

# Airport Technology Lab

Towards a digital and futureproof airport

NAG 14/9

ROTTERDAM THE HAGUE AIRPORT

GA4 **Kansen voor West II**



Het Europees Fonds voor Regionale Ontwikkeling (EFRO)  
van de Europese Unie.

**TU Delft**

**Elise Bavelaar**  
Innovation & Project  
Manager Airports (TUD)

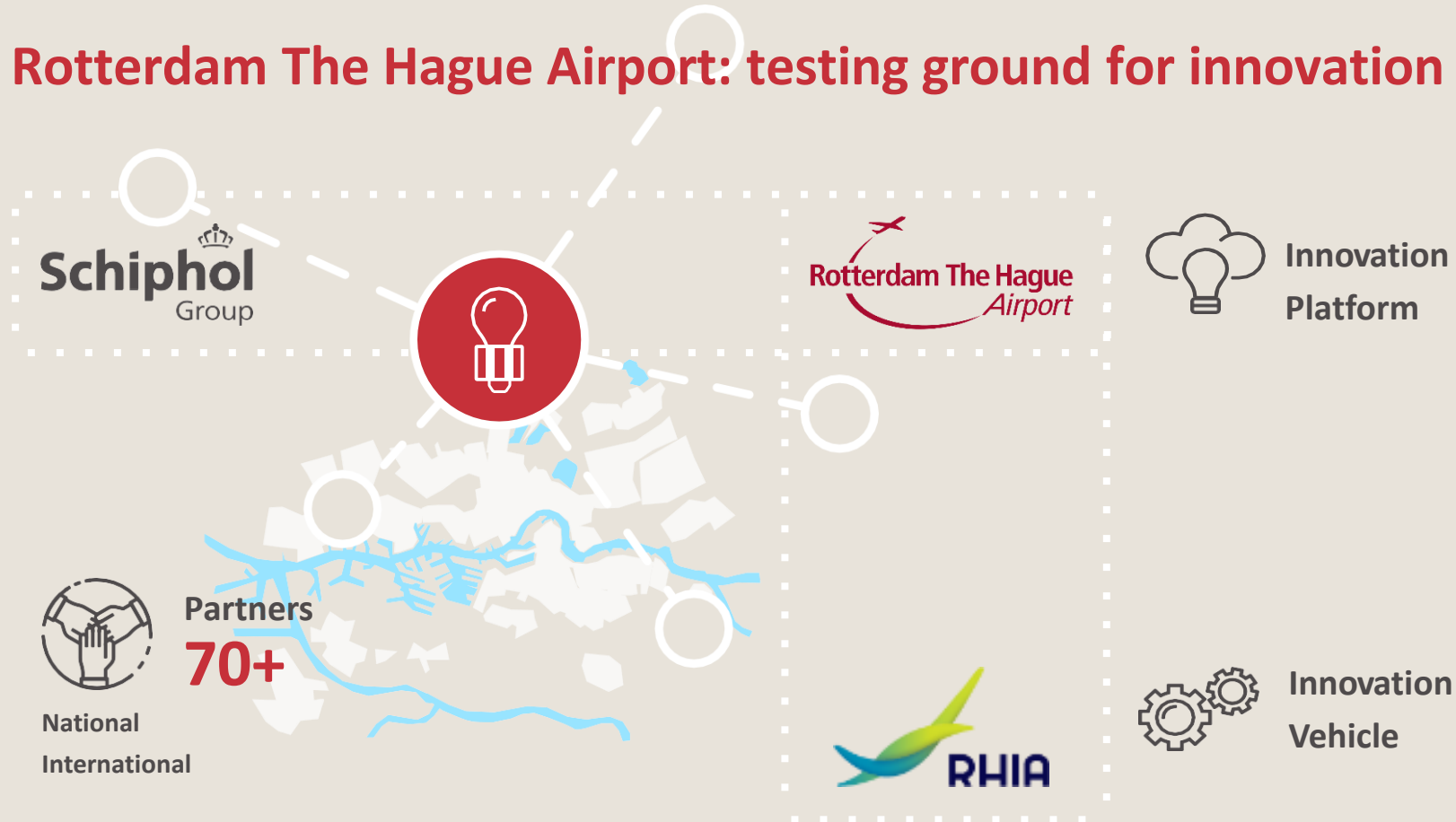


**Mathijs Koper**  
Program manager  
ATL (RHIA)

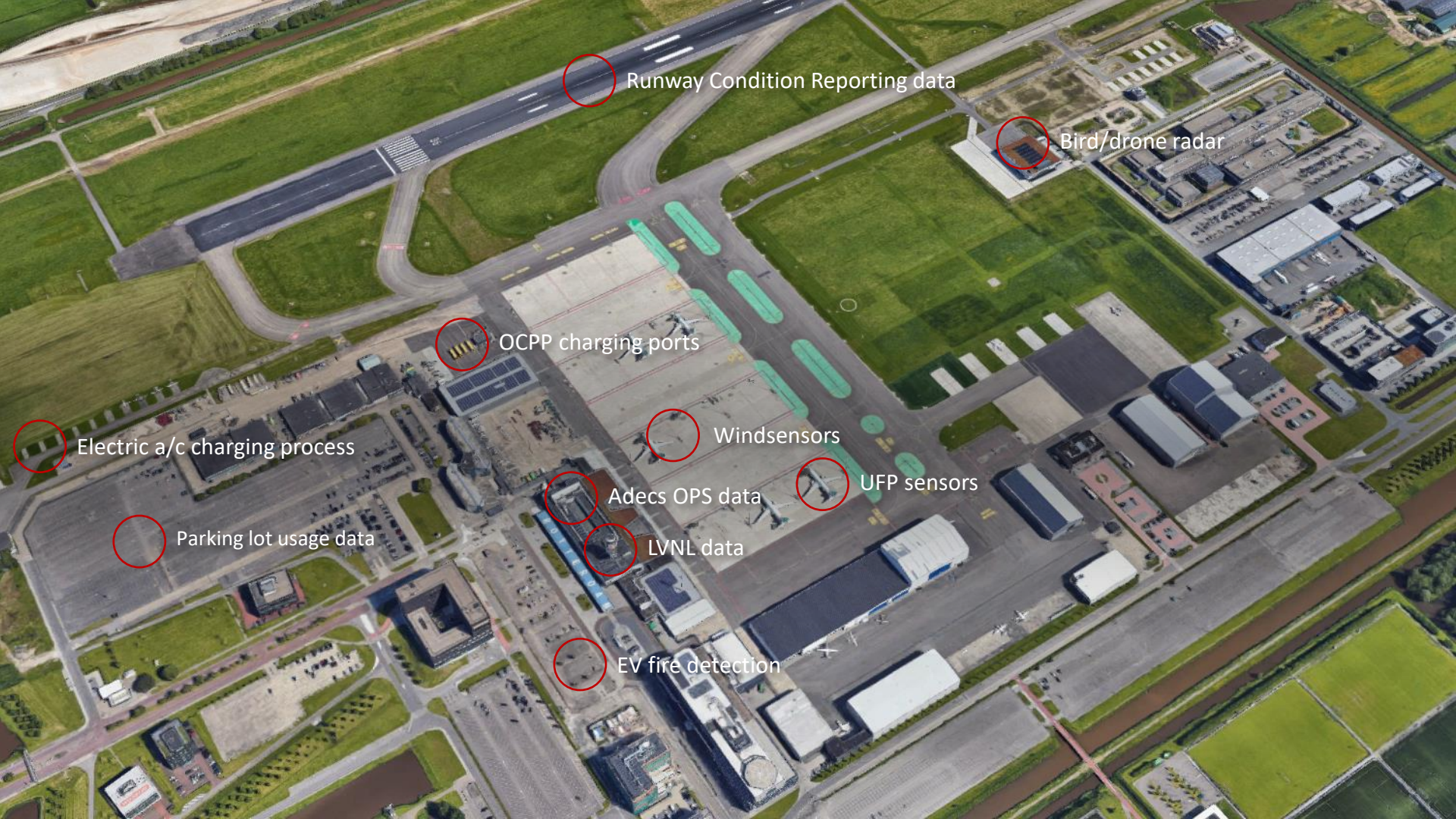


**Daan van Dijk**  
Innovation Lead  
(RTHA)

# Rotterdam The Hague Airport: testing ground for innovation







Runway Condition Reporting data

Bird/drone radar

OCPP charging ports

Windsensors

UFP sensors

Adecs OPS data

LVNL data

EV fire detection

Electric a/c charging process

Parking lot usage data

# What is the Airport Technology Lab (ATL)?

## Purpose:

A development, test, and demonstration environment for innovative, data-driven products and services for airports.

## Project coordination:



## ATL-PARTNERS:



## Made possible by:



# Activities in the Airport Technology Lab

## **“Innovation” Infrastructure**

Setting-up an Open Airport  
Database and platform

Sharing data with partners

Testing of innovations &  
tools, making use of a  
“digital twin”

## **Innovation projects**

Airside, landside, baggage,  
terminal

### ***Examples***

Development of innovations,  
simulation- and decision support  
tools in the field of:

Radar technology

Passenger and baggage flows

Airside data analytics

## **Knowledge management**

Knowledge institutes,  
coupling of education  
*MBO, HBO, WO*

Start-up accelerator  
program

Knowledge sharing and  
dissemination



**Contributing to a safe, efficient and sustainable aviation sector**



# Example of innovation projects

## Radar Technology

- TU Delft ([MS3 Group](#)), Robin Radar, To70
- Applications:
  - Weather now-casting model
  - Turbulence prediction model

## Passenger flows

- TU Delft ([ATO](#) section), To70, Bagchain
- Development of an Agent-based airport simulation and decision support tool
- Many applications, such as the call-to-gate strategy, analysis of remote check-in of baggage, and effect of covid measures

## Airside data analytics

- TU Delft ([ATO](#) section), RTHA
- Development of a decision support tool
- Applications: prediction of operational disturbances (on airside), flight-to-gate planning, etc.



# Knowledge management

## Coupling of TUD education

Strong involvement of Faculty of Industrial Design Engineering via the Bachelor and Master program (3 tracks), with the goal of:

- Facilitating collaboration and knowledge exchange
- Supporting ATL partners in their developments by means of design
- Enabling students to work on actual airport technology projects and allowing them to put their theoretical background into practise

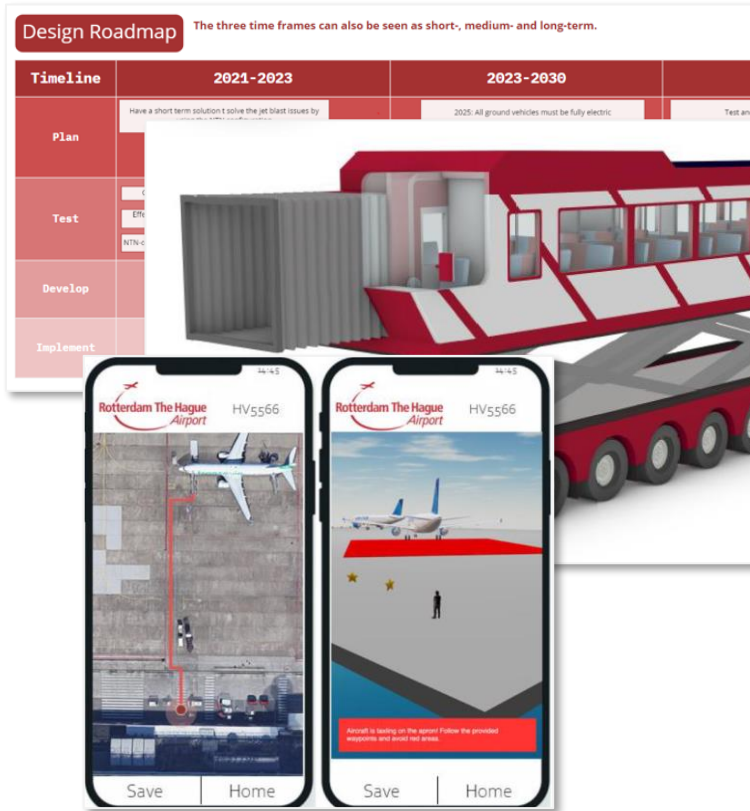
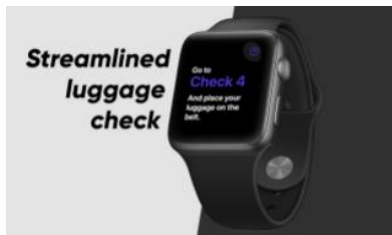
Wide variety of assignments (BSc+MSc), e.g.:

- Development of new concepts
- Redesign of existing product or services
- Marketing research
- Designing a new interaction

So far a recurring collaboration between 7 ATL partners in 5 IDE courses: RTHA, To70, Sky Echo, RHIA, TU Delft, Bagchain, Ilabs. **110+ TUD students, >60 project outcomes**



# Knowledge management





# What's next?



- Until summer next year execution of running ATL projects
- Shaping the next phase of ATL as part of the RHIA programs: 'Groen Vliegen', 'Slim Verbinden' en 'Energie Winnen'
- Arranging new funding for projects of partners and consortia
- Invitation to share challenges and projects and to join as a partner



## AIRPORT TECHNOLOGY LAB

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