



Keeping Defence Organisations Working Smoothly in the World's Most Demanding Environments

Ensuring Business Critical Mobile Devices Achieve High Uptime for Continuous Access to Mobile Applications

Few sectors of logistics are as demanding as the military. Day-to-day operations can involve coordinating operations across hundreds of locations – nationally and extending to globally, including issuing and receiving goods, tracking high-value items, routine stock verification checks and more.

During deployments logistics units must kick into an even higher gear, coordinating the movement of large amounts of materiel into theatre. What's more, infrastructure such as reliable communications networks may not always be present, complicating the tracking and tracing of equipment, while extreme environmental conditions can stress the mobile devices and technology which logistics teams rely upon to maintain supply chains.

[Nuffield Technologies](#), a UK-based mobile computing and data capture specialist, has over a decade of experience in the defence sector. And Helen Craig, Head of Delivery, Nuffield Technologies, says, "Defence shares a lot of the same challenges as the commercial sector, but also has some unique problems. While defence organisations routinely operate around the globe, they must maintain the readiness and ability to respond to emerging situations rapidly, deploying vast amounts of personnel and resources quickly to a new theatre. Security is paramount, and logistics systems need to operate in situations where connectivity is restricted or absent, such as forward operating bases."

Also, teams often work in demanding environments. The elements can be extreme, with high or low temperatures, intense sunlight, elevated humidity and severe rainfall. Dust, sand, dirt and snow may be ever present too.

"Connectivity or security issues mean smart workarounds are needed to make mobile apps always accessible," says Craig. "And when it comes to the mobile devices used by teams, it's imperative to think about the ruggedness and reliability of those devices, which must provide high levels of performance and uptime despite the operating conditions."

SUMMARY



Customer
Defence customers

Industry
Defence Logistics

Challenge
Ensure security, reliability and low costs when deploying, maintaining and optimising mobile devices

- Benefits / Outcomes**
- Time savings in excess of 80% when conducting stock checks
 - Time savings in excess of 90% when receiving pallets
 - Dramatically reduced total cost of ownership – between 42.5% and 60.5% per year compared to consumer devices
 - Intuitive solutions mean little or no training needed
 - More secure, reliable and enjoyable mobile work experience
 - High degree of device uptime

- Solution**
- Nuffield Technologies web, desktop and mobile apps
 - Zebra TC72 Android™ Touch Computer
 - Zebra OneCare™ Essential Maintenance Plan
 - Zebra LifeGuard™ for Android™

The Need for Enterprise-Grade Technology

Nuffield Technologies regularly works with Zebra Technologies on defence projects. The two organisations have a long-standing relationship, and Zebra acutely understands the demands placed on technology and the need for versatility and agility when working in the sector.

A good example of the cooperation in action concerns a large defence organisation. Many of its global sites have limited Wi-Fi, and it defined the need for an exceptional level of security. To meet these challenges, Nuffield Technologies created a unique security layer for the Android™ operating system (OS). Leveraging both Android Enterprise features and the Zebra Mobility DNA suite, the solution provides a method of operating the devices securely including device hardening, file transfer and remote updates. Called ASP, the solution's functionality can be completely delivered offline by using existing defence networks and connecting to the host system via USB.

ASP would not have been possible without Zebra's Mobility Extensions for Android (Mx), part of the Mobility DNA suite. Mx adds a layer of fine-grained control over aspects of the device that are not usually accessible to application developers, which Nuffield used to tightly lock down the devices.

"Through Mx, Zebra helped us make functional changes at the OS level to enhance security and turn off a ton of things we didn't need. Zebra's agility and willingness to go the extra mile is central to what we see as its commitment to deliver a true enterprise solution, which also comprises rugged mobile devices, powerful software and the support organisations need to ensure a high degree of uptime," observes Craig.

Devices Made for Extreme Environments

Nuffield Technologies often recommends Zebra's Android devices to defence customers because of their quality and robust design. The models are built to cope with the outdoors and the constant knocks and drops commensurate with working under pressure in demanding places.

In general, Nuffield Technologies deploys the Zebra TC72 Android Touch Computer for its defence customers. The device is intuitive to use, includes high-performance data capture capabilities, including a scanner and camera, and is virtually waterproof, tumble-proof and dust-proof. It also includes swappable batteries for nonstop operation.

Most Zebra customers plan for their devices to be used for five years, but many run them for far longer. With defence companies typically working their devices for longer periods, another feature of Mobility DNA, LifeGuard™ for Android, comes to the fore. Craig explains, "In defence, it's mandated that devices must always be supported by the latest security patches. With consumer devices, you're lucky if these OS updates are available for three years, with 18 months more typical. It's simply not realistic to expect defence customers to refresh their mobile computer estate this regularly. But, with LifeGuard, you are guaranteed updates for the expected lifecycle of the device."

"You really have to understand defence to work in it and we've found a like-minded team member in Zebra. On a recent major defence contract, Zebra helped us patch the Android OS to run its TC72 Android Touch Computer in a locked-down state. It's this kind of can-do attitude, coupled with a great range of devices, security features and service and support, which helps us and our customers trust Zebra to deploy its enterprise mobile solutions in some of the world's most demanding places."

Helen Craig, Head of Delivery, Nuffield Technologies

A True Enterprise Platform Achieving Operational and Financial Benefits

In a recent global defence deployment, Nuffield Technologies digitalised the organisation's warehouse and logistics operations and mapped these into a new app which is accessible on Zebra's TC72 Android Touch Computer. This project has achieved a reduction of 83% in the time taken to conduct daily equipment account checks at each site, across hundreds of locations, and a 93% fall in the time taken to receipt pallets.

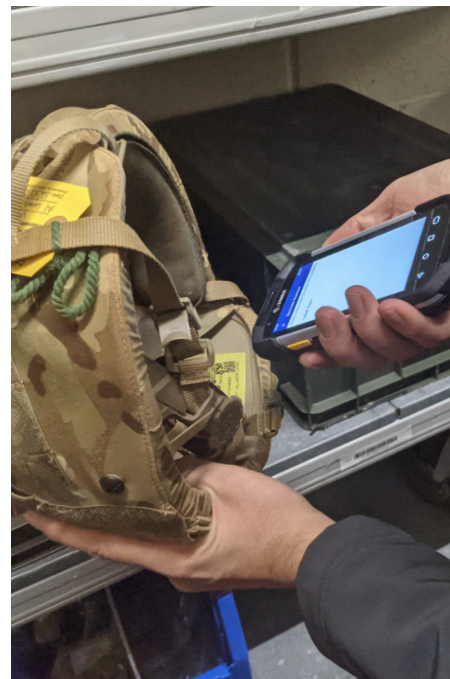
On the same project, the changes made to the OS to lock down the device have seen battery life in the field last for up to eight weeks. When Nuffield Technologies piloted the devices before rollout, users did not want to give them back.

Says Craig, "The TC72 running ASP is highly intuitive and users were able to simply pick up the devices and use them with no training. It's also the ideal partner for teams working in tough places. Touchscreens can be used with gloves on and when wet, and displays can be read in even the brightest of sunlight. The devices are also ergonomically designed to be used for long periods and the little details are well thought through. For example, there is an integrated torch which is useful in low-light environments, there is a scan button on each side which is great for left-handed users, and things like the pogo connectors for charging devices in cradles are beautifully engineered for longevity. The device is also exceptionally tough; we joke that the only way to break it is to roll a tank over it."

Financial benefits complement operational ones. With LifeGuard providing updates across the lifecycle of Zebra's devices, defence customers can drive value from their investment over the long term. Zebra also works to further reduce the cost of ownership.

It guarantees future compatibility with accessories so, if customers move on to a new iteration of a device, they can use their existing charging cables and docks. This reduces future costs and electronic waste. What's more, to help provide a predictable cost of ownership, comprehensive Zebra OneCare Essential™ and Select Maintenance plans are available for a set fee. In the aforementioned defence project, a Zebra OneCare Essential contract is in place, which includes the replacement of batteries at 18-month intervals. Add in a low failure rate for Zebra devices, and the customer can confidently predict what their mobile solution will cost over the duration of the deployment with no hidden surprises. Analysts suggest that rugged devices have a 42.5% to 60.5% lower annual total cost of ownership, a figure that Nuffield Technologies concurs with.¹

Concludes Craig, "These figures ring true for us and all hardware purchases are software purchases too, as the software which supports devices is so crucial to how easy it is to deploy, manage and maintain them. What you get with Zebra is a true enterprise solution, including durable devices, a suite of tools to manage them and the service and support customers need to ensure a high degree of uptime. It's a platform designed to thrive in the toughest of environments where security is paramount."



¹VDC Research Group, Inc. December 2018. "Total Cost of Ownership Models for Line of Business Mobile Solutions." Enterprise Mobility. <https://www.vdcresearch.com/Coverage/emob/reports/18-Total-Cost-of-Ownership.html>. Study results were published in USD and have been converted to GBP using average USD/GBP exchange rate calculated for 2018 at time of study (1.3349)

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