Autonomy by Airbus

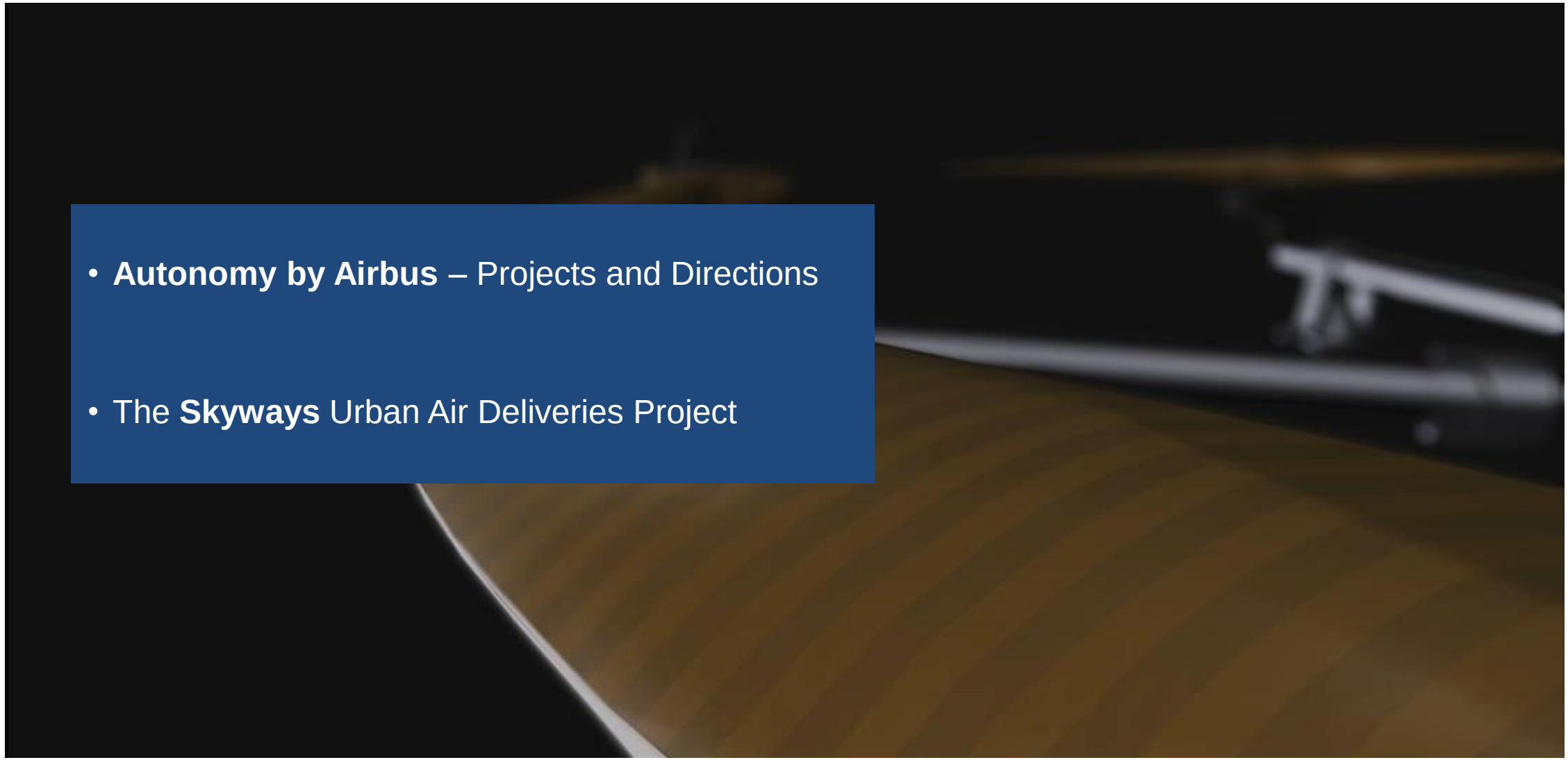
The Skyways Project

HELICOPTERS

Leo Jeoh,
Head of Aviation Safety – Asia Pacific Region
Head of Design –Southeast Asia
Skyways Program Lead

AIRBUS

SCOPE



- **Autonomy by Airbus** – Projects and Directions
- The **Skyways** Urban Air Deliveries Project

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Autonomy by Airbus

Projects and Directions

Leo Jeoh

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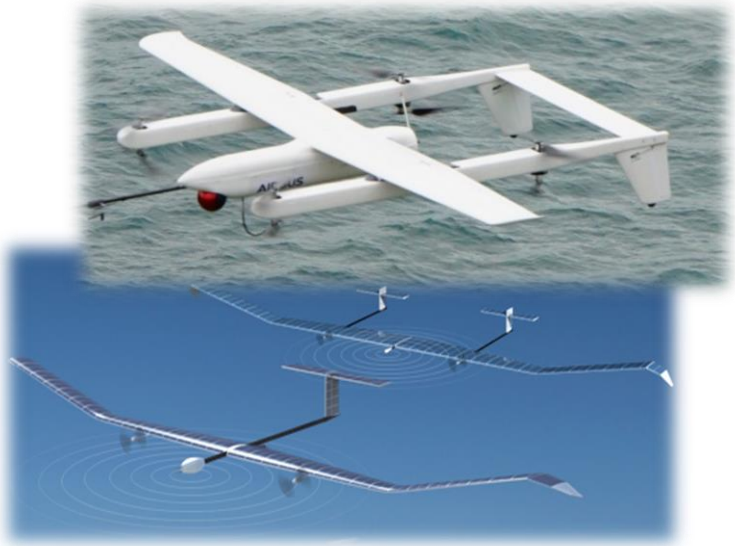
AIRBUS

Pilotless Air Transport

Urban Air Mobility

Unmanned Traffic Management

Autonomy by AIRBUS



Surveillance, Connectivity and Analytics

Unmanned Logistics (Project Skyways)

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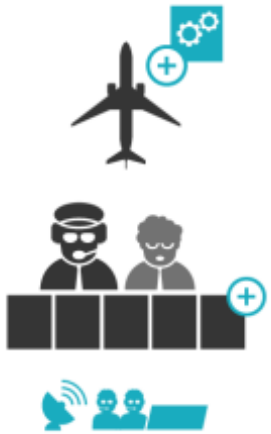
AIRBUS

Pilotless Air Transport

Flight Crew Optimization
Ambition

Technology
Demonstrators



Crew Optimisation

Single Pilot Operations

Pilotless Transport

Timeline > 2030+

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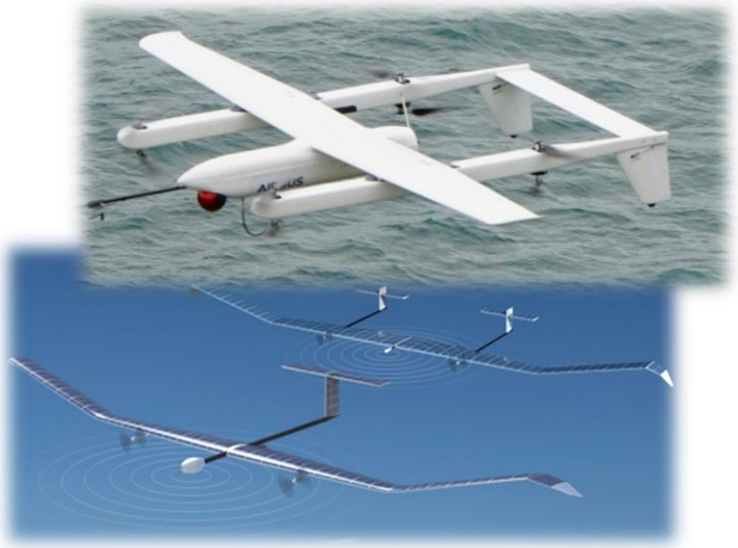

Surveillance, Connectivity and Analytics

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AIRBUS

SURVEILLANCE

QuadCruiser

Commercial maritime surveillance services

- assessing coastal damage after severe weather events
- Coastline and maritime (environmental) inspection including observation of suspicious activities
- Safe and Rescue

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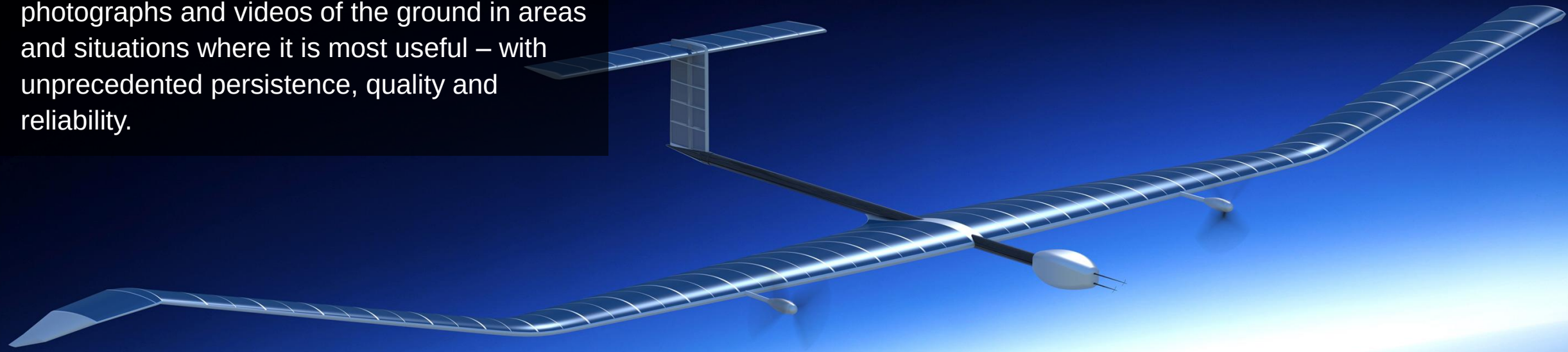
SURVEILLANCE / CONNECTIVITY

Zephyr
High Altitude Pseudo Satellite (HAPS)

Providing military surveillance and civil remote sensing services, by taking high-resolution photographs and videos of the ground in areas and situations where it is most useful – with unprecedented persistence, quality and reliability.



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AIRBUS

DEFENCE AND SPACE

SURVEILLANCE / ANALYTICS

Aerial inspection

Airbus Aerial inspection services serves utilities, oil & gas, mining and insurance companies with easy access to data sources like Airbus satellites and drones, social media, weather, vector maps, customer data etc. alongside advanced analytics for easy business operations and accurate decision making.

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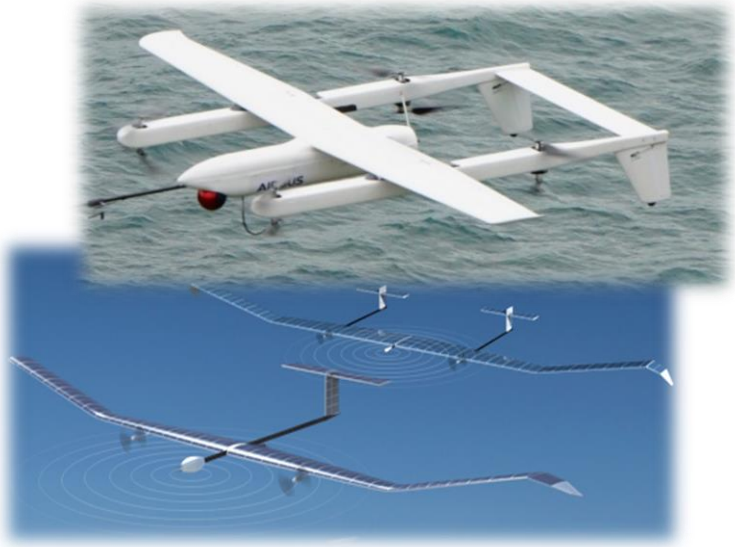

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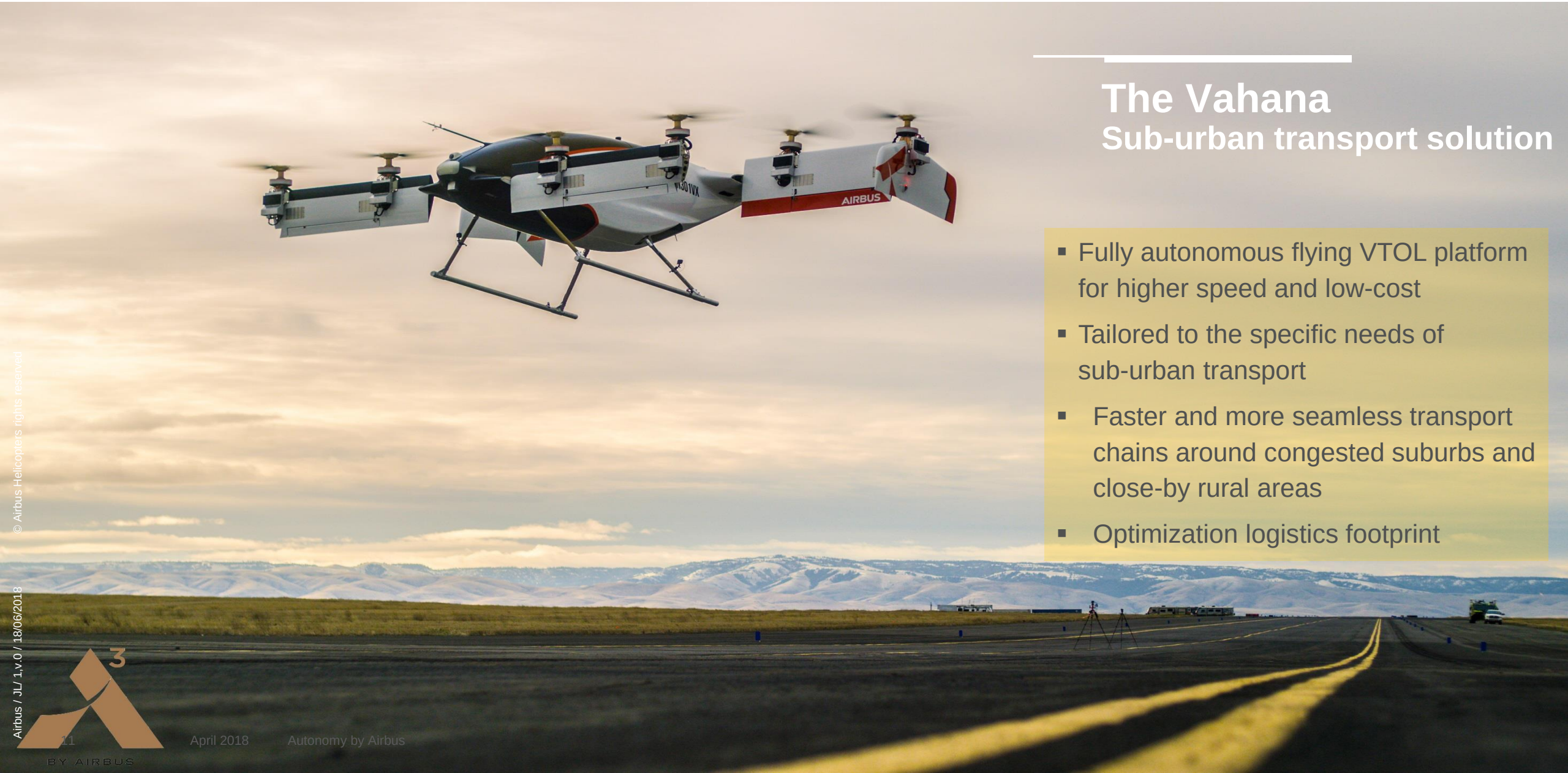
Urban Air Mobility



The Vahana
Sub-urban transport solution

- Fully autonomous flying VTOL platform for higher speed and low-cost
- Tailored to the specific needs of sub-urban transport
- Faster and more seamless transport chains around congested suburbs and close-by rural areas
- Optimization logistics footprint

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Urban Air Mobility

CityAirbus
City centre transport solution

- Full safety level and certified electrical VTOL
- Tailored to the specific needs of urban transports
- Drastically reduced costs due to low mechanical complexity and modularity
- Faster and more seamless transport chains within congested megacities
- Optimized logistics footprint

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Urban Air Mobility

- Artificial Intelligence platform to manage travel complexity for a seamless travel experience
- A passenger capsule coupled with two different and independent electric modules: ground and air
- A fully virtual user interface
- Zero emissions

PopUp Concept

modular ground and air passenger vehicle system

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Pilotless Air Transport

Urban Air Mobility

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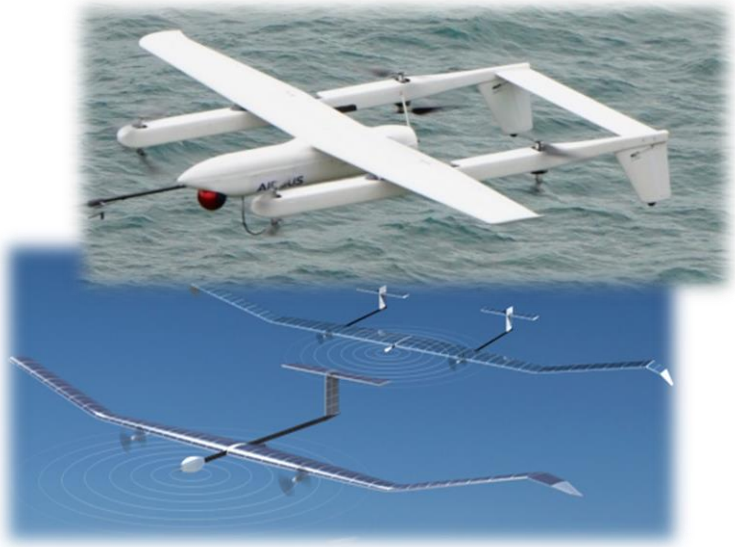

Surveillance, Connectivity and Analytics

Unmanned Logistics (Project Skyways)

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UTM / U-SPACE
With Altiscope / ADS

With Altiscope Airbus has taken the approach to achieve integration of unmanned aerial vehicles into the existing airspace. Altiscope is a simulator for evaluating policy options and operational models for ATM.

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Pilotless Air Transport

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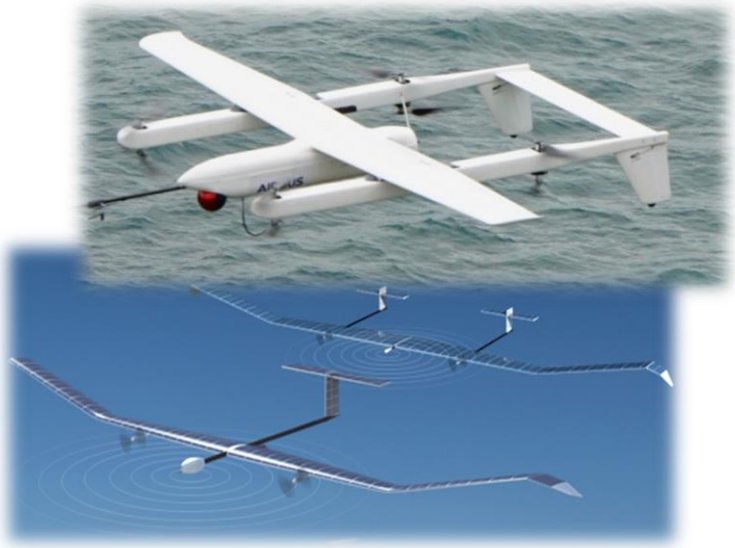

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Urban Air Deliveries

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AIRBUS

Innovative Unmanned Air System (UAS) for Urban Last-Mile Delivery

- **Embodying Aviation Standards for Public Safety**
  Advanced air and ground systems designed and maintained to aviation safety and security standards
- **Full Autonomy**
  Self-navigation and automatic cargo handling systems
- **Enabling future Urban Air Mobility**
  Setting regulatory and operational requirements standards for autonomous air vehicles in our future cities

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Project Skyways – What's involved

- **Exploring Urban Air Delivery with** "Aviation Safe" Multi-rotor UAS - initial payload of 2kg to 4kg, total load of approximately 25kg
- **Developing Urban UAS Certification and BVLOS Regulations with Authorities**.
- **Developing Urban UA System-of-systems :** UAVs, ground control/air navigation systems, operational / maintenance procedures

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Project Skyways – What's involved

- **Developing Autonomy:**

Autonomy in loading and unloading packages on specific infrastructure, navigation from a delivery station to another (hub and spoke), and recharging of battery in phase two

- **Exploring Unmanned Traffic Management:**

Utilizing Flight paths via identified routes (aerial corridors) as an initial concept

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Project Skyways – Moving Forward

FEBRUARY 2016

- Signature of MoU between Airbus & CAAS

CAAS
Civil Aviation Authority of Singapore

2017

APRIL 2017

- MoU between Airbus and SingPost

Singapore POST

2018

FEBRUARY 2018

- Initial Flight Demonstration

JUNE 2018

- MOU between Airbus and Wilhelmsen Ship Services

Wilhelmsen

NUS National University of Singapore

Design, Production, & Testing in the National University of Singapore Campus

NUS service Trials in Singapore (July 2018)

Shore-to-Ship Pilot Trial (3Q 2018)

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Project Skyways – Videos

Project Video

Feb 2018, Initial Flight Demo

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Thank you

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