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Thales UTM – GUTMA Briefing

PRESENTATION FOR:
GUTMA 26 JUNE 2017

PRESENTED BY:
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DIR., STRATEGY & BUSINESS DEVELOPMENT

Global Company, Local Presence

Global presence

56
countries

Employees

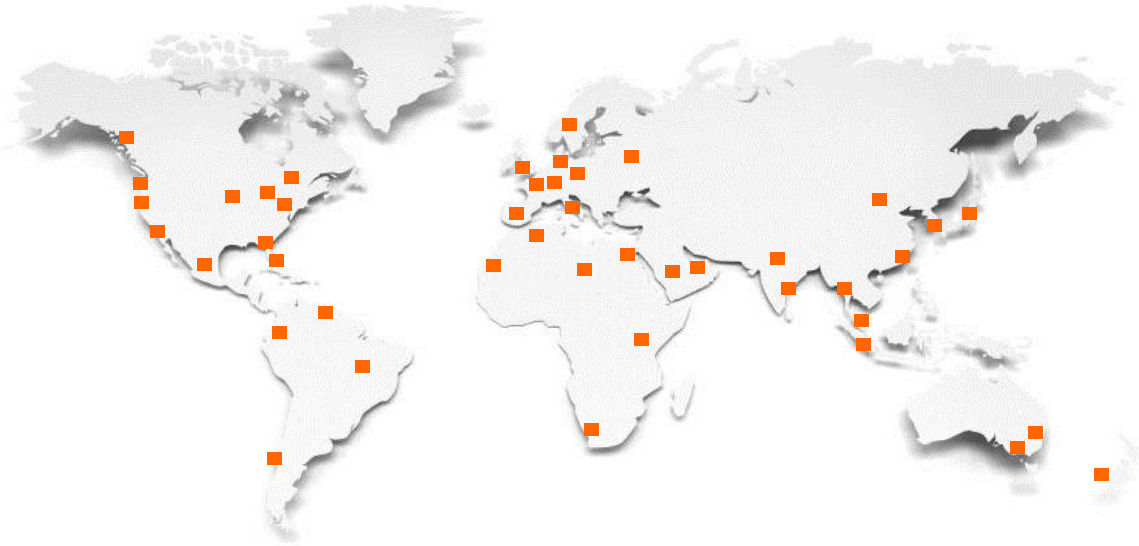
65,000

Revenues in 2016

$18.2 billion

Research and development

$3.2 billion
(approx. 20% of revenues)



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UAS Traffic Management Functional Domains

UAS Traffic Management

Customer: Operators , ANSP, CAA, Municipalities

Needs:

- Uncontrolled airspace (low and high altitude)
- Registration of drones and operators
- Planning of cooperative drone operations per local regulations (notification and authorization)
- Traffic coordination, monitoring & alerting
- Coordination of TFR/route thru controlled airspace

UAS Integration to ATC

Customer: ANSP, DoD

Needs:

- Controlled airspace
- UAS will be required to meet controlled airspace vehicle requirements
- Interface to other systems to provide controllers with warnings and alerts of drones operating in vicinity of manned aircraft

Counter UAS

Customer: Military, Police, Security, Infrastructure

Needs:

- Detection of non-cooperative targets near restricted or sensitive areas
- Identification / Discrimination of drones
- Tracking of speed, heading & altitude
- Disabling drones

Thales is active in all three domains in part to an extensive civil / military technology portfolio

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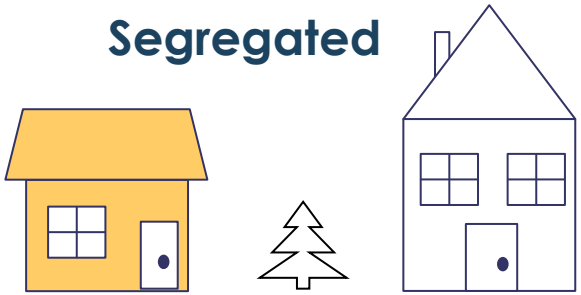
UTM → Segregated/Integrated/Interfaced with ATM Solutions?

Segregated



Unrealistic & Counterproductive

Interfaced/Integrated

Pragmatic, safe & affordable

Expanded

Onerous & risky

UTM will interface with traditional ATM systems ensuring interoperability and information sharing by leveraging highly automated, state-of-the-art technologies

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ECOSYSTEM for UTM

Professional

API

Hobbyist

CONNECTIVITY

WIRED NETWORK

MOBILE NETWORKS

SWIM

Databases

- Registration
- Drone Data
- Airspace Maps
- UAS-Flight Plan
- Regulations
- Workflows
- ANSP Data Sources

Planning

In Flight

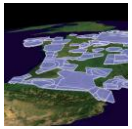
Support

Monitoring

LAANC

UAS-NOTAM

Weather



Aeronautical Info

Flight Plans

API

ATC

Airports

DoD

Police / DHS

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Thales UTM Vision

Commonalties with ATC…

- Defining and organizing the airspace
- Managing in a efficient way the traffic flows
- Inherent safety and **security**
- Classification of drones will receive varying services

There are some differences….

- Control will not be provided "per drone"
- Multi-stakeholders
- High drone density, platform diversity requires a flexible, scalable and agnostic architecture
- Affordable price for end users

To achieve these requirements UTM requires a high level of automation and a new business model

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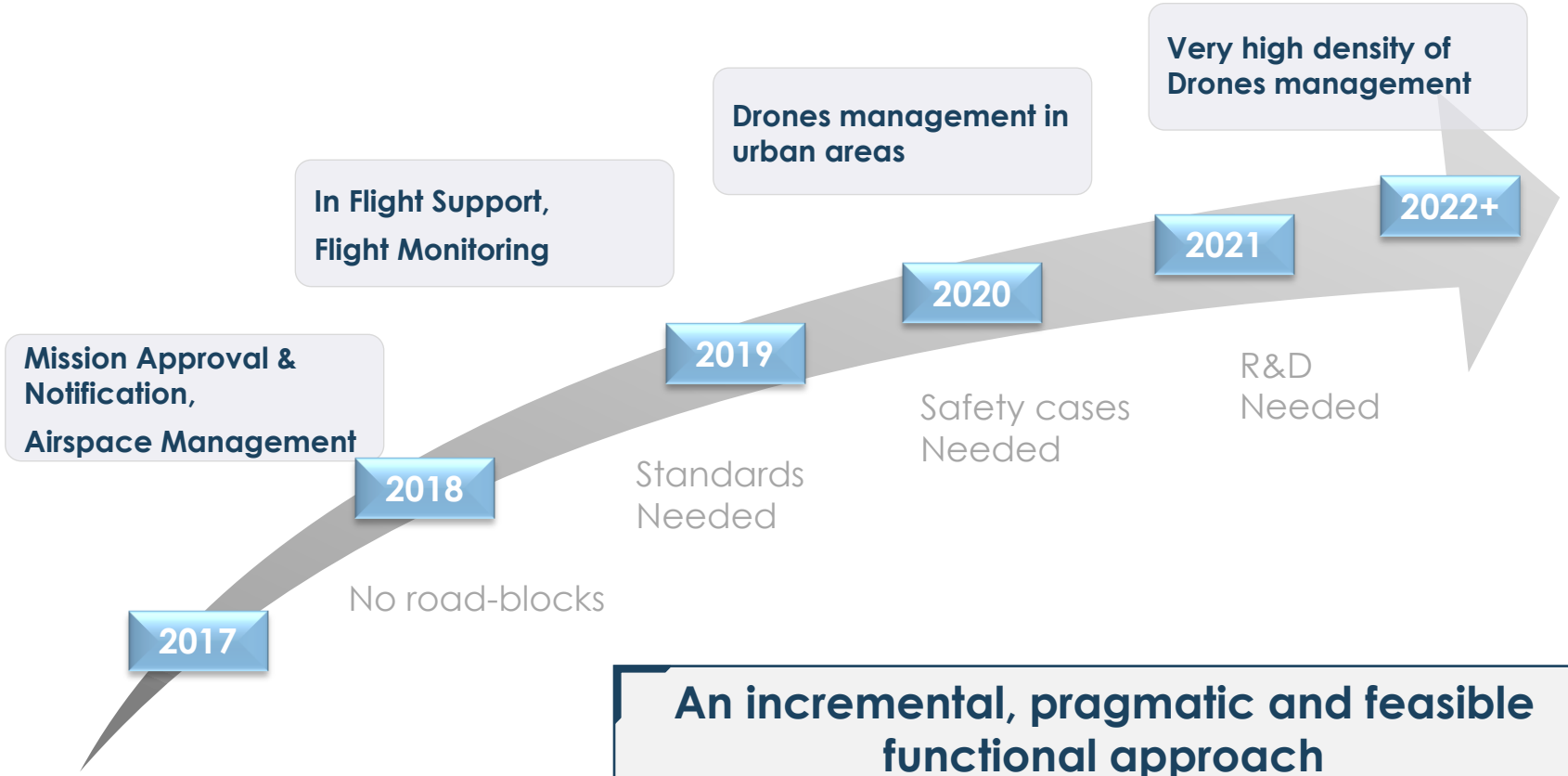
Operational Roadmap



An incremental, pragmatic and feasible functional approach

better data, better decisions, better results…

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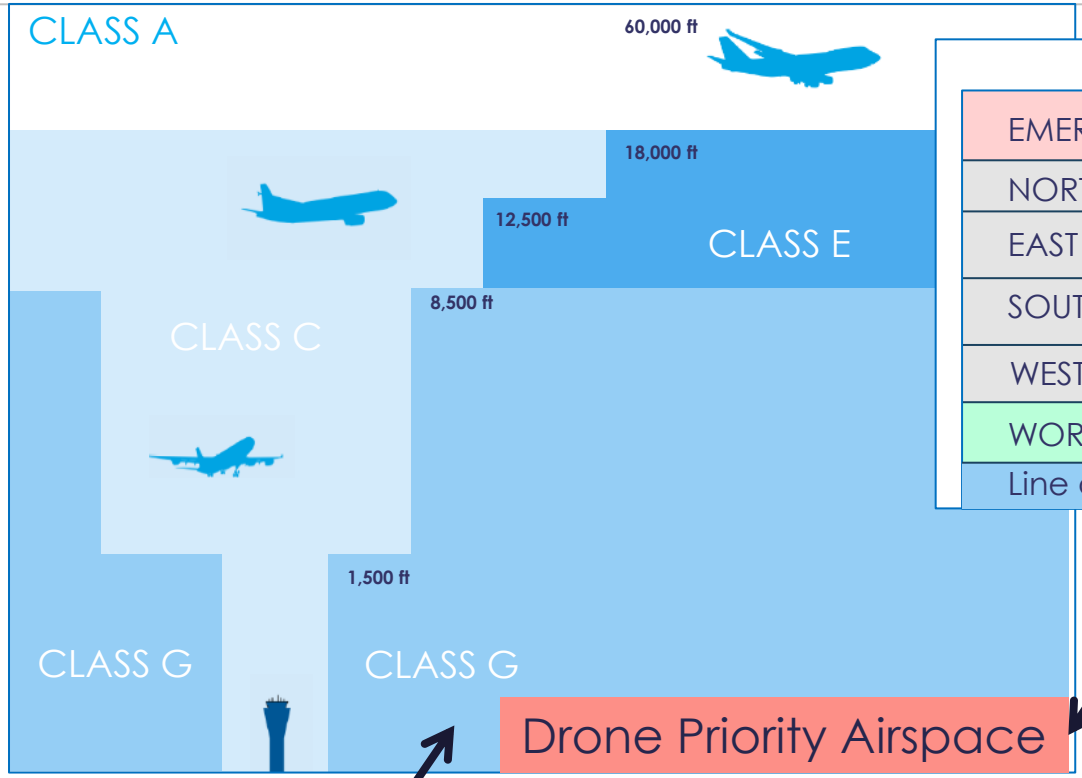
Potential UTM Airspace Structure



DRONE PRIORITY AIR SPACE

EMERGENCY	
NORTH	Levels allocated to direction of flight or specific corridors designated like "Roads in the sky".
EAST	
SOUTH	
WEST	
WORKING	
Line of Sight non Controlled	

Automatic approval of drone flights, airspace removal for manned flights when required
U-Space in Europe

Manual approval of drone flights on a case by case basis

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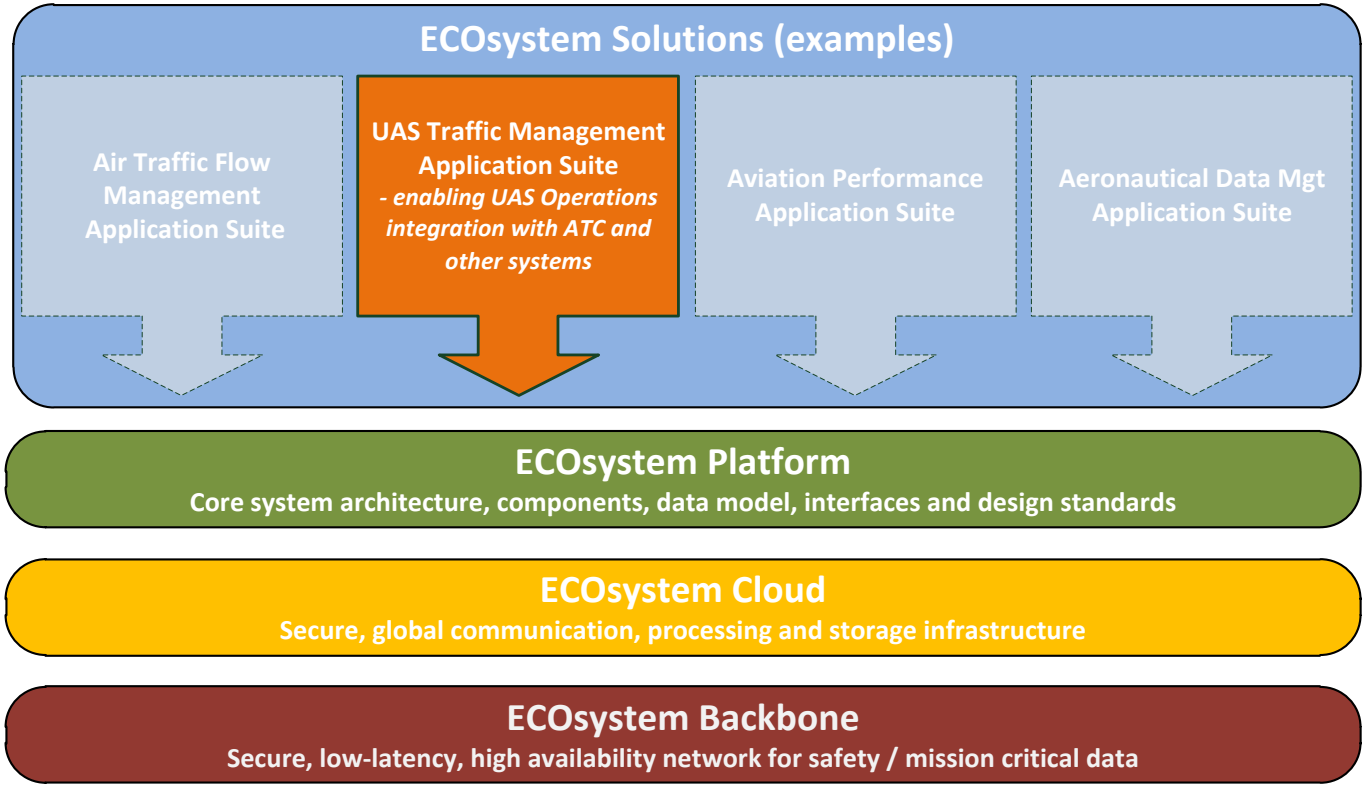
ECOsystem Application Architecture



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