THE CERBERUS SYSTEM

A Wide Area Surveillance and Control Mission System for Air, Land and Sea
Cerberus is a versatile intelligence, surveillance, target acquisition and reconnaissance system. It combines wide-area surveillance multi-mission radar with an airborne mission system that collates intelligence for better-informed strategic decisions in a range of military and non-military scenarios.

### Cerberus capabilities

1. **Surveillance**
   Cerberus consists of a high-powered multimission radar optimised specifically to detect and track multiple low-level targets beneath the horizon of ship’s radars, significantly increasing the range of detection of lowflying objects.

2. **Enhanced situational awareness**
   Combining Thales long-range radar with other sensors, the airborne mission system collates and processes detailed information and presents intelligence to decision-makers so they can control operations and environments more effectively.

3. **Reconnaissance**
   The radar provides outstanding land and maritime reconnaissance capabilities, including target classification facilities. Cerberus can gather vital information on the whereabouts of potential threats, non-combatants and friendly forces.

4. **Target acquisition**
   The combat-proven, high performance Ground Moving Target Indicator (GMTI) and Pulse Doppler radar, together with a littoral surveillance mode, allows tracking of targets overland and through coastal waters. The radar is designed specifically to detect small targets amongst land and sea clutter, and to discriminate between high velocity airborne targets and lower velocity land targets.

5. **Data communication**
   Cerberus is uniquely able to process three different radar modes at the same time. It can also relay information between contacts on the land, air and sea and control those assets whilst simultaneously sending the surface, air and ground radar pictures back to the task group via a secure data link.

6. **Command and control**
   The combination of the mission system, pulse-Doppler radar and secure data communication links transforms Cerberus into a multirole airborne platform for battlespace management. By linking data feeds to other assets either on the land, air or sea it provides a comprehensive shared situational picture.
**Radar sensor**

Searchwater Airborne Surveillance and Control is an advanced, high-powered, Pulse Doppler radar with long-range air-to-air, look up/look down capability. The radar is designed specifically for Airborne Early Warning and Control applications over land and sea, and incorporates multi-bar scanning for multiple level raid detection. Pulse Doppler/Pulse Envelope interlacing allows detection of targets at maximum range and tracking through littoral background clutter.

Its GMTI mode provides combat-proven overland detection capability – from detecting and tracking moving targets such as very low-speed, low radar cross section objects, to fast moving targets such as speeding vehicles and low-flying aircraft.

**Other sensors**

The mission system can also take feeds from other sensors, such as ESM, AIS and IFF, which are fully integrated and displayed to the operator and others on the datalink network. This ensures the complete picture is understood without additional workload.

**Versatile platform for performance**

Cerberus can be deployed on a variety of airborne platforms, including helicopters, fixed-wing, aerostat and hybrid air vehicles, and is well proven for both military and civilian security. It can also be adapted and upgraded for specific operational requirements.

**Rapid transportation and deployment**

Transportable by air, land and sea, the Cerberus roll-on/roll-off capability integrates rapidly with existing platforms.

**Robust, safe and reliable**

Combat proven in Iraq, Afghanistan and many maritime operations, Cerberus is designed to have minimal maintenance and is an integral solution for dynamic ISTAR missions - due to its reputation for reliability and robustness.

**Future-proof, with extensive growth potential**

Cerberus’ palletised design gives it growth potential, and makes it easier to maintain pace with changing technology and threats. There are several packages tailored to meet different requirements.

**Radar modes**

- Air-to-Air (Look Up and Look Down)
- Ground Moving Target Indicator (GMTI)
- Maritime Surveillance (ASW/ASuW)
- Littoral
- Open Water
- Navigation/Ground Mapping
- Target Classification
- Weather
- Beacon
Cerberus Operational Modes

The radar is capable of operating simultaneously in different modes depending on the operational needs. For example, within each 360° scan the radar might be programmed to look for low, fast aircraft along one bearing, vehicles and ground targets along another, whilst retaining tracking the whole range of surface contacts using a variety of maritime modes. Overlaid on the active radar modes and sectors are the IFF and AIS interrogations which contribute to the situational awareness and understanding.

Blank sectors can be created so that the radar and IFF do not emit in certain directions, allowing the radar to remain undetected by electronic surveillance sensors. This complex combination of Air Land and Sea environments can be readily exploited onboard the host platform using a highly intuitive HMI, and shared more widely through a variety of tactical and operational data links.

Combat-proven

Cerberus is an established and highly trusted system for military operations in Afghanistan, Iraq and Libya, and is used continually in anti-piracy and counter-narcotic initiatives. It is also suitable for monitoring maritime choke points and airborne air traffic control for disaster relief – and was instrumental in providing security intelligence for the London 2012 Olympic and Paralympic Games.

Why Thales?

Thales has an exceptional international presence, working with customers and local partners, and supporting operations around the world. The Thales Group shares a common base of technology across its military and civil business, with a single objective: the security of people, property and nations.