ESPANARO

UK SOVEREIGN / UK OWNED / VETERAN OWNED

PRODUCT DATASHEET

WATCHKEEPER

Multi-Sensor Fusion

Many sensors, one trusted track.

Watchkeeper fuses detections from radars, RF detectors, Remote ID receivers, cameras and other sensors into **one track per object, with the source and confidence of every contribution**. It works with SAPIENT and vendor adapters, so a mixed sensor estate becomes one picture that Consilium can act on.

Sensor fusion | Works with SAPIENT | Counter-drone | Edge · On-Prem · Hybrid | UK-Sovereign



Watchkeeper track detail inside Consilium during the multi-sensor drone defence demonstration. Demonstration environment, illustrative data. Interface screenshot, cropped.

Deploy as the fusion layer for any sensor estate, feeding **Consilium** playbooks with one trusted track per object.

www.ESPANARO.com

WHAT IS WATCHKEEPER

One track per object, from every sensor you own

Watchkeeper is Espanaro's multi-sensor fusion product. It takes detections from mixed sensors, from different suppliers, and associates the reports that describe the same object. The result is one fused track per object, carrying position, movement, classification, the sensors that contributed and how confident the picture is. Fused tracks pass to Consilium, where playbooks put the right decision to the right operator.

THREE PRINCIPLES

Open

Works with SAPIENT and vendor adapters, so mixed estates can be fused without replacing kit.

Explainable

Every fused track shows which sensors contributed and how confident the picture is.

Orchestration-ready

Fused tracks go straight into Consilium, where playbooks decide and operators act.

THE CHALLENGE AND THE OUTCOME

THE CHALLENGE

Sensor estates are now bought from many suppliers. Each sensor raises its own alerts, in its own format, on its own screen.

Operators are left to decide by eye whether three alerts are one drone or three, and which sensor to believe, while the clock runs.

OPERATIONAL VALUE

Watchkeeper delivers:

- → One track per object
- → Source and confidence on every track
- → Friendly and authorised objects recognised
- → Sensor health taken into account
- → Faster, clearer operator decisions

THE APPROACH

Watchkeeper moves teams from **many competing alerts** to **one explainable track per object**. It fuses once, close to the sensors, and hands a single picture to the orchestration layer, so the response is coordinated rather than duplicated.

WHERE IT SITS

Watchkeeper feeds **Consilium** with fused tracks, takes sensor health from **Pulse Sentinel** so a degraded sensor carries less weight, and can protect tracks with **ByteHarbour** so they are shared by attribute with partners and allies. **HarbourGuard** checks who has authority to act on a track.

WHAT WATCHKEEPER DOES

Turn mixed sensor reports into one picture you can act on

Watchkeeper sits between the sensors and the orchestration layer. It ingests, associates, fuses and publishes, and keeps the evidence behind every track.

- Ingests detections from SAPIENT-connected sensors
- Connects non-SAPIENT sensors through vendor adapters
- Associates reports of the same object from different sensors
- Produces one track per object, with source and confidence
- Fuses radar, RF, Remote ID and camera detections
- Uses RF signatures to identify drone make, model and link
- Uses Remote ID to give serial number and pilot position
- Checks tracks against a register of friendly or authorised objects
- Takes sensor health from Pulse Sentinel into account
- Publishes fused tracks to Consilium for playbooks and decisions
- Records the contributing detections behind each track
- Runs at the edge, on site or centrally

CORE CAPABILITIES

Three building blocks for sensor fusion

01
Adapters
SAPIENT and vendor-specific adapters bring each sensor's detections into one model, without replacing the sensor.

02
Association and fusion
Reports of the same object are linked and fused into one track with position, movement, classification and confidence.

03
Identification
Fused tracks are checked against the authorised-object register, using RF signature and Remote ID where available.

THE FUSION CYCLE

INGEST
Detections from every connected sensor

ASSOCIATE
Reports of the same object linked

FUSE
One track with source and confidence

PUBLISH
Track sent to Consilium to orchestrate

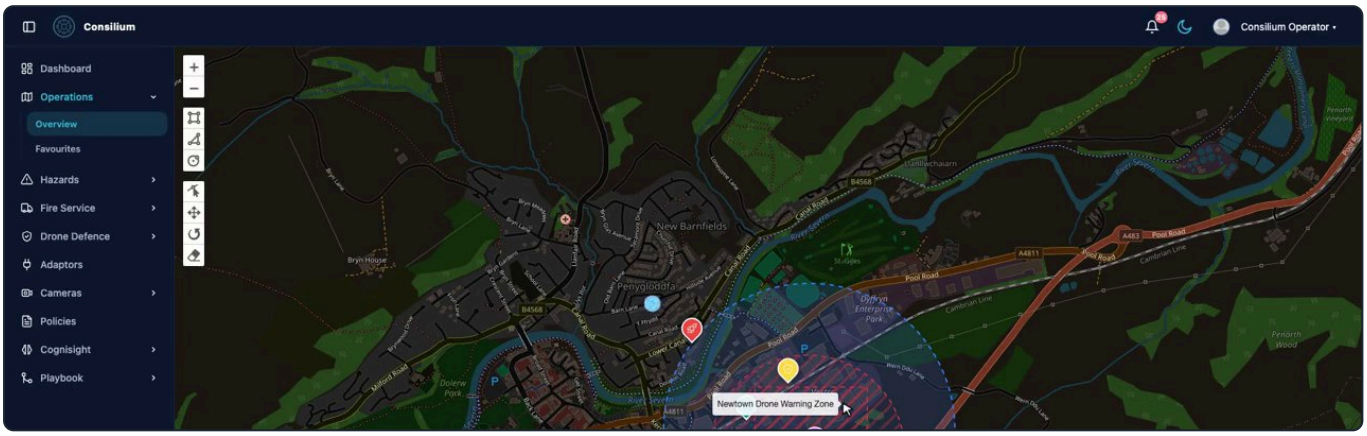
Decisions stay with people
Watchkeeper builds the picture. Consilium playbooks put the decision to an operator, and HarbourGuard checks their authority before any response is tasked.

Explainable by design
Every track keeps the list of detections that formed it, so an operator or investigator can see why the picture looks as it does.

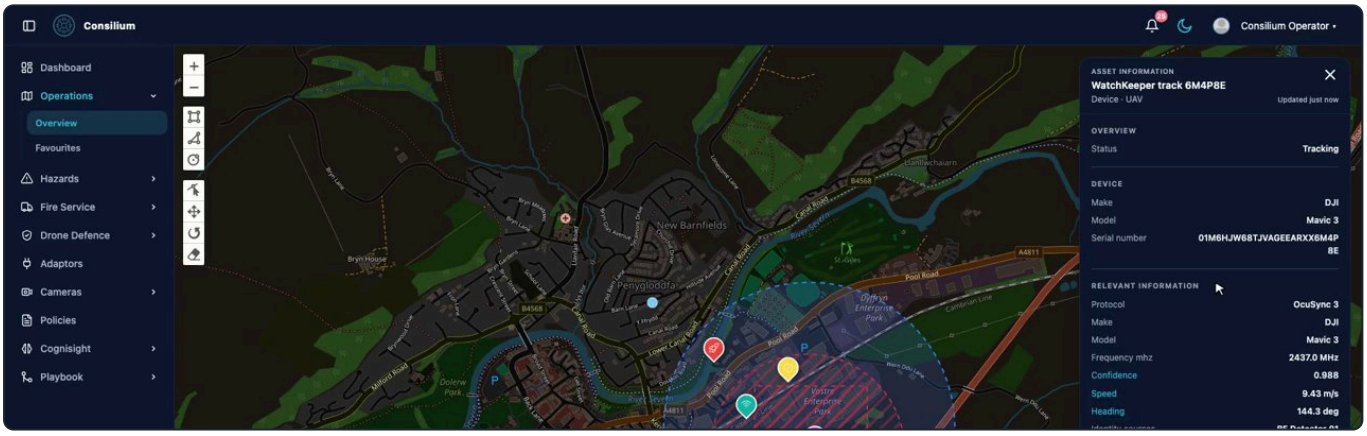
PRODUCT IN ACTION

See Watchkeeper working

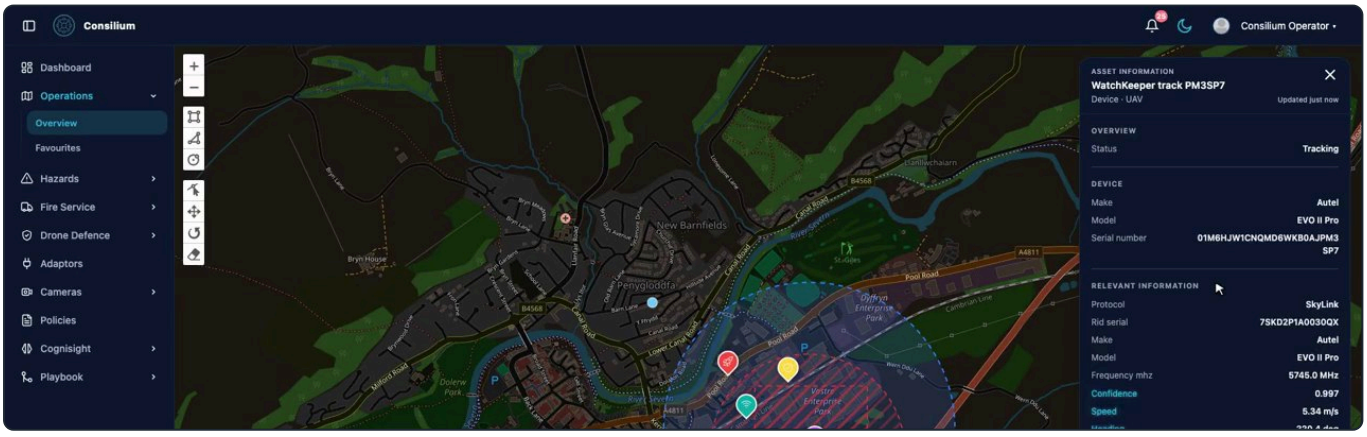
These screens are from Espanaro's multi-sensor drone defence demonstration, where a radar, an RF detector and a Remote ID receiver guard a 400 metre drone defence zone. Watchkeeper fuses their reports, and Consilium orchestrates the response.



Detect. The radar and the RF detector each pick up two drones. Watchkeeper fuses the reports into one track per drone, shown on the Consilium map.
Demonstration environment, illustrative data. Interface screenshot, cropped.



Identify. The RF signature names the intruder, a DJI Mavic 3 on OcuSync 3 at 2.4 GHz. The track panel shows position, movement, classification and confidence.
Demonstration environment, illustrative data. Interface screenshot, cropped.



Authorise. The second drone's Remote ID matches the site's register of authorised drones. It is the site's own survey drone, so no action is taken.
Demonstration environment, illustrative data. Interface screenshot, cropped.

In this demonstration the sensors and drones are simulated. Watchkeeper connects to real sensors through SAPIENT and vendor adapters.

INTEGRATION BY DESIGN

A fusion layer across your sensor estate

Watchkeeper is designed to sit across sensors from different suppliers and to hand one picture to the systems that act on it.

INTEGRATION AREA	SUPPORTED APPROACH
SAPIENT	Works with SAPIENT. Takes detections from sensors that publish SAPIENT messages.
Vendor adapters	Adapters for radars, RF detectors, Remote ID receivers, cameras and other sensors that use their own interfaces.
Consilium	Publishes fused tracks for the common operational picture, playbooks and operator decisions.
Pulse Sentinel	Uses sensor health so a degraded or untrusted sensor does not weaken the fused picture.
HarbourGuard	Authority to act on a track is checked by policy, from each operator's attributes.
ByteHarbour	Tracks can be labelled, protected and shared by attribute with partners and allies.
APIs	Structured track data available through APIs in JSON and XML.

DEPLOYMENT OPTIONS

Deploy where the mission needs it

EDGE

Beside the sensors

Fusion on a forward node, such as the DATE Box, for a deployed unit or a remote site.

ON-PREMISES

In your network

On a secure site, for bases, prisons and critical sites.

HYBRID

Edge to centre

Local fusion at each site, with fused tracks shared to a central picture.

BUILT FOR CONTROLLED ENVIRONMENTS

Assurance considerations

Explainable tracks

Every track shows the detections, sensors and confidence behind it.

Bandwidth-aware

Sends one fused track, not every raw detection, over constrained links.

UK sovereign, UK owned

Veteran owned and engineered in the UK, with direct access to the product team.

REPRESENTATIVE USE CASES

Where Watchkeeper makes the difference

Counter-drone

Fuse radar, RF, Remote ID and camera detections into one track per drone, and tell an intruder from an authorised drone.

Base and site protection

One picture across the sensors on a base, prison, port or critical national infrastructure site.

Force protection

Fuse a deployed unit's own sensors at the edge, and keep working when the link drops.

Mixed sensor estates

Bring sensors from different suppliers into one picture without replacing them.

WHY WATCHKEEPER

Sensor fusion, built in the UK

- One track per object, not five alerts
- Source and confidence on every track
- Works with SAPIENT and vendor adapters
- Recognises friendly and authorised objects
- Feeds Consilium playbooks directly
- Sensor health taken into account
- Runs at the edge, on site or centrally
- UK-sovereign engineering with direct access to the team

Many sensors, one trusted track.

Watchkeeper turns a mixed sensor estate into one explainable picture, so Consilium can orchestrate a single, coordinated response.

Use cases are representative and are configured to each customer.

WHERE IT FITS

Part of one software family, useful on its own

Watchkeeper runs standalone or with the other Espanaro products. Each layer uses open interfaces, so capability can be added without replacing what is already in place.

COMMAND Bring it together	**Consilium** Orchestration and C2		
SENSE See and verify	**Cognisight** AI video and sensor analytics	**Pulse Sentinel** Sensor health assurance	**Watchkeeper** Multi-sensor fusion
GOVERN Control access and sharing	**HarbourGuard** Policy-driven access	**ByteHarbour** Governed data sharing	
ACT Task and deploy	**WayForge** Uncrewed-systems tasking		
CONNECT Join the systems	**RibbonFlow** Service mesh, early access	**MastHead** Labelled secure messaging	

MATURITY AND PROOF POINTS

Watchkeeper today

Demonstrated

Working end to end

Radar, RF and Remote ID detections fused into one track per drone, with Consilium orchestrating the response, in the drone defence demonstration.

Friend or intruder

RF signature names the drone, and Remote ID is checked against the register of authorised drones.

Open to any sensor

Works with SAPIENT, and vendor adapters connect sensors that use their own interfaces.

DEPLOYMENT FORMS

FORM	WATCHKEEPER
Embedded in a platform Runs on a compute module inside a UGV, UAV, vehicle or sensor node, within the platform's own power, comms and update cycle.	Scoped per platform
Edge node beside a platform A forward node, such as the Espanaro DATE Box (Decision Advantage Tactical Edge), serving several platforms and sensors on a local network.	Supported
Site and on-premises Secure sites and controlled networks, hosted locally and run by your team or ours.	Supported
Hub, cloud and federated Central or accredited hosting, private cloud or hybrid, federating several sites and partners.	Supported

STANDARDS AND INTERFACES

Works with SAPIENT. Vendor adapters for radars, RF detectors, Remote ID receivers and cameras. APIs in JSON and XML.

SUPPORT AND COMMERCIAL

Licensed per deployment, with integration services scoped to each programme. Supported by Espanaro's UK product and engineering team. Available direct or through prime and integrator partners, embedded in their systems or connected by API. All IP is owned by Espanaro Ltd.

Status describes Espanaro's own deployments, trials and demonstrations. It is not an independent certification or a technology readiness level. Capabilities are configured for each customer.

TECHNICAL SUMMARY

At a glance

Product type	Multi-sensor fusion software.
Primary function	Fuse detections from mixed sensors into one track per object.
Inputs	SAPIENT detections and vendor adapter feeds from radars, RF detectors, Remote ID receivers, cameras and other sensors.
Outputs	Fused tracks with position, movement, classification, contributing sensors and confidence, published to Consilium and by API.
Identification	Authorised-object register, RF signature and Remote ID, where available.
Deployment	Edge, on-premises or hybrid.
Interfaces	Works with SAPIENT. Vendor adapters. APIs in JSON and XML.
Status	Demonstrated end to end in Espanaro's multi-sensor drone defence demonstration. Ready to integrate with your sensors.

HOW TO ENGAGE

A straightforward path from first conversation to operations

STEP 01
Discovery
Map the sensors you have, their interfaces and where they are.

STEP 02
Integration workshop
Shape adapters, fusion rules and the hand-off to Consilium around your estate.

STEP 03
Deploy
Connect Watchkeeper to your sensors and move into operational use, with UK support.

See every sensor as one picture.

Speak to Espanaro about a discovery session, an integration workshop or a demonstration.

Book a demonstration

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Watchkeeper works with SAPIENT. This is not a statement of SAPIENT conformance. Screens are from Espanaro demonstration environments with simulated sensors and illustrative data. Capabilities are configured for each customer.