



Thales at

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NEWS

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Thales: High Technology for High Security

Thales is a global electronics group serving professional markets in the areas of **defence, aerospace** and **security**. Its activities include prime contracting for large-scale programmes, complex system architecture, and the supply of equipment and systems and related support services.

With 61,500 employees and 2004 revenues of €10.3 billion, Thales is recognised as a **world leader in high technology**.

The group's engineers draw on a **solid foundation of generic and dual civil/military technologies** centred on real-time management and distribution of information.

Thales is a truly **international company** both in terms of the markets it serves and the countries of operation. With industrial operations in nearly 30 countries, Thales is pursuing a unique **multi-domestic strategy**, which is of key relevance in defence markets. This strategy is designed to provide the group with the local presence it needs to serve both civil and military customers effectively, anticipate demand and propose the right technical solutions at the right price to meet their requirements.

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Thales SHIELD™: The Thales Answer to Homeland Security

Thales SHIELD™ is the global homeland security offer from Thales. It describes a modular, inter-operable solution set for regions, nations and institutions potentially vulnerable to intrusive strikes and other security threats.

Thales SHIELD™ multi-component solutions offer advanced, real-time protection, with a complete array of open-architecture products and systems to analyse intelligence and risks, guard borders and airspace, protect critical civil and economic infrastructure, and coordinate responses nationally and internationally.

The Thales SHIELD framework consist of the following areas:

1. Security Assessment

- Intelligence: Early warning surveillance and threat assessment, suspicious or dangerous behaviour tracking, alerts and automated scenario planning.
- Risk Management: Risk analysis and management, threat hypothesis and evaluation, systems auditing, continuity and recovery plans, site surveying, standards definition.

2. Infrastructure Security

- Civil Infrastructure Security: Civil security solutions for police enforcement, citizen identification, chemical-radiological-biological-nuclear (CRBN) detection systems, site and event protection, border control and maritime border surveillance.
- Industrial Site Security: Manned and automated access control, biometric readers, perimeter and electronic espionage surveillance, anti-intrusion defence, network/IT protection and fleet management.
- Transport Security: Detection/protection/tracking systems for air, sea and ground transport security, surface-to-seaboard port access detection/control, costal & waterway monitoring and management, navigation and surveillance technology for aircraft trajectory monitoring and threat analysis.
- Defence Infrastructure Security: Integrated military facility surveillance, CRBN detection systems, multilevel and biometric access control, workstation security, real-time alarms, ground/ air/sea intrusion detection and centralised control stations.

3. Information Security

- Network and Communications Security: Fail-safe security systems for government and B2B communications (fixed, mobile, wireless, networks), classification systems from high assurance to TOP SECRET, network encryptors, data and PC protection devices and system design/implementation/support.
- Financial Transaction and Payment Security: Cryptographic solutions for electronic payments and transaction-centred e-government programmes (e.g. e-voting), PIN verification, card terminals, electronic signature and smartcard-based systems.
- Application Security: Backoffice business processing security, limited and distributed database protection, vulnerability assessment, crisis Command & Control, cryptographic intrusion detection and systems development/support.

4. Safety & Security Operations

- Command & Control: Emergency response systems, dedicated and collective command & control information centres, open-architecture communications platforms, links to police/ fire/ health/ utility teams and interstate networks, call tracking, situation assessment, mission management and training and simulation.
- Secured Communications Networks: Civil and military radio communications, commercial mobile radio systems for professionals, transportable and autonomous radio systems connected via LOS/ satellite/ land line, TETRA digital covert radio support via encrypted VECTOR terminal system, transportable or fixed line-of-sight and light satellite systems using military or civilian frequency bands, solutions for mobile surveillance and emergency communications switches.
- Crisis Management: Software and hardware solutions for all crisis management activities, incident reporting, workflow support, and communications and collation of data between field and command centres.

At GLOBAL SECURITY ASIA '05, Thales Presents Its Security Solutions for:

1. Border Security

Since 9-11, Border Security is considered as key for countries and nations to fight terrorism, control smuggling and avoid human trade.

For most Border Security applications, Thales combines sensors, telecommunications backbones, radio mobile networks, Command & Control centres with database management. Thales can act either as a vertical product integrator, as a sub-system supplier, or as a product supplier.

Governmental customers and typically Defence and Security Forces impose strong requirements in terms of operational doctrine, and system availability in any circumstances. Security is also a must for which Thales has an excellent long-standing reputation.

The Thales Border Surveillance solutions and sub-systems are based on the integration of products, either developed in-house, or provided by a third party.

Thales added value covers:

- Integration capabilities covering a wide spectrum of competencies, and the capability to master the diverse environments (multi-equipments, multi-generations)
- Mastery of all technologies of the loop, broad offer of sensors, communications and Command & Control Centres
- Knowledge of the customer's context, as well as credentials on similar projects in other countries.

Thales proposes a set of solutions inline with the operational organisation of the Border Guards. These solutions are dedicated to land border surveillance and blue border surveillance.

Land (Green) Border Surveillance

- **Surveillance:** Thales supplies sensors and solutions to fulfil the needs of observation and detection: day and night goggles, high-end infrared cameras, fixed, mobile and portable radars, unattended ground sensors, intrusion detection solutions, fixed or deployable perimeter protection from sensitive fences to radio connected unattended sensors, direction finders, GSM interceptors, radio interceptors, and local jammers.

- **Transmission:** The solutions are twofold: fixed backbones and mobile radio networks. The fixed backbones allow for the connection of any type of applications (voice, data, video), and are mostly based on IP. They are secure, encrypted and customised to answer the border guards specificities. These transmission networks can be either based on microwave, or optical links. The radio for mobiles are based on Professional Mobile Radios (PMR) or, for long distance or specific environments, on military type. Thales offers a unique PMR system, based on the European TETRA standard, that relies on any IP backbone. HF and VHF military radios are also suited for some missions. Thanks to Thales switches and integration know-how, all radio systems are seamlessly integrated into other networks and connected to their headquarters.
- **Command & Control centres:** In these centres, all sensor control functions are brought together: alarm monitoring, remote commands of the sensors and cameras, etc. with the functions of command: situational awareness, incident report, dispatching, mission follow-up, resource deployment, mission planning, statistics on missions, and logistics.

“Blue” Border Surveillance

For Blue Borders, the same user cycle applies as for the land border surveillance: from surveillance sensors to decision-making, follow-up, planning and logistics. The sensors and the decision-making process are adapted to the hierarchical chain of command of the user; typically, the radars are specific and customers can be linked to. Thus the decision process can be different from one country to another. Maritime Patrol and Border Surveillance can also be connected. UAVs are easily used for Blue Border surveillance as the air space above the sea presents less constraints with regards to civilian and military aviation regulators as the one above land.

Private Mobile Radio (PMR) and C3I Systems

Thales has more than 15 years of experience with integrated secure communications systems for Police and Security forces, and provides complete state-of-the art PMR (Private Mobile Radio) systems ranging from conventional to trunk digital (TETRA). For example, Thales has delivered a turnkey system for the police departments in Bogota, Colombia and in Porto Alegre, Brazil, that integrates the PMR and the associated C3I system. These systems integrate a full Private Mobile Radio (PMR) system in the 450 and 800 MHz band composed of the PMR network, an emergency call management system using “call taking” and “dispatching” facilities based upon the ECHO product, an automated vehicle location system based upon the use of GPS receivers, and a video surveillance network.

2. Maritime Security and Safety

In recent years coastal waters have experienced a significant increase in maritime traffic engendering environmental disasters, loss of life in shipping accidents, increased international maritime terrorism, criminal activity, illegal trades, and breaches in fisheries conventions. Maritime countries are increasingly facing multi-faceted and asymmetrical threats that result in a need to develop responses, which not only involve the military, but also coast guards, police, customs, fisheries, port authorities and other organisations.

Thales has developed a unique and specific approach to support its customers in solving these questions with a specific synthetic environment capability enabling to find the best trade-offs to enhance coverage and speed of action, and develop appropriate operational doctrines to make best use of the systems.

Thales helps its customers to improve the efficiency of maritime security and safety with full systems design capabilities to capture all type of information, with appropriate analyses, support decision as well as disseminating information in an appropriate yet secured way, possibly in multi-user environments to enable or facilitate timely actions.

The Thales modular approach is based on different steps:

Step 1 – The definition of the systems parameters in order to create interoperability and action synchronisation at sea (namely between ships, aircrafts, coastal surveillance, and Command & Control centres). The resulting operational concept should take into consideration geographic constraints, military and security agencies' organisation and assets, threats and dedicated budgets.

Step 2 – Definition of a network architecture to define the core IT backbone architecture (data processing and database management and control) and communication and dissemination (system-to-system/ system-to-Command & Control, decision centres-to-agencies that perform actions at sea).

An experimentation centre (MASSTER - MARitime Safety and Security Transformation CentER) proposes various architectural options.

Step 3 – Optimised coverage with appropriate systems and sensors: Based on a refined operational analysis and experimentations, Thales can identify gaps in threat detection and monitoring, and proposes gap fillers in terms of airborne, ship borne, space borne and land-based systems.

In the area of Maritime Security and Safety, the Thales capabilities include:

- **Experimentation Centre: MASSTER** (MARitime Safety and Security Transformation CentER) provides operational analysis, experimentation tools for an optimal architecture configuration, development of operational doctrines, training and value assessment.
- **Sense:** Detection, tracking and identification systems and sensors from land, sea and air.
- **Understand:** Multi-systems interoperability, multi-sensor data fusion, data processing, and support to classification.
- **Disseminate:** IT and communications network, selective and secured dissemination.
- **Synchronised Effects:** Command & Control systems, mission planning and debriefing, tasking and hand over.

Thales proposes a modular approach based on the priorities set by the customer. At the same time, Thales ensures interoperability for future extension of the systems.

3. Critical Infrastructure Security

Emerging contemporary threats have placed the problem of civil infrastructure security high on the list of regional and national vulnerabilities. Against this new risk set, Thales provides civil security systems and solutions for police enforcement, citizen identification, chemical-biological-radiological-nuclear (CBRN) detection, protection of people, site, events, businesses and transport.

Developed by Thales, the **Sathi Manager Supervision System** provides a single human-machine interface (HMI) for efficient management and operation of access control, intrusion detection and video-surveillance. With its inherent modularity and expandability, it is designed to manage the smallest infrastructures through to the largest and most complex, and can readily adapt to all current and future needs. The Sathi Manager's open architecture enables secure communications with other, external applications (patrol management, technical management, etc.), resulting in a highly integrated system to meet the requirements of overall security management covering people and sites.

- **Secure site access:** Access control data management includes: staff and visitor management, badge production, site and building access clearance, plus management of associated alarms. In order to reinforce the security for access control in restricted areas, Thales can integrate 3D facial recognition technology as a biometrics mean to authenticate the badge holder. This 3D imaging technology is the first to meet the stringent accuracy and processing requirements necessary for high-security physical access control through real-time face capture and processing.
- **Intrusion prevention:** Intrusion detection data can be collected either by the system's own acquisition modules, or via links with other subsystems (central intrusion detection system, distributed acquisition modules, etc.). The Sathi Intrusion module provides the full range of intrusion management functions (activate/deactivate, time period management, alarm management, etc.).
- **Video-surveillance and smart image-based analysis:** The Sathi Video module integrates communication protocols with switching matrixes, camera domes and recorders, managing all the components of video-surveillance installations. It provides operators with an intuitive graphic interface, enabling them to manage and control all installations using dynamic graphic maps, context menus and icons to access configuration changes. For **perimeter protection**, intelligent image analysis software can reinforce intrusion detection. Thanks to its behaviour recognition feature, this solution drastically reduces false alarms by detecting the difference between normal occurrences versus suspicious ones, even in harsh weather conditions.

- **Easy integration with other systems:** Sathi Manager is an open system designed to integrate and communicate with third-party systems. Interfaced with a wall projection system, Sathi Manager provides control room or command post operators with a dynamic real-time display of synoptic and video images. In addition, Sathi Manager integrates seamlessly with other applications developed by Thales, such as visitor management and pre-announcement, automatic recognition of vehicle registration plates or security data analysis.

Safety and Security Operational centres: Thales offers security solutions tailored specifically to civil and public security services. These systems are designed to enable security service staff to carry out routine operations and to mitigate and manage emergencies and crisis situations. Thales' Command & Control centres (the nerve centres in emergency situations) are designed to ensure maximum interoperability. From single sites and cities to regions and national or international applications, it interconnects police forces, fire crews and emergency medical teams either locally or via trans-national networks using telegraphic and radio communication equipment supplied by Thales, or third-party contractors. The systems can be tailored to meet the requirements of specific applications, events or operations, 24/7.

Thales Command & Control centres enable real-time operations in all the main areas of intervention: Event reporting and call handling, intelligence gathering and analysis, situation awareness, decision and operation management, resource allocation, planning and tasking.

In the area of **CBRN threat detection**, Thales offers a complete range of services, including operational analysis, functional analysis, system design, production and qualification, user training, technical support, logistic support and upgrade of existing systems. Thales offers three distinct types of services on this market:

R&D of CBRN Reconnaissance Systems: Armoured reconnaissance vehicles are equipped with nuclear, biological and chemical detection systems, chemical identification systems, sampling devices and/or remote chemical detection devices.

R&D of Operational Biological Detection and/ or Identification Systems: In the area of biological threat detection, Thales designs and develops air-transportable biological analysis laboratories. These laboratories are equipped with instruments capable of identifying bacterial, virus and toxin threats

Deployment of Biological and Chemical Detection Sensors: Thales has unveiled a comprehensive biological and/or chemical monitoring concept comprising automatic detection and sampling devices, biological analysis laboratories and command PCs with all the tools needed for CBRN management. Thales has also unveiled a comprehensive threat monitoring and management concept for sensitive sites, based on the use of fixed or deployable systems.

With the ever growing number of travellers, the reality of illegal immigration and the threats of international terrorism, a secure travel document is an absolute necessity to control the identity of people crossing borders. The trend towards interoperability of control systems will lead issuing states to delivering new travel documents. In the area of **Secure Identification Solutions**, Thales develops and secures smart e-IDs.

This global smart card delivery solution covers all requirements from data recording of the card holder through to card delivery, and includes application processing, generation of confidential data and card personalisation. It is based on a modular concept and allows a flexible deployment. It can be used e.g. for national ID cards (logical and physical identification/authentication of the citizen), daily life card (e.g. electronic online voting,...), corporate cards (physical access control, network connection, electronic messaging signature/encryption...).

Thales has developed a highly secure electronic passport issuing system, fully compliant with the ICAO (International Civil Application Organisation) standard. The production system is fully automatic: laminate sheets and blank passports are loaded into the production machine and finished passports are output.

With the Thales Artema ID biometric terminal, Thales provides a versatile control device aimed at the immediate authentication and identification of any ID holder, e.g. control of documents (ID cards, driving licences, passports, visas, etc.), convergence of identity applications and governmental needs specially for e-government applications (ID cards, fingerprints biometric for identification and authentication, encryption...), and gradation of control level (bio data, portrait, PINcode, fingerprint...), depending on situation.

4. Information Network and Communications Security

Perhaps the most readily available targets are the Information networks and communications systems, which often demand failsafe security. Both the information in transit, and the information infrastructure itself require protection at every access point. For government and business communications using fixed, mobile and wireless networks, Thales can provide solutions to protect information classified from commercially sensitive to TOP SECRET.

Thales leads the world in cryptographic security technology to protect LANs and WANs from tampering. The group provides consultancy, hardware equipment, system design, implementation, support and, when required, secured network and communications managed services for industries, agencies and governments worldwide.

Typical key applications include safeguarding ATM/ EFTPOS* transactions around the world, the safe exchange of value-bearing transactions among businesses and the protection of government networks worldwide.

At GSA '05, Thales displays the following solutions for Information and Communications Security:

1. **Datacryptor 2000 (DC2K)** – The Datacryptor family offers products that support private and public networks including Leased Line, Frame Relay, X.25 and IP. It also solves the issue of diverse algorithm standards by offering the only network security product with soft loadable encryption algorithms.
2. **Datacryptor AP** – Datacryptor AP 100Mbps-IP is the first release of the new advanced performance platform introducing high-speed full-duplex packet encryption. Datacryptor AP has the flexibility to support any IP security policy, including multiple virtual private networks.
3. **WebSentry** – The WebSentry PCI and Ethernet cryptographic devices bring the highest level of security and speed to application servers for the processing of data encryption and digital signatures.
4. **Trusted VPN** – The Internet's fundamental lack of security is perhaps the largest barrier keeping your remote workers from real productivity. Thales Trusted VPN pushes through that barrier, making all Internet-based remote sessions secure. Now the Internet can be used for even the most sensitive of remote access activities – with confidence.

** ATM: Automated Teller Machine, or Bank Cash Machine
EFTPOS: Electronic Funds Transfer at Point of Sale

Thales Research & Technology (TRT) and Homeland Security

Thales Research and Technology (TRT) is part of a global network of research centres supporting Thales Group companies. TRT has a long history of producing innovative solutions and its success is illustrated by initiatives that led directly to four Queen's Awards for Technology being gained by Thales companies.

Continuous investment in our technology base and extensive collaboration with Government, University and Industry research organisations maintains leading-edge knowledge and skills in TRT and fosters the technical and business innovation that creates new opportunities for customers.

Our processes are **ISO9001:2000, ISO14001 and TickIT** registered.

Our key applications centre on areas like 'Homeland Security'; 'Communications Security'; 'GALILEO' and 'Virtual-Collaboration Solutions'.

- **Homeland Security Platform.** This platform provides a focus for research on protection of 3D spaces over a variety of scales. The scope comprises systems of networked sensor systems and the associated situation awareness for command & control. Applications include smart secure containers that alert on intrusion and deviation from planned journeys and intelligent large area CCTV systems for monitoring behaviours.
- **Communications Security Platform.** Easy to manage multilevel security is vital to networked operations between co-operating mobile parties whether they are in business, managing civil crises or engaged in military activity. Context aware policy based management offers a firm starting point on which to build reliable networked information systems.
- **Urban (civil/ military) Emergency Management Platform.** In managing emergencies in the complex urban environment, knowledge of the situation is the chief requirement. It starts at the simplest level of needing to know the boundaries of the danger zones, the location of own teams and being able to rapidly share information. This application theme demands a wide range of integrated capabilities in precise positioning, reliable networking and information processing and usage.
- **Virtual-Collaboration Solutions Platform.** Increasingly, collaboration is required to take place when team members cannot be collocated and may also be in transit. Sharing information without long delay, at the right level, in a manner and form that is appropriate to both the nature of the business and the occasion, is the challenge that is being addressed. This advanced work is being pursued through a joint team located in the I-Lab at the University of Surrey and through collaborations with University of Cambridge and MIT.

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