

KMW vehicles on Display at IDEX 2009

Munic/Abu Dhabi. At the IDEX International Defence Exhibition and Conference in Abu Dhabi, UAE, Krauss-Maffei Wegmann displayed a new variant of the DINGO 2 vehicle, the DINGO 2 NC Recce. Fitted with the same excellent protection like the other DINGO 2 variants, the vehicle features reconnaissance equipment, by means of which up to five crew members can identify threats posed by nuclear and chemical agents. The DINGO 2 NC Recce is also equipped with a gastight airlock, which separates the rear section of the vehicle from the driver's cab. As a result crew members can enter or leave the vehicle in protective clothing to e.g. collect soil samples or analyse the composition of the outside air without exposing the cabin crew to contamination. Apart from that, the crew does not have to leave the



AMPV type wheeled vehicle from KMW.

Picture: KMW

DINGO 2 NC Recce in order to obtain precise information about the environment. The vehicle has a sampling plunger on the rear, which takes air and soil samples that can be evaluated with onboard testing equipment. If a nuclear or chemical threat is detected, markers can be fixed to the ground at the rear of the vehicle to warn others. A weather mast, which can be extended at the rear up to a height of four metres, enables the crew to collect relevant meteorological data. The so-called WXT510 records wind speed and direction, air pressure and temperature as well as air humidity and precipitation. Special nuclear sensors at the front of the vehicle notify the crew if the DINGO 2 NC Recce enters an area that is radioactively contaminated.

Besides, KMW exhibited the LEOPARD 2 MBT as a "German Success Story". With 16 user countries no other Western main battle tank is more frequently introduced. In its Virtual Reality Centre (VRC) the company the company showed three-dimensional projections of different KMW designed vehicles. They could be viewed both during construction and as finally assembled systems, from different angles and in any sectional views. The VRC presentation thus enables an excellent view into the vehicles' interior as well as the different vari-

ants of the vehicles. In cooperation with Rheinmetall Defence KMW also introduced the new family of highly protected 5 to 9 t AMPV vehicles, of which a model was on display. The family comprises two type series: AMPV1 as the smaller variant for battlefield taxi applications and AMPV2 with a higher protection level and payload capacity. The entire vehicle family is based on common construction principles and technologies.

Swedish SATCOM-on-the-Move

Stockholm. Saab Systems AB and SWEDISH Satellite Systems AB have announced a new SATCOM on-the-move terminal that integrates SWE-DISH's satellite terminal technology and Saab's stabilised platform technology. The SATCOM on-the-move terminal is designed for both land and marine applications with close to worldwide coverage and access to almost any commercial Ku band satellite in service today for up to 10 Mbps broadband communications. The terminal is designed to provide an easy-to-use, unsurpassed broadband on-the-move SATCOM capability with very high performance and accuracy. It is truly interoperable with legacy systems due to fully meeting Federal Communications Commission (FCC) and worldwide satellite operator requirements in legacy transmission modes, such as Single Channel Per Carrier (SCPC) and Time Division Multiple Access (TDMA), without the need to employ excess bandwidth and spread spectrum modulation to overcome terminal deficiencies. For the foreseeable future, operation within the common infrastructure is essential for networking with thousands of existing legacy terminals deployed worldwide.

The Saab navigation and steering system is autonomous from the satellite link and maintains pointing during blocking so reacquisition is instantaneous when line of sight is reestablished. The four-axis mount ensures accurate pointing on land or sea from the poles to the equator. Due to the use of high-strength, lightweight components such as carbon fibre, the platform has a low weight and can easily be mounted on any vehicle or vessel. The terminal is said to be an effective solution for all platforms requiring streaming video, video conferencing, net meeting, file transfer protocol, and battlefield management – all while on the move.

Six more Class 214 Submarines for Korea

Hamburg/Kiel. Howaldtswerke-Deutsche Werft GmbH (HDW), a company of ThyssenKrupp Marine Systems AG, and MarineForce International LLP (MFI) have been awarded a contract for the delivery of six material pack-



RoKN Class 214 Submarine (1st batch).

Picture: TKMS

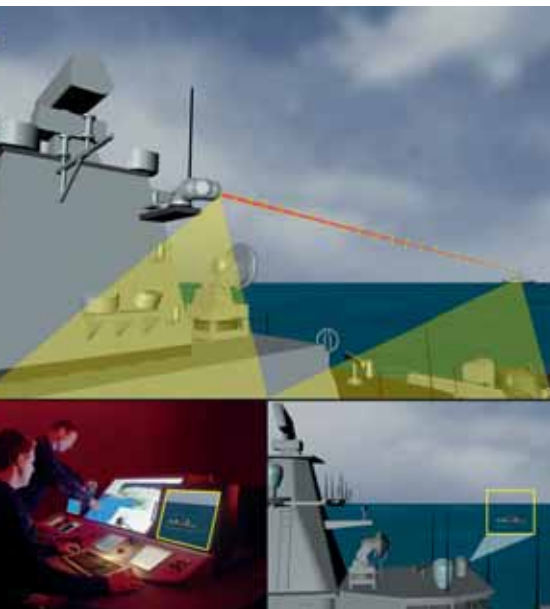
ages to build Class 214 submarines for Korea. The contract was signed between the HDW/MFI consortium and the South Korean procurement authority DAPA (Defence Acquisition Program Administration). Under the terms of the contract the Republic of Korea Navy (RoKN) will receive the 2nd batch of Class 214 boats. DAPA selected Daewoo Shipbuilding & Marine Engineering to build the first boat of this batch. The request for proposals to build the second boat is to be issued to Korean shipyards in summer 2009.

All six boats will be equipped with an air independent propulsion system on the basis of the fuel cell technology. The 2nd batch of Class 214 for the Korean Navy represents a further development of the already proven overall design for the first three boats. The new submarines will be almost identical to the 1st batch boats, which were ordered in 2000 and all three of which were built/are being built by Hyundai Heavy Industries. The first two boats of this class were delivered to the Korean Navy in December 2007 and 2008. The boats' measurements are about 66 m in length and 13 m in height. They have a displacement of approx. 1,800 t and accommodate a crew of 27. The contract further underlines the position of ThyssenKrupp Marine Systems as worldwide market leader in the field of non-nuclear submarines. It safeguards not only industrial core capabilities and jobs at the two ThyssenKrupp Marine Systems locations in Kiel and Emden but also several hundred jobs with subcontractors all over Germany for the coming years.

New High-Speed Network for Naval Vessels

Bremen. Atlas Elektronik, Tesat Spacecom and Synopta have signed an agreement for the joint development of a high-speed data network that will enable naval vessels to interconnect their combat systems and, for example, exchange large quantities of reconnaissance data in real time. As a result, forces on missions will be able to update their tactical situation pictures continuously and without any time lag, enabling them to respond to immediate threats. The new capability will enhance the security of the ships and their crews considerably.

Under the terms of the agreement the three partners are implementing innovative hybrid technology in that a radio connection with a very high bandwidth is supplemented by an integrated optical link of extremely broad bandwidth. This hybrid connection is available during all weather conditions and forms the backbone of the high-speed link. Besides transmission speed, the focus of development is on reliability. The system is being designed for reliable and automatic operation on naval vessels and for easy integration on board.



Amongst other features, the new high-speed link permits the continuous transmission of real time reconnaissance videos between two ships.

Picture: Atlas Elektronik

The first systems capable of interconnecting ships within a particular operational area will already be rolled out this year. In the second phase, a satellite network will be used to connect vessels beyond the boundaries of their operational area, even globally. Atlas Elektronik, Tesat-Spacecom and Synopta will also team up for this phase. The foremost objective of these activities is to provide new capabilities for maritime systems in the sense of true “network centric warfare”.

FFG modernises more M113 for Australia

Canberra. The Australia Army has contracted the upgrade of further 81 M113 vehicles. As a result, 431 M113 tracked vehicles will be upgraded to the AS3 and AS4 versions until 2011. The programme aims at the improvement of the vehicles’ protection, survivability and self-defence capabilities in response to the threads encountered in international deployments. As a system house FFG Flensburger Fahrzeugbau GmbH is in charge of the vehicle technology and the integration know-how for the Australian



431 M113 are subject to upgrades to AS3 and AS4 versions. Picture: www.defence.gov.au.

M113 programme. The Australian Army’s requirement for increased all-terrain mobility and improved vehicle logistics, are responded to by the modern M113G3/G4 propulsion system concept featuring a high performance power pack from MTU and ZF. FFG’s upgrade solution for the M113 has meanwhile been sold to more than 1.100 times globally. To generate additional growth potential regarding in the vehicles’ transport capability, a number of vehicles will become subject to a hull extension programme according to FFG’s M113 WARAN concept. These vehicles will have a new gross weight of 18 t and an internal volume of more than 10 cbm under protection.

EADS and Brazilian Federal Police

Ulm. EADS Defence & Security (DS) has been commissioned by Brazil’s Departamento de Polícia Federal (DPF) to expand the digital radio network of the Brazilian Federal Police on the basis of the Tetrapol standard in order to provide radio coverage for the country’s state capitals and the border areas. The existing system covers the metropolitan areas of Rio de Janeiro, Brasilia and Sao Paulo. In the current implementation phase, the states in the North-East and in the South will be integrated into the radio network. In the scope of the new extension, the Federal Police will complete the coverage in the northern and central-western states, especially in the frontier areas.

The Tetrapol IP Network delivered by EADS DS provides advanced secure encrypted digital communication for voice and data. In particular, the integration of all unities of the DPF is to further improve their operational efficiency and their services to the Brazilian citizens. Upon completion the network will be composed of nine regional networks based on Tetrapol IP with 27 tactical management sites, 100 fixed base stations and 220 independent digital repeaters to provide service around 9000 terminals. The Tetrapol IP network is one part of the PROAMATEC project, the national programme to modernise the Brazilian Federal Police. Beside the telecommunications systems, the main project areas comprise recognition and identification systems, forensic laboratories,

helicopters, information technology, logistic support and training for the Federal Police. It will be finalised by the end of 2010.

Mexico orders six EC725 Helicopters

Mexico City. This new order – the first ever placed with Eurocopter by the Mexican Ministry of Defence – will help reinforce the European helicopter manufacturer’s presence in Mexico. The Mexican Ministry of the Navy already operates Panther helicopters manufactured by Eurocopter, and the EC225 and Super Puma currently serve the Mexican President. Some 350 Eurocopter helicopters are in service in the region, where the group’s market share has progressed steadily to more than 50% today. Eurocopter has been present in Mexico for more than 25 years. In 1982, the subsidiary Eurocopter de Mexico SA (EMSA) was opened to cover Central America, the Caribbean, Columbia, Venezuela and Ecuador. In response to rapid market growth, Eurocopter has become a major provider of training for pilots and technicians in the region through partnership agreements with educational institutions such as the National Polytechnic Institute (IPN), (CONALEP) Mexico’s National Technical Professional School and the country’s Pilot Training Academy. Another response to this rapid growth has been the development of the Group’s industrial activities in Mexico, and talks are currently underway with the Mexican authorities to decide on the location of an industrial plant.



17 different customers have placed orders for a total of 151 EC725, including its civil version (EC225).

Picture: Eurocopter

The EC725 type is the youngest member of Eurocopter’s COUGAR family. The twin-engine medium weight helicopter of the 11-ton class has a five-blade rotor and features an impressive fuel capacity for 5.5 hours of continuous flight operation. Apart from two pilots the EC725 can accommodate 29 passengers. The mission spectrum extends from search and rescue deployments through to long-distance transport, medical rescue flights and logistic support operations.

Waterclean 5000 HS Delivers Drinking Water in Ghana

Winnenden. One of the largest mobile water purification systems from the Kärcher Futuretech product range is operated in Ghana. Since summer 2007, the Waterclean WTC 5000 HS has produced drinking water in Camp Burma, in Ghana's capital Accra. Around 5,000 troops and their families live in the area and have to be supplied with clean drinking water daily. At the end of 2008 the Kärcher service specialist Alexander Jäkel travelled to the "Gold Coast", inspected and serviced the system and replaced a pump. Besides, he took advantage of the opportunity to train more operators and suggested an improvement: at present, the raw water basin is fed from a well that delivers salt



Drinking water for troops and families: Kärcher service engineer Alexander Jäkel in Ghana.

Picture: Kärcher

water. The problem is that the water supply is insufficient, and the water purification system can operate only a few hours per day. Jäkel suggested that sea water, which can be taken at a distance of three kilometres from the Camp, be pumped directly into the raw water basin. Should the required long pipes and pumping stations be installed, the short hoses from the well to the Waterclean installation will become obsolete, and the Ghana Armed Forces can benefit from the full potential of the system.

Rohde & Schwarz to develop SDR Base Unit

Munich. The Federal Office for Information Management and Information Technology of the Bundeswehr has commissioned Rohde & Schwarz to develop a software defined radio (SDR) for the Bundeswehr's joint radio systems (SVFuA). These systems are the basis for the Bundeswehr's future generation of software defined radios. The objective is not only to develop the base unit, but also to demonstrate that its series production capability. The system will contribute decisively to the Bundeswehr's participation in an interoperable information and communications network of joint and combined armed forces.



Signing the contract: Ad van de Geijn, Netherlands (left) and Rob den Hartog from Rohde & Schwarz Netherlands. Picture: Rohde & Schwarz

The SVFuA project involves the development of next-generation mobile radios, which are deployed as network nodes and also as terminals with loadable, adaptive, narrowband and wideband waveforms. In the future, these radio systems are expected to form the backbone of the mobile communications system of the Bundeswehr for all service branches on missions.

In the scope of the SVFuA programme self-organising, mobile radio networks with highly-secure, wideband voice and data communications are to be provided as a prerequisite for the Bundeswehr's network-centric operations capability. SVFuA will be based on a standardised software communications architecture (SCA). In the future, the loading of a new software version will make it possible to adapt to changing requirements on a timely and cost-efficient basis. Interoperability with radios that are already deployed ensures that existing systems and transmission methods can continuously be used. Another advantage of the SVFuA is the high level of flexibility that results from the multi-band radio concept. A broad spectrum of mobile communication requirements is covered, from close-range wideband data transmission up to robust communications over long distances. Regardless of the transmission method the transmission security is very high. In addition, the system is capable of multi-line operation. A single base unit can support up to three radio lines, which means it can be deployed as a radio network node across multiple frequency bands.

Raytheon Anschutz Navigation Systems for Korean Submarines

Kiel. Raytheon Anschutz has been awarded a contract for navigation and control systems for the six batch 2 type 214 submarines for the Republic of Korea Navy (RoKN), which have been contracted with ThyssenKrupp Marine Systems' shipyard HDW. The boats will be built at Daewoo Shipbuilding and Hyundai Heavy Industries in Korea. Under the terms of the con-

tract Raytheon Anschutz will supply a navigation data management system, navigation consoles with radar and WECDIS function as well as battery monitoring, mast control, various sensors and inertial navigation systems. As the core component of the integrated solution, the data management collects and pre-processes various data from the sensors in real time in order to distribute them within the system. The scope of the contract also covers customer-specific development, programme and obsolescence management, documentation (integrated logistic support), testing and setting to work. In



The Navigation Data Management Center (NDMC) forms the core of Raytheon Anschutz' integrated solution. Picture: Raytheon Anschutz

support of cost effectiveness and availability the navigation and control system features a combination of various degradable navigation sensors. Raytheon Anschutz can refer to a solid reputation in system design and high accuracy standards, which have been proven during sea-trials of former submarine projects. Meanwhile Raytheon Anschutz has equipped more than 100 submarines worldwide, including the German Navy's latest fleet of Class U212A submarine.

First Export Success for the COBRA Radar in the UAE

Munich. Euro-Art International EWIV has been awarded a contract from the United Arab Emirates Armed Forces for the supply and commissioning of 3 Counter Battery Radars (COBRA). The COBRA high mobility weapon location radar will protect UAE Armed Forces on the move. COBRA was developed for France, Germany and UK as the first multifunctional counter battery radar in the world with a fully active phased array antenna, enabling accurate multiple targets detection within a short reaction time. Its modular architecture provides high reliability and system availability. During all live firing trials COBRA achieved performance values (location range as well as detection and location accuracy) in excess of the COBRA specifications. Deployed in several out-of-area



COBRA system of the German Army on MAN 8 x 8 truck. Picture: EADS

operations including UN missions, the German systems are involved in the Defence Against Mortar Attacks (DAMA) initiative that is part of the NATO Conference of National Armament Directors' Programmes of Work for the Defence against Terrorism. French systems are in operation in Lebanon, British systems in Iraq. Euro-Art International EWIV was formed in 2007 as a European Economic Interest Group and responsible for global marketing and sales of the COBRA system (except OCCAR). The Euro-Art International members are EADS Deutschland GmbH (Munich, Germany) and Thales Air Systems S.A. (Rungis, France).

First NH90 Full-Mission Simulator Inaugurated

Bückerburg. Earlier this year, Helicopter Flight Training Services GmbH (HFTS) a joint venture with equal shares from CAE, Eurocopter, Thales and Rheinmetall Defence Electronics, inaugurated the first NH90 full mission simulator I the new training centre on the premises of the German Army's Aviation School at Bückerburg. As the currently largest privately financed initiative (PFI) of the Bundeswehr, HFTS has been tasked with the design, the construction and the operation of three NH90 simulation training centres. The NH90 programme represents the largest ever military helicopter programme in Europe. HFRS was founded in December 2004 on the basis of a government MoU and has been allocated a budget of € 488 million for the construction and operation of four NH90 full mission simulators in Bückerburg, Faßberg and Holzdorf. The training programme contracted extends over a period of 14.5 years until the end of 2022. During this period HFTS is to provide comprehensive train-



Cockpit of the NH90 simulators. Photo: HFTS

ing services for NH90 customers, which are billed according to the individual efforts.

The Bundeswehr benefits from the implementation of this programme as a PFI effort by not having to afford costs for procurement or maintenance of the training facilities. Rather, military customers pay for broad training services generating fully skilled helicopter crews.

According to JAR FSTD 1H regulations the BNH90 full mission simulator corresponds with level C requirements. It has a motion system with six directional axes, a workstation for the instructor and provides for the simulation of all systems and optional equipment items. The high-fidelity representation of the avionics fit and the cockpit, sound effects, an OEM (Original Equipment Manufacturer) data pool and a visual system with 200° of horizontal and 60° of vertical field of vision at daylight, dawn and night provide for close-to-reality training. The database for the visual system includes both detailed terrain profiles and realistic, moving 3-D models, which can be combined with each other at instructor's choice'. Changes to the layout and flight profile of the helicopters are considered by regular software updates, thus assuring that the simulator represents the latest NH90 design at all times. The simulated flight patterns can all be adapted to the customers' individual mission profiles.

Tognum to supply Howitzer Engines for South Korea

Friedrichshafen. Tognum's Business Unit "Engines" has been awarded a € 65.5 million contract for engine kits and drive components for 428 Type K9 THUNDER self-propelled howitzers for the South Korean Army. The centerpiece of this drive system is its MTU MT 881 Ka-500 engine with a power output of 735 kW (985 bhp). The howitzers are built by the South Korean vehicle manufacturer Samsung Techwin (STW), which has ordered a total of 1206 engine kits since 1998. The new contract calls for deliveries over the next four years.

The Tognum subsidiary MTU Friedrichshafen GmbH will supply the drive components to two South Korean partner firms: The engines will be delivered to the diesel engine manufacturer STX Engine whereas the power pack subcomponents such as cooling systems, pipework or air filter systems will go to Samsung Techwin. Both companies have been licensees of MTU for several years. Their production sites are located in Changwon, in the southern part of the country. STX completes the engines with domestic parts and, following a test stand run, ships them to Samsung. There, the complete power pack including the MTU engine, the transmission and the MTU power pack sub-components (some of which are also locally manufactured) is assembled before it is integrated with the vehicle. MTU developed its first mainstay in South Korea with the MB 871



MTU MT 881 Ka-500 engines drive the self-propelled K9-Thunder howitzer with 735 kW (985 bhp).

Picture: Tognum

engine for the Korean K1 main battle tank in the 1990s. This cooperation is the basis for the K9-Thunder project using the successor series MT 881.

LEGUAN emplacing two 14-Metre Bridges

Munich. Using an electronic control system, the LEGUAN armoured bridge-layer from Krauss-Maffei Wegmann GmbH & Co. KG (KMW) can emplace a bridge of load category MLC 80 and 26 metres in length in just six minutes. Even in the dark and with the hatches closed, the bridge system can be operated by a single person. As an alternative to the 26-metre bridge, the LEGUAN can now also lay two bridges, each 14 metres in length. As a result the scope of off-road applications of the LEGUAN system has considerably been extended. Despite its weight of 62.6 t (LEOPARD 2 chassis) the 1,500 HP engine assures that the system is extremely mobile, responding to all requirements for international deployments, protection against mines.



The LEGUAN bridge-layer on LEOPARD 2 chassis.

Picture: KMW

On the basis of LEOPARD 1 or LEOPARD 2 main battle tank chassis the LEGUAN bridge-layer is in service with the Norwegian, Greek, Belgian and Finnish armed forces. The bridge-laying system can, however, also be mounted on other used or new battle tank chassis. For example, it is also in use with the Polish PT91, the American M1 »Wolverine« and the M47/M60 in Spain. Moreover, the bridge can be emplaced from wheeled vehicles, such as the MAN 8x8 and the 10x10 vehicle from Finnish company SISU. With the aid of additional pontoons, the LEGUAN can be used to assemble ferries of various load categories and, if necessary, combined to form floating bridges.