

# THALES

## Land and Air Systems Global Business Unit Thales Group

## Open Innovation

GERMANY – OCTOBER 2017



# Worldwide operations

A balanced revenue structure

Defence  
50%

Civil  
50%

Global presence

56

Revenues in 2016

15 billion euros

Shareholders

(at 31 December 2014)

26,4% French State

Float

48,3%

25,3%

Dassault Aviation

Employees

64,000

(workforce under management at 31 Dec. 2016)

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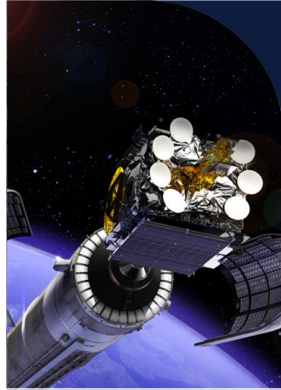
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## DUAL MARKETS Military & Civil



AEROSPACE



SPACE



GROUND  
TRANSPORTATION



DEFENCE



SECURITY

TRUSTED PARTNER FOR A SAFER WORLD

# Global leadership

**N°1**  
worldwide



Payloads  
for telecom satellites



Air Traffic Management



Sonars



Security for interbank  
transactions

**N°2**  
worldwide



Rail signalling systems



In-flight entertainment  
and connectivity

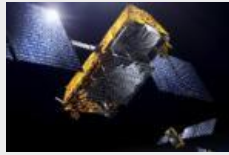


Military tactical  
radiocommunications

**N°3**  
worldwide



Commercial avionics



Civil satellites



Military surface radars

**€15**  
billion  
in revenues

# Thales specific environment

## Customers

### ➤ Professional Business

- Safe-Secure-Innovative
- Systems, Systems of Systems & Complex Systems



### ➤ Governments (DGA, MINDEF, MOD, DOD, MHA, Public Agencies)

- Long term usage – Criticality – lethality – environment friendly – precision – safety – security – non proliferation – Exportability...



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# Land and Air Systems specific environment

## How it used to be and how it's becoming:

### ➤ Defense sector

- Defense sector is/used to be the main driver of Civilian Hi-Tech products
  - GPS, Network/Wireless communications, Drones...



### ➤ Paradigm change

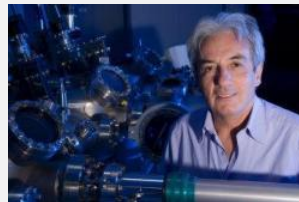
- Defense budgets are shrinking
  - Need of Innovation and Research using COTS (Commercial Off-The-Shelf)



# A strategy driven by innovation

## Long-term vision

- **Self-funded R&D: 730 million €** (not considering external funding)
- **Focus on key technical domains**
  - Complex systems
  - Hardware (sensor technologies)
  - Software
  - Algorithms and decision support
- **Open research policy**
  - International network of research centres
  - Cooperation with academic and government research institutes worldwide
- **Focused product policy**
  - Shorter development cycles
  - Risk reduction



**ALBERT FERT**  
scientific director of the CNRS/Thales joint physics unit and winner of the **2007 Nobel Prize in Physics**.



Some **25,000** Thales employees, over **70% of them engineers**, are involved in the Group's technical operations from research to engineering.



Thales confirmed as one of the world's most innovative companies for an additional year, in **Thomson Reuters 2012** and **2015 Top 100 Global Innovators**

Inventing tomorrow's products today

**THALES**

## Bringing new-to-the-world solutions and services

### ➤ From the inside out

- Internal innovation competitions  
Thales Awards, Ph.D. Awards...
- Employee recognition  
Expertise Career Path, Patent rewards
- Rapid concept demonstration  
BTC, ATIC, conops simulation, rapid prototyping
- Internal Fairs and Tradeshow  
Research days and Techno days

### ➤ From the outside in

- Active in leading international expert societies: IEEE, INCOSE, SPIE...
- Developing long term relationships with R&D Centres and academic institutions
  - Chairs, Ph.D.s
  - Joint Labs...



The Thales Innovation Award Trophy



# Thales Research & Technology

## An international network of research centres:

France

Palaiseau



**Palaiseau (FR)** Ecole Polytechnique

UK

Reading



**Reading (UK)**

Netherlands

Delft



**Delft (NL)** Delft University

Singapore



**Singapore (SG)**

Canada

Quebec



**Québec City (CAN)**

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# Key R&T Partners : A lever for innovation

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Efficiency, Excellence, Risk reduction, Worldwide Visibility

# Research Days

## Event dedicated to TECHNOLOGIES

- To showcase future products which will not mature before 2 to 5 years
  - New concepts to basic prototypes
  - **Technology Readiness Level ~3**
- Open to partners
  - Civilian and Military Research centers, Academia...
  - More than 3000 visitors
  - First step of collaborative working
    - Techno push to leverage market pull



Derisking stage

# Innovation Days

## Event dedicated to PRODUCTS

- To showcase Innovative new products
  - Technology Readiness Level ~5
  - More than 70 innovations (2017)
  - 1200+ visitors from 36 countries
  - Demos from 15 Thales countries
- Dedicated to Thales customers/partners



Starting point of Development stage

## An environment for INNOVATION

### ➤ Internally

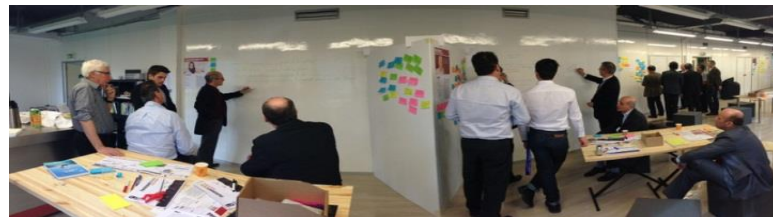
- Multidisciplinary teams
  - Technical, Marketing, Strategy...
- Brainstorming on future products
- From the idea to the basic prototype/business model

### ➤ Externally

- With partners and customers
- Design Thinking approach
  - Users, customers, marketers, technical...
- Specific topics as well as general centers
  - Optoelectronics, Defense systems, Air Traffic Management
  - Within Thales locations and at Thales University



The Thales Design Center Logo



## From INNOVATION to EXPERIMENTATION

- With customers, users and partners
  - Developed in strategic locations
- A place for experimentations:
  - Different tools
    - Audio/Video/Data record capability on all consoles
    - iDeck cockpit, Consoles, VR headsets...
  - Analyze human factors
  - Discover air-ground capabilities
  - Assess new concepts brought by major EU projects



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# Venturing and Incubating

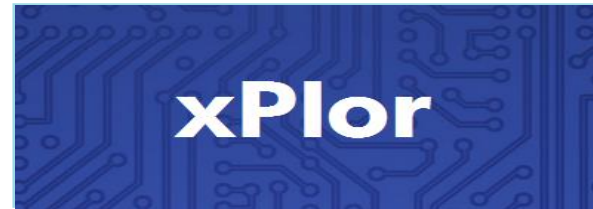
## Partnership & Co-development with Start-ups

### ➤ External Incubators/accelerators

- Starburst Accelerator (Paris, Munchen, Los Angeles)
- Starburst Accelerator provides **seed funding** from the top business angels and venture capital firms dedicated to **Aerospace**, **Defense** and **Security**

### - Thales xPlor – MIT Media Lab

- Privileged access to
  - » Breakthrough Technology
  - » Outstanding innovative environment
- A catalyst for connecting Thales initiatives to exciting **entrepreneurial** ideas flowing from **research institutions** and small business **startups** in the **U.S.**





## Partnership & Co-development with Start-ups



### ➤ Station F (The largest Incubator in the world)

- Thales makes part of the very few High Tech companies partnering with Station F
- Thales is implemented in Station F partnering with its start-ups on Cybersecurity

**JULY 2017**



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# Innovation for Thales



## Joint Labs



## Innovation Hubs



## Research & Innovation Days

## Units Labs & Platforms



## Design Centers



## Tech Scouting



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# Open Innovation in Thales

“Our success in the future will be defined as much by our **partners** – in their **innovation of new technologies** and **business models** – as by our **own ability** to develop and market **disruptive products and services.**”

Patrice Caine, CEO Thales Group



# THALES

## LAS GBU - Thales Group Open Innovation Strategy

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