ODU: Connecting the Soldier

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Q: As an OEM provider to system integrators and product integrators, how do you engage with these manufacturers to better understand their emerging needs and to co-ordinate development schedules to ensure your respective products are ready at the same time?

A: ODU has been known as a connector and contact technology provider in military technology for more than 60 years. ODU has also been successfully operating around the world in the various "Future Soldier" programmes for a number of years.

The experience gained in various projects and applications converges into a project team. Our engineers also belong to this team, and are in direct contact with our customers and users. This allows a direct communication channel between the user and developer, which has a very positive impact on development results and development times. ODU's deep vertical integration allows us to react extremely flexibly to the various customer requirements.

Because ODU produces almost everything internally, a sample connector can even be prepared within a few weeks if necessary. Of course, we would prefer to be included in the customer's development processes as early as possible so that the optimal connector can be found.

Q: To what extent do you deal directly with military customers to better understand their requirements?

A: We work very closely with the system developers. We prefer direct contact between our development team and the customer. ODU sees this special application area as a market of the future and consequently the development of separate connectors has the highest priority. As a rule, we work with the OEMs and have less contact with military organisations such as NATO.

Q: Can you outline your product line and the noteworthy aspects to it that relate to the dismounted soldier?

A: ODU is known as the manufacturer of PUSH-PULL connectors, the ODU MINI-SNAP. Many different customer-specific projects have given us a wide range of experiences in all possible cylindrical connector systems. Whether a screw locking, bayonet locking or simply a rugged SNAP-IN solution - our ODU cylindrical connectors offer the users the right connector solution for each application. This ensures that the user does not have to accept any compromises, and also that no matter how varied the connector and locking systems are, one manufacturer can provide them all. Almost any connector manufacturer can implement technical requirements. But ODU offers the flexibility and know-how to implement the optimal connector for our customers. We accomplish this by placing less emphasis on defined criteria (PUSH-PULL locking) and instead combining good technical solutions from various existing connectors in order to achieve the best solution.

Q: To what extent are connector requirements/solutions diverging or converging between military and 'rugged' civil requirements?

A: There are actually no differences to speak of between the applications.

Our connector solutions from the military segment are just as suitable for use in the civilian area. The requirements with regard to the surfaces (matte and black) have however, not yet arisen in the civilian sector.

Q: What soldier modernisation programmes have you participated in – either in terms of development programmes or fielded systems?

A: ODU has been used in very many programmes through subcontractors. I would almost like to mention practically every system. Our connectors are used in individual components, such as GPS, PRR, PTT, optronic systems, rugged computers and night vision systems, and these components are then delivered to the system manufacturers. We have worked with direct system suppliers in Germany and Israel. Our systems have also been field tested here.

Q: Has a consensus been established in terms of soldier modernisation requirements for connectors?

A: There are many different approaches to the concepts and solutions in the respective countries, and so also in the respective programmes, such as IDZ, FIST, Felin, etc. But ultimately the requirements placed on the connection system are very uniform.

A variety of circular connectors for different programmes of "Infantryman of the future" e.g. IdZ, FELIN, FIST etc. Characteristics: lightweight, extremely rugged and solid, small dimensions, shielding features . . .

Our customers' many experiences in recent years have allowed us to rigorously move forward in enhancing our connection systems. This has resulted in four new connector series, which are currently being developed and built, so that they will be available on the market soon. The new connector systems meet almost all relevant requirements.

Q: To what extent do the requirements for connectors on SMP ensembles differ from predecessor systems that equip individual dismounted soldiers such as more connectors per soldier and higher premiums put on reducing unit costs?

A: The most important requirements for the new connection systems would have to be:

- Reduced weight
- Simple, intuitive use
- Rugged, self-sealing, suitable for cleaning in the field and reuse
- Reduced costs

Q: How does your next generation of solutions currently being developed differ from the current generation?

A: The next generation is more than just a connector type, it is actually a connector family. In order to fulfil all the wishes and requirements, we need four different specified connectors in the next generation.

In the area of battlefield communications, very rugged, solid and reliable connector systems are needed

The next Generation: optimized mechanical keying, optimized shielding, reduced dimensions, weight saving, colour keying possible

In addition to general requirements, such as reduced weight or minimized size, for example, connector handling is becoming more and more significant. A pull-off function and push-pull locking are only two examples of differences for the next generation.

The contact type (slotted contacts or pressure contacts), also offers advantages and disadvantages in the field, depending on the application. The motto at ODU is to provide the best suited connectors for the entire system. This includes pull-off versions, lockable versions and connectors with various contact systems.

Q: What is the most difficult challenge in meeting military requirements for connectors?

A: The OEMs and those responsible for the respective soldier modernisation programmes have a long wish list now that the first field trials are over. In addition to the known requirements for weight reduction, optimal shield connection and simple, reliable handling, there is a special demand for connectors that are absolutely rugged, self-cleaning and preferably also self-sealing.

Q: Where do these requirements come from?

A: As our experience in the medical sector also shows, caps or similar protective measures are not used in reality. This is understandable in the military deployment environment, so that consequently, the soldier would like to use a connector that can be removed without a great deal of thought, even in a quick application, without the connector activating. At the same time, a connector in the field that is not inserted should not be affected, and should preferably be self-sealing and self-cleaning.

In the past, ODU has already developed and built connector systems for exactly these requirements, and delivered them in military applications. The problem here lies in the combination of requirements in the Soldier Modernisation Programme.

Self-sealing and self-cleaning solutions always come at the cost of size and price. And so, depending on the soldier's particular application, not all wishes can be fulfilled.

Q: Interoperability and exchangeability of components is a constant refrain heard in soldier modernisation. To what extent is the connector market and ODU moving toward common non-proprietary solutions?

A: Exchangeability of the components among various systems seems to be absolutely logical, and cannot be excluded for the future. But at this time, all manufacturers are heading in the opposite direction. In my opinion, it will not be possible to bring about any standardisation in the next two or three years. Each system manufacturer is pursuing its own strategy, and, depending on insights gained in the first field trials, each will also stick to the connectors in use as long as the supplier can fulfill or improve all or most of the requirements. ODU is very clearly pursuing the strategy of developing the optimal connector system without paying too much attention to backwards compatibility. Naturally, we can also work our enhancements into a revised, backward compatible solution in a certain framework, but we clearly prefer the optimised connector solutions. ■