WATCHKEEPER
UNMANNED AIRCRAFT SYSTEM (UAS)
**Watchkeeper’s key ISR Capabilities**

1. **Surveillance**
   Watchkeeper’s range and endurance – and its combination of electro-optical, infrared and radar sensors – allow both point and wide-area surveillance in all weathers, and even in zero-visibility.

2. **Reconnaissance**
   Watchkeeper can gather vital information on the whereabouts of potential threats, non-combatants and friendly forces. It also supports route reconnaissance, identifying possible threat locations and providing detailed terrain information.

3. **Information operations**
   Watchkeeper gathers and transmits imagery for information operations – for example, details of collateral damage or hostile actions.

4. **Target acquisition**
   Watchkeeper can identify and pinpoint targets, and, when appropriate, control or cue military action. Its sensors and laser subsystem provide accurate target location data to support precision assets, and can mark targets for ground forces.

5. **Situational awareness**
   Watchkeeper can transmit high-quality images and video securely and reliably to numerous locations, giving commanders information and Image Intelligence (IMINT) that greatly enhances situational awareness.

**A unique platform for performance**

The versatile Watchkeeper system is highly transportable and has flexible deployment options. It is built to the same exacting standards as manned aircraft, and is modular in design, so it can be adapted and upgraded for specific operational requirements. Fully network-enabled, the system will serve the UK Armed Forces for the next 30 years.

1. **Rapid transportation and deployment**
   Transportable by air, land and sea in a protective, international standard container, Watchkeeper assembles and disassembles fast, and can take off and land from prepared or semi-prepared airstrips.

2. **Robust, safe and reliable**
   Watchkeeper is built to CS23/STANAG 4671 airworthiness certification standards. It is operable in zero visibility, harsh weather conditions and extreme temperatures. It has a unique de-icing system that detects and eradicates any build-up of ice, keeping it fully operational.

3. **Fully autonomous mission system, take-off and landing**
   The Watchkeeper system has fully autonomous mission control and Autonomous Take off and Landing System (ATOLS), which minimises operator burden, and reduces manning and training costs. Its onboard autonomous emergency logic includes lost-link and glide to pre-programmed emergency landing sites.

4. **Future-proof, with extensive growth potential**
   Watchkeeper’s modular design enables future growth potential to maintain pace with changing technology and threat changes. A number of packages are available that can be tailored to user requirements.
A Sophisticated Ground Control System for Mission Execution

The Watchkeeper’s GCS is its primary mission-planning, command and control interface, and can operate independently or as part of a C4I network. Missions are not mutually exclusive, and Watchkeeper can be dynamically re-tasked while airborne.

Depending on operational requirements, the GCS can be static or semi-permanent, or fully mobile due to a range of transportable options. The GCS portable Shelter enables deliberate and dynamic tasking for mission sorties, and mission execution. The GCS can independently exploit and disseminate information, and can be networked into a variety of different information architectures.

Multi-sensor Capability

Watchkeeper carries the very latest optical and radar systems. Payload configurations include HD electro/optical, infrared and laser capabilities, to allow observation, recognition and transmission – and precision location accuracy – at any time of day or night, and in extreme weather conditions.

The Thales I-Master Radar performs both Synthetic Aperture Radar (SAR) in strip-map and spotlight modes, and supports high quality ground mapping. The Ground Moving Target Indicator (GMMTI) can detect and track moving targets.

Optical Sensor:

High Definition Electro/Optical Camera
For daylight observation, detection, and recognition, and directing and tracking targets both day and night. Transmits high definition still images and real-time video

Infrared Camera
Ideal for night observation, detection, recognition, and tracking targets.

Laser Sub System (LSS)
Comprises a Laser Target Designator and a Laser Target Marker for marking targets by laser, and providing precision location.

Radar Sensor:

Synthetic Aperture Radar (SAR)*
SAR modes:
- Strip-map SAR, illuminating terrain parallel to the UAV’s path.
- Spotlight SAR, illuminating a fixed area for a defined period.

The radar’s aim alters progressively and precisely as the UAV follows its flight path, to keep the specified area illuminated.

When processed at the GCS, radar data can help produce high-quality ground mapping images that, when used with digital map data and management software, provide optimum surveillance capabilities.

Ground Moving Target Indicator (GMMTI)*
Detect and track moving targets such as very low speed, low radar cross section foot patrols through to fast moving targets such as speeding vehicles and under-flying aircraft.

* Both the SAR and G/MMTI capabilities are provided by Thales I-Master Radar: the world’s leading lightweight tactical surveillance GMTI/SAR radar.
Operational Services

Thales Airborne ISR Services provide focused data and information to help customers make timely, better-informed decisions. We collect, interpret and securely send information in the most appropriate formats, using the most appropriate platforms, sensors and communication channels.

These ISR capability services apply to the Watchkeeper UAS. According to each customer’s specification and operational requirements, Thales provides scalable solutions, including the Watchkeeper system’s entire range of equipment, operational staff, training, maintenance and logistics. This ensures continuous system availability and fully focused ISR information.

Training

Thales provides classroom, simulation and live training to suit every operational requirement. All training is computer-aided and instructor-led.

A full virtual simulated training environment develops both technical and tactical training with After Action Review (AAR), and a Part Task Trainer gives practical maintenance training.
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.

Thales UK is the Prime Contractor and Design Authority for the UK Watchkeeper UAS, which is the largest UAS contract in Europe. The Watchkeeper UAS provides persistent, timely and accurate ISTAR to commanders 24 hours a day, seven days a week. The fully network-enabled system will serve the UK Armed Forces for the next 30 years.