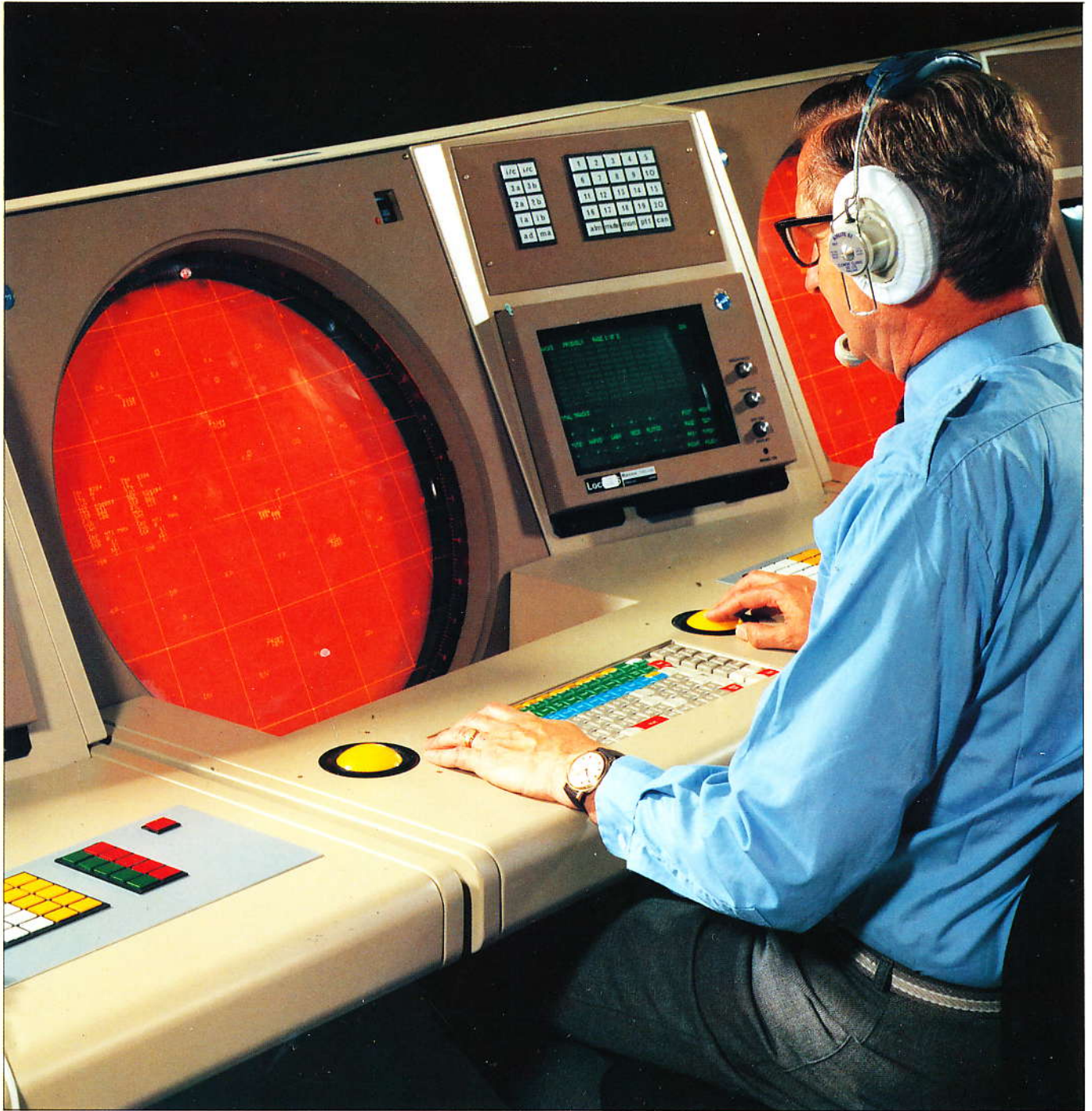


**Marconi**  
Radar Systems

# MARDIS

## Air Defence Systems





# Mardis

## MULTI-ROLE



Developments in offensive weapons technology have to be continually countered by improvements in defensive capability, since success in battle often depends upon which side the residual imbalance lies. In particular the ability of air threats to operate at low level, and high speed, below the cover of many conventional radars provides great stress on air defence systems which have to operate in this environment of steadily decreasing timescales from initial threat detection to weapon allocation and commitment.

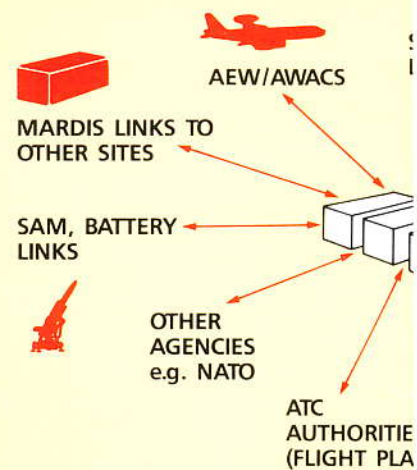
**MARDIS** offers a complete, reliable, effective air defence command and control system in which the skills of battle commanders are reinforced with powerful data processing and display facilities to provide an effective force multiplier.

**MARDIS** is a product of careful evolution. Marconi Radar has participated in every UK and NATO air defence programme of significance, as well as in many major projects worldwide. **MARDIS** offers state-of-the-art resources and facilities, and covers the whole range of activities which are required to establish a sound in-service system.

**MARDIS**, like all Marconi Radar products, is fully supported throughout its operational life by our professional, experienced staff and comprehensive facilities, built up over many years of successful operation as a supplier of air defence systems throughout the world. We can provide assistance with operational analysis, system design and modelling leading to system definition, prior to procurement. Subsequently we can provide full logistics support, including customer training, for the service life of the system.

### MARDIS OPERATIONAL CAPABILITY

#### INTEROPERABILITY



**MARDIS**, has entered operational service and is earning a reputation for high performance and reliability.



# AIR DEFENCE SYSTEM

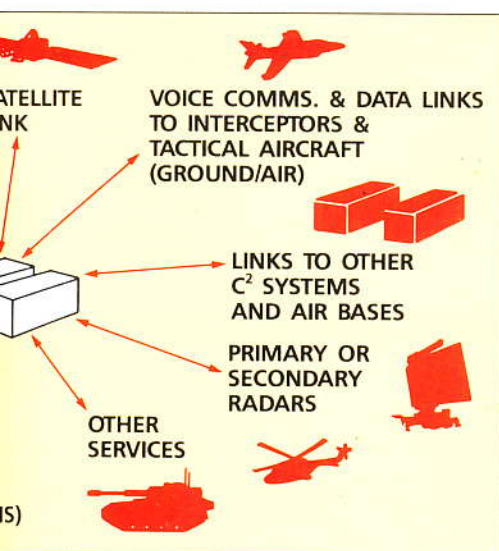
## FEATURES

MARDIS configurations are available for both static and tactical systems, to support the operational role at all element levels of the command and control structure. Complete systems can be supplied, or MARDIS elements may be incorporated into systems with elements manufactured by other companies, or integrated into existing systems.

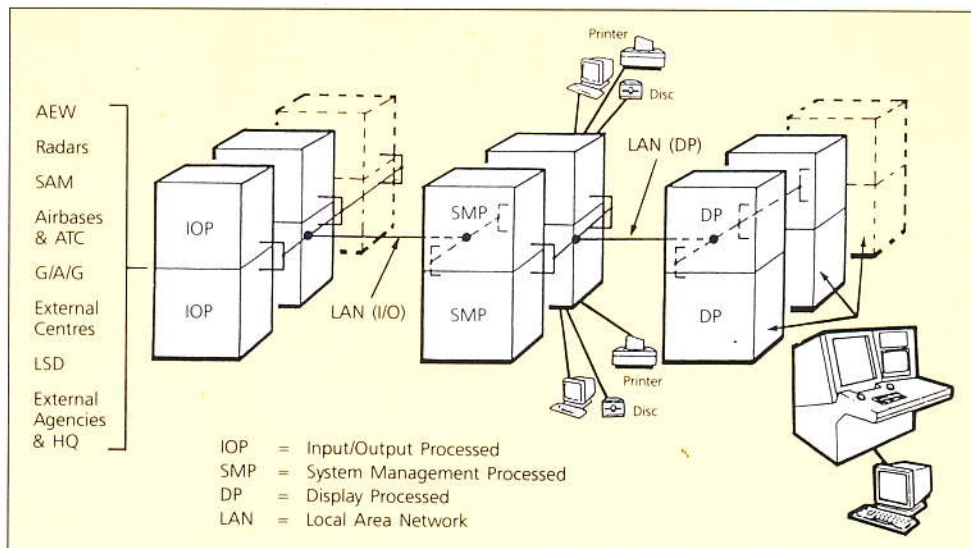
MARDIS provides a networked, fully interoperable, air defence ground environment. Each element is physically identical, the element role being determined by the software load. Track correlation across the system allows track continuity throughout the airspace of interest.

MARDIS is flexible and fully modular in its hardware and software. A single workstation type covers all operational roles, with the role being specified at log on; thus changes to the manning hierarchy can be rapidly achieved.

MARDIS systems are fully supported with services such as power and communications. Typically systems are supplied on a turnkey basis.



## MARDIS SYSTEM ARCHITECTURE



## MARDIS SUPPORTS A FULL RANGE OF OPERATIONAL FUNCTIONS

### including:

**Surveillance;** integrates with combinations of primary (2D or 3D) and secondary sensors and cross told sources, from either fixed or moving platforms such as AEW. A flexible interface processor allows any type of sensor to be readily interfaced to the system.

**Tracking;** manual and automatic initiation of true multi-head tracks using many sensor inputs, with correlated plot tracking algorithms to make best use of available data.

**Cross Tell;** exchanges track data between centres, as well as with external agencies.

**Identification;** manual and automatic identification, including flight plan correlation.

**Threat Assessment;** defended areas displayed (on and off-line defined), all potentially hostile targets assessed and prioritised. Weapons operators alerted to threat data using multiple priority levels.

**Weapon Assignment;** automatic assignment (rules on and off-line defined) of weapons (manned interceptors and/or SAM) to highest threat tracks for highest kill probability.

**Mission Control;** dynamic modelling with automatic intercept calculations including manual override and trial intercept facilities. Full alerting to each operator in command chain. Command instructions passed by voice G/A, or by digital data link to aircraft.

**SAM Control;** multiple tracks simultaneously assessed, with multiple missile modes and kill envelopes. Automatic or manual target nomination.

**Simulation;** allows operational staff to exercise interactively or in playback mode. Simultaneous live and simulated data available to enhance realism. Operates on the normal operational equipment.

**Recording/Playback;** comprehensive facilities allowing a recording list, of significant data, to be established. Processing for the off-line analysis and display of recorded data is provided.

**Communications;** a range of NATO and National standard digital tactical data links is supported, together with comprehensive voice communications which may be based on analogue or digital systems.

**MARDIS** elements are equipped with "universal" workstations. The number varies according to the customer's requirement but is typically in the range 6 to 24 workstations per **MARDIS** element. Each workstation features a comprehensive man machine interface including:

**Graphics Display** either high resolution raster, or precision monochrome cursive, showing radar plots, tracks, strobes, maps and other data associated with the operational software, minitote and operator interaction lines.

**Tote Display** comprehensive range of status, operational resources and battle management data is available on-line. Soft key inputs for direct and menued selections.

**Keyshelf** functionally grouped direct action, colour coded keyset.

**Voice Communications Keypanels** tailored to operational need of each customer. Can be fully integrated, program controlled or prewired. A headset and footswitch (PTT) are normally supplied.





## TECHNICAL FEATURES

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Distributed processing based on state-of-the-art 32 bit microprocessors, under multiprocessor operating system.

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Dual local area networks (LANs)

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High availability through the LAN-based fail soft architecture and automatic switchover to redundant (hot standby) equipment in the event of mission critical equipment failure.

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Tactical data link interfaces.

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High resolution raster colour displays with 48 and 71 cm diagonals.

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Monochrome cursive displays in 40 and 56cm diameter.

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Large screen displays (option)

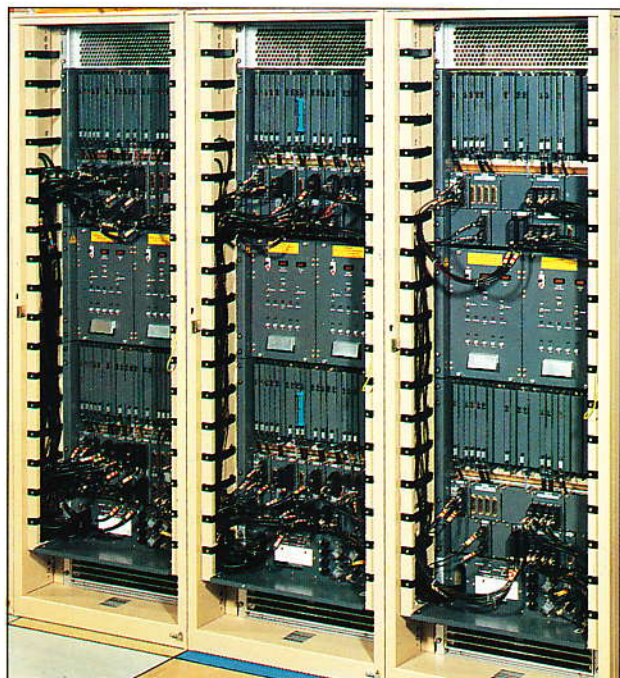
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Transportable systems supplied in containers conforming with ISO, NATO and British Standards, with environmental conditioning, lighting, primary power etc. EMP protection can be provided.

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Maximum commonality of equipment modules for low maintenance spares costs.

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# **Marconi**

## Radar Systems



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