adjust the inclination angle of the base portion to switch the object to the horizontal and slope posture, and the water tank to form a state in which the object is submerged underwater, and accordingly, it is possible to convert each object to a horizontal posture and a slope tax before and after obtaining it accordingly and calculate	KOREA INST IND TECH	KR1020200084793	2020/7/9

10	Robots, systems and methods for underwater monitoring and maintenance of hulls	A robot (2) and method for underwater monitoring and maintenance of a ship's hull (1) when the ship is underway, are described. The robot (2) comprises a main body (5), a connector (21) for connecting the robot (2) to a cable (3) for towing the robot (2), a resting base (13) adopted to rest against the ship's hull (1), one or more hydrofoil(s) (6, 7) arranged perpendicular to the length axis of the main body (5), and a rudder (8) arranged at the front part of the main body (5), the main body (5) being a straight and elongated body having a length to width ratio of 5 or more, where the length of the hydrofoil(s) (6, 7) as seen perpendicular to the main body (5), is / are longer than the width of the main body (5), and where the connector (21) for the cable (3) is arranged at	SHIPSHAVE AS	KR1020217039992	2020/4/17
11	Recovery System and Recovery Method of Buoyancy Tank	The present invention relates to a system for recovering a buoyancy tank and a method for recovering the buoyancy tank. When a steel gravity structure (SGS), which is a structure below the topside, is constructed on site, at the time of recovering a buoyancy tank used to maintain stability of the steel gravity structure, ILT is coupled with a lifting can using a crane, and, when the buoyancy tank is lifted using the crane after a securing pin is removed using a remotely operated vehicle (ROV), the buoyancy tank is lifted together with a lift sling that is previously hung. Therefore, a worker need not directly and separately perform a work of hanging the lift sling below the sea level under very bad conditions for performing lifting, so	대우조선해양 주식회사	KR1020140173162	2014/12/4
12	AMPHIBIOUS UNDERWATER DRONE FOR MARINE CLEANING HAVING	Initiates a submersible loan. The submersible theory is coupled to the body and the body at a time of hydrofoil and the hydrofoil generating lift underwater, and a screw is prepared to include a tilting rotor to generate propulsion.	LEE BONG HEE	KR1020210130991	2021/10/1

13	Towed type unmanned underwater vehicle	The present invention relates to a towing-type underwater robot capable of performing high-speed communication while stably swimming by towing, and thus, performing an underwater investigation task more rapidly. The present invention comprises an underwater robot body and a complex cable. The front side surface of the underwater robot body forms a first inclined surface that is inclined backward by a first inclination angle from the upper portion toward the lower portion, and the rear upper surface of the underwater robot body forms a second inclined surface that is inclined downward by a second inclination angle toward the rear portion thereof. In addition, the rear bottom surface of the underwater robot body forms a third inclined surface that is inclined upward by a third inclination angle toward the rear portion thereof. According to the present invention, various equipment can be loaded, stable swimming can be possible by towing, and high-	KOREA INST ROBOT CONVERGENCE	KR1020200080165	2020/6/30
14	UNDER WATER CLEANING ROBOT HAVING FLOATING DEVICE	Underwater cleaning robots according to one aspect of the present invention are put into the water to collect foreign objects, A pump for inhaling the foreign object, the main preim supporting the pump, the driving unit for moving the main fraime rotatablely installed in the main fraime, the hood having an inlet in which the foreign matter enters, and a collection rotor for collecting the foreign matter installed in the hood, it is installed in the main fraim, it may include a floating	한국로봇융합연구원	KR1020200060576	2020/5/20

15	REMOTE MONITORING SYSTEM FOR SUBMERGED FLOATING TUNNEL BASED ON UNDERWATER ROBOTS AND SENSOR NETWORKS	Remote monitoring system for underwater tunnels includes a plurality of sensor nodes, multiple sink nodes, a plurality of gateways and a monitoring center. The sensor node includes a sensor unit installed in the tension leg and a control unit installed on the tunnel body, and generates monitoring data. The sink node is installed in the connection portion of the tunnel body and ventilation tower, manages N sensor nodes, receives monitoring data, and generates an underwater alarm when the alarm data is received. The gateway is installed in the ventilation tower, manages one sink node, receives monitoring data, generates a check-side alarm when the alarm data is received, powers the sink node and sensor node, and includes local gateways and global gateways. The monitoring center is spaced out and installed with the underwater tunnel, manages the global gateway, receives monitoring data to	한국과학기술원	KR1020190123082	2019/10/4
16	Electric robotic arm and gripper system mounted on an unmanned underwater drone	The present invention is a system that can make the underwater work environment more precise and repeated by applying it to an underwater unmanned drone that is remotely adjusted by simplifying the robot arm and gripper system that was not mounted on the existing unmanned underwater drone as a method relating to the remote control underwater drone arm and gripper mounted on the unmanned underwater drone and the gripper arm. According to the present invention, a robot arm mounted on an underwater-based unmanned drone can significantly increase the precision of the work that requires driving, such as moving the object using tongs, rotating, drilling, etc., and can maximize the efficiency of the operation	LEE JIN KYU	KR1020200065566	2020/5/31

17	UNDERWATER CLEANING ROBOT FOR MINIMIZES EXTERNAL SCATTERING AND SUCTION VOLUME	The present invention is a hollow body inside; The drive unit that is provided at the lower part of the body and cleans the outside of the hull; Inlet discharge unit that is provided internally in the body and connected to the drive unit, and contains foreign matter and aquatic organisms removed from the hull exterior by the drive unit, and filters and discharges the inlet; And includes a control unit that is provided inside the body to control the operation of the drive unit and the discharge unit; The inlet discharge unit is the first work space to proceed with the suction operation; A second workspace that is connected to the first work space to form a high pressure; Outlets that are connected to the second work space to discharge the inlet to the outside; And includes a feedback tube that is connected to the second work space and circulates in the direction of the drive unit; Through the operation	INST FOR ADVANCED ENGINEERING	KR1020200097918	2020/8/5
18	Underwater robot dredging machine	The present invention relates to an underwater robot dredge, and in more detail, it relates to a technology that can remove foreign matter present at the bottom of a power plant coolant reservoir, sewer pipe, reservoir, sorting sewage pipe, sewage rock, running water, sewage treatment plant, immersion site, etc. without putting manpower using a dredging robot powered by a hydraulic supply unit on the ground, and in particular, foreign matter that is strongly attached to the	MUN KYONG HO	KR1020200172098	2020/12/10
19	Underwater cleaning robot	Underwater cleaning robot of the present invention, the body; The driving drive unit for moving the body provided in the body; A suction blanket provided movably in front of the body; A suction unit for inhaling an underwater foreign object connected to the inlet of the suction bracket; And includes an actuator that is movably connected between the suction jacket	한국로봇융합연구원	KR1020200025832	2020/3/2

20	Underwater flying manipulator	The present invention relates to an underwater flying manipulator device which is connected to an underwater robot main body to easily access the underwater robot main body when the underwater robot body is inaccessible. The present invention relates to an underwater robot body. An underwater robot body comprises a winch unit for winding and unwinding a cable, and a mounting unit for mounting the flying manipulator. The underwater robot main body is connected to the underwater robot main body, and is connected to the	한국로봇융합연구원	KR1020200025331	2020/2/28
21	Underwater robot having variable stucture	An underwater robot according to an embodiment of the present invention includes a robot body. Propelled 1 propulsion module combined with one end of the longitudinal direction of the robot body 2, and the propulsion module The propelling module 3 propulsion module and the propulsion module which are combined in the long axial end part of 4 the robot body. And. Each of the (1) - th propulsion module and 4) - th propulsion module is connected in a variable structure to	한국로봇융합연구원	KR1020200060750	2020/5/21
22	UNDERWATER ROBOT HAVING COMPACT STRUCTURE AND EFFECTIVE PERFORMANCE	The present invention relates to a robot arm, and more particularly, to a robot arm. An underwater robot is provided to accurately and rapidly change the direction and posture of the underwater robot. A plurality of vertical thrusters are installed at the rear end of the body part, and a plurality of horizontal thrusters coupled to the lower part of the body part	KOREA INST IND TECH	KR1020200084768	2020/7/9
23	Charging apparatus for fish robot and charging system and method of fish robot using the same	A charging device of an underwater robot and a charging system and method of an underwater robot using the same are provided to easily charge a battery of an underwater robot. An apparatus for charging a battery of an underwater robot having a charging terminal portion including 1 terminals and at least 2 terminals spaced apart from each other, and an agent 1 conductor connected to and disconnected from the battery 1. 1-th conductor which is spaced apart from the first and 2 2 conductors via an insulator and is connected to and disconnected from the first and second terminals.	ARTIFICIAL INTELLIGENCE ROBOT INC; ARTIFICIAL INTELLIGENCE ROBOT INC	KR1020200006377	2020/1/17

24	Method and Underwater Robot for Scan Route Setting of Underwater Object using Acoustic Camera	The present invention relates to a method and an underwater robot for setting scan path of an underwater object using an ultrasonic camera. The method includes the steps of : obtaining a plurality of 3-dimensional point cloud data for an object obtained by a scan performed by an ultrasonic camera included in an 1 underwater robot; and setting a scan path of the ultrasonic camera using 1 3-dimensional coordinates of the underwater robot, and 3 implementing 2-dimensional shape	포항공과대학교 산학협력단	KR1020190116806	2019/9/23
25	Fish Robot swiming in the Water	The present invention relates to an underwater robot swimming in water. An underwater robot comprises a main body, a propulsion device attached to the rear end of the main body, and a rotating shaft rotating about a rotation axis parallel to the rotation axis of the main body. The rising, falling and horizontal movement in the descending and horizontal	KUMOH NAT INST TECHNOLOGY IND ACAD COOP FOUND	KR1020200014000	2020/2/5
26	Apparatus and method for estimating position of underwater robot	Are an apparatus and a method for estimating a position of an underwater robot. Method for estimating position of underwater robot A method for estimating an underwater sound source and an underwater robot using the same are provided to calculate a position of an underwater sound source based on a received position of an underwater acoustic signal. Time Difference of Arrivals. The method includes removing a Gaussian model having a calculated weight less than a preset	KOREA INST OCEAN SCI TECH	KR1020190163544	2019/12/10
27	A subsea pipeline inspection crawler	A system for underwater inspection including an inspection crawler are provided. The inspection crawler includes a housing having first and second sides, a power source, a controller, an inspection tool, at least two driving wheels, and a moveable center of gravity. A method for traversing a weld joint with the inspection crawler having a moving mass is also provided. In the method, the crawler is parked proximate to the joint, and the mass is slid along a slide rail to the second end of the crawler distal to the joint. The first end of the crawler is then propelled over the joint and the mass is slid to the center of the crawler. A center portion of the crawler is then propelled over the joint and the mass is slid to the first end of the crawler. The	SAUDI ARABIAN OIL CO	KR1020197011013	2017/8/29

28	A Method of Underwater Environment Mapping System using Underwater Vehicle and Underwater Acoustic Detection Equipment	A system and a method for creating an underwater environment map are provided to create a map of an underwater environment by using songs (SONAR) and underwater (ROV). The underwater drone sensor senses the underwater environment while swimming in the underwater environment and obtains underwater drone data. A sonar collecting unit collects underwater image data obtained by sonar. Underwater drone data collection unit collects underwater drone data obtained from the underwater drone. The underwater drone data collection unit collects underwater image data collected by the sonar collection unit and underwater drone data collected by the underwater data collection unit. A map creation unit creates an underwater	DAEYANG ELECTRIC CO LTD	KR1020190142444	2019/11/8
29	System model of smart infrastructure for artificial intelligence service aggregation by self-moveable equipment	All acids in this patent A self-moving equipment such as a robot, an unmanned aerial vehicle UAV, and an underwater equipment having a communication/pseudo-determination function is proposed. These equipment are independent communication network entities (AI) with pre-trained AI services (e.g. medical AI services, smart energy AR/VR services, smart vehicle services, jamming application services, smart factory services, network reaming (entity) protection, etc.) and controlled by AI service agents. In a communication network AI service agent module provides a software based control scheme to assign AI service requests of a user to its mobile equipment. Network infrastructure and AI service providers must install pre-trained AI services on their mobile equipment according to the user and infrastructure requirements. A system model of a smart infrastructure for artificial intelligence services	UNIV INDUSTRY COOPERATION GROUP KYUNG HEE UNIV	KR1020190152773	2019/11/25

30	Screw moving Underwater Cleaning Robot be capable of Buoyancy Control	The present invention relates to a screw driving based underwater cleaning robot capable of buoyancy control and, more specifically, to a frame. Screw driving device having screw type in each of both ends of the frame. Suction unit provided at one side of the frame to suck a process sludge in an industrial water tank. A screw driving unit for driving the underwater cleaning robot by rotating the screw driving device with reference to a longitudinal center axis. Buoyancy control apparatus for controlling buoyancy of underwater cleaning robot by installing inside of the screw driving device The	ROBOSKOREA CO LTD	KR1020190169173	2019/12/17
31	Thruster for underwater robot	The present application design combines the shape of "the screw for the robot among the number" and combination of the shape to the essentials of the creation. 1. The material is the metal, and the base metal and plastic material. 2. [Fig. 1.1] The whole shape of the silver the present application design is shown. 3. [Fig. 1.2] The increased front portion of the present application design is shown. 4. [Fig. 1.3] The backside portion of the silver the present application design is shown. 5. [Fig. 1.4] The increased left part of the present application design is shown. 6. [Fig. 1.5] The increased right side portion of the present application design is shown. 7. [Fig. 1.6] The pars plana of the silver the present application design is expressed. 8. [Fig.	주식회사 씨랩	KR3020200037738M001	2020/8/13
32	Emergency escape system to protect underwater pressure	Power supply unit for supplying power from outside Emergency escape system for protecting pressure vessel of underwater robot	DAEYANG ELECTRIC CO LTD	KR1020190146120	2019/11/14

33	INFINITELY EXPANDABLE SERIAL CONNECTION SYSTEM OF REMOTELY OPERATED VEHICLE	Is a serial connection system capable of infinite expansion of ROV. A series connection system capable of infinite expansion of ROV according to the present invention. The integrated control unit 2 includes a communication unit, a sensing unit, a photographing unit, and a propulsion unit (n) connected in series to each other by a tether cable. ROV. The integrated controller is connected in series to each other by the tether cable. ROV. The integrated control unit is connected to the bus or the bus by a tether cable and is connected to the bus or the bus. ROV ROV. The integrated control unit is connected to the bus or the bus through the tether cable and the auxiliary tether	KOREA INST OCEAN SCI TECH	KR1020190141188	2019/11/6
34	Underwater vehicle having variable configuration	The underwater vehicle with variable configuration (1) comprises : a hull (2) consisting of at least four elongated elements (20), mutually articulated by means of joints (21), to form a first closed polygonal structure (F1), arranged on a plane; thrusters (3), associated in parallel with said elements (20) of the hull (2); actuating means (22), associated with said joints (21), provided for automatically modifying said first closed polygonal structure (F1), from an elongated shape configuration (AF1) to an expanded shape (EF1), corresponding to an elongated conformation of said hull (2), to determine a low hydrodynamic resistance and a longitudinal thrust of the thrusters (3) in the cruising of said underwater vehicle (1), and to a substantially isotropic conformation, wherein the same elements (20) of the hull (2), as well as the thrusters (3) are mutually angled, intended for the hovering of the same underwater vehicle (1), respectively. The latter can be suitably	UNIV DEGLI STUDI DI FIRENZE	KR1020217004591	2019/7/23

35	Fuel tank venting system for preventing negative pressure generation of fuel tank	The present invention relates to a fuel tank venting system for enabling fuel vapor gas generated in a fuel tank of a vehicle to pass through a canister to be processed. The fuel tank venting system comprises : a roll over valve (ROV) installed in the fuel tank and controlling internal pressure of the fuel tank by discharging the vapor gas generated in the fuel tank; and a pressure control valve connected to a vapor gas discharge line connected to the roll over valve and selectively blocking the vapor gas discharge line in accordance with generation of	현대자동차주식회사	KR1020150098623	2015/7/10
36	Controller shell for underwater robot	1. The material is made of synthetic resin and metal..2. This design is used to control the operation of the underwater robot and to receive and check images or images captured by the underwater robot. Both sides of the lower part are detachably assembled and fixed with a clasp..3. [Drawing 1. 1] is a drawing expressing the overall shape of the present design, [Figure 1. 2] is a front view, [Figure 1. 3] is a drawing expressing the back surface, [Figure 1. 4] is a drawing showing the left side, [Figure 1. 5] is a drawing expressing the right side, [Figure 1. 6] is a diagram representing a plane, [Figure 1. 7] is a drawing expressing the bottom surface, [Reference drawing 1. 1] is a reference drawing showing the state in which the upper part of the monitor is folded and fixed through the clasp..This design makes the combination of the shape and shape of the "	Kim Soo-yong; 김수용	KR3020200009073	2020/2/28

37	Modular autonomous surface robot of catamaran type	The present invention relates to a water robot for investigating water quality and environment in the inside and the inside of the vicinity of the water surface. 1 Connection frame with a base plate on the upper part of the body, and the base plate is connected to each other to form a hull of one body. 1 Connection frame for connecting the buoyant body to the rear of the connection frame 2, and the connecting frame. The vertical frame of claim 2, wherein the water detection module is installed at the center of the first connection frame to transmit/receive a signal for autonomous driving or remote adjustment and a signal for measuring a water phase environment through various sensors. Underwater detection module attachable to fixed frame of floating body and detecting terrain and environment in water A control module is formed on the base plate to control the transceiver, the thruster, FOG, underwater detection module, camera, warning light, GPS, and LIDAR. A transceiver, which is provided on the base plate A modular water robot of a double windowire type is provided to facilitate installation and maintenance by simply disassembling/assembling a water-in-water environment, an underwater environment, GPS, a	한국해양과학기술원	KR1020210000135	2021/1/15
38	INSPECTION ROBOT FOR RISER	Disclosed is an underwater pipe inspection device. According to an embodiment of the present invention, the underwater pipe inspection device comprises : a robot main body unit arranged in a pipe installed underwater, having a path to move along the pipe; a propulsion unit arranged in the robot main body unit to provide propulsion by seawater to the robot main body unit; and an inspection unit mounted on the robot main body unit to inspect the pipe. The underwater pipe inspection device enables a user to rapidly inspect the pipe, and reduces	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020140099085	2014/8/1

39	UNDERWATER ROBOT USING OPTICAL COMMUNICATION	Embodiments provide a technique related to an underwater robot using optical communication which does not require use of a connector. Presented is the underwater robot using the optical communication. The underwater robot using the optical communication according to one embodiment may comprise : a front end unit configured at a front part of a hull and providing an external obstacle or ground information; a posture control unit controlling a posture of the hull; a navigation control unit configured with a navigation system, providing navigation for movement of the hull, and a control system; a sensor unit measuring the speed of the hull; and a propulsion unit configured at the other side of the hull and providing a propulsion force to the hull. Here, at least two or more of the front end unit, the posture control unit, the navigation control unit, the sensor unit, and the propulsion unit each are configured with optical communication modules, thereby being able to be connected to each other through the optical communication.(110) Front end unit(120) Posture control unit(130) Sensor unit(140) Navigation control unit(150)	KOREA MARITIME UNIVERSITY INDUSTRY ACADEMIC COOPERATION FOUNDATION	KR1020180129310	2018/10/26
40	Underwater operation arm robot	An underwater manipulator arm robot comprises : a plurality of links that are connected to one another by joint modules for generating a flexural motion of the robot; multiple thrust devices located at different points along the length of the robot for applying thrust to the robot for propulsion and/or guidance; and at least one tool, or at least one connection point for a tool, attached to the robot; wherein the flexural motion and/or thrust devices enable movement of the robot and	엘루메 에이에스	KR1020177023850	2016/1/13

41	REMOTE CONTROL SYSTEM FOR COLLECTING MARINE INFORMATION	Disclosed is a remote control system for collecting marine information. According to one embodiment of the present invention, the remote control system comprises : a remote control ship collecting maritime information and underwater information and supporting maritime rescue activities; an unmanned aerial vehicle taking off and landing on the remote control ship and collecting the maritime information; an unmanned underwater robot entering the inside of the remote control ship and collecting the underwater information; and a remote control unit indirectly controlling the unmanned aerial	PARK JI HYUN	KR1020190097141	2019/8/9
42	Plastic-eating artificial intelligence robot	The purpose of the present invention is to provide a robot or an underwater robot that can eat waste of sea water or sea water such as sea water or sea water, and to discharge digestive enzymes that extinguish plastic in a batch of the	이정용	KR2020190002174	2019/5/27
43	TSUNAMI DETECTION SYSTEM WITH DATA STORAGE DEVICES IN AUTONOMOUS UNDERWATER VEHICLES	According to the present invention, a method for detecting underwater tsunami comprises : a step of detecting a trigger event by using the stoppage of at least one of a plurality of hard disc drives (HDD). One of the plurality of different HDDs exists in one of a plurality of different autonomous underwater vehicles (AUV). The time and position of each of the at least one HDD for the trigger event are logged. Based on at least one of the HDD stoppage, time, and position of at least one of the plurality of HDDs, the scale, strength, and direction of the tsunami caused by the trigger event are determined. Information related to the tsunami is transmitted to a monitoring base station. The present invention aims to provide the method for detecting underwater tsunami and a tsunami	SEAGATE TECHNOLOGY LLC	KR1020200051521	2020/4/28

44	AN APPARATUS FOR LAUNCHING AND RECOVERING UNDERWATER CLEANING ROBOT	The present invention provides an apparatus for launching and recovering a ship bottom cleaning robot, which includes : a main body part provided to be movable; a crane part provided on an upper portion of the main body part to lower the ship bottom cleaning robot under the water or lift the same from the water through a wire rope; a binding member binding the ship bottom cleaning robot to the end of the wire rope to be detachable; a transfer part provided on the upper portion of the main body part to transfer the crane part in forward and backward directions; and a mounting guide part protruding to the front of the crane part to fix the ship bottom cleaning robot supported by the crane part and guiding the ship bottom cleaning robot to be mounted on an outer surface of a hull. Therefore, the apparatus for launching and recovering a ship	SLM GLOBAL CO LTD	KR1020190116886	2019/9/23
45	articulated marine robot ship with stereo photo sensor	Provided is a multi-joint supersmall marine robot with a stereo photo sensor which comprises : a body unit which has a certain storage space inside and forms the exterior; a pair of fuselage propellers placed on one side of the body unit (10) to provide propulsion; a first joint unit (50) placed on one side of the body unit to be movable in a longitudinal direction of the body unit; a second joint unit (40) linked to and engaged with the first joint unit (50) to be respectively rotatable by 90 degrees in both directions against the first joint unit (50); a stereo camera unit placed on one side of the second joint unit (40) and including a first camera unit (310) and a second camera unit (320); and an integrated control unit controlling the longitudinal or rotary motion and the fuselage propellers for the body unit of the second joint unit (40) with respect to the	TONGMYONG UNIV INDUSTRIAL ACADEMIC COOPERATION FOUNDATION	KR1020190008637	2019/1/23

46	An apparatus for underwater creatures cleaning/extermination on ship surface and the ship surface cleaning robot equipped with the same	The present invention relates to an apparatus for killing and cleaning underwater creatures on the outer surface of a ship, which comprises : a main body unit with a hollow inner side; a cleaning unit provided on a lower portion of the main body unit and cleaning the outer surface of a ship; a recovery unit provided in the main body unit, connected to the cleaning unit, recovering foreign matter and underwater creatures by introducing, into the inside, ocean water including foreign matter and underwater creatures removed from the outer surface of a ship by the cleaning unit, and filtering the ocean water; a flow path forming unit forming a flow path through which the ocean water filtered in the main body unit flows in a zigzag direction to be discharged; and a UV module provided in the flow path forming unit and radiating ultraviolet rays to the ocean water flowing in the zigzag direction to kill underwater creatures included in the ocean water. According to the present invention, the apparatus for killing and cleaning	SLM GLOBAL CO LTD	KR1020190054380	2019/5/9

47	Modular autonomous surface robot of catamaran type	The present invention relates to an offshore robot which inspects the water quality and the environment on the inland waters and neighboring coasts, and comprises : two buoyancy bodies which are spaced apart at an interval corresponding to the width of an offshore deck, and have a propeller at the rear end; a first connecting frame which connects the buoyancy bodies to be assembled to each other to constitute a single vessel body, and has a base plate at an upper portion; a second connecting frame which is connected to the rear side of the first connecting frame to allow the buoyancy bodies to be assembled to each other; a vertical frame which is provided at the center of the second connecting frame, and of which an upper end is detachably provided with a transceiver which transmits and receives a signal for autonomous driving or remote control and a signal produced after the offshore environment is measured by means of various sensors, and a lower end is detachably provided with an underwater detection module to detect the topography and the environment of the underwaters; the underwater detection module which is detachably provided at a fixating frame of the buoyancy bodies, and detects the topography and the environment of the underwaters; a control module which is provided at the upper portion of the base plate to control the transceiver, the propeller, an FOG, the underwater detection module, a camera, a warning light, a GPS and a LiDAR; and a power source module which is provided at the upper portion of the base plate to supply power to the transceiver, the propeller, the FOG, the underwater detection module, the camera, the	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020180135831	2018/11/7

48	CLEANING ROBOTS HAVING UNDERWATER SLUDGE CRUSHER	An underwater sludge crushing device according to an embodiment of the present invention comprises : a driving robot; a crusher which crushes at the front side of the driving robot; a suction part which sucks objects processed by the crusher; and a left and right rotary part which moves the crusher to front left and right sides of the suction part. The suction part moves with the crusher by the left and right rotary part, thereby cleaning the crushed products generated by crushing of the crusher. The embodiment of the present invention as mentioned the above is configured to comprise the crusher crushing sludge by direct contact and arrange the crusher at the front side of the robot to move to left and right directions, thereby smoothly crushing the sludge, sufficiently ensuring a sludge crushing region to reduce working time, and	한국로봇융합연구원	KR1020180066075	2018/6/8
49	EASILY FORMULATED ZINC OXIDE POWDER	The present disclosure relates to polymeric siloxane coated zinc oxide powders having a mean particle size number distribution (D50) ranging from about 300 nm to about 600 nm and their use in sunscreen compositions. The relatively high surface area (in relation to particles of <100 nm) avoids agglomeration resulting in ease of formulation and high dispersal of the particles which tends toward less light scatter and hence better transparency in formulations. Furthermore, the combination of the particular particle size number distribution (D50) of zinc oxide ranging as above with bis(resorcinyl)triazine UV absorbers shows unexpected increased UV-A absorbance (320 to 400 nm) in comparison to the zinc oxide and bis resorcinyl	바스프 에스이	KR1020147031751	2013/5/14
50	MINE REMOVING SYSTEM BY USING MULTI-ARTICULATED ROBOT	The present invention relates to a buried mine removal system using a multi-joint walking robot, which can exactly approach an underwater bomb to safely remove the same. The buried mine removal system using the multi-joint walking robot includes : an unmanned surface vehicle capable of exact position control in real time; and a multi-joint robot received in the unmanned surface vehicle to be discharged under the water and capable of posture control, wherein the multi-joint robot comprises : a metal detector; and a manipulator and a bomb	KYEONG IN TECH	KR1020180122966	2018/10/16

51	Underwater Robot for inspection of Underwater Tunnel and Control Method Thereof	The present invention relates to an underwater robot for inspecting an underwater tunnel and a control method of the underwater robot, comprising a first mother ship attached to a surface of the underwater tunnel by including a first winch connected to one end of a guide wire, a second mother ship attached to the surface of the underwater tunnel in a longitudinal direction by including a second winch connected to the other end of the guide wire, and an inspection ship for inspecting the surface of the underwater tunnel while moving in a direction from the first mother ship to the second mother ship along the guide wire; and other embodiments can also be applicable. Therefore, the underwater robot is capable of	포항공과대학교 산학협력단	KR1020180062023	2018/5/30
52	ROBOT ARM GRIPPER SYSTEM FOR UNMANNED UNDERWATER DRONE FOR MOUNTED	The present invention relates to a remote control underwater drone robot arm and gripper mounted on an unmanned underwater drone, and to a system which simplifies a robot arm and a gripper system having been mounted and used on only a robot arm on land and not having been mounted on a conventional unmanned underwater drone, and is applied to an unmanned underwater drone manipulated at a remote place to enable underwater work to be more precisely and repetitively performed. The present invention can remarkably enhance precision of a specific work which has to be performed by a robot arm mounted on a remote-controlled unmanned underwater drone in an underwater environment, wherein the specific work is a work needing a drive, e.g., moving a target object using a gripper, rotating a target object, drilling a target object, etc., and can maximize the efficiency of work needing repetitive movements with respect to the same	CHOI JONG WOONG	KR1020180111925	2018/9/19

53	Underwater vehicle with integrated surface cleaning and inspection function	Integrated probes and probe systems suitable for attachment to a robotic arm of a remotely operated vehicle are disclosed. The probes and probe systems serve to perform cleaning operations and both cathodic protection (CP) voltage measurements and ultrasonic testing (UT) thickness measurements at an underwater surface. The cathodic protection measurement system includes one or more electrically conductive legs that extend outwardly from the probe. These legs are arranged about a cleaning tool and an ultrasonic sensor. When the integrated probe contacts the underwater surface, at least one leg contacts the surface, thereby providing a desired distance between the probe and the underwater surface for efficient cleaning and UT inspection. The underwater surface can be cleaned and CP and UT	SAUDI ARABIAN OIL CO	KR1020207001313	2018/7/5
54	SYSTEM AND METHOD FOR OPERATING AUTONOMOUS UNDERWATER VEHICLE FOR SEARCHING UNDERWATER TARGET OBJECT	The present invention relates to a system and a method for operating an autonomous underwater vehicle (AUV) for searching for an underwater target object which can quickly detect a target object by a mother ship and, more specifically, to a system and a method for operating an autonomous underwater vehicle for searching for an underwater target object which allows an autonomous underwater vehicle to search a set area and scan the corresponding area by side-scan sonar mounted on the autonomous underwater vehicle to acquire an image, analyze the acquired image by transfer learning among deep learning techniques to determine whether the corresponding image is a target object (for example, a mine, a drowned person, an object to be detected, etc.), allow the autonomous underwater vehicle to float to a water surface when the image is a target object to notify a mother ship of information of the target object and location information, then allow the AUV to submerge, and move the AUV to a previous location by a set distance with respect to the notified location to continue searching.(110) Side-scan	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020190079923	2019/7/3

55	Underwater Remote Unmanned System	The present invention relates to a remotely operated vehicle (ROV) system and relates to an underwater remote unmanned system which controls the movement of an underwater remote unmanned device by a user terminal, detects the movement of the user′ s head in an image output device worn on the user′ s head, and provides underwater image information in the direction corresponding to the head movement in the image output device. The underwater remote unmanned system comprises : an underwater remote unmanned device having a camera unit configured to photograph in the water and generate underwater image information and be driven in the water; an image output device worn on a user′ s head to detect a user′ s head movement and displaying the underwater image information; a portable user terminal for controlling the movement of the underwater remote unmanned device; and a controller for controlling the movement of the underwater	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY; TONGMYONG UNIVERSITY INDUSTRIAL ACADEMIC COOPERATION FOUNDATION	KR1020180053916	2018/5/10
56	Underwater vehicle	The present application design combines the shape of "the robot among the number" and combination of the shape to the essentials of the creation. 1. The material is the metal and plastic material. 2. [Fig. 1.1] The whole shape of the silver the present application design is shown. 3. [Fig. 1.2] The increased front portion of the present application design is shown. 4. [Fig. 1.3] The backside portion of the silver the present application design is shown. 5. [Fig. 1.4] The increased left part of the present application design is shown. 6. [Fig. 1.5] The increased right side portion of the present application design is shown. 7. [Fig. 1.6] The pars plana of the silver the present application design is expressed. 8. [Fig. 1.7] The bottom surface of the silver	Yo Seop Hwang; 황요섭	KR3020190014093M001	2019/3/27

57	ROBOT FOR INSPECTION AND VARIOUS OPERATION ON THE WALL-SIDE OCEAN STRUCTURE	The present invention relates to a robot for a marine work, which is placed to make it easy to inspect and repair a wall surface of a marine structure including a marine pier, sea wall, and ship. To this end, according to the present invention, the robot for marine work capable of inspecting the wall surface of the marine structure comprises : an underwater work robot (600) with an underwater camera mounted to be able to examine and measure a structure or ecosystem underwater; and a marine work robot (100) connected to the underwater work robot (600) to transfer the underwater work robot (600) and to supply power. The marine work robot (100) includes : a forward/backward thrust (300) which provides a forward/backward propulsion for the marine work robot (100); a sensor (500) which recognizes a marine structure or an obstacle, which exist in the surroundings, by ultrasonic waves or laser to inspect or repair the marine structure; and a sideway thrust (400) which is transmitted/received to and from a control unit (700) in accordance with the recognition by the sensor	KOREA MARITIME UNIVERSITY INDUSTRY ACADEMIC COOPERATION FOUNDATION	KR1020180001501	2018/1/5
58	Method and Underwater Robot for Reconstruction of Three-Dimensional Shape of Underwater Object using Sonar Image Data	The present invention relates to a method for realizing a three-dimensional shape of an underwater object using ultrasonic image data, and to an underwater robot. According to the present invention, the method comprises the steps of : detecting an object located on the seabed based on image data acquired by an ultrasonic camera by an underwater robot having the ultrasonic camera; obtaining image data of the object from a plurality of directions by the underwater robot; calculating a plurality of three-dimensional point cloud data of the object by analyzing the image data by the underwater robot; converting, by the underwater robot, the plurality of three-dimensional point cloud data into two-dimensional coordinates; postprocessing, by the underwater robot, the two-dimensional coordinates; and realizing, by the underwater robot, a three-dimensional shape of the object using the postprocessed result. Other embodiments are also applicable.(110) Ultrasonic camera(120) Processor(121)	POSTECH RESEARCH AND BUSINESS DEVELOPMENT FOUNDATION	KR1020180066107	2018/6/8

59	POOL SURVEILLANCE SYSTEM AND ASSOCIATED SURVEILLANCE METHOD	A system for surveillance of a pool containing a liquid such as water-comprises at least one first element comprising at least one submersible robot provided with standalone propulsion capabilities for propelling the robot in the pool, onboard of which robot is installed at least one sensor capable of producing at least one measurement of a quantity representative of at least one disturbance of the pool relative to a reference state, the first element being furthermore provided with communication capabilities for communicating, in the submerged position, with at least one second element, the system being configured to process, in processing means, the	소프트뱅크 로보틱스 유럽	KR1020147016779	2012/11/20
60	Method and system for leakage test using coloring for Nuclear power plant primary storage tank	Provided are a leakage testing method of a primary storage tank for a nuclear power plant using a pigment configured to detect a leakage of a boric acid solution by injecting a fluid including a pigment to the primary storage tank for a nuclear power plant, and a system therefor. According to one embodiment of the present invention, a leakage testing system of a primary storage tank for a nuclear power plant using a pigment comprises : a remotely operated vehicle (ROV) configured to operate underwater and including flow sensing membranes provided to face a front surface to detect a flow by a leakage of a boric acid solution in a storage tank; a nozzle unit mounted on the ROV and configured to inject a fluid including a pigment in a predetermined direction; and a monitoring unit configured to photograph a flow state of the injected fluid to determine whether the boric acid solution is leaked. According to the present invention, the ROV in the primary storage tank for a nuclear power plant is used to inject the fluid including a pigment and the flow state of the injected fluid is photographed to detect the leakage of a boric acid solution. In addition, a supply amount of the fluid or a mixing ratio of the pigment in the fluid are controlled by analyzing an image having photographed the injected fluid and thus, an optimized supply amount of the fluid and an optimized mixing ratio of the pigment in the fluid can be used, and the flow	KOREA PLANT SERVICE ENGINEERING CO LTD	KR1020190079122	2019/7/2

61	Method and system for Pipe maintenance using rubber balloon	Provided are a pipe maintenance method using a rubber balloon, and a system therefor, wherein when a pipe of a nuclear reactor waterway or a pipe of a boric acid solution storage tank of a nuclear power plant is leaked, a rubber balloon is installed to be inserted into the pipe to temporarily seal the leaked pipe. According to one embodiment of the present invention, the pipe maintenance system using a rubber balloon comprises : a rubber balloon; a remotely operated vehicle (ROV) on which the rubber balloon is mounted; a control device for the ROV configured to control the ROV and enable the rubber balloon to be installed and inserted into a leaked pipe; and a rubber balloon control device configured to control the internal air pressure of the installed rubber balloon. Therefore, when the pipe of a nuclear reactor waterway or the pipe of a boric acid solution storage tank of a nuclear power plant is leaked, the rubber balloon is installed to be inserted into the pipe to temporarily seal the leaked pipe, and the internal air pressure of the rubber balloon is controlled to enable a surface contact of an inner side of the pine and the rubber balloon to be maintained, and accordingly, the leaked	KOREA PLANT SERVICE ENGINEERING CO LTD	KR1020190079127	2019/7/2
62	Salvage Robot	The present invention relates to a robot for the salvage of a vessel and, more specifically, to a robot for the salvage of a vessel, which has a water robot and an underwater robot to perform monitoring for securing safety during the salvage of a sunken or shipwrecked vessel. According to an embodiment of the present invention, the robot for the salvage of a vessel comprises : a water robot including a main body formed in a floating dock shape, a docking portion disposed on a bottom surface of the main body, and an altitude adjuster enabling the main body to be semi-submerged and floated; and an underwater robot driving a propulsion means in a state in which the underwater robot is docked on the docking portion to propel the water robot, having a monitoring means to	TONGMYONG UNIVERSITY INDUSTRIAL ACADEMIC COOPERATION FOUNDATION	KR1020190016944	2019/2/13

63	Underwater Robot and Method for Sampling of Weight Object in Underwater	The present invention relates to an underwater robot and a method for sampling a weight object on a sea floor comprising an agent which obtains the image data including an object located on the sea floor from at least one camera and grips the object located on the sea floor if the object included in the image data and an object included in pre-stored learning data are the same, and a mother ship which provides learning data to the agent and collects the agent and the object by winding a connection line connected to the agent when a grip signal for the object is received from agent, wherein the agent includes a grip part, the mother ship includes a winch for winding and unwinding the connection line, and the present invention can	POSTECH RESEARCH AND BUSINESS DEVELOPMENT FOUNDATION	KR1020180062031	2018/5/30
64	Underwater Robot and Method for Inspection of Near-Shore Structure Using Thereof	The present invention relates to an underwater robot and a method for inspecting a coastal structure using the underwater robot, comprising an agent for obtaining sensing data on a coastal structure by having a plurality of sensors; a mother ship for performing separation and coupling with the agent, receiving and analyzing the sensing data from the separated agent to investigate the coastal structure, and estimating a location of the agent and identifying the location of a defect on the coastal structure based on the estimated location of the agent; and a cable connecting the agent and the mother ship such that the agent moves according to a movement of the	POSTECH RESEARCH AND BUSINESS DEVELOPMENT FOUNDATION	KR1020180062225	2018/5/31

65	ROV(remotely Operated Vehicle) APPARATUS BASED ON PIPE FRAME CAPABLE OF USING BOTH WATER AND UNDERWATER	The present invention relates to a pipe frame-based remotely operated vehicle (ROV) apparatus for surface and underwater sailing, in which sailing of four degrees of freedom is basically realized, manufacturing is facilitated due to a simple configuration, each component is modularized to be assembled/disassembled to provide excellent mobility, storage, and maintenance, a modularized structure is realized to be used as a surface or underwater vessel, and a propulsion module is compatible with other surface or underwater propulsion apparatuses. According to the present invention, the pipe frame-based ROV apparatus comprises : a plurality of main buoyant bodies disposed in parallel; a main buoyant body connecting means connecting the main buoyant bodies; a plurality of auxiliary buoyant bodies disposed on both sides of the main buoyant body; an auxiliary buoyant body connecting means connecting the main and auxiliary buoyant bodies; a propulsion means detachably disposed in the auxiliary buoyant body and generating longitudinal and lateral	LEE JOONG HOON	KR1020190029601	2019/3/15
66	Method of acquiring underwater location information using GPS and ultrasonic communication	Disclosed are an underwater location calculation system and a method thereof. According to an embodiment of the present invention, the underwater location calculation system comprises a Global Positioning System (GPS) buoys A and a GPS buoys B receiving a location through the GPS. The GPS buoys A and the GPS buoys B use a received GPS signal to transmit a current location to an underwater robot using ultrasonic communication. The underwater robot calculates a location of the underwater robot based on the location information received from the GPS buoys A and the GPS buoys B, and depth information obtained through a depth sensor	KWON O BONG	KR1020180039421	2018/4/4

67	TELESCOPIC BOOM CRANE AND LAUNCH AND RECOVERY APPARATUS FOR ROV LARS THEREOF	According to an embodiment of the present invention, a telescopic boom crane for launching and recovering a remotely operated vehicle (ROV) comprises : a pair of rope guides fixed on a ship to guide a rope; cantilevers coupled to lower portions of the pair of guides; arms coupled to be rotated on one side of the cantilevers on which the rope guides are guided on the cantilevers; a pair of pneumatic cylinders provided on preset positions of upper portions of the arms, and provided for the arms in a length corresponding to a length to one end of the arms; a guide unit connected to one side of the arms to horizontally guide the arms; a winding unit which is fixed and connected by the guide unit and a connection unit, has an ROV support unit horizontally connected to a support shaft vertically provided with the arms, and launches and recovers the ROV coupled to a lower side of the ROV support unit; and a first winch including a plurality of guide rollers connected to the winding unit by the rope on a lower side of the winding unit and sequentially and alternately arranged while having height	TECH FLOWER CO LTD	KR1020180050143	2018/4/30
68	PROPELLER APPARATUS HAVING RING SHAPE FOR UNDERWATER ROBOT	The present invention relates to a ring type propeller for an underwater robot, which can generate rotational driving force and be propelled. According to the present invention, the ring type propeller for an underwater robot includes : a rotor having a disk provided in a ring shape and a plurality of permanent magnets provided in a circle at regular intervals along a circumferential direction of the disk; and a stator having a plurality of coil bars stacked with the same center and radius corresponding to a circular shape in which the plurality of permanent magnets are arranged and rotating the disk in accordance with application of an electric signal. Therefore, the rotor and the stator can be stacked in a vertical direction to reduce an overall size, and can be used to generate driving	ROBOTOUS CO LTD	KR1020170095529	2017/7/27

69	Horizontal shift apparatus for seabed exploring robot	According to the present invention, an apparatus moves a robot for seabed exploration in a horizontal state, and comprises : a main body (10) having a cylindrical body (13) on a stationary base (11); a support means (20) to support a lower surface of the stationary base (11) by a plurality of legs (21) to allow a position thereof to be changed, and accommodate a platform (23) capable of changing a position thereof in the cylindrical body (13); a moving means (30) loaded on the legs (21) of the support means (20) to generate thrust for movement; a detection means (40) to detect a position change and a moving state of the main body (10); and a control means (50) to control the support means (20), the moving means (30), and the detection means (40) by a set algorithm. Accordingly, the apparatus can collect information in a horizontal position and automatically perform a location movement responding to a change of an underwater environment without external intervention after the apparatus is deployed to the seabed. Therefore, a variety of information can be collected for a long	HYDROBOT TECH RESEARCH	KR1020180028918	2018/3/12
70	Survey system for ocean topography	The present invention relates to a submarine topology exploring system, which directly drops a robot structure under the water to explore submarine topology. The submarine topology exploring system includes : a robot body unit connected to a mother ship through a cable member; and a ground exploring unit installed on the robot body unit. The robot body unit is possible to stably explore the submarine topology under the water under support of the cable member, thereby improving stability of exploration. In addition, the ground exploring unit including an underwater camera or the like is possible to transmit various observing information to a central control unit provided on the mother ship or the like in	RESEARCH INSTITUTE OF MEDIUM SMALL SHIPBUILDING	KR1020180062002	2018/5/30

71	Modular Underwater ROV Common Platform	The present invention relates to a platform device for installing various subsidiary devices required when performing underwater work using an underwater work robot in a form of a unit module. According to the present invention, a hook fastening member is assembled to the unit module while installing various subsidiary devices such a sensor, a navigation device, and the like required for underwater work using the underwater robot in the form of the unit module. The hook fastening member is arranged so as to face a fixing rail, and the unit module is firmly coupled to the fixed rail while exerting a strong resistance against a force being pulled away from the fixed rail by moving the unit module after the hook fastening member is brought in close contact with the fixed rail and a protruding fastening part formed on the fixed rail is inserted into an insertion inner space of the hook fastening member. Thus, the platform device has a configuration which can be quickly, conveniently, and firmly fixed to the desired position	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020180025810	2018/3/5
72	Structural installation monitoring system and its method for deep sea URF operation	The present invention relates to a system for monitoring an installation structure for a deep sea URF operation and a method therefor, and more specifically, to a monitoring system and a method therefor for monitoring the installation structure which can be stably lowered or settled on the sea bottom in consideration of external factors (wind, waves, tides) when a structure is installed on the sea bottom of a deep water depth (more than 1, 000 m). It is important to measure, store, and monitor a condition of the installation structure in real-time due to the nature of the deep sea working environment for which has a poor working environment, the monitoring result is expressed in 3D by integrating and acquiring the sensor data of each distributed equipment and measuring it in real-time, thereby contributing to improvement of accuracy and stability of the structure installation work by providing information of each state in real-time to a user′ s portable terminal or PC.(100) Processing	LEE MI SOOK	KR1020180010354	2018/1/29

73	NOISE MEASUREMENT SYSTEM USING REMOTELY OPERATED VEHICLE FOR UNDERWATER WORKING	The present invention relates to a hydrophone system using an unmanned underwater robot for underwater working. The hydrophone system using an unmanned underwater robot for underwater working allows a user to accurately measure the noise received by each underwater hydrophone even when the user operating the unmanned underwater robot is out of water, and allows the user to visually identify the position of a noise source while listening to the underwater noise in real time by estimating the position of the noise source using the noise signals received from a plurality of hydrophones. The hydrophone system further includes a digital conversion part, a	SONARTECH CO LTD	KR1020180100239	2018/8/27
74	(Aqua game system using robot fish	The present invention relates to an aqua game system using a fish robot. A fish robot is inserted into an aquarium, a background display device is installed on the rear side of the aquarium, the fish robot is manually controlled through a remote controller or control device, a virtual game object and a game background image are outputted to a background display device through the control of the control device, and the virtual game object is controlled in response to real time position information of the fish robot to provide an aqua game. The aqua game includes a variety of game content such as soccer, ice hockey, underwater hunting, underwater exploration maze and the like, and the virtual game object can be used to provide advertisements and various events.(10) Fish robot(100) Aquarium(200) Background display device(300) Control device(310) Position detector (313, 10b)(400) Remote	ARTIFICIAL INTELLIGENCE ROBOT INC	KR1020170178671	2017/12/22

75	Underwater operation robot	The shape of "the robot for the underwater work" and combination of the shape are combined to the essentials of the creation. 1. The material is the metal and synthetic resin. 2. It finalizes so that this design is not rusted to the aluminum extrinsic metal material in consideration of the operation at the inland waters (the river, the dam, the reservoir etc) and nearby coast. The water quality environment status and geomorphic survey of the nearby coast, the aquatic environmental monitoring and structure reconstitution etc. are performed if it is the domestic demand and the robot platform is remotely controlled or it can move to the autonomously given goal stub and it corresponds to the breadth of the aquatic deck for the anchorage and repair and the hull width and high and low adjustment can be arbitrarily controlled. 3. The description of drawing. [Fig. 1.1] The whole form seen with silver of the design is expressed. [Fig. 1.2] The increased front portion of this design is expressed. [Fig. 1.3] The backside portion looked with silver of the design is expressed. [Fig. 1.4] The increased left side part of this design is expressed. [Fig. 1.5] The increased right side part of this design is expressed. [Fig. 1.6] The pars plana looked with silver of the design is expressed. [Fig. 1.7] The bottom	Korea Ocean Research amp Development Institute; 한국해양과학기술원	KR302018004169 4M001	2018/9/6

76	Small-Umanned Robot for detecting landmine	The present invention provides a small unmanned landmine detection robot to effectively drive even in mountainous terrain, allow entry and detection even in a narrow area, and operate in an unmanned manner to minimize injuries of workers by explosions in a landmine removing process. The small unmanned landmine detection robot comprises : a metal detection sensor (110) coupled to an end of a hydraulic cylinder (131) protruding from one side of a main body (130); a camera sensor (120) to transmit an image of photographed surrounding terrain by a smartphone to acquire information on terrain features; the main body (130) having the hydraulic cylinder (131) formed on a driving front side; a caterpillar track (140) remotely controlled to be driven in an unmanned manner; a GPS sensor (150) arranged on an upper portion of the main body (130) to identify a position of the landmine detection robot via a satellite; and a control unit (160) to control and output by a smartphone application. The outer surface of the main body (130) is formed as a high-strength glove to minimize	JUNG SEUNG HWAN	KR1020170178280	2017/12/22
77	(Aqua game system using robot fish	The present invention relates to an aqua game system using a fish robot. A fish robot is inserted into an aquarium, a background display device is installed on the rear side of the aquarium, the fish robot is manually controlled through a remote controller or control device, a virtual game object and a game background image are outputted to a background display device through the control of the control device, and the virtual game object is controlled in response to real time position information of the fish robot to provide an aqua game. As the aqua game, a variety of game content such as soccer, ice hockey, underwater hunting, underwater exploration maze and the like can be provided, and the virtual game object can be used to provide advertisements and various events.(10) Fish robot(100) Aquarium(200) Background display device(300) Control device(310) Position detector (313, 10b)(400) Remote controller(AA) Wireless communication module(BB) Main	ARTIFICIAL INTELLIGENCE ROBOT INC	KR1020170178678	2017/12/22

78	Apparatus for estimating position of hydraulic manipulator of underwater robot and method thereof	The present invention provides an apparatus for estimating a position of a hydraulic manipulator of an underwater robot and a method thereof. According to embodiments of the present invention, the apparatus for estimating a position of a hydraulic manipulator of an underwater robot comprises : a plurality of pressure gauges arranged on joints connecting a plurality of joint links of a hydraulic manipulator to measure water pressure; a compass arranged on a first joint link coupled to a base frame of the underwater robot to measure a yaw angle of the manipulator; and an end position calculation unit to calculate vertical displacement of each joint link in accordance with a water pressure difference of both ends of each joint link, and calculate a position of an end effector arranged on a final joint link of the manipulator in accordance with the vertical displacement and length of the joint link and the measured yaw angle.(110) Pressure gauge(120)	POSTECH ACADEMY INDUSTRY FOUNDATION	KR1020180069698	2018/6/18
79	MANIPULATOR CONTROL METHOD FOR WATER ROBOT	According to one embodiment of the present invention, a method for controlling a manipulator of an underwater robot is to apply an image-based object position estimation technique to assist in underwater work, a reliability of a higher estimation result is capable of being secured when compared with existing studies such as an automatic position estimation as the initial information is inputted from an operator, a robot arm can be operated more easily than a conventional remote control by using the estimated position information, and can estimate the six degrees of freedom of an object by receiving the touch input of the point information of the object in the image from the operator by using a technique for estimating the position	KOREA INSTITUTE OF ROBOT CONVERGENCE	KR1020180035321	2018/3/27

80	DOCKING DEVICE FOR UUV	The present invention relates to a docking device for an underwater vehicle, in which the underwater vehicle is possible to be stably docked, having : a receiving member having a shape in which a sectional area decreases in accordance with moving to a moving direction of the underwater vehicle; a middle member connected to the receiving member to be designed so as to be possible to be refloated and supported; and a back end member connected to the middle	KYEONG IN TECH	KR1020170156367	2017/11/22
81	Integrated ultrasonic inspection and magnetically linked to a cathode protection measurement probe	This application discloses magnetically coupled integrated probes and probe systems, attachable to the robotic arms of a remotely operated vehicle to perform both cathodic protection (CP) voltage measurements and ultrasonic testing (UT) thickness measurements at an underwater surface. The integrated probe system can include a spring for coupling to an ROV end effector. An ultrasonic probe is disposed within and extends from the sleeve housing. A magnetic carrier, flux concentrator, and gimbal surround a portion of the ultrasonic probe, and one or more electrically conductive legs extend from the front surface of the gimbal to function as a CP probe. The legs are arranged about the ultrasonic probe, which has a flexible membrane exposed at the front surface of the gimbal, such that during inspection, at least one leg contacts the	SAUDI ARABIAN OIL CO	KR1020197002339	2017/9/8
82	UUV Recovery Device and System using Active Pinger	According to the present invention, disclosed are an underwater recovery device and a system, which are positioned on the outside of a receiving unit, irradiate an ultrasonic pulse generated by using an active pulse having a variable frequency to an underwater vehicle, and provide a sound wave diagnosing unit in which the irradiated ultrasonic pulse receives an echo signal returned from the underwater vehicle to generate position data in accordance with a position of the underwater vehicle, thereby precisely identifying an	LIG NEX1 CO LTD	KR1020180143495	2018/11/20

83	Underwater vehicle and inspection method	A method for performing operations using a water environment robotic system on a target section of pipeline located in an underwater environment is provided. The method includes the steps of deploying the underwater robotic vehicle into the water and visually inspecting the underwater environment to locate the pipeline and its plurality of weld joints. A cleaning operation is performed at one of the plurality of weld joints using the underwater robotic vehicle. The robotic vehicle can land on the sea floor and deploy a robotic arm to inspect the cleaned weld joint. The underwater can then swim to a next weld joint and land and perform cleaning and	SAUDI ARABIAN OIL CO	KR1020197008625	2017/9/14
84	Integrated ultrasonic inspection and cathode protection measurement probe	This application discloses integrated probes and probe systems, which can be attached to the robotic arms of a remotely operated vehicle to perform both cathodic protection (CP) voltage measurements and ultrasonic testing (UT) thickness measurements at an underwater surface. In some embodiments, the integrated probe system couples an inner and outer gimbal together such that one or more electrically conductive legs pass from the outer gimbal through the inner gimbal. These legs are arranged about an ultrasonic sensor which extends from the front surface of the inner gimbal. When the integrated probe contacts the underwater surface, both the ultrasonic sensor and at least one leg contact the surface,	SAUDI ARABIAN OIL CO	KR1020197002337	2017/4/26
85	UUV Recovery Device and Control Method thereof	According to the present invention, disclosed are an unmanned underwater vehicle recovery device, which provides a rotation coupling unit, which is coupled to an upper end of a receiving unit, is connected to an outer crane to be lifted and lowered, and performs bearing deviation compensation between an unmanned underwater vehicle and a recovery device, and a control method thereof, thereby being possible to be operated while not generating rotation even when a	LIG NEX1 CO LTD	KR1020180117183	2018/10/1

86	Underwater operation robot	The shape of 'the robot for the underwater work' and combination of the shape are combined to the main point of the creative work content of the design. 1. The article of this design is used for the underwater photography, discovery, underwater work, the research of science etc. 2. The material comprises the metal or the plastic material. 3. Figure 1.1 is drawing expressing the whole form of the present application design. It is drawing in which fig. 1.2 expresses the front side of the present application design. It is drawing in which fig. 1.3 expresses the rear side of the present application design. Figure 1.4 is drawing expressing the left side of the present application design. It is drawing in which fig. 1.5 expresses the right side of the present application design. Figure 1.6 is drawing expressing the plane of the present application design. It is drawing in	Sun Generator Technology Company Limited; 썬전 제네이노 테크놀로지 컴퍼니 리미티드	KR302018003117 9M001	2018/7/6
87	An apparatus for underwater creatures cleaning/exterminati on on ship surface and the ship surface cleaning robot equipped with the same	The present invention relates to an underwater creatures cleaning/exterminating apparatus on the outer surface of a hull, which is provided on a robot for cleaning the outer surface of a hull and cleans the outer surface of the hull. Provided is an underwater creatures cleaning/exterminating apparatus on the outer surface of a hull, including : a cleaning means cleaning the outer surface of the hull; a main body unit connected with the cleaning means and introducing marine water including foreign objects and underwater creatures falling from the outer surface of the hull during a cleaning process by the cleaning means therein; a collecting unit provide in the main body unit and filtering the foreign objects and the underwater creatures included in the marine water introduced in the main body unit to collect the same; and an ultraviolet module provided on the main body unit and irradiating ultraviolet rays to the marine	PARK YOUNG JUN; SLM GLOBAL CO LTD	KR102018010170 6	2018/8/29

88	Underwater robot with no bolting waterproof structure	The present invention relates to an underwater robot applied with a no-bolting waterproof structure. According to the present invention, watertightness between a main body and a cover is provided by contact and fixing forces of a coupling ring, and thus the conventional problem of watertightness release attributable to corrosion or deterioration can be resolved even in the event of long-term exposure to an underwater environment. The present invention includes the main body incorporating a control board, a camera module, and a servomotor; a pair of covers respectively installed on both sides of the main body, having a protruding insertion end on one side for insertion into the main body, and having a ring groove in the outer peripheral surface of the insertion end; and the coupling ring annularly disposed in the ring groove, protruding higher than the insertion end, and fixing the cover	황요섭	KR1020170110158	2017/8/30

89	Optical transmission device capable of transmission of optical signal and electric power	The present invention relates to a rotation type optical transmission device capable of simultaneous transmission of an optical signal and power and, more specifically, to a rotation type optical transmission device capable of transmitting an optical signal and power simultaneously to a control object requiring rotation by using a rotation type optical rotary joint. According to the present invention, the rotation type optical transmission device capable of simultaneous transmission of an optical signal and power has an effect of simultaneously transmitting an optical signal and power without interference of a signal to a control object requiring a rotating body such as a crane, oil drilling equipment, medical equipment, broadcasting equipment, a robot, a radar system, and a remotely operated vehicle (ROV). In addition, the rotation type optical transmission device capable of simultaneous transmission of an optical signal and power is able to directly supply power transmitted by optical fiber to a control object requiring a rotating body. The present invention includes a light source unit; an optical modulator connected to the light source unit; an optical rotary joint connected to the optical modulator through first optical fiber; a splitter connected to the optical rotary joint through second optical fiber; an optical detector connected to the splitter through third optical fiber; a solar cell module connected to the splitter through fourth optical fiber;	KOREA PHOTONICS TECHNOLOGY INSTITUTE	KR1020170021404	2017/2/17
90	Remote operation vehicle (ROV) sea hub	This invention relates to a subsea Remotely Operated Vehicle (ROV) hub. In particular, the invention relates to a subsea ROV hub comprising a plurality of compartments for housing and	KEPPEL OFFSHORE MARINE TECH CT PTE LTD	KR1020187029226	2017/3/21

91	METHOD AND APPARATUS FOR DELIVERING DATA IN NETWORK SYSTEM	According to the present disclosure, a method for transmitting data comprises : storing information necessary for transmitting and consuming an MPEG media transport (MMT) package in a table form for each role; transmitting necessary tables from an MMT transmitting terminal to a receiving terminal through an MMT signaling message; and transmitting a list of all assets forming one MMT package through a PA message while the list is stored in an MP table. The MT table includes information related to time of all assets forming the MMT package, a position of data, and associated descriptors necessary for consuming the asset.(AA) Photographing device(BB) Sensor(CC) Raw image(D1, D2, D3) Physical state change information(EE) Media processing device(FF) Completed image(GG) Transmitting device(HH) FOV change determining unit(II) Receiving device feedback data(JJ) Realistic media data(KK)	SAMSUNG ELECTRONICS CO LTD	KR1020170089265	2017/7/13

92	ROBOT MANIPULATOR MONITORING APPARATUS FOR REMOTELY OPERATED VEHICLE AND THE METHO THEREOF	The present invention relates to a remotely controlled unmanned underwater vehicle and, more specifically, to a device for monitoring the manipulators of an unmanned underwater vehicle, which is configured to facilitate underwater operations such as the repair of a cable and a pipe embedded in the sea floor. The above-mentioned device for monitoring the manipulator of an unmanned underwater vehicle comprises : a horizontal plane image capture device installed on the housing frame of the unmanned underwater vehicle, in which a first manipulator and a second manipulator which have tools mounted at the other ends are installed to rotate vertically and horizontally, so as to observe the movement of the first and second manipulators on a horizontal plane (x-y plane, x-axis : the transverse direction of the unmanned underwater vehicle, y-axis : the front direction perpendicular to the x-axis of the unmanned underwater vehicle, and z-axis : the vertically downward direction of the unmanned underwater vehicle); and one pair of vertical plane image capture devices respectively installed on the first and second manipulators in the directions where the first and second manipulators face each other so as to image operation	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020170175769	2017/12/20
93	System and Method for Controlling Attitude based on Optical Communication at A U V Underwater Docking	The present invention relates to a device for controlling posture based on optical communication for AUV underwater docking to do docking control by controlling a horizontal position, an angle, and a distance based on information collected by a slit through which light passes and a method thereof. The device comprises : an optical transmitting unit configured to transmit light to any one of first and second objects to control docking of the first and second objects; and an optical receiving unit configured to sensing the light transmitted from the optical transmitting unit to another one of the first and second objects and controlling a position, an angle, and a distance of another object based on a sensed result to control posture for docking of the first and second objects.(10, 11) Optical transmitting	KOREA MARITIME UNIVERSITY INDUSTRY ACADEMIC COOPERATION FOUNDATION	KR1020170156664	2017/11/22

94	FUEL VALVE	Provided is a fuel valve including a uniform valve housing accommodating a roll-over valve (ROV), an over-pressure relief valve (OPR) and a pressure retention valve (PRV), wherein a pressure retention disc is substantially axially displaceable within a top chamber of the valve housing, between a normally closed portion in which it sealingly bears over an outlet port of the flow path and an open position; the pressure retention disc is configured with a cutout portion at least partially enveloping	라발 에이 씨 에스 엘티디	KR1020137022223	2012/3/13
95	NORMAL VECTOR EXTRACTION APPARATUS AND METHOD THEREOF BASED ON STEREO VISION FOR HULL UNDERWATER INSPECTION USING UNDERWATER ROBOT	The invention relates to an apparatus and a method for extracting a stereo vector based normal vector for an underwater inspection of a hull using an underwater robot to be able to extract a normal vector for a tangent plane viewed by a camera in order that the underwater robot can constantly keep and follow the distance and posture from the surface of an object to be inspected while performing the hull inspection work using the underwater robot. The stereo vision-based normal vector extraction apparatus (100) comprises an underwater image enhancement unit (110) for receiving a stereo image including left and right images of a plane of an object captured by a stereo camera and then changing the brightness distribution to improve an image quality; a stereo vision unit (120) for calculating three-dimensional coordinates of stereo corresponding points based on a camera coordinate system included in the left and right images with improved image quality; and a plane determining unit (130) for determining a plane using the three-dimensional coordinates obtained by the stereo vision unit (120) and extracting and outputting a normal vector.(110) Underwater image	KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY	KR1020170047345	2017/4/12

96	HEATING APPARATUS ATTACHED TO LIFESAVING REMOTELY OPERATED VEHICLE TO MITIGATE HYPOTHERMIA	The present invention relates to a heating apparatus attached to a lifesaving remotely operated vehicle (ROV) to mitigate hypothermia. According to the present invention, the heating apparatus attached to a lifesaving ROV comprises a heating body to heat relatively cold water and discharge the heated water to an outlet so as to prevent hypothermia of a person to be saved. The heating body is formed in an angled zigzag shape to have a wide contact area between the heating body and the water so as to quickly and efficiently heat the water. Moreover, the heating apparatus comprises a tide detection means to detect a flow of the water so as to access within a predetermined reference distance with respect to a position of the closest person to be saved in a flowing direction of the water, and the heated water is discharged through the outlet to be moved along a flow so as to maintain a body heat of the person to be saved, in particular, in the case of a plurality of persons to be saved, or prevent hypothermia. According to the present invention, the heating apparatus comprises : one or more pumps to discharge external water to the outside therethrough; the heating body connected to the pump, having a continuous angled zigzag shape, having a space formed therein to pass the water, and raising the temperature	KOREA MARITIME UNIVERSITY INDUSTRY ACADEMIC COOPERATION FOUNDATION	KR1020170013492	2017/1/31
97	ROV withdrawal device and its withdrawal method	The present invention relates to an ROV drawn-out device and a drawn-out method thereof and, more specifically, relates to an ROV drawn-out device and a drawn-out method thereof, wherein the ROV drawn-out device comprises : a working table having a mounting unit on an upper surface thereof; a roller conveyor provided in an upper portion of the working table, and having a moving roller; a lifting means enabling the roller conveyor to be drawn-out and operated; and a driving means installed in one portion of the working table. Therefore,	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020180045728	2018/4/19

98	Robot for underwater work	The shape of "the robot for the ground operation among the number" and combination of the shape are combined to the essentials of the creation. 1. [Fig. 1.1] It is drawing expressing the whole form of the silver design. 2. [Fig. 1.2] It is drawing expressing the increased obverse part of the design. 3. [Fig. 1.3] It is drawing representing the back side part of the silver design. 4. [Fig. 1.4] It is drawing expressing the increased left surface part of the design. 5. [Fig. 1.5] It is drawing expressing the increased right face part of the design. 6. [Fig. 1.6] It is drawing expressing the upper side part of the silver design. 7. [Fig. 1.7] It is drawing representing the lower surface part of the silver design. 8. [1.1 it is the referential view] It is drawing showing the active condition of the silver design. 9. The material is the metal and plastic material. 10. It is the robot for the ground operation among the number for performing the operation in which the article of this design is performed in the underwater ground including the cleaning of the underwater ground, the excavation of the underwater ground, the bedrock breaking at the underwater etc. 11. In this design, the colored part excludes from the design object of registration to the chromatic color of yellow and it is the part in which the achromatic color part which is not to the chromatic color the colored part tries to receive the design registration as the part design. 12. In this design, it is the part in which the white color	Korea Institute of Ocean Science Technology; 한국해양과학기술원	KR302017006095 9M001	2017/12/21

99	RISK WARINING AND ANTI-COLLISION SYSTEM AND METHOD FOR REMOTELY OPERATED VEHICLE	The present invention relates to an ROV risk warning and collision prevention system, which detects risks by using a range sonar that an ROV operating on a seabed detects a state of surroundings and outputs a warning sound or a warning message so that a joystick controlling the ROV cannot move to dangerous spots when risks are detected, and a method thereof. The ROV risk warning and collision prevention system comprises : a range sonar installed in an ROV to recognize surrounding objects; a position detection sensor installed in the ROV to recognize the position of the ROV; a joystick provided in a control deck to recognize ROV position information recognized by the position detection sensor and surrounding object information detected by the range sonar to manipulate the ROV; a warning message output part generating a text corresponding to a close situation when the ROV is close to the object by using the information detected by the range sonar and outputting the generated text by voice; and a control part provided in the control deck and controlling the joystick not to move to the object when the object is within a predetermined distance, thereby preventing the ROV from	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020180042319	2018/4/11

100	SYSTEM FOR COLLECTING AND GENERATING COMPLEX INFORMATION USING UNMANNED ROBOT COMPRISING UNMANNED AERIAL VEHICLE, UNMANNED SURFACE VEHICLE, UNMANNED UNDERWATER VEHICLE AND UNMANNED GROUND VEHICLE	The present invention relates to a system for collecting and generating composite information using an unmanned robot including an unmanned aerial vehicle (UAV), an unmanned surface vehicle (USV), an unmanned underwater vehicle (UUV) and an unmanned ground vehicle (UGV). An objective of the present invention is to perform integration and control at various sites such as the construction industry, industry, agricultural industry, transportation industry, and warehouse management to collect a variety of information to protect personnel having to bear a risk to acquire a variety of information at the sites, and measure and collect accurate information to increase utilization. According to an embodiment of the present invention, the system for collecting and generating composite information using an unmanned robot including a UAV, USV, UUV and UGV comprises : a composite data acquisition unit to use at least one unmanned robot to acquire at least one among image data for one or more target sites among a construction site, agricultural site, and loading or unloading site of a harbor, weather data at the target sites, and physical property data for a ship and seawater at the harbor among the target sites; and a composite	BYUN JOUNG TAE	KR1020180066744	2018/6/11

101	TELESCOPIC BOOM CRANE AND LAUNCH AND RECOVERY APPARATUS FOR ROV LARS THEREOF	The present invention provides an extensible boom crane to reduce a shock applied to a remotely operated vehicle (ROV) and an ROV launching and recovering apparatus using the same. According to one embodiment of the present invention, the extensible boom crane for launching and recovering an ROV comprises : a pair of rope guides fixed to a vessel to guide a rope; a cantilever coupled to the lower part of each guide; an arm coupled to one side, in which the rope guide is guided in the cantilever, of each cantilever guide to be able to rotate; a hydraulic cylinder installed at a preset position of the upper part of the arm, and provided to each of the paired arm by the length corresponding to the length to one end of the arm; a guide unit connected to one side of the arm to horizontally guide the arm; and a winding unit fixed and connected to the guide unit by a connection unit, including an ROV support unit horizontally connected to a support shaft	TECH FLOWER CO LTD	KR1020170052692	2017/4/25
102	Self-generating underwater robot	Provided is a self-generated submersible robot, quickly detected through continuous location tracking even when the submersible robot is lost. To this end, according to one embodiment of the present invention, the self-generated submersible robot comprises : a driving unit controlling a movement direction; a sensor unit collecting a plurality of information after sensing surroundings; a communications unit transmitting the plurality of collected information to the outside; a battery supplying power to the driving unit, the sensor unit, and the communications unit; and a self-generating unit generating a current and charging the battery. Moreover, the plurality of information includes location	KOREA INSTITUTE OF ROBOT CONVERGENCE	KR1020170039933	2017/3/29

103	Underwater Robot and the Method of Attitude Control of Underwater Robot	The present invention relates to a method of controlling an attitude of an underwater robot and an underwater robot, comprising : a main body unit configured to be capable of underwater operation; a hydraulic pressure generation unit provided in the main body unit and configured to generate a hydraulic pressure; a hydraulic drive unit for selectively supplying the hydraulic pressure; an arm provided on one side of the main body unit and operated to receive the hydraulic pressure; a sensor unit provided on at least one of the main body unit and the arm; and a controller configured to drive the arm by reflecting periodical external force when being determined which the periodical external force acts on a basis of a value measured from the sensor unit. The method of controlling an attitude of an underwater robot and the underwater robot according to the present invention can grasp an ocean current by behavior due to an external wave and reflect the same to control so that accuracy of work is increased	KNR SYSTEM INC	KR1020170050933	2017/4/20
104	APPARATUS FOR VERIFYING AUV NAVIGATION	The present invention relates to an apparatus for verifying an autonomous underwater vehicle (AUV) navigation performance, in which underwater navigation performance for measuring a position, a velocity and a posture of an antibody is verified in an underwater environment where GPS is unavailable. The apparatus for verifying an AUV navigation mounted on a ship according to the present invention includes : a navigation detecting mechanism for obtaining first position information on the ship; a navigation measuring mechanism including a plurality of sensors to collect sensor data generated from the sensors and measure second position information on the ship based on the sensor data collected according to an inputted algorithm; and a fixation mechanism fixed to the ship and	주식회사 한화	KR1020160179382	2016/12/26

105	UNDERWATER ROBOT SYSTEM BASED SURFACE CRAFT	The present invention relates to an underwater robot system based a surface craft, capable of quickly controlling a position and a posture of the underwater robot. According to the present invention, the underwater robot system based a surface craft comprises : the surface craft; the underwater robot including a prelusion device and performing remote communication with the surface craft through a tether line; a winch including a driving motor installed on the surface craft, a winch drum operated by the driving motor, three winch cables inserting one end part under the water while winding the other end part on the winch drum to vertically tow the underwater robot, and three cable arrangement guides to input the three winch cable under the water while being arranged in a triangular shape; a force sensor to detect a horizontal force applied to the winch cable; and a controller to check position movement and posture change of the underwater robot based	KOREA MARITIME UNIVERSITY INDUSTRY ACADEMIC COOPERATION FOUNDATION	KR1020170020957	2017/2/16

106	BALL WHEEL TYPE MOVING APPARATUS FOR REMOTELY OPERATED VEHICLE AND REMOTELY OPERATED VEHICLE WITH THE SAME	The present invention relates to a spherical wheel type remotely operated vehicle (ROV) driving apparatus and a spherical wheel type ROV including the same. According to the present invention, the spherical wheel type ROV driving apparatus comprises : an ROV main body including a propulsion device; a body unit including a body frame fixed to the lower part of the ROV main body and a plurality of supporting legs downwardly extended from the body frame; a carriage including a carriage frame installed on the lower part of the body frame and at least three or more spherical wheels disposed in the carriage frame to be able to freely rotate while coming in contact with the seabed; and an elevation device vertically elevating the carriage to place the bottom surface of the spherical wheel on the upper or lower side with respect to the bottom part of the supporting leg. Accordingly, the spherical wheel type ROV driving apparatus acquires propulsive force for traveling on the seabed from the propulsion device installed in the ROV main body without a separate driving device, thereby simplifying a structure thereof, and realizing lightweight and a small size. Moreover, when the carriage is lifted by the elevation device, the position of the spherical	KOREA MARITIME UNIVERSITY INDUSTRY ACADEMIC COOPERATION FOUNDATION	KR1020170020955	2017/2/16

107	Method for controlling ROV with 2 horizontal thruster and 1 vertical thruster	The present invention relates to a method for controlling ROV having two horizontal thrusters which are spaced apart from each other at a desired interval and are arranged in parallel in a thrust direction, and one vertical thruster disposed in front of the horizontal thrusters, by use of a controller with a horizontal joystick and a vertical joystick. Two thrusters are controlled by one horizontal joystick to move the ROV in forward, backward, left-turn and right-turn directions, and a third thruster is controlled by the remaining one vertical joystick to control lifting movement of the ROV. First and second control signals applied to two thrusters (21, 22) are varied by one horizontal joystick, so that output values of the first and second thrusters (21, 22) can be respectively outputted within a range of -255 to 255. In particular, the left-turn or right-turn switching of the ROV can be performed with various thrusts by making the output values applied to the first and second thrusters (21, 22) different.(AA) Start(BB) Is first controller inputted with signal?(CC) Orientation calculation (DD) Forward/reverse (EE) Is	CHOI JONG WOONG	KR1020170006242	2017/1/13
108	POSITION RECOGNITION SYSTEM AND METHOD BASED VLC FOR UNDERWATER ROBOT	The present invention relates to a visible light communication-based position recognition system for an underwater robot and a method thereof. The system includes a modulation unit for modulating output data, a light source unit for converting the modulated output data into an optical signal and outputting the optical signal, a photodiode for receiving the optical signal from the outside, an amplification unit for amplifying the optical signal received from the photodiode, a demodulation unit for demodulating the amplified optical signal, and an operation unit for generating the output data and calculating a position of the underwater robot using the demodulated optical signal. Accordingly, the robot can accurately grasp its own position in an underwater environment.(110) Operation unit(121) Modulation unit(123) Light source driving unit(125)	RESEARCH BUSINESS FOUNDATION SUNGKYUNKWAN UNIVERSITY; RED ONE TECHNOLOGIES CO LTD	KR1020170184342	2017/12/29

109	Underwater performance system of robot fish	The present invention relates to an underwater performance system of a robot fish, capable of providing a spectator with various entertainment content. According to the present invention, the underwater performance system of a robot fish comprises : a water tank filled with water; and the robot fish to perform underwater performance while swimming in the water tank in accordance with a predetermined scenario. The system comprises a projector, a screen, a background image display unit, a location detection unit, and a control unit. The projector is disposed in the front side of the water tank, and generates and projects a moving image capable of moving in response to the robot fish swimming in the water tank. The screen is disposed between the water tank and the projector, and displays the moving image. The background image display unit is disposed on the rear side of the water tank and displays a background image corresponding to a background in which the robot fish is swimming. The location detection unit detects a location of the robot fish swimming in the water tank. The control unit is connected to the projector to control a position of the moving image and is connected to the location detection unit to receive the location of the robot fish. When the location of the robot fish and the position of the moving image are fit	ARTIFICIAL INTELLIGENCE ROBOT INC	KR1020160181253	2016/12/28

110	SYSTEM AND METHOD FOR AUTONOMOUS RESCUE OF EVACUEES INTO THE SEA DURING ACCIDENTS ON OFFSHORE FACILITIES	The present invention relates to a system and a method for automatically rescuing a drowning person in a marine accident. The system comprises : a position transmission apparatus carried by a worker, and automatically transmitting a position signal when drowning is sensed; and a rescue system for analyzing a position of a drowning person to rescue the drowning person when a position signal for the drowning person is received.(10) Transmitting a position signal after a drowning person occurs (from working clothes, safety helmets, safety shoes, etc.(210) Boarding/protecting a person to be rescued(30) Independently operating transmission and reception apparatus (Installing a marine facility)(300) Moving out a semi-submersible small ROV to rescue the drowning person(AA, 400) Transmitting/receiving a position signal for the drowning person(b) Returning the semi submersible small ROV after rescuing the drowning person(BB) Transmitting an ROV operation control signal transmitting and receiving the position	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020160179749	2016/12/27

111	SYSTEM AND METHOD FOR DISPLAYING AUGMENTED REALITY OF VIEW OF UNDERWATER CONSTRUCTION ROBOT	The present invention relates to a system and a method for displaying augmented reality of an underwater construction robot which combine a screen correcting distortion of an image acquired by a camera installed on a robot being active on the seabed and a screen of a blueprint to display a combined screen as an augmented reality screen. The system for displaying augmented reality of an underwater construction robot comprises : a camera which is installed on a front surface of an underwater construction robot, and acquires an image while moving; a filter to remove noise created underwater in the image acquired by the camera; an object recognition unit to recognize an object including a background in the image from which noise is removed by the filter; a search unit to search for a blueprint corresponding to the object recognized by the object recognition unit to find the blueprint; a matching unit to magnify a scale of the blueprint matched by the search unit to match and align a scale of the object recognized by the object recognition unit; an improving unit to improve quality of an image where the blueprint and the object are superimposed by the matching unit; and a display unit to display the image improved by the improving unit on a virtual reality screen. A screen compensating a refractive index of the image acquired by the camera installed on the robot being active on the seabed and a screen of the blueprint are combined to display a combined screen as an augmented	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020170122510	2017/9/22
112	[GRO Aptamer]-Drug Conjugates And Use Thereof	The present invention relates to a cancer-targeting therapeutic agent comprising a drug-linker-AS1411 structure. The drug may be selected from a group comprising : monomethyl auristatin E (MMAE), monomethyl auristatin F (MMAF), cytarabine, gemcitabine, maytansine, DM1, DM4, calicheamicin and derivatives thereof, doxorubicin, duocarmacine and derivatives thereof, pyrrolobenzodiazepine (PBD), SN-38, α -amantine, and tubulysin analog. The AS1411-drug conjugates of the present invention are more	LEE JUNG HWAN; INTEROLIGO CORPORATION	KR1020160179111	2016/12/26

113	UNDERWATER ROBOT FOR LOW POWER CONSUMPTION ATTITUDE CONTROL USING BALLAST TANK	The present invention relates to an underwater robot for low-power attitude control by using a ballast tank, including : a float ballast tank (FBT) disposed on an uppermost floor to provide a predetermined buoyancy; a deep control ballast tank (DBT) for controlling a direction and an attitude by sucking or discharging external water; and an attitude ballast tank (ABT) including a plurality of ballast tanks (BT), an upper pipe, and a lower pipe to move the water between the ballast tanks by using the lower pipe and move air between the ballast tanks by using the upper pipe. Accordingly, it is possible to control in roll, pitch, and heave directions without being limited to pitch control using existing ballast tanks, and to reduce a mechanical stress against a buoyancy and a gravity of the underwater robot. In addition, even with a low-power small-sized motor, the attitude control is performed at a large angle by moving	PUSAN NATIONAL UNIVERSITY INDUSTRY UNIVERSITY COOPERATION FOUNDATION	KR1020160179169	2016/12/26
114	Underwater Robot Platform	The shape of "the platform for the underwater robot" and combination of the shape are combined to the essentials of the creation. 1. [Fig. 1.1] It is drawing expressing the whole form of the silver design. 2. [Fig. 1.2] It is drawing expressing the increased obverse part of the design. 3. [Fig. 1.3] It is drawing representing the back side part of the silver design. 4. [Fig. 1.4] It is drawing expressing the increased left surface part of the design. 5. [Fig. 1.5] It is drawing expressing the increased right face part of the design. 6. [Fig. 1.6] It is drawing expressing the upper side part of the silver design. 7. [Fig. 1.7] It is drawing representing the lower surface part of the silver design. 8. [1.1 it is the referential view] It is drawing showing the active condition of the silver design. 9. [1.2 it is the referential view] It is drawing showing the increased active condition of the design. 10. The material is the metal and plastic material. 11. As this design expressed in the referential view side 1.2 the platform according to the present invention is placed on on the	Korea Institute of Ocean Science Technology; 한국해양과학기술원	KR3020170060958M001	2017/12/21

115	Underwater robot	The present application design combines the shape of "the robot among the number" and combination of the shape to the essentials of the creation. 1. The material is the synthetic resin, the metal, and the base metal and glass. 2. [Fig. 1.1] The whole shape of the silver the present application design is shown. 3. [Fig. 1.2] The increased front portion of the present application design is shown. 4. [Fig. 1.3] The backside portion of the silver the present application design is shown. 5. [Fig. 1.4] The increased left part of the present application design is shown. 6. [Fig. 1.5] The increased right side portion of the present application design is shown. 7. [Fig. 1.6] The pars plana of the silver the present application design is expressed. 8. [Fig. 1.7]	HWANG YoSeop; 황요섭	KR302017004946 7M001	2017/10/24
116	Remotely Operated Vehicle	The present invention relates to a remote control submarine. The remote control submarine according to one embodiment of the present invention comprises : a hull; a propulsion portion generating propulsion force to move the hull underwater; a control portion controlling the propulsion portion in accordance with a remote control command received from the outside to move the hull underwater; and a tube being contracted in general and being expanded in accordance with control of the control portion or being inputted into a target location through a gripper. According to the present invention, the remote control submarine can be used for	CHO HYUN JOON; BAEK SEON MIN; YU HWAN WOO; LEE GEON GYU; KIM DO GYUN; BYUN YOONG BEOM	KR102016016795 1	2016/12/9
117	Egocentric Tele-operation Control With Minimum Collision Risk	The present invention relates to a self-centering remote control method for controlling a multi-degree slave robot disposed at a remote location using a master robot, comprising : a slave motion controller; a master motion controller; a slave robot; and an environment, wherein the master motion controller	한국생산기술연구원	KR102016011456 1	2016/9/6

118	a docking apparatus for underwater wireless power transferring system	The present invention relates to a docking apparatus for an underwater wireless power transmission, and more specifically, to a docking apparatus for an underwater wireless power transmission which supplies power in a wireless way to an autonomous unmanned underwater vehicle (AUV) for underwater exploration, wherein a gap between a feeding coil and a pickup coil in underwater is constantly maintained to stably supply power, and operates the AUV in underwater for a long time without lifting the vehicle. To achieve the purpose, the present invention comprises : a main body having an accommodating unit in which an AUV is accommodated; and an entry guide formed on both sides of the accommodating unit in order to correspond to guide wings formed on both sides of the AUV. The present invention regularly maintains a gap between the pickup coil installed in an upper part of the	KRRI	KR1020160154746	2016/11/21

119	A Planning Method for Robot Position and Tracking Path Using CAD Information of Object	The present invention relates to a system to generate a position and a tracking path of a robot using a computer-aided design shape (CAD) of an object, capable of calculating a contact point between a robot and an object, or a tracking path without a teaching work for all working points; and a method thereof. According to the present invention, the system comprises : an input processing unit analyzing position data of a plurality of points stored in an STL electronic file to extract position information, a vertical vector, and the like of a point selected by a user; a robot synchronization unit using coordinates of an actual robot to calculate a relation between an STL reference coordinate system and a robot reference coordinate system; a tracking path calculation unit to calculate a tracking direction and path between two points meaning start and end points, and to extract coordinates of a plurality of points between the two points; a coordinate conversion unit to perform conversion into coordinates and directions for the robot reference coordinate system; and an output unit to transmit robot coordinate information to a controller of the actual robot. Moreover, the method comprises : a step of calculating a relation between a reference coordinate system of the actual robot and a reference coordinate system of STL data; a step of using vertical vector information to create a plane and determine a tracking direction; a step of extracting an intersecting point between the created plane and a plurality of triangles on an STL; a step of rearranging the extracted	주식회사 윈텍오토메이션	KR1020160115476	2016/9/8

120	REMOTELY OPERATED VEHICLES, SYSTEMS, AND METHODS FOR INSPECTING CORE SHROUDS	The present invention relates to a remotely operated vehicle (ROV), a system, and a method to inspect a core shroud of a nuclear power plant. According to the present invention, the ROV to inspect a core shroud having an external surface comprises : a main body operably connected to a tether; and/or a sensor operably connected to the main body and providing inspection information of the shroud. The tether provides vertical position information for the ROV with respect to the external surface. The system comprises : a trolley; an arm; the tether; and/or the ROV. The arm is operably connected to the trolley and the ROV is operably connected to the arm through the tether. The method comprises : a step of installing the system on the shroud to inspect the shroud; a step of horizontally operating the system around the shroud;	GE HITACHI NUCLEAR ENERGY AMERICAS LLC	KR1020170102986	2017/8/14
121	Underwater workload monitoring buoy, Underwater workload monitoring system and method for monitoring underwater	According to an embodiment of the present invention, an underwater workload monitoring buoy is mounted in a discharge hose connected to an underwater cleaning robot, and may comprise : a body providing buoyancy; and a water level measurement sensor module provided at one side of the body to measure water level data expressing a depth of the body submerged under a water surface, and wirelessly	POSCO	KR1020160170340	2016/12/14
122	COMPACT UNDERWATER ROBOT	A small underwater robot comprises : an underwater robot body having an inner space; an ascending and descending unit stored in the inner space and enabling the underwater robot body to be ascended and descended; a plurality of driving steering units mounted on both side surfaces which face each other of the underwater robot body and enabling the underwater robot body to be operated and rotated in water; a sensing unit stored in the inner space and sensing information; and a power unit supplying power to the ascending and descending unit, the driving steering unit, and the sensing	KOREA UNIVERSITY OF TECHNOLOGY AND EDUCATION INDUSTRY UNIVERSITY COOPERATION FOUNDATION	KR1020160015868	2016/2/11

123	Underwater robot	The shape of "underwater robot" and combination of the shape are combined to the essentials of the creation. 1. The material is the synthetic resin and metal material. 2. While the present application design penetrates into the underwater and it moves it is installed at the underwater or it is the robot among the number for the aquatic structure check performing the function of examining the state of the installed aquatic structure. 3. While it easily concretes in underwater the aquatic structure is checked out with the screw in which the present application design is installed in the central inside both side room. 4. [Fig. 1.1] The whole form of the silver design is expressed. 5. [Fig. 1.2] The increased front portion of the design is expressed. 6. [Fig. 1.3] The backside portion of the silver design is expressed. 7. [Fig. 1.4] The increased left side part of the design is expressed. 8. [Fig. 1.5] The increased right side part of the design is expressed. 9. [Fig. 1.6] The pars plana of the silver design is expressed. 10. [Fig. 1.7] The bottom surface part of	PARK Kyung HeeRed one technologies co ltd	KR302017002728 4M001	2017/6/15
124	Method for direction verifying of submarine robot	The present invention relates to a method of checking a direction of an underwater exploration robot, and more specifically, aims to increase efficiency of an underwater exploration work by enabling real-time checking of left, right, front, back, and up and down directions of a robot, which performs the exploration work under the water, through a monitor of a control device located outside the water. To this end, the present invention includes : an underwater exploration robot body; a control device including an interface module, a memory portion, a monitor, and the like, capable of grasping directions of the exploration robot based on information obtained from the underwater exploration robot so as to check and control the directions of the exploration robot;	CHUNNAM TECHNO UNIVERSITY INDUSTRY ACADEMY COOPERRATION FOUNDATION; MARINEROBOTICS CO LTD	KR102016008103 7	2016/6/28

125	APPARATUS FOR COLLECTING OF FOREIGN SUBSTANCE, AND UNDERWATER CLEANING ROBOT INCLUDING THE SAME	The present invention relates to a foreign substance collection device, and an underwater cleaning robot having the same. According to one embodiment of the present invention, the foreign substance collection device sucking filtered water containing foreign substances separated from a work surface through operation of the underwater cleaning robot can comprise : a filter member filtering the foreign substances from the filtered water; and a porous graphene member	SAMSUNG HEAVY IND CO LTD	KR1020160010500	2016/1/28
126	METHOD AND SYSTEM FOR ESTIMATING LOCATION OF A PLURALITY OF UNDERWATER ROBOT CONNERCTED BY CABLE	The method encoded number ball position estimate of robot water operating in water. The method number 1 body and said number 1 position estimate of ship hull located on water or sleep state capable of moving body connected by a cable to a target object as method number 2 body relative position estimate, thereby aligning the body body and number 2 number 1, number 2 to adjusting tension of the approaching target object body, taking into account the length involves setting a search area for grasp the position of number 2, number 2 body pattern being in search area than the size of objects, an object number 2 is selectively removed during movement of a predetermined number 2 body compared body	포항공과대학교 산학협력단	KR1020150185487	2015/12/23
127	Dark green-gray colored low transmittance glass composition	The present invention relates to a low-transmission dark mist green glass composition, more specifically relates to a low-transmission dark mist green glass composition in which Fe 2 O 3 , CoO, Se and Cr 2 O 3 are used as coloring components within a specific content range where for the coloring components the relative contents of (CoO+Cr 2 O 3) to Se and CoO to Cr 2 O 3 are restricted to certain ranges and accordingly the visible transmittance (LT A) is effectively controlled and thus a blocking performance for privacy is satisfied; the solar energy transmittance (T e) and the UV transmittance (T uv) are lowered, and accordingly the cooling load for vehicles, buildings and the like is reduced and interior materials and people protection against UV rays is obtained;	주식회사 케이씨씨	KR1020130001645	2013/1/7

128	Be communication between mobile robot environment	A water environment robotic system that includes a control station, an underwater robotic vehicle, and a water-surface robotic vehicle. The underwater robotic vehicle is in communication with the water-surface robotic vehicle and the water-surface robotic vehicle is in communication with the control station. Accordingly, the water-surface robotic vehicle can act as a relay between the control station and the underwater robotic vehicle. The water-surface robotic vehicle is further capable of detecting the position of the underwater vehicle and automatically adjusting the position of the	SAUDI ARABIAN OIL CO	KR1020177029161	2016/3/14
129	ADHESIVE TAPE FOR SEMICONDUCTOR WAFER PROCESSING	The present invention provides an adhesive tape for semiconductor processing, which does not leave adhesive residue when the adhesive tape for semiconductor processing is removed from a wafer surface after back polishing, especially in a back grinding step of a silicon wafer or the like. An adhesive tape for semiconductor wafer processing 1 according to the present invention comprises a base film 2 and an energy ray-curable adhesive layer 3 that is provided on one surface of the base film 2, and is characterized in that if A (N/25 mm) is the adhesive power thereof before irradiation of an energy ray, T (KPa) is the tackiness thereof before irradiation of an energy ray, E (mm) is the elongation thereof before irradiation of an energy ray, AUV (N/25 mm) is the adhesive power thereof after irradiation of an energy ray, TUV (KPa) is the tackiness thereof after irradiation of an energy ray, and EUV (mm) is the	FURUKAWA ELECTRIC CO LTD	KR1020177019175	2016/3/14

130	FEED MANUFACTURING PLANT	The present invention refers to domestic agricultural wastes and feed high quality of soft capable of producing, by means of which an increase or decrease of production through packaging line replacement, can be provided to improve a quality satisfaction while non-reduce the burden increases feed, only 1 name each other method for selecting personnel number article, material input to the entire production line method for selecting personnel and work by number in packaging article are alternatingly arranged in line are formed on the base and secure and safe ratio can be grouped, post-processing the corresponding compressed air feed cup water descending in dust or odor molecular by realizing clean cut off or not can be factory, plant maintenance may be made hereinafter for them with a feed tank plant number are disclosed. The present invention according to a crushing and agricultural wastes with auger feed a pair of plant number bath and dried, a pair of with auger feed by a number combination and mixing materials and other agricultural wastes excised tissue bath, a pair of with auger feed amount by filling and discharging, feed for packing and quantitative, for a material transport between successive two process in combination with a screw conveyer and filling part with a crushed portion and	김중관	KR1020160030168	2016/3/14
131	Apparatus for operating ROV in submarines	The present invention relates to an apparatus for operating a remotely operated vehicle (ROV) for underwater search, and elimination and reconnaissance of a mine. The apparatus is installed with the ROV in a ballast tank which is disposed in the external of a pressure hull of a submarine and separates the ROV away from the submarine in the water and operates the	대우조선해양 주식회사	KR1020110056216	2011/6/10

132	REMOTELY OPERATED VEHICLE	The present invention relates to a remotely operated underwater robot and, more specifically, provides a remotely operated underwater robot, which comprises : a pressure sensor detecting pressure in the underwater robot; a control unit determining a change in a pressure value detected by the pressure sensor; a compressed air storage device storing air compressed therein; and an air control device discharging the compressed air of the compressed air storage device in	삼성중공업 주식회사	KR1020150153580	2015/11/3
133	Assist apparatus for launch and recovery of ROV LARS	The present invention relates to an assist apparatus for launching and recovery of a remotely operated vehicle (ROV) launching and recovery system (LARS). A pair of support bars (310) are installed on both sides of a crane (100), respectively, in order to be supported. One side of an extender (400) extended in a direction parallel to a longitudinal direction of the support bar (310) is installed on the support bar (310). One side of an arm (500) is coupled to the other side of the extender (400) through a hinge. A holder (600) is also coupled to the other end of the arm (500) through a hinge. The holder (600) plays a role to hold an unmanned submersible (200) or a signal/power cable (UC) to prevent movement of the signal/power cable (UC) connected to the unmanned submersible (200) or the underwater operational equipment (200). According to the present invention configured as described above, the holder holds the unmanned submersible or the signal/power cable to prevent movement of the unmanned submersible and the signal/power cable and to prevent collision between the unmanned submersible and a body of a ship due to influence by vibration applied to the	KOREA INSTITUTE OF GEOSCIENCE AND MINERAL RESOURCES (KIGAM)	KR1020170047334	2017/4/12

134	MAINTENANCE ROBOT FOR DRAINPIPE AND METHOD THEREOF	The present invention relates to a robot for the maintenance of sewer and a method thereof. According to the present invention, the robot for the maintenance of sewer includes : a manipulator wherein a nondestructive inspection module detecting a flooding part within a predetermined distance from an outer wall of the sewer by using nondestructive inspection signals and generating coordinates of the flooding unit and a repair module drilling the outer wall of the sewer and inputting a repairing material are mounted; a communication unit transmitting the coordinates of the flooding unit through a wireless communication with a remote control device and receiving control signals; a movable platform moved along the sewer and controlling the manipulator to be parallel to a horizontal plane; and a control unit controlling the movement of the movable platform by corresponding to the control signals received from the remote control device and controlling the manipulator to detect and repair the flooding part. According to the present invention, the robot for the maintenance of the sewer is capable of accurately detecting the flooding part formed around the outer wall of the sewer with the nondestructive inspection signals and remarkably improving safety and a working speed by drilling the outer wall of the sewer and inputting the repairing material right after inspection. In addition, the robot for the maintenance of the sewer is capable of detecting the repaired part again immediately after repairing the flooding unit and directly checking the repairing completion degree, thereby improving a completion degree of the repairing task.(AA) Start(BB)	DAEGU GYEONGBUK INSTITUTE OF SCIENCE AND TECHNOLOGY	KR1020150114501	2015/8/13

135	UNDERWATER CLEANING ROBOT	The present invention relates to a submersible cleaning robot, including : a main body; a marine organism removal plate installed in the main body and removing a marine organism attached to a vessel surface; and a seawater supplying portion installed in an upper surface of the marine organism removal plate and allowing the seawater to be introduced into a through-hole formed in a manner that penetrates the marine organism removal plate. According to one embodiment of the present invention, the present invention can remove marine organisms stuck onto the vessel surface by effectively giving an	삼성중공업(주)	KR1020150155489	2015/11/6
136	Method and apparatus for controlling position of underwater robot and underwater robot having the same	The method number ball position number is encoded water operating in water. The ship hull starting point and reaches the position number water method involves setting a target point, starting at the point and method of obtaining ultrasonic object, starting at each target and computer system which has reached point Image, ship hull moving reaches target point reaches point position error is not arrived calculator includes a difference in moving the calculated position error is fed to a	포항공과대학교 산학협력단	KR1020150185484	2015/12/23
137	A driving method of Exploration power unit for underwater observation	The present invention relates to an underwater robot and, more specifically, relates to an exploration power unit for underwater observation, which comprises : a head unit (100); a first body unit (200); and a second body unit (300). Moreover, a driving method of the exploration power unit comprises : a descending step of lowering the exploration power unit; and an ascending step of raising the exploration	부산외국어대학교 산학협력단	KR1020170002595	2017/1/6

138	Apparatus for launch and recovery UUV	PURPOSE : An apparatus for launching and recovering an unmanned undersea vehicle is provided to obtain safety by launching and recovering an unmanned undersea vehicle with a cradle installed in a free flooding space of a casing of a submarine. CONSTITUTION : An apparatus for launching and recovering an unmanned undersea vehicle comprises an opening(3a), a cradle(11), a hinge part(13), and a tilting cylinder(15). The opening is formed in a casing. The cradle is installed inside the casing in a state where unmanned undersea vehicles are loaded. The hinge part supports the cradle to be axially rotated to the outside of the casing. The tilting cylinder	대우조선해양 주식회사	KR1020110033162	2011/4/11
139	HEADING ESTIMATION APPARATUS OF AUV IN SEVERE MAGNETIC DISTURBANCE ENVIRONMENT AND THE METHOD THEREOF	The present invention relates to an apparatus to estimate an entrance-angle of an underwater vehicle in an environment with a severe magnetic field disturbance and a method thereof, which are capable of estimating the entrance-angle of the underwater vehicle by using a reference landmark and sonar to correct an error in the entrance-angle. According to the present invention, the apparatus to estimate an entrance-angle comprises : a work frame unit wherein a plurality of reference landmarks are formed in an underwater work area; and an entrance-angle estimation unit which comprises : a navigation unit mounted on an underwater vehicle; a sonar transmission/reception unit which transmits sound waves and then receives the sound waves reflected from the reference landmarks; an entrance-angle calculation unit which calculates the position of the reference landmarks to calculate an entrance-angle; and a correction unit which corrects an error of the navigation unit. The present invention allows the estimation of an entrance-angle of an underwater vehicle by using an underwater work environment as the coordinate system, thereby estimating the precise entrance-angle even	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020160039937	2016/4/1

140	LEVEL WIND OF UMBRICAL WINCH FOR REMOTELY OPERATED VEHICLE LAUNCH AND RECOVERY SYSTEM	The present invention relates to a level wind of a winch to remotely launch and recover an unmanned undersea vehicle (UUV), reducing a load applied to a drum to be stably operated. According to the present invention, the level wind comprises : a frame member coupled to an upper part of a winch assembly including the drum where a cable to launch or recover a remote-controlled UUV is wound around the outer circumference thereof, and fixated and installed in an upper part of the winch assembly; a screw shaft coupled to the frame member, coupled to a rotary member separate from a rotary member of the drum to receive rotary force, and having a spirally twisted guide groove formed on the outer circumference thereof; a slider block coupling one end to the screw shaft to reciprocally move in a horizontal direction by the guide of the guide groove; a sheave block connector to couple one end to the slider block; a sheave block including a sheave which couples one end to the sheave block connector and receives a part of the cable in a part of a circumference to guide winding or unwinding of the cable around the drum through bidirectional rotation; a limited sensor member coupled to a position corresponding to the frame member at both upper end parts of the drum to detect that the slider block is horizontally moved by the rotation of the screw shaft to reach each of both upper end parts of the drum, so as to generate a signal to change a rotary direction of the screw	TECH FLOWER CO LTD	KR1020160034586	2016/3/23

141	Real-time Status Monitoring Apparatus of Remotely Operated Vehicle Umbilical Cable nearby Lifting Ring	The present invention relates to a device for transmitting state monitoring information on an umbilical cable (120) to a mother ship (200) by monitoring the state of the umbilical cable (12) around a lifting lug installed in an unmanned submarine, among the umbilical cable (12) connected between the mother ship (200) floating on the water and the unmanned submarine (110) in the water, in real time. The device for transmitting state monitoring information on an umbilical cable (120) to a mother ship (200) includes : an umbilical cable monitoring device (130) having buoyancy and moving along the umbilical cable (120) as the umbilical cable (12) passes through the center, wherein the umbilical cable monitoring device (130) transmits photographing information and posture information to an operation system installed in the mother ship (200) through length-limited umbilical cable (140), the unmanned submarine (110), and an umbilical cable (120) by photographing the upper side and the lower side of the umbilical cable (120) at a current position and detecting a posture thereof; and the length-limited umbilical cable (140) connected between the umbilical cable monitoring device (130) and the unmanned submarine (110) in a predetermined length and performing a function of a communication line between the umbilical cable monitoring device (130) and the unmanned submarine (110), wherein the length-limited umbilical cable	KOREA INSTITUTE OF ROBOT CONVERGENCE	KR1020160003539	2016/1/12

142	Parameter Adaptive Backstepping Control AUV System	The present invention relates to a parameter-adaptive backstepping control autonomous underwater vehicle (AUV) system, and more particularly, to a parameter-adaptive backstepping control AUV system, capable of entirely performing precise control by estimating an unknown parameter and compensating for an error by applying a parameter-adaptive backstepping control method, and performing more accurate control by applying PLL in motor torque control. The parameter-adaptive backstepping control AUV system includes an inverse kinematics operation unit which converts global coordinates of a moving body into local coordinates, an inverse dynamics operation unit, an inverse transfer function connection matrix operation unit which produces a force required for a thruster motor and an angle required for a fin motor, and an inverse actuator modeling unit which products an angular speed required for the thruster motor.(10) Inverse kinematics operation unit(20) Inverse	RESEARCH BUSINESS FOUNDATION SUNGKYUNKWAN UNIVERSITY; RED ONE TECHNOLOGIES CO LTD	KR1020160171771	2016/12/15
143	FUEL CELL SYSTEM OF UNDERWATER MOVING BODY AND UNDERWATER MOVING BODY HAVING THE SAME	According to one aspect of the present invention, provided is a fuel cell system of an underwater moving body comprising : a fuel cell; a reformer reforming a fuel and generating hydrogen to be supplied to the fuel cell; a combustor supplying heat needed in the reformer; an aqueous gas conversion reactor converting unreacted carbon monoxide to carbon dioxide from the reformer; a gas separator increasing purity of the hydrogen generated from the reformer; and a buffer cylinder installed between the gas separator and the fuel cell, correcting a difference in reaction according to a power change and storing and supplying the required quantity of hydrogen in the fuel cell.(110) Combustor(120) Reformer(130) Aqueous gas conversion reactor(140) Gas separator(151, 152, 153) Heat exchanger(170) Fuel cell(AA) Fuel (Ethanol or methanol)(BB)	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020150147704	2015/10/23

144	APPARATUS AND METHOD FOR RECOGNIZING POSITION OF UNDERWATER VEHICLE	The present invention relates to a device and a method for recognizing a location of an underwater working robot. The device for recognizing a location of an underwater working robot comprises : a depth sensing unit which measures a depth of an underwater working robot; a travel distance measuring unit which measures a travel distance of the underwater working robot from a hull surface of a ship; and a location recognition unit which recognizes a location of the underwater working robot from the hull surface by a variation of a depth of	삼성중공업(주)	KR1020150022346	2015/2/13
145	APPARATUS FOR COLLECTING OF FOREIGN SUBSTANCE, AND UNDERWATER CLEANING ROBOT INCLUDING THE	The present invention provides an apparatus for collecting foreign substances of an underwater cleaning robot. The apparatus for collecting foreign substances comprises : a filtering member which successively filters foreign substances from the water to be filtered; a heavy metal adsorbing member which removes heavy metal from the water to be filtered; and a first clogging prevention member which prevents the filtering	삼성중공업(주)	KR1020140184764	2014/12/19
146	WATER JET ARM OF WATER JET EXCAVATOR FOR EXCAVATION OF SEABED GROUND	The present invention relates to a water jet arm of a water jet excavator for excavation of the seabed ground, improving construction performance and work efficiency. To this end, the present invention provides the water jet arm of a water jet excavator for excavation of the seabed ground, comprising : a jetting head; a forward tube; a plurality of nozzles; a backward tube; and a plurality of fixing plates.COPYRIGHT	KOREA MARITIME UNIVERSITY INDUSTRY ACADEMIC COOPERATION FOUNDATION	KR1020150151834	2015/10/30

147	Omnidirectional Movable Underwater Robot	The present invention according to the forward movement of the diving the robot seawater inflow aperture formed in a body part, the axial movement of number plower direction number control unit, seawater to branch and to the inlet hole coming from bow or stern drive having a predetermined wavelength. The chassis bow or stern direction of seawater inflow hole formed an opening body disposed away in the circumferential direction of a plurality of directions comprises a number. Direction number a fisherman, hole number hole covering some or all of the plurality of directions for shadowing direction number, hole number and direction connected to shield, to the forward movement of the submersible rotated at an angle with shutter opening direction number number	노동현; 김기무; 허운회	KR1020150088258	2015/6/22
148	THE REMOTELY OPERATED VEHICLE FOR SAVING LIFE	An embodiment of the present invention provides a remotely operated vehicle (ROV) used for life-saving operations. The life-saving ROV includes : a frame which has a low corrosive property against salinity and is made of a lightweight material; a first propelling unit which is mounted on the upper or lower ends of the frame to enable the vertical movement of the ROV; a second propelling unit which is mounted on a side surface of the frame to enable the horizontal movement of the ROV; an image obtaining unit which uses an ultrasonic sensor to recognize the location of obstacles and obtains images regarding the environment surrounding the ROV; an output unit which outputs either or both of text and images; a control unit which controls the operation of the output unit for enabling the reliable movement using the first propelling unit, second propelling unit, image obtaining unit, and a gyroscope unit; and a path which enables the communication with the control unit from remote locations and supplies power to the	JEJU NATIONAL UNIVERSITY INDUSTRY ACADEMIC COOPERATION FOUNDATION	KR1020150119858	2015/8/25

149	CLEANING ROBOT FOR UNDERWATER USE	The present invention relates to an underwater cleaning robot which stabilizes traveling on foreign substances, such as underwater sludge, and removes a large amount of foreign substances. The underwater cleaning robot comprises : a robot body; a traveling unit which is arranged in the robot body to move the robot body; and a foreign substance removal unit which is arranged in the robot body to remove the foreign substances and is moved in a height direction by corresponding to the height of the foreign substances. Therefore, the present invention widens a cleaning area and improves cleaning efficiency as the foreign substance removal	주식회사 포스코; 한국로봇융합연구원	KR1020140121938	2014/9/15
150	SYSTEM AND METHOD USING ROV FOR DETECTING DAMAGE POINT SUBMARINE POWER CABLE	The present invention relates to a system and a method for detecting a damage point of a submarine power cable, which can easily verify a damage position of a power cable by enabling an acoustic sensor to have high receiving sensitivity and to receive a discharging sound generated in a damage point of the power cable while the acoustic sensor approaches as much as possible to the power cable by an ROV capable of freely floating around a sea-bed. The system comprises : a sled drawn by a vessel to move by approaching to the power cable along the sea-bed; a second acoustic sensor installed in the sled, and receiving the discharging sound generated in the damage point of the power cable; and a controller for analyzing the discharging sound received in the second	GEOTECH SYSTEM CORP	KR1020160060892	2016/5/18
151	A CONTAINER APPARATUS FOR UNDERWATER CLEANING ROBET	A container apparatus for an underwater cleaning robot is disclosed. According to one embodiment of the present invention, the container apparatus for an underwater cleaning robot comprises : a container where an underwater cleaning robot is stored or loaded; a transportation unit moving the underwater cleaning robot to the outside of the container; and a rollover protection unit provided to be extended and	삼성중공업 주식회사	KR1020140128110	2014/9/25

152	Disaster Underwater Robot Platform Device based on Internet of Everything	Disclosed is an underwater disaster robot platform device based on the Internet of everything. The underwater disaster robot platform device based on the Internet of everything comprises a robot leg pillar frame forming a vertical pillar extended from a sea level to the seabed as a plurality of pillars having a predetermined length are connected in a clip type in a site to fall under water. The robot leg pillar frame is hinged in accordance with at least one condition of a depth of an underwater disaster ship, a shape of the underwater disaster	한양대학교 산학협력단	KR1020140093520	2014/7/23
153	TUBULYSIN DERIVATIVES	Novel tubulysin derivatives which may be useful as cytotoxic agents to provide therapeutic benefits in the treatment of various types of cancers, alone, as drug conjugates or in combination with other chemotherapies are provided.	MEDIMMUNE LLC	KR1020167031176	2015/4/10
154	A multi-joint underwater robot system for deep sea exploration	The present invention relates to a multi-joint underwater robot system for deep sea exploration, capable of continuously and stably performing very close exploration for a surface of deep sea. According to the present invention, the system comprises : a multi-joint seabed robot including a plurality of first and second pressure-resistant vessels to endure water pressure and prevent embedded devices from being flooded by sea water through waterproof processing, acquiring ocean research data, and closely and precisely exploring a seabed topology to transmit underwater state data; a mother ship receiving and storing the ocean research data and the underwater state data, and monitoring and controlling a moving direction of the seabed robot; and a depressor having a third pressure-resistant vessel, and connected to the mother ship and the seabed robot with a first and a second cable, respectively, to prevent underwater resistant force of the first cable from being transferred to the seabed robot. The first pressure-resistant vessels are installed on a robot body frame as a spherical shape, the second pressure-resistant vessels are installed	KOREA INST OCEAN SCI TECH	KR1020160073409	2016/6/13

155	LAUNCHING APPARATUS FOR UNDERWATER CLEANING ROBOT	A launching apparatus for an underwater cleaning robot is disclosed. According to an embodiment of the present invention, the launching apparatus for an underwater cleaning robot comprises : a launching frame coupled to be separated from an underwater cleaning robot to be moved along an outer surface of a hull with the underwater cleaning robot together; a fastening unit enabling the launching frame and the underwater cleaning robot to be coupled to or separated from each other; and a magnetic body provided to the launching	삼성중공업 주식회사	KR1020140128095	2014/9/25

156	BOTTOM CLEANING SYSTEM AND METHOD FOR SHIP	The present invention relates to a system and method for cleaning the bottom of a ship, which can perform cleaning work of the bottom of a ship with minimum manpower within the least amount of time by installing a device of the system inside the ship. The system for cleaning the bottom of a ship comprises : a control device installed on a deck in the ship; a connection device connected to the control device; a ship bottom injection recovery device to which the connection device is connected; an underwater cleaning robot which is connected to the connection device, and is injected into the bottom of the ship by operation of the ship bottom injection recovery device to clean a bottom surface of the ship; and a location sensor module connected to the connection device to measure a location of the underwater cleaning robot. In addition, the method for cleaning the bottom of a ship comprises : a step of repairing and fixing the underwater cleaning robot after inspecting the abnormality of the underwater cleaning robot; a step of moving the underwater cleaning robot and the location sensor module that are stored in an exclusive store by connecting the underwater cleaning robot and the location sensor module to a tether cable; a step of injecting the underwater cleaning robot into the bottom of the ship by unwinding the tether cable to which the underwater cleaning robot is connected by operating the ship bottom injection recovery device; a step of injecting the location sensor module into the bottom of the ship by unwinding the tether cable to which the location sensor module is connected by operating the ship bottom injection recovery device; a step	DAEWOO SHIPBUILDING MARINE	KR1020150070475	2015/5/20

157	UNDERWATER CLEANING ROBOT AND LAUNCHING APPARATUS FOR THE SAME	An underwater cleaning robot and a launching apparatus for the same are disclosed. According to an embodiment of the present invention, the underwater cleaning robot comprises : a driving unit traveling along an outer surface of a hull; a main body unit having a cleaning unit cleaning the outer surface of the hull; and a fastening unit coupling the driving unit and the main body unit. The driving unit and the main body unit are provided to be coupled by the fastening unit after the driving	SAMSUNG HEAVY IND CO LTD	KR1020140128092	2014/9/25
158	Cable tangle preventing device of ROV for deep sea mining vessel	Disclosed is a cable tangle preventing device of an ROV for a deep sea mining vessel. A cable tangle preventing device of an ROV for a deep sea mining vessel according to an embodiment of the present invention may include a ring-type cable grip part which holds or releases a cable; and a gap maintaining part which is rotatable in a pan direction on the lateral surface of	SAMSUNG HEAVY IND CO LTD	KR1020140023428	2014/2/27
159	UNDERWATER DOCKING DEVICE USING ARRESTING GEAR FOR UNMANNED UNDERWATER VEHICLE	The present invention provides an underwater docking device with an arresting gear for an unmanned underwater vehicle (UUV) (10). The UUV (10) enters a docking station (20) while an arresting wire (100) is spread on the UUV (10) when the UUV (10) recognizes the docking station (20). An arresting hook (200) exposed in the docking station (20) hooks the spread arresting wire (100) and then pulls the arresting wire (100) to the docking station (20) to dock the UUV (10) on the docking station (20) by an arresting gear method of an aircraft carrier in	AGENCY DEFENSE DEV	KR1020150073697	2015/5/27

160	Steering method for a hybrid underwater glider	The present invention relates to a hybrid autonomous underwater vehicle (AUV). To compensate for shortages of large rotational radius and slow navigation speed in an underwater glider, a torpedo type autonomous underwater vehicle having a propeller and a tail wing is coupled to an underwater glider equipped with a buoyancy bag and a weight center moving device. So when a long time navigation is required, the present invention performs an underwater glider mode control operation to reduce energy consumption and to perform an operation with low noises. In order to pass a target point at rapid speed, the present invention performs an autonomous unmanned underwater vehicle mode control operation without attachment or detachment of equipment to perform general purposed missions. To this end, the present invention operates two modes of the autonomous unmanned underwater vehicle mode using the propeller for obtaining propulsion power, and the underwater glider mode using the buoyancy bag and the weight center moving device. When steered, a conventional underwater glider uses two weight center moving devices to control a rotational angle on a z-axis generated while moving a weight center on an x-axis and a	PUKYONG NAT UNIV INDUSTRY UNIV COOP FOUND	KR1020150057570	2015/4/23

161	SLING RETAINER FOR JACKET LIFTING AND FIXED PLATFORM HAVING THE SLING RETAINER	The jacket of fixed platform which relates to the device for a lift sling retainer, true [...] sling for supplying and slidably disposed plate L-shaped gripper of gripper ropes wire installed in the injection aperture plate true plate fixed structure [...] sliding plate moves the true [...] structure an entrance slit into a close the jacket when carrying a sling to prevent the secession of sea is ROV jacket provided upon completion of the wire rope a tension chemicals flowing through the circulation line to enable cutting out the ratchet gear is coaxially plate gripper plate and the slide (prudence) by by and allowed to fall toward a to sea, by using a simple structure, a number-easy properties and small number work expense saving is mounted at a side of can be height, temporarily completely retainer sling structure has an inner diameter (Temporary) number for producing a sedated by etching the sling and hereinafter for is for producing a	대우조선해양 주식회사	KR1020140008903	2014/12/3
162	APPARATUS FOR DETECTING CABLE USED FOR HULL SURFACE CLEANING ROBOT, AND CABLE FEEDING APPARATUS INCLUDING THE SAME	The present invention provides a cable sensing unit for a hull cleaning robot. The cable sensing unit for a hull cleaning robot comprises : a guide roller part which guides a cable on a path where the cable is transferred to be linearly spread; a pressing roller part which presses the cable in the rear of the guide roller part; and a sensing part which is located between the guide roller part and the pressing roller part to sense the transfer state of the cable. Therefore, the present invention effectively senses whether the cable connected to a hull cleaning robot is	SAMSUNG HEAVY IND CO LTD	KR1020150038393	2015/3/19

163	CLEANING ROBOT FOR UNDERWATER USE AND CONTROL METHOD FOR THE SAME	The present invention relates to an underwater cleaning robot measuring a load to a pump sucking foreign substances such as underwater sludge or the like to control the means of removing foreign substances and a control method thereof. The underwater cleaning robot comprises : a robot body; the drive means; the foreign substance removing means; and a control part. The robot body includes the pump. The drive means is arranged on the robot body to transfer the robot body. The foreign substance removing means is arranged on the robot body to remove the foreign substance using the suction force of the pump. The control part corresponds to the load to the pump to control the drive of at least one of the drive means and the foreign substance removing means. Accordingly, the movement speed of the drive means is controlled by and corresponds to the load to the pump sucking the foreign substance, thereby further effectively performing the cleaning work.(AA) Start(BB) End(S10) Moving robot body by drive means(S20) Sucking foreign substance by foreign substance removing means connected to pump(S30) Measuring consumption current value generated when pump is driven(S40) Controlling operation of drive means to allow pump consumption current value to converge pump target	POSCO; KOREA INSTITUTE OF ROBOT CONVERGENCE	KR1020140123046	2014/9/16
164	LIFTING TYPE ROV RAIL AND SHIPS, OFFSHORE STRUCTURES HAVING THE SAME	The device, lifting type lobe rail and having the same relates to water-craft or marine structures, more particularly, underwater probe outer hull of the vessel the purpose is to installed in lobes rail that is lifted up and down for producing a sedated number installation and structure a to those needed to perform the read and thus reduces public box number is at a lower end.	대우조선해양 주식회사	KR1020140009574	2014/12/26

165	Waterjet propulsion system of underwater robot	The present invention relates to a water jet propulsion system of an underwater robot, comprising a propellant main body, a front propellant body, a rear propellant body and a propellant part. The propellant main body has a water flow path formed on an interior center thereof along a longitudinal direction to allow water to pass. The front propellant body is coupled to one end of the propellant main body and has an entrance formed on an interior center thereof to allow water to be introduced into the water flow path. The rear propellant body is coupled to the other end of the propellant main body and has an exit formed on an interior center thereof to allow water passing through the water flow path to be discharged. The propellant part is installed on the water flow path of the propellant main body to allow water to be introduced through the entrance, pass through the water flow path, and be discharged through the exit. Therefore, the water jet propulsion system of an underwater robot has a structure allowing seawater to be introduced through the water flow	CATHOLIC KWANDONG UNIVERSITY INDUSTRY FOUNDATION	KR1020150026286	2015/2/25

166	FOR ROV LARS PORTABLE DISINFECTION DEVICE EASY TO CLEAN FOR ROV LARS	The present invention relates to a launching and return apparatus of a submarine for ROV LARS. The launching and return apparatus of a submarine for ROV LARS which includes an umbilical cable launching and returning a remote submarine in the water using a crane installed in a mother ship and connected with the remote submarine to control an operation of the remote submarine and a vertical shaking compensator controlling the position of the crane comprises : a wire wound or unwound from the mother ship toward the water and connected with the remote submarine; a winding unit installed in the mother ship and launching and returning the remote submarine to the water by winding or unwinding the wire; and a resistance reducing unit connected with an upper portion of the remote submarine by the wire and reducing the resistance of the water by being deformed to a predetermined shape when the remote submarine is returned to the mother ship from the water. The launching and return apparatus of a submarine for ROV LARS can reduce the resistance of the water when the remote submarine is returned to the water using the resistance reducing unit, and can quickly return the remote submarine with blocking the resistance of the water when the remote submarine is returned by applying deformation to the	KOREA INSTITUTE OF GEOSCIENCE AND MINERAL RESOURCES (KIGAM)	KR1020160030180	2016/3/14
167	METHOD FOR CORRECTING POSE, AND UNDERWATER CLEANING ROBOT PERFORMING THE SAME	Disclosed are a posture correcting method and an underwater cleaning robot performing the same. The posture correcting method according to an embodiment of the present invention comprises : a step (a) of sensing a bilge keel; and a step (b) of correcting a posture to form a certain angle with the sensed bilge keel. Therefore, the present invention enables the normal driving of the underwater cleaning robot by correcting the	삼성중공업 주식회사	KR1020140124791	2014/9/19

168	AMPHIBIOUS ROV	The present invention relates to an amphibious ROV. According to the present invention, the amphibious ROV comprises : a first body where a pair of symmetric guide protrusions are installed on one side; a second body where insertion protrusions, which are combined to the guide protrusions, are installed on one side; and multiple wheels combined with sides of the first and second bodies. The first and second bodies are adjusted in combination angle by a coupling of the guide protrusions and the insertion protrusions. The multiple wheels have a screw shape. The first and second bodies move on the	모터웰 주식회사	KR1020130115875	2013/9/30
169	micro water robot equipped with rotating sonar system	The present invention relates to a micro water robot which can be autonomously operated on water. The micro water robot having a rotating sonar system comprises : a hull (10) having a sealing structure; a bottle unit controlling buoyancy; a sonar; a sonar rotating unit (40) coupled to the sonar; an interlocking board; a pair of paddle units; a surge-yaw unit; a main board; and a communication unit.COPYRIGHT KIPO 2016	TONGMYONG UNIVERSITY INDUSTRIAL ACADEMIC COOPERATION FOUNDATION	KR1020150009252	2015/1/20

170	Underwater robot having variable stucture capable of chaging thruster configuration	The present invention relates to an intelligent underwater robot constructed to perform development and verification of algorithms for carrying out high precision assignment based on artificial intelligence for research on unmanned technology, such as remotely operated vehicles (ROV) and autonomous underwater vehicles (AUV). According to the present invention, since thrusters only have a specific motion characteristic because the thrusters are fixed to and arranged on a specific position. As a result, disadvantages of a conventional underwater robot, which limit development and verification of various algorithms performed in a process of researching the underwater robot, are resolved. Therefore, a position of an underwater robot can be changed depending on the characteristic of an algorithm to be applied, thereby providing the underwater robot with a variable structure capable of changing the arrangement of thrusters, which is constructed to develop and verify various algorithms due to various motion abilities thereof. In order to achieve this purpose, the underwater robot with a variable structure capable of changing the arrangement of thrusters comprises : a movable body; a main frame installed inside the movable body; a plurality of thrusters; a fixing bracket including a frame mounting part and a thruster mounting part; a plurality of buoyancy materials; an internal pressure-resistant container for a system, on which a control system for controlling the underwater robot is	한국해양과학기술원	KR1020140166365	2014/11/26

171	Exploration power unit for underwater observation	The present invention relates to an underwater robot, which is an exploration device for underwater observation. The exploration device for underwater observation comprises : a head part (100) which has an image unit (110), a control unit (120), and a power unit (130); a first body part (200) which has a first propulsion unit (210), a second propulsion unit (220), and a housing unit (230); and a second body part (300) which has a direction indicator (310) having a steering function, a DC motor (320) for supplying power, and a rear propeller (330) connected to the DC motor to supply ship propulsion. Therefore, the present invention enables a remote control by communicating with a wired and wireless controller (400), and prevents the loss of the exploration device by allowing the	PUSAN UNIVERSITY OF FOREIGN STUDIES	KR1020150006828	2015/1/14
172	Submarine	The submarine has oil detection device (13) and oil/water separating device (21). A flexible trunk that is provided in oil discharge device. A device for discharging of oil degradation products is connected to a line leading into the submarine cable, and is attached in a region adjacent to free end portion of remotely operated vehicle (ROV). An oil tank (22) is provided for storage of recovered oil. A filling device is provided for filling the oil tank. A transportation device is provided for	티센크루프 마린 시스템즈 게엠베하	KR1020137032209	2012/6/6
173	CLEANING APPRATUS FOR UNDERWATER PIPE	A cleaning apparatus for an underwater pipe is disclosed. The cleaning apparatus for an underwater pipe according to an embodiment of the present invention comprises : a robot body unit which is arranged in a riser and has a path enabling movement along the riser; a propulsion unit which is arranged in the robot body unit to provide propulsion caused by seawater to the robot body unit; and a pipe cleaning unit which moves along an underwater pipe to clean the outer surface of the underwater pipe. The cleaning apparatus for an underwater pipe reduces the management costs of a remotely-operated vehicle (ROV) as the cleaning apparatus moves along the underwater pipe without the ROV and rapidly performs the	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020140099088	2014/8/1

174	COMBINATION TYPE ROV RAIL AND SHIPS, OFFSHORE STRUCTURES HAVING THE SAME	The device, combined lobe rail relates to, more particularly, underwater probe outer hull of the vessel the purpose is to installed in lobes rail simply combine the water heat block and noise bar eliminating device structure are to time and thus reduces constitution : an isolator combination type lobe rail and including ship and is provided to marine structures.	대우조선해양 주식회사	KR2020140009575	2014/12/26
175	A METHOD FOR MONITORING UNDERWATER EXPLORATION ROBOT	The present invention relates to a monitoring method for an underwater exploration robot. According to an embodiment of the present invention, the monitoring method for an underwater exploration robot includes : a step of obtaining an image in which an underwater exploration robot is photographed by a camera; a step of obtaining depth information about the underwater exploration robot by a depth sensor; a step of detecting the position of the underwater exploration robot from the image by adjusting a threshold value of the image; a step of expressing the detected position as a two-dimensional coordinate; a step of determining a center point of the underwater exploration robot; a step of changing the two-dimensional coordinate into a three-dimensional coordinate using the depth information and the center point; and a step of correcting a wobble of the camera, caused by disturbance. According to the present invention, the monitoring method for an underwater exploration robot can obtain an accurate position of the underwater exploration robot as the three-dimensional coordinate by the camera. So, the monitoring method for an underwater exploration robot	AJIN IND CO LTD	KR1020140181485	2014/12/16

176	underwater robot for enhancing impact resistance, management efficiency and hovering efficiency	The present invention relates to an underwater robot. Since globular elastic frame part is installed outside a controller, including an electric element, a circuit, a sensor, and processors, the globular frame part absorbs and distributes an external impact to prevent malfunction and damage to a device, caused by the external impact. Since the globular frame part comprises multiple frame assemblies, able to be assembled and disassembled as modules, to enable easy assembly and disassembly, the maintenance and replacement of an internal core component become simple and working time is reduced. The torque/force of XYZ axes of each corner is measured by a torque/force sensor of each corner of a rectangular frame part, and the controller quickly recognizes contact intensity and position or intensity and direction of a current depending on the data, measured by the torque/force	RED ONE TECHNOLOGIES CO LTD	KR1020150017563	2015/2/4
177	Visible underwater receiving terminal and information transmitting and receiving system using the terminal	The present invention relates to a visible underwater transceiving terminal, which comprises : a light receiving unit; a light transmitting unit; a light collecting lens; a light receiving device; an information output unit; an information input unit; a light transmitting device; a first control unit; a power unit; a fixing frame; and a weight, thereby securing user convenience of an apparatus by inducing to reuse	KOREA MARITIME UNIVERSITY INDUSTRY ACADEMIC COOPERATION FOUNDATION	KR1020140184444	2014/12/19
178	CLEANING ROBOT FOR UNDERWATER USE	The present invention relates to an underwater cleaning robot which comprises : a robot body; a driving unit installed in the robot body, and provided for the robot body to be moved; and a plurality of removing units individually arranged to be opened up at a predetermined angle with respect to a moving direction of the robot body at one side of the robot body. Therefore, fragmentation and suction can be possible in a sludge layer which is collapsing, and efficiency of cleaning work can be maximized as the underwater cleaning robot can be operated while cleaning the sludge layer in a state in which	POSCO	KR1020140169569	2014/12/1

179	Heavy fittings moving system for work underwater using ihe plural cable winch robot	The present invention provides an underwater heavy weight moving system which performs underwater work without moving a ship or a structure under a quay wall mooring not to be influenced on a production process. The underwater heavy weight moving system of the present invention moves a fitting and the heavy weight underwater using a plurality of cable robots installed in a quay wall and a plurality of cable robots installed in a floating object such as a tugboat; and performs installation, dismantling, and other works by moving to a proper position using a monitoring device.(100) Controller(101) Monitor(110) Position detection unit(120) Monitoring camera	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020140072680	2014/6/16
180	Cable winch robot for buoyancy control underwater	The present invention relates to an underwater cable robot device capable of controlling buoyancy. A plurality of cable winches are installed in an inner wall and a floating structure, and a cable is connected to an upper and a lower corner of a moving plate by guide pulleys with different heights, installed in a side wall. The underwater cable robot device is formed to move an object to be transferred by mounting the object to be transferred on an upper part of the moving plate. A buoyancy control device using a ballast tank and a weight are installed in the moving plate to control buoyancy; and also, a vision system to monitor an underwater working situation and various sensors to measure a position, an angle, and a height of the moving plate are installed. A movement and a posture of the moving plate by the cable winch are controlled by a controller; and the moving plate can be moved to a position except for a	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020140088854	2014/7/15

181	LAUNCHING APPARATUS FOR UNDERWATER CLEANING ROBOT	A launching apparatus for an underwater cleaning robot is disclosed. According to an embodiment of the present invention, the launching apparatus for an underwater cleaning robot comprises : a moving vehicle having a transfer wheel to travel along an outer surface of a hull; a launching unit enabling an underwater cleaning robot to fall toward a bottom of the hull; a fastening unit enabling the underwater cleaning robot to be coupled to or separated from the moving vehicle; and a magnet enabling the moving vehicle to be attached to the outer surface of the hull. The fastening unit comprises : a fastening cable connecting the moving vehicle and the underwater cleaning robot; and a fastening winch towing the	SAMSUNG HEAVY IND CO LTD	KR1020140128096	2014/9/25
182	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot comprises : a frame; a cleaning unit having a cleaning brush installed in the frame to be rotated by coming in contact with a target surface; a cover member covering the circumference of an upper surface and a side surface of the cleaning brush and having an opening formed on a front side to which the frame is operated to travel; a foreign substance collection pump taking in a foreign substance inside the cover member to be discharged; a suction pipe connecting the foreign substance collection pump and the cover member; and a pulverizing device pulverizing the foreign substance introduced to the suction pipe by a suction force of the foreign substance collection pump. The purpose of the embodiments	SAMSUNG HEAVY IND CO LTD	KR1020140118292	2014/9/5

183	LAUNCHING APPARATUS FOR UNDERWATER CLEANING ROBOT	A launching apparatus for a ship bottom cleaning robot is disclosed. According to an embodiment of the present invention, the launching apparatus for a ship bottom cleaning robot comprises : a launching frame provided to be connected to a ship bottom cleaning robot and comprising a magnet body assisting adhesion of the ship bottom cleaning robot with respect to an outer surface of a hull; a fastening unit enabling the launching frame and the ship bottom cleaning robot to be coupled to and separated from each other; and a cable supporting body enabling at least one launching cable connected to the launching frame to be spaced from the outer	SAMSUNG HEAVY IND CO LTD	KR1020140115591	2014/9/1
184	CABLE GUIDE DEVICE FOR UNDERWATER CLEANING ROBOT	Water cleaning robot cable guiding device is is disclosure. Water cleaning robot cable guiding device of the present invention in the embodiment according to the land structure is installed at, hull outer wall on a cleaning to perform cleaning work is connected robot and reel unit a wound and unwound, in; the hot blast supply unit in a wall surface structure support unit; support unit to surround and cables provided on the	SAMSUNG HEAVY IND CO LTD	KR1020140154134	2014/11/7

185	Underwater IMR (Installation, Maintenance, and Repair) Task Management System and Its Method	The present invention relates to a system and a method to manage an installation and maintenance of an underwater equipment which uses augmented reality in the installation and maintenance of an equipment performed by a remotely operated vehicle (ROV) which is a remotely operated unmanned undersea vehicle for underwater resource exploration and development. The system of the present invention comprises : a plurality of work ROVs installed in the deep sea; a monitoring ROV to monitor an operation of the work ROVs; a database to store information about equipment to be installed, submarine topography information, information about the work ROVs, and information about the monitoring ROV; a virtual reality image generation unit to generate a 3D virtual reality image information in accordance with the information stored in the database; and an augmented reality image generation unit to generate the augmented reality image by adding information photographed by the work ROVs and the monitoring ROV to the image information generated by the virtual reality image generation unit. As such, the system of the present invention improves an efficiency of installation and operation of the underwater equipment, and an efficiency of supervision of the installation	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020140155629	2014/11/10
186	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. The underwater cleaning robot comprises : a frame; a drive unit and a steering unit which are installed in the frame; and a cleaning unit which is installed in the frame to clean a work surface. The cleaning unit comprises : a cleaning unit frame which is installed in the frame to be lifted; a lifting device which lifts the cleaning unit frame; one or more cleaning motors which are installed in the cleaning unit frame; and one or more cleaning brushes which are coupled to the shafts of the cleaning motors and are rotated to clean the work surface. Thus, the underwater cleaning robot stably moves on the work surface having a	SAMSUNG HEAVY IND CO LTD	KR1020140148865	2014/10/30

187	UNDERWATER CLEANING ROBOT	Disclosure the water cleaning robot. Water cleaning robot of the present invention in the embodiment according to a frame; support bracket coupled to frame, and a connection shaft directed traveling jacket supported by tilting showed in chemical formula (tilting) which is detachably connected to a connected bracket, mounted to bracket connected travel drive part, travel drive exterior of the rotatably mounted a dose set by operation of the drive with the steering while rotating a drive wheels travelling through the upper surface work bench a drive unit; a steering wheel travelling through the upper surface work bench, steering wheel-is mounted in the frame in which the control of running direction steering wheel a steering	SAMSUNG HEAVY IND CO LTD	KR1020140148868	2014/10/30
188	ROV for Ships Using Radio Control	PURPOSE : An underwater cleaning robot for a ship using radio control is provided to secure the autonomy of robot motions and eliminate restriction in cleaning area by removing cables. CONSTITUTION : An underwater cleaning robot for a ship using radio control comprises travel wheels, a vertical propeller, a horizontal propeller(90), a brush device, dummy wheels, a power housing(50), a control housing(60), a USBL(Ultra-Short Baseline) transponder(70), an IMU(Inertial Measurement Unit, 80), a camera, and a light(100). The vertical propeller is located in front of the travel wheels and keeps the verticality of the underwater cleaning robot. The brush device removes sphagnum or barnacles. The dummy wheels are located on the front side of the underwater cleaning robot and support a load. The power housing comprises a power source such as a high capacity battery. The control housing controls the underwater cleaning robot. The USBL transponder automatically responds to a received signal. The IMU measures the inertia of the underwater cleaning robot. The horizontal	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020090118913	2009/12/3

189	Pill bug robot to extinguish the flames	A variable-type ball robot for extinguishing fire comprises : multifidus shells which are disposed at regular intervals to protect the inside of the robot, the insides of which are connected in a hinge type, and which is deformed to a protective mode of being rolled circularly to protect the inside when detecting danger and a detection mode of being unrolled linearly; an imaging unit which penetrates the multifidus shell and protrudes upward to photograph an ambient image; a posture detection unit which detects the surroundings of the robot and detects whether fire occurs by using multiple ultrasound sensors, thermal detection sensors, and gas sensors penetrating the multifidus shells and attached to the surface, keeps horizontality of the robot, and detects an overturned state; a fire extinguishing unit which includes a liquid-type extinguisher attached to the multifidus shell, suppressing the fire confirmed by the detection unit, and keeping the temperature of the multifidus shells at low temperature, and a water motor pump; a driving unit which transfers power to multiple semi-circular wheels in the protective mode and the detection mode; a communication unit which transmits the image of the imaging unit and the detection result of the detection unit to an external terminal.	KUMOH NATIONAL INSTITUTE OF TECHNOLOGY INDUSTRY ACADEMIC COOPERATION FOUNDATION; KAG BYEONG GYU; YOON SEOK JUN; JANG HYE EUN; PARK SOO KEUN; PARK SANG AH	KR1020140137654	2014/10/13

190	Ship sinking position and attitude display device	Position and posture display device relates to submerged ship the device, as a ship sink when sensing water pressure of compressed gas supplied to the expansion buoy, expanded buoy the sub for lifting the object to be automatically grounded to the both sides of main through the connecting line wire is submerged a double-skinned ship's submerged or submerged posture sink depth ROV such as fruit Figure into water to recover the pigment materials of ship without putting in the raw bean directly submerged position and has an electric compressor for compressing refrigerant depth sink position and submerged vessel submerged position and position display of relates to device. In particular, the device by injection sleep buoybuoy said locked in water for injection device and, is connected between unit submerged depth of watercraft and via a connection line and has an electric compressor for compressing refrigerant, injection device, buoy, connection line is stored in an housing includes device comprises a, there	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020140007313	2014/10/8
191	CONCRETE MATTRESS LIFTING UNIT AND CONCRETE MATTRESS INSTALLATION SYSTEM USING THE SAME	Disclosed are a concrete mattress lifting unit and a concrete mattress installation system using the same. The present invention can install a concrete mattress by releasing the concrete mattress without input of a diver or an ROV and install the concrete mattress without much difficulty even if there a visibility problem. The concrete mattress lifting unit and the concrete mattress installation system using the same can rapidly, accurately, and safely install the concrete mattress regardless of visibility on the seabed so that a construction	HYUNDAI HEAVY INDUSTRIES CO LTD	KR1020140131233	2014/9/30

192	Cleaning Robot For Underwater Use	Provided is an underwater cleaning robot which can clean sludge under the water or the like. The disclosed underwater cleaning robot may comprise : a sludge processing unit which is in contact with sludge to clean sludge placed under the water; an impact absorbing unit deformed by a load applied to the sludge processing unit to absorb an impact applied to the sludge processing unit; and a robot body connected with the impact absorbing unit, and further may additionally comprise a load measurement unit for measuring a load applied to the impact absorbing unit. According to the underwater cleaning robot, an impact applied from an external load such as sludge, a wall surface, or the like is alleviated through the impact	POSCO	KR1020130162748	2013/12/24
193	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot comprises : a magnet package unit having at least one magnet arrangement unit where magnet substances having the predetermined magnetization direction are radially arranged; and an operating wheel comprising a housing storing the magnet package unit. Embodiments of the present invention provide the underwater cleaning robot increasing a magnet	SAMSUNG HEAVY IND CO LTD	KR1020140124790	2014/9/19
194	METHOD FOR CORRECTING POSE, AND UNDERWATER CLEANING ROBOT PERFORMING THE SAME	A method for correcting a posture and an underwater cleaning robot performing the same are disclosed. According to an embodiment of the present invention, the method for correcting a posture comprises : a step of calculating a roll value, a pitch value, and a yaw value for every set distance and calculating a normal vector for every set distance based on the same (a); a step of confirming flatness of a hull based on an angle change value of the normal vector (b); and a step of correcting a yaw angle to have a preset value based on the confirmed flatness (c). An embodiment of the present invention provides the method for correcting a posture enabling the underwater cleaning robot to normally travel by correcting the yaw angle of the underwater cleaning robot to have the preset value when it is determined that the underwater cleaning robot travels on a flat portion of an outer surface of the hull.(300)	SAMSUNG HEAVY IND CO LTD	KR1020140125089	2014/9/19

195	SHACKLE DEVICE FOR UNDERWATER CLEANING ROBOT, AND LUNCHING AND RETRIEVAL APPARATUS OF UNDERWATER CLEANING ROBOT HAVING THE SAME	An underwater cleaning robot fastening device and an apparatus for launching and recovering an underwater cleaning robot comprising the same are disclosed. According to an embodiment of the present invention, the underwater cleaning robot fastening device comprises : a body unit having a connection unit connected to a lifting device; a movement guide unit provided to the body unit and guiding the body unit to be moved along a tether cable connected to the underwater cleaning robot; a locking hook installed in the body unit and released or fastened by being locked by a lifting ring of the underwater cleaning robot; and an operating device installed in the body unit and operating the locking hook to be fastened or released. The present invention enables the underwater	SAMSUNG HEAVY IND CO LTD	KR1020140123062	2014/9/17
196	APPARATUS FOR DETECTING CABLE USED FOR UNDERWATER CLEANING ROBOT, AND LIFTING APPARATUS INCLUDING THE SAME	A cable sensing device for an underwater cleaning robot and a lifting device comprising the same are disclosed. According to an embodiment of the present invention, the cable sensing device comprises : a support roller wound around or unwound from a drum and supporting a cable connected to an underwater cleaning robot; a roller frame where the support roller is coupled to be rotated; a fixing plate disposed to be spaced from a lower side of the roller frame; a guide unit connecting the roller frame and the fixing plate and comprising a guide shaft pushed and moved toward a lower side by the roller frame when the cable is pressed; and a sensor unit fixated to the fixing plate and transmitting a sensing signal when the sensor unit comes in contact with the roller frame. The purpose of the present invention is to provide the lifting device comprising the cable sensing device and the cable sensing device for an underwater cleaning robot which	SAMSUNG HEAVY IND CO LTD	KR1020140118406	2014/9/5

197	LAUNCHING APPARATUS FOR UNDERWATER CLEANING ROBOT	A launching apparatus for a robot cleaning a bottom portion of a ship is disclosed. According to an embodiment of the present invention, the launching apparatus for a robot cleaning a bottom portion of a ship comprises : a transportation unit moving a robot cleaning a bottom portion of a ship to the outside of a hull; and a launching unit connected to the transportation unit and launching the robot toward a bottom portion of a ship along an outer surface of the hull. According to an embodiment of the present invention, provided is the launching apparatus for a robot cleaning a bottom portion of a ship stably launching the robot and minimizing shaking or	SAMSUNG HEAVY IND CO LTD	KR1020140115464	2014/9/1
198	LAUNCHING AND COLLECTING APPARATUS FOR UNDERWATER CLEANING ROBOT	A launching and recovering apparatus for a ship bottom cleaning robot is disclosed. According to an embodiment of the present invention, the launching and recovering apparatus for a ship bottom cleaning robot comprises : a moving vehicle having a transfer wheel to travel along an outer surface of a hull; a fastening unit comprising a net covering a ship bottom cleaning robot and enabling the moving vehicle and the ship bottom cleaning robot to be coupled to and separated from each other by tension of the net; and a magnet enabling the	SAMSUNG HEAVY IND CO LTD	KR1020140115568	2014/9/1
199	CLEANING ROBOT FOR UNDERWATER USE	Purpose : a saw traveling means when operated mobile body is robot influenceable by an external force which are provided for emergency running means relates to cleaning robot-in-water, a robot body and of the present invention water cleaning robot, said robot body travel drive is disposed by power of which are provided for mobile body is robot said traveling means, and said robot body is disposed said traveling means when operated mobile body is robot said influenceable by an external force which are provided for emergency running includes means for its. In this configuration, traveling means are provided for electrically coupling the emergency running to	POSCO	KR1020140101196	2014/8/6

200	Transfer system for loading underwater using cable robot	The present invention relates to an underwater structure transfer system using a cable robot. A conventional underwater mounting work has a problem that the process time and costs are increased due to necessary dredging work, use of marine crane or the like, and standby time required to avoid overlapping when other processes are delayed. To resolve this problem, according to the present invention, a guide rail is installed on an inner wall to allow an elevation jig to be moved upward and downward by a plurality of cable winches. A fixed pole is installed on an underwater position spaced from the inner wall to secure a work space. A pulley is installed on the fixed pole, a lower part of the inner wall and the upper end of the inner wall such that cables of the cable winches are guided by the pulley to be supplied and retrieved. A docking jig is installed to be horizontally moved under water by the cables. A buoyant mounting case is integrally installed thereon and is boarded on the elevation jig. After an underwater mounted object is fixedly placed on the mounting case, the mounting case is moved downward under water by controlling the cable	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020140104885	2014/8/13

201	SUBMARINE CABLE GUIDE DEVICE USING CATERPILLAR AND SUBMARINE CABLE SPREADING MONITORING SYSTEM	The present invention relates to a submarine cable guide device using a caterpillar and a submarine cable laying monitoring system having the same. According to the present invention, even when a submarine cable is protected by a cast iron pipe enclosing the submarine cable, the submarine cable guide device (10) can move smoothly along a slippery and curved cast iron pipe surface and maintain a constant height (h) near from a landing point (P) of the submarine cable to provide position information. Therefore, the landing point (P) where the submarine cable is laid on a seabed can be monitored and a landing angle of the submarine cable can be maintained at an optimum state even without using a facility such as remotely operated vehicles (ROV), etc. The submarine cable guide device (10) according to the present invention comprises : a tubular guide body portion (110) which includes a through hole where the submarine cable enclosed with the cast iron pipe passes; and a caterpillar which forms a track of a belt in a length direction of the cast iron pipe such that the belt touches to move along a surface of the cast iron pipe penetrating the guide body portion (110) without slipping, wherein a plurality of caterpillars are radially arranged along an inner circumferential surface of the guide body portion (110) to press the surface of the cast iron pipe uniformly at a plurality of positions. Therefore, the submarine cable guide device according to the present invention can maintain a constant	GOTS CO LTD	KR1020150116591	2015/8/19

202	CLEANING APPARATUS FOR UNDERWATER PIPE	The present invention relates to a cleaning apparatus for cleaning an underwater pipe. According to an embodiment of the present invention, the apparatus for cleaning an underwater pipe comprises : a robot main body unit (100); a pipe thickness detecting unit (200); and a pipe cleaning unit (300). The robot main body unit (100) is arranged on the underwater pipe and has a path (101) to be moved along the underwater pipe (10). The pipe thickness detecting unit (200) is mounted on a lower part of the robot main body unit (100) and measures marine sediment (20) attached to the outer surface of the underwater pipe (10) to detect the thickness of the underwater pipe (10). The pipe cleaning unit (300) is mounted on the robot main body unit (100) to clean the underwater pipe in accordance with the thickness of the underwater pipe (10) detected by the pipe thickness detecting unit (200) while moving along the underwater pipe (10). The apparatus for cleaning the underwater pipe measures the thickness of the underwater pipe using a laser vision and obtains an image of the surface of a marine structure such as a pipe or a riser to calculate the amount of marine sediment (barnacles) attached	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020140087375	2014/7/11
203	Method and device for mosaicking underwater image	Provided are a method and a device for mosaicking an underwater image. A device for mosaicking an underwater image according to the embodiment of the present invention includes a step of moving an underwater robot to prevent the rotation of the underwater robot along a scan path for mosaicking an underwater image; a step of determining whether the tilt of an imaging object ground is changed; a step of adjusting the posture of the underwater robot to allow the underwater robot to take a picture in a vertical direction to the ground; and a step of photographing a still image for a mosaic in a vertical direction to the ground.(110) Ground photographing unit(112) First image acquiring unit(114) Light source unit(120) Inclination photographing unit(122) Second	POSTECH ACADEMY INDUSTRY FOUNDATION	KR1020140081843	2014/7/1

204	Fittings moving system for work underwater using a cable winch robot	Ballast tank in the device such as device control buoyancy trousers are mounted robot and cable, in the form of a cable line on the water for robot movable payload relates to device provided water. Which is free to move trousers-like carrier the cable robot are mounted which, protruding pin to support 4 via the first two side walls is arranged between the winch, each winch cable, the data line, and the are configured between the moving plate and the center of, moving plate and is on payload in-water is provided, two encoder is mounted 8 of winch cable tension and length of moving plate and by controlling a 3-dimensional graphics since of controlling height and angle, water control and posture mounting positions of payload can be. In addition the device as well as manner-like	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020140004917	2014/7/1
205	INSPECTION APPARATUS FOR UNDERWATER PIPE	Disclosed is an underwater pipe inspection device. The underwater pipe inspection device according to an embodiment of the present invention comprises : a robot body unit having an opening in one side to be disposed in a pipe along the pipe formed in water, and having a path connected with the opening to dispose the pipe therein; one or more wheel operating units rotated to move the robot body unit, having a wheel disposed to come in contact with an external unit of the pipe, and disposed in the robot body unit around the path; and an inspection unit disposed in the outside of the path to inspect the pipe. The underwater pipe inspection device may be independently driven along a pipe without an ROV, so operation costs may be reduced. When being driven along a pipe, the underwater pipe inspection device is suitably adhered	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020140075973	2014/6/20

206	REMOTELY OPERATED VEHICLE SYSTEM FOR UNDERWATER WORK AND THE CONTROL METHOD THEREOF	The present invention relates to a remotely operated vehicle (ROV) system and a control method thereof capable of increasing an efficiency of operation of a user and expanding the efficiency of operation and scope of an ROV by reducing the costs of the ROV system and the costs of a command ship through downsizing of the hardware. The ROV system for underwater work comprises a multimedia part. The multimedia part comprises : an image processing part to provide a front view image using a high definition camera, a work area image using a fixed-focus camera, and a peripheral image of the ROV using a surround camera; a sound processing part having a stereophonic sound sensor part with a plurality of sound sensors mounted on an outer surface of the ROV to measure a direction and magnitude of a sound source and a stereophonic sound system part to generate a stereophonic sound with a direction and magnitude of a virtual sound source corresponding to a sensing signal of the stereophonic sound sensor part; and a contact signal processing part detecting the locations of the obstacles around the ROV to provide contact information step-by-step. As such, the present invention provides a convenience of use, and drastically reduces operational and management costs of the ROV system by distribute-processing the signal such as an image, sound, and contact signals required to control the ROV for underwater	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020140075790	2014/6/20

207	A emergency supervisory equipment of underwater robot	In an error detection device for an underwater robot connected to an underwater cable according to the present invention, when the underwater cable or the underwater robot in underwater operation is electrically leaked, a coupling device installed in a power supply part on a ship and connected to the underwater cable detects current variation and magnetism variation and a ground fault monitor (GFM) detects the detection of the coupling device and then sends a control signal to an output controller to shut off power transmitted to the underwater cable or the underwater robot in the underwater operation or to adjust a power supply amount; thereby automatically detecting the electric leakage and shutting off the power supply when the underwater robot operating underwater in a state of being connected to the underwater cable is electrically leaked by itself or due to a short circuit with the underwater cable. Therefore, the present invention minimizes damage to the underwater cable or the underwater robot, prevents damage to all kinds of offshore facilities including the power supply part on the ship, and minimizes damage to human lives due to the electric leakage.(1) Power supply part of a ship(11) Power supply part(12) Switch(13) Overcurrent protection part(14) Frequency converter(15) Output controller(16) Booster(17) Coupling device(21) Decompressor(22) Rectifier(23) Voltage converter(24) Sensor, underwater camera, and control	DAEYANG ELECTRIC CO LTD	KR1020140073334	2014/6/17

208	ROV Handling System of Drillship	The present invention relates to a remote control submersible handling system of a drillship. The system includes : a guide rail vertically installed on a side of a drillship body; a submersible holder combined with the guide rail to slide up and down, and fixing a remote control submersible; a crane installed in a side end part of the body on an upper surface of the drillship, and generating necessary power to move up and down the submersible holder including the remote control submersible; and a guide fence installed in front and rear parts of the guide rail in a longitudinal direction. According to the present invention, the system is capable of easily controlling positions for drilling work and increasing the efficiency of the navigation of the drillship by minimizing the frictional resistance of the guide rail against the seawater by installing the guide fence in the front and rear parts of the guide rail so	HYUNDAI HEAVY INDUSTRIES CO LTD	KR1020140070673	2014/6/11
209	refloating apparatus of submerged vessel	The present invention relates to an apparatus for refloating a submerged vessel and, more specifically, relates to an apparatus for refloating a submerged vessel comprising : a buoyant body to find a submarine position of the apparatus for refloating engaged to the submerged vessel and complement the force required to refloat the submerged vessel using buoyancy; a refloatation control part which may be installed in multiples and is configured to refloat the submerged vessel through a revolution; a rotational force transferring part a side of which is coupled to the refloatation control part to transfer the rotation force to the refloatation control part; a connecting cable to engage a buoyant body to the refloatation control part; and a refloatation cable engaged between each refloatation control part to refloat the submerged vessel by being bound to the refloatation control part through a revolution of the refloatation control part. The apparatus can improve stability by maintaining the equilibrium of a submerged vessel through an adjustment of the height at the refloatation, shorten the length between the apparatus for refloating, a point of force and the submerged vessel, a point	JUNG MIN SHY	KR1020150089730	2015/6/24

210	apparatus for covering opening inflowing sea water	Provided in the present invention is a cover apparatus for a seawater inlet, capable of being assembled and disassembled by a remotely operated underwater vehicle (ROV), the cover apparatus which can block a seawater inlet at any place in order to perform a check for a ship by installing a cover member in the seawater inlet using an ROV instead of a person. The cover apparatus for a seawater inlet, capable of being assembled and disassembled by an ROV includes a cover member for blocking the seawater inlet formed on the hull. The cover apparatus also includes at least one switch magnetic unit which is installed on the outer circumferential surface of the cover member in order to adsorb and fixate the cover member to the front side of the	KIM JEONG SOO	KR1020130041267	2013/4/15
211	Underwater moving apparatus and control method thereof, ship, underwater moving robot and docking station having the same	An underwater moving apparatus is provided. According to an exemplary embodiment of the present invention, an underwater moving apparatus, as an underwater moving apparatus can float underwater in a state of being hung on a fixing body or a moving body positioned underwater or on the water surface by a cable, comprises : a first body connected with a cable; a second body separately arranged with the first body; an elastic module for moving the second body in the direction adjacent to the first body or in the reverse direction thereof as one side is coupled to the first body and the other side is coupled to the second body; and an elastic cover covering the outside of the elastic module, wherein one end	POSTECH ACADEMY INDUSTRY FOUNDATION	KR1020140075022	2014/6/19

212	Robot designed for underwater search having sailing stability	The present invention relates to an underwater search robot having sailing stability based on situation recognition, which sails on a river or a lake, and explores and searches a corresponding spot. The underwater search robot having sailing stability based on situation recognition according to the present invention comprises : a boat body unit to sail while floating on the water; a thrust unit loaded on the boat body unit to provide a thrust by sailing; an ultrasonic exploration unit loaded on the boat body unit to explore topographical information and an object in the water through ultrasonic waves; an underwater camera unit to photograph an underwater image; a wireless transceiver to transmit exploration information photographed by the ultrasonic exploration unit and underwater image information photographed by the underwater camera unit to a receiver located outside thereof; and a control unit to control a drive of the thrust unit, the ultrasonic exploration unit, the underwater camera unit, and the wireless transceiver by a control signal supplied from an external unmanned controller. The boat body	FNINE CO LTD	KR1020140045273	2014/4/16

213	Method and Apparatus for Estimating Position of Underwater Robot	The present invention relates to a method and an apparatus for estimating a position of an underwater robot. The method for estimating a position of an underwater robot according to the present invention comprises : a first step of using interoceptive sensor measurement information of an underwater robot measured at prescribed time (t) to calculate prediction values and prediction error covariances of state variables including a position of the underwater robot, a direction angle of the underwater robot, and a height of a sea level; and a second step of using exteroceptive sensor measurement information of the underwater robot and information about a prescribed topographical map to correct the prediction values and the prediction error covariances of the state variables to calculate estimation values and estimation error covariances of the state variables.(AA) Start(BB) End(S300) Use interoceptive sensor measurement information of an underwater robot measured at prescribed time (t) to calculate prediction values and prediction error covariances of state variables including a position of the underwater robot, a direction angle of the underwater robot, and a height of a sea level(S310) Use exteroceptive sensor measurement information of the underwater robot and information about a prescribed topographical map to correct	INDUSTRY ACADEMIC COOPERATION FOUNDATION CHOSUN UNIVERSITY	KR1020140060237	2014/5/20
214	CABLE-DRIVEN PARALLEL ROBOT FOR AQUATIC REHABILITATION	Disclosed is a cable-based parallel robot for aquatic rehabilitation. The cable-based parallel robot for aquatic rehabilitation comprises : a water tank for aquatic rehabilitation; a winch located at the top of the tank to wind up a cable; a pulley located inside the water tank to guide a direction of the cable which is wound up by the winch; and an end-effector located in a specific area on the cable and touched or combined to a body region of a patient for aquatic	INDUSTRY FOUNDATION OF CHONNAM NATIONAL UNIVERSITY	KR1020140038182	2014/3/31

215	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot includes : a frame; a driving unit installed in the frame and having a driving wheel and a traveling driving part for driving the driving wheel; a steering unit installed in the frame and having a steering wheel and a steering driving part for driving the steering wheel; a cleaning unit having a cleaning motor installed in the frame and a cleaning brush which rotates with the operation of the cleaning motor to clean a cleaning target surface; and a negative pressure control device having a negative pressure control flow passage to connect the center of the cleaning brush to the outside and a control valve for controlling the opening of the negative pressure control flow	SAMSUNG HEAVY IND CO LTD	KR1020130167341	2013/12/30
216	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot includes : a frame; a driving unit which has a driving wheel to come in contact with a cleaning target surface and a driving part to drive the driving wheel and is installed in both sides of the frame; a steering unit which is installed in the front side of the frame and has a steering wheel to come in contact with the cleaning target surface and a steering driving part to drive the steering wheel; a cleaning unit installed between the steering unit and the driving unit to clean the cleaning target surface; and a foreign substance collection device which collects foreign substances escaping from the cleaning target surface with the operation of the cleaning unit by sucking up the foreign substances and selectively discharges a water	SAMSUNG HEAVY IND CO LTD	KR1020130164852	2013/12/27

217	UNDERWATER ROBOT OPERATING APPARATUS AND UNDERWATER ROBOT OPERATING METHOD THEREWITH	The present invention relates to an unmanned underwater robot operation apparatus, and an operation method of an unmanned underwater robot. The present invention comprises : an unmanned underwater robot to work in water; and an unmanned mother robot. The unmanned mother robot comprises : a docking unit wirelessly communicating with a main control station to move on a surface of the water, where the unmanned underwater robot is docked; and a robot control unit wirelessly communicating with the main control station to control operation of the unmanned mother robot and the unmanned underwater robot. The unmanned underwater robot moves the unmanned underwater robot to a working position with the docked unmanned mother robot to be returned to the main control station after performing an underwater work, and power is transmitted from the unmanned mother robot to the unmanned underwater robot to operate the unmanned underwater robot in order to reduce	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020140027294	2014/3/7

218	UNDERWATER CLEANING ROBOT	The present invention relates to an underwater robot filtering medium collecting apparatus to prevent the working efficiency from decreasing and the problems regarding a driving operation due to the uneven floor surface under the water. The apparatus includes : a body frame which has an inlet and a discharging pipe to draw in the underwater foreign matters and discharge the foreign matters to the discharging pipe and has a driving means to operate; a floating roller which is installed in front of the body frame to float the foreign matters deposited down to the floor through rotation; a swing arm which connects the floating roller and the body frame and is installed to rotate from the body frame by a predetermined angle; a driving means which is installed to the body frame to automatically pivot the pivoting shaft of the swing arm; and a touch device which is installed on the base of the floating roller to be arranged in front of the floating roller while being tilted to come in contact with the ground surface, senses the pivoting angle by being pivoted by a predetermined angle according to the degree of the slope of the ground surface	DAE YANG ETS CO LTD	KR1020150040928	2015/3/24
219	Underwater robots	The shape of "the robot among the number" and combination of the shape are combined to the main point of the creative work content of the design . 1. [Fig. 1.1] It is drawing expressing the whole form of the silver design. 2. [Fig. 1.2] It is drawing expressing the increased front side of the design. 3. [Fig. 1.3] It is drawing expressing the rear side of the silver design. 4. [Fig. 1.4] It is drawing expressing the increased left surface of the design. 5. [Fig. 1.5] It is drawing expressing the increased right face of the design. 6. [Fig. 1.6] It is drawing expressing the plane of the silver design. 7. [Fig. 1.7] It is drawing expressing the bottom plane of the silver design. 8. The material is the metal and plastic material. 9. The screw is mounted on both sides and this article uses. It makes the moving convenient in underwater operation in the weak soil foundation. 10. In this design, it is the part for to receiving the registration as the part	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR3020150010830M001	2015/3/3

220	Underwater robots	The shape of "the robot among the number" and combination of the shape are combined to the main point of the creative work content of the design . 1. [Fig. 1.1] It is drawing expressing the whole form of the silver design. 2. [Fig. 1.2] It is drawing expressing the increased front side of the design. 3. [Fig. 1.3] It is drawing expressing the rear side of the silver design. 4. [Fig. 1.4] It is drawing expressing the increased left surface of the design. 5. [Fig. 1.5] It is drawing expressing the increased right face of the design. 6. [Fig. 1.6] It is drawing expressing the plane of the silver design. 7. [Fig. 1.7] It is drawing expressing the bottom plane of the silver design. 8. The material is the metal and plastic material. 9. The skid is mounted on both sides and this article uses. The skid is puts on the weak soil foundation upper side of the bottom of the sea and it makes the moving convenient in underwater operation. 10. In this design, it is the part for to receiving the registration as the part	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR302015001082 9M001	2015/3/3
221	UNDERWATER CLEANING ROBOT	Disclosed is an underwater cleaning robot. According to an embodiment of the present invention, the underwater cleaning robot drives by being attached on a target work surface, and has a foreign substance collection device having a foreign substance collection unit which is connected with an exit of a foreign substance collection pump sucking and discharging foreign substances separated from the work target surface by operation of a cleaning unit, and collects the foreign substances. The foreign substance collection unit comprises a filter rotation plate installed to be rotatable, and a plurality of filter nets arranged to be separated along the circumference direction of the filter rotation plate, and respectively	SAMSUNG HEAVY IND CO LTD	KR102013013520 4	2013/11/8

222	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot comprises : a frame; one or more driving units which have a driving wheel to come in contact with a cleaning target surface, a wheel housing mounted on the frame to support the driving wheel, a driving motor mounted on the wheel housing to adjust the center of gravity by changing its mounted position on the wheel housing, and a power transmission device to transmit the rotatory power of the driving motor to the driving wheel and are installed on the frame; a steering unit which is installed on the frame and includes a steering wheel to provide a supporting force with the driving wheel of the driving unit and a steering driving part to drive the steering	SAMSUNG HEAVY IND CO LTD	KR1020130135385	2013/11/8
223	DRILLSHIP	Disclosed is a drillship. The drillship of the present invention comprises a moonpool prepared in the hull, and a drill floor prepared in the hull. The drill ships lowers center of gravity of the hull by arranging the drill floor to descend with the predetermined height, and moves the longitudinal center of gravity of the hull toward the stern space unit by preparing a ROV (remotely operated vehicle) arranged in a well test area of the hull over a riser rack.(AA) Moonpool center(BB)	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020130153838	2013/12/11

224	underwater imaging device with multi-axes controlling and imaging module system using it	The present invention relates to an underwater imaging device capable of multi-axes controlling, and an imaging module system using the same which comprise : a rectangular support frame; a transparent cylindrical body case inserted and fixed in the support frame; a hemispheric head case extended from the body case; a propeller part for transportation and posture control of the body case under water, installed and fixed in four sides of the support frame; a body module equipped inside of the body case and controlling the posture of the body case by including : a body battery, a propeller control unit sending driving control signals to the propeller part, and an ESC converting driving speed of the propeller part by receiving the signals from the propeller control unit; and a head module including a head battery, a camera capable of underwater shooting, and a gimbal device supporting the camera and controlling the posture of the camera precisely. The present invention is equipped with a two-step posture controlling device including the body module maintaining and securing the body posture of the whole imaging device, and the head module precisely maintaining and securing the posture by the rotation in the pitch direction or the roll direction of the	KYUNGPOOK NATIONAL UNIVERSITY INDUSTRY ACADEMIC COOPERATION FOUNDATION	KR1020130135414	2013/11/8

225	STRAINER INSPECTION ROBOT OF IN-CONTAINMENT REFUELING WATER STORAGE TANK	The present invention relates to a strainer inspection robot of an in-containment refueling water storage tank and, more specifically, to the strainer inspection robot of the in-containment refueling water storage tank including : a body part which is embedded with a buoyancy member, and comprises an underwater propulsor for underwater movement; a plurality of articulated pedestrian legs which moves the body part along the upper part of the strainer by being connected to the strainer, and comprises an obstacle identification camera for identifying an obstacle contacting a bottom of an upper part of the strainer; and an articulated photographing arm which is connected to the body part and photographs a gap of the strainer through a camera module by installing the camera module in a front-end part. The strainer inspection robot of the in-containment refueling water storage tank is for remote visual check of the strainer comprised in the in-containment refueling water storage tank. The present invention has the effect of inspecting a narrow space of the strainer more efficiently, which is difficult to inspect the state thereof, by using a movable inspection robot having four articulated pedestrian legs and the articulated photographing arm, and has the effect of saving time spent for the inspection because of inspecting the state of the space difficult to inspect through the movable	KOREA HYDRO NUCLEAR POWER CO LTD	KR1020140007361	2014/1/21

226	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot comprises : a frame; two driving units which have a driving wheel to come in contact with a cleaning target surface and a traveling driving part to drive the driving wheel and are separately installed on both sides of the frame; a steering unit which includes a steering wheel to provide three-point support with each driving wheel of the driving unit and a steering driving part to drive the steering wheel and is installed on the frame; a cleaning unit installed on the frame between the steering unit and the two driving units to carry out cleaning; a marking unit to supply a marking substance to the outer side of the driving wheel to mark a trace of the traveling of the driving	SAMSUNG HEAVY IND CO LTD	KR1020130135160	2013/11/8
227	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot may comprise : a frame to make up the overall outer shape and the framework; a pair of driving units which has a driving wheel to come in contact with a cleaning target surface and a traveling driving part to drive the driving wheel and is separately installed on both sides of the frame; a steering unit including a steering wheel to control the moving direction of the frame and a steering driving part to drive the steering wheel; a cleaning unit arranged on the frame between the pair of driving units and the steering unit to carry out cleaning by adjusting the height in response to the height variations of the cleaning target surface; and an image taking unit including a lighting device including red, green, and blue lights to allow an image on the condition or on the cleaned or uncleaned state of the cleaning target surface to be taken, a camera to take an image on the cleaning target surface, a specimen of which the image is taken by the camera at all times to provide a reference on color information, and a control part which controls the operation of the lighting device and detects the color	SAMSUNG HEAVY IND CO LTD	KR1020130135292	2013/11/8

228	UNDERWATER CLEANING ROBOT	Disclosed is an underwater cleaning robot. The underwater cleaning robot according to an embodiment of the present invention comprises a frame; a driving unit including a first driving wheel and a second driving wheel installed on each of both sides of the frame and contacting with a target surface by a magnetic force, and a driving part driving the first driving wheel; and a cleaning unit including a rotational brush cleaning the target surface by rotation, wherein the rotational brush is	SAMSUNG HEAVY IND CO LTD	KR1020130135203	2013/11/8
229	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot may comprise : a frame; a pair of driving units which has a driving wheel to come in contact with a cleaning target surface and a traveling driving part to drive the driving wheel and is separately installed on both sides of the frame; a steering unit including a steering wheel to control the moving direction of the frame and a steering driving part to drive the steering wheel; a cleaning unit arranged on the frame to carry out cleaning by adjusting the height in response to the height variations of the cleaning target surface; and an image taking unit including a lighting device which adjusts the brightness to allow an image on the condition or on the cleaned or uncleaned state of the cleaning target surface to be taken, a camera to take an image on the cleaning target surface, a specimen of which the image is taken by the camera at all times to provide a reference on illuminance measurement, and a control part which controls the operation of the lighting device and detects information on illuminance by analyzing the image	SAMSUNG HEAVY IND CO LTD	KR1020130135296	2013/11/8
230	TRANSPORTING APPARATUS OF UNDERWATER CLEANING ROBOT AND LAUNCHING METHOD USING THE SAME	A transporting apparatus of an underwater cleaning robot is disclosed. According to an embodiment of the present invention, the transporting apparatus of an underwater cleaning robot comprises : a movable body to move along a rail installed on the inner wall of a quay; and an extendable actuator installed on the movable body to be extended and which has a connection part to attach and detach the	SAMSUNG HEAVY IND CO LTD	KR1020130142672	2013/11/22

231	Base station for unmanned robot	The present invention relates to an anchorage base for an unmanned robot and, more specifically, relates to an anchorage base for an unmanned robot which anchors an unmanned underwater robot installed in each underwater point for rescue or exploration purposes, and to an underwater point to allow the anchored robot to charge itself to be on standby at	KYUNGPOOK NATIONAL UNIVERSITY INDUSTRY ACADEMIC COOPERATION	KR1020130160410	2013/12/20
232	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot comprises : a frame; two driving units which have a driving wheel to come in contact with a cleaning target surface and a traveling driving part to drive the driving wheel and are separately installed on both sides of the frame; a steering unit including a steering wheel to control the moving direction of the frame and a steering driving part to drive the steering wheel; a cleaning unit which is installed on the frame between the steering unit and the two driving units to be elevated and includes a cleaning brush to clean the outer side of the cleaning target surface by rotating; a cover member which is elevated along with the cleaning brush and covers the top and the circumference of the cleaning brush to cover a front circumferential part traveling forward; a distance detection sensor to detect a distance from the cover member to the cleaning target surface; an electromagnet which adjusts the magnetic force and is installed on one side of the cover member to make the cover member come in contact with the cleaning target surface; and a control unit to adjust the height	SAMSUNG HEAVY IND CO LTD	KR1020130135268	2013/11/8

233	LUNCHING AND RETRIVAL APPARATUS OF UNDERWATER CLEANING ROBOT	Disclosed is a launching and retrieving apparatus of an underwater cleaning robot. According to an embodiment of the present invention, the launching and retrieving apparatus of an underwater cleaning robot comprises : a transport device to move to an underwater operation region while having a cleaning robot mounted thereon, or mounting and retrieving the cleaning robot placed in the underwater operation region; a recovery device to drop or raise the transport device underwater; and a recovery hook installed in the recovery device to hang and pull up the transport device, moving along a tether cable connected to the transport device to a recovery	SAMSUNG HEAVY IND CO LTD	KR1020130151068	2013/12/6
234	DRILLSHIP	Disclosed is a drillship. The drillship of the present invention comprises a moonpool prepared in the hull, and a derrick prepared in the hull. The drillship prepares a ROV (remotely operated vehicle) arranged in a well test area of the hull over a riser rack and secures the stern space unit in the well test area, and moves the longitudinal center of gravity of the hull toward the stern space unit.(AA) Moonpool center(BB) Conventional	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020130153837	2013/12/11
235	DRILLSHIP	Disclosed is a drillship. The drillship of the present invention comprises : a stem space unit prepared in the stem direction around a moon pool; and an X-mas tree skid unit prepared in the stem space unit, and transferring an X-mass tree to the moon poll. The stem space unit prepares a ROV (remotely operated vehicle) arranged in a well test area of the hull over a riser rack and prepares a stern space unit on the well test area, and is prepared by transferring the longitudinal center of gravity of the hull toward the stern space unit direction.(AA)	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020130153843	2013/12/11

236	Multi - Functional swing training bat by using hollowness	The present invention relates to a bat for practice, practice assist equipment, for practicing a swing for baseball, golf, etc. The present invention is made of compressed bamboo lumber and has a hollow hole and an air resisting groove on the bat. The present invention is used by inserting a function assist device in the hollow hole. Through a flow of air and a movement of an insertion apparatus, the present invention enables to check various swings at the same time. The insertion apparatus comprises : a propeller; a swing line (flag); and a hollow cap in a semicircular shape. A function of the bat for practice enables to maintain and improve physical strength, to maintain a swing rhythm, a tempo, and a balance as well as	JOO KI SUNG	KR1020130133865	2013/11/5
237	UNDERWATER CLEANING ROBOT	Disclosed is an underwater cleaning robot. The underwater cleaning robot according to an embodiment of the present invention comprises a frame; a pair of driving units including a driving wheel contacting with a target surface and a driving part driving the same, and installed on both sides of the frame respectively; a steering unit including a steering wheel controlling moving direction of the frame and a steering driving part operating the same; a cleaning unit prepared on a frame between a pair of driving units and the steering unit, and having the height controlled corresponding to change in height of the target surface to clean; and detection unit including a lighting device radiating light to the target surface to detect foreign materials attached on the target surface, and controlling the color of the light, a light reception device storing reflective light of the light radiated by the lighting device, and a control part detecting color information of the	SAMSUNG HEAVY IND CO LTD	KR1020130147049	2013/11/29

238	Unmanned exploration robot	This design is installed so that the front cover in which the front part of the hull the leading end is pointed be laminated and the rear cover in which the late of the hull is made of the regular square is arranged and it is done by the main point of the creative work content which looks at having the sensuousness which is on the whole new with these hulls, the front cover and rear cover of the design . 1. The material is the synthetic resin and metal. 2. While this design runs to the supported state with the unmanned control in the aquatic the aquatic and underwater are reconnoitered and it explores. 3. Figure 1.1 is drawing expressing the whole form of the design looked. Figure 1.2 is drawing expressing the front portion of the design looked. Figure 1.3 is drawing expressing the backside portion of the design looked. Figure 1.4 is drawing expressing the left side part of the design looked. Figure 1.5 is drawing expressing the right side part of the design looked. Figure 1.6 is drawing	Hydro Corporation me Rix	KR302014004107 6M001	2014/8/22

239	Portable Solar Cell Following Sun	The present invention relates to a portable tracking-sun solar cell which is capable tracking the sun without additional power supply and automatically controlling an installation angle thereof to be suitable for the meridian altitude of the sun according to changes in latitude and season, and also to be suitable for a daily altitude change of the sun. The portable tracking-sun solar cell according to the present invention comprises : a fixed disk including a disk main body which is a hollow disk-shaped case, a rotating means which includes a rotating shaft coupled to a spring as being mounted in the disk main body, a compass which is disposed on an outer circumference of the disk main body, and scales which are formed around the circumference of the disk main body as disposing the compass on the 12 o′ clock direction; a rotating disk coupled to the rotating shaft as being disposed on an upper surface of the disk main body, and having a rail and a movable plate which is coupled to the rail to be movable on the upper surface; a solar cell panel having a lower portion fixed to the upper surface of the rotating disk using a hinge; and a supporting case having an upper portion fixed to a rear surface of the solar cell panel using a hinge in a state of being electrically connected to the solar cell panel, a lower portion fixed to the movable plate using a hinge, and an accommodation groove attached to/detached from filler on an	SILI CHEM CO LTD; YANG JIN SEUNG	KR1020140141789	2014/10/20
240	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot comprises : a frame; a cleaning unit installed in the frame, cleaning a target surface of a magnetic material; a permanent magnet attaching the frame on an upper surface of a worktable by a magnetic force; a driving unit and a steering unit installed in the frame to drive the frame on the target surface; and a separation unit installed in the frame, separating the frame attached on the target surface by a	SAMSUNG HEAVY IND CO LTD	KR1020130142679	2013/11/22

241	CLEANING BRUSH FOR UNDERWATER CLEANING ROBOT, AND UNDERWATER CLEANING ROBOT HAVING THE SAME	Disclosed are a cleaning brush for an underwater cleaning robot and an underwater cleaning robot having the same. According to an embodiment of the present invention, the cleaning brush for an underwater cleaning robot comprises : a disk-shaped rotary plate; a brush part arranged on one side of the rotary plate; and a barrier film which is installed on the rotary plate to surround and cover the brush part and is elastically transformed when coming in contact with a cleaning	SAMSUNG HEAVY IND CO LTD	KR1020130142771	2013/11/22
242	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. An underwater cleaning robot according to an example of the present invention comprises a frame; a driving wheel contacting with a target surface; a driving unit including a wheel housing installed on the frame to be rotated, while supporting the driving wheel, and tilted corresponding to change in slope of the target surface, a driving motor, and a power delivery device delivering a rotational force of the driving motor to the driving wheel , and installed on the frame; a steering unit installed on the frame, and including a steering wheel supporting the driving wheel and a steering driving part	SAMSUNG HEAVY IND CO LTD	KR1020130142776	2013/11/22
243	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot which moves along the outer surface of a hull to clean up foreign substances adhering to the outer surface of the hull may comprise : a frame to make up the overall outer shape and the framework; a driving unit having a plurality of driving wheels coming in contact with a cleaning target surface; a plurality of cleaning units each of which has a roller brush to clean the cleaning target surface by rotating and a cleaning motor to rotate the roller brush; and a plurality of tilting devices separately arranged between the frame and each cleaning unit to adjust the position and height of each cleaning	SAMSUNG HEAVY IND CO LTD	KR1020130141828	2013/11/21

244	UNDERWATER CLEANING ROBOT	Disclosed is an underwater cleaning robot. According to an embodiment of the present invention, the underwater cleaning robot comprises : a frame; a cleaning unit installed on the frame and cleaning a work target surface under water; a driving unit and a steering unit installed on the frame to drive the frame to the work target surface; and a separation unit installed on the frame and having an expansion member of an elastic material which is expanded by supplied gas, pressurizes	SAMSUNG HEAVY IND CO LTD	KR1020130135169	2013/11/8
245	UNDERWATER CLEANING ROBOT	Disclosed is an underwater cleaning robot. According to an embodiment of the present invention, the underwater cleaning robot comprises : a frame; a driving unit having a driving wheel which is in contact with a work target surface, and a track driving unit driving the same, and installed on the frame; a steering unit having a steering wheel controlling the movement direction of the frame, and a steering driving unit operating the same; a cleaning unit arranged on the frame and including a cleaning brush which cleans the work target surface by rotation; and a foreign substance processing unit sucking and sterilizing foreign substances which are ejected from the	SAMSUNG HEAVY IND CO LTD	KR1020130135205	2013/11/8
246	UNDERWATER CLEANING ROBOT	Disclosed is an underwater cleaning robot. According to an embodiment of the present invention, the underwater cleaning robot comprises : a frame; a cleaning unit having a pair of cleaning motors installed to be separated on the frame, and tilting in every direction to the frame by corresponding to change of a curved surface of a target work surface, and a pair of cleaning brushes respectively combined on the axis of a pair of cleaning motors, and rotating and cleaning the target work surface; and a cover member having a first cover unit and a second cover unit respectively covering surroundings of a pair of cleaning brushes, and a connection unit connecting the first cover unit and the second cover unit between the first cover	SAMSUNG HEAVY IND CO LTD	KR1020130135208	2013/11/8

247	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot may comprise : a frame; a driving unit which has a driving wheel to come in contact with a cleaning target surface and a traveling driving part to drive the driving wheel and is installed on the frame; a steering unit which includes a steering wheel to control the moving direction of the frame and a steering driving part to drive the steering wheel; a cleaning unit arranged on the frame between a pair of driving units and the steering unit; and a position stabilization unit which collects and discharges foreign substances with water flowing in along with the foreign substances by sucking foreign substances escaping from the cleaning target surface due to	SAMSUNG HEAVY IND CO LTD	KR1020130135212	2013/11/8
248	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot comprises : a frame; a pair of driving units which has a driving wheel to come in contact with a cleaning target surface and a traveling driving part to drive the driving wheel and is separately installed on both sides of the frame; a steering unit including a steering wheel to control the moving direction of the frame and a steering driving part to drive the steering wheel; a cleaning unit which is arranged on the frame to carry out cleaning by adjusting the height in response to the height variations of the cleaning target surface and has a pair of cleaning brushes to clean the cleaning target surface by rotating; and a foreign substance collecting device to collect foreign substances from the operation of the cleaning unit. The foreign substance collecting device includes a cover member to cover the top and the circumference of the pair of cleaning	SAMSUNG HEAVY IND CO LTD	KR1020130135213	2013/11/8

249	UNDERWATER CLEANING ROBOT	Disclosed is an underwater cleaning robot. The underwater cleaning robot according to an embodiment of the present invention comprises a frame including a cleaning unit driven on a target surface of an outer plate of ship and cleaning the target surface; a foreign substance collecting device installed on the frame to collect foreign substances separated from the target surface by operation of the cleaning unit; and a supply hose connecting the foreign substance collecting device and a ballast water treatment device or a ballast tank formed on the	SAMSUNG HEAVY IND CO LTD	KR1020130135284	2013/11/8
250	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot may comprise : a frame to make up the overall outer shape and the framework; a pair of driving units which has a driving wheel to come in contact with a cleaning target surface and a traveling driving part to drive the driving wheel and is separately installed on both sides of the frame; a detection unit arranged in the front side of a steering unit frame which includes a steering wheel to control the moving direction of the frame and a steering driving part to drive the steering wheel to detect the type and the amount of foreign substances adhering to the cleaning target surface; a cleaning unit which has a pair of cleaning brushes to clean the cleaning target surface by rotating and carries out cleaning by adjusting the rotation speed of the pair of cleaning brushes in response to the type	SAMSUNG HEAVY IND CO LTD	KR1020130135304	2013/11/8

251	TRANSPORTING APPARATUS OF UNDERWATER CLEANING ROBOT	A transporting apparatus for an underwater cleaning robot is provided to move to an underwater work area to carry an underwater cleaning robot or to collect the underwater cleaning robot from the underwater work area. The transporting apparatus of underwater cleaning robot according to the embodiments of the present invention comprises : a frame having a robot mounting unit combined corresponding to a docking unit of a cleaning robot; a binding unit prepared at the frame that binds or releases the cleaning robot combined with the robot mounting unit; a plurality of thrusters installed at the frame for underwater swimming and posture control; a lifting device hanger unit prepared at the frame to	SAMSUNG HEAVY IND CO LTD	KR1020130135405	2013/11/8
252	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot comprises : a frame; two driving units which have a driving wheel to come in contact with a cleaning target surface and a traveling driving part to drive the driving wheel and are separately installed on both sides of the frame; a steering unit which includes a steering wheel to provide three-point support with each driving wheel of the driving unit and a steering driving part to drive the steering wheel and is installed on the frame; a first cleaning unit installed on the frame between the steering unit and the two driving units to clean the cleaning target surface having a width (W) greater than the maximum distance (L) between each driving wheel of the two driving units; and a second cleaning unit to clean the cleaning target	SAMSUNG HEAVY IND CO LTD	KR1020130135418	2013/11/8

253	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot comprises : a frame; two driving units which have a driving wheel to come in contact with a cleaning target surface and a traveling driving part to drive the driving wheel and are separately installed on both sides of the frame; a steering unit which includes a steering wheel to provide three-point support with each driving wheel of the driving unit and a steering driving part to drive the steering wheel and is installed on the frame; a first cleaning unit installed on the frame between the steering unit and the two driving units to clean the cleaning target surface having a width (W) greater than the maximum distance (L) between each driving wheel of the two driving units; and a second cleaning unit having a scraper arranged in	SAMSUNG HEAVY IND CO LTD	KR1020130135430	2013/11/8
254	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot comprises : a frame; two driving units which have a driving wheel to come in contact with a cleaning target surface and a traveling driving part to drive the driving wheel and are separately installed on both sides of the frame; a steering unit which includes a steering wheel to provide three-point support with each driving wheel of the driving unit and a steering driving part to drive the steering wheel and is installed on the frame; and a cleaning unit including a cleaning unit frame installed on the frame between the steering unit and the two driving units, two cleaning motors separately installed on both sides of the cleaning unit frame, and two cleaning brushes separately joined to the shaft of the two cleaning motors to clean the cleaning target surface by rotating. The maximum width (W) of an area cleaned by the two cleaning brushes is	SAMSUNG HEAVY IND CO LTD	KR1020130135439	2013/11/8

255	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. According to an embodiment of the present invention, the underwater cleaning robot comprises : a frame; two driving units which have a driving wheel to come in contact with a cleaning target surface and a traveling driving part to drive the driving wheel and are separately installed on both sides of the frame; a steering unit which includes a steering wheel to provide three-point support with each driving wheel of the driving unit and a steering driving part to drive the steering wheel and is installed on the frame; a cleaning unit including a cleaning unit frame installed on the frame between the steering unit and the two driving units, two cleaning motors separately installed on both sides of the cleaning unit frame, and two cleaning brushes separately joined to the shaft of the two cleaning motors to clean the cleaning target surface by rotating; and a foreign body collecting device including a cover member which covers the top and the circumference of the two cleaning brushes and has an opening on the front circumference traveling forward, a foreign body collecting pump to suck and discharge foreign bodies inside the cover member with water, and a foreign	SAMSUNG HEAVY IND CO LTD	KR1020130135459	2013/11/8
256	Monitoring System for Testing Drilling Equipment and Drilling Equipment Test System Using The Same	The present invention relates to a drilling equipment test monitoring apparatus and a drilling equipment test system using the same which is configured such that : by exposing drilling equipment used in a deep sea environment such as BOP equipment to a condition similar to a deep sea environment in order to execute various tests, problems of drilling equipment can be prevented and managed preliminarily which enables smooth and quick execution of installation and operating processes at a real installation site such as a deep sea, and by equipping photographing unit capable of filming under the sea test process, a test process of a drilling equipment may be monitored in real time without an additional unit such as a	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020130131191	2013/10/31

257	DYNAMIC POSITIONING SYSTEM CONSIDERING MOVEMENT OF ROV AND DYNAMIC POSITIONING METHOD OF THE SAME	The present invention relates to a dynamic positioning control system considering a movement of a remotely operated vehicle (ROV), and a positioning control method thereof capable of preventing a loss or damage to the ROV by automatically controlling a position of a ship in accordance to a movement of the ROV using sound wave signals generated from the ROV. According to an embodiment of the present invention, the dynamic positioning control system to control a plurality of positioning devices installed in the ship comprises : a sensor part to measure information on the position of the ship; the ROV having a sound wave generator to generate sound wave signals, and to perform seabed exploration; a sound wave receiver to receive the sound wave signals generated from the sound wave generator; and a central control device outputting a thrust control signal to control the position of the ship using the information measured by the sensor part to the positioning devices, and controlling the position of the ship in accordance to the distance between the ship and the ROV grasped using a sound wave generation time at which the sound wave generator generates the sound wave signals, and a sound wave reception time at which the sound wave receiver receives the sound wave signals.(10) Sensor part(15) Sound wave	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020130126871	2013/10/24
258	UNDERWATER CLEANING ROBOT	Disclosed is an underwater cleaning robot capable of increasing cleaning efficiency by having a guide screen installed on the periphery of a running wheel to surround the running wheel. According to an embodiment of the present invention, the underwater cleaning robot comprises : a body; a running wheel moving the body on an external wall of a hull; a rotational cleaning brush installed on the lower part of the body to clean foreign substances existing on the external wall; and a guide screen installed on the periphery of the running wheel in the form of surrounding the running wheel in order to	SAMSUNG HEAVY IND CO LTD	KR1020130124826	2013/10/18

259	UNDERWATER REMOTE CONTROL ROBOT	An underwater remote control robot is disclosed. According to an embodiment of the present invention, the underwater remote control robot comprises : a body including a first body and a second body rotationally coupled with each other; a traveling wheel installed in the body, and moving the body; and a control unit controlling a movement of the traveling wheel, and enabling the first body and the second body to be aligned in parallel with each other due to the rotation between the first body and the second body when the body reaches a predetermined position or receives a control command from	SAMSUNG HEAVY IND CO LTD	KR1020130141203	2013/11/20
260	GUIDING DEVICE FOR UNDERWATER CLEANING ROBOT	Disclosed is a guiding device for an underwater cleaning robot. The guiding device for the underwater cleaning robot shown in an embodiment of the present invention comprises : a wire; a pair of guide roller, installed in the underwater cleaning robot and moves along with a side of a wire in accordance to a motor′ s rotation; and a pair of wire supporting robot fixated on an exterior of the hull in order to support the ends of	SAMSUNG HEAVY IND CO LTD	KR1020130141826	2013/11/21
261	ROBOT FOR INSPECTING UNDERWATER CRACK	The present invention relates to a robot for inspecting an underwater crack. According to an embodiment of the present invention, the robot for inspecting an underwater crack can accurately check a crack on an underwater structure using information on photographed images of an image sensing module, and can concretely detect information on the crack on the underwater structure using a contact type sensing tool, a non-destructive inspection tool, and an underwater leakage	DAEGU GYEONGBUK INSTITUTE OF SCIENCE AND TECHNOLOGY	KR1020130120801	2013/10/10

262	Underwater robot communication device and method thereof	The present invention relates to an apparatus and a method for underwater robot communication capable of wirelessly communicating between the robots through visible light without distortions of signals in a underwater, the apparatus comprising : a main robot which performs signal processing on data inputted through a communication cable to generate an input signal suitable for a visible light communication protocol, and converts the input signal into visible light signal to transmit the converted signal into the water; and a sub robot which receives the visible light signal transmitted from the main robot, converts the received signal into an electrical signal, compensates for distortions in the converted electrical signal, and recovers original data, thereby compensating for attenuation and distortions in a underwater visible light signal to implement more accurate underwater communication, based on a wavelength to be used in visible light communication, a depth, salt concentration, temperature, and turbidity of the water, positional information of each robot, and a scattering index of water.(21) Photo diode(23)	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020130116870	2013/9/30

263	Apparatus for power charge in underwater robot and method thereof	The present invention relates to an apparatus for the power charge of an underwater robot and a method for the same. The apparatus for the power charge of an underwater robot comprises : a power charge station to provide a light for position recognition and to wirelessly charge a charging target object up underwater when the charging target object is docked on it; and an underwater robot which detects the light provided by the power charge station, recognizes the position of the charge station, and moves to the charge position of the power charge station in order to be charged. The method for the power charge of an underwater robot comprises the following steps. The underwater robot recognizes the light outputted by the power charge station to recognize the position of the power charge station. The underwater robot initially moves to the charge position of the power charge station when the underwater robot is adjacent to the power charge station. The power charge station wirelessly charges the underwater robot up after docking the underwater robot on	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020130116871	2013/9/30
264	A METHOD OF SUBSEA TESTING USING A REMOTELY OPERATED VEHICLE	A method of subsea testing using a remotely operated vehicle (ROV) is provided. The ROV has a spectroscopic sensor, preferably an x-ray fluorescence or neutron activation analysis sensor. The method includes identifying seafloor material to analyse, directing the ROV to the identified seafloor material, and analysing the seafloor material with the spectroscopic sensor. The method allows real time, or at least near real time, analysis of seafloor materials of interest without the need to	Nautilus Minerals Ltd Pacific Petey	KR1020157003300	2013/7/10

265	Desander in subsea pipeline	The present invention relates to a submarine pipeline solid body separating apparatus. More specifically, the said invention is made to separate a solid body such as sand, mud, etc. by installing a steel net in a fine size. The steel net in a fine size requires little initial costs since production is simple, and requires little installation and operational costs since recovery and installation are possible through a ROV; and increases a life span of a pipe by decreasing corrosion and abrasion of the pipe by effectively separating the solid body. According to the present invention, the submarine pipeline solid body separating apparatus for ocean drilling provides the fine steel	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020140012943	2014/2/5
266	SHIP HULL CLEANING SYSTEM	Disclosed is a hull surface cleaning system. According to an embodiment of the present invention, a hull surface cleaning system includes : a cleaning robot having a robot body, a driving unit driving the robot body on the surface of a hull, and a cleaning unit cleaning the surface of the hull while being connected to the robot body; a vision module formed on the robot body, taking images of an underwater floor unit boundary line formed on the edge of a floor unit of the hull as a reference line for a reference driving passage of the cleaning robot on the floor unit of the hull; and a controller controlling the cleaning robot based on the information of the images of	SAMSUNG HEAVY IND CO LTD	KR1020130100356	2013/8/23
267	DRILLSHIP	Disclosed is a drillship which secures a working space and extends the steering range of a crane by rearranging a remotely operated underwater vehicle (ROV) seating part and the crane. According to the present invention, the drillship comprises : a riser deck which is arranged on a main deck and on which a riser is loaded; the ROV seating part on which an ROV is loaded; and a first crane arranged on the riser deck. A well test area has at least a pair of ROV seating parts arranged side by side at the lateral edge. The first crane is arranged on the riser	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020130106970	2013/9/6

268	Underwater robot for cleaning hull surface using water depth information	The present invention relates to a robot to clean a hull (10) underwater, comprising : a main body (20) having a plurality of brushes (25); an actuator (30) to vertically or horizontally move the main body (20); and a detection unit (40) to generate a signal corresponding to the changes in positions of the main body (20). Therefore, the present invention enables the robot to smoothly clean the hull by three-dimensionally correcting the position based on a pressure sensor, and to carry out perfect cleaning by grasping the moving distance using	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020130100585	2013/8/23
269	Load Measuring Device For Underwater Use And Cleaning Robot Having The Same	Disclosed are a load measuring device for underwater use and a cleaning robot having the same enabling a load cell not to be in contact with water, and to stably be transmitted with a load to be suitable for use. Disclosed is the load measuring device for underwater use comprising : a base housing accommodating the load cell to measure a load; a sealing unit closing an end of the housing, and preventing the load cell from being in contact with water; and a load transmission unit being in contact with the sealing unit, transmitting the load to the load cell. Moreover, a disclosed underwater cleaning robot controls an operation of a robot body or a sludge process unit by measuring a load applying to the robot body or the sludge	POSCO	KR1020130118818	2013/10/4

270	METHOD OF VERTICAL LIFTING TYPE FOR WASTE PIPE LINE RETRIEVAL	The present invention provides a vertical lifting type waste pipeline collection method. According to an aspect of the present invention, the vertical lifting type waste pipeline collection method comprises : a first step of putting a remained oil collection unit and an ROV into water from a ship having a lifting device, and dividing a waste pipeline into individual pipes using the ROV; a second step of putting a guide line and a fixing block from the ship to a seabed to install the guide line between the seabed around the one individual pipe and the ship; a third step of installing chain clamps in the individual pipe using the ROV; a fourth step of connecting a lifting plug to the individual pipe using the ROV; a fifth step of ascending the lifting plug and a lifting cable using the lifting device to erect the individual pipe; a sixth step of connecting the chain of the chain clamps to the guide line using the ROV;	SAMSUNG HEAVY IND CO LTD	KR1020130055321	2013/5/15
271	APPARATUS AND METHOD FOR CONTROLLING BALANCE OF UNDERWATER MOVING OBJECT	Disclosed are an apparatus and a method for controlling the balance of an underwater moving object. The present invention includes a sensor part which includes at least one sensor and detects the balance of an underwater moving object, a balance determination part which determines the balance of the underwater moving object by analyzing a detection signal supplied from the sensor part and generates a balance determination signal according to the balance of the determined underwater moving object, a control part which receives the balance determination signal, responds to the received balance determination signal, and generates a control current for controlling the balance of the underwater moving object, and a centroid variation part which generates a magnetic field by responding to the control current and moves the center of gravity in the underwater moving object by	LIG NEX1 CO LTD	KR1020140077794	2014/6/25

272	LOCATION RECOGNITION METHOD OF AN OBJECT USING DUAL ORTHOGONAL STEREO SENSING ROBOT	Disclosed technology relates to a frequency offset tracker and a packet delay modification recovering method using the same. A method of sensing a location of an object by using a sensing robot walking in an underwater environment comprises the following steps. A transmitter mounted on the sensing robot transmits a first ultrasonic signal. Vertical and horizontal ultrasonic antennas, which are disposed on the sensing robot so as to intersect with each other, receive a first carrier wave of the first ultrasonic signal transmitted in the transmitter. The sensing robot calculates a location of an object on the basis of the first carrier wave. The transmitter transmits a second ultrasonic signal. The sensing robot rotates the ultrasonic antenna by 45 degrees according to the transmission of the second ultrasonic signal to receive a second carrier wave of the second ultrasonic signal. The sensing robot corrects the calculated location of the object on the basis of the second	KUMOH NATIONAL INSTITUTE OF TECHNOLOGY INDUSTRY ACADEMIC COOPERATION FOUNDATION	KR1020130081977	2013/7/12
273	Remotely operated apparatus	An unmanned operation device is disclosed. According to an embodiment of the present invention, the unmanned operation device comprises : an elevation driving part connected to a leg of a fixed offshore structure to be movable in a vertical direction; an arm part having a driving arm with one end connected to the elevation driving part and the other end on which a driving shaft is arranged, and an interlocking arm interlocked with the driving arm; and an operating robot	SAMSUNG HEAVY IND CO LTD	KR1020130055491	2013/5/16
274	SNAKE-LIKE ROBOT IN WATER	An underwater snake robot includes an internal joint part, a connection part and a waterproof case. The internal joint part includes a plurality of units; the connection part includes a plurality of joints connecting units to mutually adjacent units respectively; and the waterproof case covers the internal joint part and the connection part, forms wrinkles to be bent, and is driven to be bent in the same horizontal direction as the internal joint part which receives a directional conversion signal	KOREA UNIVERSITY OF TECHNOLOGY AND EDUCATION INDUSTRY UNIVERSITY COOPERATION FOUNDATION	KR1020130149673	2013/12/4

275	Submarine robot with underwater organism shape and Method for managing the same	According to an embodiment of the present invention, a submarine robot comprises a main body (10), which is formed to have the shape of underwater organisms and can perform bending and stretching motions; a propulsion unit (20) having a propeller (24) installed in the main body (10); a communications unit (30) having a sonar (33) installed in the main body (10); an attachment unit (40) having a magnetic generator (48) installed in the main body (10); and a control unit (50), which supplies power to the propulsion unit (20), the communications unit (30), and the attachment unit (40) and inputs and outputs an operation signal at a set condition. Accordingly, the loss of life can be minimized, using a rescue robot capable of waiting in the water for a long time and	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020130075228	2013/6/28
276	u-AUV FOR MANAGING AQUACULTURE OF FISHES	The present invention relates to an autonomous underwater vehicle (AUV) for managing a growth environment and growing state of raised fishes living in a fish farm, comprising a camera part which photographs movement of fish living and the growth environment in the fish farm; a sensor part with a plurality of sensors which collect the growth environment information in the fish farm; an analysis part which stores and analyzes images photographed by the camera part and the growth environment information collected by the sensor part; a communication part which communicates with external terminals and transmits the image and the growth environment information to the external terminal. The AUV of the present invention has advantages of collecting the growth environment and growing state of raised fishes and accordingly determining abnormal fishes based on the collected growth environment and growing state information. In addition, the AUV can collect the growth environment information in the fish farm like water	JINWOO SOFT INNOVATION	KR1020130071576	2013/6/21

277	MULTI-LEGGED UNDERWATER ROBOT FOR PREVENTING WATER NOISE AND METHOD THE SAME	The present invention relates to a multi-joint submarine robot preventing a water surface noise and a method for preventing the water surface noise, capable of obtaining a precise submarine topography image preventing surface reverberation by calculating and applying an inclination angle by using the size of a vertical beam radiated from a scan sonar. To achieve the purpose, the present invention includes a scan sonar radiating a horizontal beam, a depth calculating part for measuring a distance between the scan sonar and the surface of water, a distance storage part storing a radiation length of the vertical beam radiated from the scan sonar, an inclination angle calculating part calculating the inclination angle by using the depth and length, and a posture control part converting the inclination angle into a pitch angle and controlling multiple joints of the submarine robot by the pitch angle.(140) Inclination angle calculating part(150) Posture control part(130)	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020130111863	2013/9/17
278	Submarine robot for sea power command and Method for managing the same	The present invention relates to a submarine robot for commanding the sea comprises : a main body (10) which has an underwater organism shape; a propulsion unit (20) which is mounted with a propeller (24) in the main body (20); a communications unit (30) which is mounted with a GPS receiver (31) and a transceiver (35) in the main body (10); an explosion unit (40) which is mounted with a war head (42) and an igniter (44) in the main body (10); and a control unit (50) which inputs and outputs an operating signal in set conditions while providing power to the propulsion unit (20), the communications unit (30), and the explosion unit (40). Therefore, an operating method for the submarine robot can minimize loss of lives and can secure a military edge in an	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020130068531	2013/6/14

279	Multipurpose robot for underwater probing and rescue having sailing stability	The present invention relates to a multipurpose robot for underwater probing and rescue having sailing stability and, more specifically, to a multipurpose robot for underwater probing and rescue having sailing stability, which draws and rescues victims in case of flood accidents in the sea, river or reservoir by enabling the rapid dispatch to an accident occurrence place; and collects information including the images of the corresponding place by sailing a place on the	BIGCO CO LTD	KR1020130069481	2013/6/18
280	UNDERWATER CLEANING ROBOT	An underwater cleaning robot is disclosed. The underwater cleaning robot according to an embodiment of the present invention comprises a frame; two driving units, installed on both sides of the frame, each of which has a driving wheel coming into contact with a work target surface and a running driving part driving the driving wheel; a steering unit having a steering wheel for controlling the movement direction of the frame and a steering driving part operating the steering wheel; a cleaning unit installed at the frame between the steering unit and the two driving units to allow vertical movement thereof and cleaning the outer side of the work target surface by rotation; a foreign material collection device including a cover member which vertically moves with a cleaning brush and covers the upper side and a circumferential part of the cleaning brush, and a foreign material collection pump which sucks in the foreign material from the inner side of the cover member together with water and discharges the foreign material and water; a distance sensor sensing the distance of the cover member from the work target surface; a flow control device controlling flow rate of the mixture flowing into the foreign material collection pump; and a control unit actuating the flow	SAMSUNG HEAVY IND CO LTD	KR1020130135259	2013/11/8

281	METHOD FOR WASTE PIPE LINE RETRIEVAL	The present invention provides a method for collecting a waste pipe line using a curved coupling unit. According to an embodiment of the present application, the method comprises a first step of sending a first remotely-operated vehicle (ROV) and a second ROV of a ship into water and moving the first ROV and the second ROV toward a site of the waste pipe line; a second step of collecting the remaining oil of the waste pipe line by the first ROV; a third step of separating the waste pipe line into unit pipes by the second ROV; a fourth step of installing a curved coupling unit on the unit pipe; a fifth step of descending a hoist cable, a hoist frame, a trolley, a collecting cable into water by a hoist; a sixth step of connecting the collecting cable to the coupling unit; a seventh step of moving the trolley from the hoist frame to adjust an interval between the collecting cables; and an eighth step of raising the hoist	SAMSUNG HEAVY IND CO LTD	KR1020130062876	2013/5/31
282	METHOD FOR WASTE PIPE LINE RETRIEVAL	The present invention provides a method for collecting a waste pipe line. According to an embodiment of the present invention, the method comprises a first step of sending a ship, which is equipped with a remotely-operated vehicle (ROV) and a hoist, to a site of the waste pipe line; a second step of separating the waste pipe line into unit pipes by the ROV; a third step of installing a coupling unit on the unit pipe; a fourth step of descending a hoist cable, a hoist frame, a trolley, and a collecting cable into water; a fifth step of combining the collecting cable with the coupling unit; a sixth step of moving the trolley from the hoist frame to adjust an interval between the collecting cables; and a seventh step of raising the hoist cable, the hoist frame, the trolley, the collecting cable, the	SAMSUNG HEAVY IND CO LTD	KR1020130062874	2013/5/31

283	METHOD PREDICTING VERTICAL POSITION OF UNDERWATER ROBOT	A method for predicting the vertical position of an underwater robot with a depth sensor comprises : a step of measuring the depth of an underwater robot at a stop from the surface of the ward for a preset measuring time using a depth sensor; a step of predicting a wave shape based on the measured depth for the measuring time; a step of generating a dynamic window based on the wave shape; a step of calculating the predicted vertical position of the underwater robot through the dynamic window; a step of calculating the actually measured vertical position of the underwater robot using the depth sensor; and a step of calculating the actual vertical position of the underwater robot by correcting the actually measured vertical position according to the predicted vertical position.(AA) Start(BB) End(S10) Collect depth information(S11) Predict a wave shape(S12) Generate a dynamic window(S13) Predict the vertical position of a robot using the dynamic window(S14) Actually measure the vertical position of the robot(S15) Calculate the actual vertical position of the robot through a	SAMSUNG HEAVY IND CO LTD	KR1020130068479	2013/6/14
284	COOLING APPATATUS FOR PRESSURE RESISTANCE HOUSING OF UNDERWATER ROBOT	The present invention relates to a pressure resistant housing of an underwater robot having a cooling device which easily exhausts heated air generated from an electronic device inside the pressure resistant housing of the underwater robot to the outside using an air circulation device. To this end, the pressure resistant housing of the underwater robot comprises a cooling fan which is formed in the inner longitudinal end of the other side of the pressure resistant housing to blow the air to one side of the pressure resistant housing; an air distribution part which is formed in the blowing direction of the cooling fan to distribute the air from the cooling fan; and an air circulation part which is composed of at least one flow path where the air distributed through the air distribution part passes through, wherein the flow paths adhere to the inside of a canister for	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020130071649	2013/6/21

285	micro underwater robot	The present invention relates to a micro underwater robot capable of navigating on its own in water. When obstacle information acquired by a first sonar (30) disposed outside a hull (20) is transmitted to a control board (80) through a first board (40), the control board (80) controls the driving of a pitch heave unit (100) and a surge yaw unit (200) based on a micro underwater robot (10) driving program is downloaded via a control unit (90) such that mobility can be ensured for the micro underwater robot (10). A side surface scanning sonar image acquired by a second sonar (50) is outputted in real time through the control unit (90) positioned out of the hull (20) such that the observability can be ensured for the micro underwater robot (10). Also, the hull (20) is configured to have	TONGMYONG UNIVERSITY INDUSTRIAL ACADEMIC COOPERATION FOUNDATION	KR1020130071072	2013/6/20
286	Signal processing method for transforming and reproducing stereo underwater acoustic signals in the air and signal processing appratus using thereof	The present invention relates to a signal processing method for reproducing stereo underwater sound signals in the air capable of playing a sound wave signal received from two points underwater in the same sound quality as that of the sound wave signal played underwater through a stereo channel such as a head phone, and a signal processing apparatus using the same. According to the present invention, in order to solve problems of a underwater sound signal processing method according to the related art which does not represent a technology of reproducing an underwater sound signal in the air, and make a user equally feel the underwater sound outside the water, rather than an incident angle of the underwater sound source is confirmed by numbers or a graph, an underwater sound source is estimated by listening to the underwater sound source, so that a location of underwater sound source is easily recognized by listening underwater sound on a ship upon underwater work, thereby improving location recognition and recognition performance of the sound source. When a underwater work is performed using a remote control robot such as a remotely operated vehicle (ROV), work efficiency can be increased. The signal processing method is	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020130157705	2013/12/18

287	COMBINED REMOTELY OPERATED VEHICLE AND POWER SUPPLYING METHOD OF REMOTELY OPERRATED VEHICLE	The present invention relates to a hybrid underwater operation robot and a power supply method thereof. Provided is a hybrid underwater operation robot comprising : an operation robot performing an operation underwater; and at least one power supply robot having a power supply part, and moving to a predetermined position when raised to the surface of the water by buoyancy or swimming underwater after being separated from the operation robot so that the power supply part can be charged or replaced, wherein the power supply part detachably mounted on the operation robot supplies power to	SAMSUNG HEAVY IND CO LTD	KR1020130062894	2013/5/31
288	Underwater Mobile Robot for Aquarium	Disclosed is a water mobile robot for an aquarium. The water mobile robot according to an embodiment of the present invention comprises : a body unit (100) equipped with an accommodating unit (111) having a structure therein to be waterproofed and sealed from the outside; a driving unit (200) mounted on both side surfaces or bottom of the body unit (100) to move the body unit (100); an operating unit (300) disposed in the accommodating unit (111) of the body unit (100) to provide the driving unit (200) with a driving force; a water quality purifying unit (400) mounted on the top of the body unit (100) and equipped with a fluid flowing pipe (410) having a feeding hole (411) for feeding water and a discharging hole (412), with a purifying filter (420) disposed in the feeding hole (411), and with a suctioning fan (430) disposed between the purifying filter (420) and the discharging hole (412); a feed supplying unit (500) mounted on the top of the water quality purifying unit (400) and equipped with feed storing chambers (510, 540) connected with the inside of the fluid flowing pipe (410) and storing feed for fish and having feed feeding	INDUSTRY ACADEMIC COOPERATION FOUNDATION YONSEI UNIVERSITY	KR1020130137791	2013/11/13

289	APPARATUS AND METHOD FOR RECOVERING OF REMAINING OIL IN WASTE PIPE LINE AND METHOD FOR RECOVERING OF WASTE PIPE LINE	Disclosed are a system and a method for oil recovery for a waste pipeline and a waste pipeline recovery method. According to an embodiment of the present invention, there is provided an oil recovery system for a waste pipeline including an ROV that approaches the waste pipeline disposed in the sea, forms a predetermined section of the waste pipeline into a sealed closed section, and drills two or more pipe holes on the closed section; a heat supply unit that is provided in a vessel; a heat transfer unit that connects at least one of the pipe holes formed on the closed section and the heat supply unit to each other and allows a heating medium provided by the heat supply unit to be supplied to the waste pipeline; a storage tank that is provided in the vessel for oil storage; and an oil recovery unit that connects the one or more pipe holes formed on the closed section but not connected to the heat transfer unit and the storage tank to each other and recovers residue oil	SAMSUNG HEAVY IND CO LTD	KR1020130078915	2013/7/5

290	METHOD FOR WASTE PIPE LINE RETRIEVAL	The present invention provides a method for collecting a waste pipeline by launching connectors. According to an aspect of the present invention, the method may comprise : a first step of putting a first ROV and a second ROV of a ship in water, and moving the first ROV and the second ROV toward a waste pipeline site; a second step of collecting the remaining oil of a waste pipeline using the first ROV; a third step of dividing the waste pipeline into individual unit pipes using the second ROV; a fourth step of installing connectors in the individual pipes by launching the connectors toward the individual pipes using a launching unit of the second ROV; a fifth step of descending pulling cables, pulling frames, trolleys, and collecting cables into the water using pulling devices of the ship; a sixth step of connecting the collecting cables to the connectors; a seventh step of adjusting the gap between the collecting cables by moving the trolleys in the pulling frames; and an eighth step of collecting the individual pipes by ascending the pulling cables, the pulling frames, the trolleys, the collecting cables, the connectors, and the individual pipes using the pulling devices.(AA) Start(BB) End(S10) Put first and second ROVs in water, and move the first and second ROVs toward a waste pipeline site(S20) Collect the remaining oil of a waste pipeline using the first ROV(S30) Divide the waste pipeline into individual unit pipes using the second ROV(S40) Install connectors in the individual pipes by launching the connectors using the second ROV(S50) Descend pulling cables, pulling frames, trolleys, and collecting cables into the water using pulling devices(S60) Connect the collecting cables to curved	SAMSUNG HEAVY IND CO LTD	KR1020130062875	2013/5/31

291	Floating ROV for high place working	The present invention provides an ROV performing a work for a working target object (10) positioned at a high place, comprising a main body (20) having a propelling unit (21) and attachment legs (23, 24); a working unit (30) mounted on the main body (20) and having a gripper (35); a controller controlling flight of the main body (20) and a multi-axial movement of the working unit (30); and a wireless manipulation unit (50) transmitting and receiving a manipulation signal to and from the controller at a remote place. Therefore, the present invention dispatches a flyable remote manipulation type robot in a high place work, thereby	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020130049693	2013/5/3
292	APPARATUS FOR TRACKING POSITION OF UNDERWATER ROBOT	The present invention relates to a position tracking apparatus of an underwater robot which includes : a buoyancy unit for providing buoyancy under the water; a frame connected with the buoyancy unit in such a way as to be adjusted in length in the vertical direction under the water; a mounting unit which is attached to one side of the frame to mount an underwater robot thereon; a connection unit of which one side is connected to an upper end of the frame or to the buoyancy unit to adjust the length of the frame according to adjustment of the length; and an operating unit which is connected to the other side of the connection unit and provides a rotary power to be adjusted in length while the connection part is wound. The position tracking apparatus of the underwater robot according to an embodiment of the present invention can check the position of the underwater robot with naked eyes without using any sensor to prevent malfunction of a sensor	POSCO	KR1020130137854	2013/11/13

293	Automatic hook device	Disclosed is an automatic hook device. The automatic hook device according to an embodiment of the present invention includes an automatic hook including a hook body selectively hung on a first hook hanging unit of an underwater working robot; a safety clip, which opens and closes an opening unit of the hook body by being installed in the opening unit of the hook body, and a clip driving unit driving the safety clip by being connected to the safety clip; and a remote controller controlling the clip driving unit of the automatic hook at a	SAMSUNG HEAVY IND CO LTD	KR1020130039283	2013/4/10
294	METHOD FOR RECOVERING OF WASTE PIPE LINE	A method for recovering a waste pipeline is provided. According to an embodiment of the present invention, the method for recovering a waste pipe line comprises a remotely-operated vehicle (ROV) input step of inputting an ROV into the water and transporting the ROV toward a waste pipe line site; a protective coating removal step of removing a protective coating of a waste pipeline from a pipe body at a site by a coating removal unit of the ROV; a waste pipeline compression step of compressing the pipe body by a press unit of the ROV, wherein the pipe body is exposed to the outside due to the removal of the protective coating; a waste pipeline cutting step of cutting and sealing the compressed pipe body by a cutting unit of the ROV to make waste pipeline sections; and a waste pipeline section collecting step of collecting the cut and sealed waste pipeline sections.(AA) Start(BB) End(S100) Input an ROV into a waste pipe line site(S110) Remove a protective coating from the waste pipeline by a coating removal unit of the ROV(S120) Compress the coating-removed part of the waste pipe line by a press unit of the ROV(S130) Cut the compressed part of the waste pipe line by a cutting unit of the ROV(S140) Is	SAMSUNG HEAVY IND CO LTD	KR1020130034477	2013/3/29

295	DEVICE FOR ACTUATING UNDERWATER WEARABLE ROBOTS AND METHOD FOR CONTROLLING THE SAME	Disclosed is a driving device of a wearable robot for underwater work, capable of making a wearer easily overcome the resistance of water, and quickly and omnidirectionally driving an end part. The driving device of a wearable robot for underwater work comprises a driving body that a worker can wear and nozzle parts installed in the driving body to generate thrust by spraying supplied fluid. The driving body is worn in the end part of one among the wrists and ankles of the worker. The nozzle parts generate the linear moving force of three-axis directions, such as X, Y, and Z axis, and one axial rotation force. Thus, the present invention assists the worker to quickly move the end part while overcoming the resistance of the water by directly driving the end part of the wearable robot to be freely moved on the coordinate of a work place, and can precisely control minute movement and high speed movement	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020130034054	2013/3/29
296	MULTIFUNCTION MILIITARY GLOVES	The present invention relates to a multifunctional military glove which covers a hand and includes : a touch part formed in a region corresponding to a fingerprint part of a finger of the hand, and is made from a conductive thread to transmit an electrical signal which provides a touch function to a liquid crystal display of a smartphone; an accommodating pocket formed on the back of the hand having an opening and closing member; an attachment means formed on the lower side of an outer surface of the glove on an inlet side corresponding to a wrist configured to removably attach a flashlight or a small item; and a compass removably coupled to a side of the upper surface on the inlet side. Accordingly, the glove covers a hand to keep warmth thereof and the compass is used to find directions. In addition, a laser pointer provides a pointing function and an LED light is used to see a map. Furthermore, a small item can be accommodated in the accommodating pocket, and an input operation is performed through a touch	G GTC CO LTD	KR1020140071025	2014/6/11

297	POSE SUPPORTING ROBOT FOR COMMERCIAL DRIVER AND METHOD FOR CONTROLLING THE SAME	Disclosed in the present invention are a posture maintaining robot for a diver, which can assist a diver in maintaining a work posture by minimizing inadvertent movements of the diver due to tidal currents or buoyancy during underwater work, and to a controlling method thereof. The posture maintaining robot for a diver comprises : a fixated unit which is fixated to an underwater pipe; a multi-joint link unit with a structure where multiple joints for linking the fixated unit to a diver are connected; and a control unit which controls the operation of the multi-joint link unit. The controlling method for the posture maintaining robot for a diver comprises : a step of connecting an underwater pipe and a diver using the multi-joint link unit where joints are connected with one another in order to rotate and a power source is placed at a connection part; a step of sensing the motions and direction of the diver using a sensor; and a step of operating each of the joints by applying a driving signal to the power source based on information on force sensed by the sensor. Therefore, the posture maintaining robot for a diver and the controlling method thereof can assist a diver in maintaining the balance of the body or the work posture during underwater work in order to reduce the shaking of the	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020130028956	2013/3/19
298	UNDERWATER HABITAT EQUIPPED WITH WEARABLE ROBOT	Coordinate information of subaqueous where the inlet side and the submerged of sufficient work efficiency and improves the rate purpose : a mount robot with subaqueous dwelling port is disclosure. Fasteners dwelling subaqueous with robot wearer to receive a operator penetrates into water residential instrument body has a, said dwelling instrument body one side of and opening is formed on the resultant structure, the interior of instrument body dwelling said worn operator is having a wearable robot. Therefore, excellent coordinate information work, to provides comfortable subaqueous environment, work actuator for discriminating cell in code	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR2020130001642	2013/3/5

299	HYDRAULIC STATUS MEASURING APPARATUS FOR UNDERWATER ROBOT EQUIPPED HYDRAULIC SYSTEM	The present invention relates to a hydraulic status measuring apparatus for an underwater robot having a hydraulic system which senses information on a hydraulic fluid of an underwater robot actuator operating in the deep sea; and provides the collected information to a mother ship in order to easily check for abnormal conditions of the hydraulic system and a pressure compensating device of the underwater robot. The apparatus comprises : a cylindrical canister; an inner frame fixated inside the canister and includes a slot; a first end cap which seals one side of the canister, and includes a plurality of pressure sensors to collect information on a hydraulic fluid coupled with second pipes; a signal processing module mounted in the slot of the inner frame, and processes signals by receiving information on the hydraulic fluid collected by the pressure sensors and inner sensors and information on the inside of the canister; and a second end cap which seals the other side of the canister, includes a penetrating information transmitting hole to transmit signal processing information from the signal	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020130071648	2013/6/21
300	Underwater robot guide device	A guide device for an underwater robot is provided. The guide device for an underwater robot according to an embodiment of the present invention comprises a body combined with an underwater structure; at least one first rail unit formed along the underwater structure on a part of the body; a second rail unit moving along the first rail unit and covering at least a part of the underwater structure; and a stand unit part which is combined with the underwater robot and moving along the	SAMSUNG HEAVY IND CO LTD	KR1020130021687	2013/2/28

301	ROBOT LOCALIZATION DETECTING SYSTEM USING A MULTI-VIEW IMAGE AND METHOD THEREOF	The present invention relates to a system for measuring the position of a robot inside a reactor using multiple images and a measuring method thereof. The system comprises : an underwater robot (100) which includes a vertical and a horizontal thruster (101) at a fixed position in an internal space (10) of a reactor in order to move front and back, left and right, and up and down, and includes an underwater camera (102) at one end thereof in order to observe the internal space (10) of the reactor; multiple cameras (200) which are installed on the top (20) of a reactor vessel; a position measuring unit (300) which processes multiple images through the multiple cameras (200) in order to measure the position and posture of the underwater robot (100); and a remote control unit (400) which controls by converting data on the position and posture of the underwater robot (100) measured by the position measuring unit (300) into feedback signals. The position measuring unit (300) includes a DVR facility for obtaining images, and a PC for driving algorithm. Therefore, the system for measuring the position of a robot inside a reactor using	KOREA ATOMIC ENERGY RESEARCH INSTITUTE; KOREA HYDRO NUCLEAR POWER CO LTD	KR1020130012254	2013/2/4
302	LOCALIZATION SYSTEM OF UNDER WATER ROBOTS	A location estimating system of an underwater robot according to the present invention includes a location measuring unit which is interlocked to the underwater robot moving according to a dead reckoning sailing system and outputs a depth where the underwater robot is positioned and a movement direction angle of the underwater robot; and a calculation unit which applies a movement estimation value including the depth and the movement direction angle and an odometer of an encoder installed on the underwater robot to an extended Kalman filter and estimates the current location of the underwater robot on	SEOUL NATIONAL UNIVERSITY OF TECHNOLOGY CENTER FOR INDUSTRY COLLABORATION	KR1020120134612	2012/11/26

303	PAYLOAD STOWAGE UNIT	A stowage unit for a payload such as a weapon, countermeasure or unmanned underwater vehicle (UUV), and a method for using the unit to deploy the payload are described. The unit comprises an inner tube for holding the payload, wherein the inner tube is mounted in an outer vessel and so defines a volume between the outer vessel and inner tube. The volume has a first sealing element, which can be used to open or seal the volume at one end, and a valve enabling fluid communication between the volume and inner tube. After deployment of the payload, a weight of fluid equivalent to the deployed payload can be allowed to enter the volume from the inner tube, thus enabling the weight of the unit to remain	BABCOCK INTEGRATED TECHNOLOGY LTD	KR1020107020322	2009/2/6
304	APPARATUS AND METHOD FOR CONTROLLING AN UNDERWATER ROBOT	The present invention relates to an underwater robot control device and an underwater robot control method. The underwater robot control device including a laser radiating unit for radiating laser beam of a predetermined shape to an irradiation region of a target object; a photographing unit for photographing images including the irradiation region; and an image analyzing unit and the underwater robot control method are disclosed.[Reference numerals] (AA) Clockwise direction; (BB) Counter clockwise direction; (CC) Up; (DD) Left; (EE) Right;	SAMSUNG HEAVY IND CO LTD	KR1020120047554	2012/5/4

305	SUBSEA EQUIPMENT, UNDERWATER OPERATION SYSTEM AND UNDERWATER OPERATION METHOD	The present invention relates to subsea facilities, an underwater work system, and an underwater work method and more particularly, to subsea facilities, an underwater work system, and an underwater work method which photograph surrounding images for manipulating an underwater robot. According to an embodiment of the present invention, the underwater work system comprises : subsea facilities which are installed in the seabed; an underwater robot which manipulates the subsea facilities; and a mother ship which is connected to the underwater robot by a tether cable and provides a user interface for manipulating the underwater robot. The underwater robot includes a first camera which photographs the front side of the underwater robot in order to acquire a first image. The subsea facilities include a second camera which photographs the front side of the underwater	SAMSUNG HEAVY IND CO LTD	KR1020120079472	2012/7/20
306	WORK SUPPORT PLATFORM AND METHOD OF UNDERWATER ROBOT	Disclosed in the present invention are a work supporting platform for an underwater robot and a method thereof. According to an embodiment of the present invention, the work supporting platform for an underwater robot can be positioned between a mother ship and an underwater robot in order to support the work of the underwater robot, and comprises a platform main body which has a waterproof structure; a robot mounting unit which physically mounts or disassembles the underwater robot on or from the platform main body; multiple cable regulating winch units which regulate the length of a cable depending on the relative motion of a mother ship and the underwater robot; and a control unit which forms a fixed coordinate system using a position measuring sensor, and provides the underwater robot with	SAMSUNG HEAVY IND CO LTD	KR1020120122623	2012/10/31

307	Subsea manifold installation structure	The present invention relates to a manifold installation structure in a deep sea suction pile and, more specifically, a manifold installation structure in a deep sea which prevents a guide cone from being damaged and stably installing a pair of guide posts and a rest pair of the guide posts which is vertically installed and horizontally rotated by the guide cone. The manifold installation structure in a deep sea facilitates observation of an installation part by improving accessibility of an ROV by forming a plurality of the guide posts in a suction	HYUNDAI HEAVY INDUSTRIES CO LTD	KR1020120148287	2012/12/18
308	Unmanned Underwater Vehicle Recovery System and Underwater Recovery Method thereof	An unmanned underwater vehicle recovery system comprises : an RF type docking antenna (20) composed of a first transmission sensor (21), a second transmission sensor (22), a third transmission sensor (23), and a fourth transmission sensor (24) included in a dock station (10); and an RF type UUV sensor (50) composed of a first receiving sensor (51) and a second receiving sensor (52) included in an unmanned underwater vehicle (UUV) (40). The UUV recovery system can calibrate electromagnetic wave characteristics according to the seawater environment by calculating the distance from a virtual vector projected on an xy plane to an UUV (40), from the first to fourth receiving sensors (51-54) to the first receiving sensor	NATIONAL DEFENCE SCIENCE A LABORATORY	KR1020120140156	2012/12/5

309	UUV recovery device for submarine	The purpose of the present invention is to prevent a physical collision by implementing a guidance function of recovering an underwater moving vehicle and a position detecting function of preventing a collision when recovering the underwater moving vehicle into a torpedo tube, though other special transferring apparatus is not provided. To attain the purpose, the present invention comprises : a multiple ring type wire guide (16) installed at the outside of the torpedo tube (14) to be capable of spreading out and guiding a recovery path of the underwater moving vehicle (12); wire rope (18) connected to appear or disappear on the outside of the torpedo tube (14) and individually fixing the wire guide(16) at plural positions over the total length; a connecting rod (20) installed to appear or disappear on the outside of the torpedo tube (14) and adjusting an unfolding or a reception position of the wire guide (16); a winch (22) winding the wire rope (18) when unfolding or receiving the wire guide (16) with respect to the torpedo tube	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020120091052	2012/8/21

310	APPARATUS FOR MEASURING POSITION OF ROV	The present invention relates to a device for precisely measuring a location of an underwater robot spaced apart from a ship to move and operate in the water, by using a location of an underwater structure spaced apart from the ship by a certain distance. The device for measuring a location of an underwater robot according to the present invention includes : a first sound wave generation unit attached to the underwater robot to emit sound waves to the water, the underwater robot being spaced apart from a ship by a certain distance to operate in the water; a plurality of first sound wave receiving units installed in an underwater structure spaced apart from the ship and the underwater robot by certain distances to receive the sound waves emitted from the first sound wave generation unit; a plurality of second sound wave generation units installed in the underwater structure to emit sound waves to the water; a plurality of second sound wave receiving units attached to a plurality of locations corresponding to the shape of the bottom of the ship to receive the sound waves emitted from the second sound wave generation units; and a control unit for transmitting sound wave generation signals for generating the sound waves to the first and second sound wave generation units, calculating distances between the first sound wave receiving units and the first sound wave generation unit using sound wave receiving times at which the first sound wave receiving units receive the sound waves of the first sound wave generation unit, calculating distances between the second sound wave receiving units and the second sound wave generation units using sound wave receiving times at which the	PARK WON CHUL	KR1020130032389	2013/3/26

311	Apparatus and Method for Estimating the Position of Underwater Robot	PURPOSE : A device and a method for estimating the position of an underwater robot are provided to accurately measuring a three-dimensional position of the underwater robot in water by solving problems regarding errors, difficulty of installing a sensor, and cost. CONSTITUTION : A device for estimating the position of an underwater robot comprises an inner sensor unit(110), an outer sensor unit(120), a potential position obtaining unit(130), a reliability obtaining unit(140), a potential position rearrangement unit(150), and a positioning unit(160). The reliability obtaining unit obtains the reliability for potential particles by allowing environmental information to a random variable at each sampling time. The potential position rearrangement unit rearranges the potential particles according to reliability. The determining unit calculates an average position of the potential particles rearranged at each sampling time and determines a calculated average position as a current position of the underwater robot. [Reference numerals] (110) Inner sensor unit; (120) Outer sensor unit; (130) Potential position obtaining unit; (131) Potential position generating unit; (132) Potential position update unit; (140) Reliability obtaining unit; (150) Potential position rearrangement unit;	INDUSTRY ACADEMIC COOPERATION FOUNDATION CHOSUN UNIVERSITY	KR1020110112503	2011/10/31

312	UNDERWATER WORKING ROBOT	The present invention relates to an underwater working robot. The underwater working robot comprises : a main body where a buoyancy device for having neutral buoyancy is installed at one side thereof; a driving device which is installed in the main body and can move along the surface of an object by including multiple wheels; an adsorption pad which is installed in the lower part of the main body, is connected with a vacuum pump through piping, and sucks water through the vacuum pump in order to have adsorptive power with the surface of the object; and multiple ball transfers which are installed in the lower part circumference of the adsorption pad. The provided underwater working robot can perform work such as cleaning on a wall surface through smooth movements by being adsorbed onto the wall surface of a swimming pool using the vacuum pump and the adsorption pad. To be more particular, the underwater working robot can avoid the separation from the wall surface and maintain work by having vacuum power of a fluid due to the suction pressure of the vacuum pump, can operate by adhering to the wall without any influence of the self weight by installing the buoyancy device in the main body in order to have neutral buoyancy under the water, and can increase suction power by enlarging a pressure difference between the inside and the outside of the adsorption pad, by minimizing the gap between the adsorption pad and the surface of the object through the installation of a gap regulating unit protruding downward on the lower part	COREBELL SYSTEMS INC; KUMOH NATIONAL INSTITUTE OF TECHNOLOGY INDUSTRY ACADEMIC COOPERATION FOUNDATION	KR1020120139860	2012/12/4

313	Underwater trigger system using sound code and underwater triggering method using thereof	The present invention relates to an underwater trigger switch, which is used in performing underwater triggering work and in removing a mine installed underwater, and an underwater triggering system using the same. The conventional method for removing a mine using an ROV has a limit of hundreds of meters in the exploration radius due to a cable connected with a mother ship, and has potential danger of an unpredictable terrible accident by causing explosions of not only a targeted mine but also other mines due to reaction. To solve the above problem of the conventional method for removing a mine, the provided underwater trigger switch using a sound code and the underwater triggering system using the same can expand the exploration radius thereof using an autonomous underwater vehicle (AUV) which autonomously sails through artificial intelligence, can selectively remove a targeted mine using a	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020120141802	2012/12/7
314	Pressure hull of underwater robot for enhancing peach	The present invention relates to a pressure hull of an underwater robot for reducing direct hindrance between structures and effectively improving watertightness and waterproof properties as covers facing each other on a closure are joined to each other by a connection part with elasticity to make the covers tightly seal the closure using tensile stress of the connection part, and the connection part is designed to flexibly react to external drag with one end protruding towards	RED ONE TECHNOLOGIES CO LTD	KR1020120125961	2012/11/8

315	Underwater sediment removal device	The present invention relates to an underwater sediment removing device, which is a sediment removing device (1) for preventing the contamination of water by filtering after sucking and collecting sediment accumulated on the bed of a lake or a river. The underwater sediment removing device comprises : a boat unit (10) which moves on the surface of water; a lift unit (20) which is connected with the lower part of the boat unit (10) and whose length is variable; a caterpillar unit (30) which is connected with the lower part of the lift unit (20); a sediment collecting unit (40) which is connected with one side of the lift unit (20) in order to collect sediment accumulated on the water bed; a discharge pipe unit (50) which is connected with the sediment collecting unit (40); and a filter unit (60) which is connected with the discharge pipe unit (50). The underwater sediment removing device includes : a caterpillar which is seated on the water bed and moves in order to accurately move the sediment removing device connected with the lower part of a boat; a crossed rod type lift means which easily changes the height of the boat and the caterpillar depending	KIM TAE YOUNG	KR1020120117372	2012/10/22

316	ON THE WATER OIL-SKIMMER ROBOT SYSTEM	The present invention relates to a water oil-skimmer robot system comprising : a hollow hull in which a stem and a stern are penetrated; vertical propellers installed in both sides of the hull; a horizontal propeller installed in the stern of the hull; a hull controller arranged on the top of the hull; an overland controller controlling the sailing of the hull while communicating with the hull controller by a wire or wirelessly; an oil storage tank fixed on the top of the hull controller and having internal spaces divided by barriers; a belt type oil-skimmer installed in the opened part of the stern of the hull and rotated on a caterpillar track to adsorb and pump up collected oil; an oil-water separator installed in one among the spaces divided by the barriers to separate oil from the belt type oil-skimmer; an oil storage which is the other space divided by the barriers to store the separated oil; and an overland oil tank connected to the oil storage by an oil discharge hose to suck and discharge the stored oil from the oil storage. The present invention can increase workability and work efficiency and can prevent safety accidents by automatically absorbing and removing the oil polluted on seawater using the ROV type	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD	KR1020120115684	2012/10/18

317	Underwater robot and direction control method thereof and flapper capable of swimming	The present invention relates to an underwater robot, a direction control method thereof, and a flapper allowing the same to swim. According to an aspect of the present invention, the underwater robot comprises : a main body (100) capable of moving underwater; a pair of the flappers (200) formed to protrude from the sides of the main body (100) and reciprocating in the front and rear direction of the main body (100); and guide parts (300) formed at the sides of the main body (100) and guiding the motions of the flappers (200). The flapper (200) includes : a fin-shaped wing (270) protruding from the side of the main body (100); driving parts (210, 230, 250) moving the wing (270); and followers (260) connecting the wing (270) to the driving parts (210, 230, 250) so that the wing (270) can rotate, and the guide part (300) includes : a first cam (310) forming the outer border of a space in which the follower (260) moves; and a second cam (320) forming the inner border of the space in which the follower (260) moves,	KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY	KR1020120079362	2012/7/20
318	Water station of underwater robot	The present invention relates to a water station capable of allowing maintenance and operation of an underwater robot at all times. According to one aspect of the present invention, the water station includes a storage unit disposed below the water surface to accommodate the underwater robot; a maintenance unit provided on the storage unit and disposed above the water surface; and a transfer unit transferring the underwater	KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY	KR1020120111392	2012/10/8
319	UNDERWATER CLEANING ROBOT	The present invention relates to an underwater cleaning robot capable of sucking deposits piled up on the underwater bottom and discharging the deposits while rapidly driving and converting the direction according to a driver or an automatic driving program on the ground by mounting a deposit suction unit; a pump; and a transfer screw transferring the deposits on the front of a platform. The underwater cleaning robot allows a user to effectively and safely clean the deposits such as various industrial sludge, sand, and small solids on the bottom of a tank or a reservoir by performing a danger and hard work with	ZETA CREZEN CO LTD	KR1020130131259	2013/10/31

320	UNDERWATER ROBOT CAPABLE OF 3-DIMENSIONAL SWIMMING	The present invention relates to an underwater robot capable of 3-dimensional swimming by comprising a plurality of joint parts and a plurality of driving parts for driving the joint parts. The underwater robot according to the present invention includes : a head part comprising a first driving part; a chest part which is combined to the head part as being able to rotate through a rotary axis of the first driving part, and comprises a second driving part; an abdomen part which is combined to the chest part as being able to rotate through a rotary axis of the second driving part, and comprises a third driving part; a tail part which is combined to the abdomen part as being able to rotate through a rotary axis of the third driving part; and a control part which controls the first, the second and the third	KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY	KR1020120072769	2012/7/4
321	ROBOT CONTROL SYSTEM AND ROBOT CONTROL METHOD USING THE SAME	The present invention relates to a robot control system which controls a robot in a mother ship and a remote place and a robot control method using the same. According to the embodiment of the present invention, the robot control system using the robot which is installed on the mother ship connected to a remote operated vehicle robot via a tether cable and which includes an input module receiving an input of first control signals; a wireless communication module which receives second control signals via a wireless communication network from a remote place; and a cable communication module which receives the first and second control signals from	SAMSUNG HEAVY IND CO LTD	KR1020120045679	2012/4/30

322	APPARARTUS AND METHOD FOR GENERATING AN AROUND VIEW OF A REMOTELY OPERATED VEHICLE	The present invention relates to a device and a method for generating a peripheral image of an underwater robot. The device for generating a peripheral image of an underwater robot comprises a sonar sensor which is mounted at an underwater robot to receive acoustic waves, to analyze response acoustic waves of the received acoustic waves, and to detect three dimensional location information on an area being measured; a plurality of image photographing devices which are mounted at the underwater robot to acquire image data on different areas including at least a portion of the area being measured; and a data processing device which is installed at at least one side of the underwater robot and a bus line connected to each other via a communication cable and matches the image data acquired by the image photographing devices with the three dimensional location information detected by the sonar sensor to generate three dimensional image information. [Reference numerals] (100) Underwater robot; (131) First image photographing device; (132) Second image photographing device; (133) Third image photographing device; (134) Fourth image photographing	SAMSUNG HEAVY IND CO LTD	KR1020120087721	2012/8/10
323	APPARATUS AND METHOD FOR CREATING A SUBMARINE TOPOGRAPHY MAP	The present invention relates to a device and a method for creating a submarine topography map. The device for creating a submarine topography map which includes a plurality of submarine exploration robots which collects the submarine topography information of different submarine regions and includes a submarine robot and at least one auxiliary submarine robot which is mounted on the submarine robot to be separated; a submarine topography map creating unit which creates a submarine topography map by composing the submarine topography information detected by the submarine exploration robots is disclosed. [Reference numerals] (241, 341) Position detecting device; (242, 342) Posture detecting device; (243, 343) Seabed topography information detecting unit; (244)	SAMSUNG HEAVY IND CO LTD	KR1020120064342	2012/6/15

324	Underwater Robot based on flapping	The present invention relates to a flapping underwater robot comprising : a driving part which comprises intelligent materials having the shape deformed by external signals and directional materials for preventing deformation in a specific direction; a main body connected to the driving part; and a control part for performing a first stroke to operate the driving part in one direction and a second stroke to operate the driving part in the other direction; wherein the driving part performs at least one deformation of bending and torsion according to the arrangement of the intelligent materials and the directional combination of the directional materials. According to the present invention, the underwater robot having the driving part can simultaneously perform natural bending and torsional motions with a simple structure by controlling the arrangement	SNU R DB FOUNDATION	KR1020120057263	2012/5/30
325	AN UNDERWATER WORKING SYSTEM	The present invention relates to an underwater working system, and provides an underwater working system comprising : a wire crane comprising a wire winch for winding a wire and a location transmitter for transmitting location signals; and a working robot comprising a location detection sensor to detect the location signals from the location transmitter.COPYRIGHT	SAMSUNG HEAVY IND CO LTD	KR1020120098916	2012/9/6
326	UNDERWATER ROBOT, SUBSEA EQUIPMENT SYSTEM WITH THE SAME AND UNDERWATER OPERATION METHOD USING THE SAME	The present invention relates to an underwater robot, a subsea facility system including the same, and an underwater work method using the same. To be more particular, the present invention relates to an underwater robot which works remotely underwater, a subsea facility system which includes the underwater robot and subsea facilities, and an underwater work method which operates the subsea facilities using the underwater robot. According to an embodiment of the present invention, the subsea facility system comprises : a subsea facility which includes a housing installed in the seabed, a control panel provided on one surface of the housing, and a protrusion member extended from one surface in a direction; and an underwater robot which includes a frame, a thruster which moves the frame or adjusts the posture of the frame, a	SAMSUNG HEAVY IND CO LTD	KR1020120079467	2012/7/20

327	ROBOT SYSTEM FOR UNDERWATER WORKING	The present invention relates to a robot system for an underwater work which includes a horizontal frame installed in a horizontal direction; a vertical frame which is installed in a vertical direction and which supports the horizontal frame; a movable frame which is installed to be moved in a first direction along the horizontal frame; a robot arm which is installed to be moved in a second direction orthogonal to the first direction along the movable frame; and a horizontality adjusting device which adjusting the height of the vertical	SAMSUNG HEAVY IND CO LTD	KR1020120054132	2012/5/22
328	MULTI-USING UNDERWATER CLEANING ROBOT	PURPOSE : A multipurpose under water cleaning robot is provided to prevent damage or malfunction of the multipurpose under water cleaning robot which is caused by foreign substances which are spread on a river bed or by crushed substances which is attached to or put into a deposition suction unit during a dredging work. CONSTITUTION : A multipurpose under water cleaning robot comprises a body, a running unit, a first motor, a suction hopper (30), a discharge tube (40), a crushing screw (50), a second motor, and a hydraulic pressure generating unit (70). The discharge tube is connected to the suction hopper, and transfers inhaled depositions to the outside. The crushing screw is installed inside the suction hopper, and crushes the depositions. The second motor drives the crushing screw. The	KIM CHANG HO	KR1020120005595	2012/1/18

329	SYSTEM AND METHOD FOR DETECTING POSITION OF MOVING BODY	The present invention relates to a system and method for detecting the position of a moving body and, more particularly, to a system and method for detecting the position of a moving body on the water (or on the ground) and under the water. According to the present invention, the system and method for detecting the position of a moving body may detect the position of a robot both on the water and under the water; may enable continuous detection even if there is temporary reception failure; and may prevent the accumulated position errors by combining advantages of GPS, USBL and INS methods altogether.[Reference numerals] (110) GPS unit; (120) USBL unit; (130) INS unit; (140) Position detecting unit; (142) Determining unit; (144) Control unit; (146) Kalman filter; (AA)	KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY	KR1020120072767	2012/7/4
330	MOBILE NODE, AND COMMUNICATIONS SYSTEM AND METHOD USING SAME	The present invention relates to a mobile node, a mobile communication system using the same, and a method thereof and, more specifically, a mobile node capable of detecting the position of an underwater robot and enabling the underwater robot and a ground client to be communicated with each other, a mobile communication system using the same, and a method thereof. The mobile communication system according to the present invention, the method thereof, and the mobile node enable a mobile client to recognize the position of the robot and transmit data to the robot or receive the data from the robot when the underwater robot is operated by itself. Therefore, the mobile node, the mobile communication system, and the method thereof can more easily recognize the position of the underwater robot and expand mission ranges.[Reference numerals] (100) Mobile node; (200) Client; (210) Position detecting unit; (300) Robot; (AA) Ground; (BB)	KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY	KR1020120072768	2012/7/4

331	UUV recovery device for submarine	Figure in firing tube armed of the submarine to the device guidance function and normal cross induction chemical function and gripping monitoring function for a paste collecting platform for that is in the launching water at using within box smoothly be recovered with a submarine and moves the data to the other more efficient fruit Figure operation of connected to a plug of each of the heat exchanger.. For 800 armed firing tube of the submarine to the device (10) the interior of external and a paste collecting, and a deployed structure can be is deployed at (18) for platform with (12), said platform (12) and used the connection bar is connected through the header (14), said armed firing tube (10) toward said fruit Figure (34) with the center of the pulling head to derive said header (14) installed panel structure for guiding a	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTDKRKRKR	KR1020120004523	2012/5/30
332	UNDERWATER VEHICLE SYSTEM	The present invention relates to an underwater robot system which comprises an underwater robot for performing underwater works; and an auxiliary underwater robot which is detachably mounted on the underwater robot for assisting the underwater works of the underwater robot. The underwater robot includes a mounting plate on which the auxiliary underwater robot is mounted. The auxiliary underwater robot includes a mounting device for mounting the auxiliary underwater robot on the mounting plate or detaching the	SAMSUNG HEAVY IND CO LTD	KR1020120064343	2012/6/15
333	UNDERWATER THRUSTING APPARATUS WITH A FUNCTION OF ADJUSTING STIFFNESS IN CAUDAL FIN	PURPOSE : An underwater thrust device for adjusting the stiffness of a caudal fin is provided to stably improve a swimming property because the strength of the caudal fin of a fish robot is varied to actively cope with various underwater environments. CONSTITUTION : An underwater thrust device for adjusting the stiffness of a caudal fin comprises a fin housing (110), a magnetic field generating coil (130), and a control part (150). The fin housing has a receiving space (112) in which magneto-rheological fluid (MR) is charged. The magnetic field generating coil is installed inside the receiving space and generates a magnetic field. The control part controls the stiffness of the fin housing by changing the viscosity and	KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY	KR1020120000476	2012/1/3

334	Underwater probing robot using USN	The present invention relates to an underwater probing robot using a ubiquitous sensor network (USN) and, specifically, to an underwater probing robot using a USN to probe underwater environments about water quality, water level, water flow conditions including the height of sediments, and underground landform using various sensors while automatically flowing through a waterway; to convert the probing result into map data; and to wirelessly transmit the	UNIV KYUNGWOON IACF; FNINE CO LTD	KR1020120146066	2012/12/14

335	A CARRIAGE UNIT WITH VIBRATION ISOLATORS AND ROTATION FUNCTION FOR MAINTENANCE AND REPAIR OF CYLINDRICAL UNMANNED UNDERWATER VEHICLES	The present invention relates to a vibration-proof carrier vehicle with the rotating function for the maintenance of cylindrical autonomous underwater vehicles which comprises : a pair of lower fixing frames horizontally disposed side by side; a pair of upper fixing frames that are disposed to be vertically separated from the lower fixing frames and be parallel with the lower fixing frames and have a shorter length than the lower fixing frames; multiple reinforcing frames which vertically connect and fix the upper and lower fixing frames; multiple horizontal frames which horizontally connect and fix the upper and lower fixing frames; multiple carrying wheels fixed on the lower fixing frames; a bow supporting plate disposed vertically on the upper side of one end of the lower fixing frames and allows the bow cone of the autonomous underwater vehicle (AUV) to be supported thereto; a handle that is disposed on the reinforcing frames across from the bow supporting plate and which connects the ends of the upper and lower fixing frames; a position fixing means that is disposed on the bottom side of the end of the lower fixing frame having the handle disposed thereon and which places the lower fixing frame on a specific position; multiple supporting frames which are disposed to be vertically separated from the horizontal frames; a shock mount for absorbing shock which is mounted on the upper side of the supporting frame; and a rotating unit that is fixed on the upper part of the shock mount and which rotates and supports the AUV. The vibration-proof carrier vehicle with the rotating function for the maintenance of a cylindrical autonomous underwater vehicle according to the present	KOREA INST OCEAN SCI TECH	KR1020120082068	2012/7/27

336	An underwater robot system for eliminate the starfish	The present invention relates to an underwater robot for eliminating starfish and, more specifically, to an underwater robot which is covered with seashells and a seashell-shaped exterior material. Starfish approaches the underwater robot and inputs own stomach inside the robot after opening the entrance of the robot with tube feet. When the stomach is sensed by a contact sensor formed inside the robot and the robot senses the contact of the stomach, a driving unit of the robot operates and cuts the stomach of the starfish with cutting members formed on inner upper and lower sides of the robot so that the starfish loses vitality or the nutrient ingestion of the starfish is consistently prevented. The purpose of the present invention is provided to minimize damage to an aquaculture industry by eliminating asteroidea inhabiting in the river or the sea basin and eating fish and shellfish such as seashells.[Reference numerals] (110) Cutting member; (130) Driving unit; (131) Motor; (140) Power supply; (150)	LEE SANG YUN	KR1020120132134	2012/11/21
337	TEST BED FOR TESTING FUNCTION OF UNDERWATER ROBOT	The present invention provides an underwater robot. The underwater robot comprises : a robot body; multiple legs which are installed in the robot body to have multiple degrees of freedom; and one or more grip units which are installed in one or more legs among the legs to be foldable. The purpose of the present invention is to provide a test bed for testing the function of the underwater robot for developing various	KOREA INST OCEAN SCI TECH	KR1020120052411	2012/5/17

338	deep-sea unmanned underwater robot control system with indicator and imaginary wall as external device	PURPOSE : A position control system and method of a deep sea remote operated vehicle for exploring and collecting resources are provided to enable the precise exploration and collection of resources by preventing a collision even if multiple deep sea remote operated vehicles are simultaneously powered.CONSTITUTION : A position control system of a deep sea remote operated vehicle for exploring and collecting resources comprises a deep sea remote operated vehicle (10), an indicator, and external devices (20). The deep sea remote operated vehicle explores and collects resources in the deep sea. The indicator allows the deep sea remote operated vehicle to recognize the exploration and collection reference point of	LEE SANG YUN	KR1020120096852	2012/9/1
339	ICE MANAGEMENT METHOD USING VESSEL WITH CAISSON PIPE	PURPOSE : A drift ice management method using a vessel having caisson pipes is provided to enable a work on the water or the upper deck of a vessel without the underwater work of a driver or remotely operated vehicle (ROV) by easily performing a connection work with an anchor buoy on the water. CONSTITUTION : A drift ice management method using a vessel having caisson pipes is as follows. A first vessel is anchored to a first plant anchor arranged on the bottom of the sea to moor an offshore plant. A second vessel is anchored to a first plant anchor or second plant anchor. The first vessel and/or the second vessel move or crush drift ice by using the	SAMSUNG HEAVY IND CO LTD	KR1020110140438	2011/12/22

340	UNDERWATER ROBOT OPERATING DEVICE	PURPOSE : An underwater robot operation device is provided to enable the simultaneous and stable operation of multiple unmanned undersea vehicles without the tangling of cables. CONSTITUTION : An underwater robot operation device (200) comprises a support module (210), one or more underwater work modules (220), support cables (230), tangle prevention modules (240), a control part, and a relay module (250). The support module is located on the water. The underwater work modules are electrically connected to the support module through the support cables and have propulsion parts. The support cables comprise first and second cables (232, 234) and position recognition sensor parts. The tangle prevention modules are installed on the support cables and control the state and position of the support cables. The control part controls the operation of the underwater work modules and the	SAMSUNG HEAVY IND CO LTD	KR1020120036230	2012/4/6

341	static and dynamic positioning system and method using real time mooring line monitering	PURPOSE : A static and dynamic positioning system and method of an offshore structure using the real-time monitoring of a mooring line are provided to automatically and properly control and manage the positioning of an offshore structure by measuring the defects and tension of a mooring line and accurately estimating the service life of the mooring line.CONSTITUTION : A static and dynamic positioning system of an offshore structure using the real-time monitoring of a mooring line comprises a processor part (100), a mooring line optical sensor measuring part (200), a mooring line data measuring part (300), an external equipment connecting part (400), and a time information synchronizing and connecting part (500). The processor part has an algorithm control processor (600), a motor drive and hydraulic drive part (700), a motor and hydraulic device, and a signal transmitting and receiving part. The algorithm control processor controls the motor and hydraulic device using a pre-stored control algorithm. The mooring line optical sensor measuring part and data measuring part sense the tension change of a mooring line in real-time. The external equipment connecting part has a trigger input/output device (410) connected to the processor part. The time information synchronizing and connecting part has a GPS/Gyro/Sonar module (510) connected to the processor part.[Reference numerals] (100) Processor part; (20) Power supplying part; (200) Mooring line optical sensor measuring part; (310) Embedded sensor part; (320) Electric measuring sensor part; (400) External equipment connecting	CYTRONIQ CO LTD; LEE MICHAEL MYUNGSUB	KR1020120036946	2012/4/9

342	Apparatus for prevention of fule leakage and method thereof	PURPOSE : A device and method for preventing a fuel leakage in a vehicle are provided to prevent the fuel leakage from the roll over valve (ROV) of a fuel tank full of fuel when the vehicle running on a bump or a bump road.CONSTITUTION : A device for preventing a fuel leakage includes a fuel sensor (107), a pressure sensor (108), a control part (109), and a solenoid (105). The fuel sensor measures the amount of fuel inside a fuel tank in a vehicle. The pressure sensor detects pressure inside the fuel tank. The control part generates a fuel leakage control signal according to the measured amount of the fuel and the detected pressure inside the fuel tank. According to the fuel leakage control signal from the control valve, the solenoid actuates a closing rubber (106) at the final outlet of a roll over valve (ROV), and additionally opens or closes the final	SSANGYONG MOTOR COMPANY	KR1020120032958	2012/3/30
343	APPARATUS AND METHOD FOR CONTROLLING POSTURE AND BUOYANCY OF UNDERWATER ROBOT	PURPOSE : A device and a method to control posture and buoyancy for underwater robots are provided to control the buoyancy of the underwater robots as the liquid amount in a water tank is controlled if the liner movement of an eccentric piston is controlled by a first actuator and the position of the eccentric piston is controlled. CONSTITUTION : A device (10) to control posture and buoyancy for underwater robots comprises a cylinder (310), an eccentric piston, a first actuator (100), a prismatic joint (400), and a second actuator (200). The eccentric piston moves in the cylinder in the linear movement to access the liquid to the inside of the cylinder through a water hole. The first actuator is connected to the eccentric piston and moves the eccentric piston in the linear movement. The prismatic joint is installed in the eccentric piston. The	KOREA IND TECH INST	KR1020120072770	2012/7/4

344	Underwater Robot based on flapping	PURPOSE : An underwater robot based on flapping is provided to enable the simultaneous bending and twisting movement thereof by controlling the arrangement of a smart material and the direction of a directional material.CONSTITUTION : An underwater robot (100) based on flapping comprises a drive unit (120), a main body (110), and a control unit (130). The drive unit comprises a smart material and a directional material. The shape of the smart material is changed by an external signal. The directional material controls a change in a specific direction. The main body is connected to the drive unit. The control unit performs first and second strokes. The drive unit bends and/or twists the underwater robot by controlling the	SNU R DB FOUNDATION	KR1020120014687	2012/2/14
345	APPARATUS FOR LIGHTING UNDER THE SEA USING PRESSURE COMPENSATOR	PURPOSE : An LED underwater lighting device for the deep sea using a pressure compensator is provided to insulate a circuit of an underwater light and prevent damage to a lamp caused by external water pressure by using the pressure compensator and insulating oil. CONSTITUTION : An LED underwater lighting device for the deep sea using a pressure compensator includes a pair of fixing members which is formed corresponding to a curvature of an autonomous underwater vehicle (AUV); multiple lamp housings which are fixed to the fixing member and are filled with insulating oil; a heat radiation plate which is built in the lamp housing, has multiple stepped slopes on the surface, controls an angle, and radiates heat; a metal PCB which is installed on the stepped slope of the heat radiation plate and mounts an LED; a lens which is formed on the upper part of the metal PCB and limits the angle of light outputted from the LED within a constant angle; an LED power module which is installed on one end of the lamp housing and controls a voltage supplied to the metal PCB; a transparent window (228) which seals the opened upper part of the lamp housing; an O-ring which seals the gap between the window and the lamp housing; a fixing frame (230) which fixes the window to	KOREA INST OCEAN SCI TECH	KR1020120082067	2012/7/27

346	Robot fuselage for undersea exploration	PURPOSE : A fuselage for an underwater exploration robot is provided to restrain the bending and the deformation of a main body caused by water pressure or external shocks, thereby improving durability. CONSTITUTION : A fuselage (1) for an underwater exploration robot includes a hollow main body (10) having a housing space, and an end cap (20) at the end portion of the main body. The end cap closes the opened housing space. The main body includes an adapter (11) and at least one connecting pipe body (12) connected to the end portion of the adaptor. Fixing grooves are radially aligned in a row on the outer wall surface of the main body which comprises the adapter and the connecting pipe bodies. Supporting bars (30) are radially placed among the fixing grooves, and reinforce the main body in order to restrain the generation of bending in the	PYEONG HWA AUTOMOTIVE CO LTD	KR1020120031951	2012/3/28
347	UNDERWATER CLEANING METHOD USING UNDERWATER ROBOT	PURPOSE : An underwater cleaning method using a multipurpose underwater cleaning robot is provided to prevent secondary contamination which arises during a transfer process for burying depositions in landfill by transferring collected depositions which is effectively treated.CONSTITUTION : An underwater cleaning method using a multipurpose underwater cleaning robot comprises the following steps. The multipurpose underwater cleaning robot is put on a stream bed to be dredged (S100). A suction hopper and/or a crushing screw is operated (S200). A suction pumping of river depositions is firstly performed by using a first suction pump in the multipurpose underwater cleaning robot (S300). A suction pumping of river depositions which is secondary pumped by the firstly suction pumping is performed by using a second suction pump which is installed on a mother ship or on shore (S400). The depositions which are secondary inhaled and pumped are collected (S500).[Reference numerals] (AA) Start; (BB) End; (S100) Underwater cleaning robot inputting step;	KIM CHANG HO	KR1020120005551	2012/1/18

348	Lift frame for installation in a concrete mattress	PURPOSE : A lift frame for the installation of a concrete mattress is provided to accurately and easily confirm the release point of a concrete mattress at a barge.CONSTITUTION : A lift frame for the installation of a concrete mattress comprises a frame body (11), releasing parts (20), a release unit (30), and a vision camera (40). Hook holders are formed on the top surface of the frame body. The releasing parts are installed on one side of the frame body. The release unit is connected to the releasing parts and supports or release hanging ropes (2) coupled to both ends of a concrete mattress (1) depending on the operation of the releasing parts. The vision camera is installed on one side of the frame body and	HYUNDAI HEAVY INDUSTRIES CO LTD	KR1020110140808	2011/12/23
349	SEABED SURVEY SYSTEM USING MULTI-LEGGED UNDERWATER ROBOT WITH HYBRID MOVING FUNCTION OF WALKING AND SWIMMING	PURPOSE : A seabed exploration system using a multi-joint seabed robot is provided to enable seabed exploration in deep sea by transmitting seabed data through a seabed robot to a depot ship through a communication unit. CONSTITUTION : A seabed exploration system using a multi-joint seabed robot comprises a multi-joint seabed robot(100), a shock absorber(200), and a depot ship(300). The multi-joint seabed robot is comprised in order to compositely move. The multi-joint seabed robot comprises a first switching hub(150), a light fiber converter(152), a computer(162), a second switching hub(164), a video encoder(166), and an ultrasonic waves camera(20a). The shock absorber is connected to the depot ship with a first cable. The resistance of the first cable is transmitted to the shock absorber and is not transmitted to the seabed robot. The depot ship stores underwater state data	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020110135194	2011/12/15

350	Remote Operation Vehicle Having Variable Stabilizer	PURPOSE : A manless underwater work apparatus having a variable stabilizer is provided to improve driving reliability by adjusting the exposed area of a stabilizer when the direction of a remote operation vehicle (ROV) is controlled. CONSTITUTION : A manless underwater work apparatus having a variable stabilizer comprises a body (10), a stabilizer (30), and a drive module. The body is formed in a longitudinal direction and comprises a rear portion (20). The stabilizer is formed in the rear portion of the body to be longitudinally movable, and a part of the stabilizer is vertically exposed to the outside the body. When the stabilizer is moved frontward, the stabilizer is inserted into the rear portion of the body, and an area exposed	RED ONE TECHNOLOGIES CO LTD; SAMSUNG THALES CO LTD	KR1020120054116	2012/5/22
351	Apparatus for improving driving performance of ROV and Method for improving driving performance of ROV	PURPOSE : A device and a method for improving the propulsion performance of an ROV(Remotely Operated Vehicle) are provided to improve the propulsion performance moving with a tether cable underwater by providing propulsion in a partial area of the tether cable.CONSTITUTION : A device for improving the propulsion performance of an ROV comprises a body unit(10), a nozzle unit(30), and a fluid supply unit(50). The body unit is connected to a tether cable(7) mutually connecting a mother ship and the ROV to be rotatable. The nozzle unit is connected to the body unit and injects fluid to the rear side of the body unit. The fluid supply unit supplies the	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020110137629	2011/12/19

352	Underwater-type Autonomous Robot-kit	PURPOSE : A submersible autonomous navigating robot kit is provided to obtain the excellent underwater movement, waterproofing efficiency, and weight controlling ability capable of using in a submersible robot competition. CONSTITUTION : A submersible autonomous navigating robot kit comprises a body (100), a duct (200), a tail slide (400), a head slide (300), a propeller (500), a first shaft connecting member, a double driven control plate (700), a second shaft connecting member, a mass adhering plate (901), and a transfer member. The double driven control plate generates the yaw. The second shaft connecting member connects a rotary shaft of a second motor and the double driven control plate to a second shaft. The mass adhering plate generates the pitch in a lower part of the head slide. The transfer member horizontally transfers the	UNIV TONGMYONG IND ACAD COOP F	KR1020120010277	2012/2/1
353	Underwater robot and Method for controlling the same	PURPOSE : An underwater robot and control method thereof are provided to accurately sense an obstacle by setting a traveling path with considering the distance from the obstacle, the angle from a target spot, and the error degree along a trajectory. CONSTITUTION : A method for controlling an underwater robot comprises following steps. The distance and angle information about an obstacle on a traveling path is obtained by an infrared ray sensor(10). The shape and gradient of an obstacle are obtained using the angle information. A virtual three-dimensional coordinate is calculated using the underwater robot as the origin, and divided into cells. The	Pusan National University Industry University Cooperation FoundationKRKRKR	KR1020110046993	2011/5/18

354	smartphone to provide location information and dive condition.	PURPOSE : A smartphone providing diving information and conditions is provided to measure maximum diving time, maximum depth of water, current time, temperature, remaining gas pressure status, location, and bearing information, etc. which divers have to consider when diving, and to offer the measurements to a diving information management server, after downloading an application capable of acquiring diving conditions by using a smartphone. CONSTITUTION : A smartphone providing location information and diving conditions includes the following parts : a multi-port(130); a temperature measurement part(140); a compass providing part(145); a remaining gas pressure status acquiring part(150); a depth of water measurement part(155); a time measurement part(160), a GPS(Global Positioning System) location coordinate calculation part(165); an image information acquiring part(170); a heart rate acquiring part(173); a memory part(175); a user condition setting part(180) setting the diving conditions of a diver and storing in the memory part; a diving condition calculation part(185) calculating diving conditions which the diver should consider when diving, by reflecting individual diving conditions, depth of water measurement information, temperature measurement information, and time information in diving-related information; a diving condition checking part(190) checking if there is diving information required to be notified to the diver, by comparing the information measured by the time measurement part of the depth of water measurement part with the diving conditions calculated by the diving condition	CHOI YOUNG CHEOL	KR1020110110725	2011/10/27

355	DEVICE FOR SENSING POSITION OF UNDERWATER CART SWEEPING SLUDGE	PURPOSE : A position detecting apparatus of an underwater carriage for removing sludge is provided to remove sludge without interruption by arranging a covering member on the outer circumference of a lifting bar.CONSTITUTION : A position detecting apparatus of an underwater carriage for removing sludge includes a rotary member(311), a lifting member(330), a lifting bar(351), a corrugated member(371), a lift limiting member, an elastic member, at least one sensor member, and a bracket member. The lower part of the corrugated member is fixed to one lower part of the lifting bar and supports a lifting operation. The lifting bar is protected from water in a setting bath by being covered with the covering member. The elastic member applies elastic force to the lifting bar. The sensor member is installed between the lift limiting member and a detecting member to detect the lifting of the detecting member. The sensor member includes a first sensor(380a) and a second sensor(380b). The first sensor installed at the bracket member is positioned at one side of the lifting bar, and the second sensor installed at the bracket member is positioned at the other side of the lifting bar. The first sensor transmits	RIM BYONG HA	KR1020130006574	2013/1/21
356	Camera robot of buoy type	PURPOSE : A buoy-type camera robot is provided to grasp surrounding conditions, water pollution level, underwater ecological environment, and others with a monitoring part and to transfer data obtained by monitoring to a remote place.CONSTITUTION : A buoy-type camera robot(100) comprises a body part(1), a self power generating part(2), a monitoring part(3), a propulsion part(4), a wireless communication part, and a driving control part. The body part provides buoyancy on the water. The self power generating part comprises solar cells(21) arranged above the body part to enable self power generation using sunlight. The monitoring part monitors surrounding conditions. The propulsion part is mounted on the body part to provide propulsion force on the water. The wireless communication part transfers the data obtained by the monitoring part to a remote place and	CONVEX CO LTD	KR1020110111826	2011/10/31

357	Fuel Tank vaporization Gas Purge System	PURPOSE : A purge system for evaporation gas in a fuel tank is provided to satisfy HEV/PHEV without increasing the capacity of a canister by improving the efficiency of purge and the efficiency of collecting the evaporation gas. CONSTITUTION : A purge system for evaporation gas in a fuel tank comprises a vent line(30), an additional vent line(60), and a vapor control valve(40). The vent line is installed in a fuel tank, and collects hydrocarbon included in evaporation gas, and connected to a canister(4). The additional vent line is installed in the fuel tank, and connected to the canister and a ROV valve, which discharges the evaporation gas. The vapor control valve is installed in one side of the vent line, and closed by an ECU when purging an engine. One line of the vent line and additional vent line is connected to the other line, not directly connected to the canister.	HYUNDAI MOTOR COMPANY	KR1020100123774	2010/12/6
358	A MULTI-LEGGED SEABED WALKING ROBOT FOR SURVEY OF HIGH CURRENT AND HIGH TURBIDITY UNDERWATER ENVIRONMENT	PURPOSE : A walking robot for exploring underwater environment even under the water with high turbidity and high tidal current is provided to get over the tidal current, and to walk on the bottom of the sea. CONSTITUTION : A walking robot(100) for exploring underwater environment even under the water with high turbidity and high tidal current comprises a streamlined body(110), articulated walking legs(121, 122, 124, 126), a control unit, a leg driving unit, a sensing unit, and a communication unit. The articulated walking legs are mounted to the left and right sides of the body, respectively. The control unit is installed in the body, and controls the movement of the robot. The leg driving unit generates a signal for driving the articulated walking legs. The sensing unit senses the contact	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020110034845	2011/4/14

359	UNDERWATER ROBOT SYSTEM	PURPOSE : An underwater robot system is provided to enhance the limited movement of a ROV(Remotely Operated Vehicle) due to a tether cable and to work in a deep sea for a long time by installing the ROV in an active tether management system.CONSTITUTION : An underwater robot system comprises an active tether management system(100) and a ROB(300). The active tether management system has a first tether cable to receive power from a floating offshore structure to the underwater equipment. The ROB is connected to the active tether management system by a second tether cable and connects the first tether cable arranged in the active tether management system to the underwater equipment by detecting the position of the underwater equipment.[Reference numerals] (110) Interface unit; (120) Power unit; (130) Sensor	SAMSUNG HEAVY IND CO LTD	KR1020110124530	2011/11/25
360	Fuel supplying system for vehicle	PURPOSE : A fuel supply system for a vehicle is provided to simply arrange gas transfer pipes for connecting a fuel tank, a canister, and an engine and to minimize the occupying space thereof.CONSTITUTION : A fuel supply system for a vehicle comprises a fuel tank(101), a fuel pump(111), a canister(120), an ROV(Roll Over Valve)(118), and a flange(115). The fuel tank stores fuel. The fuel pump is positioned inside the fuel tank and supplies the fuel to an engine. The canister is positioned inside the fuel tank and supplies fuel evaporation gas to the engine. The ROV is positioned inside the fuel tank, and discharges the fuel evaporation gas to the canister in order to control the internal pressure of the fuel tank. The flange is fixed on the	RENAULT SAMSUNG MOTORS CO LTD	KR1020110097369	2011/9/27

361	APPROXIMATED MODELING METHOD OF GENERALIZED DRAG TORQUE ACTING ON MULTI-JOINT LINKS UNDERWATER ROBOT	PURPOSE : A method for approximately modeling fluid resistance torque applied to an articulated underwater robot is provided to allow for application to an L-E motion equation by approximately modeling fluid force and torque. CONSTITUTION : A method for approximately modeling fluid resistance torque applied to an articulated underwater robot comprises following steps. The application range of a hydrodynamic coefficient according to the section of the articulated links of a robot moving under the water is determined. The fluid force applied to the articulated links is approximately calculated. The fluid force torque applied to a joint coordinate system is calculated through fluid force applied to the articulated links. The fluid force torque applied to a joint coordinate system is converted into the fluid force torque, and the fluid force torque by the articulated links is calculated. [Reference numerals] (AA) Algorithm for calculating a motion equation of an articulated underwater link; (BB) Algorithm for calculating fluid resistance	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020110057773	2011/6/15
362	DETACHABLE ROV RAIL ASSEMBLY FOR VESSEL	PURPOSE : A detachable lobe rail assembly for a ship is provided to prevent the deformation of the exterior shape caused by external factors and to reduce maintenance costs.CONSTITUTION : A detachable lobe rail assembly for a ship comprises a pair of guide rails(100), a detachable connection unit(200) and a pocket unit. The pair of guide rails are installed erectedly on the outside surface of a ship and extended with a space from each other side by side. The detachable connection unit connects the guide rails detachably with the ship. The pocket unit is formed the outside surface and	STX OFFSHORE SHIPBUILDING CO LTD	KR1020110094155	2011/9/19

363	HYBRID UNDERWATER VEHICLE FOR MARITIME RESEARCH	PURPOSE : A hybrid underwater vehicle for marine exploration is provided to automatically keep the depth of water by combining the self controlling function of an autonomous underwater vehicle and a manual function of a remotely operated vehicle. CONSTITUTION : A hybrid underwater vehicle for marine exploration includes a main body(10), an external frame(20), a plurality of propellers(30), a network camera(40), a lamp(50), an adapter(60), and a manipulator. The main body is made of aluminum. An electric circuit part is formed in the main body. The external frame protects the main body. The network camera is installed at the front part of the main body. The lamp is installed at the lateral side of the	KIM JONG WOO; Bakyeji; LEE SEOUNG HUN	KR1020110059439	2011/6/20
364	a more convenient and secured J-Frame for Launching and Recovery of Man-Portable Autonomous Underwater Vehicles	PURPOSE : A J-shaped frame for conveniently launching and pulling a portable autonomous underwater vehicle is provided to improve convenience during launching and pulling and to prevent safety accidents during work. CONSTITUTION : A J-shaped frame for conveniently launching and pulling a portable autonomous underwater vehicle is composed of a J-shaped frame body(100), first and second lower parts(130, 140), first and second upper parts(110, 120), and a first handle(310). One side of the J-shaped frame body opens to place the body of an autonomous underwater vehicle. The first and second lower parts are protruded from the bottom of the frame body. The first and second upper parts are protruded from the top of the frame body. The first handle is arranged on a first horizontal	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020110070103	2011/7/14

365	PRESSURE MAINTAINING AND ANTIPOLLUTION TYPE PUSH CORE	PURPOSE : A push core for maintaining pressure and preventing pollution is provided to prevent a dilution caused by an inflow of seawater and to improve the reliability and precision of a specimen analysis because the collected specimen is accommodated to be safe. CONSTITUTION : A push core for maintaining pressure and preventing pollution comprises a collector(100), a cylinder(300), and a fixing cup(200). The collector collects a specimen through the operation of a manipulator after being inserted into a deep sea through ROV(Remotely-Operated Vehicle), thereby accommodating the collected specimen. A collector is inserted into the cylinder. The cylinder fixes the collector while sealing the upper part of the inserted collector. The lower part of the cylinder is inserted into the fixing cup, thereby being fixed. The	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020110035507	2011/4/18
366	Buoy type robot for monitoring conditions	PURPOSE : A buoy type monitoring robot is provided to grasp the water pollution, underwater ecological environment, and surrounding condition of rivers and sea using a monitoring unit, and to transfer obtained data to the desired remote location.CONSTITUTION : A buoy type monitoring robot includes a body unit(1), a self-electricity generator(2), a monitoring unit(3), a propulsion unit(4), a wireless communications unit, and a driving control unit. The body unit provides buoyancy. The self-electricity generator includes a solar cell which is installed on top of the body for self-generating electricity. The monitoring unit monitors the condition of surroundings. The propulsion unit is mounted on the body unit for providing driving force. The wireless communications unit transfers obtained data from the	CONVEX CO LTD	KR1020110088811	2011/9/2

367	Self power generating robot of buoy type	PURPOSE : A buoy type self-electricity generation robot is provided to transmit data obtained by monitoring to the desired remote location using a wireless communications unit.CONSTITUTION : A buoy type self-electricity generation robot includes a body unit(1), a self-electricity generation unit(2), a monitoring unit(3), a propulsion unit(4), a wireless communications unit(51), and a driving control unit. The body unit provides buoyancy from underwater. The self-electricity generation unit includes plural solar cells located on the upper side of the body unit for generating electricity using sunlight. The monitoring unit monitors the surrounding condition. The propulsion unit is mounted on the body unit. The wireless communications unit wirelessly transmits data obtained from the monitoring unit, and receives control commands for the	CONVEX CO LTD	KR1020110088812	2011/9/2
368	ROBOT CLEANER FOR WATER TANK	PURPOSE : A robot cleaner for a water tank is provided to conveniently remove deposits inside the water tank, and hygienically clean the water tank without discharging water stored inside the water tank since the waterproof body of the robot is submersible.CONSTITUTION : A robot cleaner for a water tank includes a body(10), a discharging pump, and a controller. The body is waterproof in order to submerge into the water tank, and equipped with a suction port(11), a discharging pipe(12), and wheels(13). The suction port separated from the bottom of the water tank at a certain distance sucks deposits. The sucked deposits are discharged outside the water tank through the discharging pipe. The body is movable, and is capable of changing movement directions with the wheels. The sucked deposits are discharged to the discharging pipe by the discharging pump. The automatic driving and manual driving mode of the body is converted into each other by the controller. The body is equipped with an underwater camera(14) for penetrating inside the water tank, and an ultrasonic sensor(15). When the controller sets the	SEOHEE INFORMATION TECHNOLOGY CO LTD	KR1020110081355	2011/8/16

369	ROV moonpool handling	PURPOSE : A method for handling a ROV(Remotely Operated Vehicle) for a drillship is provided to guarantee the safe handling of a drillship by installing a central moonpool to handle a ROV.CONSTITUTION : A method for handling a ROV for a drillship comprises a winch(6), a guide frame(3), a ROV holder(4), and an ROV(5). The winch is installed in one side of a moonpool(11) formed at the center of the drillship and generates power for lifting the ROV holder including the ROV. The guide frame is vertically installed in the lateral side of the moonpool to slidingly lift the ROV holder. The ROV holder is	HYUNDAI HEAVY INDUSTRIES CO LTD	KR1020110071868	2011/7/20
370	3-point link vector thruster and manufacturing method	PURPOSE : A 3-point link vector thruster and a manufacturing method thereof are provided to use in an underwater robot such as a small autonomous underwater vehicle.CONSTITUTION : A 3-point link vector thruster comprises a first ball joint(11), a second ball joint(12), a first linear actuator(21), a second linear actuator(22), and a second axial link(30). The first and second ball joints are attached at the top of a propulsion motor housing(2). One end of the first and second linear actuators is connected to the first and second ball joints, respectively. The other end of the first and second actuators is connected to a hull structure. One end of the second axial link is attached at the bottom of the propulsion motor housing and the other end thereof is fixed in the hull	KOREA OCEAN RESEARCH AND DEVELOPMENT INSTITUTE	KR1020100104570	2010/10/26
371	Emergency module device for Autonomous underwater vehicle	PURPOSE : An emergency module for an underwater robot is provided to communicate with administrators using an emergency module device when emergency situations are generated in an unmanned underwater vehicle.CONSTITUTION : An emergency module for an underwater robot comprises a GPS module(100') and a RF module(120). The GPS module comprises a GPS(110) and a GPS substrate(100) to generate position signals by sensing the current position of an unmanned underwater vehicle. When emergency situations are generated in the unmanned underwater vehicle, the FR module transmits the position signals and emergency signals receiving from a control part to administrators and transmits emergency	KOREA INSTITUTE OF OCEAN SCIENCE TECHNOLOGY	KR1020120028521	2012/3/20

372	Pectoral Fin Apparatus of Underwater Robot which uses Fish Swimming method	PURPOSE : A pectoral fin device of an underwater robot which uses fish swimming method is provided to control a direction of an underwater robot which uses fish swimming method because the 2D rotational movement of an actuator is changed into the 3D rotational movement by a plurality links. CONSTITUTION : A pectoral fin device of an underwater robot which uses fish swimming method comprises a control module(100) and two driving modules(200). The control module controls the forward-backward movement, a direction change, rising movement, and the submergence of an under water robot. The two driving modules are respectively comprised in both sides of the robot. The driving module converts the rotation of an actuator(210) into the movement of a fin plate(260) so that a lift force and propulsion are generated in the fin plate. The two driving module comprises actuators	KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY	KR1020100137957	2010/12/29
373	Robot Fish with Caudal Fin using Electromagnet	PURPOSE : An underwater vehicle including a propulsion pin using an electromagnet is provided to reduce the excessive movement of a body by reducing the torque of a caudal fin.CONSTITUTION : An underwater vehicle including a propulsion pin using an electromagnet includes plural propulsion pins(31) rotating around a hinge rod(20). Each propulsion pin has the separated phase difference to the vertical direction, and operates by the sinusoidal wave. The underwater vehicle also includes plural electromagnets, the	KOREA INSTITUTE OF MACHINERY MATERIALS	KR1020110059690	2011/6/20
374	REMOTE CONTROL SYSTEM AND METHOD FOR UNDERWATER ROBOT	PURPOSE : An underwater robot remote control method and system thereof are provided to prevent unnecessary energy consumption by aperiodically controlling plural underwater robots at a desired time in a remote place. CONSTITUTION : A gateway broadcasts preamble messages to plural underwater robots(S101). Plural underwater robot selects each subscription target cluster. The underwater robots transmits join messages to the gateway(S103). The gateway broadcasts a beacon frame to the underwater robots(S105). The underwater robot transmits underwater information collecting data to the gateway(S107). The gateway broadcasts each control message	GANGNEUNG WONJU NATIONAL UNIVERSITY INDUSTRY ACADEMY COOPERATION GROUP	KR1020100140293	2010/12/31

375	SUBMARINE ROBOT CONTROL SYSTEM AND METHOD FOR CONTROLLING THE SAME	PURPOSE : An underwater robot control system for fish management and a control method thereof are provided to increase momentum of fishes by applying external stimulus and to improve ability of ecology adaptation. CONSTITUTION : An underwater robot control system for fish management comprises an underwater robot(100), a remote control unit(200), an information analysis unit(300), and an information storage unit(400). The underwater robot swims under water. The underwater robot includes a remote communication module and an image acquiring module. The remote control unit remote-controls motion of the underwater robot. The information analysis unit analyzes underwater image information acquired from the underwater robot to set	IMTECHNOLOGY CO LTD; IMTechnology CO LTD	KR1020100106128	2010/10/28
376	Method for underwater sediment cleaning	PURPOSE : An underwater cleaning method is provided to prevent operators from exposing toxic materials and reduce time for supply and drain water of a storage tank. CONSTITUTION : An underwater cleaning method is as follows. A cleaning robot puts into a storage tank to prepare cleaning of the storage tank(S100). The cleaning robot drives in the storage tank and sucks polluted water including sludge piled on the bottom of the storage tank(S200). The polluted water is discharged to a tank located outside of the storage tank(S300). The sludge in the polluted water is discharged to the outside of	KOREA INSTITUTE OF ROBOT CONVERGENCE	KR1020110095241	2011/9/21

377	UNDERWATER CLEANING ROBOT	PURPOSE : An underwater cleaning robot is provided to completely automate a process for cleaning the surface of an underwater structure by cleaning while stably driving even in consecutively curved parts among the surfaces of an underwater structure. CONSTITUTION : An underwater cleaning robot comprises a driving part(500), a robot body(100), a body connection part, a cleaning head part(200), and a head connection part(400). The driving part moves along the surface of an underwater structure and comprises multiple driving modules. The body connection part connects the multiple driving modules to the robot body to be respectively rotated around a first direction, to which the driving part moves, a second direction vertical to the first direction. The cleaning head part comprises a cleaning module for removing foreign material attached on the surface of the underwater	SAMSUNG HEAVY IND COLTD; SAMSUNG HEAVY IND CO LTD	KR1020110001979	2011/1/7
378	Remote control robot for water purification	PURPOSE : An unmanned robot for purifying water is provided to prevent secondary pollutants from being generated by retaining at underwater.CONSTITUTION : An unmanned robot for purifying water includes a vessel body(10), a thrust part(11), a self-generating part(12), one or more ultrasound wave oscillators(13), and a controlling part(14). The vessel body floats on the surface of water. The thrust part generates thrust for moving the vessel body. The self-generating part includes a solar cell panel(12a) and a battery(12b). The battery condenses electric currents generated from the solar cell panel. The ultrasound wave oscillators receive the electric currents from the self generating part and emit ultrasound waves to water such that algae is removed from the water. The controlling part	FNINE CO LTD	KR1020110032574	2011/4/8

379	Artificial air bladders system of robot fish and drive method	PURPOSE : An artificial air bladder system for an underwater robot and a driving method thereof are provided to easily control the sensing information measuring the depth of water and inclination and information outputted from a sensor part with a control part and to accurately and rapidly move at a predetermined position of the underwater robot.CONSTITUTION : An artificial air bladder system for an underwater robot comprises a sensor part(100), artificial buoyancy adjusting parts(200), and a control part(300). The sensor part measures the depth of water and inclination of an underwater robot(400). The artificial buoyancy adjusting parts are respectively arranged in the front and rear of the underwater robot and control the buoyancy of the underwater robot through the inflow and discharge of the water. The control part calculates the current depth of the water and inclination by using the information measured in the sensor	KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY	KR1020110057596	2011/6/14
380	APPARATUS FOR MEASURING POSITION OF UNDERWATER ROBOT	PURPOSE : A location measuring of an underwater robot is provided to accurately measure the location of the underwater robot by receiving an underwater acoustic wave signal without receiving the obstruction of a curved protrusion of the bottom of a ship. CONSTITUTION : A plurality of first sound generating units(110) is attached to a plurality of locations corresponding to the bottom shape of a ship. The plurality of first sound generating units generates sound waves according to a sound wave generation signal received from outside. A second sound generating unit(120) is attached to a robot working in the bottom of the ship and generates sound waves to underwater. Three sound wave receivers(130) is separated from the bottom of the ship to underwater as constant distance and receive the sound waves from the plurality of first sound generating units and the second sound generating unit. A controller(140)	PARK WON CHUL	KR1020110015919	2011/2/23

381	SYSTEM AND METHOD FOR UNDERWATER ROBOT GLOBAL POSITIONING	PURPOSE : An underwater robot location measuring system and method are provided to measure the relative location information of a mother ship and an underwater robot based on the relative location information of the mother ship and a towing boat and the relative location information of the towing boat and the underwater robot. CONSTITUTION : An underwater robot location measuring system comprises a mother ship(100), a towing boat(200), and an underwater robot(300). The mother ship measures self-location through a DGPS(Differential Global Positioning System). The towing boat measures own location at the location separated with the mother boat. The towing boat obtains first relative information in regard to the mother ship by comparing location information of the mother ship and own location information. The underwater robot transfers distance	SAMSUNG HEAVY IND CO LTD	KR1020110053872	2011/6/3
382	MODULAR BACKUP FLUID SUPPLY SYSTEM	A system and method to allow backup or alternate fluid flow routes around malfunctioning components using removable, modular component sets. In one exemplary embodiment, an ROV (106) establishes a backup hydraulic flow to a BOP (22) function by attaching one end of a hose to a modular valve block (18, 77) and the other end to an intervention shuttle valve (16), thus circumventing and isolating malfunctioning components. A compound intervention shuttle valve (16) is provided that comprises first (100) and second (600) primary inlets, first (101) and second secondary inlets (601), and an outlet (50). A modular valve block is provided that comprises a directional control valve (40, 42), a pilot valve (41, 43), a manifold pressure regulator (45), a pilot pressure regulator	Transocean Offshore Water Drilling Inc	KR1020087004256	2006/8/2

383	Fish Type Robot	PURPOSE : An underwater fish robot adopting a small control circuit designing and waterproofing method is provided to prevent power short circuit and corrosion because a coupling part of first, second, and third plates is firstly waterproofed with liquid silicon and is secondly waterproofed with epoxy. CONSTITUTION : An underwater fish robot(100) comprises multiple frames(F1, F2, F3, F4), a controller(114), and multiple driving motors(116, 126). Multiple frames are physically connected through multiple gears. The controller is mounted on one of the multiple frames. The multiple driving motors are respectively mounted on the multiple frames and are respectively connected to the controller through waterproof cables.	KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY	KR1020100139413	2010/12/30
384	NTEGRATION COMMUNICATION METHOD AND SYSTEM FOR PERIOD DATA AND APERIOD DATA IN UNDERWATER	PURPOSE : A periodic and aperiodic data integrating communication method in underwater environment and communication system thereof are provided to simultaneously process data aperiodically transmitted and data periodically transmitted in underwater by including plural sensor nodes. CONSTITUTION : A sync node broadcasts a beacon message in a beacon section of a underwater communication protocol(S101). Plural underwater sensors and underwater robots confirm data transmission time through the beacon message(S105). The underwater sensor and robot periodically transmits underwater collecting data which previously collected in a CFP(Contention Free Period) of the underwater protocol. The sync node aperiodically transmits control data to the underwater robot in the CAP(Contention Access Period) of the underwater protocol(S107).	GANGNUNG WONJU NATIONAL UNIVERSITY INDUSTRY ACADEMY COOPERATION GROUP	KR1020100140292	2010/12/31

385	Cleaning robot, method and apparatus for underwater sediment cleaning	PURPOSE : A cleaning robot, a cleaning device and a method for cleaning underwater are provided to control a cleaning robot by operating an operation console while an operator is observing image by a camera, thereby the operator cannot be exposed to toxic material. CONSTITUTION : A cleaning robot(100) comprises a main body(110), a driving unit(120), a suction unit(130), and a tilt unit. The main body puts into a storage tank. The driving unit supports and moves the main body. The suction unit is arranged in the front of the main body and sucks polluted water including sludge in the storage tank. The tilt unit is supported in the main body to support the suction unit. The tilt unit turns the suction unit on a direction where a moving	POHANG INSTITUTE OF INTELLIGENT ROBOTICS	KR1020100080815	2010/8/20
386	Wearable robot in the underwater	PURPOSE : A wearing underwater robot for increasing muscular strength is provided to smoothly perform a kicking motion to a desired direction because a motion of a wearer is predicted in advance by using a sensor. CONSTITUTION : A wearing underwater robot for increasing muscular strength assists muscular strength for movement of feet and arms while swimming in the water. Signals and power are supplied through a connect post(C). A pin structure is automatically moved by a sensor so that a robot balances or	SEOK SANG HO	KR1020120011552	2012/2/6
387	Apparatus for measuring optical properties of retina	PURPOSE : An optical retinal property measurement apparatus is provided to compare blood vessel areas or branching angles by computing the blood vessel areas or the branching angles, thereby outputting quantitative retinal properties before and after performing an epiretinal membrane elimination process. CONSTITUTION : An eye-ground camera(110) records the bottom part of an eyeball. A first data storage device(120) stores a bottom part image of the eyeball. A blood vessel selection device(130) selects first and second major blood vessels. A second data storage device(140) two-dimensionally stores the first and second major blood vessels. A center detection device(150) determines the center of an optical disc or an eye socket. A quantitative retinal property calculation	SNU R DB FOUNDATION	KR1020100086178	2010/9/2

388	Multi degree-of-freedom underwater operation robot based on unmanned surface vehicle	The present invention relates to a remotely operated vehicle (ROV); and more specifically to a remotely operated vehicle (ROV) based on an unmanned, underwater robot with multi-degree of freedom, which is inexpensive and easy to install and transport and which can provide a stable remote control and an accurate position control and maintain posture, thereby making it possible to maintain an underwater structure and to monitor and investigate the ecosystem. According to the present invention, a precise position control of the ROV is possible even with an inexpensive sensor, and an inexpensive underwater robot can be used for high-speed precise control of	KOREA MARITIME UNIVERSITY INDUSTRY ACADEMIC COOPERATION FOUNDATION; Korea Maritime University Industry Academic Cooperation Foundation	KR1020090109013	2009/11/12
389	CROSS-TYPE SEGMENT POWER SUPPLY	The present invention relates to a cross-segment feed device capable of turning on/turning off individual modules, and more particularly, to a cross-segment power feed device that can turn on or turn off a power feed for each feed module, by modularizing non-contact feed lines for various moving bodies, such as a vehicle, an under-water moving body, or a robot. According to the present invention, one or a plurality of feed modules can be selectively turned on or turned off by controlling a switch that regulates the direction of the electric current flowing through each of the feed modules, without the need to install a common line separately from the feed line in order to supply power to each of the feed modules, thereby reducing the cost for installing the common line and improving	KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY; Korea Advanced Institute of Science and Technology	KR1020100052341	2010/6/3

390	Power Transmission Device for Under Water Robot	PURPOSE : A power transmission device for an underwater robot is provided to remove a sealing member by delivering the drive force of a drive motor to a rotary shaft through a contactless coupling structure using magnets.CONSTITUTION : A power transmission device for an underwater robot comprises a first and second magnet(154, 158). One or more drive motor(150) is installed in the internal space of a front side body(110). The first magnet is installed in the end part of the driving shaft of the drive motor. One or more pivot axis is installed in the internal space of the back side body. The second magnet is installed in the end part of the pivot axis coping with the first magnet. The second magnet is magnetized with	KOREA INSTITUTE OF MACHINERY MATERIALS	KR1020090113615	2009/11/24
391	Shaft Sealing Device for Under Water Robot	PURPOSE : A shaft sealing device for an underwater robot is provided to secure the watertightness between a drive shaft and a sealing member. CONSTITUTION : A shaft sealing device for an underwater robot comprises front and rear side bodies(110, 120), one or more drive motors, and sealing parts(150a, 150b). The drive motor is installed in the internal space of the front side body. Through-holes(111, 121), in which a driving shaft(155) of the drive motor passes through, are formed in each external side of the front and rear side bodies. The sealing part shuts the interval between the inner surface of through-holes and the external side of driving shaft. The driving shaft passes through the first and second center holes(151a, 152a) of the first and second magnetic materials. Magnet is	KOREA INSTITUTE OF MACHINERY MATERIALS	KR1020090113616	2009/11/24
392	Intelligent unmanned robotic autopilot	The shape of "intelligent unmanned automatic action navigation robot" and combination of the shape are combined to the essentials of the creation. 1. The material is the metal. 2. It is manufactured in order to the present application design intelligent unmanned automatic action navigation robot do the minor for the underwater detection etc. with mount and have the continental shelf detection of deep, the identification of the underwater object, the search of the sunken vessels, and	Ahmoseutek	KR3020100047911	2010/11/4

393	Intelligent unmanned robotic autopilot	The shape of "intelligent unmanned automatic action navigation robot" and combination of the shape are combined to the essentials of the creation. 1. The material is the metal. 2. It is manufactured in order to the present application design intelligent unmanned automatic action navigation robot do the minor for the underwater detection etc. with mount and have the continental shelf detection of deep, the identification of the underwater object, the search of the sunken vessels, and	Ahmoseutek	KR3020100047932	2010/11/4
394	Intelligent unmanned robotic autopilot	The shape of "intelligent unmanned automatic action navigation robot" and combination of the shape are combined to the essentials of the creation. 1. The material is the metal. 2. It is manufactured in order to the present application design intelligent unmanned automatic action navigation robot do the minor for the underwater detection etc. with mount and have the continental shelf detection of deep, the identification of the underwater object, the search of the sunken vessels, and	Ahmoseutek	KR3020100047938	2010/11/4
395	Charging system for underwater exploration robot and charging method	PURPOSE : A charging system and method for a battery of an underwater discovery robot are provided to enable efficient underwater discovery by ensuring continuous operation of an underwater discovery robot. CONSTITUTION : An underwater discovery robot(100) comprises a battery(130) and transmits a charge request packet according to the remaining amount of the battery. A charging station(200) operates an electromagnet in response to the charge request packet in order to place the underwater discovery robot in a charge position with the magnetic force. The battery is charged through electromagnetic induction between a first coil and a second coil which are	Korea Academy of Industrial Thechnology; KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY	KR1020090072006	2009/8/5

396	UNDERWATER ROBOT FOR SLUDGE COLLECTING	PURPOSE : An intelligent underwater robot for collecting sludge is provided to prevent a main body from being completely separated from a rail by moving the main body on the rail in the opposite direction to a progressive direction. CONSTITUTION : An intelligent underwater robot(100) for collecting sludge comprises a main body(110), a drive unit, a scrapper(130), and a separation sensing/operation control unit(140). Multiple drive shafts(111) coupled to wheels(112) are rotatably installed in both ends of the main body. The main body is slid on a rail(20) through the drive unit. The drive unit rotates the drive shafts. When the main body is moved on the rail, the scrapper pushes out sludge of a settling pond(10). The separation sensing/operation control unit senses the position of the rail. When the main body is separated from the rail, the separation sensing/operation control unit changes the rotation direction of the drive shafts and returns the main body.	HUR JONG HYUNG	KR1020110018931	2011/3/3
397	Dark neutral green-gray colored soda lime glass composition	The present invention relates to a dark neutral green gray soda-lime glass composition comprising, as a colorant ingredient per 100 weight parts of a base glass composition, 1.4 to 2.5 weight parts of total Fe 2 O 3 , 0.02 to 0.04 weight parts of CoO, 0.0001 to 0.004 weight parts of Se, 0.005 to 0.5 weight parts of MnO 2 , and 0.05 to 1 weight parts of CeO 2 . The glass composition of the present invention has a visible light transmittance (LT A) of 15% or less, an ultraviolet ray transmittance (T uv) of 0 to 1%, and a solar transmittance (T sol) of 15% or less, measured for a reference thickness of 4mm. As described above, the glass composition of the present invention is excellent in absorbing ultraviolet rays and	KEUMKANG CHEMICAL CO LTD; KCC CORPORATION	KR1020090015456	2009/2/24

398	Obstacle Sensor of Underwater Robot for sensing and avoiding of obstacles, Underwater Robot and Method thereof	PURPOSE : An underwater robot, obstacle detector of an underwater robot for sensing and avoiding obstacles and method of sensing and avoiding an obstacle using an underwater robot are provided to detect an obstacle by sensing pressure applied to a spring, not using magnetism.CONSTITUTION : An obstacle detector of an underwater robot(100) comprises at least one proximity sensor(132), a spring(134) and attachments(136). The proximity sensor is installed on the outer end of the body of the underwater robot. One side of the spring is connected to the proximity sensor. The spring supplies pressure applied from its other side, to the proximity sensor. The attachments are attached to the other side of the spring. When the attachments make contact with an obstacle, which is laid ahead, the attachments transfer pressure to the spring. While the underwater robot moves, the obstacle make contact with the	RESEARCH INSTITUTE OF INDUSTRIAL SCIENCE TECHNOLOGY	KR1020090134444	2009/12/30
399	SEACHEST GRATING STRUCTURE OF VESSEL	PURPOSE : A sea chest grating structure of a ship is provided to facilitate opening/closing of a grating and maintenance of a sea chest by employing an ROV(Remote Operated Vehicle).CONSTITUTION : A sea chest grating structure of a ship comprises a grating(10) and a locking unit(20). The grating is hinged on a sea chest(5) and rotated to be opened/closed. The locking unit comprises a locking bolt(21) which is coupled to a side of the sea chest, a locking lever(22) which is fixed to the end of the locking bolt, and a locking hole(23) in which the locking lever passing through the grating placed on the sea	SAMSUNG HEAVY IND CO LTD	KR1020090124083	2009/12/14
400	Letters Input Apparatus	PURPOSE : A character input device is provided to reduce the number of input letters while inputting an English sentence by assigning the alphabet to 1 to 4 units for each key while keep a encyclopedic sequence in a keyboard or a touch screen using keys more than dozen.CONSTITUTION : The alphabet of 26 units is divided to dozen like ab, cd, efg, h, ijk, lm, n, opq, r, s, tuv and wxyz, and is successively assigned to the key of dozen. The first or the fourth alphabet among the alphabet which is assigned to the key is inputted according to times	JANG SOON GIL	KR1020110049283	2011/5/25

401	Training underwater robot for studying the ecology of fish	PURPOSE : An underwater robot for training the adaptation of fish to the ecology is provided to monitor a fish training situation and an unexpected situation since an image taking unit takes images of an underwater situation according to the operation of the underwater robot.CONSTITUTION : An underwater robot for training the adaptation of fish to the ecology comprises a power supply unit(10), a control unit(30), a driving unit(50), and a sensor(20). The power supply unit supplies an independent source. The control unit is connected to the power supply unit and controls the operation of the underwater robot. The driving unit is connected to the control unit. The driving unit drives some or all of a body according to a control signal. The sensor is connected to the control unit.	GANGWON PROVINCIAL COLLEGE INDUSTRY ACADEMIC COOPERATION FOUNDATION	KR1020090096354	2009/10/9
402	Charging system for underwater exploration robot and charging method	PURPOSE : A charging system and a charging method thereof are provided to guarantee continuity of the underwater research by smoothly implementing the recharging of the underwater research robot in the water. CONSTITUTION : An underwater research robot(100) comprises a combining member charging a battery(150) by the electromagnetic induction. The combining member comprises a second body and a secondary coil wound around the outer surface of the second body. The underwater research robot implements the	Korea Academy of Industrial Thechnology; KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY	KR1020090070005	2009/7/30

403	The connecting structure of remote operated vehicle for rock berm ship	PURPOSE : A structure for connecting a remote-controlled submarine to macadamize in the deep sea is provided to cancel vertical force, which is applied to the remote-controlled submarine using a flexible pipe-connecting structure.CONSTITUTION : A structure for connecting a remote-controlled submarine(107) to macadamize in the deep sea comprises a pipe connecting structure(10), a power cable(121) and a wire rope(123). The pipe connecting structure comprises a plurality of pipes and a cover. A ball protrusion is formed on one end of the pipe and a flange is formed on the other end. The cover is linked to the ball protrusion to be coupled to the flange and connects one end of the pipe to the other end. One end of the pipe connecting structure is fixed to the remote-controlled submarine. The power cable supplies	BUMA CE LTD	KR1020090079610	2009/8/27
404	SOLAR HEAT ROBOT SCUM REMOVING MACHINE	PURPOSE : A solar heat robot scum removing machine is provided to reduce the maintenance cost by removing a scum through the use of solar light.CONSTITUTION : A primary overflow ware(16) adjusts the excessive inflow of a flowing stream, and two underwater pumps(21) discharges a saturated flowing stream. An upper cover(13) cuts off the inflow of rain, and a charging battery(12) is installed at the upper portion of the upper cover. A flat steel bar(22) is installed at the lower portion of a scum box(10), and plays a rubber role and a weight role. Through a discharge pipe(24), a scum is removed	SON SUN AE; LEE BYUNG SAM	KR1020090067106	2009/7/23

405	Device for monitoring leakage of fuel vapor gas of vehicle	PURPOSE : An evaporative gas leakage sensor of an automobile is provided to prevent over-refueling by first and second orifices. CONSTITUTION : An evaporative gas leakage sensor of an automobile comprise a fuel tank(10), a ROV(Roll Over Valve, 20), and a canister(30) and a PCSV(Purge Control Solenoid Valve, 40). The fuel tank comprises a vent line(11) and a filler neck(12). The vent line discharges gas generated from fuel. The filler neck guides a lubricator when supplying fuel. The ROV is located on top of the fuel tank with a first orifice. The canister is connected to a first pipe line(25) to the ROV. A PCSV is installed in a second pipe line(35) interlinking the canister and an engine. The ROV has the first orifice of 8.5mm diameter	Ssang Yong Motor Company; SSANGYONG MOTOR COMPANY	KR1020080062229	2008/6/30
406	UNDERWATER EXPLORATION ROBOT AND NAVIGATION METHOD USING THE SAME	PURPOSE : A robot for exploring the environment under the water and a navigation method using the same are provided to enable a subminiature design since power consumption is reduced and thus a small capacity of battery is needed.CONSTITUTION : A robot for exploring the environment under the water comprises a body, a plurality of control fins(30), a gripping part(50), a buoyant part and a communication part. The control fin controls the operation of the body. The gripping part grips or releases a weight(60) for applying negative buoyancy. The buoyant part applies positive buoyancy. The communication part enables external communication. The angle of each control fin is individually controlled. If the depth of the water reaches a given value, the	POHANG INSTITUTE OF INTELLIGENT ROBOTICS	KR1020090058608	2009/6/29
407	CHARGING SYSTEM FOR UNDERWATER EXPLORATION ROBOT AND CHARGING METHOD	PURPOSE : A charging system and a method thereof are provided to continuously execute a water exploration process by smoothly charging the batter of a robot. CONSTITUTION : A charging system comprises an underwater discovery robot(100) and a crane type charge station(200). The underwater discovery robot has a battery(130). The crane type charge station comprises a charge part(260) and a crane(220). The charge part charges the battery of the underwater discovery robot. The crane senses the underwater discovery robot by using an	KOREA IND TECH INST	KR1020090072005	2009/8/5

408	Device for intercepting HC gas from canister	The present invention refers to canister in vehicle of relates to device for anti gas leak HC, canister gas HC film in a path site coming to air filter in detecting a presence or an absence of a HC detection sensor and solenoid 2 way valve is carried out by installing a, HC gas is drawn out of the canister into the atmosphere via a air filter from being released to the shape so as to be contacted to a vehicle HC of canister relates to device for anti gas leak. The present invention refers to fuel tank evaporation gas generated within ROV and ORVR and canister collects the through a valve to an actuator for, amounting to the outlet of canister is air filter in a device for processing evaporated gas fuel including, a at the exit of canister said HC detection sensor and; said outlet side of canister is, activated carbon in a canister one passageway is connected toward layer, of the other of passages is connected to line that is in communication with the air filter a solenoid 2 way valve and; the input side the	KIA MOTORS CORPORATION	KR1020040096653	2004/11/24
409	A Master System for Workspace-Operated and Automatic control of Tele-Operated Underwater Manipulators	PURPOSE : A master system for driving and automatically controlling the work space of a remote control underwater robot arm is provided to maximize the efficiency of work necessary for repetitive movement about the same posture.CONSTITUTION : A workspace-operated controller(10) controls the joint of whole robot are by commanding the command about a position and a posture of a tool located in end of the arm of a robot area on a working space. An automatic controller(20) automatically controls the posture of the robot arm with only a joint location command. By inputting the command about a location and posture of a end of a area of a slave robot arm, a worker conveniently operates the	KOREA OCEAN RESEARCH AND DEVELOPMENT INSTITUTE	KR1020090032719	2009/4/15

410	submersed position directing apparatus of a submarine robot	PURPOSE : A device for indicating a submersed position of a submarine robot is provided to rapidly confirm a submersed position of a submarine robot when the submarine robot is moved under a pre-set water level.CONSTITUTION : A device for indicating a submersed position of a submarine robot comprises a position detecting unit. The position detecting unit has a fixed member(10), a floating member(20), a position transmission unit(30), a connection rope(40), and a separated operating unit(50). The fixed member is fixed to the outer surface of a submarine robot body. The floating member is detachably coupled to the fixed member. The position transmission unit is coupled to the floating member and transmits the position of the floating member. The connection rope connects the fixed member and the floating member. The separated operating unit separates the floating member from	GANGWON PROVINCIAL COLLEGE INDUSTRY ACADEMIC COOPERATION FOUNDATION	KR1020090015812	2009/2/25
411	AUV retrieval apparatus	PURPOSE : An underwater equipment collecting system is provided to enable the underwater equipment to rise to the surface by an automatic operation when the underwater equipment cannot be operated or collected.CONSTITUTION : An underwater equipment collecting system comprises an internal pressure housing(10), a buoyant balloon(20), a gas tank(30), and a control unit(50). The buoyant balloon is formed outside the internal pressure housing. The gas tank is connected to the buoyant balloon through the electronic control valve. The gas tank injects gas into the buoyant balloon.	UNDERWATER SURVEY TECHNOLOGY CO LTD	KR1020090010316	2009/2/9

412	A SUBMARINE ROBOT FOR COLLECTING SEAFOOD	Seafood moving bottom sea the device to scrape a knock the boards together to simultaneously defragmentation, which seafood are as blocks, of robot relates to sea for collecting seafood which can be, in the sea into the sea while the abutting with the ground when a mobile means, said mobile means seabed by refrigerant delivered from the lower stage cause suction of the are seafood purpose : a process for a suction means, said moving means is fixed to suction while moving along the moving means bow through the means of an suck which can be containing seafood member, and said moving unit then is calculated for one frame to front, marine rotation support for control to a water craft in-water transmission Image has a camera. Furthermore, the device of camera for using medical service and transmitted from Image based on moving means and a suction means is drive-controller that generates a control signal to a remote controller and, remote controller said in response to a control signal transmitted from the moving means and a suction means is drive-the further include controllable heating supply which can be a. According in the device which is not prepared with an orifice ship decongested by controlling the robot sea for collecting seafood for remotely controlling by spring force adjusting apparatus of hinge can be mobile to freely. Furthermore, the device Image sea to ship control, could transmit the, suction pipe cause suction of the seafood placed in front of the square frame overlying seafood into a mesh can be piling. Furthermore, the absorption tube is designed into a square frame of the door and a left direction can be is moved	KIM JAE YEON	KR2020100005986	2010/6/8

413	FUEL PUMP MODULE UNITED USE CANISTER AND ROLL OVER VALVE	PURPOSE : A canister and ROV(Roll Over Valve) integrated fuel pump module is provided to enable easy installation in a fuel tank regardless of the height of the fuel tank and the length of parts of the fuel pump module.CONSTITUTION : A canister and ROV integrated fuel pump module comprises a flange part(10), a reserve cup(20), and a plurality of pipe parts(30). The flange part is installed in a fuel tank(50) so that the upper end thereof is flush with the top of the fuel tank. The reserve cup contacts the fuel tank through the bottom surface thereof. The pipe parts connect the flange part and the reserve cup so that a gap(A) of fixed length is formed between the flange part and the reserve cup and the fuel pump module is installed in the fuel tank. The pipe parts are formed longer than a sum of the length(C) of a canister(40) and the gap in order to prevent the separation between the flange part and the reserve cup. The reserve cup has a guide unit(21) formed lengthwise on the outer or inner circumference thereof and a stopper(22) for	HYUNDAM INDUSTRIAL CO LTD	KR1020080132637	2008/12/23
414	Underwater robot	The shape of "underwater robot dredge" and combination of the shape are combined to the essentials of the creation. 1. The material is the metal, and the plastic material. 2. It is the instrument which ejects the deposit soil through the discharge hose to the dozer box which is on ground have while the entry of the dump truck was impossible and it mobilized the forklift and bulldozer in the river dredging to the river with the some part and it pulled the dredged soil to ground and the dump truck raised but the underwater robot dredge which looks	KIM IN SIK	KR3020090005664	2009/2/12

415	Underwater vehicles controlled by using gyro momentum approach	PURPOSE : An underwater robot using gyro momentum is provided to control a posture using gyro momentum of a pyramid gyro without using an exterior propeller.CONSTITUTION : An underwater robot using gyro momentum comprises an underwater robot body, a pyramid gyro(120), and a gyro controller. The gyro controller controls a posture of the underwater robot body by operating the pyramid gyro. The pyramid gyro comprises four gyros(121, 122, 123, 124). Each gyro has gimbals(121a, 122a, 123a, 124a) and wheels(121b, 122b, 123b, 124b). The gimbals are rotated around gimbals shafts. The wheels are rotated around wheel	INDUSTRY FOUNDATION OF CHONNAM NATIONAL UNIVERSITY	KR1020080087386	2008/9/4
416	Composite sharp	Such as blade with compass to mechanical pencil one the device canoe while as the core part, economical and cover provides the ease efficiently use method for the device to provide mechanical pencil, pen with button on the upper surface ROV (20) constituting the, said mechanical pencil toward a side of the cut blade (30) constituting the, toward a	LEE JUNG YOUNG	KR2020080011762	2008/8/30

417	Catamaran Boat with going up and coming down fluoroscopes for watching underwater	The device equipped with trade name a lifting observation water pair similar type boat, a pulsating current is based the windows 2000 server/professional a calmed down as surface resistance or-holes are provided in an (lake, to manufacture, for example, motor), as well as the typical use in small boat said trade name part observation water water (around window : [...]) is vertically moved on board a marine vessel operation of observed water the trade name n the case of need and observation by a fourth, the function of a handle of vertical articulated robot trade name supplied to the prevent the damage or the mobile of trouble in a device is installed to an equipped with trade name a lifting observation water pair similar type boat by a rope. is provided. In the device equipped with trade name enlargement hull boat, to increase the propulsive pair eastern fluid and both sides of; said planar longitudinal hull between the pair eastern fluid a central axle from which protrudes projection it comes on time, , protruding material integrally projection it comes on time, central said trade name added to one side formed in; said fluoroscope and trade name a hoistway in which inserted into support; said mobile on trade name hoistway hereinafter	LEE JUN GOO	KR2020090015130	2009/11/23
418	Silt Removal Apparatus by Using Barge and Underwater Robot	PURPOSE : A dredging device which removes slit using a barge and an underwater robot is provided to effectively dredge slit and shells on the bottom of a pipeline and an open chamber.CONSTITUTION : A dredging device which removes slit comprises a barge and an underwater robot. The underwater robot is connected to one side of the barge, and dredges slit on the bottom. And the underwater robot comprises a suction pipe(152), a discharge pipe(153), and a rotation unit(154). Two pipes are formed in the suction pipe to be each other corresponded. The discharge pipe is located	KIM DONG HEE	KR1020090059265	2009/6/30

419	Deep-sea Unmanned Underwater Vehicles System	A complex deep unmanned submarine system is provided to improve work efficiency because the underwater launching apparatus which is the underwater movable station and remote control unmanned submarine help each other. A complex deep unmanned submarine system comprises an underwater launching unit(100) which is connected to the oceanographic vessel floating on the sea with a iron coating cable and enables depth control with a ship winch and supports remote control unmanned submarine(200) and performs underwater observation independently, a remote control unmanned submarine which performs sea-floor exploration and precision operation, and a ship control system(300) which monitors and	KOREA OCEAN RESEARCH AND DEVELOPMENT INSTITUTE	KR1020080000366	2008/1/2
420	Method for improving quality of water	PURPOSE : A method for improving quality of water is provided to prevent environmental contamination while preventing vibration and noise due to dehydration operation, and to reduce the time and the costs by suspension of work.CONSTITUTION : A method for improving quality of water includes the following steps of : moving a transfer pipe to the surface of an operation place or mounting a transfer pipe to a dredging robot; (S10); settling sludge on the bottom by dropping the dredging robot or a dredging machine to underwater(S20); transferring the sludge to the outside by rotating a screw or a brush(S30); injecting the transferred sludge into a dehydration pipe having membrane structure(S40); recycling filtered water from the outside(S50);	HWANG SEUNG MIN	KR1020090050616	2009/6/8

421	ROBOT WORKING MACHINE FOR UNDERGROUND	PURPOSE : A method for dredging an intercepting sewer using an underwater robot dredger is provided to efficiently dredge while controlling an underwater robot dredger by an underwater camera mounted in the underwater robot dredger. CONSTITUTION : A method for dredging an intercepting sewer using an underwater robot dredger comprises the following steps. A connection line of a monitor(284) for monitoring an underwater camera is connected to underwater cameras(280, 280-1, 280-4) and underwater lights(282, 282-1, 282-2). A discharging hose(334) and a power line(312) wound in a discharging hose reel(330) are connected to the underwater	KIM IN SHIK	KR1020090065167	2009/7/17
422	Small Autonomous Underwater Vehicle Test-bed	PURPOSE : A small unmanned submarine test bed is provided that the time to be required to the engineering development and experience accumulation is cut down.CONSTITUTION : A small unmanned submarine test bed comprises a front part(11), a central part, a rear part, a front cap, a rear cap, a hull, a drive motor(21), a driving part consisting of a linear stepping motor(22) which is connected in order to get sunburned with the rudder(14) and elevation and run in(15), a main computer(36) having the software for operating, a frame grabber(32) which interface is connected, a battery(37) for being connected to CAN(Controller Area Network) module(33) and power converter(38) and permitting the power, a control means(30) comprised of the equipped screw motor amplifier(39) between the drive motor(21) and single board processor(31), a measuring means(40) which is installed at the hull inside and is comprised of a plurality of sensors (41, 42) for control and execution of duty, a communications means for	KOREA OCEAN RESEARCH AND DEVELOPMENT INSTITUTE	KR1020070079420	2007/8/8

423	ROBOT WORKING MACHINE FOR UNDERGROUND	PURPOSE : An intercepting sewer dredging method using an underwater robot dredge is provided to prevent damage to parts mounted on the magnetic track main body of the underwater robot dredge or damage to a wall of an intercepting sewer. CONSTITUTION : An intercepting sewer dredging method using an underwater robot dredge comprises a power pack, a reel system, an underwater robot dredge(200), and a sludge separator. The power pack is installed outside the intercepting sewer. The reel system is formed to reel or release a power hose and a discharge hose to perform the dredging work of the underground according to movement of the underwater robot dredge. The reel system includes a power reel system, a discharge reel system, and a reel system adjusting device. In the discharge reel system, the discharge hose is reeled and mounted on the frame. The power hose of the reel system is connected to an encapsulated oil	KIM IN SHIK	KR1020090044768	2009/5/22
424	SILT REMOVAL APPARATUS BY USING BARGE AND UNDERWATER ROBOT	An apparatus for removing tideland using barge and underwater robot is provided that the tideland of the conduit line floor and open chamber is effectively removed. An apparatus for removing tideland using barge and underwater robot comprises a barge(11) operated in the open chamber of the generating station, a slurry pump(12) installed inside barge, a hose(13) for the suction protruded to the barge outside, an underwater robot(14) absorbing the tideland at the floor of the conduit line and open chamber. The underwater robot includes an underwater pump, an absorbing tube extended due to the absorbing hole of the underwater pump,	KIM DONG HEE	KR1020070080045	2007/8/9

425	unmanned surface vehicle to support AUV fleet	PURPOSE : An underwater-water surface linked communication platform relaying communications with an underwater discovery leading end and a bus lines or a land control room is provided to detect an economic discovery without additional bus lines cost.CONSTITUTION : An underwater communication modem controls a communication and location tracking sequence under the water. A GPS(Global Positioning System) and an antenna control the communications at aquatic and positional system sequence. An RF(Radio Frequency) antenna and WLAN(Wireless Local Area Network) antenna perform communications with the bus lines. A camera monitors a navigating situation on a real time basis by transmitting the	KOREA OCEAN RESEARCH AND DEVELOPMENT INSTITUTE	KR1020070137234	2007/12/26
426	UNDERWATER NAVIGATION SYSTEM FOR A PLATOON OF MULTIPLE UNMANNED UNDERWATER VEHICLES USING RANGE MEASUREMENTS ON TWO REFERENCE STATIONS AND INERTIAL SENSORS	An underwater navigation system of a front end of an unmanned underwater vehicle using range measurements on two reference stations and inertial sensors is provided to reduce a manufacturing cost by eliminating expensive inertial sensors or expensive speed sensors. A main UUV(Unmanned Underwater Vehicle)(M) transmits a signal corresponding to a position thereof through a sound transducer(100). Sound transponders(210, 220) of two reference stations receive the signal from the mother UUV. The sound transponders output response signals after a predetermined delay period. A plurality of sub UUVs(D1) receive the signal of the main UUV in order to record the received time and to detect the position of the main UUV. The sub UUVs receive the response signals, measure the received time, calculate a distance of the two reference	KOREA OCEAN RES DEV INST	KR1020070027156	2007/3/20

427	Remote Control Underwater Dredging Robot	PURPOSE : A remote control underwater dredging robot is provided to remove the underwater sludge in an environment-friendly and efficient way while minimizing the secondary pollution due to the suspended material.CONSTITUTION : A remote control underwater dredging robot comprises : a suction hopper(115) which is located at the front side of the underwater dredging robot and draws sludge into an inlet; a rotor(116) which is fixed inside the suction hopper, prevents damage to the impeller of a hydraulic suction pump, and crushes the shell, timber and stone included in the sludge in order to prevent the inlet from being blocked; the hydraulic suction pump(108) which is located in the center of the suction hopper and inhales the sludge through the inlet; a delivery pipe(109) for transmitting the sludge inhaled by the suction pump to a mother ship; a caterpillar(112) which is positioned at the edge of the delivery pipe to connected the delivery pipe to a suction hose of the mother ship and makes the underwater dredging robot move back and forth; and an underwater ultrasonic positioning device(106) chasing the location of the	KOSSCO CO LTD; JANG SOON WOOK	KR1020070119488	2007/11/22
428	Knife for leisure	The device provided to improve reliability knife for leisure, scabbard of with an outer surface of the upper part (4) having fitting (3) is formed, the scabbard of abrasive member rear view (7) is formed, abrasive member (7) top of projection (10) is formed on a characterized by, said band (4) the recess (5) by forming a leather belt to easy to inserting a fitting, said protrusions (10) high high the (15) is formed in bottom low and the other (14) as a characterized by it, the for cutting meat of projections (10) the ROV (2) characterized by to form a, said, which fits into a knife is for cutting meat the, said protrusions (10), which fits into a connection (13) for the formed between the blade and a handle, in addition a standing position the incision unit without any the stepped portion (34) by forming a the incision unit without any edge (22) and saw blade (21) and formed side by side in a, narrow than on the top of handle	JEONG JAE SEO	KR2020070018094	2007/11/9

429	Underwater photography device capable of acquisition of image for multi-direction	Angle and predetermined photographing water the device are cut a plurality of individual camera and of light lamp position is disposed between the to keep the lighting light when photographed by the Image position measuring apparatus the degradation of the quality of interference to prevent a thin film, and individual lighting ramp on the basis of the required camera selectively lighting or/and driving the storage in the direction the object to be taken only the location of the. after finishing the Image picked up with a seam in the direction of gravity of the robot in its only specific Image is Image various video data for displaying the display member comprising a convenience function, in a very simple way the opening thermoplastic resin or a thermosetting resin the structure a multi-directional process underwater photographing device relates to, semi-spherical and said photographing water, of the program said constant portion of a and the tip section formed by cutting a, of a front end part of the central and the water-repellent treatment, which camera is located inside the inner surface by coupling elements to is capable of taking a number 1 and camera, said 90° intervals a control signal of the controller with a built-in camera via a treated for water repellency, and is capable of taking a each direction to and camera number 4 to number 2, number 4 to said number 2 side of body of said camera via a treated for water repellency.	PATIMA U/W ENG CO LTD	KR1020070011476	2007/7/12
430	Method and apparatus for accessing underwater cables or pipes	A method and apparatus are provided for accessing a cable or pipe (9) buried underwater in a layer of material (10). The method comprises urging a tool (1) through the layer of material (10) by fluidising the material adjacent the tool (1) such that the tool may be positioned at or adjacent the position	GLOBAL MARINE SYSTEMS LIMITED	KR1020037003300	2003/3/5

431	A flashlight	The device relates to flashlight, ramp or light emitting diode (LED) battery storage device a head portion, said head portion connected to the rear end and, a battery within a plastic is has a receiving space for receiving the is as well as a handle member, said handle portion and connected to the rear end, an intermediate cap form an accommodating space, which is connected at the rear part cap intermediate said rear in on the flashlight as well as enables a cap, said cap (kindling device) tool ignition in inner space of the container at said intermediate, candle (Candle) and a whistle or is stored (whistle) said rear lead form an accommodating space (kindling device) tool ignition in said receiving space and, candle (Candle) and a whistle or is stored (whistle), or said intermediate P.E. rear barrel device (kindling device) tool ignition in inner space of the container at extending, candle (Candle) and a whistle (whistle) are stored in the characterized in that. Said battery is the flashlight of the device comprised of a phase for the previous frame fell a candle can be used during the mobile (Candle) possible to prevent that a broken, carry size that all of the first and an ignition field fairly when tool (kindling device) and a whistle (whistle) on the flashlight as well as enables a store together only when the flashlight is kept	KIM TAE HYEONG	KR2020070011294	2007/7/6

432	Streamlined cylindrical shell module connecting structural configuration	A streamlined cylindrical shell pressure hull connecting structure is provided to simply connect a modularized pressure hull regardless of a small thickness of the pressure hull such as an AUV(Autonomous Underwater Vehicle). A streamlined cylindrical shell pressure hull connecting structure includes a circular partition(5), a pressure hull(1), and a fixing band(3). The circular partition is a circular plate type structure installed inside the pressure hull to support the pressure hull and the fixing band against external pressure. The pressure hull is a cylindrical structure integrated with the circular partition by being coupled with both end surfaces of the circular partition. The fixing band is a cylindrical structure integrated with the circular partition and the pressure hull by being simultaneously	KOREA OCEAN RESEARCH AND DEVELOPMENT INSTITUTE	KR1020070028744	2007/3/23
433	ROV FOR CLEANING AND INSPECTION OF SHIP HULL	An underwater robot for cleaning and inspecting a ship hull is provided to rapidly and efficiently perform cleaning and inspection work for a ship by controlling the underwater robot using a managing console. An underwater robot for cleaning and inspecting a ship hull comprises vertical/horizontal propellers(16, 17) installed at one side of the underwater robot to move the underwater robot in the vertical and horizontal directions, a water jet spraying device(31) installed in front of the underwater robot, a wheel(26) driven by a driving motor to change the moving direction of the underwater robot, a controller(25) for controlling the operation of the vertical/horizontal propeller, the water jet spraying device, and	PARK WON CHUL; DSME E R LTD; DAEWOO SHIPBUILDING MARINE	KR1020070037366	2007/4/17

434	A Device on Optical Guidance for Underwater Docking of Autonomous Underwater Vehicles	PURPOSE : An optical guide device for underwater docking of an Autonomous Underwater Vehicle(AUV) and an underwater docking method are provided to safely dock the AUV to an underwater base by installing an underwater lighting unit at an inlet of a docking unit and making the AUV recognize the lighting unit. CONSTITUTION : An optical guide device(40) for underwater docking of an AUV is composed of a conical fixed unit(41) fixed to an inlet side of a docking unit, and a plurality of LEDs(43) arranged on the front of the fixed unit in two rows to form a pair of light sources and connected with each other parallel. The LEDs are waterproofed with soft film. Five semicircular light source groups(#1-#5) are installed at the top, bottom, right, left and portion with an inclination of 45 degrees of the outer circumference of the fixed unit. The	KOREA OCEAN RESEARCH AND DEVELOPMENT INSTITUTE	KR1020030032757	2003/5/23

435	Launch, Recovery and Procedure for Underwater Equipment	PURPOSE : An apparatus and a method for launching and pulling up underwater equipment are provided to prevent damage to a power/communication cable connected to the underwater equipment when launching and pulling up the underwater equipment. CONSTITUTION : A first rope(90) is used when launching underwater equipment(30) with neutral buoyancy. A crane(40) is installed at a side of a ship or a quay and pulls up or down the underwater equipment connected to the first rope by winding or unwinding the first rope connected to a winch(60). A docking apparatus(70) is installed at an end of the crane and stably fixes the underwater equipment to the crane when launching or pulling up the underwater equipment. A release hook(160) is installed at an end of the first rope and transmits tension of the first rope to the underwater equipment by being temporarily coupled with the underwater equipment to connect the first rope and the underwater equipment. A release rope is connected to the release hook and separates the release hook and the underwater equipment from each other by pulling the release hook. A second rope(100) is put underwater together with the underwater equipment by being fastened with a coupling ring(120) of the underwater equipment when the underwater equipment is launched and wound around the winch by being connected to the end of the first rope when the underwater equipment is pulled up. A net cover(180) is opened	KOREA OCEAN RESEARCH AND DEVELOPMENT INSTITUTE	KR1020070028743	2007/3/23

436	ROV for Cleaning and Inspection of Ship Hull	PURPOSE : An ROV(Remotely Operated Vehicle) for cleaning and inspecting a ship hull is provided to prevent an accident in an underwater operation and perform cleaning accurately and quickly without an interruption by equipping the ROV with a wheel for moving and changing direction and multiple detecting devices for an accurate condition of the ROV. CONSTITUTION : An ROV for cleaning and inspecting a ship hull comprises the followings : a vertical and a horizontal propeller(16, 17) installed at a side of the ROV to move vertically and horizontally to a necessary place underwater; a brush(27) installed at a side of the ROV and operated by a driving motor to remove a barnacle and sphagnum attached to a ship hull; a wheel(26, 30) for moving and changing direction installed at a side of a surface contacting the brush of the ROV and operated by a driving motor to enable the ROV to do a cleaning operation while moving to a desired direction; a control unit(25) installed at a side of a frame(11) of the ROV, to control the vertical and the horizontal propeller, the brush for cleaning, and the wheel for moving and changing direction; an IMU(Inertia Measurement Unit, 21), a DVL(Dopper Velocity Loger, 22), a depth sensor, and an LBL-APS(Long Base Line Acoustic Positioning System, 18) installed at a side of the frame, to detect a moving angle, a moving direction, a depth of water, and an accurate position of the ROV; and an operating console connected to the control unit of the ROV and located	DAEWOO SHIPBUILDING MARINE ENGINEERING CO LTD; DSME E R LTD; PARK WON CHUL	KR1020060119427	2006/11/30

437	Active water pollution monitoring and pollution source tracing system	PURPOSE : An active water pollution monitoring and pollution source tracing system is provided to improve efficiency in tracing and monitoring a pollution source by using complete manless monitoring system and tracing the pollution source without additional manpower. CONSTITUTION : An active water pollution monitoring and pollution source tracing system comprises an underwater self-controlled robot(10) and a tracing system. The underwater self-controlled robot capable of moving itself under the water has a propeller shape or a fish shape with a built-in water quality measuring device. The tracing system uses one self-controlled robot or more, and monitors a pollution source cooperatively	INDUSTRY FOUNDATION OF CHONNAM NATIONAL UNIVERSITY	KR1020060087792	2006/9/12
438	MECHANICAL EQUIPMENT TO CLOTH AN ARMOR STONE ON HARBOR SURFACE IN THE UNDERWATER	PURPOSE : An automation system for covering an underwater breakwater is provided to prevent various industrial disasters and to improve poor working conditions, and to prevent the delay in construction work due to the weather on the sea, waves, tides, etc., and to manage construction work and quality of construction easy by observing working conditions and performing breakwater covering work. CONSTITUTION : An automation system for covering an underwater breakwater for mechanizing and automating the covering work for all water surface or underwater breakwaters comprises a robot arm device(10) hanging on a chain rope(3) of a crane(2) and including a parallel mechanism having one central shaft and two linear actuators located on two sides of the central shaft and making rotational movements in the x-axis and y-axis directions, propelling screws making rotational movements in the z-axis direction and a clamping mechanism clamping armor stone, and an observation device observing working conditions on the breakwater under covering work and including an observation mechanism(30) with a transparent box observing objects clearly in the water having high opacity and a	CHANGWON NATIONAL UNIVERSITY INDUSTRY ACADEMY COOPERATION CORPS	KR1020060122246	2006/12/5

439	ROV Valve structure	PURPOSE : A roll over valve structure is provided to suppress discharge of the air and an evaporated gas to the ambient air and prevent a spit back phenomenon that fuel flows back through a filler neck. CONSTITUTION : A roll over valve structure includes a fuel pump(6). The fuel pump is installed in a fuel tank(1) to pump fuel into an engine. An roll over valve(10) is formed on the fuel tank to supply an evaporated gas to a canister. The roll over valve includes a housing(11) coupled to an upper part of the fuel tank. A valve body(13) is formed in the housing to pass the evaporated gas therethrough. A nipple(15) is formed at an upper part of the housing to be coupled to a tube connected to the canister. A division(16) projects outward from an outer periphery of the valve body to primarily block the fuel overflowed from the fuel tank. A slope(18) is formed at a	KIA MOTORS CORPORATION	KR1020050118525	2005/12/7
440	Collecting and lifting methods of manganese nodule and mining device	Disclosed herein are a mining device for mining manganese nodules, which comprises a mining surface ship, a collector, and a recovery device, and a collecting and lifting method using the device. Without having a rising pipe between a collector which mines manganese nodules scattered around sea bottom and a mining surface ship, manganese nodules are carried a net-type or a box-type recovery device. In the mining device, the collector is operated by a control cable form the mining surface ship or by the remote control of an ultrasonic transceiver. Manganese nodules are discharged by a collector to a recovery device or sucked by a suction pipe, which is installed at a recovery device and attaches a small ROV (Remote Operating Vehicle) at the end. After stacking manganese nodules, the recovery device is lifted to the mining surface ship by a lifting cable or a buoyancy controlling device. It would be a collecting and lifting method and a mining device	YOON KIL SOO; PUKYONG NATIONAL UNIVERSITY BUSINESS INCUBATOR CENTER	KR1020050003971	2005/1/15

441	Cathode-ray tube	PURPOSE : A cathode ray tube is provided in which inner atmospheric pressure strength and beam strike neck margin are sufficiently secured and deflection consumption power is effectively reduced to increase deflection sensitivity. CONSTITUTION : A cathode ray tube includes a panel having a fluorescent screen at the inner surface thereof, a funnel connected with the panel, a neck connected to the end of the portion having the smaller diameter of the funnel, at which an electron gun is placed, opposite to the fluorescent screen, and a deflection yoke accommodating area(50) between the end of the neck and the panel. If the deflection yoke accommodating area reaches at least the side end of the screen of the deflection yoke from the portion connected to the neck, the value obtained by dividing Td by Tv or Th is in the range of 0.5 to 0.85 when the axis ranging from the connection portion to the end of the deflection yoke accommodating area is divided by n, the thickness of the shorter side at each of the divided	LG ELECTRONICS INC; LG Electronics Inc	KR1019990016635	1999/5/10
442	Floor composed of synthetic resin with bar code	The present invention refers to automatic working robot autonomous moving apparatus is able to be the necessary data to two-dimensional provided synthetic resin where a bar code is printed is. treatment is made. For the same back layer for underwater horizontal the present invention according to; lower part foaming layer or lower non-firing layer ; substrate layer; protection layer pattern provided surface pattern and with skin layer employs a buffer system for buffering substrate and hydroxycarbonates method for built-surface including surface layer; is in floor material attached to a layer of a synthetic resin, said is bar	HANWHA L C CORPORATION	KR1020040115233	2004/12/29

443	Pixel circuit having shared interconnections/transistors in image sensor and driving method thereof	PURPOSE : A pixel circuit having interconnections/transistors shared in an image sensor and a driving method thereof are provided to interconnect or operate signals/transistors requested in unit pixels through common contacts with neighboring pixels, thereby optimizing the entire interconnection of an APS array. CONSTITUTION : A pixel circuit having interconnections/transistors shared in an image sensor includes a reset transistor(RG) operating according to a reset control signal, and a source-follower transistor(SF) operating according to a signal transmitted to an FD(Floating Diffusion) node. A reset signal based on the signal transmitted to the FD node via the reset transistor and an image signal based on a signal transmitted from a PD(Photodiode) to the FD node are outputted via the source-follower transistor. The reset transistor is connected between a node of the shared first signal(ROV) supplied through the same contact(SH1) as a reset transistor of a neighboring pixel and the FD node. The source-follower is supplied with the shared second signal(SFV) supplied through the same contact(SH2) as a source-follower transistor of	SAMSUNG ELECTRONICS CO LTD	KR1020050048823	2005/6/8
444	Underwater Transportation System by an Autonomous Underwater Vehicle	PURPOSE : An underwater transportation system by an autonomous underwater vehicle is provided to automatically store signals inputted from various sensors and a GPS into a database of a management server and always check stored data through a wireless communication terminal. CONSTITUTION : In an underwater transportation system by an autonomous underwater vehicle, a propeller(15) and a rudder(16) for propulsion and direction conversion are located at one side of the underwater vehicle. A GPS(Global Positioning System) receiver(12) receives a position coordinate of a fairway in real time. A sonar array(17) detects an underwater terrain for understanding an underwater location of the underwater vehicle. A sonar(18) includes an ultrasonic transceiving device. And a system controller(14) includes devices setting a starting point, an intermediate path, and a destination and controlling	DSME UTECH CO LTD; WOO JONG SIK	KR1020050121492	2005/12/12

445	Underwater Cable Surveying System with a Manned Submarine	PURPOSE : An underwater cable surveying system with a manned submarine is provided to directly repair abnormal parts of the underwater cable in a manned submarine by operating a robot arm. CONSTITUTION : In an underwater cable surveying system with a manned submarine, a robot arm(250) catches an underwater cable or other underwater facilities. A pair of fixed plates(300) are installed toward a front side. A pair of crossing bars are connected to the front end of the fixed plates by a connecting member and a fixing bracket. A plurality of detecting sensors detects a location and a malfunction of the underwater cable or other underwater facilities. And an	KOREA ELECTRIC POWER CORPORATION; SUBSEATECH CO INC	KR1020050076663	2005/8/22
446	Alphabet Inputting System for digital terminal	PURPOSE : An alphabet input system for a digital terminal is provided to enable a user to select one of a basic type that the user can input characters in a normal keyboard unit only and an interworking type that the user can input the characters even in a direction key unit according to the user's typing environment or taste, so that the selected type can be executed, thus user convenience is increased.CONSTITUTION : A character assignment unit separates 26 alphabets into 8 groups(ABC, DEF, GHI, JKL, MNO, PQRS, TUV, WXYZ) to assign the separated alphabets to a 3x3 grating type character assignment part. The ninth preceding combinative key is located on the very center of the 3x3 grating type character assignment part where the 8 alphabet groups are assigned. A direction key unit indicates 4 directions or 8 directions interworked with the 3x3 grating-type character assignment part. The fifth or ninth preceding	KIM SANG KEUN	KR1020050030169	2005/4/12

447	lineless submersible motor pump	The present invention refers to amount, drainage for using relates to window air conditioner. The present invention refers to intended for the supply wires built in type completely excluded by using one address signal as a source of electrical potential, battery, even lock assembly like output from the battery used as well as, outdoor, such a current feed is difficult using more effectively between the set minimum value and the in which it is possible, external connected to a power supply voltage can be used as a light-a separate auxiliary power supply device by, extending time using the robot operator at low cost may be used in, the screen or charger periphery device operated using a inserts the issue numbers in off-the handling means of electric cables free provides underwater pump. Provided in the present invention in-water pump are in side by side relationship for motor mounting that is isolated while a space for installation and the battery in the event of a space one ferroelectric film egress of fluids thus, outlet of a vertical passage is provided in the form housing open downward installed in said frame and batteries mounted on the space, the bottom side of said frame is assembled while finish the sucking of fluid intake and discharge is a outlet of fluid that is suction while having tube induced inlet of monitor and the monitor casing, said frame and stand the casing finish the bottom of the space is disposed a vertical feed through shaft is assembled while a first shaft an a plurality of bearing and confidential for is provided with a plurality of threads with a-first/second the bearing housing connected to the inner, said space is disposed	JMI CO LTD	KR1020050057448	2005/6/30

448	Cathode-ray tube	The disclosed cathode-ray tube has a panel provided with a fluorescent screen on an inner surface thereof, a funnel joined to the panel, a neck joined to the funnel and provided with electron guns facing the fluorescent screen, and a pyramidal yolk mounting part provided in a region extending from the neck side to the panel side, the pyramidal yolk mounting part having an inside profile in a rectangular form projecting to the outside of the funnel with fixed radii of curvature, the rectangular cross section of the yolk mounting part being designed to have the ratio of a radius of outer curvature to a radius of inner curvature in the range of 0.70<=Rov/Riv<=0.90 and 0.70<=Roh/Rih<=0.93, wherein Rov and Riv are radii of outer and inner curvatures on the minor axis perpendicular to the tubular axis, respectively; and Roh and Rih are radii of outer and inner curvatures on the major axis perpendicular to the tubular axis, respectively. Thus the yolk mounting part has the optimized ratio of a radius of outer curvature to a radius of	LG ELECTRONICS INC; LG Electronics Inc	KR1019990016890	1999/5/12
449	Underwater Detection System Using Submarine Wireless Communication Method	The present invention refers to using for wireless communication in underwater relates to system the bottom of the sea, more particularly fruit Figure (ROV) and a top clearance of of sea unlike the deep sea fruit Figure (AUV) wireless communication center a top clearance of ship and as the system transmitting Image data to, a reception unit, a control transmitting, tensioned by counterrotating reception component using only wire for linking top clearance of surface the ship and the sea is disconnected possibility, which eliminates a device of the compressor isolates an and to satisfy the, [...] a system and photographing to prevent damage of fish and shell continuous ultrasonic wide area irradiation device simultaneously have the features of being two-way acoustic wave detector object the gas-feeding device feeds to the	KOREA OCEAN RESEARCH AND DEVELOPMENT INSTITUTE	KR1020040113223	2004/12/27

450	Method for the position measurement of under water reactor inspection robot	PURPOSE : An apparatus is provided to accurately calculate the position of an underwater robot in a reactor by using a laser pointer, sensor, motor, encoder, and a water level detector. CONSTITUTION : An apparatus comprises a pan/tilt module(3) constituted by an encoder and a two-axis motor having a laser point for providing optical information to a position sensitive detector, wherein the pan/tilt module is arranged at the center of the bottom surface of a reactor; a position sensitive detector sensor module having a position sensitive detector sensor(6) horizontally fixed at the center of the top of an underwater robot; a water level sensor(9) attached on the underwater robot so as to provide, in a real time basis, information of depth of underwater robot in the reactor; and a personal	KOREA ATOMIC ENERGY RESEARCH INSTITUTE; KOREA HYDRO NUCLEAR POWER CO LTD	KR1020030023639	2003/4/15
451	Underwater Robot System for Reactor Internals Inspection and Foreign Objects Removal	PURPOSE : An underwater robot system is provided to reduce an amount of radiation beating down on workers by shortening inspection time and to improve safety of a reactive power plant by enabling inspection on lower and upper core plates and removing pollutants from the power plant. CONSTITUTION : An underwater robot system for inspecting a reactor internal structure and removing pollutants therefrom includes an underwater robot(100), a measurer(200), and a remote controller(300). The underwater robot includes a high luminescence LED on an upper portion, a vertical-horizontal thruster, and an underwater camera. The underwater camera pictures an internal portion of the reactor. The measurer processes a luminescence pattern of the LED to measure position and posture of the underwater robot by using an upper camera. The remote controller obtains a control value from a difference between a water depth signal from a sensor	KOREA ELECTRIC POWER CORPORATION; KOREA HYDRO NUCLEAR POWER CO LTD	KR1020030053910	2003/8/4

452	INCLINE MEASUREMENT EQUIPMENT	In the device is, outer shell the canister and can be electrically opened existing angle measurement functions based on the horizontal wherein the outer membrane while the angle output efficiency are increased and the orientation to the application of uneven even when inclination angle capable of measuring a measuring device having a ramp surface is relates to, circular angle table watch (10) using as a measuring system including slanted angle as to; said angle table watch (10) is connected to a rear side and adapted to be secured with route only column form of controlling a horizontal level of member (20) and said goniometer (10) of central shaft part (11) center of which lies on the transverse so as to be capable of rotation horizontal adjusting member (20) form route only column rear end an upper electrode and a lower electrode tilt adjuster of member (30) having a unit for said horizontal adjusting member (20) balance adjusting mode for videocamera member (30) position variable locking structure angle a it is possible to know a line from a second (21, 31) is displayed at a high temperature; said horizontal adjusting member (20) the upper surface of a display orientation publicly known of ROV (22) and liquid pipe (23a) and air bubble (23b) are provided for electrically coupling the horizontal state a it is possible to know a publicly known of leveling instrument (23) is transparent cap (24) are expected to exhibit prominent and to; said horizontal adjusting member (20) are obliquely adjusting member (30) of the each switch (41	KIM SEUNG MIN	KR2020060003787	2006/2/10

453	robert working machine for underground	PURPOSE : An underwater robot dredging machine is provided to dredge sewerage automatically using an unmanned dredging robot regardless of the size or folding state of a sewer pipe. CONSTITUTION : An underwater robot dredging machine executes dredging work by installing a hydraulic engine unit(100) provided with a hydraulic pump(130) on the ground(C), placing a dredged soil collecting vehicle(400) around an opening(A) of a sewer system, placing an unmanned dredging robot in a sewerage box(B) of an underground sewer system, installing a hose roll wound or unwound with a power hose and a discharge hose on a frame of the dredged soil collecting vehicle, digging in the ground using an auger screw attached to the front of the dredging robot and eddying soils, suctioning the eddied soils through a suction opening by the vacuum generated by driving an underwater suction pump with the rotary power of an underwater motor and discharging the	KIM IN SHIK	KR1020050078533	2005/8/26
454	Method of regenerating a corroded water supplying pipe	PURPOSE : A method for reviving an old water pipe is provided to improve safety of an operator and coating efficiency by minimizing leakage of water caused by a flaking phenomenon of a pipe line by flatly forming a coated surface by checking all surfaces by using a camera. CONSTITUTION : A method for reviving an old water pipe comprises a step of inspecting information about an inside of a pipe line(S1); a step of removing sludge by using a grinding robot(S2); a step of uniformly treating an inner surface of the pipe line by the grinding robot equipped with a grinding roll(S3); a step of accurately injecting dead material underwater solidifying paint to a center portion of the pipe line and coating the inside of the pipe line(S4); a step of planting the paint for regular time(S5); and a step of passing water to inspect	INFOGREENTECH CO LTD; DNC CO LTD	KR1020040048644	2004/6/26

455	Apparatus and method of internet-based control for underwater robot	PURPOSE : A device and a method for remotely controlling an underwater robot using a mobile terminal or a PC through the Internet are provided to remotely control the underwater robot of an ROV(Remotely Operated Vehicle) type, and entire system configuration between a user on the land and the underwater robot in the sea through the Internet. CONSTITUTION : A user terminal(10) remotely controls the underwater robot(50) through the wired/wireless Internet. A server(20) is connected to the user terminal, and manages video information and control data of the user terminal. Located in an exploration ship(30), a control computer(31) controls the underwater robot by receiving a remote control command of the user terminal from the server. The underwater robot performs observation in the sea-bottom. A power supply/video signal/control line(40) transfers power, a video signal, and the control command between the control	KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY	KR1020040033493	2004/5/12
456	robert working machine for underground	For dredging sewer pipe the device relates to underwater dredger robot, more particularly dredging robot (200) is connected over an underground gate to perform the task underground ground in response to movement of power hose (314) and corrugated (334) is roll hose end (300) and dredging robot (200) attached to the front surface of a [...] (210) is connected over an underground [...] the land dig into the vices surface (210) and indoor unit of 4-the earth-and-sand by submersible motor (230) of the slightest rotational force is water suction pump (232) the a high vacuum pump of the earth-and-sand by [...] vortex (210) is mounted to the rear surface of, a suction opening (220) is drawn to corrugated (240) and an outlet pipe (242) and is expelled through the and a power run a remote with attraction force is the forwards or reverse operation may free sewage pipe as well as reservoir, classification sewer pipe well! , sewage underdrain, flowing	KIM IN SIK	KR2020050024582	2005/8/26

457	Remotely Operated Vehicle Capable of Receiving and Transmission Using Ultrasonic Wave	PURPOSE : An ROV(Remotely Operated Vehicle) transmitting and receiving image data through ultrasonic waves is provided to obtain image signals about the desirable place by transmitting and receiving the image signal through the ultrasonic waves and calculating underwater correction GPS(Global Positioning System) coordinates on the basis of GPS coordinates of a mother ship. CONSTITUTION : An ROV(Remotely Operated Vehicle) having an ultrasonic transceiver(210) communicating with a mother ship, exploring the underwater, and obtaining an underwater image consists of the ultrasonic transceiver for receiving a control signal from the mother ship and transmitting the image signal obtained from the underwater to the mother ship; an image obtaining unit(140) for obtaining the image signal for the underwater or exploring the underwater; a device control unit(110) for modulating and controlling the obtained image signal into a signal capable of being transmitted to the mother ship through ultrasonic waves at real time; a lighting unit(150) for lighting up an object to obtain a clear image signal from the deep sea; a propelling unit(120) for supplying propulsion force to the ROV to approach the ROV toward the desirable place to obtain an underground image signal; a ballast(310) controlling upward	KOSSCO CO LTD	KR1020050051244	2005/6/15

458	lineless submersible motor pump	Amount the device, drainage for using relates to window air conditioner. The device intended for the supply wires built in type completely excluded by using one address signal as a source of electrical potential, battery, even lock assembly like output from the battery used as well as, outdoor, such a current feed is difficult using more effectively between the set minimum value and the in which it is possible, external connected to a power supply voltage can be used as a light-a separate auxiliary power supply device by, extending time using the robot operator at low cost may be used in, the screen or charger periphery device operated using a inserts the issue numbers in off-the handling means of electric cables free provides underwater pump. In-water pump provided in the device are in side by side relationship for motor mounting that is isolated while a space for installation and the battery in the event of a space one ferroelectric film egress of fluids thus, outlet of a vertical passage is provided in the form housing open downward installed in said frame and batteries mounted on the space, the bottom side of said frame is assembled while finish the sucking of fluid intake and discharge is a outlet of fluid that is suction while having tube induced inlet of monitor and the monitor casing, said frame and stand the casing finish the bottom of the space is disposed a vertical feed through shaft is assembled while a first shaft an a plurality of bearing and confidential for is provided with a plurality of threads with a-first/second the bearing housing connected to the inner, said space is disposed	JMI CO LTD	KR2020050018921	2005/6/30
459	multifunctional pencial	Such as blade with compass to mechanical pencil one the device canoe while as the core part, economical and cover provides the ease efficiently use method for the device to provide mechanical pencil, pen with button on the upper surface ROV (20) constituting the, said mechanical pencil toward a side of the cut blade (30) constituting the, toward a	Minbyeongsik	KR2020050016583	2005/6/8

460	Underwater robot for removing sludge	PURPOSE : An underwater sludge removal robot is provided to dredge up sludge at the bottom under the water. CONSTITUTION : The underwater sludge removal robot(1b) comprises : a thrust screw attached to the backside of a robot body to move a robot body of a sludge removal robot(1b) under the water; hydraulic motor fixed on each free end of support legs attached on the front and rear sides of the robot body to operate separately; wheels connected to each shaft of the hydraulic motors; a suction bucket installed on the front of the robot body to suction sludge; and a hydraulic pump attached to the rear end of the suction bucket to discharge the	KIM WON TAE	KR1020030017011	2003/3/19
461	Underwater robot system for harbor construction	PURPOSE : A robot system for submerged harbor construction work is provided to carry a heavy object about two or three tons, to avoid obstacles easily and to identify a place of the heavy object with the naked eye. CONSTITUTION : Three external legs(3) are arranged to an edge of an upper platform(1) isometrically to be rotated up and down. Length of external legs is adjusted. A lower platform(2) is arranged under the upper platform. A parallel device(5) is connected between upper and lower platforms to change a place and a position of upper and lower platforms. Three internal legs(4) are installed to an edge of the lower platform to be rotated up and down. Length of three internal legs is adjusted. A contact sensor is installed to a floor of each external leg to control an operation of other members after sensing an obstacle. A gripper is supplied to one of platforms to grip a heavy object. A control room(15) moves around the upper platform and forms with a rigid and transparent body. Air is supplied to the control room	CHANGWON NATIONAL UNIVERSITY INDUSTRY ACADEMY COOPERATION CORPS; CHANGWON NATIONAL UNIVERSITY Industry Academy Cooperation Corps	KR1020020068106	2002/11/5

462	An Ultra-Short Baseline System with Hemisphere Viewing Angle	PURPOSE : An USBL(Ultra-Short Baseline) ultrasonic tracking system of a ROV(Remotely Operated Vehicle) having a hemispheric area is provided to widen an observation region by forming a sensor module with a shape of a regular hexahedron. CONSTITUTION : An USBL ultrasonic tracking system of a ROV having a hemispheric area includes a sensor module. The sensor module is formed with a shape of a regular hexahedron. A plurality of ultrasonic sensors(S1-S6) are installed at the sensor module. The ultrasonic sensors are formed with a two-layered structure in order to form a tracking rage of a target as the hemispheric area. A transducer/receiver and a plurality of receivers are arranged on a front side of the sensor module. A	KOREA OCEAN RESEARCH AND DEVELOPMENT INSTITUTE	KR1020030009467	2003/2/14
463	azimuth compass pillow	The device part of the of pillow cover the compass on one side (cover) for sleep of compass used for working a pillow pin needle teachings provide user ease of use, and a transmitted by the control the direction of be asked go to bed easily as perceived by the compass pillow relates to, generally employs pillow cover (cover) on one side with ROV manner or in a button or an antistatic as occasion demands compass directly made of easily provided compass in humanly-perceptable	KIM YONG HO	KR2020050002491	2005/1/27
464	Floor composed of synthetic resin with bar code	The device autonomous mobile robot automatic working is able to be the necessary data to two-dimensional provided synthetic resin where a bar code is printed is. treatment is made. In the device for the same back layer for underwater horizontal a; lower part foaming layer or lower non-firing layer ; substrate layer; protection layer pattern provided surface pattern and with skin layer employs a buffer system for buffering substrate and hydroxycarbonates method for built-surface including surface layer; is in floor material attached to a layer of a synthetic resin, said is bar code having data different	HANWHA L C CORPORATION	KR2020040037247	2004/12/29

465	FISHES CAPTURE SYSTEM	PURPOSE : A fish catching device using an underwater camera is provided to facilitate catching of fish and to easily collect underwater waste materials, thereby protecting the marine ecosystem and developing the fishing industry. CONSTITUTION : The fish catching device comprises : a fish trapper having a main body having 8 robot arms and a net for surrounding the robot arms, the robot arms being connected to meshes so that the fry can be protected rather than being caught by adjusting the dimension of the meshes; an underwater camera for monitoring the underwater condition to detect fish and to obtain information on the marine ecosystem; a ballast using a balance water tank; and an underwater waste collector.	LEE IL	KR1020030018746	2003/3/26
466	Underwater Robot System	PURPOSE : An underwater working robot system integrated with a floating working craft is provided to prevent the robot from turning upside down, to move the robot under the water, and to use as an amphibious craft on the land by connecting and disconnecting the underwater working robot system from the floating working craft easily. CONSTITUTION : A floating working craft(50) is connected to an underwater working robot(10) firmly by a variable spud(40), and overturning of the underwater working robot is prevented in moving the underwater working robot according to the inclination of the bed of the sea. The distance between the floating working craft and the underwater working robot is adjusted corresponding to the depth of water, and the underwater working robot is combined with the floating working craft to move freely on the land. The floating working craft is protected from waves by floating, and the underwater working robot is separated from the floating working craft to	BAEK SOO GON	KR1020030009971	2003/2/18

467	Glass sheet (Glass sheets for producing glazing) for producing glazing	This invention concerns glass sheets made from a glass containing, in percentages by weight, from 0.85 to 2% of total iron expressed in the form Fe2O3, the content by weight of FeO being from 0.21 to 0.40%, said sheets having, for a thickness of from 2 to 3 mm, a factor (TLA) of at least 70%, a factor (TE) less than 50% and a factor (TUV) less than 25%. The sheets according to the invention are more especially intended		KR1019960706448	1996/11/15
468	Transparent cap for underwater robot localization system	The present invention refers to laser scanner laser beam ray illuminated from the specularly reflected from a transparent window portion of the grating layer light reflected by the address shift detection signal by detecting the mistaking the even-delimeter for the light, the position of a mobile body of accurately recognizing a in water elevator device recognition the position of the movable body travelling through the transparent window used in heat exchanger. provided to. Then a certain amount according to the present invention for, in water travelling through the elevator the position of the movable body in the cluster are aware of the, inclination angle sensor and, grating layer and, laser scanner and, processing, and an interface section including at in recognition device, said laser scanner to insulate the with water in water provided in a transparent window, said window interior surface portion of incident laser light is specular said laser scanner re-reflected beams inclined and, the outer surface being said inner surface incident the laser beam is applied to the transmitted laser beam prior to being parallel so that said water through said incidence of reflector is retroreflective, and is non-parallel inner surface	KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY	KR1020000024898	2000/5/10

469	Light reflector for underwater robot localization system	The present invention refers to outputs the result change the position of the movable body and reflect the reflected according to reflection grating layer and sleep problems by tracing phone location of a preventing, travelling through the elevator in water in the precise position of the movable body for recognising, water position recognition device optical provide a reflector structure, that is. Then a certain amount according to the present invention for, and the inclination angle sensor detecting directional angle of mobile, provided with a light-reflector and vertical plane, of installing with the rotating a laser beam for performing each light reflector and outputs a laser beam reflected from plural laser scanner and, arranged an arithmetic processing device, and an interface section including at in recognition, laser scanner from an output in an laser position of a moving object by a user notifies another of his location in light reflector, said light reflector variation according to incident at an angle with respect the position of the movable body according to the state of a stop intensity of the reflectance is proportional to the thickness to laser scanner, an incident change a way that its normal surface regardless of the orientation of grating layer and in circular cylinder 140, the laser beam is applied to the	KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY	KR1020000024899	2000/5/10
470	Energy transmission ratio low-endcapacity layer window pane vehicle	A pane with low energy transmission. The pane has a laminated structure of at least one glass sheet tinted in its mass and preferably having antisolar properties, and at least one sheet of polymer material containing a UV-absorbent, the at least one glass sheet and at least one sheet of polymer material being chosen to give a light transmission factor TLA of less than 60%, an energy transmission factor TE such that the ratio TLA/TE is greater than 1 and a transmission factor TUV less than 0.5%, the total thickness of the pane being preferably between 2.5 and 8 mm. The application of the pane, notably, as a	셍 고벵 비뜨라지	KR1019950015946	1995/6/16

471	Twenty Four Hour Used Eum Yong O hang Twelven Earth Oclock	Pen comprises a correction tape (1) the device]; formed with a thick region wired drum comprises the following structure to binarization, five elements, manufacturing as a timepiece contains binarization does 12 is a no; mechanism receives the one viewing orientation to coat the it is thisplaque season an interlayer ROV may be negative. ; The aim (2) of the device; a user handles the key pad to universal reason region formed with a thick smoothly applied steps smoothly to life by the guide member as a timepiece. ; Configured (3) of the device ; (Movement) movement for time clock 24 front surface of a supporting tap reason constitution : r.o.k and reflect number plate a watch type advertising sheet for is attached to the faceplate ; (4) of the device effect; formed with a thick region (user, axis, in, house, a, yarn, and, pushing, scene, oil, wine, the) of 12 as time 2 whether 24 indicating that the portable computing device is for time, as a timepiece life by	HONG SEUNG PYO	KR2020010027351	2001/9/6
472	AN AQUARIUM SYSTEM WITH ROBOTIC UNDERWATER TOYS	PURPOSE : Provided are underwater toys and a habitat system to enable the toys to move through the habitat system. More particularly an aquarium assembly facilitates autonomous movement of self propelled underwater toys simulating aquatic creatures. CONSTITUTION : The display system for presenting aquatic devices comprises : a container for holding a liquid; a unit for causing the liquid to circulate in the container; and an aquatic toy apparatus that is sized to fit within the container having a motor, a generator of power for driving the motor and a propulsion member operatively connected to the motor to cause movement of the toy apparatus, wherein the aquatic toy apparatus is weight balanced to be approximately neutral weight when immersed in the liquid whereas the combination	TAKARA CO LTD; XENOID PROTODESIGN CO LTD	KR1020000057125	2000/9/28

473	Mobile phone with compass	The device measured relates to a cell phone to attaching. Mobile phone (1) of one side are radially (2) to compass (3) for sticking objectionable home (4) or create space leading to ROV (3) inserting, mobile phone is controlled by using a laser etching (1) users travel, hermetically sealed by heat-sealing a alpenstock, when isolated alone at appendage or of the relates	KANG SUNG CHU	KR20200100111129	2001/4/18
474	Tension shadow grill device motor	An object is to remove unnaturalness of the picture caused by inferior flatness of the apparent screen and provide a safety-designed color picture tube device having a flatter apparent screen without deterioration of static strength of the picture tube. The upper half of the panel (the part above the Z-axis) shows the vertical-axis (V) section and the lower half (the part below the Z-axis) shows the horizontal-axis (H) section. The outside surface of the panel is in a convex form with respect to the Z-axis in the vertical-axis (V) section with a radius of curvature of ROV and is in a convex form with respect to the Z-axis in the horizontal-axis (H) section with a radius of curvature of ROH. The inside surface of the panel is in an almost linear form in the vertical-axis (V) section with a radius of curvature of	MITSUBISHI ELECTRIC CORPORATION	KR1019980029071	1998/7/20
475	Swimwear structure	The device is contact at belongings swimwear absorbs water the water do not flow of 374 is underwater friction and is minimized and the thickening forming is performed to appearance of a swimming suit is formed by an assembly of an, used in the swimming or ripplingthe in swimwear, swimwear this oxygen permeable silicon comprising at, gas is injected site and breast swimwear is formed defines 374, internal check result is prevented from coming into parts (embossing) embossing, swimwear the simplification of a production process and to reduce the number and, and the resistance value of the resistive the inner manipulator 374 due to changed by underwater friction, by embossing unit increase feeling of wearing and the storage are easy, swimwear before, to the rear surface or printing various colors varying pattern of phrases and figure for printing is appearance of robot body is	DAEHEUNG SILICONE CORP	KR2019980006728	1998/4/27

476	Energy absorbing member	Energy absorbing members are provided between a lever mount bracket (2) that support a shift lever (1), and a base member of a vehicle body that is located in the front part of a vehicle compartment. the energy support member includes a pipe (22), and a trigger (23) that is joined to one end portion of the pipe, and the trigger includes a truncated conical portion (232) whose inclined surface cases plastic deformation of the end portion of the pipe in the direction for increasing the diameter of the pipe upon application of an excessive load thereto. The pipe (22) has a three-layer cylindrical core member consisting of an inner continuous glass fiber random mat, a uni-direction continuous glass fiber layer formed on the random mat, and an outer continuous glass fiber random mat	MITSUBISHI JIDOSHA KOGYO KABUSHIKI KAISHA	KR1019980041970	1998/10/8
477	TRANSPARENT BEACH BALL HAVING COMPASS	The device transparent beach ball having compass relates to. The body transparent beach ball having compass of the device (1) outside of one side with lighting device of a vehicle (2) through the body (1) the inner space of chamber air is inflated vinyl formed on one end thereof with rubbers or the like or in transparent beach ball consisting of, body (1) internal air of with the front plate to ROV supporter (4) is formed, said ROV supporter (4) the central part of the transparent interlayer (4 ') is formed said ROV supporter (4) transparent interlayer (4') N to, consisting of a magnet that has a polarity S ROV (3) fixed is inserted is connected to the semiconductor layer ., the structure. Therefore, the transparent beach ball having compass of the device form having a generally spherical shape beach lower air chamber of the body or sleep is glidably provided compass when it will come to be put on ground member operates body beach compass N the direction of article to be want to the north pole is taken, having functions complex useful play	YOON BONG SEOK	KR2020000021496	2000/7/27

478	A CHECK DEVICE OF GROUND-WATER PORE	PURPOSE : A tester of an underground water hole is provided to prevent pollution of underground water by adopting a compass, a motor and an image transfer device for informing a worker of an underground water vein and a polluted position. CONSTITUTION : A power cable connected with a tester is coupled with a connector of a control box. An image line coupled with a vertical camera(122) is connected with a second connector of a monitor. Then an image line of a horizontal camera(453) is connected with a third connector of the monitor. Each main switch of the monitor and the control box is turned on and a recording button of a VTR(Video Tape Recorder) switch is pushed. The tester is put into an underground water hole by a rope, and a light switch is turned on. The brightness of a light is adjusted by a brightness adjustor. A light switch of a stop camera(322) is turned on and adjusted in brightness by a light brightness adjustor. A compass is mounted at the same direction toward the underground water hole. A light switch of a rotatable camera is turned on	PARK JONG HWAN	KR2019990030343	1999/12/9

479	WATCH	Disclosure the view the device. The device, is provided to the display window on the front, one side between the lower face of at the outer surface a plurality of knob setting up function provided in the case and; is located to the inner surface of the case, supplied from satellite for various information and requests GPS receiver and; to the signal from the collision sensor inner surface one side of case, a desired date and time desired schedule rotates to transfer the document through a user is allowed to recognize that his a schedule alarming means; display window of directional to the user a sub PCB disposed inside the ROV and presents them to a; and if a bit in the complimentary including, required date, critical in time and user schedule member rotates to transfer the document through a by forget time of an appointment important to prevent photoresist mask as an etch mask is enabled. Furthermore, because of recording the information from satellite medicine fluid, and receives an external clock by	JO SU BEOM; JUNG JONG KOOK	KR2020000009131	2000/3/27

480	A NEUTRAL BUOYANCY MAINTAINING DEVICE OF THE CABLE FOR UNDERWATER VEHICLE	Use of ship hull the device chosen so that is correct for purposes of power or signal cable manufacturing method thereof are provided to impart buoyancy neutral device and method the approximate as described as follows. Ship hull is correct for purposes of use of cable-tension power supply/signal for underwater for imparting neutral buoyancy characteristics maintaining the buoyancy using tube. protruded. Buoyancy tube-tension power supply/signal according weight of the cable buoyancy classified from water which has a volume capable of security maintenance the calculated to offer is firm subject outer diameter. In addition gas for generating buoyancy the end of torsion tube (e.g. : N2 gas) door's opening for injecting/of provided components. Thus the device internal pressure of the tube a pressure adjusting according to depth a balanced status and to enhance buoyancy tube for injecting/with a gas for generating buoyancy force on cable by drawing off manufacturing method thereof are provided to impart buoyancy neutral is device. Buoyancy neutral cable ship hull the device to maintain of the motor, attached to the robot by remove an unnecessary minimize the	KOREA ATOMIC ENERGY RES	KR2019990026060	1999/11/25

481	MULTIPURPOSE CANE	The device used for rotating a generating magnet versatile for leisure and alpenstock stick relates to, connector has one side with rake-shaped holder (1a) is formed hoethe other side (1 ') formed handle (1) the underside center of male screw part (1b) the one side a knife (2') is formed a top (2) the belt from being male screw part (1b) supporting shift lever (4) of the housing chamber (4a) the screw connection to top (2) the support shift lever (4) contained in the shift lever support and (4) solution is filled in the connector (4 ') deformations produced there are connection body (5) of threadedly engaging a connection body (5) lower end supporter (5') objects using aerosols and a opening (51) engaged with the screw in turn, so that the pull tab in (1) of upper dead centre position for a ROV (3)-edged retaining grooves (3') by forming a chucking ROV (3) inserting the adhesive material (3a) is fixedly attached to to the user receiving an ROV selected by a user and (3) is not necessary is connected with the process modules through the lever pressurizes the climbing sudden changing weather or night acid width lost away respect to safety accident such as a alpenstock unit modulates a supplied a need items of a rescue for preventing plates and [...] ㎷ (3) the handle (1) projecting from	CHOI YUN GOON	KR2019990024079	1999/11/5

482	WATER CIRCULATION AND UNDERWATER BUBBLE JET-TYPE THAWING DEVICE	PROBLEM TO BE SOLVED : To provide a water circulation and underwater jet foam type thawing apparatus at low cost capable of carrying out uniform and efficient thawing free from thawing unevenness in a short time even if a large amount of frozen fishes are fed to a tank in a piled state in a single thawing operation without using a tank of large volume, a pump of high output, a heater, etc. SOLUTION : This apparatus is equipped with a thawing tank 1, a thawing basket 6 rotatably pivoted in the thawing tank 6, a water pipe body and an air pipe body each communicating with the inside of the thawing tank through a communicating hole, a circulating pump 11 to circulate and supply thawing water and discharging the water from the communicating hole to the thawing tank, a blower 12 for supplying outside air and discharging the air from the communicating hole to the thawing tank, a temperature sensor 13 for detecting the temperature of thawing water, a steam generator for supplying steam to the water pipe body, a steam valve 14 operated for turning on and	JUNG SEOK BONG	KR2019990020955	1999/9/30

483	..	The present invention refers to the steel structures in water by river bed undersea or converted cell ground water after dredging the ground construction the stone construction the stone surface riprap after airdropping selectively outputs a received manual adjustment signal and method relates to method. The submerged (bath) that for a conventional construction method using attraction force the stone after thousand is formed integrally with the screw and applying method (tensile), birds (flow rate), contrast (clear, an Image blur by) natural climatic conditions such as by a thread work investment and personnel expenses connect the tension bar with the reduction and monohydrate, spiral penetration hole formed by risk factors work in that portion are constructing technology of development current corrected by the was a signal which indicates a connection is desired in which the container has such. Some foreign water in "robot" and uses it or water stop equipment ([...]) many as well as e.g. that utilize a there has been the problem of resulting putting the budget. The present invention refers to "meth" represented as a graph obtained by substituting concrete release block 24. 0 TON weight as an degree has flat ground plane 45° is lifted the fore-aft and tip than four the bottom of the sea (water by river bed surface) " [...] " after deferring to an acoustics and constructing a the stone surface a compensation is back and	LEE KEUN HEE	KR1019990028587	1999/7/14

484	weight angle	The present invention refers to combining protractor and weight ram in weight angle by generally widely used ROV can be easily as sends the group theater of operation, medical-based, various field laboratory, such as the order placer construction widely in various field. for recognition. Wall slope and bottom, the center portion of the ceiling for a larger won easily ruler which become so low that the unit will of polyethylene, polypropylene or soft vinyl which is highly accurate. Therefore small and easy a plate for propping the flavored design and beautiful key holder, step selling manufacturing even with current accessory various simple to protect user's	SIM HONG SUB	KR1019990015113	1999/4/15
485	Pyramid tent	Exact sensor in a simple and easy way establish a lower limit position for tent pyraamidal, line from a second height (4.4 ') is to be opened or closed booth (15) is adhesive Asistant (9.9') to the fixation and the peeling a fiber-cover (3) and an inner recessed part on the with the inserted protrusion (7.7 '. 7 ") is having a square column (1.1') the upper corner (8) moved to a decorative (16 . 16 ') is structure body hair and shrinks in protrusion is inserted (. 7' 7.7") for insertion into insertion groove (6.6 ') protrusions is (7.7' . 7") fixed locking than a data and then removing the portion of the opening and closing device (10 . 10 ') so as site ROV (5.5') inserting pre-compass needle matched to that of the square pyramid the display column (1.1 ') is north of the compass issue positioned in a direction (5.5') the hands and the dial, a precise position in unison vibrationally compass issue easily receivable (5.5 ') for configuring and right and left assembly redundant type (13 .	AN JEONG OH	KR2019970041788	1997/12/29

486	INSTALLING STRUCTURE OF AUTOMOBILE COMPASS	The device and be affixed inside of the instrument panel of vehicle, comprising a transparent window mirror and the driver has to look when compass for a vehicle comprises a shoulder edge appear to vertical position in compass provided, on the upper surface ROV (20) is attached horizontal plate (12) and transparent window (13) a ring hold the vertical chassis (11) with housing (10) and a slant surface inclined lines of weakness in an automotive instrument panel on excavated, said horizontal plate (12) is inserted into this instrument panel, mirror (30) one side of drift and be mounted on an upper part of said vertical chassis, other side mutation attached display on a front portion of the horizontal plate said mirror (30) the specular surface of (31) is blade shape or a rectangular cross-	DAEWOO MOTOR CO LTD	KR201996001638 5	1996/6/19
487	ROV	Compass relates to the device, in particular, compass needle needle centrally positioned internal compass, hepatitis or the like on both sides is horizontal controller is provided having mercury the south and north azimuths as at a, both sides of work as a terminal direction for leveling of fit and the simultaneously remaining horizontal regulator, book directional indicia indicating a setting flow big width between horizontal compass needle needle can be controllably adjusted	YOO TAE WOO	KR201997001467 4	1997/6/18

488	SYSTEM FOR MEASURING POSITION OF MOVING OBJECT	Alignment members such as submarine or the present invention refers to ROV (Remotely Operated Vehicle) can grasp if there is system for measuring position of moving object relates to spaced transmits the pulse signal fingers the incident light from the method using receiving time interval pulse signal with a short latency measuring system is included to measure position device for measuring position of moving object calculated heat exchanger. is provided to. A purpose of the invention said a predetermined time interval for generating an ignition spark of an supersonic waves finger for measuring the position of the system for measuring position of moving object in : a plurality of which are two-dimensionally located apart predetermined interval is configured with possibility destruction , possibility destruction each said finger from said RF delivery an electric signal for respectively receiving the ultrasonic pulse for translating a receiving means and; said each possibility destruction amplify the digital audio signal pin and an electrical signal that is provided from, computer processing of the correction waveform shaping into a signal that can be associated with means; said waveform shaping means provided from the input from the signal to the waveform shaping, said ultrasonic pulse possibility destruction each said time O reception for he receives part respectively, each received data block and each of said measuring means for measuring the time difference between time and; the method using receiving time interval measured said said finger and compute its position and locate displaying the power, said finger's calculation of position as a	SHIN HYUN OK	KR1019940026696	1994/10/19

489	CLEANING APPARATUS CAPABLE OF MOVING UNDERWATER AND A METHOD FOR CLEANING A WAFER	The present invention refers to when the pattern is formed on a wafer a process used plurality of processes cleaning batch processing in a displaceable manner in the prediction candidates of the mobile cleaning water device is provided to low-noise output buffer and method, operating zone and a service a gate line is formed in the integrated process of an outer tank (112) and a; said process of an outer tank (112) predetermined region of the which are disposed, each partition (116) are to a plurality having an area of non-tub process (114) and a; said tub process (114) which are disposed at center of, said tub process (114) is isolated and a a rotary robot driving unit (80) and a; plurality said and is installed in at least a region of, said tub process (114) and the predetermined position is intervals, and said rotary robot driving unit (80) of arms (82) a plurality of region rotation of process bath (20-50) and a; said rotary robot driving unit (80) of arms (82) attached to the hanger it walks and it comes to raise, transportation eulogy the wafer either by the next process the table can be moved sufficiently of pairing a predefined said tub process (114) each partition (116) the openings formed in the (118) including the, one process the next process the bath said tub process of pairing a predefined wafer fortune hemisphere when moving (114) in water in the pure fed into the combustion chamber has a structure movement of. According to the above-mentioned method and device, cleaning process the wafer and wafer when move investigationtransportation eulogy formed in the air since the mobile in water, the wafer and wafer thereof in	SAMSUNG ELECTRONICS CO LTD	KR1019950055687	1995/12/23
490	Rov. Ineluv	The combination of the image and the shape of the'roff guide ruff 'is used as the main point of the decoration content.	사공철	KR3019970002935	1997/2/22

491	Subsignal white balance correcting apparatus of TV receiver	[Configured] the sub-screen, by processing Image signals composite for the top end of the signal YUV, PIP processing a substrate as said TUV scene call primary signal coin provided to the mobile terminal by screen and a Chemotactic surface primary with signal synthesis sub screen generating output signals of the TV, V signal and said U predetermined section pedestal signal DC level to crimp means and said switching hub pedestal it became the lymph which will grow DC level of a signal section comprising means for sensitized with any doing	DAEWOO ELECTRONICS CO LTD	KR1019960023378	1996/6/24
492	WATER TANK FOR PREVENTING VIBRATION IN A WASHING MACHINE	The present invention refers to a circumferential surface to form the inside surface equipped with at each on the upper and lower parts of the lidded a blower, constant amounts of fluid to accommodate a water tank supporting sidewall tank the water tank during strength, modulus, and good to each other capable of reducing vibration of a washing machine water tank to-board electric connector having male relates to water tank. The present invention refers to such amount of member for receiving a fluid to water reservoir (2) false loft tank securement of having detachably mounted wall dehydration to reduce vibration and in determining position location, said water reservoir (2) for feeding water on top of lid (3) and by drainage lower lid (4) and, said inner panel a to the outer wall of the water tank (6) for tank and the same an arc that the, said inner panel (6) on the edges of the suitcase shells plurality of a coupling for piping connection (5) to the and integrally formed in the mounting rubber, tank outer wall of a conveniently and	DAEWOO ELECTRONICS CO LTD	KR1019930017169	1993/8/31

493	METHOD FOR DISTINGUISHING MICROWAVE PINGER OF SINGLE FREQUENCY	The present invention refers to fish physical, to the silicon steel slab, including sanitary, petroleum, environment that are used to make the IR tracking fishes in (pinger) ultrasonic pinger, single network that employs a plurality of frequencies a plurality of ultrasonic pinger for tracking an ultrasonic pinger identification of relates to method, single network that employs a plurality of frequencies a plurality of ultrasonic pinger attached of fish or ROV, submarine such as swimming range the Si is in bodies of constant magnitude if the each ultrasonic pinger in real time for single frequency identifying identification of ultrasonic pinger of enabling the heat exchanger.. The present invention refers to said end of the and the past (PTIME) the currently received ultrasonic receiver time been formed on time difference with time of reception of finger acquisition formed on past been captured finger period and allows variation predetermined period between present in the finger period is tracked the recognized number finger apparatus for storaging the period the step number 1, ultrasonic receiver received plurality of past the currently received time ultrasonic receiver time with predetermined pulse period the time difference is one that detects and time ultrasonic receiver past the currently received ultrasonic receiver time and said ultrasonic receiver using past detected in an of processing of the step number 2, detecting in step said number 2 the central controller receives a re-ultrasonic receiver the past by a film a plurality of ultrasonic receiver detecting in step said number 2 time ultrasonic receiver the past by a film	SHIN HYUN OK	KR1019940020214	1994/8/17
494	Geographic wind possibility for ROV	Copyright 1997.	임언수	KR2019940002084	1994/2/4

495	Portable as a result of underwater	The chopsticks to search the device inserted portable [...] relates to portable, of placing stage supporting the shovel it will be good to slide out a rectangular board portable [...] lid inserted into fixing material fixing internal soft long spoon also provided excellent in a telerobotic spoon mourning dress can be using old, damage is capable of easily replacing the left detachable shovel addition of spoon, shadow on both sides by spoon are disengaged so as not to flow presses the chopsticks located noise being formed is punched to ensure that there is portable	BAK SAN CO	KR2019950045459	1995/12/22
496	Instrument panel	Instrument on one side of the vessel, provides wiring support structure compass. Instrument panel mounted in front of the interior (10) on one side is loaded by the of vehicle dynamics of a vehicle in a vehicle chamber and performing identification crew to enter an operation while a various instrument panel (30) is provided, a storing part stores a various components the supporting plate is installed, instrument panel (10) of tiles the direction of progress of vehicle whilst underway side a ROV mark shows that the spin dryer (20) is provided with easy first trip the direction of progress of vehicle while identifying to allow a user to drive the to be such a manner as to avoid the	BOUYGUES SA	KR1019950072040	1995/12/30
497	ROV	Electromagnet or silicon material (4) insulator (4 ') (7) are installed copper equivalent again in the one or more coating (6) corrosion method such as sterilization of electromagnet (4) liquid crystal plate (4') (3) densifying structure around the cascaded (6) of cell, electronic component by electromagnet (4) (4') in most large magnetic locating liquid crystal plate (3) liquid crystal bearing display (2) exhibits a north pole is	AN JONG OH	KR2019950030309	1995/10/26

498	Digital ROV	The identification of the direction as with Letters and Figures provides a measured. compass direction sensor part (1) and, in magnet (electromagnet) (8) portion a elevator in case of blocking of power (3), intensity of power a power by sensor (method for steel, about) for adjusting portion (5), and from the telephone directory and numerical the character direction portion (7) are composed. Needle sensor ROV in its initial condition blocks (10) the due north all the time direction (the direction of the due north all the time direction) is article to be want to, in two magnet and the power source, and a neutral a portion modulate the intensity of an is for enabling a. When the reference, on the right needle in ROV is connected. The, magnet power intensity for operating a data storage device is the operation of the portion, magnet between the two in a stronger resulting in, is absorbed relatively right.. Change, according to the intensity of power window display where it is	O WON KYUNG	KR1019950029960	1995/9/14
499	UNDERWATER ROBOT SYSTEM FOR LEISURE AND RESEARCH	By controlling all the motors(M1-M11) in the ship, the main body of the submarine(1) can be moved up and down, forward and backward, by turning the camera box(10) up and down, right and left, the underwater exploration can be conducted in the ship through the image of the video camera of the camera box(10). Therefore, when the object of the research appears in the display of the ship, the main body of the submarine(1) can be moved to the position of the object and by controlling the articulations from 1st to 6th(21)-(26), a pair of fingers(30)(31)	IM HUN MAN; IM SANG SOO	KR1019930032318	1993/12/31

500	Autonomous fruit Figure (AUV) a distributed control system	Each functional functional performance to the distributed control module by function extention by and case has an opened, high-speed processing can which, can be reliability. Master controller (10) each module (30-60) controls the, each module for communicating data between a data bus to control. Yet, of tailstocks control unit (20) of modules (30-60) at least one from interrupt request caused by a recognition output signal an interrupt, the recognition occurs. Interrupt demand the invention relates to a module master controller (10) necessary upon application interrupts in acknowledge signal.-document receive mode. On the other hand, of tailstocks control unit (20) of each module (30-60) composed of to the digital signal processor (DSP). Number 1 module (30) over the data bus communication with seperate bus bar sensed content contents master controller (10) and, master controller via a data bus if not unmanned autonomous submarine by content controls the voyage. Number 2 module (40) to surround the side of the convex front and silver submergence justice sonar for monitoring a irradiates the released state by driving the. Number 3 module (50) the submarine rising/falling, really, also navigation, for tracking target and obstacle avoidance automatic flight of such controls the mode. Number 4 module (60) the Image pick-up device (65) and a target by using through, compression processing the signal by photographing. If, photographing in busbar signal loaded in a cleaning apparatus master controller (10) under mobile terminal number 4 of the to intermediate frequency signal, number 1 module for delivery of signal, the input module number 1 the signal to	DOOSAN HEAVY INDUSTRIES CONSTRUCTION CO LTD	KR1019940029714	1994/11/12

501	Gram P. S information received a signal from a base a double-skinned ship's trial run measuring device	Gram P. S converter for measuring starting point speed = distance/time, Hangzhou from the respective positions of the end point measuring the distance between the, measurement is of the speed of the divided into time enabling any direction of ship trial by Hangzhou aligned with the direction in which the pump dispenser of the flight of the electro-to enables to measure a height of a deposition. Reference station (1) gram having function of differential of P. S receiver (11) for transmitting information to determine corrective procedures has consumption while turning off the (12) mobile station as (2) routing the, mobile station (2) creates a satellite information in as well as signal recognition mechanism (23) has up of solenoid valves and a speed log speed of from, course from ROV rotation, includes a from wind velocity , passing through from wind direction, angle browser allows from steering angle sensor, rpm from sensor number of revolutions of tube period, output propulsion from horse power, equation through regression analysis from each periodically size of the waves into input numerical information in the digit board (22) through the central processing device (21) is passed, a built-in speed test with wool joule program central processing device wool joule	HYUNDAI HEAVY ELECTRIC CO	KR1019940027243	1994/10/25
502	DEGAUSSING APPARATUS AND METHOD OF TV	The device is provided for having the clear image quality by correcting the magnetic field in TV, and includes a stand-by power source part outputting the constant voltage, a remote controller selecting the magnetic field correction mode, a remote control receiver receiving the signal from the remote controller, a free amplifier amplifying the signal received from the remote control receiver, a microprocessor outputting the signal for controlling each mode, a chroma part displaying the direction of a compass, a element coil part, and a magnetic	LG ELECTRONICS CO LTD	KR1019940016171	1994/7/6
503	An ROV	Copyright 1997.	금성일렉트론주식	KR101991001843	1991/10/18

504	Camera telescope and ROV and radio	Is. If the device is provided with a compass and telescope and camera or radio. If the device number and is the technique by which those radio, compass, telescope, each camera separately is not portable, and the handling coat of storage through a, thus purchase has been along the horizontal bar. Disclosed. If the device and method of the device if the radio, [...] telescope and camera by composite construction portable, convenient to purchase expenses of storage to facilitate handling the upper pipe together. As. Important use of the	HO WON	KR2019930006213	1993/4/16
505	Number assembly ROV attachment and the watch using ROV	In the wrist watch, the assembly is provided with watch function (12) in the middle and houses a permanent magnet for indicating the direction with graduation formed on the circumference. The interior storage (7) for magnet consists of an air tighting case, which has an aqueous solution as lubrication oil and is formed in laminate structure for circular floating materials (9) and permanent magnet (8) with in the	WON KWANG IL	KR1019890002373	1989/2/28
506	A ROV [...] into the		PARK SEY JOON	KR201989002005	1989/12/28
507	ROV engine of vehicle using both		PARK SEY JOON	KR2019890007868	1989/6/7
508	For ship ROV		장국임	KR201988000468	1988/3/31
509	Road guider	When a driver inputs present position and his destination in the computer in advance the computer reports the destination to him by directional sensing device to guide the driver safely to his destinations. If the signal generator (1) gives the sinusoidal wave to the signal amplification circuit (2), the sinusoidal wave is amplified without distortion. The comparator (3) compares the sinusoidal wave with the reference wave and if the error is	Samsung Electronics Co	KR1019850008060	1985/10/30
510	Synthetic resin		대한민국 고려식량	KR201984000444	1984/5/10
511	ROV attached to		대한민국 이규주	KR201983000852	1983/10/5

512	with compass orientation storage circuit having of calculating	Constant a pointer location to a distant deduced easily even from the types of nightglow patterns can be location. Calculator (1) horizontal parabolic circuit deduced a diverted away from one or a constant magnetic field is memory orientation of each keyboard (2) the alphabet (3) and incoming weapon for, calculator (1) body enemy where the direction indicating arrow (6) a opinion grudge glass cap (5) on the outer circumference the mounting field trillion (8) rotated by a rotation orientation number plate (7) for chip one ROV (4) is formed on. Horizontal parabolic keyboard (10) to turn on alphabet for rasterizing a desired part (3) is stronger than the in	BAEK TAE SUN	KR1019830003779	1983/8/12
513	battleship that are provided with standard operation unit (battleship)	PCT No. PCT/EP82/00272 Sec. 371 Date Jul. 29, 1983 Sec. 102(e) Date Jul. 29, 1983 PCT Filed Dec. 21, 1982 PCT Pub. No. WO83/02317 PCT Pub. Date Jul. 7, 1983.A warship with individual standardized operating units and a central command post unit has standardized information transmission lines independent of the type of units arranged on the individual standard platforms. A data processor (11', 11'', 12' to 31') is provided inside each standardized operating unit (11, 12 to 31). The information to be transmitted is brought into a suitable form for transmission via the standard information transmission lines. Furthermore, the information received via the standard information transmission line is transformed into a	BLOHM VOSS A G	KR1019820005603	1982/12/14