



Urban Air Mobility ein erstes & vorläufiges Resümee

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DLRK, 01.09.2021

Timeline

Helicopter Airlines

Fairey Rotodyne, 1957



Los Angeles Airways, 1965



eVTOL

Volocopter VC200, 2013



1917



1950



1965



2010



Autoplane by Glenn Curtis, 1917



Pitcairn Autogyro AC-35, 1935



Terrafugia Transition, 2009

First Steps to Flying Cars

Carplanes

Timeline eVTOL

Vertiports Infrastructure & Networks
become essential factors

More and more funding
reaches eVTOL companies

Cities and regions begin investigations
into the integration of air transport services

Lilium intends to list on the NASDAQ
Joby Aviation acquires Uber Elevate

2021

2019

2016

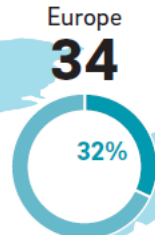
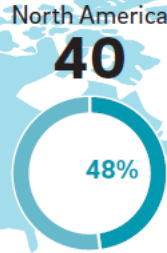
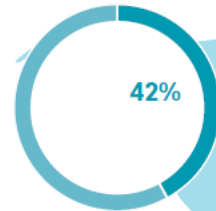
2011



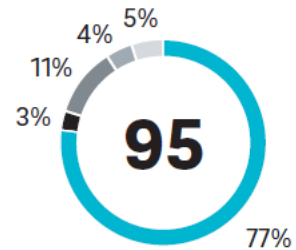
UAM Status

► 95 known UAM projects worldwide

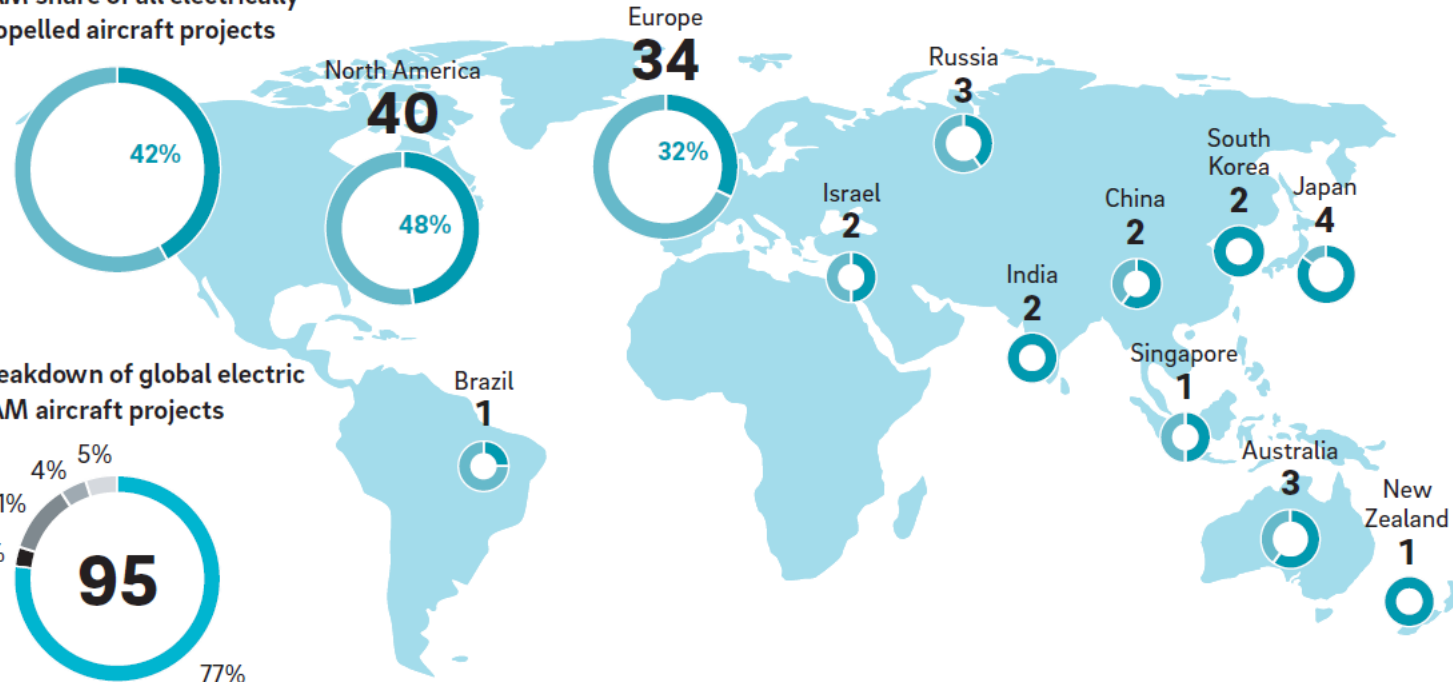
UAM share of all electrically propelled aircraft projects



Breakdown of global electric UAM aircraft projects



- Startup/independent
- Academic
- Aerospace prime
- Major non-aero
- Other aerospace incumbent

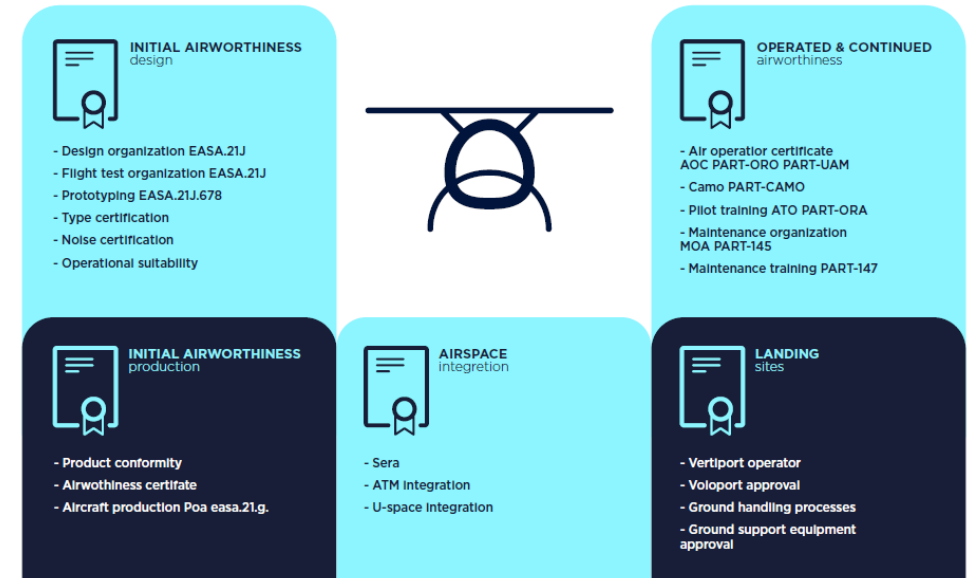


Roland Berger, Urban Air Mobility, 11/2020

Certification

➤ Open, but the main points are being processed by authorities and companies:

- Airworthiness
- Airspace
- Operation
- Training
- Landing Sites



[Volocopter: Roadmap to scalable UAM]

➤ Joby Aviation hopes to achieve certification in 2023

➤ Volocopter is close to attaining EASA's Part 21G Production Organization Approval (POA)

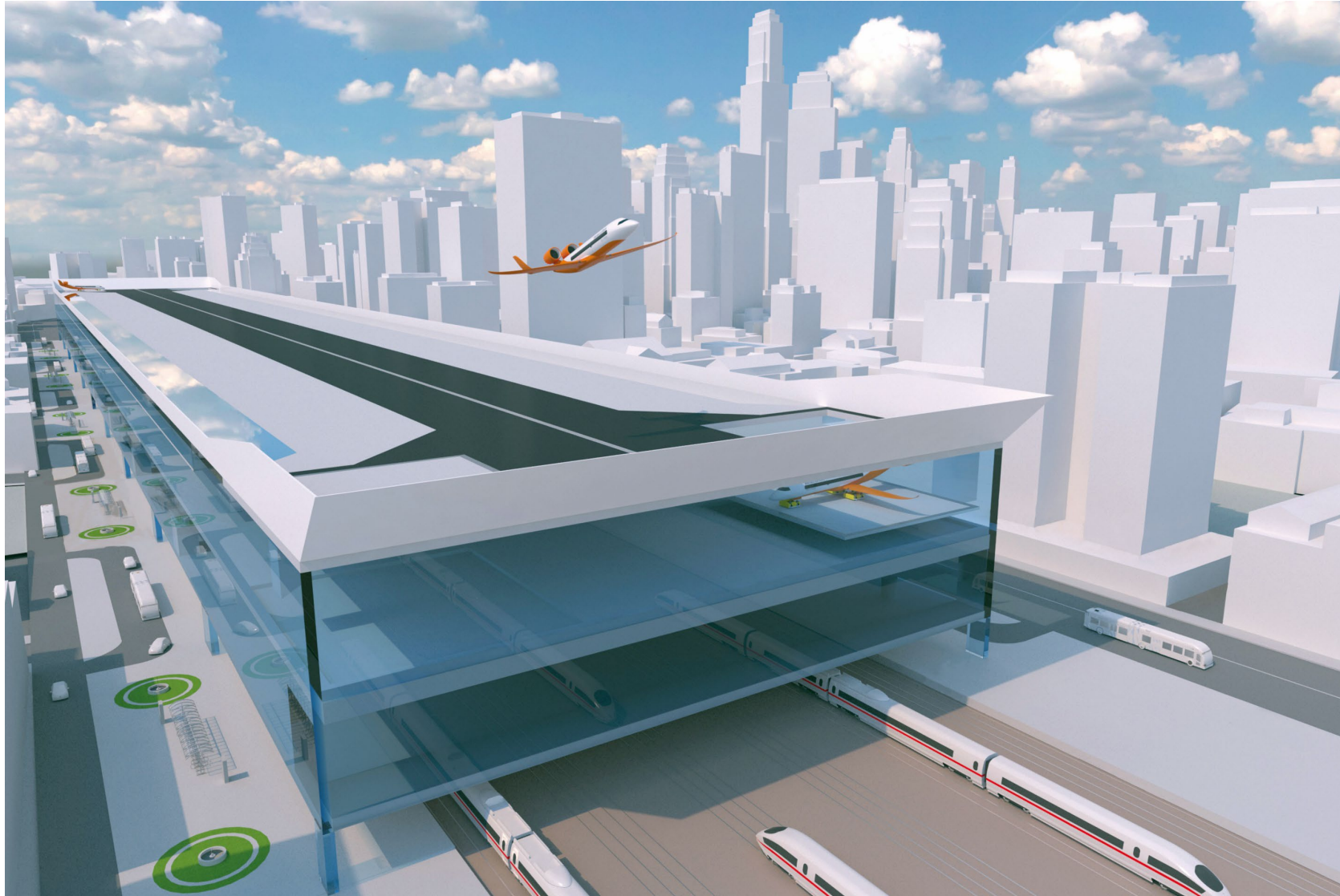
OECD Study

- ▶ **"Ready for Take Off? Integrating Drones into the Transport System" by the International Transport Forum - OECD**
- ▶ **Social Impacts and Acceptance:**
 - Noise
 - Privacy
 - Improvement of accessibility (integration into existing transport modes)
- ▶ **Infrastructure:**
 - Robust UTM system necessary

NASA Regional Air Mobility (RAM)

- ▶ **RAM as complementary to and an accelerator for Advanced Air Mobility (AAM).**
- ▶ **Use existing local infrastructure and develop it further. Aviation must become a "good neighbour".**
- ▶ **Good integration of services into an end-to-end travel chain necessary (seamless travel).**

CentAirStation - Bauhaus Luftfahrt



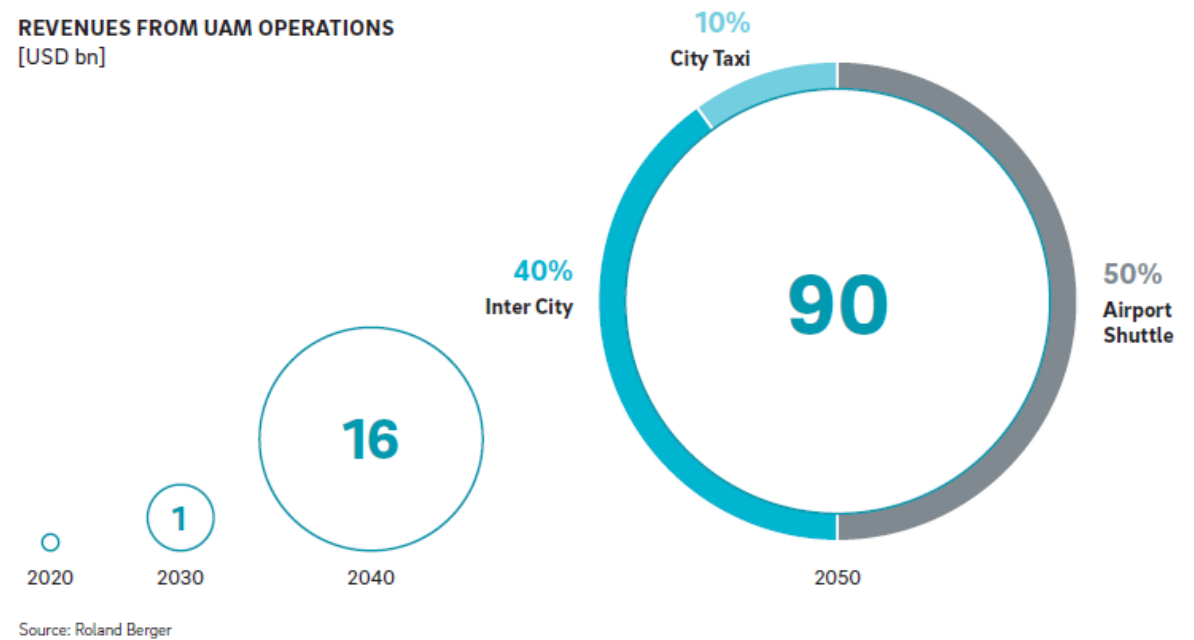
German Urban Air Mobility Regions

- ▶ **Memorandum of Understanding for cooperation between 4 Urban Air Mobility model cities and regions and BMVI**
 - Aachen
 - Hamburg
 - Ingolstadt
 - Nordhessen
- ▶ **Embedded in the framework of the EU Commission's UAM Initiative for Cities & Communities ("UIC²") with 43 European cities and regions**

UAM Market Forecast (Roland Berger)

- Focus on Airport Shuttle und Inter City Transport (50-250 km)
- Needs at least 10 years before it really starts to "fly"
- Clearly a premium product in the beginning
- Main issues:
 - Certification
 - Acceptance
 - Integration with other modes of transportation

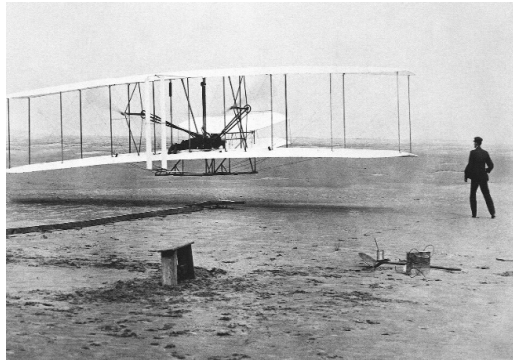
REVENUES FROM UAM OPERATIONS
[USD bn]



Source: Roland Berger

Market Forecast by Roland Berger, Urban Air Mobility, 11/2020

Resümee



► Henry Ford, 1940: “Mark my word: a combination of airplane and motorcar is coming. You may smile, but it will come.”