

THALES
Building a future we can all trust

G-Cloud 15

OT – CNI LABS

Design, Build, Host, Test - Maintain

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INTRODUCTION

Sustaining confidence in OT Resilience using representative OT laboratory environments

Thales' OT CNI Physical & Digital Labs service focuses on sustaining confidence in OT security and cyber resilience over time through the provision of representative OT laboratory environments and digital twins at our Thales Ebbw Vale facility.

As operational environments evolve, changes to technology, architecture, configuration and threat conditions can undermine previously implemented security and resilience measures.

Validating these changes directly in live operational environments is often impractical or unsafe. This service provides safe, controlled environments in which OT systems, security capabilities and operational changes can be tested, validated and exercised without impacting live operations.

SERVICE DESCRIPTION

Features

- Design of representative OT lab and digital twin environments
- Physical, virtual and hybrid OT lab builds
- Emulation of customer systems, processes and dependencies
- Digital twins hosted on the Thales cyber range
- Safe testing and validation isolated from live operations
- Support for change assurance and resilience validation
- Secure hosting options within Thales facilities
- Adaptable lab environments as operational context evolves

Benefits

- Enables safe validation of OT security and resilience capabilities
- Reduces risk when introducing change into live operations
- Improves confidence in system behaviour under evolving conditions
- Supports evidence-based assurance and decision-making
- Enables learning, exercising and improvement without operational disruption
- Avoids unsafe or disruptive testing in production environments
- Sustains resilience as systems, threats and technology change

Use Cases

- Validating OT security and resilience controls prior to deployment
- Testing system upgrades, configuration changes or integrations
- Exercising operational and cyber scenarios in a controlled environment
- Assessing impact of new technologies or architectures
- Supporting assurance, audit and regulatory confidence
- Enabling safe experimentation and learning

DETAILED SERVICE OVERVIEW

Operational Technology environments underpin essential public services and safety-critical operations. Understanding cyber risk in these environments requires specialist OT expertise and an approach that recognises operational constraints, safety requirements and regulatory obligations.

Thales applies disciplined OT engineering, cyber security expertise and experience in safety-critical and regulated environments, removing the burden of complex design and build from customer teams. Thales designs, builds, hosts and supports representative hybrid OT lab environments that replicate part or all of a customer's operational technology environment. The environments are engineered to reflect real-world architectures, dependencies and operational behaviour, enabling meaningful testing and validation activities.

Thales maintains established OT cyber-physical laboratory capability in the UK, including OT CNI lab environments at its Ebbw Vale facility. These existing lab environments are designed to replicate complex industrial systems and operational processes and include representative CNI and industrial sector labs such as Manufacturing, Gas transmission and distribution and Smart Grid system architectures, alongside other industrial and cyber-physical configurations.

The Ebbw Vale facility demonstrates Thales's ability to:



- Design and operate physical and hybrid OT lab environments
- Replicate complex CNI architectures and dependencies
- Support validation, testing, exercising and assurance activities
- Deliver OT lab capability suitable for safety-critical and regulated environments

Use of existing Thales's lab environment is optional. Dedicated, customer-specific lab environments can be designed, built and hosted privately as required.

These lab environments may include:

- Physical OT equipment configured to emulate customer systems and processes
- Virtual OT environments and simulated processes
- Digital twins hosted within the Thales cyber range
- Hybrid combinations of physical and virtual components

OT CNI Labs support:

- Safe testing of security and resilience controls
- Validation of system changes, upgrades and integrations
- Exercising and walkthroughs of operational and cyber scenarios
- Change assurance activities prior to deployment into live environments

All testing and validation activities are conducted outside of live operations, protecting availability and safety.

Outcomes

- Ongoing confidence that OT security and resilience remain effective as operational context, technology and threat conditions change.
- Evidence operations are tested and able to better withstand and recover from disruption

Delivery Approach

Thales applies OT engineering discipline and experience in safety-critical and regulated environments to ensure lab environments are technically accurate, operationally relevant and safe to use.

Thales will:

- Work with customers to define lab objectives, scope, and success criteria
- Design representative OT architectures aligned to customer environments
- Build physical, virtual, or hybrid lab environments as required
- Configure lab environments to reflect operational processes and dependencies
- Host lab environments within Thales' facilities / support customer-hosted deployment
- Support testing, validation, exercising, and assurance activities within the lab
- Maintain and adapt lab environments as customer requirements evolve

Thales enables and supports the lab capability. Operational decisions and outcomes remain under customer control.

THALES OT PRODUCT SUITE

The Thales OT Product Suite is a resilience-orientated approach to the through-life management of security & resilience in safety-critical complex OT environments.

The Thales UK OT Product Suite is a set of products or services that allow flexibility and adaptability to a customer's needs in moving them along their OT journey towards cyber resilience.

Figure 1 shows the OT journey to value as an organisation progresses from cyber awareness to cyber resilience maturity: with each column building upon the last.

The OT Labs service forms part of the Thales UK, OT Product Suite situated within the 'MAINTAIN - RESILIENT category (outlined in red - Figure 2). This category provides the solutions and capabilities required to safely design, integrate and sustain OT security solutions as part of a broader journey towards cyber resilience.

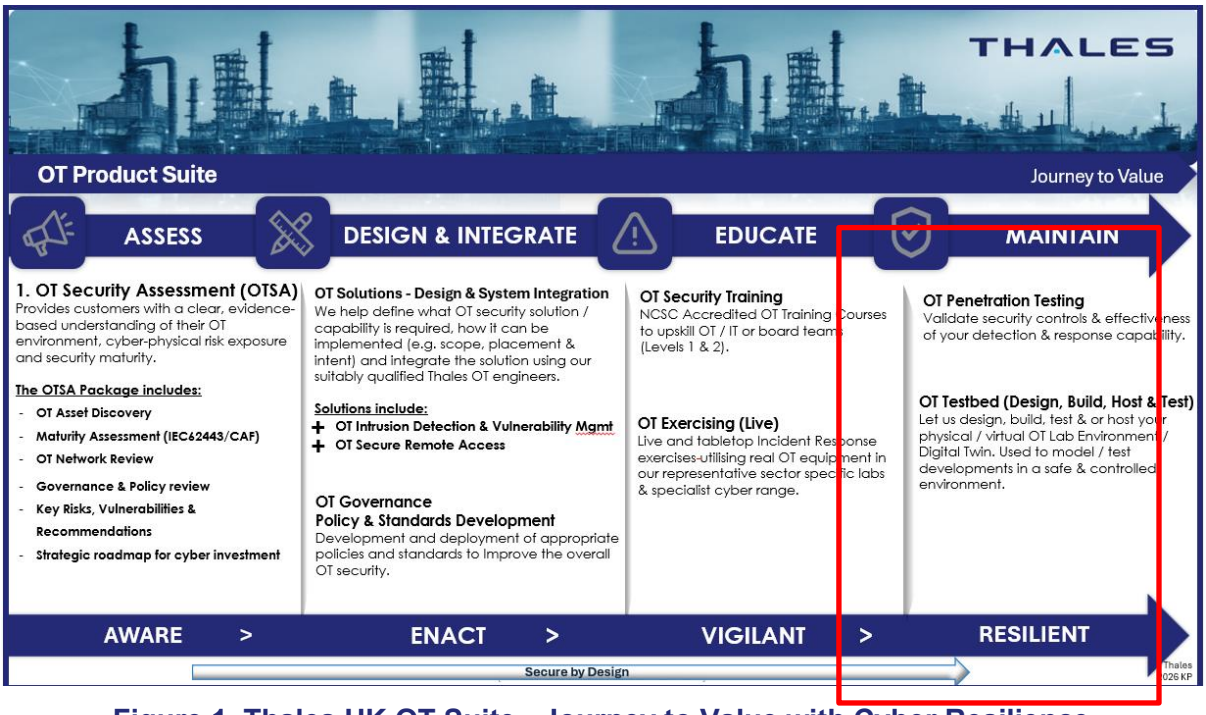

Figure 1 Thales UK OT Suite - Journey to Value with Cyber Resilience

OUR EXPERIENCE AND EXPERTISE

Thales is trusted and relied upon by its customers to ensure that their critical services & infrastructure remain operational, secure and effective; we are a company where security is at the core of all our products and services. Thales designs, builds, delivers and sustains mission-critical information systems and solutions all over the world for government agencies, industry and critical national infrastructure.

ABOUT THALES

Thales in the UK has been harnessing technology to benefit the nation for over a century. Across all walks of life, you will find us securing and protecting every moment. We develop world-leading capabilities to help our customers think smarter and act faster.

Thales collaborate with partners in both government and industry, providing cutting-edge technologies to the civil and defence markets.

Thales has a significant presence across the UK, with locations strategically positioned in England, Wales, Northern Ireland, and Scotland. This geographic reach enables us to effectively support the diverse needs of local communities while contributing to the economic prosperity of all four nations. Our key facilities, along with several customer-facing sites, extend from the South West of England to Glasgow, reinforcing our commitment to regional investment and development.

The most trusted organisations in the world rely on Thales for cybersecurity solutions that keep critical assets safe. With more than 6,000 cybersecurity experts worldwide, our portfolio protects applications, data and identities, including services that close compliance gaps, detect and monitor threats and strengthen defences.

For further information, please see https://www.thalesgroup.com/en/worldwide/united-kingdom

