

Simple, Reliable, Trainable

The future in robotics has just begun.

“To develop machines, equipment and systems that protect or replace human beings in situations where their presence would be either impossible or place them at great risk.”

This is the motto, motivation and mission of telerob Gesellschaft für Fernhantierungstechnik mbH, which is now at the heart of Cobham Mission Equipment’s unmanned systems business. Whether it’s one of our Master-Slave Manipulators being used to dismantle a nuclear facility or an EOD robot being used to disarm a dangerous explosive device, protecting people and their surroundings is always our paramount concern anytime one of our products is deployed.

The task

The task can be summed up as follows: Go into the potentially dangerous area, search for suspicious items, neutralize all possible threats and come back in one piece and still healthy. In the case of a real threat one should be very happy if this can be done using a remotely controlled robot. On the way to the suspicious object, the task sometimes includes having to overcome stairs, gaps or closed doors. Ideally this job should be done by the robot itself. Having a robot makes no sense if you have to go into the dangerous zone to open the door for it.



“Don’t send a man to do a robot’s job”



The tEODor, which stands for telerob Explosive Ordnance Disposal observation robot, is a heavy duty robot especially designed to help under more demanding circumstances. The original design goes back to 2001 and although this seems to be a rather long time ago the tEODor is still the crown in its class of simple, reliable and trainable robots. The tEODor is in service in 43 countries all over the world from Scandinavia over Europe to South Africa and from Australia, South and North America to Canada. This includes 20 NATO countries. Over the years the tEODor was equipped with wide spectrum of tools, which satisfy almost every wish. Nether the less telerob was always and will be open to new customer requirements. New tools are simple to integrate into the system and the ease of use of the tools is one of the mayor advantages which make the tEODor the crown of its class of robots.

“Don’t do it twice if once is enough”

“This would be the perfect moment to have that tool...!” Under the current state of the art in remote controlled robotics, the user usually has

to return with the robot to the base station to pick up a new tool. If you bear in mind that it might have been very difficult to get the robot to the place where you suddenly needed the tool, you can easily imagine what's going through the user's head at that moment! It is not unusual for the user to bring the robot only partially back to the base station, and to leave the secure area with the tool and bring it to the robot. Or the user winds up driving all the way twice, whereas once would be enough.

The simplest solution is to put a tool magazine on the robot, develop useful tools and implement some easy functions for automatically picking up the tools when they are needed. Placing the tool into the gripper the first time the robot is sent into the danger zone is not really an alternative, because you often don't know what is needed and, on the other hand, you wouldn't be able to use the gripper for manipulation tasks. It is best to let the robot do the job.



The tEODor is the only vehicle in its class that has three tool magazines integrated in the chassis. This means that up to three additional tools or weapons can be carried in an operation, eliminating the need to return to the base station in order to pick up new equipment. The user saves valuable time, permitting him to

concentrate on the actual task at hand. At the touch of a button, the manipulator arm automatically withdraws an extra tool from the magazine.



“Be sure an object is as harmless as it looks”

CBRN detection is most often done by specialists wearing heavy suits to protect them. Nevertheless they are still risking their lives when they inspect suspicious items like dirty bombs. Preferably, a remotely controlled robot should do that job, with the operator sitting well away from the danger zone. To be sure an object is really harmless a close inspection with special sensors is needed. Otherwise one can only tell that the area surrounding the suspicious object is safe and not the object. This is especially true when you are dealing with a chemical and/or biological (CBW) threat. A systematic search is necessary and is best done with an easy-to-use manipulator. This is why the tEODor can be equipped with a sensor platform that scans the environment, and special sensors that can be used by the manipulator thanks to its innovative and easy-to-use manipulator control technology.

At this point I would like to close my report saying again:

“Don't send a man to do a robot's job”

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