ROTTERDAM
THE HAGUE
INNOVATION
AIRPORT

RHIA

ROTTERDAM THE HAGUE INNOVATION AIRPORT

6 February 2025

RHIA: INNOVATION FOR AEROSPACE IN A BROAD PERPECTIVE

STIMULATE AEROSPACE INNOVATIONS

In our innovation ecosystem we work to create a basis and growth model for innovation

INCREASE SOCIAL-ECONOMIC VALUE

The airport is a magnet for new economic activities, providing opportunities in jobs and innovation

ACCELERATE ENERGY TRANSITION

Less emissions, alternative fuels and to be an airport that delivers energy to the net

RHIA is a community platform of companies, research institutions and governments. Together we are committed to the transition to a cleaner, quieter and smarter future of aviation. Together, we make innovation fly.

AIRPORT AS A DRIVER OF AN INNOVATION CLUSTER

AEROSPACE CLUSTERS

1. **NOORDWIJK***: SPACE CAMPUS, ESA BIC, ESTEC
2. **VALKENBURG**: UNMANNED VALLEY
3. **DEN HAAG**: TECHNOLOGY PARK YPENBURG
4. **DELFT**: AEROSPACE INNOVATION HUB @TUD, SAM XL
5. **AVIATION DISTRICT RHIA**: RTHA, RTHA CAMPUS, FIELDLAB NEXT AVIATION, AIRPORT TECHNOLOGY LAB
6. **PAPENDRECHT**: FOKKER

SEAPORT CLUSTER

GREENPORT CLUSTER

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RHIA organisation and COMMUNITY

EXECUTIVE BOARD

Rotterdam The Hague Airport

STRONG LINK WITH MUNICIPALITIES, PROVINCE AND MINISTRY

PROJECT PORTFOLIO:

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RHIA organisation and COMMUNITY

Community:

- From start-up to corporate
- Education/Research organisations, all levels
- Government bodies

Knowledge sharing through RHIA Cafes and Talks

Exchange with other networks such as NAG

RHIA Partnership model in progress; due this quarter

Interest in the RHIA-program?

Please join the Community!

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FIELDLAB NEXT AVIATION

Development and testing of propulsion technologies, wing designs, propellers and rotor blades, for sustainable flying.

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Fieldlab Next Aviation

- RHIA program, led by TU Delft and NLR
- Purpose: Development of a test- and demonstration environment for new technologies and innovations at the airport (on airside)
- Using our Flight Test organisation as a strong basis

Location Flight Test Organisation TU Delft & NLR

Activities of our Test Flight Organisation

3 Test/research aircrafts

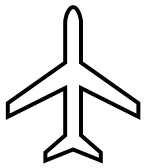
Unique capabilities

- Experts in Flight Test Operations
- Multiple test flight pilots
- Modification Design, Certification, Airworthiness

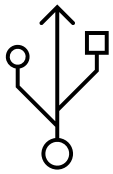
Home of multiple "flying test beds"

- Flying Classroom for Education (TUD)
- Advanced aviation research, inflight measurements
- Validation & demonstration purposes of new technologies and procedures, including electric and hydrogen flying

Focus areas



Support to other (RHIA) projects & demos on airside



Electric Powered Aviation

Quieter flights

TUD/NLR Flight Test organisation in RTHA Hangar 3

Some (recent) highlights

- Linked to Municipality Rotterdam “Sustainability Transision” funding, e.g:
  - Refuelling and Taxi-demo AeroDelft on gaseous hydrogen
  - Study on hydrogen leakage sensors
- Electric powered aviation: RHIA talk Nov’24: develop Fieldlab relevance and community
- Under development: “Steep Approach” for noise reduction
- TU Delft welcomed a new flying testbed (Cessna F337F Skymaster) on 21 January.

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SMART ENERGY AIRPORT

Investigate and plan the electrification infrastructure necessary for supporting electric aircraft operations at Rotterdam The Hague Airport (RTHA)

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SEA project status

GOAL

- **Roadmap to 2035**

  Address increasing electricity demand ensuring the airport's energy needs are met sustainably over the next decade

- **Strategic Development of an Energy System**

  Recommendations on implementing sustainable energy solutions and infrastructure to support airport operations, ensuring alignment with environmental goals

- **Incorporation of a Real-Time Smart Energy Management System**

  optimize energy usage and ensure efficient distribution, while providing an operational revenue model to support financial sustainability.

PARTNERS

TU Delft

nlr

Rotterdam The Hague Airport

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SEA project steps

The primary objective of this project is to facilitate a seamless transition to sustainable energy solutions at Rotterdam The Hague Airport (RTHA).

Key steps include:

1. **Infrastructure Evaluation**: Conduct a thorough assessment of the current energy infrastructure to identify gaps and establish a baseline for improvements.
2. **Energy Requirements Analysis**: Determine the specific energy needs to support electric aircraft operations through detailed projections and analyses.
3. **Infrastructure Upgrade Plan**: Develop a comprehensive plan outlining the necessary steps and investments to enhance the airport's energy systems, ensuring they can support new technologies and increased energy loads.
4. **Regulatory Compliance**: Ensure all developments comply with sustainability and environmental regulations, contributing positively to the airport's environmental goals and paving the way for a greener future.

SEA ROADMAP

Electrical Capacity and Future Demands at RTHA

Current situation

- 32 smaller connections (<50kW)
- 8 larger connections (50kW – 500kW)
- Sufficient grid & contracted capacity

2025 - 2027 — Upgrade infrastructure & Renewable Energy integration

- Setup energy groups and create a GTO (Groep Transport Overeenkomst)
- Install Realtime Energy Management System
- Renewables generation, integration & energy storage (BESS) to ensure stable energy supply
- Pilot projects (BESS, Smart EMS, "Power up" group 4 500 kWh -> 1 MWh)

2028 - 2033 — Expansion & Optimization

- Expand renewable energy installations and storage capacity
- MW-charging implementation Group 2&3
- Grid and Energy storage combination. Ramp up from 500kW – 4MW
- Optimize energy management system

2034 - 2035 — Implementation & prepare for growth

- Roll-out infrastructure upgrades and renewable energy projects
- Ramp up grid & renewables 4MW+
- Continuous improvements, documentation. Updating roadmap and prepare for third fase of electric aviation.

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AIRPORT TECHNOLOGY LAB

Development, testing and demonstration environment for innovative products and services for airports.

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Airport Technology Lab (ATL)

Description project

- Development and demonstration environment for digital driven innovation, products, and services for airports
- Funded by EFRO (KvWII) from 2020-2024
- Involved >10 partners

ATL Partners (EFRO-project)

adecs AirSystems · bagchain · De Haagse Hogeschool · mborijnland · robin radar systems · Rotterdam The Hague Airport · Sky ECHO HD weather experts · to70 · TU Delft · WorldStartup

Funded by

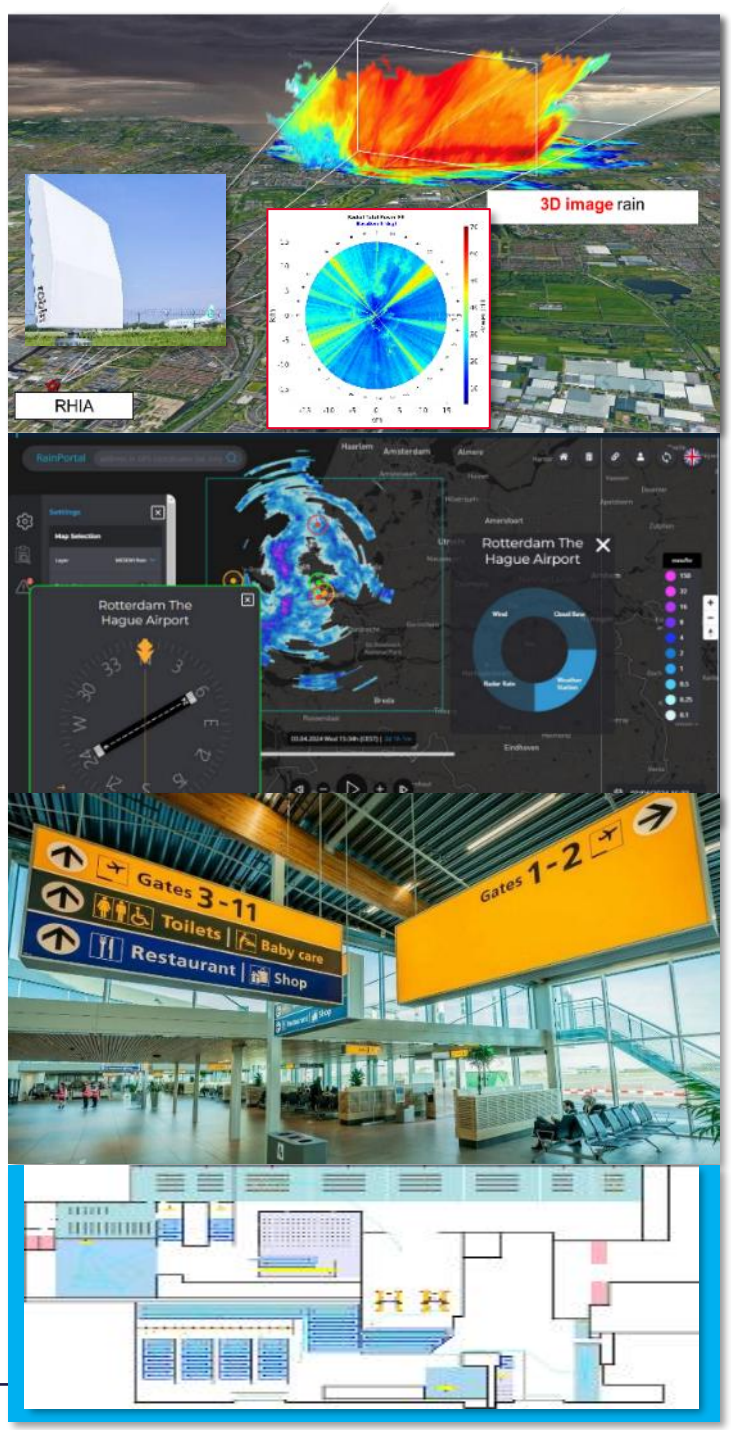
Gemeente Rotterdam · G4P4 Kansen voor West II

Results

- **Fieldlab infrastructure**: AODB to share data with partners and link new tools
- Innovation projects:
  - Weather now-casting (radar technology)
  - Delay prediction + Flight-to-gate planning
  - Passenger flow management in terminals
- Education: involved >130 students; recurring collaboration with 5 ATL partners

Next steps

- Open for new project ideas



To summarize...

RHIA:

- Is a community platform working on the transition to a cleaner, quieter and smarter future of aviation
- Focusses on various innovation programs, such as DutcH2 aviation hub, Smart Energy Airport & Fieldlab Next Aviation
- Organises various knowledge sharing events for the community → **Sign up for our next RHIA Talk on Feb 13!**

Interest in the RHIA-program?

Please join the Community!

Register before Feb 8!

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For more information:

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