

Warrior 21

Improved operational capabilities and protection through new infantry systems

Somewhere in Kosovo, KFOR mission 2000. A German infantry squad on a night-time patrol in the maze of alleys of the old city. Suddenly, shots ring out from the left. The squad immediately moves to the adjacent safety zone; the squad leader attempts to gain an overview of the situation. But the situation is confused: There is no visual contact with all soldiers in the unit; the squad also lacks tactical radio. The group members shout out their situations to one another. The platoon commander

demands an initial situation report by radio. While further shots are heard, a rapid deployment force makes its way to the scene of the action. The squad leader on site tries to guide in the rapid deployment force. However, as he only has a city map with street names in Serbo-Croat, which the Kosovo Albanians have removed, and lacks a GPS unit, he can only relay an approximate situation report using coordinates picked off the map – a challenging task under fire and combat stress.

Since Germany began participating in military missions abroad in the 1990s, it has been the forces deployed on the ground that have delivered the main contributions to the stabilisation of conflict regions. It was, and is, the infantry who, as the 'boots on the ground', maintain close contact with the population and are thus able to build trust and a feel for the situation that enables them to respond immediately and flexibly. This means that these forces should have the best obtainable information at their disposal, and must be optimally able to act



▶ decisively and assertively; at the same time, this also means that they should be provided with the best possible protection in view of their exposed situation. In the first foreign missions of the Bundeswehr, however, the infantry forces in particular, with their sub-optimum equipment, fell far short of the state of the art. In Germany, as within NATO, this triggered greater discussion on developing and initiating soldier modernisation programmes (SMP). For the first time, the focus was not on the procurement of components, but on viewing the individual soldier and his squad as a system.

The present

Somewhere in Afghanistan, ISAF mission. A German infantry unit, equipped with the Infantry Man of the Future, Basic System (IdZ BS), on foot patrol. Suddenly shots ring out through the night; the unit moves into the safety zone. A quick glance at the display of his NaviPad, a PDA designed for military use, gives the squad leader and all soldiers in the squad an immediate overview of the dislocation of the squad members. The assistant squad leader reports via the squad-level tactical radio that he has identified muzzle flashes coming from a house 75 metres to the left of the squad. The assistant squad

leader lasers the house with the laser range finder – the position of the house appears immediately on the NaviPad. All members of the squad can unmistakably see what the target is. The squad leader communicates a detailed situation report to the platoon leader via a second radio device. The dispatched rapid deployment force is already en route to the precise coordinates.

The combat roll-out of the Infantryman of the Future, Basic System (IdZ BS) in 2004 was the rapid response to the increased needs of the infantry in the missions of the Bundeswehr. By taking advantage of technologies available on the civilian market, the Bundeswehr, with the support of the systems house Soldat under the leadership of EADS Defence & Security, became the first army in the world to achieve a comprehensive expansion of capabilities in the areas of protection, situational awareness, communication and weapons deployment, in close cooperation with users and procurement authorities. Since being deployed with the army, navy and air force, the IdZ BS has proved its effectiveness in missions in Kosovo and the Congo, and continues to do so every day in Afghanistan.

An IdZ BS system for equipping ten soldiers of an infantry squad consists of an identical basic configuration

for all soldiers (including modular bullet-proof vest in protection class I to IV, electronic vest including NaviPad for situation overview and transmitting messages, target data and images, night vision device, tactical radio) and various special items to be carried by only one or two members (such as laser range finder, camera, thermal image sighting device).

However, since the series production of 220 IdZ systems for 2200 soldiers between 2004 and 2007, technology has made further strides. For example, the system now has the capability to connect to simulation systems to eliminate existing training deficits, and also enables seamless links to both the FAUST command and control system and the FülInfoSys H system. Going forward, enhancement of combat performance in the form of a rapid, risk-free weight reduction at low cost while increasing the capabilities of the deployed infantrymen is conceivable through less spectacular means, such as the replacement of individual components and protective materials.

The near future

Somewhere in the mission area, 2010. On a mounted combat patrol, an infantry squad comes under fire from ▶

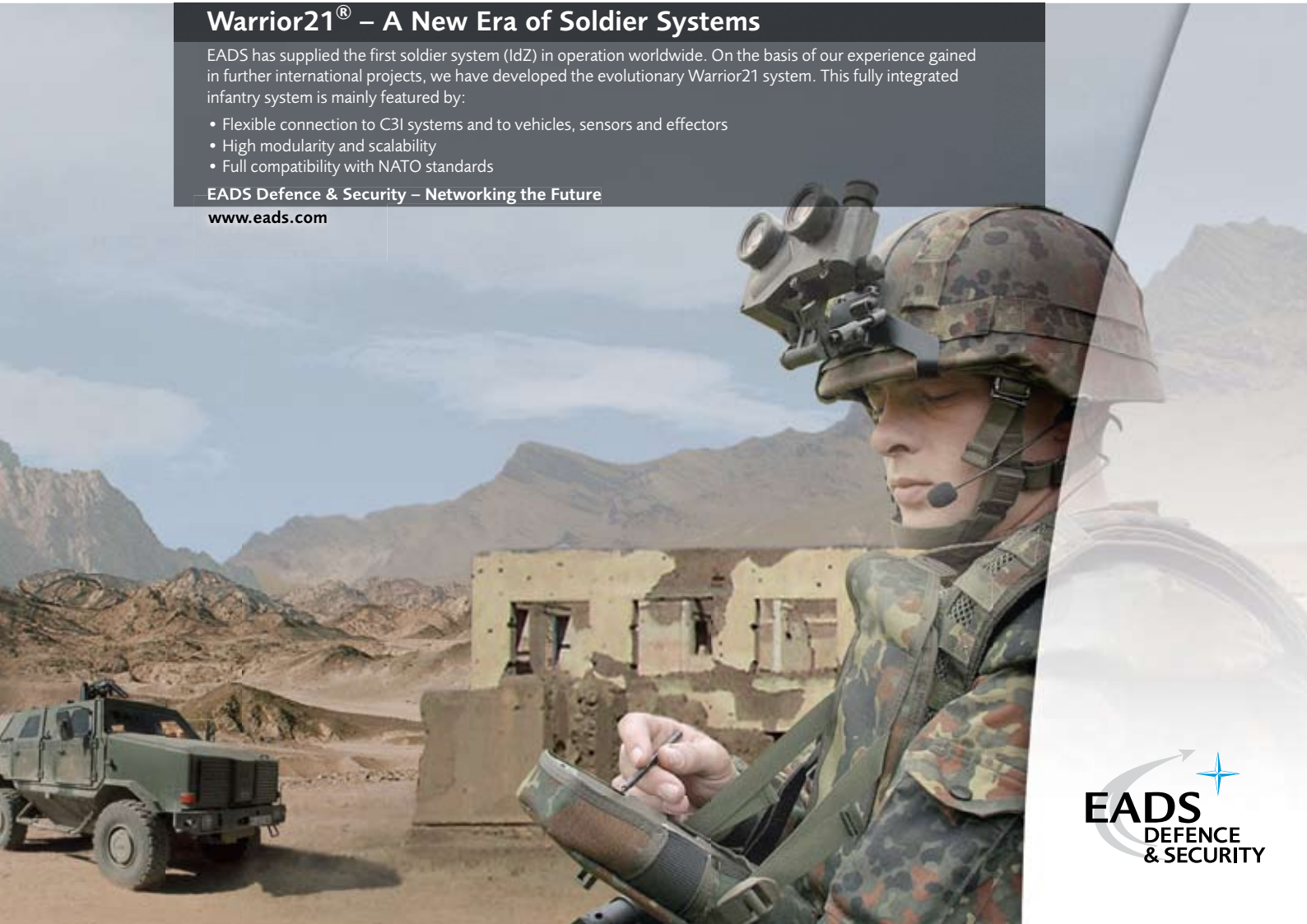
Warrior21[®] – A New Era of Soldier Systems

EADS has supplied the first soldier system (IdZ) in operation worldwide. On the basis of our experience gained in further international projects, we have developed the evolutionary Warrior21 system. This fully integrated infantry system is mainly featured by:

- Flexible connection to C3I systems and to vehicles, sensors and effectors
- High modularity and scalability
- Full compatibility with NATO standards

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▶ a rock formation on the ridge line. One soldier is slightly wounded. The squad immediately returns fire and moves to the safety zone; the wounded soldier is given first aid. On their displays, the soldiers see their respective positions; messages are exchanged via the internal tactical radio link. An Unmanned Aerial Vehicle (UAV) flies over the scene and transmits its reconnaissance data directly to the squad leader's display devices. The squad leader transmits the attackers' position, precisely determined using the laser range finder, to the Army Command and Control Information System (FülInfoSys H) using the same device as for tactical radio. He also issues a standardised casualty report. The entire rescue chain is immediately alerted and can initiate initial actions to recover and care for the wounded soldier. The situation

can be followed virtually in real time at the platoon, company and battalion levels. Thanks to the instantaneous and precise target data, high-angle artillery fire can be immediately deployed as a countermeasure.

The Warrior-21 concept: the rapid response to a wide range of needs

On the basis of the experience gained with IdZ in ongoing missions, the continuing expansion of requirements and threat situations and the newly available technologies, EADS Defence & Security developed the Warrior 21 concept. The main principle and feature of Warrior 21 is its open architecture. Based on a data and energy bus system, and standardised interfaces, Warrior 21 can be rapidly configured to meet customer requirements and

achieve product maturity. Individual components can be quickly exchanged and integrated in the product. This facilitates the involvement of local industries and suppliers that is so often a condition of procurement projects, and additionally ensures the growth capability of the Warrior 21 product. Warrior 21 is a modularly scalable system that is capable of growing with the increasing demands on soldiers and with future technologies through changes on the component or subsystem level.

Warrior 21 realises additional capabilities, such as the use of video sights, head-up displays, comparable or better protection at a reduced weight, speech warning when approaching dangerous objects (e.g. mine fields), an optimised power supply, links to vehicles, command and control information systems and reconnaissance systems such as UAVs. The communication concept of Warrior 21 envisages the use of just a single high-performance radio unit for squad-level tactical radio, communication with the platoon level and data interchange between all soldiers in the platoon. Health monitoring and detection of enemy snipers are also slated for implementation in the near future.

However, this increase in requirements and capabilities must not overtax the infantrymen – their mission urgently demands their full attention. For this reason, support services such as training with the device in virtual and real environments and logistics concepts matched to the soldiers and to maintain the sustained operational capability of the system are core elements of the implementation and operating concepts of the modern infantry system, Warrior 21.

The modular Warrior 21 concept has drawn a uniformly positive response from international customers. To date, Switzerland, with its "Integriertes Modulares Einsatzsystem Schweizer Soldat" (IMESS) and Spain, with the "Combatiente Futuro" (ComFut – Future Soldier System), have chosen solutions based on the Warrior 21 concept. Other customers are also showing great interest. The sometimes extremely short intervals from order placement to delivery of prototypes – in Switzerland, the prototypes were delivered just nine months after the contract was signed – and the successfully completed field tests affirm the Warrior 21 approach.

Well equipped for the future

In view of the increasing asymmetric threat situations and the challenges of joint and combined missions within the context of network enhanced capabilities, enhancing the effectiveness, assertiveness, protection and rapid and secure information exchange via more powerful information and communication systems for the deployed infantry forces is of ever greater importance. State-of-the-art infantry systems like the Warrior 21, developed on the basis of the IdZ BS, provide the deployed forces maximum possible effectiveness, protection, communication and situation information, ensuring that they are well-equipped and protected when performing their demanding tactical operational mission. ■



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