

THALES



SMARTFLEET

INTELLIGENT MAINTENANCE & FLEET MANAGEMENT



AGENDA

1. OVERVIEW
2. CMMS FEATURES
3. SMART FEATURES
4. INFRASTRUCTURE & NETWORK
5. SERVICES & SUPPORT
6. BENEFITS & ADVANTAGE



1. / OVERVIEW

1.a / Context : The Fleet management Challenges

1.b / SmartFleet overview

1.C / Functional packages



1.a - Context: The Fleet management Challenges

Daily activities :

- Manage Maintenance activities
- Allocate ressources efficiently
- Manage stocks and costs
- Manage Procurement
- Ensure failure secured solution

Expected benefits :

- Improve equipments availability & reliability
- Optimise maintenance management and costs
- Anticipate breakdowns and consolidate Fleet management view
- Make the most of fleet management for mission preparations
- Ensure information security, integrity, availability

1.b - SmartFleet overview

Main functionalities

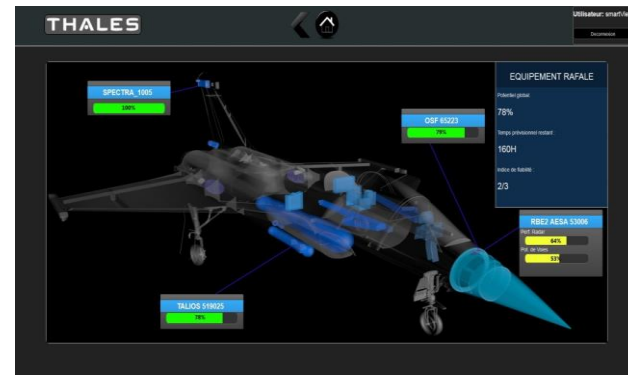
- Record **Health and Usage data** (HUMS) from equipment
- Calculate **life potential** of parts thanks to **advanced algorithms**
- Propose **optimal dates** and actions for **maintenance operations**
- Ensure **configuration consistency**
- Ergonomic and intuitive web application for **fleet management**

Customer Benefits

- Increase equipment **availability**
- **Minimize the breakdown risk** during missions
- **Reduce costs** of ownership
- No IT infrastructure investment

A new way to collaborate with our customers

- Proposed through **performance based SLA**
- **Shared IS and KPIs** between operators, maintainers and Thales



1.c – 3 functional packages



CMMS :

Computerized Maintenance Mgt Syst



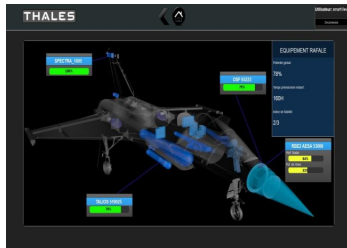
Fleet Management :

Global visibility per assembly and sub-assembly



HUMS intelligence:

Equipment RUL (Remaining Useful Life)





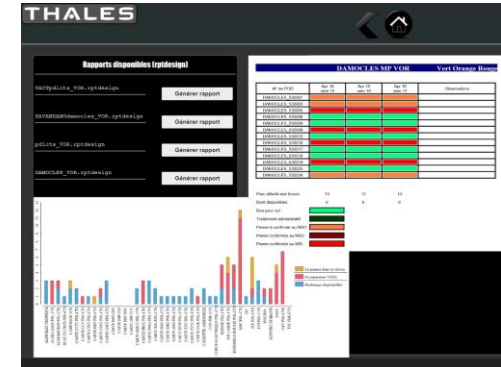
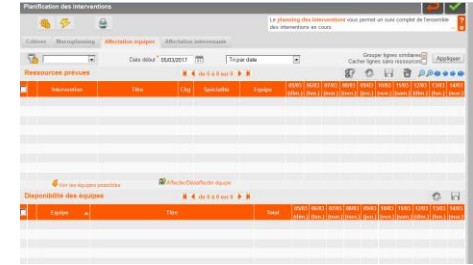
2. / CMMS FEATURES

- MAINTENANCE OPERATIONS
- CONFIGURATION MANAGEMENT
- RESOURCES
- STOCKS
- SUPPLIES
- REPORTING & KPIS



Global view of CMMS Features

- Maintenance Operations
- Configuration Management
- Ressources management
- Stocks
- Supplies
- Key Performance Indicators (KPIs)



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Maintenance Operations

Work order follow-up

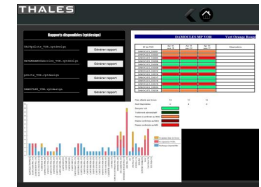
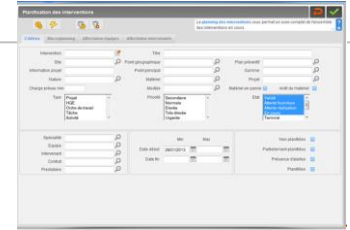
Work organisation

- Structure your maintenance work orders with specific hierarchy and budget
- Enable work order action progress and costs follow-up versus as planned
- Features particularly adapted to major Overhauls and new Operations
- Planning : forecast resources availabilities (Workforce, Stocks, Means)

Work approval

- 2 role-levels work acceptance : request owner and operator
- 2 status work acceptance : technical and administrative
- Work approval can be completed by internal satisfaction survey

Preventive maintenance and regulatory constraints



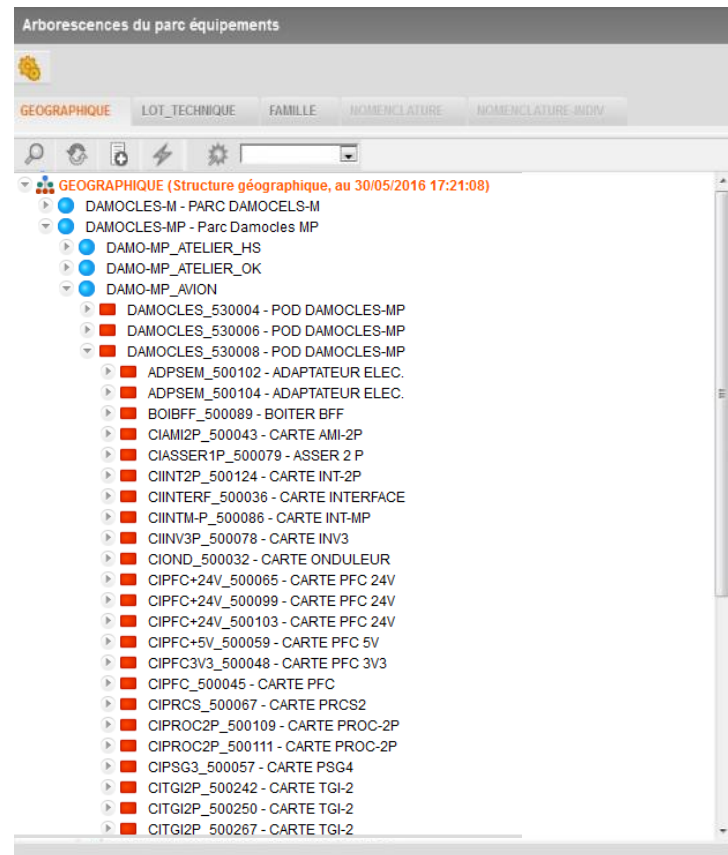
Configuration Management

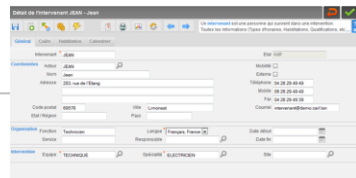
Actual and historical equipment configuration

- List all the parts in a given system
- Check parts consistency when a new part is installed
- Track all the parts installed in a given system during its whole life cycle

Configuration management with its associated stocks of spare parts

- Equipment architecture visibility
- Ergonomic and intuitive interface





Define Who does What and How

- Who : 3 major parameters (Tools contributor, Working team, Professional specialty)
- What : predefined types of operations (ex: cleaning,...)
- How : time spent, hourly rate, authorizations & qualifications

Punctual sub-contracting

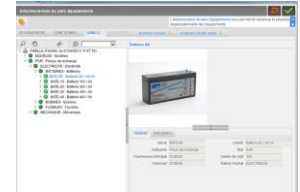
- Define the content of services received : description, units of work, type of activities, ...
- Enclose the conditions suppliers shall provide services : prices, penalties, referentials, ...

Contractual sub-contracting

- Contract per operation or per work-package
- Define precisely your contractual and operational conditions :
 - covered periods of time, turn around time commitment, fleet of equipments concerned, volume of activities with associated and precise costs calculation versus allocated budget
- Other features : history, criterias to define the type of sub-contracting, terms and conditions

Stocks organisation : from the equipment to the smallest unit

- Stocks classification according to Multi-level tree view
- Different types of articles : spare parts, consumables, ...



Stocks optimisation functional features

- Updated nomenclature fed by operations and disclosed with tree view
- Prices features :
 - Supplier prices linked to the contractual sub-contracting conditions
 - Prices history and Supplier prices comparison
- Warehouse selection & optimization
- Corrective action further to stocks rupture
- ABC analysis and classification : quantity and value of entries, exits, inventory records

Standard functions : stocks movements, inventory, supply

Supplies Management

Suppliers Profile

- Structure your Suppliers Key information to optimise follow-up : administrative, qualification, strategic
- Anticipate Litige thanks to automatic supplier evaluation based on weighted criteria (delays, delivery satisfaction, ...)

Purchase request

- Multi-supplier call for tender management

Order management

- Easy order follow-up with details on content and costs

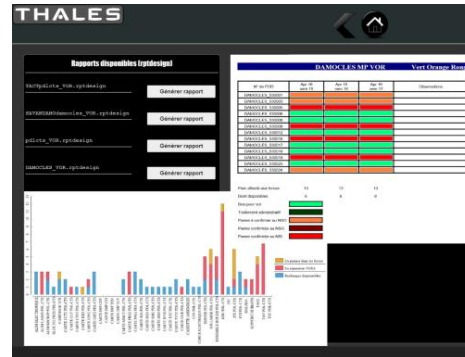
Delivery management

- Non conformities follow-up and management of “Return” to supplier
- Key information follow-up : destination, quantity, unit price, stocks place
- Automatic update with budgets records and gap on commitment follow-up

The screenshot displays a software interface for 'Detail de la réception RL-0015'. It includes a header with navigation icons and a message: 'Vous pouvez consulter les articles réceptionnés. Par ligne d'achat, sont renseignés les...'. Below this, there is a 'Général' section with fields for 'Bon de livraison', 'Commentaires', 'du', 'Réceptionné par', and 'le'. The main part of the interface is a table titled 'Ligne(s) d'achats' with columns: 'Commentaire (OA)', 'Article / Service', 'Réception prévue', 'Qté livrée', 'Qté sous réserve', 'PU Unit', 'Qté Maje', and 'Libré / Commentaire'. The table contains two rows of data. Below the table, there is a 'Mouvements stock' section with a sub-section for 'Mouvements stock "CMDE00012"', which includes a table with columns: 'Date', 'Magasin', 'Emploi/stock', 'Type de mouvement', 'Matériel', 'N° de lot', 'Date de réception', and 'Commentaire'.

Maintenance Reporting and KPI

- Graphical views and export (Excel, pdf,...)
- Historical information of all maintenance operations are recorded
- Design optimization thanks to Data failure analysis vs usage
- Availability : past, actual and forecast
- Specific reports creation





3. / SMART FEATURES

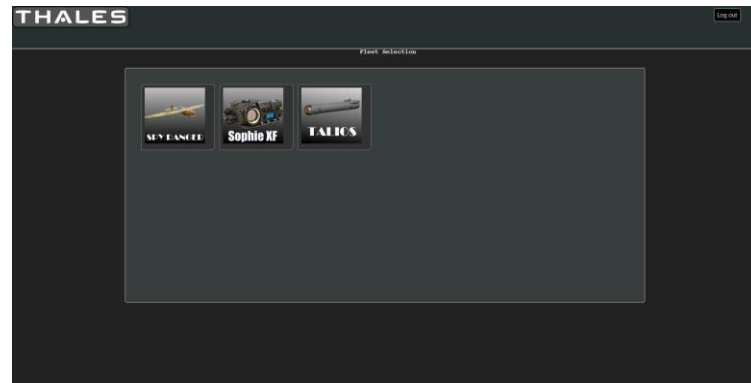
- COMPREHENSIVE FLEET MANAGEMENT
- CYBERSECURITY ENSURANCE
- PREDICTIVE MAINTENANCE



Comprehensive Fleet Management

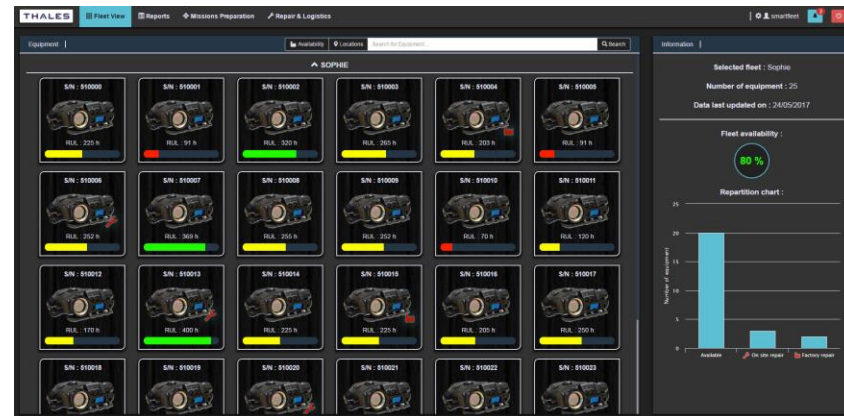
Land, Airborne and Naval Application

- Interfaced with Thales equipment
- Can be interfaced with any other equipment or system (Vehicle,...)
- Customized Views : by site or equipment type, etc



Maintenance Management

- View Available equipment and equipment under maintenance
- Predictive dates for maintenance
- Part to exchange or maintain for the next maintenance window



■ Maintenance & Hums data are (usually) not classified

- However, a good level of security is required

■ Security

- Supervision of security : SOC services (Security Operation Center)
- Mandatory security features (examples) :
 - Individual login and password for each user
 - Data exchanges are encrypted (https)
 - Customers data servers and access point are isolated
 - Thales front securization (firewalls)
 - Site Access restricted and Server data Room access highly secured

*Higher security level is possible, but would **reduce** significantly the **ergonomy**
Would **increase** deployment **time and cost***

Predictive Maintenance

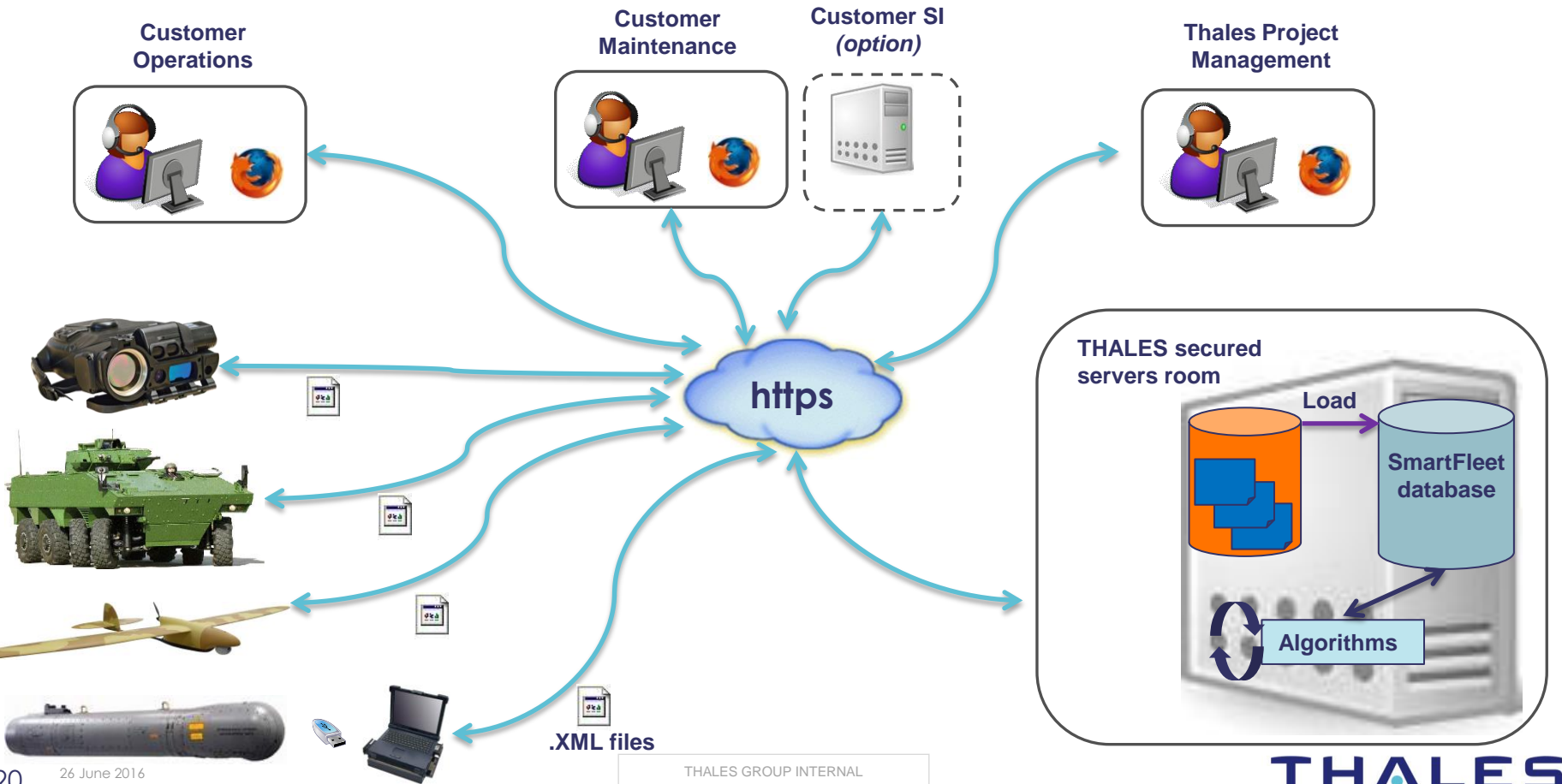
- **Unfreeze** securely the power of your **operational data** to **optimize** equipments **availability** rate
- Anticipate breakdowns and ensure **zero mission failure**
- Benefit from top-edge **predictive maintenance algorithms** (3 International Patents)
- Get the advice of our **top notch experts** to acquire your existing data and process them efficiently

4. / NETWORK & INFRASTRUCTURE



Network and data flow

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5. / SERVICES & SUPPORT

- SMARTFLEET « TURNKEY » SERVICES
- (SMARTFLEET : SETUP & CONSULTING SERVICES)



Services in « Build Phase »

- Standard solution : dedicated Software & IT servers accessible from internet
- Personalization and Support : from Cybersecurity to graphic, training and tailor-mode infrastructure

Services in « Run phase »

- Support & administration, Infrastructure maintenance
- Maintenance and Continuity ensurance with the right level of security

Consulting services

- Audit operational processes : adherence to customers operations
- Workflows customization & adaptation to the processes
- Faisability study to integrate HUMS technology



6. / BENEFITS & ADVANTAGE



Benefits & Advantages

- **Optimise** maintenance management
- **Support, centralise et secure** maintenance activities
- **Ease** maintenance information structure and visibility
- **Improve** availability thanks to a better strategy and execution operations
- **Tailormade** services and **perenisation**



Reduce costs - Increase performance and availability

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ANNEXES

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