



EASA DOA for Start-Ups.

Bhavesh Mandalia, Chief Airworthiness Officer and Deputy CTO
October 2023

2015

FOUNDED
IN MUNICH

800+

EMPLOYEES
2/3 IN PROGRAM
AND ENGINEERING

58+

NATIONALITIES
FROM 6 CONTINENTS

10,000 M²

MANUFACTURING
FACILITIES

\$ 1.4 BN

TOTAL
FUNDING

 **Nasdaq**

LISTED SINCE
SEPTEMBER 2021



German-based aerospace company
founded in 2015 and
listed on Nasdaq in 2021



Global leader in electric jet aviation
with unique aircraft design and
proprietary technologies



~800 employees, including 450+ engineers
with **deep aerospace experience**



Co-located and fully integrated
design, prototyping, testing,
and production capabilities



Most advanced electric jet aircraft program in
regulatory approval process,
with expected market entry in 2025

Engineering / Design Organisation Leadership

DOA Nominated Persons (EASA Form 4)

Alastair McIntosh
Chief Technology Officer



Chief Engineer & MD of Rolls Royce



Engines of Airbus A350 and Gulfstream G650

Axel Trappmann
Head of Engineering Safety, Quality & Compliance



Former Head of Approvals, Investigations and Standards at Airbus Helicopters



Bhavesh Mandalia
Chief Airworthiness Officer & Deputy CTO



Former General Manager and Head of Design Organisation at Boeing



Stephen Vellacott
Chief Engineer



Former Chief Airworthiness Engineer at Calidus



Christophe Hommet
Head of Flight Test & Chief Engineer Phoenix



Former Chief Engineer Utility Drones Volocopter



Tom Brassington
Head of System Design



Former Head of System Engineering at Marshall Aerospace



Mattia Nardi
Head of Lab Test & Experimental

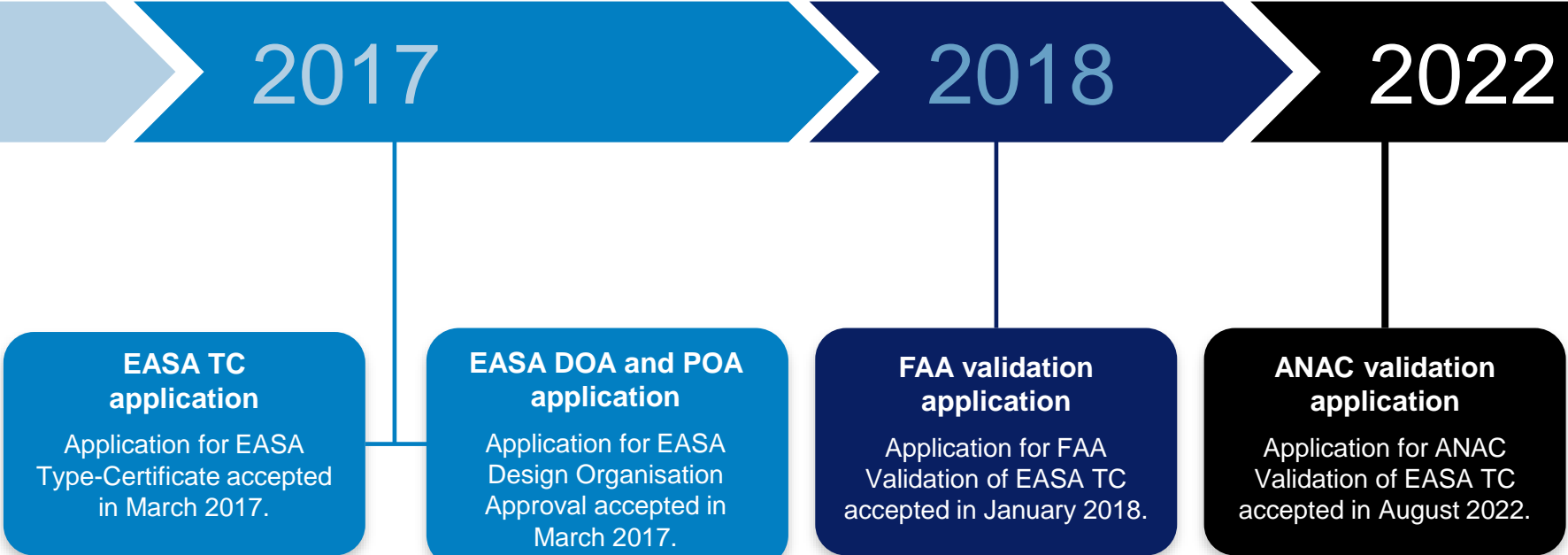
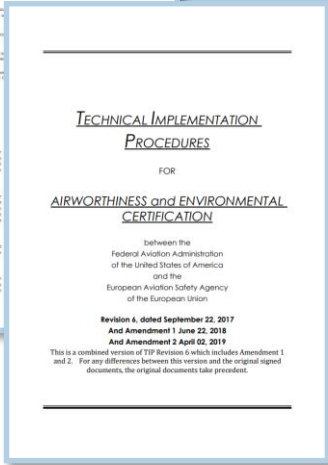
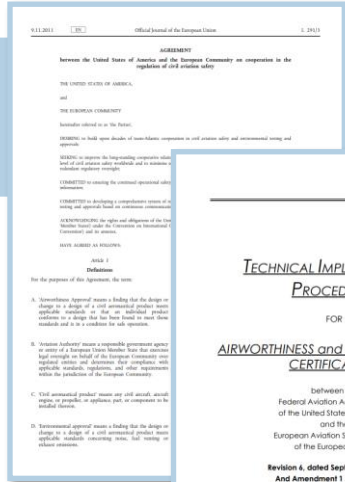


Former Test Engineering Manager at Umbra Group



PREVIOUS ROLES

Certification and DOA/POA Timeline of engagements



Application for FAA and ANAC Validation of EASA TC, submitted under the provisions of the existing Bilateral Aviation Safety Agreement (BASA) between the EU / USA and EU / Brazil and Technical Implementation Procedures (TIP) between EASA, FAA and ANAC.



Order pipeline of 750 aircraft

First pre-delivery payments received

NETJETS®

- Right to order up to 150 Lilium Jets for fractional program
- Support for Lilium Jet sales to private individuals

EMCJET

- Right to order up to 20 Pioneer Edition Jets
- Support for Lilium Jet sales to private individuals



- Right to order up to 5 Lilium Jets
- Premium demand in Southern Spain

Bristow

- Right to order up to 50 Lilium Jets
- One of the largest helicopter operators in the world
- Potential Part 145 partner in the United States

eVOLARE

- Right to order up to 20 Lilium Pioneer Edition Jets
- Premium sustainable demand in UK market

GLOBE AIR

- Right to order up to 12 Lilium Jets
- Premium demand in French Riviera and Italy



- Right to order up to 40 Lilium Jets
- Sustainable Scandinavian air mobility



- Right to order up to 6 Lilium Jets
- Premium demand in Benelux



- Right to order up to 5 Lilium Jets
- Premium demand in Switzerland and Italy



- Right to order up to 100 Lilium Jets
- Network across Saudi Arabia



- Right to order up to 100 Lilium Jets
- Able to serve >85m people in the Greater Bay Area
- MoU with Bao'an District of Shenzhen municipality to launch eVTOL service in China



- VIP helicopter and private jet operator
- Sustainable high-speed travel between Greek islands



- Right to order up to 220 Lilium Jets
- One of the world's leading helicopter and Business aviation market



Source: Company information and public press releases. Final commercial terms are still being negotiated and remain subject to definitive documentation.

EASA & FAA Regulatory Framework



Air Operations



New EU Air Ops requirements, Part-IAM proposed in 2022 now published in opinion 2023-03.



New SFAR for operational requirements for powered lift aircraft proposed in 2023.

Air Traffic Management



Leveraging existing regulatory framework (SERA) and national regulatory frameworks.



Leveraging existing regulatory framework for initial operations. New requirements under development.

Air Crew



Transitional provision proposed in 2022 now published in opinion 2023-03 and CM-FCD-001, in 2022.



New SFAR for operational requirements for powered lift aircraft proposed in 2023.

Infrastructure



Utilizing existing helicopter sites and aerodromes with spec. for vertiports proposed in 2022 (PTS-VPT-DSN).



FAA Vertiport Design , Engineering Brief No. 105 published in 2022 and new AC to be finalized in 2024.

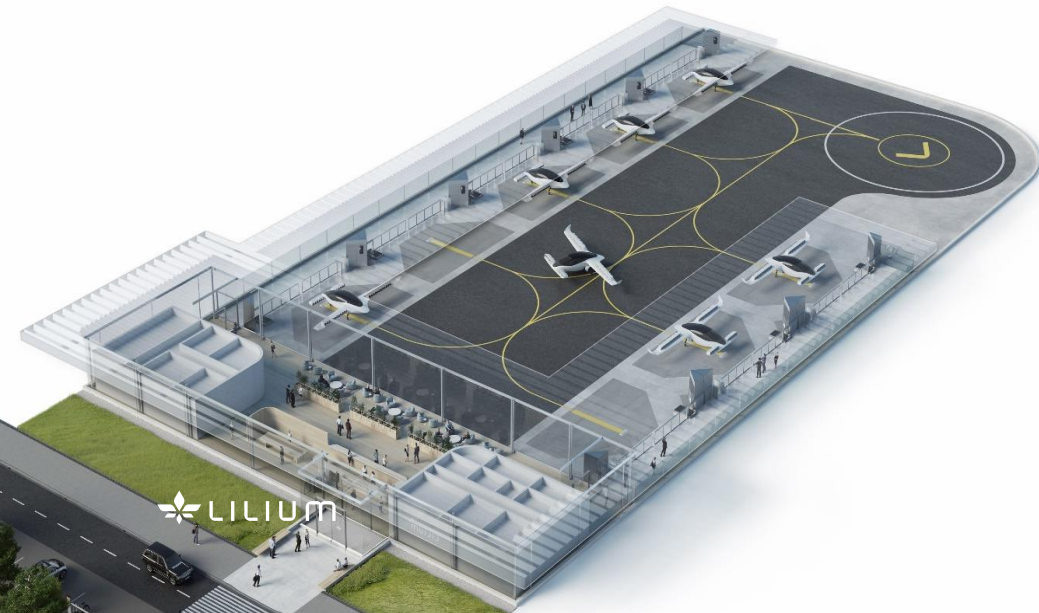
Initial Airworthiness



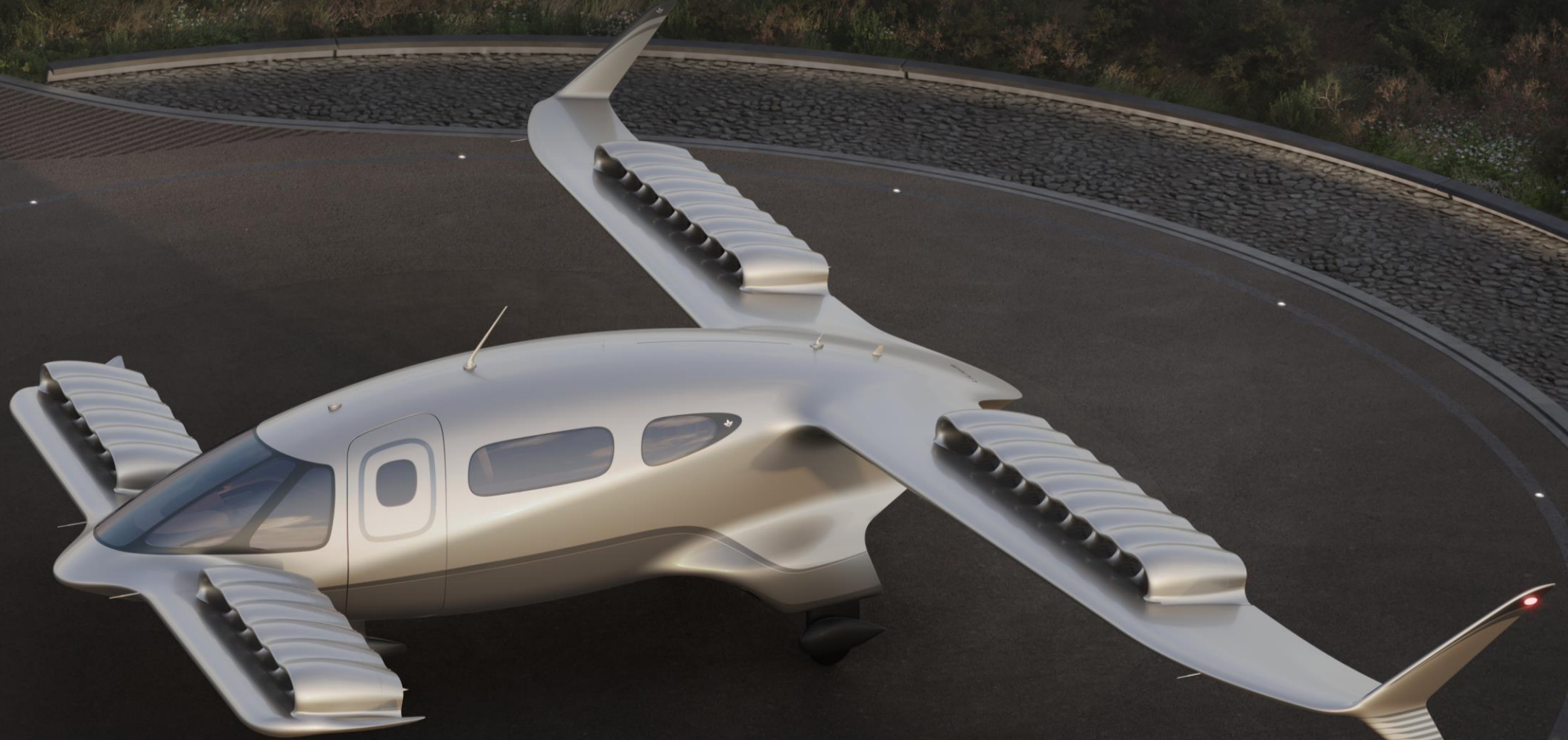
EASA published special conditions for airframe and electric engines in 2019 / 2020.



FAA have proposed special class airworthiness criteria for powered lift to Lilium in 2023.



The Lilium Jet



HIGH-SPEED

135kt

250KM MAX RANGE

175KM OPERATING RANGE¹

LOW NOISE

68dBA at 100m¹

ZERO EMISSIONS

FULLY ELECTRIC¹

HIGHEST SAFETY

10⁻⁹ SAFETY LEVEL²



Source: Architectural performance assessment of an eVTOL aircraft. Lilium engineering assessment. Management estimates.¹ Performance targets based on current development status of aircraft. Cruise speed based on Lilium engineering assessment assuming flight at 10,000 ft. Range refers to physical range (service range + reserves).

² Lilium's primary certification authority stipulates probability of a catastrophic failure must not exceed 10⁻⁹.

Robust supply chain with leading aerospace suppliers

Starting the assembly of the Liliium Jet by end of 2023

Honeywell

Avionics and flight control computer

ACITURRI

Aerostructures

Expliseat

Seats

DIEHL

Interior, interior lights and floor

AERONAMIC

Engine rotor blades and engine shaft

AERnova

Aerostructures

Collins Aerospace

Inceptor system



L3HARRIS™

Data recorder

MAGROUP

Landing gear, wheels and struts

ASTRONICS

Energy management system

CUSTOMCELLS®

Cells for batteries

Honeywell | DENSO

E-motors for the engine

GEN

Electrical Wiring Interconnection System

SKF®

Electric motor bearings

LILIUM

Source: Company information; management estimates.

AUDIT #1 – May 2021

- Organisational Construct
- Design Subcontractors
- Competencies
- Independent System Monitoring
- Interview of Management Staff

AUDIT # 3 – December 2022

- Compliance Demonstration including Testing (Laboratory / Ground)
- Manuals
- Instructions for Continued Airworthiness

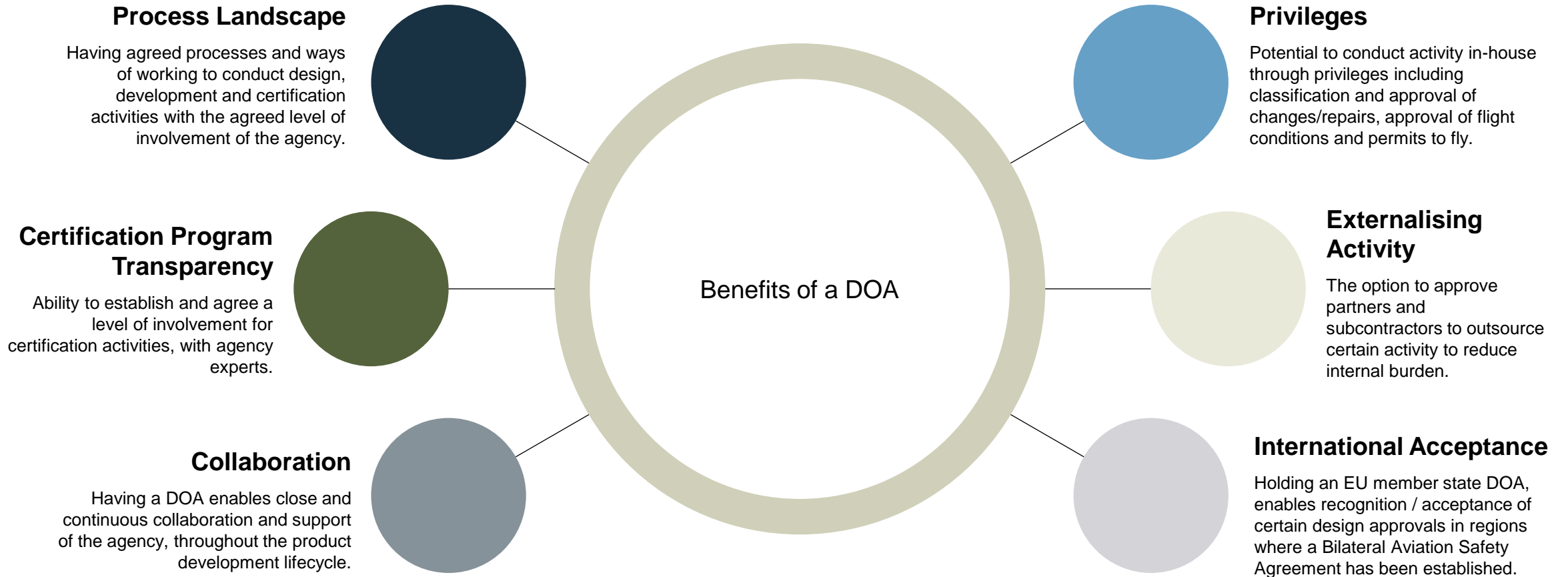
AUDIT #2 – April 2022

- Type Investigation
- Configuration Management
- Design / Production coordination
- Concessions

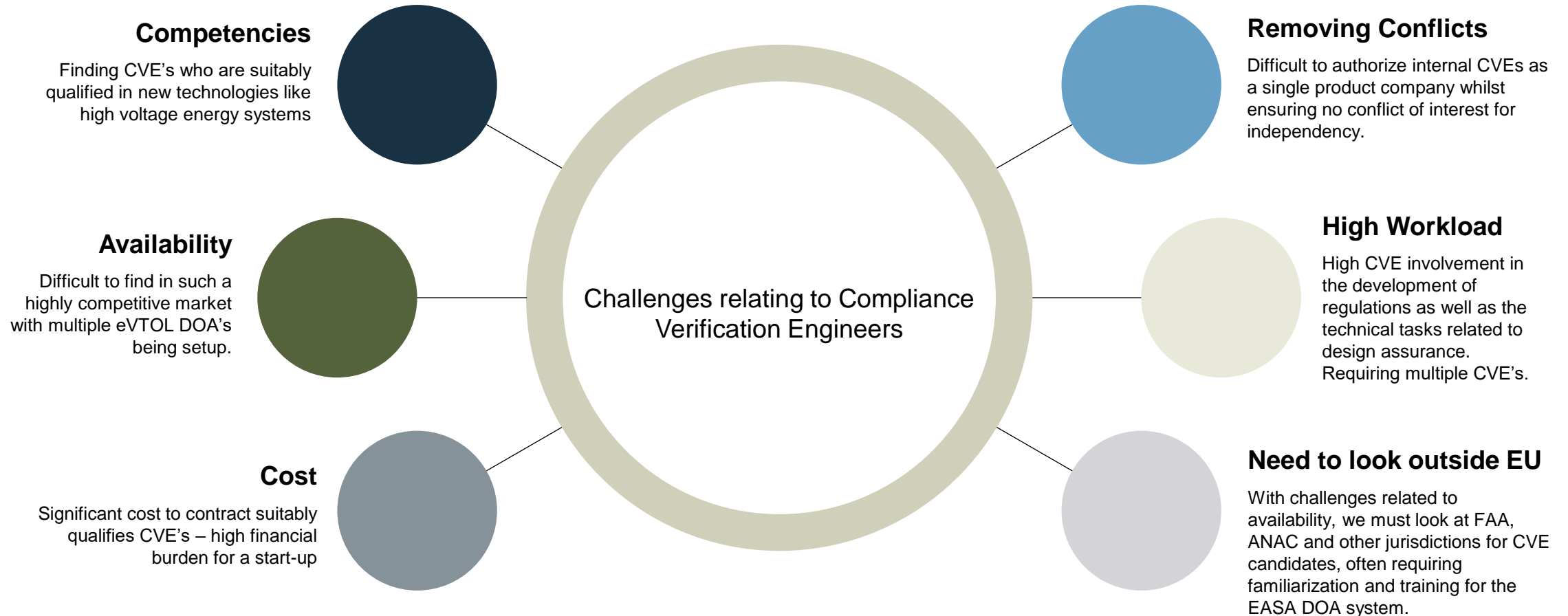
AUDIT #4 – June 2023

- Compliance Demonstration related to Flight Testing including Flight Test Operations Manual (FTOM)
- Permit to Fly and Flight Conditions Approval
- Operational Suitability Data

Benefits of a DOA



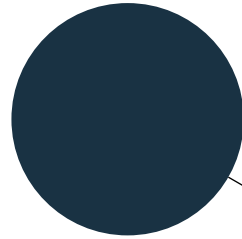
Challenges relating to Compliance Verification Engineers



Challenges relating to Part 21 and other regulatory updates

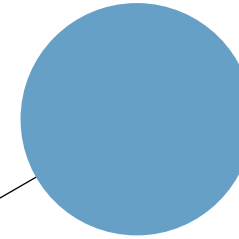
Safety Management System

SMS updates to Part 21 came into effect in March 2023. But AMC and GM are still under development making it difficult for a new DOA to fully comply.



Opinion 03/2023

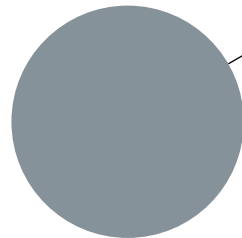
Further changes to initial airworthiness are expected for eVTOL certifying organization, upon adoption of opinion 03/2023.



Challenges relating to Part 21 and other regulatory updates

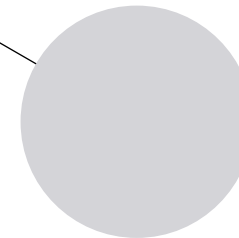
Operational Suitability Data

The evolution of operational requirements for eVTOL aircraft are challenging for a new DOA to include the level of detail necessary for a TC holder DOA..



Aircraft Certification Basis

Unlike conventional products where the airworthiness requirements and AMC are well established, the fluidity in eVTOL airworthiness criteria impact the required detail in DOA processes for TC of this category of product.



Challenges of setting up a TC DOA and POA concurrently

Application

Application for a POA and formal kickoff of the POA initial investigation process, commences once a valid DO/PO arrangement is in place with an approved DO.

Conformity

Inability to use in-house POA for the purpose of conforming test specimens per 21.A.33(b)(1) and J-News item 2019/1/1.

Production Inspection System

The need to introduce processes under the DOA to implement a Production Inspection System per 21.A.126 and Subpart F

Challenges of setting up a TC DOA and POA concurrently

Safety Management System

Due to different stages of the initial investigation process for DOA and POA, it is difficult to introduce a centralized SMS to address 21.A.139 PMS and 21.A.239 DMS.

Risk

Additional risk when setting up multiple interfacing approvals with interdependencies for DOA, TC, POA, Aircraft Statement of Conformity for CofA / Noise Certificates.



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Given these risks and uncertainties, you should not rely on or place undue reliance on these forward-looking statements, including any statements regarding when or whether any strategic collaboration between Liliium and the respective collaborator will be effected, the number, price or timing of any Liliium jets to be acquired (or if any such Liliium jets will be acquired at all), the price to be paid therefor and the timing of launch or manner in which any proposed eVTOL network or anticipated commercial activities will operate, or statements regarding the Liliium Group’s business and product development strategies or certification program. Actual events or results may differ materially from those contained in the projections or forward-looking statements. Many factors could cause actual future events to differ materially from the forward looking statements in this presentation, including, but not limited to, the following risks: (i) the eVTOL market may not continue to develop, or eVTOL aircraft may not be adopted by the transportation market; (ii) Liliium’s eVTOL aircraft may not be certified by transportation and aviation authorities, including the European Union Aviation Safety Agency (“EASA”) or the U.S. Federal Aviation Administration (“FAA”); (iii) the Liliium Jet may not deliver the expected reduction in operating costs or time savings that Liliium anticipates; (iv) adverse developments regarding the perceived safety and positive perception of the Liliium Jets, the convenience of Liliium’s expected future Vertiports, and Liliium’s ability to effectively market and sell regional air mobility (“RAM”) services and aircraft; (v) challenges in developing, certifying, manufacturing and launching Liliium’s services in a new industry (urban and regional air transportation services); (vi) a delay in or failure to launch commercial services as anticipated; (vii) the RAM market for eVTOL passenger and goods transport services does not exist, and whether and how it develops is based on assumptions, and the RAM market may not achieve the growth potential Liliium’s management expects or may grow more slowly than expected; (viii) if Liliium is unable to adequately control the costs associated with pre-launch operations and/or its costs when operations are commenced (if ever); (ix) difficulties in managing growth and commercializing operations; (x) failure to commercialize Liliium’s strategic plans; (xi) any delay in completing testing and certification, and any design changes that may be required to be implemented in order to receive certification; (xii) any delays in the development, certification, manufacture and commercialization of the Liliium Jets and related technology, such as battery technology or electric motors; (xiii) any failure of the Liliium Jets to perform as expected or an inability to market and sell the Liliium Jets; (xiv) any failure to manage coordination with vendors and suppliers to achieve serial production of complex software, battery technology and other technology systems still in development; (xv) reliance on third-party suppliers for the provision and development of key emerging technologies, components and materials used in the Liliium Jet, such as the lithium-ion batteries that will power the jets, a significant number of which may be single or limited source suppliers; (xvi) if any of Liliium’s suppliers become financially distressed or go bankrupt, Liliium may be required to provide substantial financial support or take other measures to ensure supplies of components or materials, which could increase costs, adversely affect liquidity and/or cause production disruptions; (xvii) third-party air carriers are expected to operate Liliium Network services in the U.S., Europe and Brazil using the Liliium Jets, and these third-parties, as well as Liliium, are subject to substantial regulation and complex laws, and unfavorable changes to, or the third-party air carriers’ or Liliium’s failure to comply with, these regulations and/or laws could substantially harm Liliium’s business and operating results; (xviii) any inability to operate the Liliium Network services after commercial launch at the anticipated flight rate, on the anticipated routes or with the anticipated Vertiports could adversely impact Liliium’s business, financial condition and results operations; (xix) potential customers may not generally accept the RAM industry or Liliium’s passenger or goods transport services; (xx) any adverse publicity stemming from any incident involving Liliium or its competitors, or an incident involving any air travel service or unmanned flight based on autonomous technology; (xxi) if competitors obtain certification and commercialize their eVTOL vehicles more quickly than Liliium; (xxii) Liliium’s future funding requirements and any inability to raise necessary capital on favorable terms (if at all); (xxiii) business disruptions and other risks arising from the COVID-19 pandemic and geopolitical events, including related inflationary pressures, may impact Liliium’s ability to successfully contract with its supply chain and have adverse impacts on anticipated costs and commercialization timeline; and/or (xiv) Liliium’s inability to deliver Liliium Jets with the specifications and on the timelines anticipated in any non-binding memorandums of understanding (“MOUs”) or term sheets we have entered into or any binding contractual agreements with customers or suppliers we may enter into in the future. 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