Federal Ministry of Transport

mFUND Funding Future Mobility

Welcome to the workshop series

DRIVEN by DATA

The mFUND Workshops Series about Mobility in Europe

In collaboration with

MIMER – the Swedish AI factory

MIMER AI FACTORY

Workshop No. 17

Strengthening the digital Backbone – Artificial Intelligence sustaining Europe's Future

Federal Ministry of Transport (BMV)

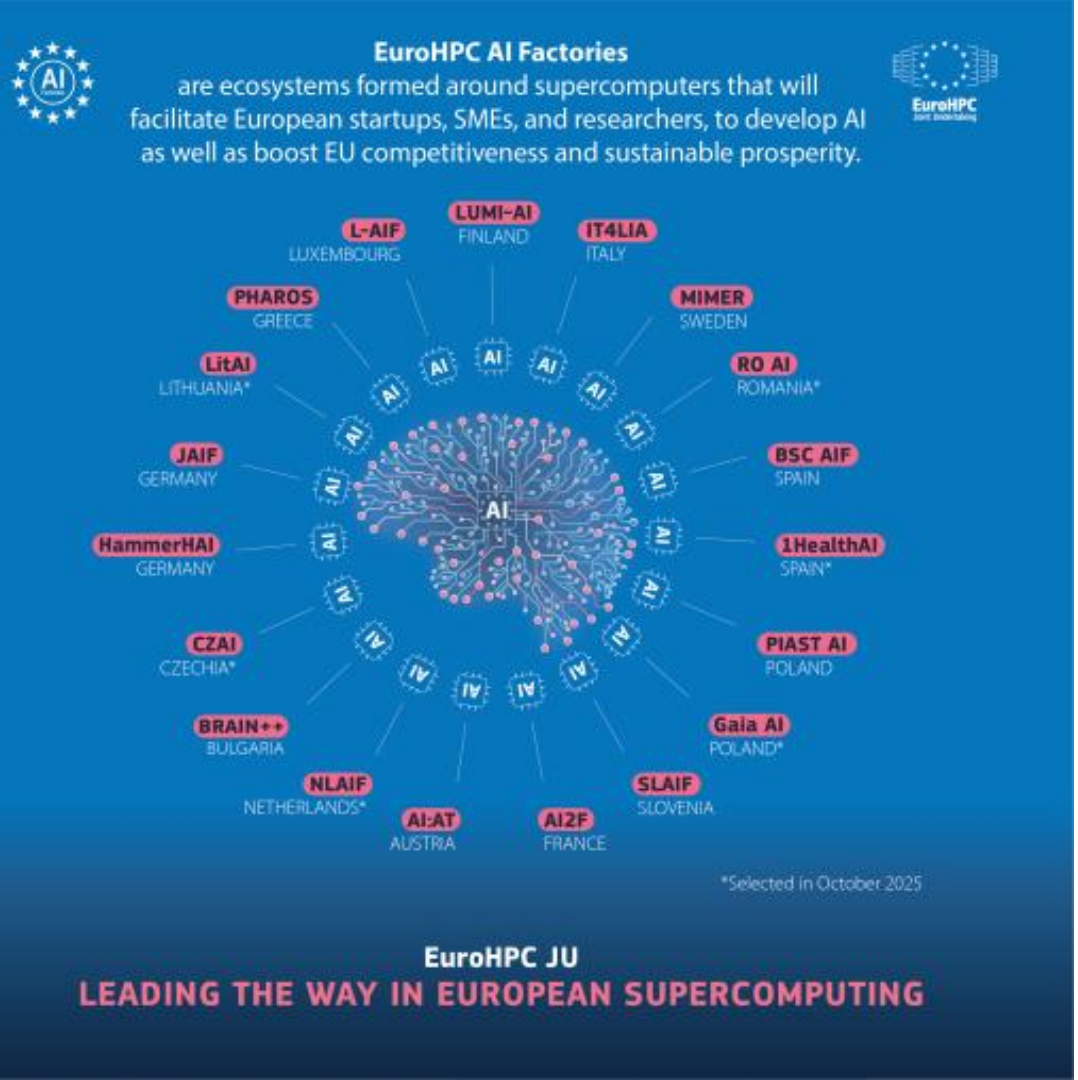
14.10.2025

www.linkedin.com/groups/12778505

The Mimer AI Innovation Factory

Thor Wikfeldt, Director @ RISE

NAISS AI Factories EuroHPC Joint Undertaking RI.SE



European Commission Initiative

19 AI Factories across Europe managed by EuroHPC JU

Soon also many AI Factory Antennas

Facilitating AI innovation for SMEs and the public sector

2025-2027+

I know where Othin's eye is hidden, Deep in the wide-famed well of Mimir;

Mead from the pledge of Othin each morn Does Mimir drink: would you know yet more?

--Snorri Sturlusson, 13 century

Objectives

Build a Sovereign AI Infrastructure for Europe

Enable AI-Driven Scientific Discovery (AI4Science)

Empower Industry and SMEs

Strengthen Sweden’s and Europe’s AI Ecosystem

Build AI Competence and Capacity

Promote Responsible and Sustainable AI

Ensure Long-Term Impact and Sustainability

Target Audiences

Startups, SMEs, Industry.

Public sector, healthcare, public service.

Academic research.

RISE Research Institutes of Sweden.

NAISS National Academic Infrastructure for Supercomputing in Sweden.

Focus areas

Life Sciences	Autonomous systems	Material Sciences	Gaming

What do I get as an SME or researcher?

Access to supercomputing infrastructure

Training/CoLabs/ Events/Workshops

Scaling and deployment support

Access to AI experts

Test and evaluation
Compliance by design

Data quality, privacy, support and access to data

Access to tests in real world testbeds in TEFs towards customers

Tools for Ethical by design

Operational characteristics

A pure AI system - Cloud environment

- Kubernetes, IaaS, SaaS, instant resources, Jupyter, web interfaces

AI on tap, for standardized workloads.

Sensitive data ready.

Free access for selected excellent projects, including SMEs under de minimis rules.

Open to further customers.

Graphic from AIDA Data Hub Data Science Platform, with permission.

Offering

Full AI chain support: develop, test, deploy.

Dynamic network of experts: 52 FTE.

Hands-on support and training.

Two (or more) co-working hubs.

Reference datasets and pre-trained models.

Data and model sharing.

Co-located with national flagship resources.

Graphic adapted from Free Vector Maps.

Kickstarting Mimer

ENCCS
EuroCC National Competence Centre Sweden

HPC access

Training

Consultancy

ENCCS empowers Sweden's ***industry, academia and public sector*** *to leverage* ***HPC, AI, HPDA and QC*** *efficiently and effectively.*

Standard Services

- EuroHPC Access and Onboarding
- Training Workshops, Bootcamps, Webinars, Hackathons
- HPC Consulting and PoCs
- Information and outreach events

Additional Services

- HPC Maturity Assessment
- Customised/one-on-one Training
- Funding, Matchmaking, Specialised Services
- Compute Continuum Platform

User engagement spectrum

Advanced users
Low support need

Emerging users
High Support Need

Compute Access Only
Experienced users, self-sufficient in AI workflows

- Access to HPC
- Minimal support - helpdesk/onboarding only

Tech Guidance & Tools
Moderately advanced users needing help integrating AI/HPC

- Tool selection, workflow optimisation
- Short consultations or mentoring

Collaborative PoCs
Co-development with Mimer experts

- Implementation of models or data pipelines
- Knowledge transfer and capacity building

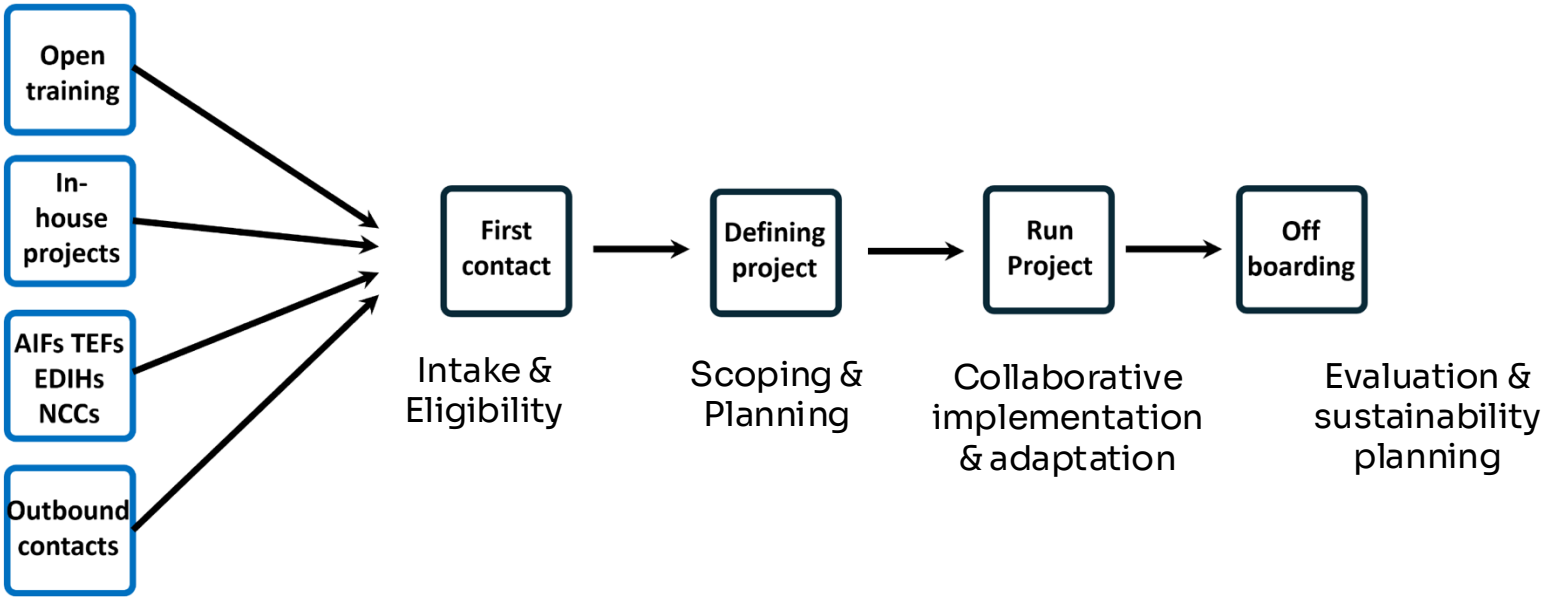
Full Co-Development
Low AI maturity users (often SMEs, startups)

- Mimer experts embedded in project teams
- End-to-end support from scoping to deployment

Training & Upskilling Pathways (cross-cutting)
All users can engage in training, workshops, or “train-the-trainer” sessions

Customer journey

Entrypoints



Project workflow and execution

1. Intake & Eligibility

- User requests from multiple entry points (events, referrals, outreach)
- Eligibility checked based on alignment with Mimer's mission and technical feasibility

2. Scoping & Planning

- Joint definition of goals, outcomes, and timelines
- Resource and data requirements assessed
- Legal, ethical, and administrative aspects formalised early

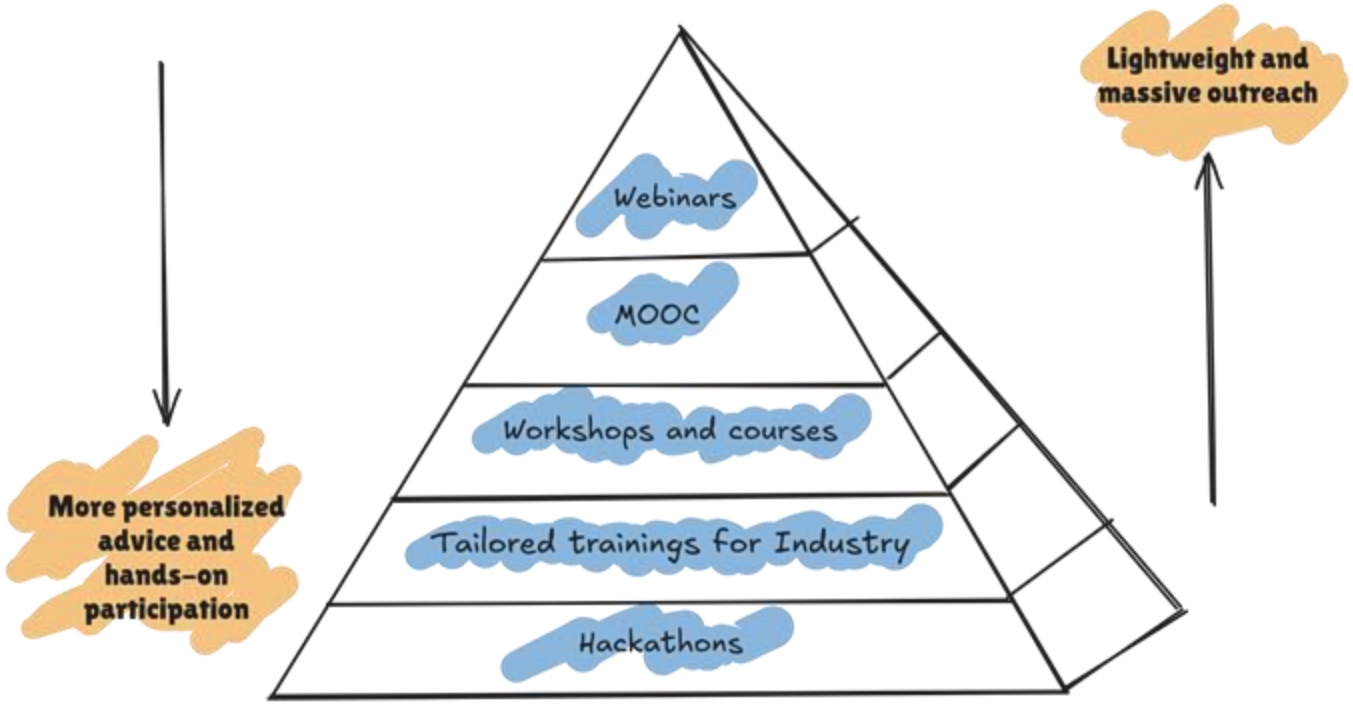
3. Execution & Co-development

- Collaborative implementation focused on knowledge transfer, not just service delivery
- Continuous tracking and adaptive project management

4. Completion & Evaluation

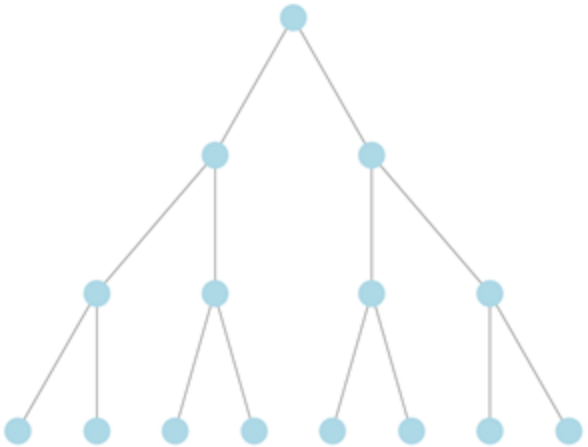
- Results reviewed against objectives; success stories documented
- Structured user feedback collected
- Offboarding support ensures sustainability beyond project duration

Training portfolio



Applied AI skills tree

- Based on EVITA skills tree (EuroHPC Training Academy)
- Competency profiles (AI skills per profile)
- Training Hierarchy:
  - Skills (leaves)
  - Modules (sets of skills)
  - Courses (sets of modules)
- Standardisation of
  - Training material
  - Didactic approach
- Ensures:
  - Consistent quality
  - Consistent learning experience
  - Managed module coverage and overlap
- Exams and Certificates
  - courses and modules



Existing and upcoming courses

- Sample **ENCCS** courses:
  - “Supercomputing for AI”
  - “Introduction to Deep Learning”
  - “Julia for HPDA”:
  - “Python for HPDA”
  - “Upscaling AI Workflows”
  - “GPU Programming”
- On the horizon:
  - Privacy-Enhancing Techniques
  - MLOps and Data Versioning
  - Interacting with AI Models
  - Reinforcement Learning
  - GDPR & AI Act Regulation
  - Change Management for AI Adoption

Trustworthy AI

Structured Testing of AI Systems

Build on CitCom.AI TEF to provide EU AI Act–aligned testing for compliance, safety, and robustness.

Modular services for risk classification, data quality, oversight, privacy, and transparency.

Ethical by Design

Offer ethics-by-design onboarding with expert guidance and readiness tracking.

Developing shared infrastructure for compliance-by-design with partners by 2026.

Trustworthy AI Services

Hu-GTVA: Human-validated evaluation of generative AI for oversight and accountability.

Risk Classification Analysis: Structured AI Act risk and compliance assessment tool for early planning.

Position Mimer as Sweden's hub for AI assurance and compliance.

MIMER
AI FACTORY

NAISS · AI Factories · EuroHPC Joint Undertaking · RI.SE

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Measuring the Invisible: How Satellites and AI Decode Soil Moisture

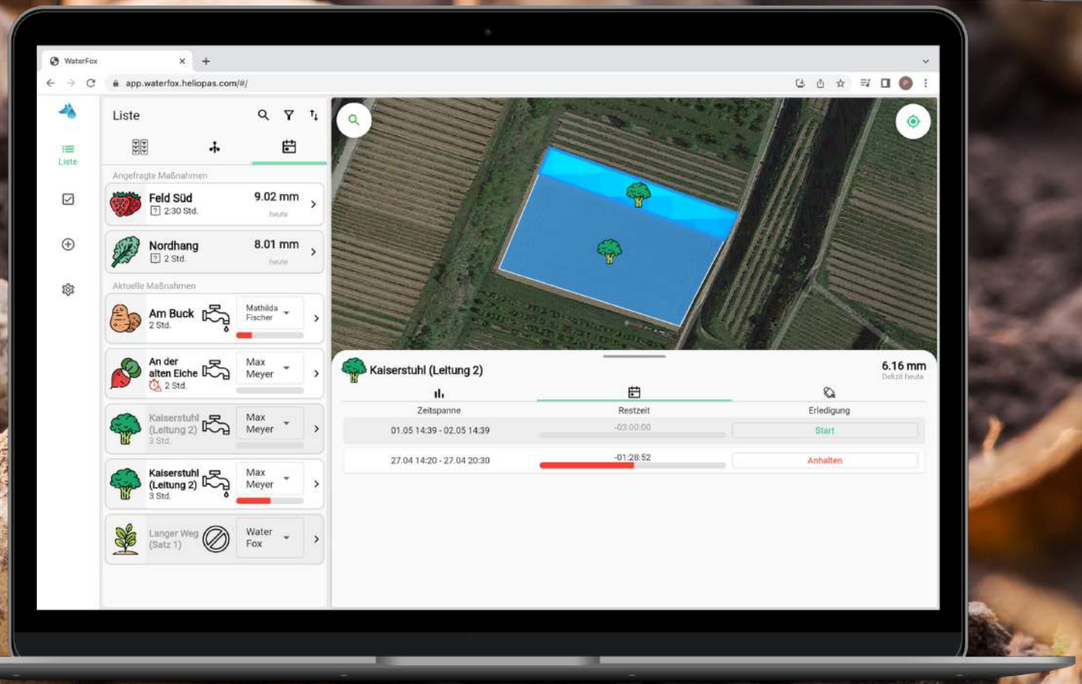
Source: Adobe Stock

RiverFox

Sensorless irrigation decision support system

It increases farm profit by more than 350 EUR per hectare per year

It helps farmers save water, energy, nutrients, and provides drought warnings



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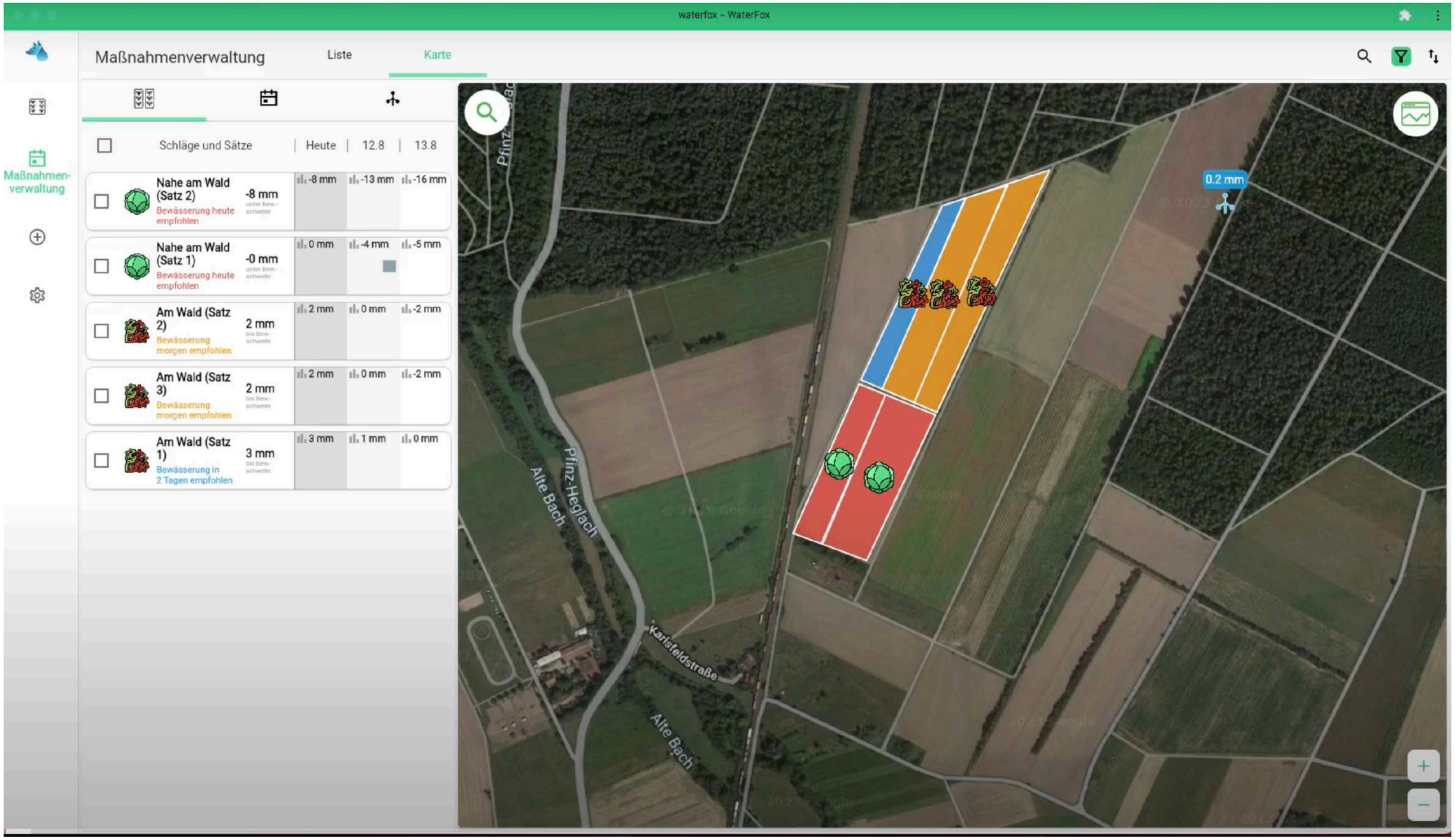
waterfox - WaterFox
Maßnahmenverwaltung
Liste
Karte
Maßnahmen-verwaltung
Schläge und Sätze
Heute
12.8
13.8
Nahe am Wald (Satz 2)
-8 mm
Bewässerung heute empfohlen
-8 mm
-13 mm
-16 mm
Nahe am Wald (Satz 1)
-0 mm
Bewässerung heute empfohlen
0 mm
-4 mm
-5 mm
Am Wald (Satz 2)
2 mm
Bewässerung morgen empfohlen
2 mm
0 mm
-2 mm
Am Wald (Satz 3)
2 mm
Bewässerung morgen empfohlen
2 mm
0 mm
-2 mm
Am Wald (Satz 1)
3 mm
Bewässerung in 2 Tagen empfohlen
3 mm
1 mm
0 mm
0.2 mm
Pfinz-Heglach
Alte Bach
Karlsfeldstraße
Alte Bach

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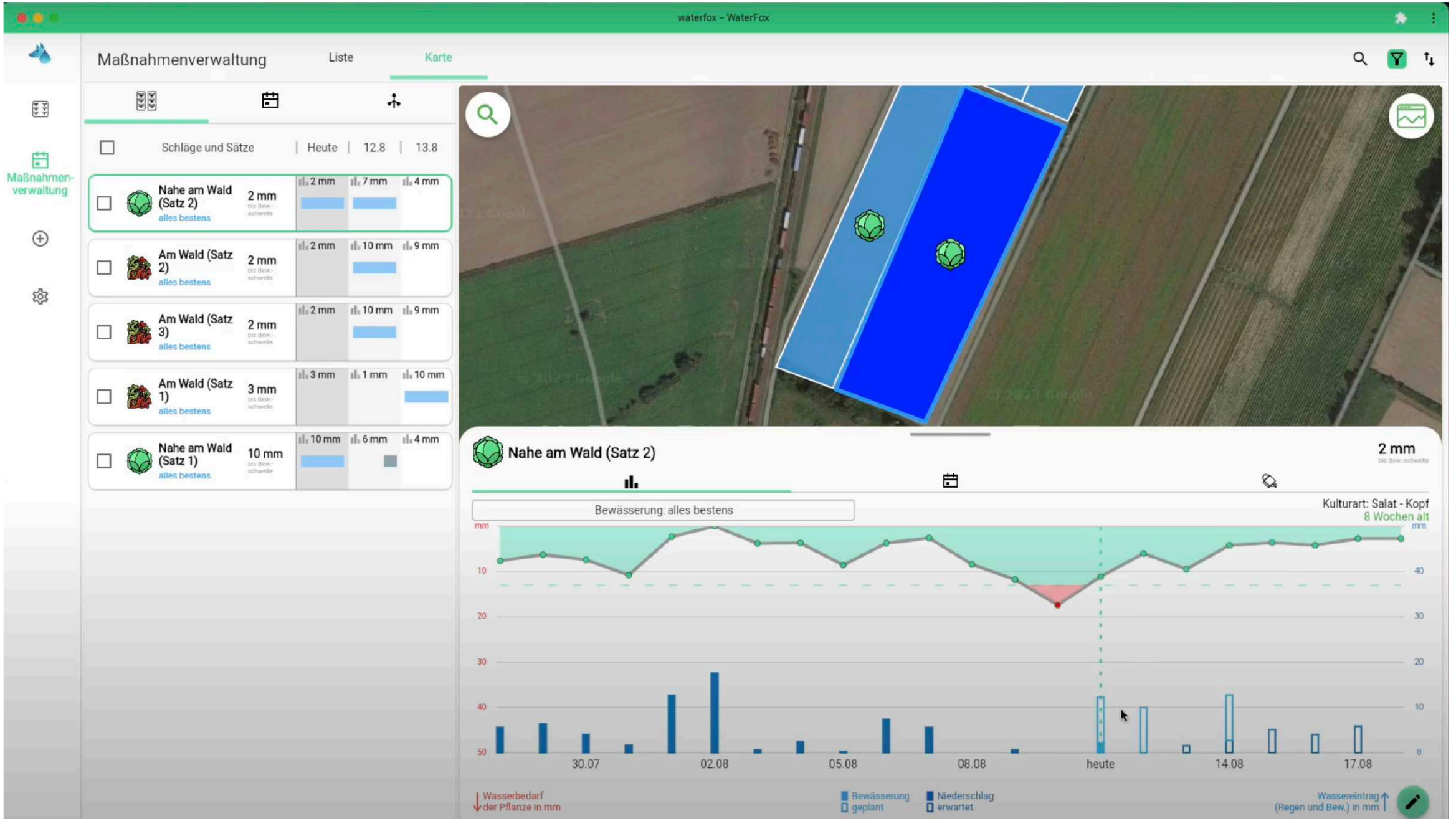
waterfox – WaterFox
Maßnahmenverwaltung
Liste
Karte
Maßnahmen-verwaltung
Schläge und Sätze
Heute
12.8
13.8
Nahe am Wald (Satz 2)
2 mm
alles bestens
2 mm
7 mm
4 mm
Am Wald (Satz 2)
2 mm
alles bestens
2 mm
10 mm
9 mm
Am Wald (Satz 3)
2 mm
alles bestens
2 mm
10 mm
9 mm
Am Wald (Satz 1)
3 mm
alles bestens
3 mm
1 mm
10 mm
Nahe am Wald (Satz 1)
10 mm
alles bestens
10 mm
6 mm
4 mm
Nahe am Wald (Satz 2)
2 mm
Bewässerung: alles bestens
Kulturart: Salat - Kopf
8 Wochen alt
mm
10
20
30
40
50
40
30
20
10
0
30.07
02.08
05.08
08.08
heute
14.08
17.08
Wasserbedarf der Pflanze in mm
Bewässerung geplant
Niederschlag erwartet
Wassereintrag (Regen und Bew.) in mm

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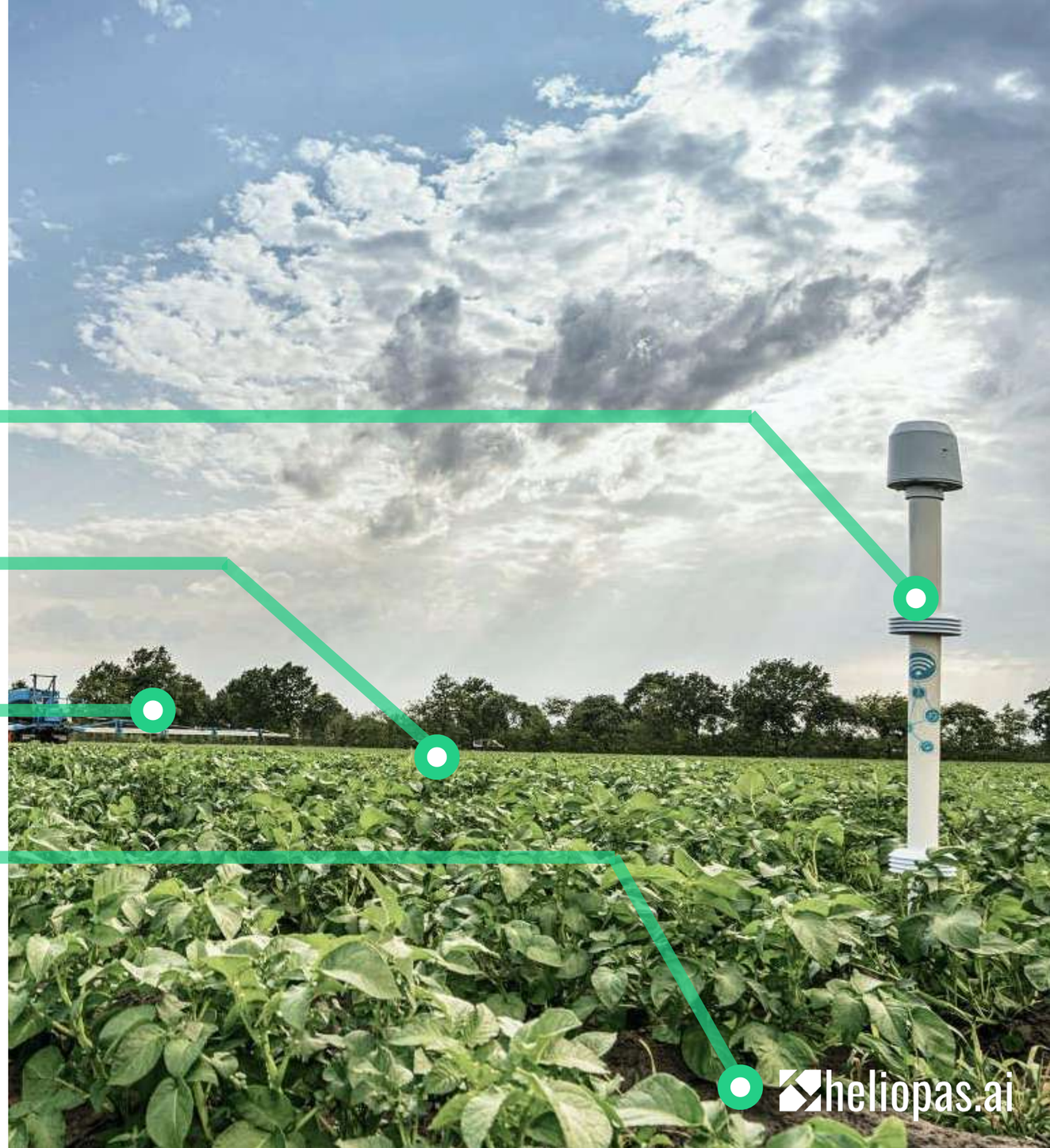
STRONGER AI THROUGH DATA

- Weather data
- Crop type & seeding date
- Irrigations
- Soil type

→ Stronger AI through data



FARMERS NEED SOLUTIONS

- Irrigation without sensors
- Intelligence without complexity

HABKIS 2
New methods to improve the accuracy of AI-based high-resolution soil moisture information

Bundesministerium für Verkehr und digitale Infrastruktur

mFUND
Das Startkapital für die Mobilität 4.0

Source: Adobe Stock

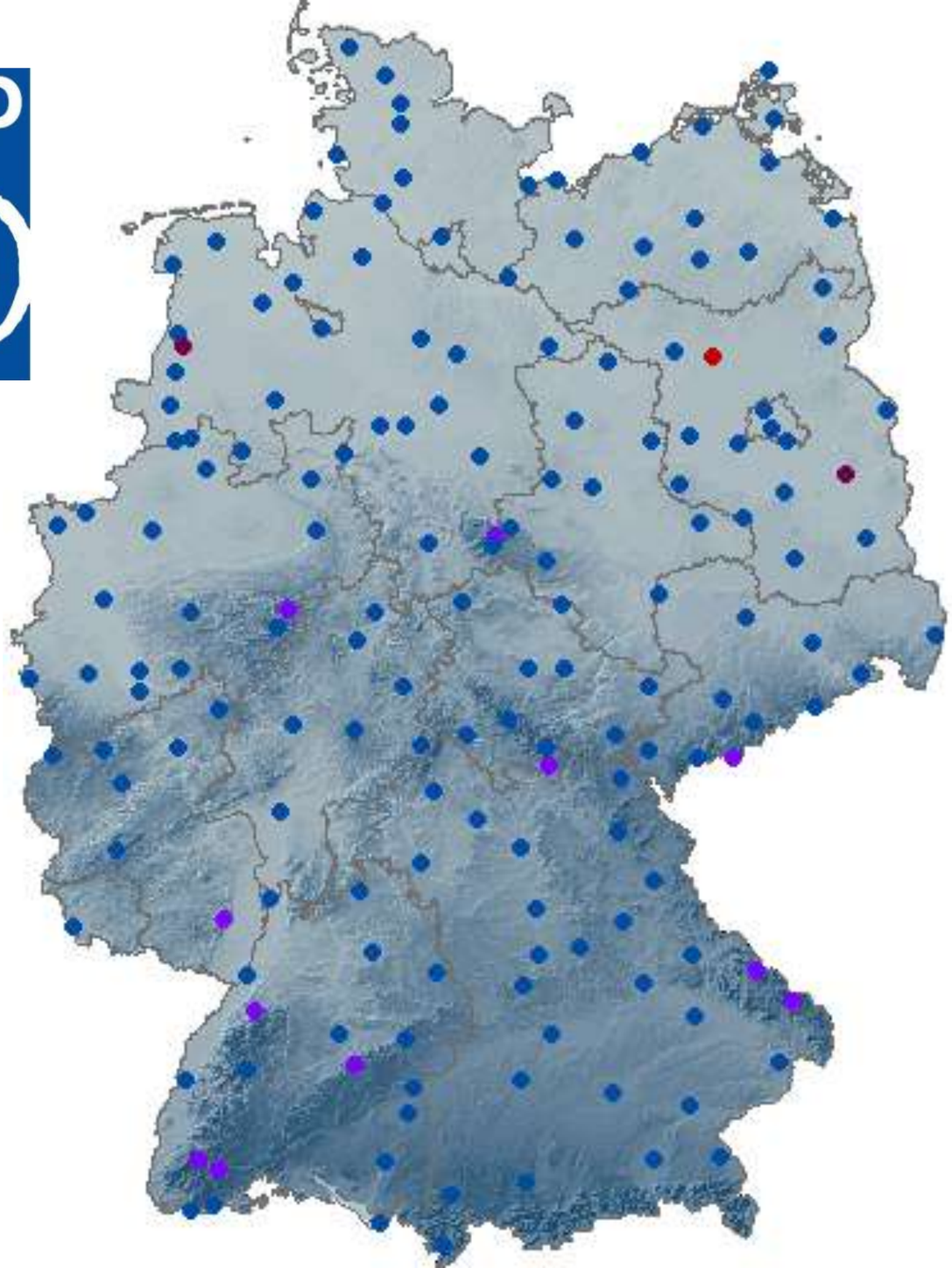
MOBILITY CONNECTION

Road accessibility

Flood events

FEASIBILITY STUDY HABKIS 2022

- AMBAV model
  - Developed by the DWD Center for Agrometeorological Research in Braunschweig
- 550 weather stations with relative available field capacity (% nFK)
- Available via the Open Data Portal of the DWD Climate Data Center



HABKIS 2

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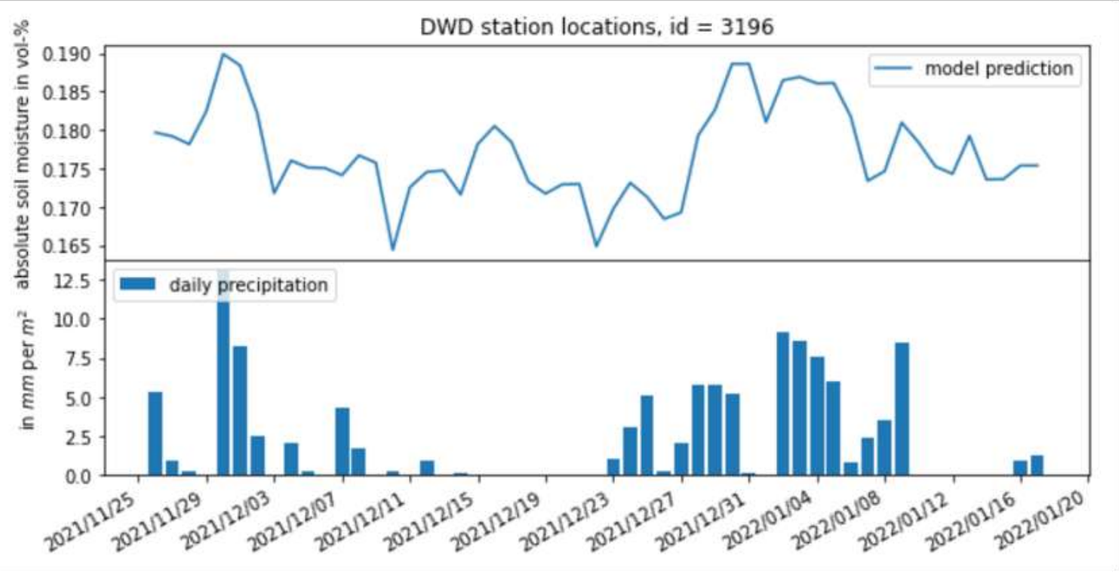
constellr

JÜLICH Forschungszentrum

RheinlandPfalz
DIENSTLEISTUNGSZENTRUM LÄNDLICHER RAUM (DLR) RHEINHESSEN-NAHE-HUNSRÜCK


DWD station locations, id = 3196
absolute soil moisture in vol-%
model prediction
daily precipitation
in mm per m²
2021/11/25
2021/11/29
2021/12/03
2021/12/07
2021/12/11
2021/12/15
2021/12/19
2021/12/23
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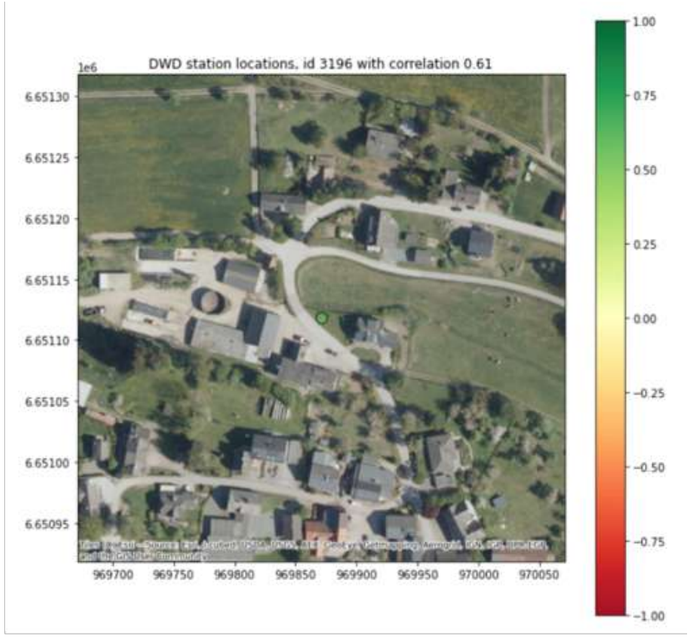
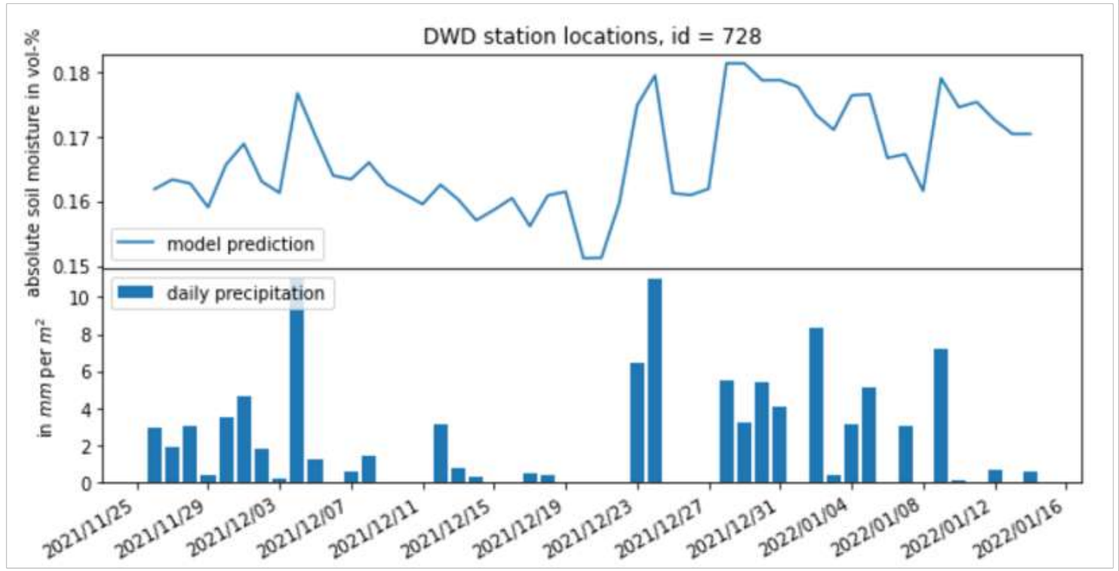
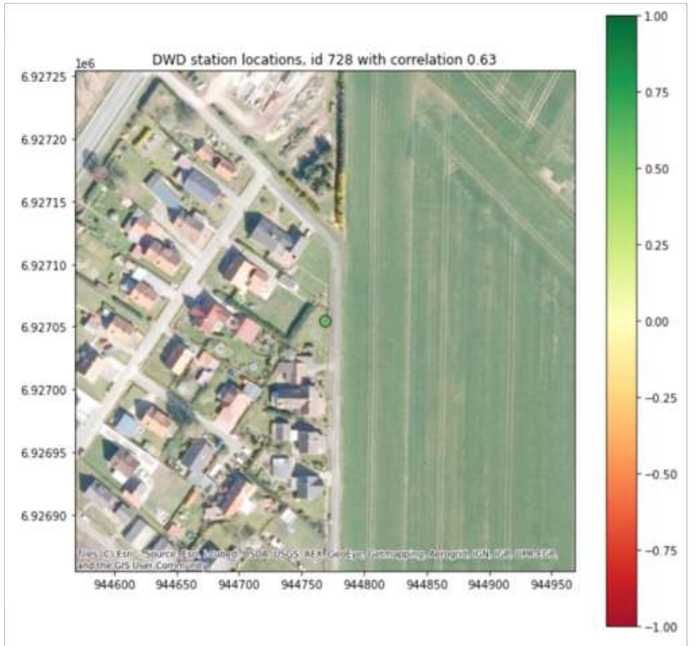
2022/01/16
2022/01/20


DWD station locations, id 3196 with correlation 0.61
1e6


DWD station locations, id = 728
absolute soil moisture in vol-%
model prediction
daily precipitation
in mm per m²
2021/11/25
2021/11/29
2021/12/03
2021/12/07
2021/12/11
2021/12/15
2021/12/19
2021/12/23
2021/12/27
2021/12/31
2022/01/04
2022/01/08
2022/01/12
2022/01/16


DWD station locations, id 728 with correlation 0.63
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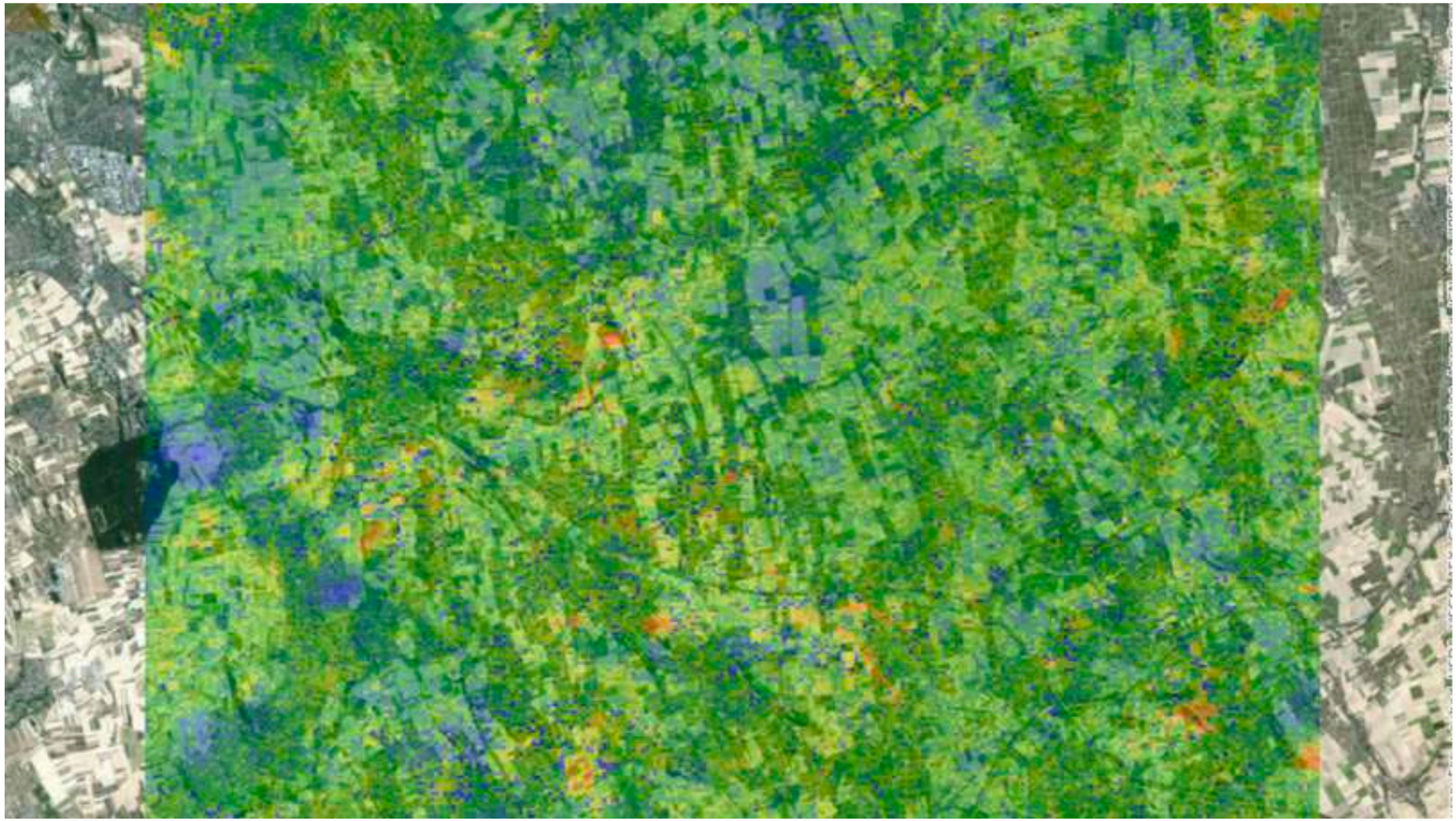

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Sentinel satellites from the Copernicus program

- Copernicus Earth Observation Program of the European Union
- Dual systems in sun-synchronous polar orbit
- Global coverage of land surfaces

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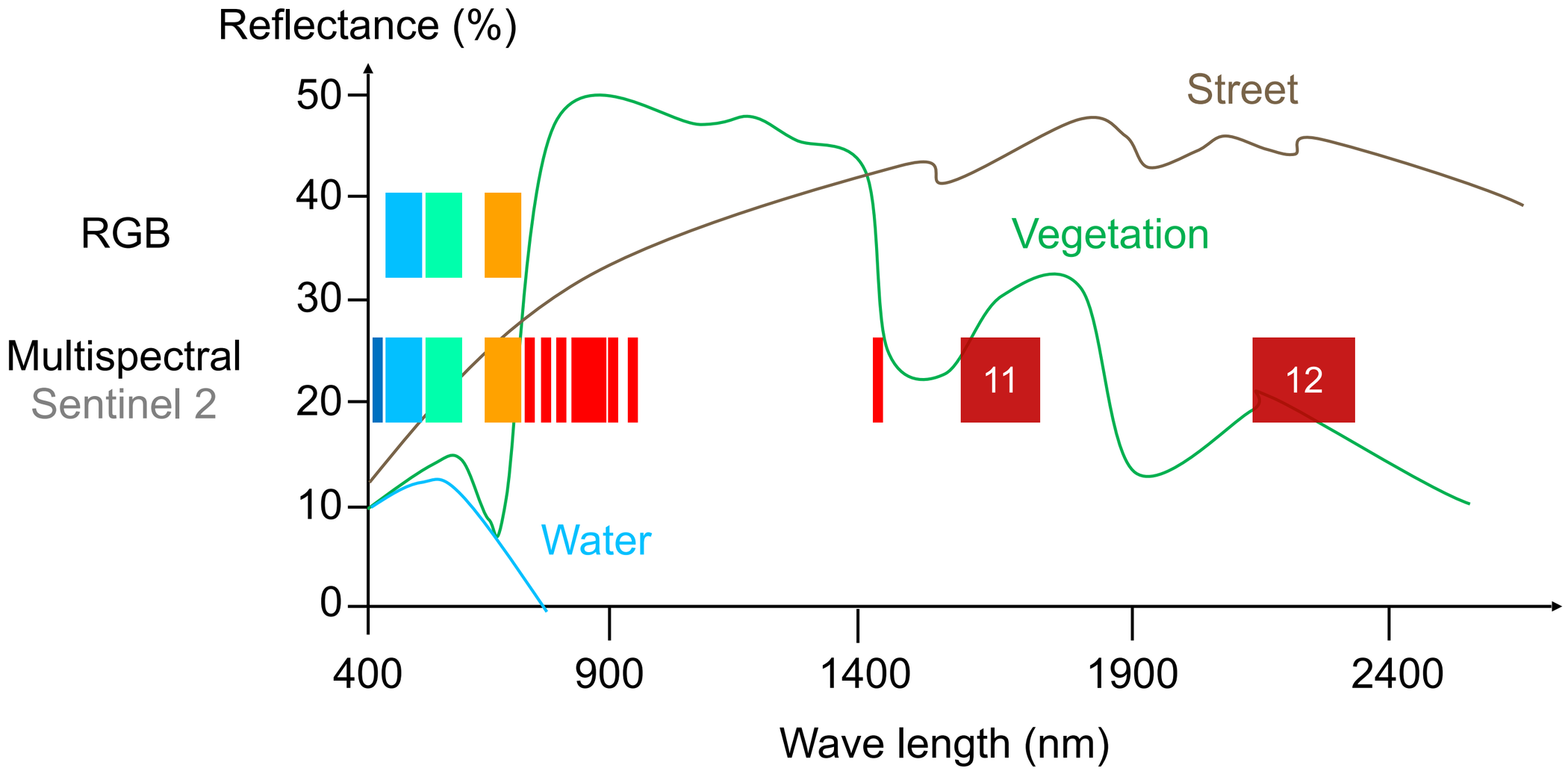
RGB vs. multispectral



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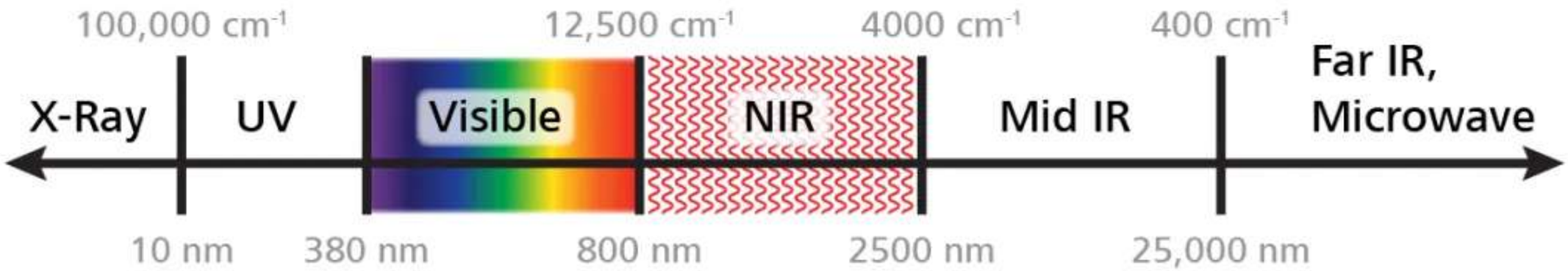
Beyond Optical: The SAR Advantage



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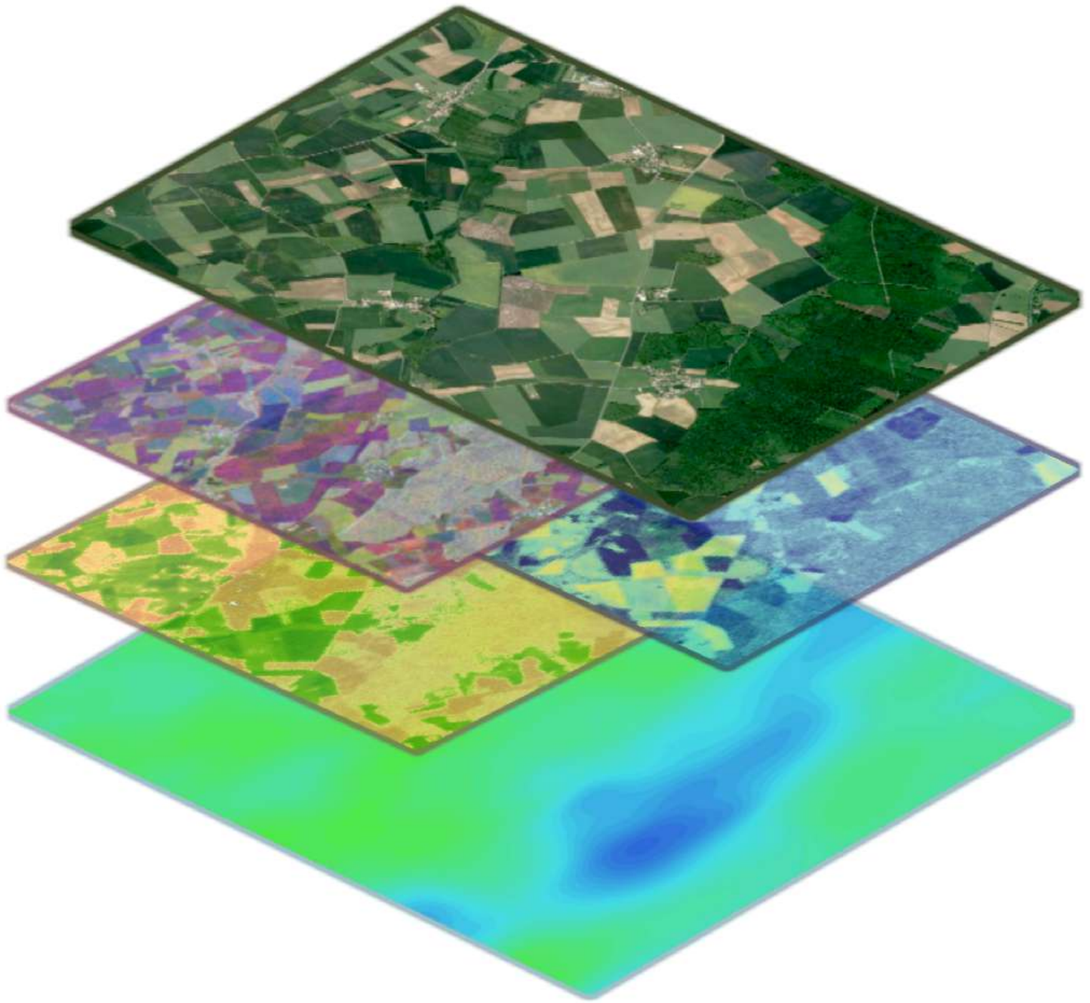
LATEST AI APPROACHES



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Monotemporal approaches

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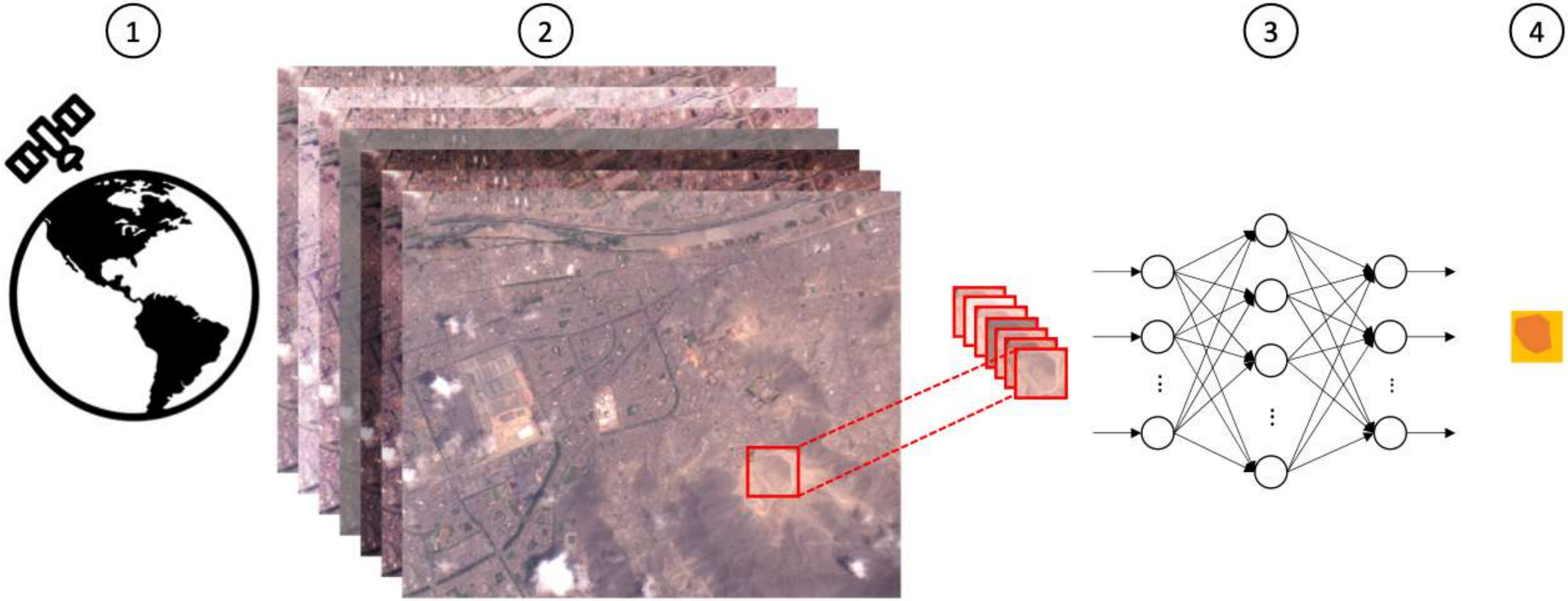
Multitemporal approaches additionally use the temporal dimension



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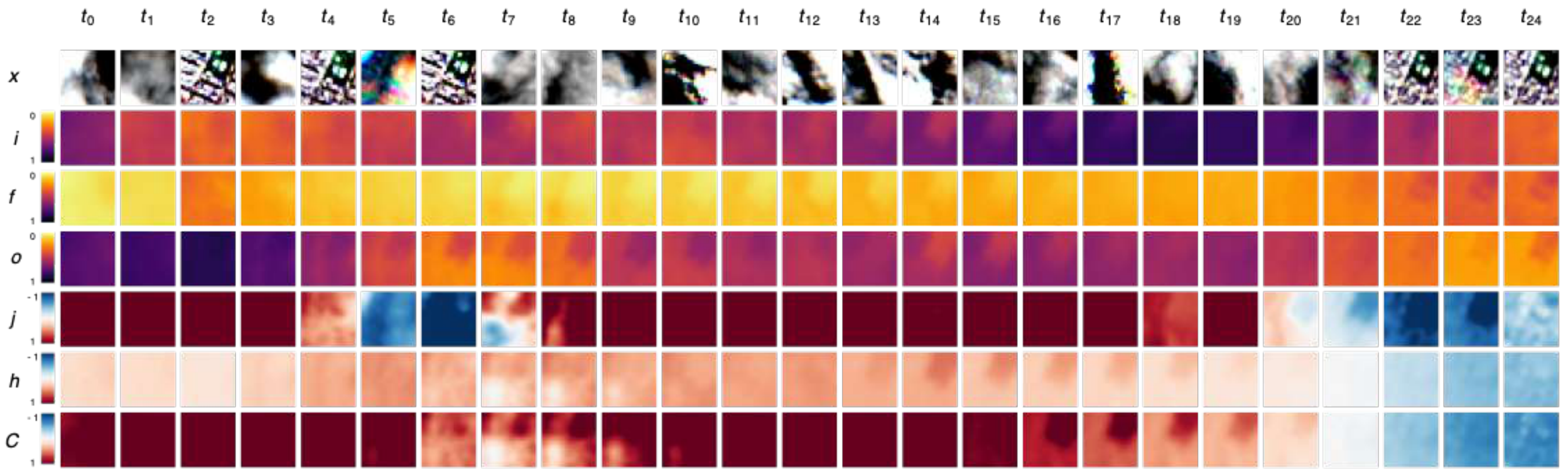
Visualization of an artificial neuron



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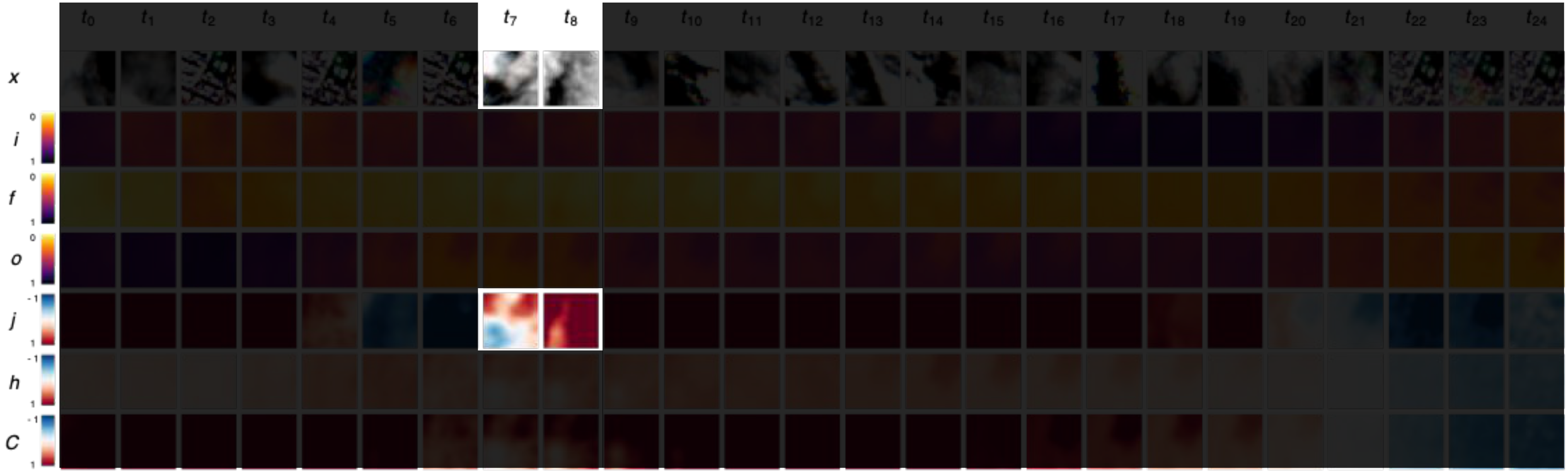

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Federal Ministry of Transport

mFUND
Funding Future Mobility

Workshop series

DRIVEN by DATA

The mFUND Workshops Series about Mobility in Europe

Workshop No. 18

03 December, 12:30-14:00h

Data Mapping – The Future of Public Transportation

Registration: https://tuvrheinland.webex.com/weblink/register/r2cf3a4ebd8aa607c66b23eb40265dd8b

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