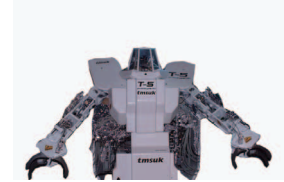
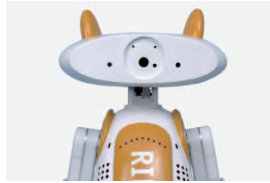
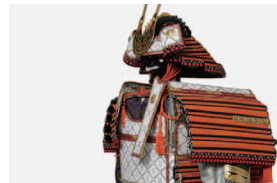
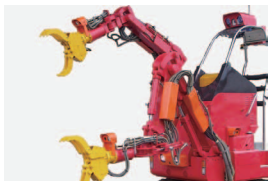


TMSUK ROBOT LINEUP





HANAKO2 SHOWA (2011)
Dental patient robot

Showa University and tmsuk introduces the dental patient robot “Hanako2 Showa” .

“Hanako 2” has achieved more humanized performances than previous model. It is more users friendly and highly functioned.

She looks like a live actual woman with some behaviors.

Furthermore it becomes easier to change the parts as teeth and mucous membrane.

It means less maintenance and long durability.



HANAKO SHOWA (2010)
Dental patient robot

Showa University and tmsuk introduces the dental patient robot. Nowadays, it is very important to keep the high quality and safety of medical treatment so that more advanced clinical abilities can be mastered and it is necessary to evaluate clinical ability of medical student objectively. Now Showa University and tmsuk have just completed the third generation robot for dental patient model cooperatively and the patient robot has been used for ability examination in which the dental treatment was performed as in the actual situation. All of 88 students have treated the patient robot which reacts as real human patient and have studied how to avoid faulty operations and have competed for accurate dental care.

This is the first examination in the world and biggest scale ever. Attendants from foreign medical universities have admired the result of robotics examination at the demonstration. There may be the first practical use of humanoid robot in the world and it will boost growing of robot industry by the proof of Showa University while contributing to advanced medical & dental training.



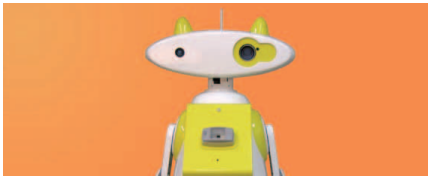
RODEM (2009)
Universal vehicle

“RODEM” has been developed for the aging society and declining number of children in the 21st Century and it is a quite new product breaking preconceived idea enabling everyone to live in better conditions. “Reach anywhere you want to go more freely” is the basic concept and “RODEM” allows users to move widely in the daily life and to achieve higher level of life. “RODEM” is the new category of vehicle that provides aged and disabled people the opportunity to enhance their situation. Veda Center announces that a new category of Universal Vehicle will be accepted in Japan and in the world quite soon.



T-34 (2009)
Security robot

tmsuk co., LTD. and Alacom Co., Ltd. (Security company in Tokyo) have co-developed the new guarding robot “T-34” which works independently by itself without network system or LAN. The first special function is that it can be controlled by a cellular phone. It allows you to control the robot from anywhere and to monitor what happens on the site of emergency in real time. It means quick and proper action is possible. Sometime it is dangerous for human guard to go to the site by himself, but robot guard can monitor the site before human staff arrive to save life.” T-34” is equipped with net launcher made by Nippon Koki Co., Ltd.. It is possible to launch catching net controlled by cellular phone from far away when an invader is detected. tmsuk and Alacom started this project supported by the Ministry of Economy, Trade and Industry which has promoted creating next generation service robot during 2006-2007. Both companies have been developing autonomous robots parted into security system together.



T2-5 (2008)
Communication robot

tmsuk has produced communication robot “T2-5” for Aeon mall shopping center and “Lucle” in Kasuya town, both in Fukuoka. The robot is equipped with QR code reader which certifies individual customers. It pronounces individual customer’ s name and certifies birth date and gender. It means the robot can communicate by talking while certifying the individual customers. The robot is also equipped with sound speaker and visual projector so that it works in the event court additionally. This is the first project in the world in which communication robot works routinely at shopping malls and at big retail facilities to give services as “touching communication” and daily events.



T-53 ENRYU (2007)
Hybrid rescue and disaster recovery robot

The new rescue robot T53 Enryu was produced for rescue work at disastrous places where rescue workers cannot go into. T-53 is the third generation tmsuk rescue robot. It is a successor of the technology of T-52 Enryu in 2004. tmsuk has worked closely with national fire department to develop T-53, which thus has been embedded with much desired functions.

T-53 is made more compact than the previous rescue machines. It has maximized maneuverability for emergency operations. Furthermore, the synchronous robot arm systems have sophisticated motion control capabilities of operators.



T2-4 (2007)
Onboard supersensitive odor sensor,
fire detection robot

T2-4 has fire detection sensors and security surveillance systems for public and commercial buildings. It can patrol on a programmed route. When its embedded supersensitive odor sensors, fire detection sensors and temperature sensors detect emergency conditions, the robot sends alarm signals to a security office. T2-4 then gives full remote-controlled operation systems to security officers for their surveillance work which means that the security work can be done in real time from remote and secured place. The supersensitive odor sensors upgrade fire prevention methods as it can sense burnt odor before disastrous smoke and fire are developed.



T2-3-001 Guide robot (2006)
T2-3-002 Receptionist robot (2006)

Aidu Chuo Hospital of Aizu-Wakamatsu, Fukushima has introduced one receptionist robot and two guide robots. This is the first time in the world for guide and receptionist robots to be used at a private hospital. It carries on a security camera to check around the hospital. Guide robot can guide a visitor to a nearby elevator and carry baggage on its arm. If the power of the battery is low, it will recharge by returning automatically to a battery charger.

Receptionist robot: If a visitor to the hospital touches the panel on the robot body or speaks to it, it will display directions on any surface from a projector in the robot’ s head or make a printout from a printer in the robot’ s hand and hand it to the visitor. Speech recognition also supports the Aizu dialect.



WL-16R III (2006)

Biped walking vehicle robot

tmsuk and Japan's Waseda University Department of Science and Engineering (Dr. Takanishi Lab) have developed general-purpose two-legged robot WL-16RIII. This robot has the world's first robotic technology to walk and carry a human at outdoor environment. The engineering team is working for better controlling unit so that a user can ride on it easily while having smoother motion controls of speed and directions.

WL-16RIII demonstrated safe walk in several different situations such as at the public road with textured paving block, graveled road with 3 degrees sloping and public pedestrian crosswalk. The robot has succeeded in walking carrying a 55kg male adult at outdoor environment.



T12-1 (2006)

Shopping assistant robot

T12-2 (2006)

Remote communication robot

Shopping assistant robot "T12-1" can call a robot by showing their own RFID tag to a card reader and requesting a robot escort. Customers choose a store from the touch screen on the robot and it accompanies them to the selected store. The robot can describe products and offers at the store and it is equipped with a lock box to carry your purchases.

Remote communication robot "T12-2" : The customer selects the store online and the robot navigates to the store and finds a sales person. There is two-way video communication so that the shopper can talk to the sales person at home. It could also be used to meet friends at the mall. You both log in at the same time then send your robots to the same store where you can chat.



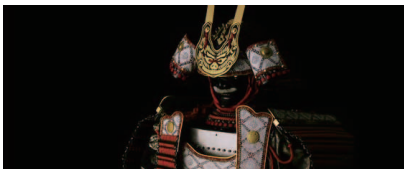
T-82 (2006)

Ultra small motors and advanced

Multi-fingered operational robot

In a strategic engineering project sponsored by the Japan Small and Medium Enterprise Development Organization, T82 ultra-small actuator & servo-amp hands (multi-fingered hands) robot was developed. The technology robot was produced collaboratively with robotic organizations of SIMEX Corporation, Yasukawa Electric Corporation and Kyushu University.

It was necessary to sophisticate hand operating technologies for practical service robots at household and security companies. However, such technological development was difficult for many years for existing large actuator motors and servo-amp controlling units. The project has succeeded in developing desired robotic hands with advanced actuator motors and servo-amp.

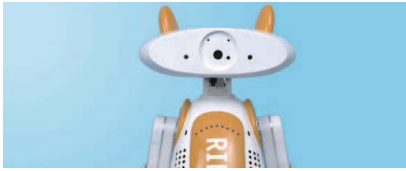


KIYOMORI (2005)

Biped walking robot

KIYOMORI was born to lead Japanese robots in their quest to set the world standard and its position as the flagship of the new robot civilization.

It can execute a wide range of natural looking actions due to an incredible number of 39 joints within its frame and bend as well as stretch its knees when walking. It can also sit and stand.



RIDC (2005)
Superior Voice Recognition System,
Commercial Service Robot

tmsuk developed a public service robot, RIDC-01, when an order was received from the Robot Industry Promotion Committee (HQ in Kitakyushu, Fukuoka).

The robot was produced collaboratively with several organizations: tmsuk, Kyushu College of Tech Human Life IT Development Center and a college spin-off venture, KITHIT Co Ltd.

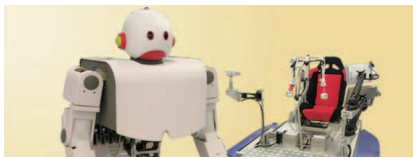
One of the best features of RIDC is superior voice-recognition systems. For event organizers, RIDC can give event guidance, sponsor commercials and place information to customers inside and outside building. RIDC does also cleaning. The robot has an onboard projector at the head which is useful for visual communications.



PRE-HOSPITAL CARE ROBOT (2005)
A new type of life-saving robot:

This new prototype robot was developed specifically for the AICHI EXPO 2005 in collaboration with Kyushu University. Visitors to the EXPO who felt ill were able to utilize this robot to get medical assistance at the theme parks and public facilities that were hard to get to by ambulance..

This experimental robot immediately relays information to hospitals and first-aid rooms as soon as someone sits it. Then it, automatically, takes readings of the vital signs like, taking the pulse, measuring blood pressure, heart beat rate and blood oxygen. In emergencies, doctors can administer first- aid by giving instructions directly to the robot or through a speaker and microphone system to bystanders.



SHINPO (2005)
Humanoid two-legged walking robot

This robot was developed on order from the Niigata Prefecture Hall of Natural Science where it is now on permanent exhibition. Using the rotation of the human pelvis and the free movement of leg-joints as a model, we finally succeeded in making a robot that is able to walk without bending its knees - the first in this field. An almost humanlike walking style was achieved. The robot is able to move its wrists and fingers independently in three fashions allowing it to play “rock, scissors, paper” which requires clenching of the fist and formation of the peace sign.



MUJIRO” and “LIGURIO (2005)
Security robot

A couple of outdoor security robots, Mujiro and Ligurio were developed for AICHI EXPO 2005 where they were operated for 185 days. They ordinarily appear to be armless, but when they need to, they can open up their body exterior to the both sides to free two concealed arms which feature the same seven joints as human arms, for removal of suspicious objects. The two robots use a special GPS to navigate, and can position themselves to within an accuracy of a few centimeters from the target. Intended tasks are movement, arm retraction, autonomous patrols, security patrols, removal of suspicious objects and visitor guidance.



ROBORIOR (2004)
House-sitting robot

ROBORIOR's name is derived from "Robot" and "Interior".

It has a digital camera, infrared sensors and videophone capability to notify you of intruders while you are away from home. It can be remote controlled with a FOMA phone, sense break-ins using infrared sensors and notify homeowners by calling their cell phones and sending video from its camera.

Its price is 294,000yen including tax.



T63 ARTEMIS (2004)
Surveillance robot

T63 ARTEMIS was developed in 2003 as a new type of security machines at public space and commercial buildings. T63 can move through programmed routes inside buildings independently due to its advanced automatic control systems and it can even push elevator buttons to use them. T63 can help security company businesses. When the robot detects emergency signals from its fire-sensors and human detection sensors, it sends alarm signals to security office. Security officers are then given robotic controls to



T-52 ENRYU (2004)
The hyper rescue robot

"T-52 ENRYU" was developed as a large-scale rescue robot for the use at disaster sites.

"T-52 ENRYU" is one of the world's largest rescue robots measuring approximately 3.45m in height and 2.4 m in width and weighs 5 tons. Each arm, having eight joints, can lift 500 kg (1 ton with both arms).

It is operated in two modes: One by an operator inside the robot and the other by remote operation by master-slave control and joystick control for perilous situations where rescuers cannot gain access to victims because of the risk of secondary disaster.



T73S BANRYU (2003)
Home utility robot, BANRYU for limited sale

The sensor in Banryu detects any aberrance such as intruders, noise, odor, temperature etc. in an empty house and reports it to a mobile phone of the house owner. The owner can control the robot by remote control, looking the real time image on a videophone on PHS. The organized system including mechanical maintenance and support service, training programs, insurance and financing is established through cooperation from Sanyo Electric and Omron groups. Banryu-T73S is a robot which can be used at home at a practical level.



T72S BANRYU (2002)
Home utility robot, the second BANRYU

Compared to the prototype of T72S, the speed has been increased from 3m/min. to 15m/min. It can go over dumps of about 10cm. It also has an "odor detecting sensor", which was newly and jointly developed with Kanazawa Institute of Technology and New Cosmos Electric Co., Ltd.



T7S BANRYU (2002)
Home utility robot, the first BANRYU

Two types of this robot were developed; one walks quietly with a stable posture like a lizard and the other walks dynamically like an animal. The dynamic walk type was developed with support from Takanishi Laboratory of Waseda University. This robot can be remote-controlled by commands like “Go ahead” and “Turn left” through videophone on FOMA, the third generation cellular phone.



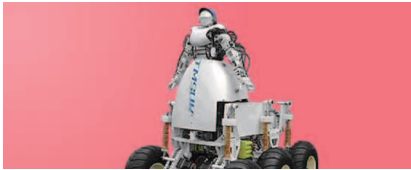
T62K (2003)
Practical patrol and monitor robot

This robot was produced smaller than QC-SR with overall height of 157cm, in consideration of affinity with ambient surrounding. The moving speed was also improved.



QC-SR (2002)
Practical patrol and monitor robot

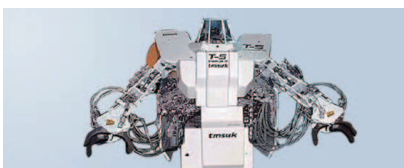
This robot automatically goes on patrol in a building and, in case of an emergency, it can be remote-controlled to fire-fight in early stage of a disaster.



TMSUK-4.2 (2000)
Remote control robot

TMSUK04-2, a remote-controlled robot traveling non leveling grounds.

We remodeled TMSUK4 adding 6 buggy tires plus innovative suspension system, so that it can go over dumps of about 20cm and work on non leveling grounds.



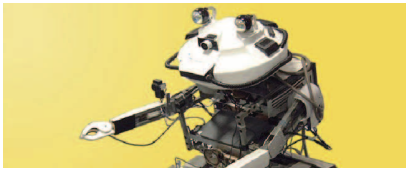
TMSUK-5 (2000)
Rescue robot

With the overall height of 2.5m and overall width of 1.8m, TMSUK-5 is a large-scale concept model to replace people in inapproachable constructions and disaster sites. Its arms are driven by water based hydraulic cylinder, which was adopted for the first time ever and we consider it to be much more environmentally friendly than the conventional water based ones.



TMSUK-4 (1999)
Remote control robot

TMSUK-4 has 27 degrees of freedom and can be operated from a much more sophisticated control module. We have made 15 of these robots, and sold 11 to universities and research institutes where motivation is currently being investigated.



TMSUK-3 (1997)
Remote control robot

TMSUK-3 was the world's first experimental robot controlled remotely by the use of PHS network.

It can be controlled by a keyboard or joystick, steering the image on a PC monitor screen by which is transmitted from the CCD camera attached to the head of the robot. You can also converse with the robot using a microphone and a speaker.



TMSUK-2 (1996)
Voice Recognition and Conversation Technologies robot

We added voice-recognition function to command 35 patterns of speeches into TMSUK-1 with the reception feature. TMSUK-2 is a unique robot with a Kansai accent. When asked for tea, it tells you: "Just a minute!" and brings you tea served on a tray. It also says: "How cold!" when the temperature drops, and: "Mighty hungry." when its battery is low.



TMSUK-1 (1993)
Receptionist robot

TMSUK-1 is active in the entrance hall of Thames. It welcomes a customer and guides him or her to a department requested. After guiding, it goes back to the original position and stands by while being recharged. When a customer leaves, it sends him or her off, saying: "Thanks for coming. Hope to see you soon" .

