

[ASK THE EXPERTS]



Caption

Power management: the challenge ahead

*What are the most pressing issues in the area of power management?
Here, Richard Morgan, Managing Director of ATSI Ltd, a leading supplier of power
management systems to the MOD and the US Department of Defense, tells MOD DCB
why equipment manufacturers and power management suppliers need to work together.*

Military equipment demands the highest standards of safety, durability and reliability in order to operate in extreme hostile conditions, both climatically and environmentally, and that is equally true of the power management and battery systems that power them.

Over the past decade, ATSI Ltd has been at the forefront of design for specialist power management systems used by both military and law enforcement agencies. In my opinion, as the defence industry looks towards the future for the modern-day soldier, we need to start looking at both sides of the equation; this means looking at the battery or power management systems and also at the apparatus and equipment that requires it. We need to concentrate on reducing the power consumption of radios, radar and all of the other equipment that a modern-day marine needs to do his job effectively. You can have the best piece of equipment in the world, more advanced than the enemy's equipment, but if it runs out of power, it becomes useless.

In that sense, the power management is more important than the actual product, because without that power management, or battery, there is no product. If you look at communications in the field, for instance, if that piece of equipment cannot survive for however long the soldier needs it on a particular mission, then we are in trouble.

As a prominent supplier of power management systems and equipment, one of the biggest issues we have always faced has been interfacing with the manufacturer of the equipment because, sadly, power management is often the last thing that is considered. It is an uphill struggle to get information from the manufacturer in the first place.

If we look at the front-end perspective, one solution would be to get consortia together to discuss – from both ends of the scale – power management and the equipment in general. Thereupon the customer, namely the MOD, also needs to be part of the chain to specify the absolute requirements for the equipment.

Another issue is the wide variety of voltage and battery requirements. In a modern army, hundreds of different batteries are required for hundreds of different items of equipment. No standardisation seems to exist. If we could standardise our power requirements across a range of equipment, we could then create a range of power supplies using a DC to DC converter. Instead of purchasing each product and each individual power supply, standardisation would enable the MOD to buy the single generic charger and enable its application across a wide range of equipment by using the DC to DC converter to create a 3v, 6v, 12v, 24v or 48v power supply. A great deal of time, money and effort is currently invested in supporting 101 different batteries

and 101 different battery chargers, when not all of these are needed.

For example, a soldier may have three pieces of kit – a radio, a torch and a sophisticated piece of night-sighting equipment. All of these use different batteries; all of these have different power requirements. Standardise it, and you have a situation where all of the apparatus can be mixed and matched to operate from a DC to DC converter.

What we have at the moment is a lack of communication between the customer, the suppliers of power management systems and the manufacturers themselves. Someone might develop a new product – for instance, a very sophisticated radio and communications device – but may then bring in someone else to develop the power

management side of it; once they have decided on the requirement they decide what the power management has to be.

In future, we must also look at obtaining a certain freedom from dependence on any one supplier of power management systems. At the moment there is no such manufacturing industry in the UK, US or Canada. I think that the UK and other governments need to look at maintaining their own industrial base in relation to power management and batteries. In my opinion, this problem is so urgent that dependence is more of an issue than developing new technology, or expanding on existing technology. The best way forward would be to develop home-grown bases to start developing new products and getting some of our own sources back, because at the moment we are losing sight of the supply line.

To begin to solve the problems mentioned here, I believe a power management committee should be set up to discuss where we go next, and where the customer, the manufacturer and the supplier of power management systems can discuss new and perhaps even existing technology that could provide possible solutions. There are many challenges ahead for those involved in the power industry, and it is only by cooperation and collaboration that we can begin to solve the problems we face, now and in the future.

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Richard Morgan
Managing Director, ATSI Ltd