

SkyKeeper Battlespace Management and Surveillance



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SkyKeeper overview

SkyKeeper is a Battlespace Management C4i (BMC4i) system that utilises a scalable, fully networked open architecture to integrate cutting-edge ground sensors with real-time data from advanced air surveillance assets, to deliver Airspace Management, Airspace Surveillance, and Ground Based Command and Control. SkyKeeper has also been developed to utilise its fully integrated air picture to provide engagement quality track information for weapon system cueing.

SkyKeeper is built on the heritage of the highly successful Ministry of Defence (MOD) Automated Sense and Warn (AS&W) and Land Environment Air Picture Provision (LEAPP) programmes. These systems have nearly 10 years and over 50,000 operational hours of in-theatre performance with UK forces.

The SkyKeeper Battle Manager is a state-of-the-art Command and Control software application which is the 'brain' of the SkyKeeper system. The Battle Manager utilises a modern Graphical User Interface (GUI) which runs on the Microsoft Windows™ 10 Operating System.

At the core of the SkyKeeper GUI is the Luciad Lightspeed Geographic Information on System (GIS) which provides the mapping display and associated geospatial functionality. The mapping display allows the user to display and analyse geospatial data in 2-D and 3-D.

The SkyKeeper Battle Manager is designed and built using the Data Distribution Service (DDS) open architecture framework. The use of the DDS at the heart of SkyKeeper supports the future growth and development of the system using industry standard open architecture mechanisms and underpins SkyKeeper's "Plug and Play" philosophy.

The Key Components of the Battle Manager are:

- Mission Planner (pre & post operation)
- Weapon Engagement Manager
- Air Picture Compiler
- IFF Integration and Tactical ID Process
- Data Recording and Playback



Mobile BMC4i

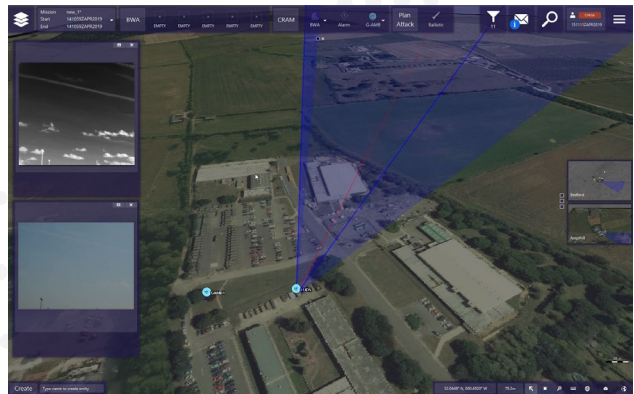
SkyKeeper also provides the BMC4i spine to dispersed forces allowing commanders at all levels to receive the Recognised Air/Land Picture, friendly force locations and tactical information to facilitate information manoeuvre and improve situational awareness.

Utilising SkyKeeper at the tactical level alongside other assets (sensors, effectors, IFV`s) at the strategic levels creates a layered approach to Ground Based Air Defence (GBAD) allowing dispersed commanders the freedom to manoeuvre within their own GBAD "bubble" yet still have sight of the wider GBAD picture at a higher level.

Through the use of universal communications links SkyKeeper can transmit the host nation battlespace picture and receive the battlespace picture of partner nations improving interoperability with NATO allies.

The ability of dispersed units to receive situational awareness information via SkyKeeper in a small form factor has the following benefits:

- Continued information manoeuvre in dynamic operating environments
- Distributed Information can be further disseminated to dismounted teams
- Provides combined air and land picture to the lowest tactical units as required
- Allows the exchange of information across and within operational boundaries; thus maintaining a full situational picture at all levels
- Allows for reach back to Brigade/Divisional assets; ensures full picture provision of available deployed sensors



SkyKeeper Battlespace Management & Surveillance - Communications Options

SkyKeeper provides organic Wide Area Network (WAN) communications in addition to flexibility to integrate native Tactical Radio systems. Where no suitable infrastructure exists we would offer a high-speed, high-bandwidth, ad-hoc networking radio solution to provide the communication backbone, to meet the necessary communications requirements of; Latency, Bandwidth, Quality of Service, Resilience, and Security. SkyKeeper's situational awareness information can also be shared with the wider battlespace using a number of other mechanisms including:

TACTICAL DATALINK

- SkyKeeper is a fully capable Link 16 C2 unit and can share its picture with other L16 units via the network
- In addition, SkyKeeper supports JREAP, Link 11/22 and VMF

COMBAT NET RADIO

- SkyKeeper is capable of sharing its battlespace picture information via Combat Net radio
- It currently supports any IP-capable system

IP BEARER OF OPPORTUNITIES

- SkyKeeper is capable of transmitting its battlespace picture via any IP-capable communications link – e.g. Fixed/mobile WAN's etc.

