

White Paper

FUJITSU Head Mounted Display in Defence

Maximising the operational effectiveness of your skilled resources.

Providing your people with the capability to deliver effective maintenance and support in remote and sometimes hard-to-reach locations is a key requirement for Defence and National Security. But the nature of the environment in which your people operate means this isn't always possible. Having the right people in the right place at the right time cannot be guaranteed. So what if you can provide all of your people with the technology to access the requisite skills, knowledge and information required to carry out important maintenance tasks, or deliver crucial remote support wherever they may be?

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Maximising the operational effectiveness of your skilled resources in this way could deliver a Force Multiplier effect. With this aim, Fujitsu has developed its Head Mounted Display (HMD) solution, consisting of a non-see-through display positioned below the eye, with a wearable keyboard, one camera and four microphones. Complete with Augmented Reality software we believe it is the perfect solution to deliver and administer remote support, maintenance, and training while monitoring the safety and wellbeing of your personnel.



Ideally suited to day-to-day Military challenges

With built-in robustness, intuitive ease of use and inherent flexibility the Fujitsu Head Mounted Display solution has been thoughtfully designed, incorporating the latest technology and augmented reality software.

As such, it is ideally suited to the day-to-day rigours and challenges faced by people operating in the Defence and National Security sector:

- **Robustness**
Conforms to US Military Standard MIL-STD-81, the unit is waterproof to standard IPX5/7 and dustproof to standard IPX5. It can also withstand a drop from 1.5 meters.
- **Long battery life**
Large capacity battery and exchangeable, making it suitable for use on long-range missions and reconnaissance.
- **Ease of use**
Based on the Android operating system ensures both the hardware and software are intuitive and easy-to-use, removing the need for expensive training sessions.
- **Flexibility**
The eye display can be used with both left and right eyes, positioned below the eye line so as not to interfere with forward vision. The display is compatible with military and safety helmets, and the wearable keyboard is also ambidextrous.
- **Lightweight**
Weighing less than 400g (without helmet attachment clips) the display is incredibly lightweight.
- **Comfort**
The display and in-built camera are fully adjustable to ensure maximum operating comfort for the user.



The sophisticated in-built augmented reality software can be controlled by the HMD user with voice commands, making the system completely hands-free. This enables the display of multiple objects and media attachments, including text, diagrams, photos and video. The software also provides the capability for colleagues to communicate with the HMD user by overlaying written instructions, or annotating images that the user is viewing in real time. Effectively providing real-time, over-the-shoulder remote support capabilities.

Warning messages can also be displayed to alert the user of danger or an incorrect action and the latest functionality includes real-time video conferencing capability, sharing the image that the HMD user is viewing with an expert who can provide the user with detailed instructions of how to complete the task in hand.

Multitude of Defence uses

Such sophisticated in-built features mean the Fujitsu Head Mounted Display solution is suited to a wide range of industrial applications. In the Defence and National Security space the solution has a multitude of uses from training and simulation activities, repair and maintenance of complex equipment, right through to reconnaissance missions in the battlespace. Below is a snapshot of potential applications within Defence & National Security:

■ Providing remote 'over-the-shoulder' Support

The HMD enables users to communicate remotely with colleagues, allowing the sharing of information and insight in real time. The nature of the information which can be shared is practically unlimited and can include video or real-time screen sharing with the supervisor who has the ability to overlay images with annotated instructions or talk directly to the HMD user. The provision of such effective over-the-shoulder support is particularly suited to remote or hard-to-reach locations. Enabling and empowering workers who do not have the requisite skills or knowledge to conduct the tasks they're faced with dramatically increases the effectiveness of your resources. Maintenance tasks and repairs can also be conducted much quicker, without the need for fully trained personnel to be shipped to the equipment. Associated costs and downtime of equipment in need of repair are reduced.

■ Hands-free operation

The HMD fully supports voice control and command as input methods to interact with the device, enabling a completely hands-free operation. Effectively providing the user with the ability to hold two tools simultaneously is particularly useful for maintenance and repair tasks. The need for hard copy equipment manuals is replaced by cloud-based versions which the user can view and navigate through the display, providing step-by-step guidance for the task in hand. The user can also film or photograph real-time imagery of the scenario they are faced with to validate with more experienced or trained colleagues. This content can be uploaded and stored for future use.

■ Training, Simulation & Examination

The HMD also has extensive applications for the delivery of training and simulation to students in complex, practical tasks like changing an engine or commissioning a gun on a tank. Previously, this would require a 1-on-1 relationship between the tutor or examiner, and the student. But the use of the HMD solution allows multiple students to be taught and then assessed by a single examiner, all in remote locations. This could dramatically reduce training costs, while increasing productivity of your skilled resources. Downtime of machinery and equipment in need of repair can also be reduced as diagnosis and repair instructions can be sent directly to the operative's HMD display. This can also ensure quality standards, equipment maintenance accreditation and safety levels are upheld and maintained.

■ Staff Monitoring

Providing lone workers with a direct connection to colleagues can reduce the risks that they may be exposed to, particularly in potentially dangerous, isolated or unexpected situations. In-built sensors in the HMD provides accurate and real-time insight on their position, delivering sufficient information for a full appraisal of their surroundings to be made. Such insight can inform critical decision making to avert risk, while maximising the effectiveness of potentially dangerous missions.

Why Fujitsu

Fujitsu understands the modern-day complexities and challenges facing military organisations and intelligence communities. As a result of our work across the Defence sector we have an excellent insight into the challenges that surround the 'joining up' of information across many large agencies in order to respond effectively to any situation in the emerging new global battlespace.

That's why partnering with Fujitsu can help to improve the quality of your information and how you use it. By exploiting a wide range of ICT-based solutions, like our Head Mounted Display solutions, we enable this information to deliver a real Force Multiplier effect, dramatically increasing the efficiency and effectiveness of your Force's limited resources.

We're expanding our Global Defence and National Security portfolio, supporting customers across Europe, the Middle East and India, Asia Pacific, Canada and the USA. Our commitment to military deployed infrastructure is unrivalled among ICT companies and we provide the same high level of support to Defence & National Security customers wherever they are, be that in the office, at headquarters, on the road, on foot, at sea, in the air or in combat.

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