

Terma Chooses MÄK Technologies Products for Royal Danish Navy Upgrades

When Terma was chosen to upgrade Command, Control and Communication (C3) systems on the Royal Danish Navy's Flyvefisken class ships, they started looking for commercial off the shelf tools to save development time. They needed products that had the same flexibility they were building into their C-Flex systems.

“We chose MÄK products because of their knowledge and experience with HLA, ” explained Thorsten N. Hansen project manager. “For scenario generation, we chose their COTS product VR-Forces®. VR-Forces is flexible and can easily accommodate special requirements. **MÄK seems to be serious about making their software highly customizable. We saved a lot of development hours using VR-Forces instead of making our own proprietary scenario generator.**”

The C3 systems technology upgrade is based on the new Terma C-Flex platform and incorporates all operational and technical experience from many years of operations of the current C3 systems onboard twenty-one vessels of the Royal Danish Navy. C-Flex is built around an intranet, based on TCP/IP Internet technology using optical cabling, routers and switches in a lattice providing high bandwidth, real-time services and redundancy. The C-Flex software is a true component-based architecture. The main advantages are flexibility in configuration, reduced test requirements, open to third party software and reduced maintenance costs. Each interface to a subsystem is based on components, such that if a given unit, e.g. GPS, is changed to a new type (or upgraded), only new components for this GPS need to be installed (like a new driver) and the unit is integrated with C-Flex. This allows for continuous upgrades of ships with new equipment without major costs or waiting time for a new software

release, a concept that supports a continuous development of a ship rather than mid-life upgrades. The software for C-Flex is Object Oriented and based on JAVA. The first system is expected to undertake sea trials in the autumn of 2003.

“**MÄK's products were chosen after a thorough investigation of different HLA options,**” said Hansen. “MÄK's products have built-in simulation capabilities based on the HLA RPR FOM. The simulated data is distributed to the Radar and Weapon simulators in the system using the MÄK RTI.”

“Flexibility is a cornerstone of our product design. Our focus matched the goals of Terma's C-Flex program,” said Len Granowetter, Director of Product Development at MÄK Technologies. “Their system makes upgrading and maintaining ship based C3 systems easier and more scalable. MÄK's products are flexible, portable and supported, making integration of COTS tools simple and practical.”

Terma is the leading contractor in Denmark within a host of defense related applications, such as army air defense, naval command and control, airborne electronic warfare, airborne tactical reconnaissance, aerial surveillance, ground based communication, and many more. As a radar manufacturer for more than fifty years, Terma maintains a strong position as a supplier of radar sensor solutions, to a wide range of customers for surveillance of coasts, ports, straits and airports, as well as complete surveillance radar systems for navy vessels. In the civilian arena, Terma is the world leader in ATC information systems and airborne environmental surveillance, and provides a host of systems and services for space applications and the ever more complex environment of embedded software development.