

DONAR — Future-Oriented Artillery System

Munich/Vienna. Krauss-Maffei Wegmann (KMW), Munich, and General Dynamics European Land Systems (GDELS), Vienna, have teamed up to develop and market the new generation, air transportable, autonomous and remotely operated DONAR 155mm artillery system. The system addresses the growing need for precise indirect fire capabilities that can augment or even replace close-air-support operations previously conducted by fixed- or rotary-wing aircraft. A first prototype has already undergone rigorous mobility and firing trials at the test facility of the Federal German Office of Defense Technology and Procurement (BWB), and was first displayed in June at the largest European exhibition for land forces equipment, EUROSATORY in Paris, France.

The DONAR is a joint European technology program of GD ELS and KMW that utilizes specific resources and shared skills between the companies, creating true value for European and international defence forces. The joint effort also follows the growing European trend towards enhanced multinational industry cooperation in the land system sector. As a joint European technology programme DONAR's



DONAR on the move.

Picture: KMW

unique system characteristics are expected to revolutionise the conventional understanding of artillery, thus laying the ground for the replacement of conventional systems that are currently still in service with modern forces (such as M109, AS90, K9). For example, DONAR reduces the challenges for personnel and in logistics and can be deployed autonomously. The total weight of the system is below 30.5 tons. As a result, it can be transported in the new European A400M transport aircraft — or in other aircraft with comparable volume and weight capacities.

The completely remotely operated artillery module is equipped with a 155mm (52 cal.) cannon, giving it a fire power comparable to

that of a PzH 2000. The maximum range amounts to more than 56 kilometres (vlap). The on-board ammunition supply comprises 30 155 mm rounds. Despite a significant reduction in weight and size, the gun module is operational without any additional stabilisation and provides a 360-degree azimuth range.

The system provides the highly mobile capabilities of an MICV, derived from an adapted ASCOD 2 version for artillery applications. Separated from the automatic gun module, a crew of two soldiers (driver and commander) operate the system from a highly protected driver's cab. The interaction between the crew and the weapon system supports very rapid firing and moving manoeuvres. The crew's and the system's survivability has been enhanced both by its low silhouette and the cabin's protection against ballistic impact from hand weapons and shell fragments from artillery and mortar ammunition. The cabin meets a very high NATO protection standard.

International Conference: "Transformation of the D-A-CH Armed Forces"

Berlin. During the fourth annual conference experts from the German, Austrian and Swiss Armed Forces will enter into discussions about the development of the armed forces' transformation. The transformation process is continuously developing along with the increasing security political challenges. Networked Security will continue to play an exposed role. Not only the networking of military forces has to be enabled, moreover all other players in the area of security have to be part of the network. Effective Cooperation between civilian and military players (CIMIC) can only be assured by such networks.

The human being has a decisive role. That is why the conference programme this year includes a training focus. CROP, the use of space-based assets as well as the development of international cooperation are some of the issues dealt with this year. Joint approaches are essential. For this reason, Berlin-based "IQPC Gesellschaft für Management Konferenzen GmbH" has for the fourth time invited to an exchange of information on the subject of "Transformation of the German/Austrian/Swiss Armed Forces". The conference will take place in Berlin from 18 to 20 November 2008 and is based on the idea of accelerating and improving military command and control processes through the exchange of information and knowledge and the resulting advantages.

The conference addresses decision makers and managers from the German Bundeswehr,

the Austrian Bundesheer, the Swiss Armee, NATO and politics, as well as ministries, public and commercial institutions, industry, political parties, research and development organisations, defence and IT companies. The registration fee for representatives from the public sector is 399.- Euro — apart from two conference days including site visit an interactive workshop — one day — is part of the programme. More information about the event is available at www.iqpc.com/de/transformation, or phone +49(0)30-209130.

ESG supports EU in out-of-area missions

Fürstenfeldbruck. With the support of ESG Elektroniksystem- und Logistik GmbH the EU will in future be able to conduct operations in crisis areas more effectively. On order to the Secretariat General of the EU the company is currently analysing the entire flow of information, which is crucial for the conduct of such operations. The results are expected to reveal important findings for the development of future mission concepts and the architecture of command and control systems.

By February 2009, ESG will complete an analysis of the actual situation of the total exchange of information for military and civilian EU operations. All levels will be investigated, from the political, strategic and operative through to specific decisions during deployments. Here, ESG is able to draw on two past projects it managed and implemented for the CIS project team of the European Defence Agency (EDA) between 2006 and 2008. In these projects, the requirements of the exchange of information and the processing and decision patterns of various organisations and nations on a military level were analysed.

Well over a hundred different documents on how to execute operations exist at the European level. These set out the formal sequences, which must be observed — from "discovery" of a trouble spot by the EU and assessing and deciding whether civilian or military means should be used, through to actual deployment. ESG is analysing all of the relevant documents and records mission experiences by means of interviews and workshops with the respective executives.

ESG is conducting the study directly for the Secretariat General of the Council of the European Union. The project team on the part of the client, led by the Director of the EU Situation Centre, is made up of representatives of the European military staff, the Directorates-General for External Relations and Administration, the European Defence Agency and "Civilian Planning and Conduct Capability", which plans and leads the EU's civilian overseas missions. The staff of ESG's Koblenz subsidiary are responsible for executing the project.

Eight EC135 Helicopters for the Bavarian Police

Marignane/Munich. The Home Office of the German State of Bavaria has announced its decision to procure eight new Eurocopter Type EC135 P2i helicopters for the airborne police echelon. Thus, the echelon will be able to accomplish its missions with newest generation helicopters. The EC135, which have a state-of-the-art police equipment fit, are to be delivered between September 2009 and April



EC135 for the Bavarian Police. Picture: Eurocopter

2010. The dedicated police equipment of the aircraft includes a FLIR (Forward Looking Infra-Red) camera, a high-resolution digital day and night vision camera, SatCOM, GPS, a digital mapping device, digital TETRA radio communication, the FLARM® collision warning system, tactical direction finder, digital flight management system as well as a cellular GSM phone. The IFR (Instrument Flight Regulations) capable helicopters are equipped with glass cockpits, which have been certified for operations with night vision goggles. Roping device, cargo hook system and four rescue winches, which can be fitted to each of the eight helicopters, are part of the package. The contract with the ministry includes an option for "Power-by-the-Hour" service over a time period of at least ten years.

The twin-engine EC135 has a maximum take-off weight of 2,910 kg, a range of 645 km and a maximum cruising speed of 257 km/h. It

can accommodate the pilot and six or seven passengers. Low fuel consumption and easy maintainability ensure unparalleled reliability and very economic operation. The continuing success of the EC135 and the helicopter's undisputed leading position among the twin-engine new generation light helicopters for police and air rescue services worldwide reflects the innovative and reliable technology implemented in these aircraft. This includes modular construction, the use of light, corrosion-resistant composite materials, digital avionics, light, bearing-free main rotor and a coated tail rotor of the Fenestron® type. The spacious airframe with easy access through large sliding doors on the side and broad tail doors provides for optimal use and quick reconfiguration. A large variety of certified special add-on equipment is available.

Launching Ceremony of Class 209PN Submarine for Portugal

Kiel. The launching and christening ceremony of N.R.P TRIDENTE, the first Class 209PN submarine for the Portuguese Navy, was held on 15 July 2008 at the Kiel facilities of Howaldtswerke-Deutsche Werft GmbH. The guest list of the event read like a "Who is Who in Portuguese Defence": Defence Minister Dr. Nuno Severiano Teixeira was accompanied by the Chairman of the Military Committee of the Portuguese Government, Dr. Júlio Francisco Miranda Calha, General Luis Vasco Valenca Pinto, the Chief of Staff of the Portuguese Armed Forces, Admiral Fernando José Ribeiro Melo Gomes, the Chief of Staff, Navy, as well as the President of the National Parliament, Dr. Jaime José Matos de Gama, and the Portuguese Ambassador to Germany, José Caetano de Campos Andrade de Costa Pereira. Dr. Alda Taborda, the wife of the President of Portugal's Parliament, was the christening godmother. From the German side the party was complemented by Undersecretary of State Rüdiger Wolf from the MoD, the Deputy Chief of Staff, Navy, RADM Hans-Jochen Witthauer, the Chairman of the Board of ThyssenKrupp Marine Systems, Dr. Hans Christoph Atzpodien, and the Lord Mayor of Kiel, Ms. Angelika Volquartz. In his welcome address, Walter Freitag, the CEO of HDW, reminded the audience of the history of Portugal as a seafaring nation, which has been supported by German shipyards already since 1989, starting with the VASCO DA GAMA Class frigates. As far as submarines are concerned Freitag proudly referred to some 170 boats of three classes delivered by TKMS shipyards since WW II.

With the Class 209PN the Portuguese Navy for the first time is taking delivery of submarines with an air-independent propulsion system based on fuel cell technology and featuring the Permasyn engine, which has been developed jointly by HDW and Siemens. Compared to conventional diesel-electric propulsion systems the fuel cell increases the operational time for the submerged submarine in battery mode by the factor of 4. For the control and integration of the sensors and weapons the two boats are equipped with the ISUS 90 command and weapon control system from Atlas Elektronik. ISUS 90 also integrates the COMINT ESM system. There are eight torpedo tubes to accommodate the weaponry. As a particular feature the boats have been fitted with a pressure-proof bulkhead directly in front of the command turret, which separates the boat into two independent sections. Due to this particular feature new construction concepts had to be developed, both with regard to the platform fit and for the security measures, which — among others — include an emergency blow system with compressed air, two individual emergency exit ducts as well as a series of other features according to NATO standard, like docking facilities for deep-water rescue vehicles.



The building contract for N.R.P. TRIDENTE was signed on 21 April 2004. Picture: ThyssenKrupp Marine Systems/HDW

The second boat ordered by Portugal from HDW has the building number 384, and her keel was laid on 25 April 2007. After service introduction the two Class 209PN boats will operate in the Atlantic Ocean and in the Mediterranean together with Portugal's last DAPHNE Class boat, N.R.P. BARRACUDA.

First GALILEO Control Centre opened

Oberpfaffenhofen. As the most important European technology project GALILEO requires the implementation of leading-edge information and communication technologies (ICT). This is also true for Oberpfaffenhofen in Bavaria. Here, the German Aerospace Centre (Deutsches Zentrum für Luft- und Raumfahrt — DLR) has opened a GALILEO control centre, the ICT infrastructure of which is mainly provided by T-Systems as a long-lasting

partner of the DLR. The Business Customer Branch of Deutsche Telekom also ensures the operational safety of GALILEO through logistics management. "Already now during the system development pilot phase the workstations of the space experts have to perform 100%", Ralf Nejedl, T-Systems' GALILEO Programme Director, said on the occasion of the inauguration ceremony of the first of two control centres. In the future these two ground stations will control a network of 35 distributed ground stations as well as 30 satellites orbiting our planet in a height of 23,000 kilometres.

MTR speeds up the TIGER

Hallbergmoos. Since mid-August of this year the Fritzlar-based Airmobile Brigade 1 has been operating a Step-2 TIGER helicopter with a preliminary licence. Four additional support helicopters of this type are to be fielded before the end of the year. The feedback from the troop is positive, which also pleases the manufacturer of the TIGER's twin engines, namely MTU Turbomeca Rolls-Royce GmbH (MTR) in Hallbergmoos near Munich. MTR, however, is not only the manufacturer of the propulsion system, moreover the company transfers technical expertise to the Bundeswehr. Between 2004 and April 2008 the European consortium trained mechanics in the Franco-German TIGER training centre in Le Luc. "We have shown the German soldiers how to exchange individual modules or even the entire MTR390-2C engine. In April of this year the Bundeswehr technicians were skilled enough in order to exchange the modules and engines without further support by us", explains Dr. Christof May, the Director of Sales. Once the TIGERs in Fritzlar will be officially licensed and are operated by the Luftwaffe's Weapon System Command, MTR is to get involved in the technical-logistic support of the aircraft, too. A respective agreement is currently being negotiated.

Germany has ordered a total of 80 TIGER helicopters, not all of which will be equipped with the MTR390-2C engine. Some will have the more powerful MTR390-E ("Enhanced Engine") propulsion system. This engine has been developed and is manufactured by the MTR sis-



TIGER support helicopter equipped with the MTR390 engine. Picture: ES-Archive

ter company MTU Turbomeca Rolls-Royce ITP GmbH. The MTR390-E provides the TIGER with an additional power capacity in extreme climatic zones. With the new engine the helicopter can accept more payload or run at lower relative power in moderate climatic conditions.

MTU Turbomeca Rolls-Royce GmbH (MTR) was founded in June 1989 as a joint venture of the companies represented in its name. As a programme organisation it is responsible for the development, production and maintenance of the MTR390-2C engines for the TIGER. Besides, the company is a contractor of the European procurement agency OCCAR.

Rollout of the TEP 90 Decontamination System

Obersontheim. The Bundeswehr officially accepted the new TEP 90 mobile decontamination system during a rollout ceremony at the KÄRCHER facilities in Obersontheim. In the presence of numerous distinguished guests, the then Vice-President* of the Federal German Office of Defense Technology and Procurement (BWB), Harald Stein, and the Deputy Chief of Staff, German Armed Forces, and Chief of Staff, Joint Support Service, VADM Wolfram Kühn, handed the first two decontamination systems over to their future operators, namely the NBC Defence School at Sonthofen.

By the year 2010 the Bundeswehr will have received a total of 73 TEP 90 systems and will thus have significantly improved its NBC defence capabilities. With the delivery of the first TEP 90 to the Bundeswehr's NBC defence troops a new chapter in NBC decontamination was opened in more than one sense. After completion of the procurement programme for the planned 73 TEP 90 systems not only a critical capability gap will have been closed, moreover the standard will be set for highly mobile, compact and autonomous decontamination systems.

The TEP 90 system consists of the new decontamination equipment developed and manufactured by KÄRCHER Futuretech as well as a highly mobile carrier vehicle from IVECO Magirus, the specially developed cabin of which offers the crew best possible protection against threats in the mission theatre. The vehicle fit includes a crane for the mounting and dismounting of the decontamination equipment, which is installed in three containers. Besides, the loading crane can carry a hoisting platform, from which the operators can decontaminate major equipment, like tanks and vehicles, from an elevated position.

Following the contract award the suppliers needed less than two years until the delivery of the first two systems. The keeping with such an ambitious time schedule was supported by close coordination during the development between the two companies as well as with other companies that have been involved as subcontractors — like Krauss-Maffei Wegmann for the protected driver's cab, Palfinger for the hydraulic loading crane and Kurz for the container transport frame. In response to the system mobility requirement, a field test was carried out together with the customer, during which the total system was made subject to a particular life cycle test at the testing facilities of IVECO Magirus in Ulm as well as at the Bundeswehr's Technical Centre 41 in Trier. The lead for the entire programme has been with the Federal Office of Defense Technology and Procurement (BWB), which managed to make imminent inputs for the achievement of the ambitious objective through the close coordi-



Decontamination of a FUCHS NBC detection vehicle.

Picture: Kärcher

nation of all activities and consistent time management. Before the end of the year 22 further systems are to be handed over to the users in the Army, the Air Force and the Navy; deliveries of all systems are to be completed by mid-2010. (* Effective 01 October 2008 Harald Stein has been appointed President of the BWB)

Protection of German Army Training Area

Ulm. EADS Defence & Security (DS) is to protect the German Armed Forces' air defence firing range in Todendorf with its proven TRS-3D naval radar. Defence Electronics (DE), an integrated business unit of EADS DS, recently handed over the first naval radar in the world to be deployed in camp protection to the customer, the Federal German Office of Defense Technology and Procurement (BWB). TRS-3D, more than 50 systems of which have already been sold to various naval forces around the world, is characterised by highly sophisticated signal processing techniques allowing



TRS-3D radar for the protection of the exercise ground near Todendorf. Picture: EADS

surveillance of the airspace, both over land and water, as well as of the surface of the sea. In addition to this, the system is equipped with the MSSR 2000 I secondary radar for automatic identification of ships and aircraft, thus preventing aircraft and vessels from approaching unnoticed. This is a major requirement for the protection of the military training site situated on the Baltic Sea near Kiel since conventional radars cannot perform with the required reliability under the varying environmental conditions over land and sea.

The TRS-3D is a 3-dimensional multimode naval radar for air and sea space surveillance. The vessels already equipped with the TRS-3D include the German Navy's new K130 corvettes, the US Coast Guard's National Security Cutters and the Finnish Navy's "Squadron 2000" patrol boats. With state-of-the-art signal processing technologies implemented, the radar is especially suited for the early detection of low flying or slowly moving objects, such as helicopters, sports planes or sports boats under severe environmental conditions.

Investments in Engine and System Production

Friedrichshafen. The Tognum Group (ticker symbol TGM, WKN A0N4PE) continues its expansion trend. The company decided to invest an additional 75 million Euro in capacity expansion in the production of MTU engines, L'Orange high performance injection systems, as well as the extension of the MTU Onsite Energy power generation systems during the current and the coming year. Particularly the in-house production of essential components for high performance diesel engines will be expanded and given a more international outlook with an investment volume of around 50 million Euro. The Tognum Group is therefore currently looking for a new site in the US dollar region, which would initially supply the existing assembly plant in Detroit (Michigan, USA) with cylinder heads and components for the production of the successful Series 4000 en-

gines. Furthermore, at the existing site near Istanbul (Turkey), the first step will be to set up a manufacturing facility for cylinder liners designed for the Series 4000. Simultaneously with the installation of new international manufacturing sites in the US and Turkey, an amount of more than 10 million Euro will be invested at the existing production site in Friedrichshafen in order to boost quantities in conrod and crankcase production facilities (total investment of about 50 million Euro for the worldwide expansion for inhouse production include more than 10 million Euro for investments in Friedrichshafen).

The development of a new engine production site in the US is another consistent step in the implementation strategy of the Tognum Group, which was initiated in 2005. Besides the assembly plants in Friedrichshafen (Lake Constance/Germany) and Detroit (Michigan/USA), MTU also has an assembly facility in Suzhou/China for Series 2000 engines, and has started a local joint venture in China targeted at the assembly of Series 4000 engines.

Apart from the expansion in the engine business, Tognum Group is currently investing around 10 million Euro as planned in the "MTU Onsite Energy" sites Mankato (Minnesota/USA), Augsburg and Ottobrunn near Munich (both in Germany): these investments are targeted at the expansion of the production capacities for diesel, gas and fuel cell based onsite power generation systems. Another element is the growing component business of Tognum subsidiary L'Orange GmbH in Glatten (Germany/Black Forest area), which is currently expanding their production capacities for high pressure injection systems with an investment volume of 16 million Euro.

47 NEW LMVs for Norway

Lillehammer. In addition to the 60 vehicles already procured in two batches (March 2006 and January 2208) the Norwegian Defence Logistics Organisation (NDLO) has signed a new contract with IVECO for further 47 armoured Light Multirole Vehicles (LMV). The new vehicles will have a number of modifications intended to overcome the shortcomings of the 25 batch 1 variants, which were practically sent directly from the production line in Italy to the Norwegian troops in Afghanistan. One first batch 3 vehicle will soon be delivered to the NDLO for testing. If the configuration proves to meet the requirement, series production is to commence and the first vehicles are to be delivered by the end of 2009. The batch 1 vehicles have also been made subject to modifications in Italy, and in the meantime have made significant contributions to the protection and survival of the vehicle crews during several IED attacks in Afghanistan.

Apart from Norway the LMV has been or will be introduced by the armed forces of Italy

(1,216 Veicolo Tattico Leggero Multiruolo (VTLM) "Lince", the procurement of further 7,700 has been earmarked, Belgium (440 Light Armoured Tactical Vehicles (LATV) with an option for further 180), Spain (120 Vehículo Ligero Multipropósito "Lince", option for further 275), the UK (401 Command and Liaison Vehicles (CLV) "Panther" in licence production by BAE Systems, option for further 400), Croatia (10 vehicles) and the Czech Republic (19 vehicles). During the year 2008 a total of 850 vehicles have been built.



The LMV has been selected by the armed forces of seven countries. Shown here are vehicles from the second batch for Norway. Picture: IVECO Defence Vehicles

In the scope of the "Protected Command and Mission Vehicle" (Geschützte Führungs- und Funktionsfahrzeuge — GFF) programme the German Bundeswehr tested the LMV, which had been offered in cooperation with Rheinmetall under the designation CARACAL for the respective class 2 requirement, however, the EAGLE IV from Mowag in Switzerland has been given preference for the first batch. Since then the LMV has been made subject to a number of upgrade programmes, particularly with regard to payload and protection. Designated "LMV-plus" it is now subject to contract negotiations in a number of countries.

Delivery of FENNEK pioneer vehicle

Munic. Krauss-Maffei Wegmann (KMW), Europe's leading system supplier of protected vehicles on tracks and wheels, has delivered the first of a total of 24 FENNEK pioneer vehicles to the German Army's pioneer troops. The handover took place at the end of September during the "2008 Pioneers" training exercise and the subsequent "Pioneers' Day" at the Münchsmünster barracks near Ingolstadt in Bavaria, Germany. The vehicles from the FENNEK family will provide a valuable service to the German Army's pioneer troops in their reconnaissance and preparatory work in the future. They can move almost silently through any terrain, offer a wide range of functions, wide-ranging protection, excellent stability and a high level of autonomy, and are able to defend themselves.