



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

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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

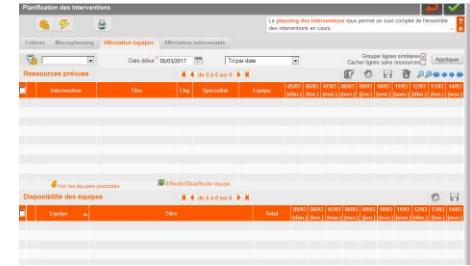
- MAINTENANCE OPERATIONS
- CONFIGURATION MANAGEMENT
- RESOURCES
- STOCKS
- SUPPLIES
- REPORTING & KPI'S



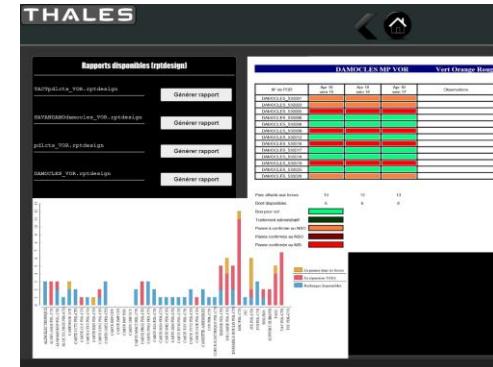
Global view of CMMS Features

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Maintenance Operations



Configuration Management



Ressources management

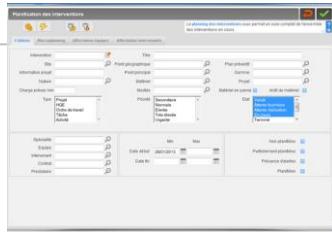
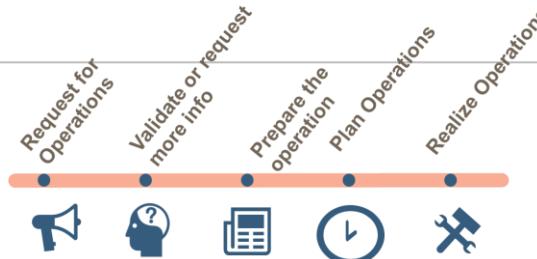
Stocks

Supplies

Key Performance Indicators (KPIs)

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

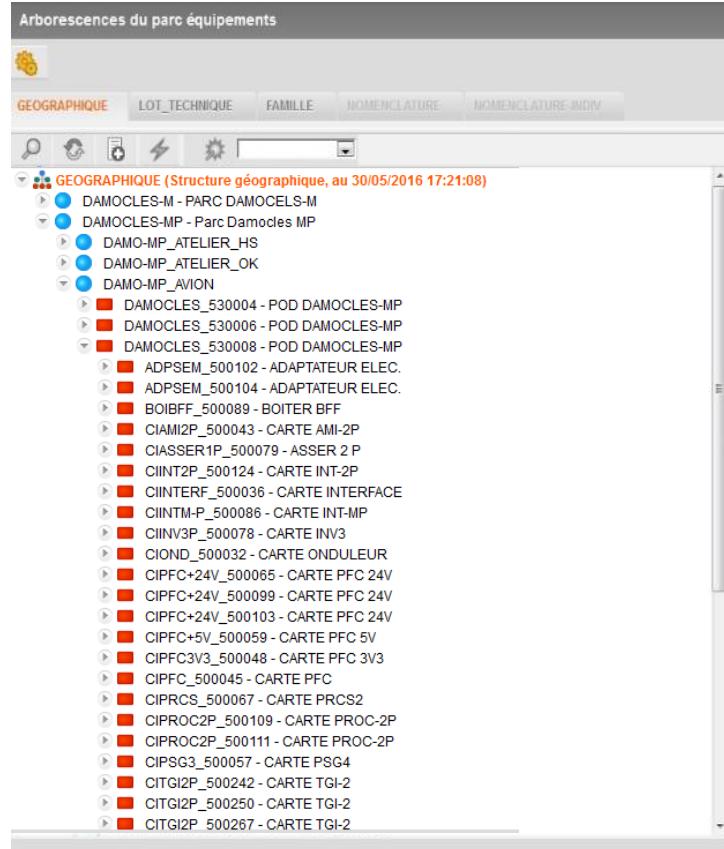
Configuration Management

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



Resources Management

| 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

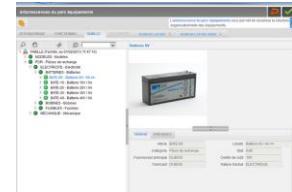
- Define the content of services received : description, units of work, type of activities, ...
- Enclose the conditions suppliers shall provide services : prices, penalties, referentials, ...

| 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

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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

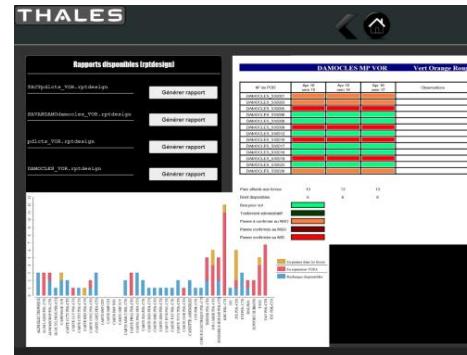
Delivery management

- 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

Détail de la réception BL-00015								
Général								
Bon de livraison	BL-00015	de	01/02/2013	Réceptionné par	DEMO	le	01/02/2013 14:15:19	
Commentaire								
Ligne(s) d'achat								
Commande / OA	Article / Service	Réception privée	Qd livré	Qd non livré	PV Net	Qd Mise	Uppr	Commentaires
CMDE00012	DATE-20	08/02/2013	10 Unité	0,0000 Unité	120,00 €	0 Unité		
CMDE00012	DATE-40	08/02/2013	10 Unité	0,0000 Unité	140,00 €	0 Unité		
Mouvement stock "CMDE00012"								
Date	Magasin	Emplacement	Type de mouvement	Mancant	N° de lot	Dates péremption	Ouverture	
01/02/2013 14:15:19	A	ATL1033	Entree sur actuel stock					

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

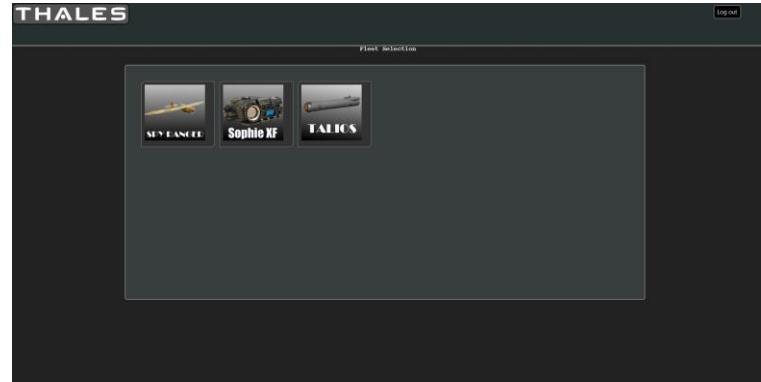


Comprehensive Fleet Management

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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 & 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 **ergonomics**
Would **increase** deployment **time and cost***

Predictive Maintenance

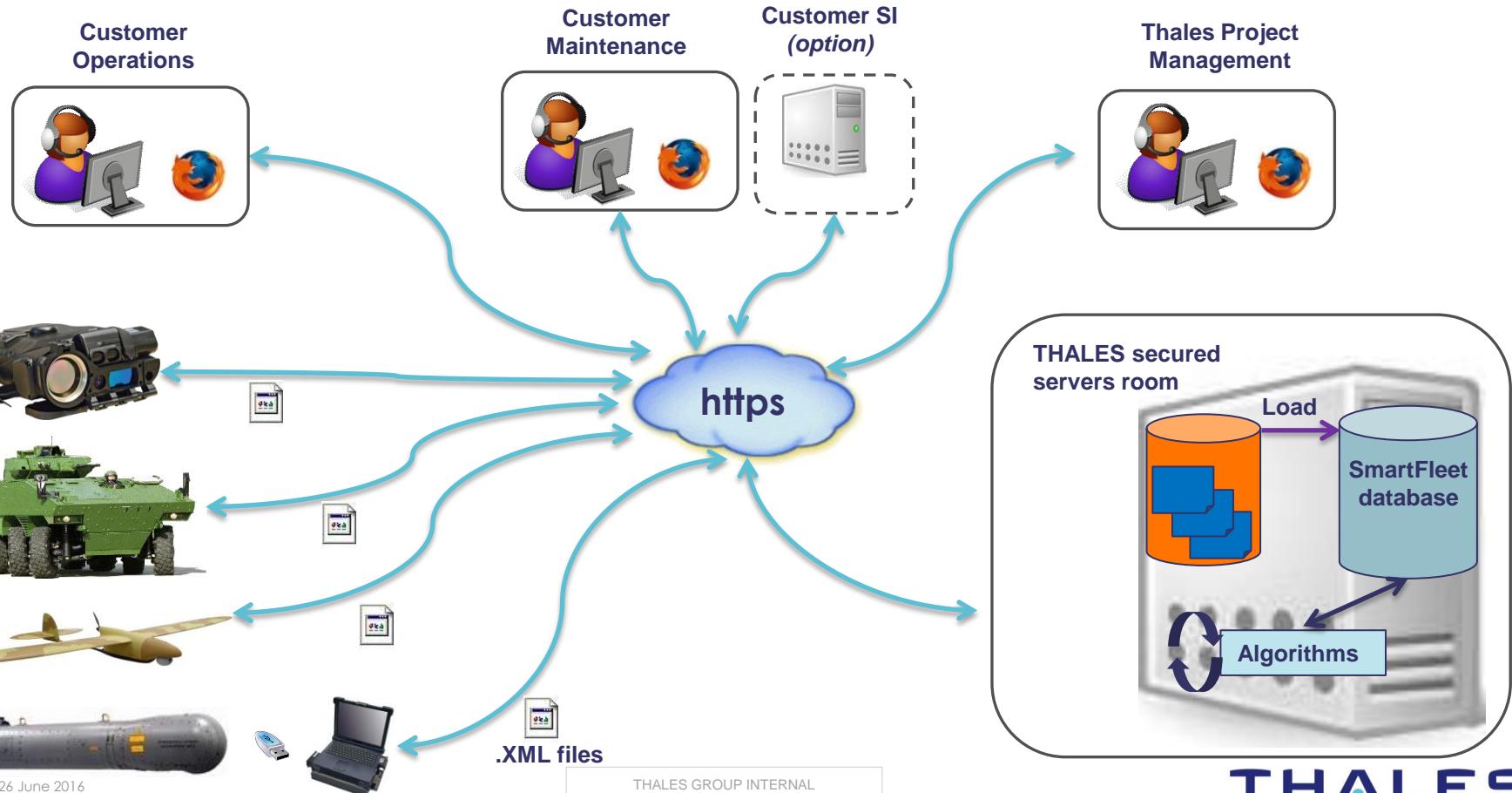
- | **Unfreeze** securely the power of your **operational data** to optimize equipments **availability** rate
- | Anticipate breakdowns and ensure **zero mission failure**
- | Benefit from top-edge **predictive maintenance algorithms** (3 International Patents)
- | Get the advice of our **top notch experts**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



ANNEXES

