

Gathering in Estonian Aviation Academy

Welcome!

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Estonian Aviation Academy 101

Professional higher education + aviation

- EU/EASA requirements + ICAO/Eurocontrol standards
- 3 certified training organizations + 3 certified simulators for training
- 247 students, ~900 alumni, 13 in VE programme, 59 employees

EAVA key facts

- 📅 **1990** Pilot training started at Nõo High School
- 📅 **1993** Tartu Aviation College (TAC) was founded, 2008 renamed Estonian Aviation Academy (pilot training and maintenance training according to JAA, ATC training according to ICAO)
- 📅 **2004** pilot training, maintenance training and ATC training according to EU regulations
- 📅 **2017** CNS training according to ATSEP regulations (EU)
- 📅 **2018** Vocational programme for aircraft maintenance technicians - 2 years
- 📅 **2021** IATA Authorized Training Centre



Estonian Aviation Academy

Aviation starts here!

Vision 2025: EAVA is an internationally acclaimed aviation training and development partner

EAVA strategic goals:

- 1. We are a sustainable university of applied sciences offering quality education.**
- 2. Our education, research and development services are diverse and future-proof.**
- 3. There is an active international partnership in teaching, research and development.**

Curricula



AIR TRAFFIC SERVICES *ET*

AIRCRAFT PILOTING *ET*

- Aeroplane and Helicopter Piloting

AVIATION MANAGEMENT *ET*

AERONAUTICAL ENGINEERING *ET*

- Communication and Navigation Systems
- Aircraft Engineering
- Aircraft Maintenance Technician (vocational level)

COMMERCIAL AIR TRANSPORT PILOT *EN*

COMMERCIAL AVIATION MANAGEMENT *EN*

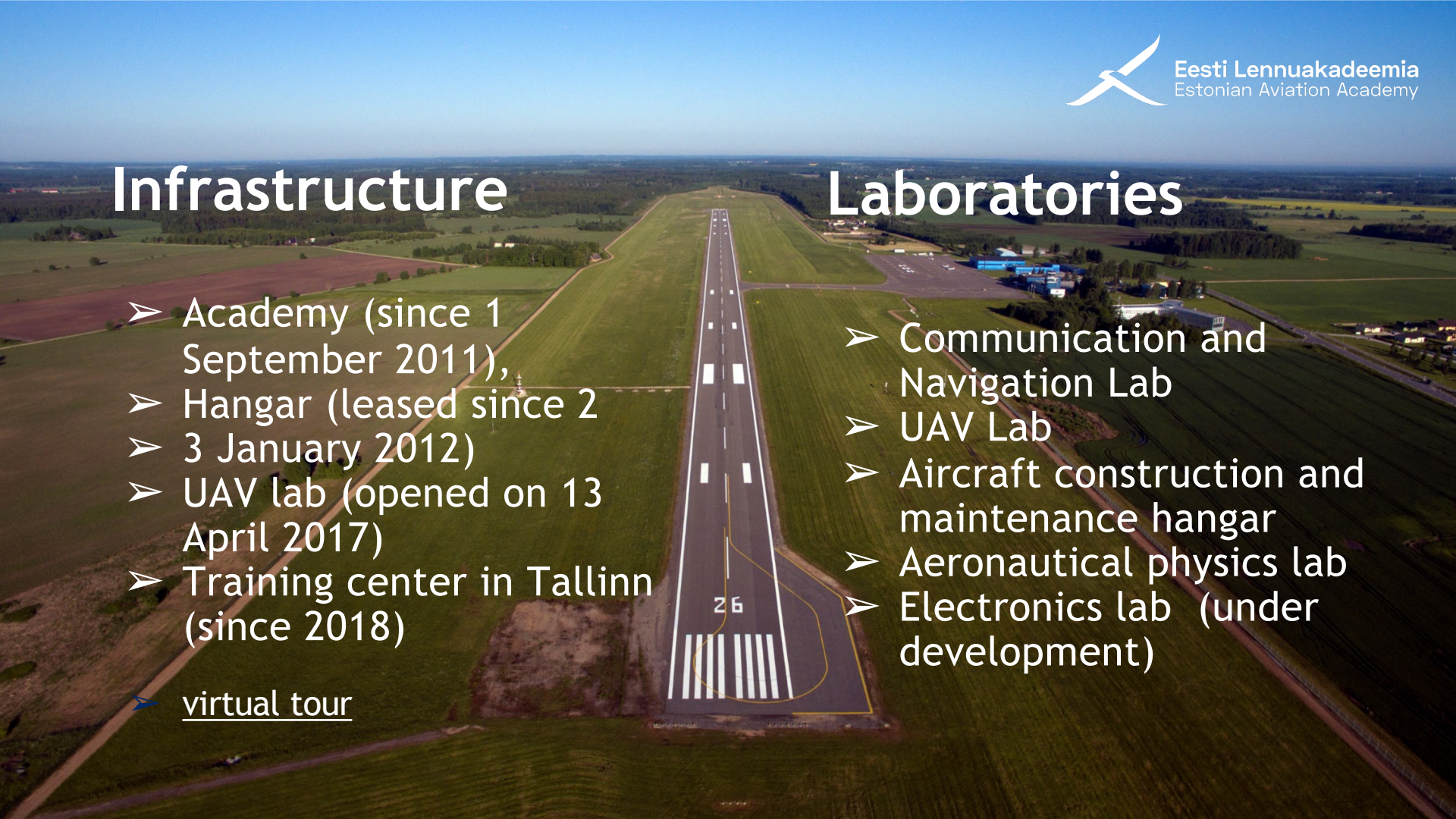
Infrastructure

- Academy (since 1 September 2011),
- Hangar (leased since 23 January 2012)
- UAV lab (opened on 13 April 2017)
- Training center in Tallinn (since 2018)

[virtual tour](#)

Laboratories

- Communication and Navigation Lab
- UAV Lab
- Aircraft construction and maintenance hangar
- Aeronautical physics lab
- Electronics lab (under development)



Simulators



- ATC simulator (UAS simulation capability under development)
- Airplane simulator FNPT II MCC
- Helicopter simulator FNPT II MCC
- FMS simulator
- SIMIO digital platform (under development)
- GNSS simulator (under development)



Aviation professionals coming after higher education



Eesti Lennuakadeemia
Estonian Aviation Academy

Degree programmes for aviation specialists.

Commercial Air Transport Pilot - pilot training/ license + professional higher education subjects = professional higher education (equivalent to BSc).



Micro-credentials / Reskill-upskill



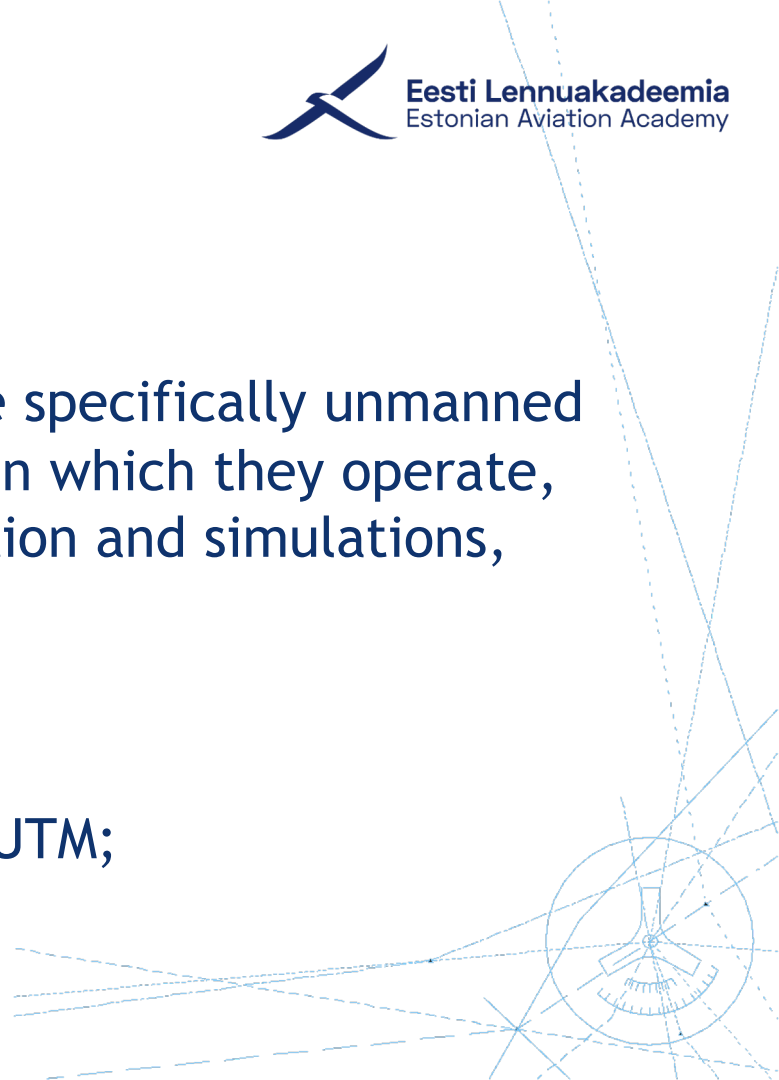
- Micro-credentials for professionals without higher education (Tech, ATC, ...)
- Micro-credentials for people without aviation background
- Future technologies and new skills in aviation

R&D Focus Areas:

Future technologies in aviation - more specifically unmanned aviation vehicles and the environment in which they operate, aviation digitalisation, process automation and simulations, robotics).

Research programmes:

- Communications and connectivity in UTM;
- Unmanned airport/GH procedures;
- Green aviation.



Ongoing projects:

- **ELASTRA I & II:**

To increase the learning and development capacity of UAV's.

Identifying EAVA developmental prerequisites in cooperation with businesses and Estonian Aviation Cluster, development of educational and R&D service packages, simulation capability of aviation processes.

- **FLYING FORWARD #2020:** partnering with the Living Lab Tartu project (HORIZON2020) in cooperation with Tartu Science Park for **UAV research and development.**

The project's task management and budget disposal are being negotiated and confirmed. Preparation of Tartu Living Lab demos, Skycorp, Hepta

- **EMP Norway Cooperation Programme in Higher Education:**

Simulation Based Learning in Aviation (**Developing the English AM Programme on a digital platform, 30 credits**) with Tromsø University (Norway)

Projects starting in 2021/2022 :





- **Theoretical UAV development** in collaboration with Estonian Military Academy;
- **Public drone services concept development** in collaboration with Estonian Academy of Security Sciences
- **ESA Space for UAM Feasibility Study**

Enabling study that aims at **assessing space-based services for a safe and efficient UAM**. Cooperation with - Skycorp, Frequentis, Anra Technologies;

- Cooperation in the development of **an automated Air Traffic Management system (NxGenSKY)**;
- Cooperation in the development of **systems supporting drone transport service** (*start-up Vindico*).

Aitäh! Thank you!

www.lennuakadeemia.ee

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-  /eestilennuakadeemia
-  /estonian aviation academy



Tartu Airport



BEST AIRPORT **2018**
UNDER 5 MILLION
PASSENGERS

History

Airport was established 15. May 1946 as a medical airport

Asphalt runway was built in 1975

Passenger terminal was opened in 14.August 1981

Autumn 2008 the runway was extended to 1 799 meters

A renovated passenger terminal was opened in 2009

Technical specifications

- Runway - 1 799 meters long and 31 meters wide
- Approach types –
 - 08 visual approach,
non-precision approach
 - 26 visual approach,
non-precision approach
CAT I precision approach – ILS
- Airport reference code – 3C
- Airport rescue category – 5

Types of flight

- Training
- Scheduled
- Medical
- Military
- Private

Estonian Aviation Cluster

Estonian Aviation Cluster (EAC) is a non-profit organization with the goal of bringing together the aviation industry and connecting it to the global network of aviation clusters. As of November 2021, EAC involves 20 members alongside value chain.

Our mission is to build a new economic sector, thereby giving new boost to Estonian economy (from 3% of country's GDP to 7% by 2023)

- eac.ee

Our story

Our logo is inspired by a compass arrows, which:

- form the map of Estonia
- arrow ends are pointing to the Asia-Pacific region – The World's fastest growing aviation market

Our geographical location enable us to act as a gateway to Northern and Eastern Europe




estonian
aviation
cluster

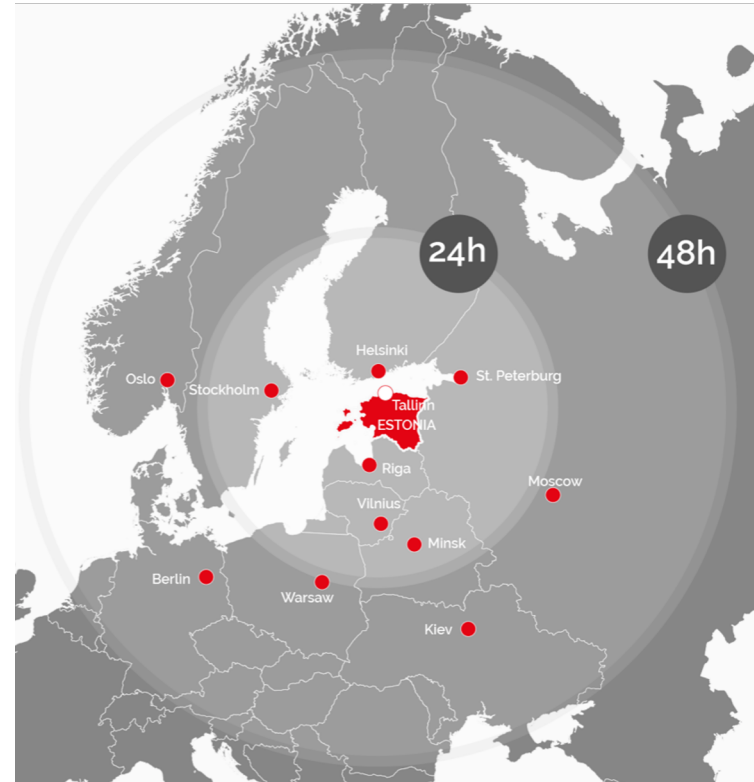
Why Estonia

We are a **gateway to Northern and Eastern Europe:**

- 150M customers in Nordic, Baltic and northwest Russian regions within a 24H reach
- In total, providing access to a market of 300M customers

We are home of digital society, E-governance and start-ups:

- ideal **test-bed** for innovation
- **birthplace of aviation companies** with global ambitions



Members

Airlines

XFLY
Pakker Avio
Diamond Sky

Airport / Air Traffic

Tallinn Airport
Estonian Air
NavigationServices Provider

Air Cargo

Ospentos International
Qstep Logiciel
Feeport

Education

Estonian Aviation Academy
Tallinn University of
Technology
Estonian Aviation Museum

Digitalisation

ION Access and Health
Axinom Estonia
Operose Labs
SkySelect

Aerospace Industry

Magnetic MRO
Nordic Aircraft Service
Skeleton Technologies
Nordic Custom

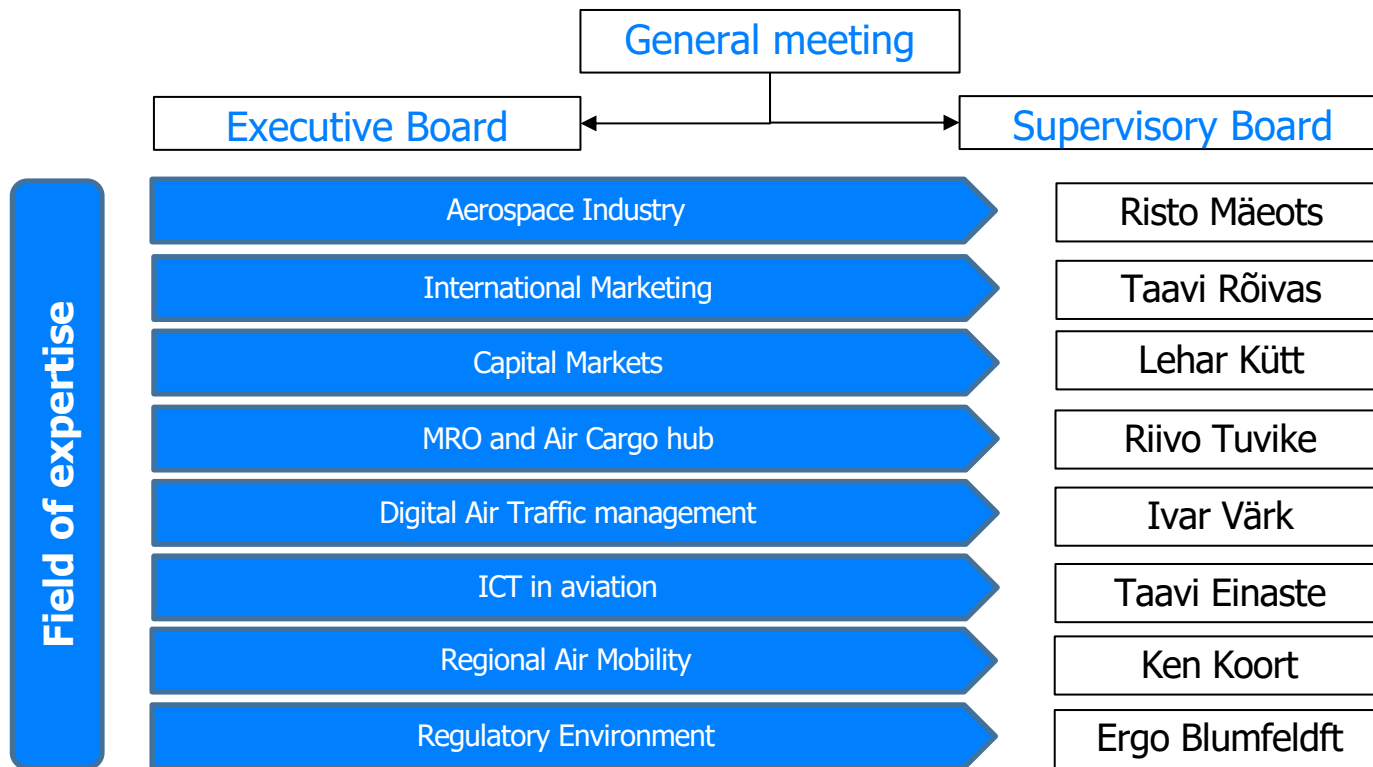
Autonomous Mobility

Threed Systems
Hepta Airborne
Solutions
Auve Tech
KrattWorks

Others

Transpordi Varahaldus

Management



Main priorities

- [Aerospace industry](#) – post-COVID, Brexit
- [Air Cargo hub](#) – South-East Asia growth
- [Future aviation](#) – climate neutrality
- [Value chain digitalisation](#) – ICT
- [Aviation education](#) – reskill/upskill



Member of European Aerospace Cluster Partnership (EACP) – think tank of European aviation

OUR MISSION

- The EACP is the most active, visible and comprehensive aerospace cluster collaboration platform in Europe.
- The EACP establishes trustworthy relations through close interaction and open collaboration among European aerospace regions.



THE COMMON GOAL

By establishing closer inter-cluster relations to provide added value to the overall market, the EACP shapes the relationship between clusters, industry stakeholders and policy makers. Moreover, the EACP stimulates innovation, thereby aiming to strengthen the EU's overall position within the global aerospace market.

OBJECTIVES

Knowledge Exchange

- Cluster excellence
- Funding schemes
- Role of clusters

Push Innovation

- Skills & qualification
- EU projects
- Connecting member clusters

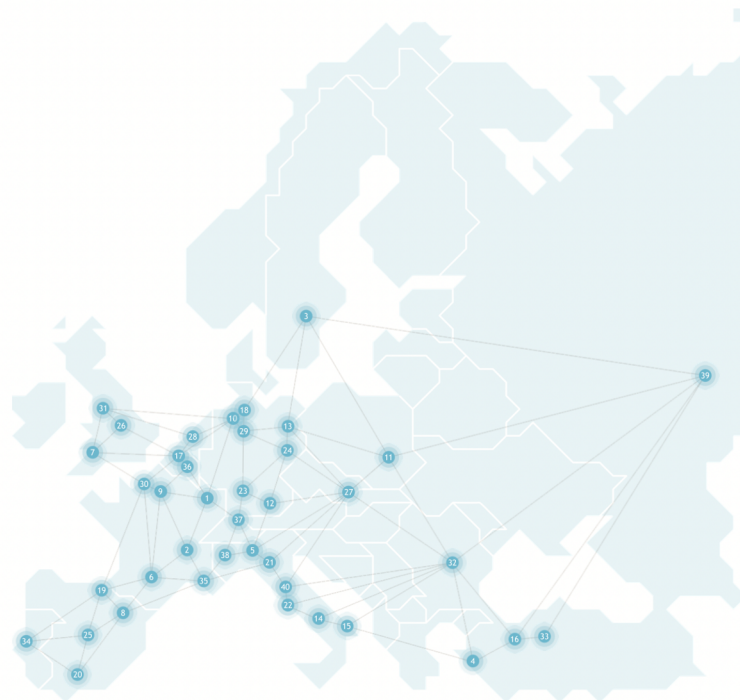
Strengthening of EU-Position

- Targeted internationalisation
- Supply chain infrastructure
- Global competitiveness

WORKING GROUPS



THE EACP STRENGTHENS THE POSITION OF THE EUROPEAN AEROSPACE INDUSTRY IN THE WORLD MARKET.



Thank you!

Innovation in Aviation



Marek Alliksoo - CEO / Co-Founder of SKYCORP .

Working throughout COVID-19

resence

- Head organiser for the **Estonian Hydrogen Days**
- Tartu Vertical City workshops
- **Seinäjäki (Capital of Space)** City / Airport visit
- Delegate and speaker at the high-level **WindMeetsGas symposium in Groningen**
- **ZeroEST Climate Neutral Air Mobility Hub** – Roadmapping
- **Estonian Hydrogen Valley** – Concept & Preparation phase

Presenting @

- Various International expo's
- International Hydrogen Aviation Conference 2020 and 2021
- ESA BIC EE events
- European Hydrogen Week – Clean Hydrogen Alliance project day
- Hydrogen Day 2020 & 2021 speaker
- Xfly / Nordica Academy - Lecturer
- Estonian Aviation Academy – First podcast invitee Lennurada03
- Estonian Aviation Academy – Lecturer

Achievements

- Team won Robobattle Estonia
- Team won DeltaX drone games
- Top 10 most innovative companies (EAS) - 2020
- H2020 – **Flying Forward 2020** project @ Tartu consortium
- Hydrogen workshop at Taltech's En conference + world's first hydrogen conversion
- Contributions to various UAS regulations
 - Incl. UK gov. paper
- Humanitarian Logistics Association
- Iceland search & rescue workshops
- **ESA ARTES BASS** call – **Space4U** lead
- COST Project – **EU DRONE** - subm





ZeroEST

Becoming the Climate Neutral Air Mobility Hub

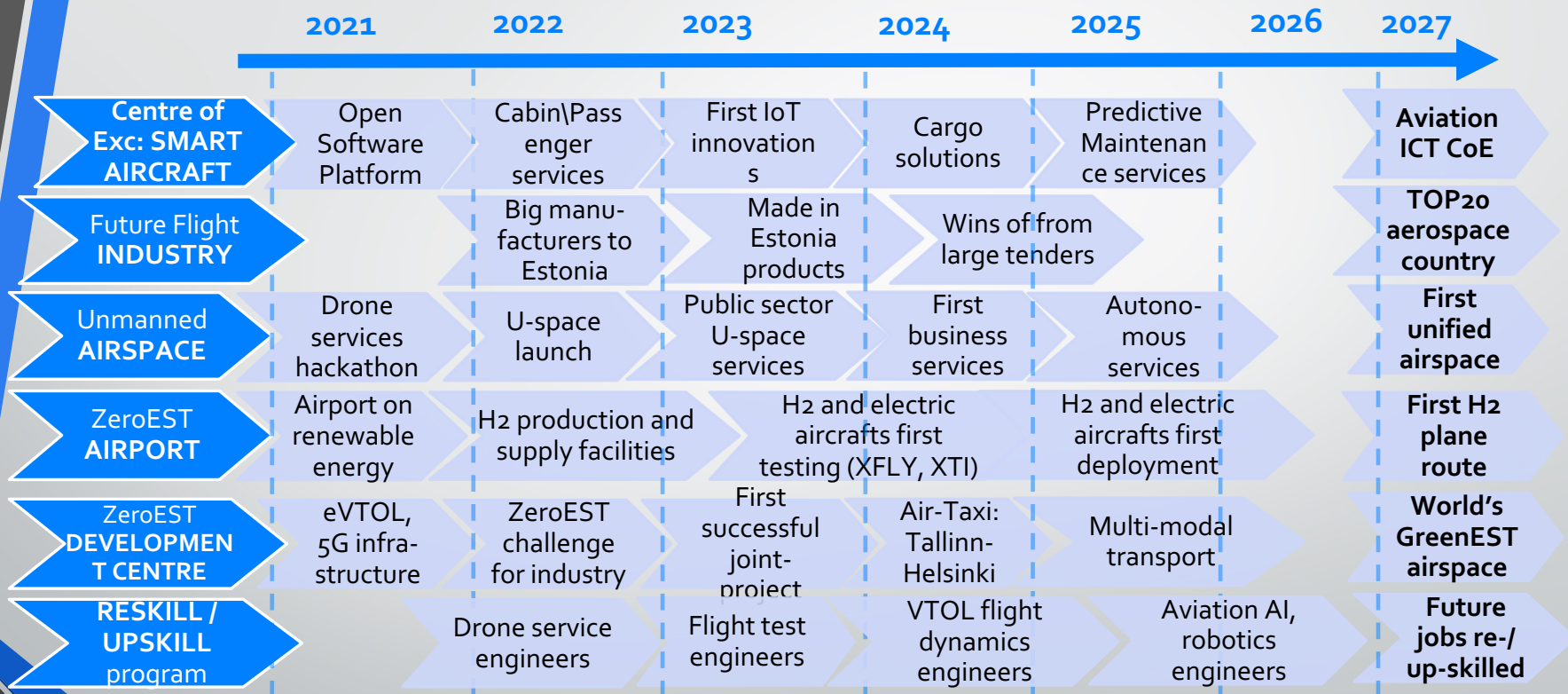
Why

- Becoming **Climate Neutral** by 2050 across all verticals – no compromise
- **Mobility**, particularly aviation is one the toughest sectors to decarbonise
- European developments hindered by lack of clear **regulation**, **awareness**, slow **uptake** and missing or restricted **development locations** providing a **holistic ecosystem as a testbed**
- Education (**Reskilling and Upskilling**) are falling behind for a sufficiently agile transformation
- Creating a **level playing field** across all regions and sectors

The ZeroEST mission

- Represent the City of Tartu in becoming one of **100 climate-neutral cities by 2030**
- Attracting foreign investment into the region for **development of climate neutral aviation technologies and services**
- Establishing a **cooperation network** of partners, **new connections** of fully electric and hydrogen Aircraft
- Contribute to establishing the **leading centre for the development and testing** of drone services in the EU with the Estonian Aviation Academy
- Prepare and implement the **Estonian cross-border Hydrogen Valley**
- Take part EU and external project **consortiums and funding** opportunities
- Participate in **climate neutral aviation conferences, expos and networking events**
- Raise **public awareness** regarding the development perspectives of **climate neutral aviation**, including new technologies such as **drones, hydrogen and electric aviation**.

Future ambitions of Estonian aviation



Hydrogen in Aviation



- **European Clean Hydrogen Alliance (ECH2A)**
 - 7,4% of total aviation projects came from Estonia
- **Preparing For Hydrogen Aviation**
 - cooperation with early H2 movers such as ZeroAvia, Universal Hydrogen
 - converting an **ATR72-600 aircraft to hydrogen**
 - 10 000+ tons of CO2 saving annually per plane

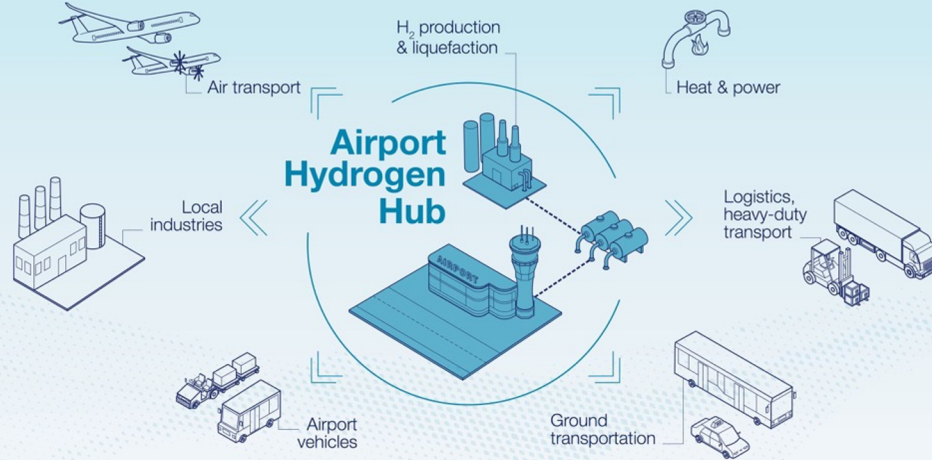
Aviation as an Ecosystem

Airports as Hydrogen Hubs

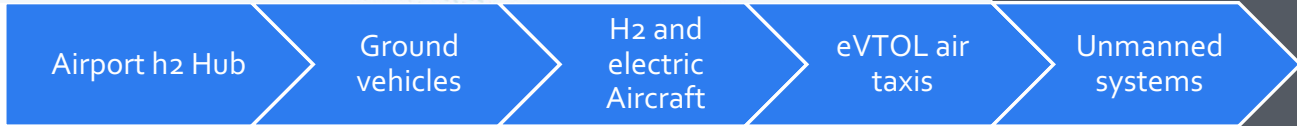
Hydrogen Hub at Airports by Airbus

This concept involves collaborating with airports to develop a stepped approach to decarbonise airport facilities, ground operations and transportation using hydrogen

- 2020**
Launch of preliminary studies into airport infrastructure and energy production needs
- 2023**
Start of concept deployment at airports worldwide
- 2030**
Ramp up of hydrogen infrastructure deployment worldwide
- 2035**
Entry-into-service of ZEROe hydrogen aircraft at airports

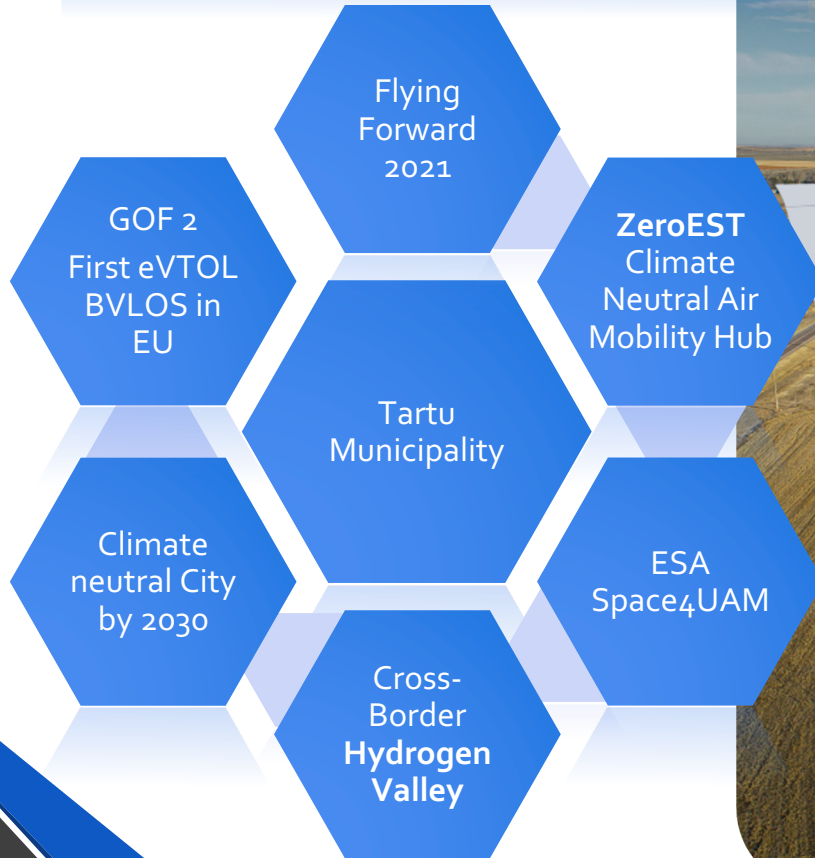


AIRBUS



Regional Air Mobility and Point-to-Point air travel will become vital with the rise of zero-emission aviation aiming to offer climate neutral travel within 500 km.

Synergies for a strong local Ecosystem



Blueprint: Towards the ZeroEST Climate Neutral Air Mobility Hub

ACTIVITIES:

ZeroEST challenge:

Future Flight ecosystem support measures

ZeroEST Manifesto:

National agreement that by 2030 all domestic flights are carbon neutral

ACTORS:

ZeroEST Development Centre:

Aviation Academy,
Tartu University,
Science Park,
Municipality



INFRASTRUCTURE:

eVTOL:
Future Air
Mobility

U-Space:
Tartu as the
Estonian
Testbed

Positive impact towards climate neutrality
Support the development of electric / hydrogen infrastructure
Take part in large scale EU projects
Help generate a multibillion EUR Industry

Airport coverage From Tartu

-  Battery electric aircraft
-  Hydrogen aircraft

Estonia can have zero-emission domestic air travel by 2030



Estonian H₂ Valley in the making

Ecosystem

- Private Companies
- Tartu University
- Tartu Science Park
- Tartu Regional Energy Agency
- Tartu Vocational Education School
- Tartu Aviation Academy
- Tartu Airport

Potential for 1500 tonnes green (PV)

Observers' Network for Hydrogen Regions (2020)

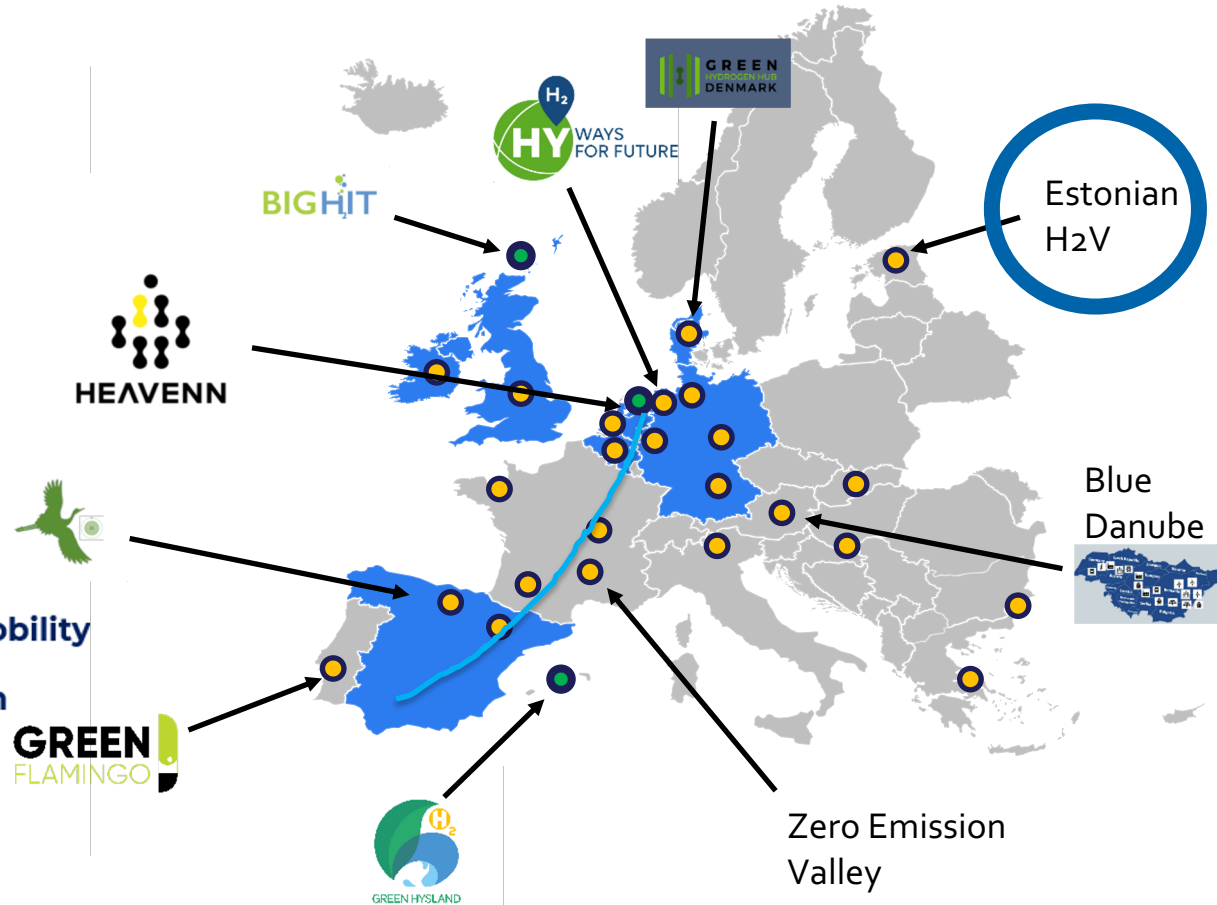
Strong IPCEI representation

ZeroEST Climate Neutral Air Mobility Hub

Member of The European Clean Hydrogen Alliance

Climate Neutral City by 2030

Culture Capital of Europe 2024



ZeroEST

The GreenEST airspace of the Future

Your ZeroEST presenter

Marek Alliksoo, CEO of
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„Coalition of the Investing“

[Municipality of Tartu](#)

- The City of Tartu
- Tartu Airport
- University of Tartu
- Estonian Aviation Academy
- Tartu Science Park
- Tartu Vocational Education School
- Tartu Regional Energy Agency
- LAG Tartu

[Estonia](#)

- Estonian Aviation Cluster
- Tallinn Airport
- Xfly
- Enterprise Estonia
- Estonian Association of Hydrogen Technologies