



# Friday Talks

Alexander Høiberget - Business Development

January 17th 2025

# ■ INTRO

## Agenda

- About EIDEL, the story so far
- Products
- Services
- Typical customer scenarios
- Competencies and capabilities
- From idea to product
- Partnerships and collaboration
- EIDEL Roadmap and what's important to consider
- Example of standardization projects
- Questions?

# ABOUT EIDEL & THE STORY SO FAR

**EIDEL AS** (Previously Eidsvoll Electronics AS)

Founded 1966 by Erik Olsson in his garage in Eidsvoll, Norway

2025: Employees: 50 (10% PhD).

Turnover 2024: 120 MNOK

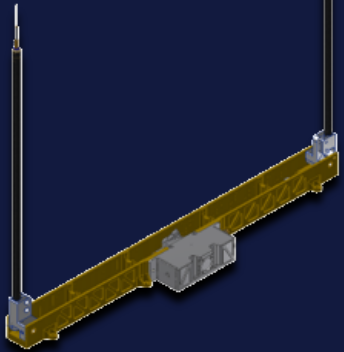
Offices at Eidsvoll and Lillestrøm, Norway



# ■ PRODUCTS, SYSTEMS & SERVICES

## SPACE INSTRUMENTS PAYLOADS & SUB-SYSTEMS

**m-NLP**  
multi-Needle  
Langmuir Probe

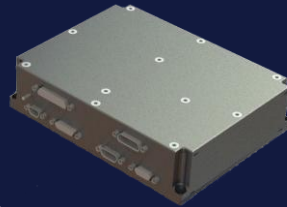


**ERIU**  
EIDEL Remote  
Interface Unit

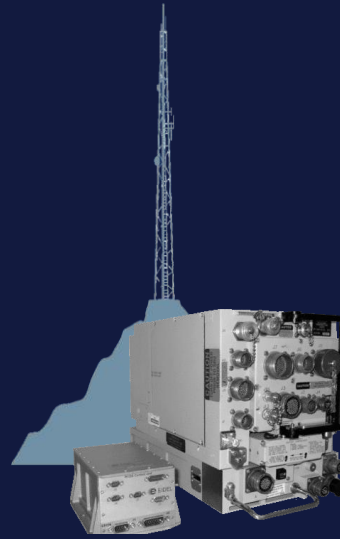


## SECURE COMMUNICATION

**SSL**  
Secure Satellite Link

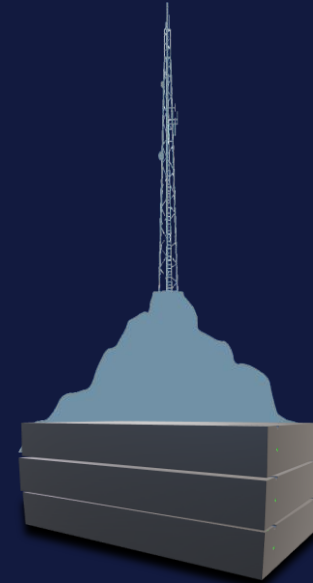


**RCDS®**  
Remote Crypto  
Distribution System



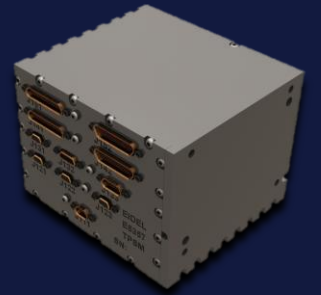
## COMMAND & CONTROL

**RCS**  
Radio Control System



## TELEMETRY & DATA ACQUISITION

**EDDAS**  
EIDEL Distributed  
Data Acquisition System



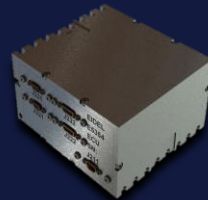
**MSS**  
Miniaturized Sun Sensor



**USLP**  
Unified Space Link  
Protocol  
Encoder/Decoder



**SDL**  
Secure Data Link



## ■ SERVICES



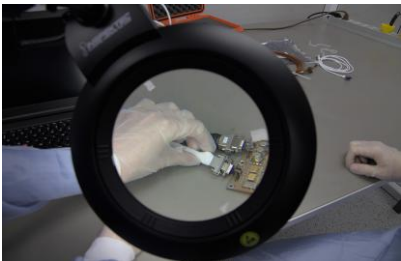
### Space Mission Design

What are the needs of the mission and how do we best achieve our goals? At EIDEL, our Space System Engineers analyze every phase of a mission's lifecycle, from understanding its purpose, scope, and destination, to selecting launch vehicles and launch dates, and finally mapping out all planned maneuvers and operations.



### Research & Development

EIDEL provides research & development activities and various custom design project, including system design and electrical engineering, prototyping, re-design and adaptations. EIDEL has expertise in hardware and software development, analogue and digital signal processing, telemetry, remote control and cryptography, designed for critical applications and harsh environments.



### Assembly Integration, Test & Verification

EIDEL's engineers perform assembly, integration, test and verification of electronics payload components and instrument for our space missions within our cleanroom facilities.



### Cleanroom Rental

EIDEL facilitate a 16m<sup>2</sup> ESD protected and secure cleanroom certified at ISO class 8. The cleanroom can be rented for short and longer assignments and may be increased in size and modified to reach lower ISO-class (i.e. lower particle count) if necessary.

# WHAT WE DO

## TYPICAL CUSTOMER SCENARIOS & NEEDS

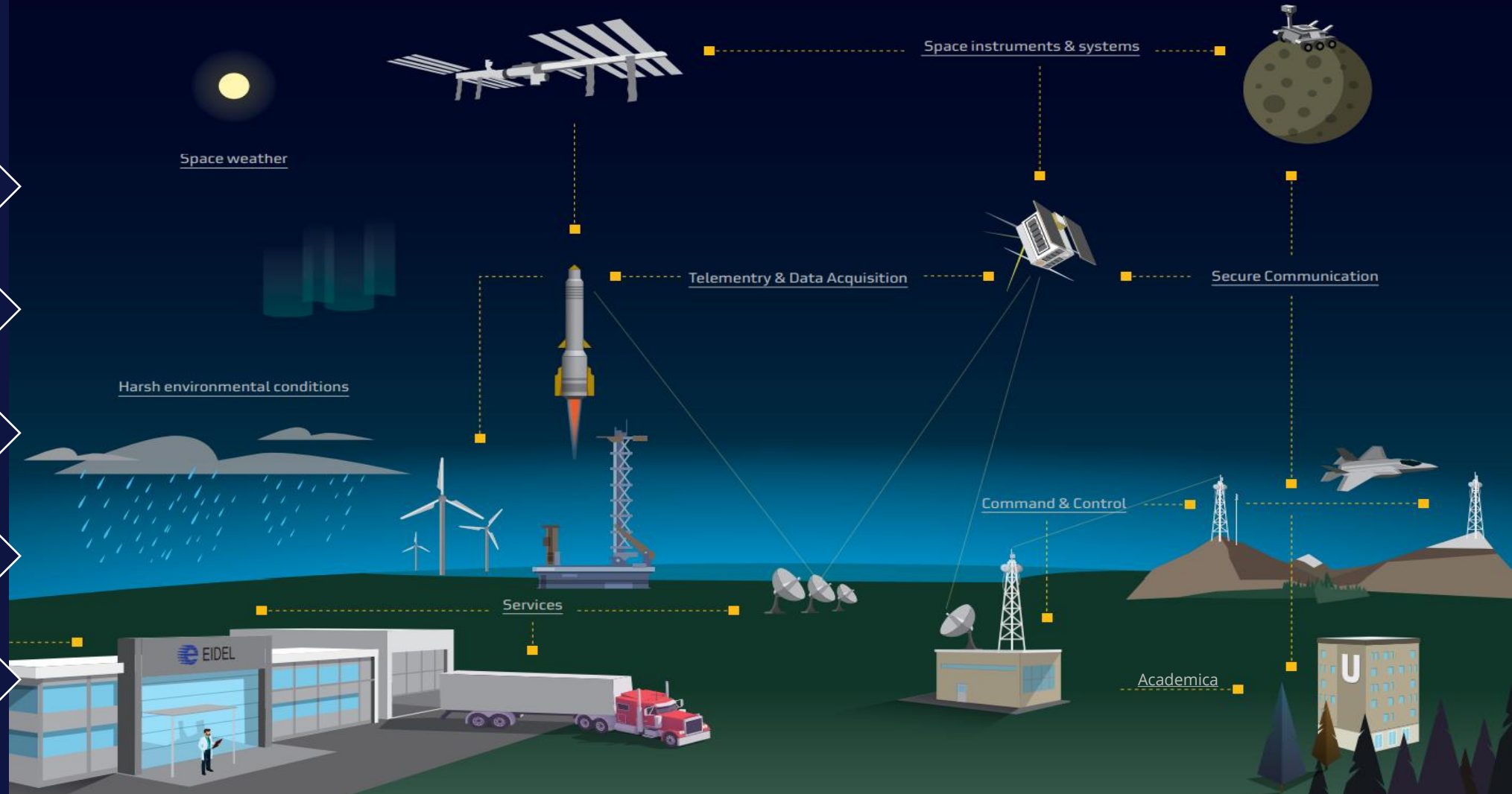
REMOTE LOCATIONS

UNMANNED ASSETS

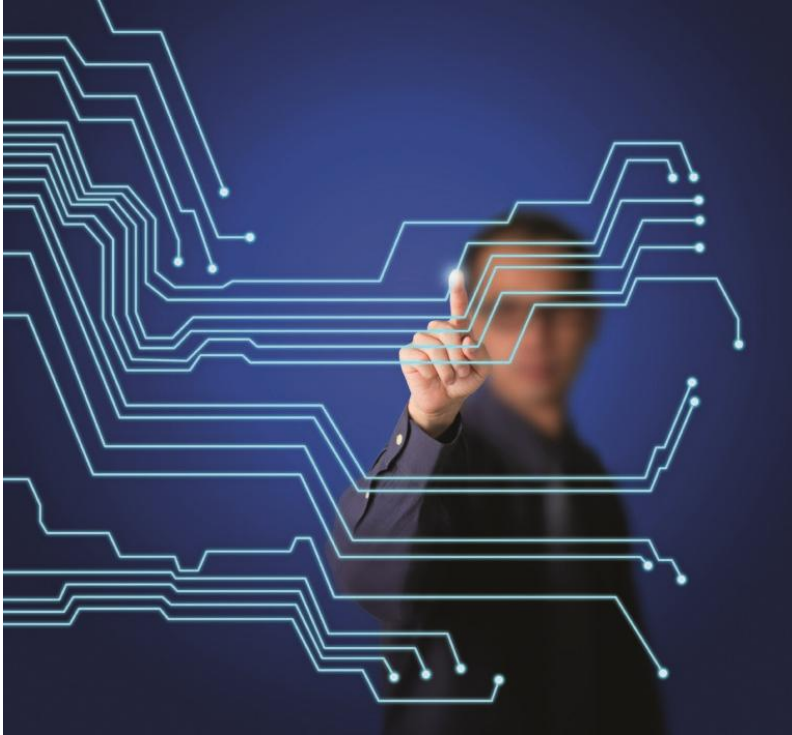
HARSH ENVIRONMENTS

HIGH PRECISION MEASUREMENTS

HIGH SECURITY NEEDS



## ■ COMPETENCIES & CAPABILITIES



- System and sub-system design
- High end Electronics
- Space technology, instruments and system components
- Feasibility studies
- R&D services
- System engineering
- Space project Prime
- High grade security
- Integration/ AIT

# SPACE PROJECTS 2023-2027

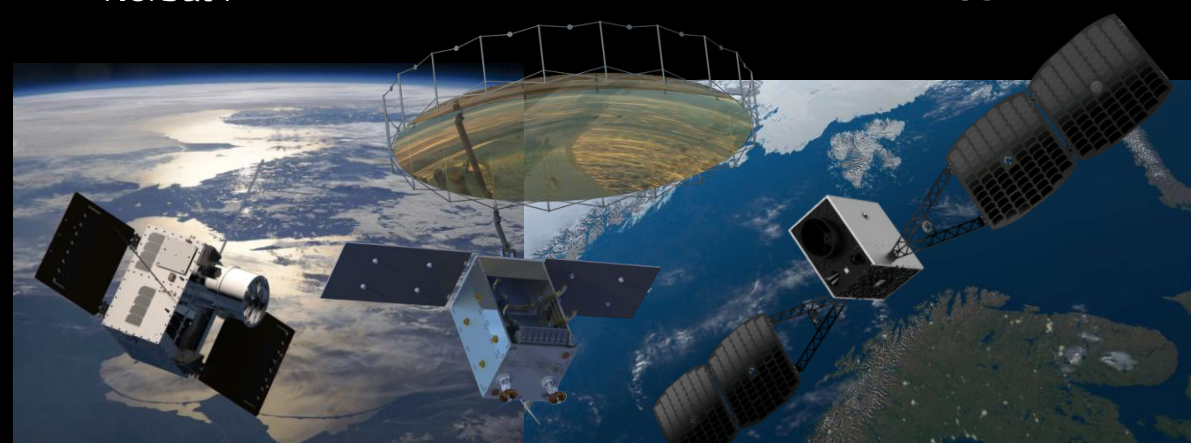
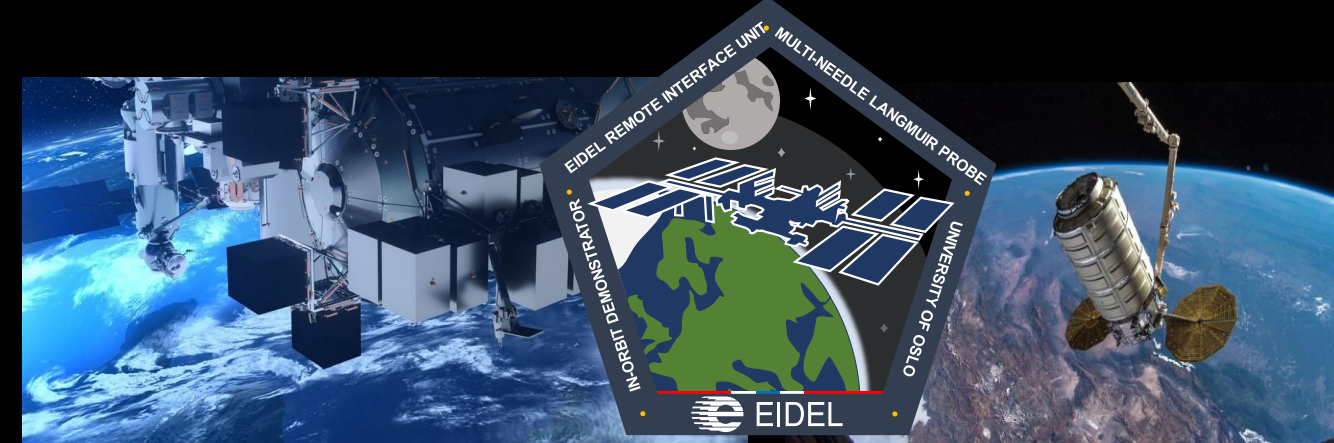


In Orbit Demonstrator of m-NLP on ISS Bartolomeo

NorSat4

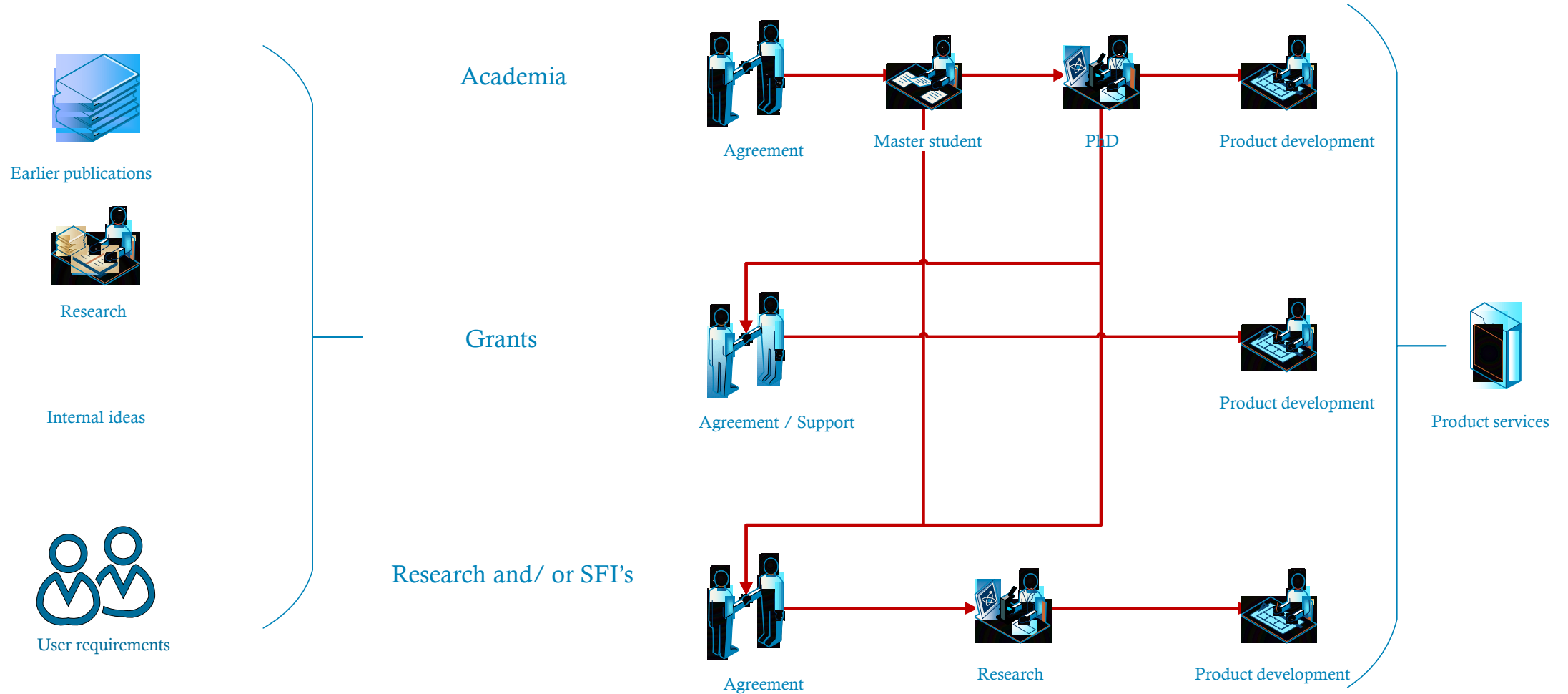
MicroSAR

AOS-D



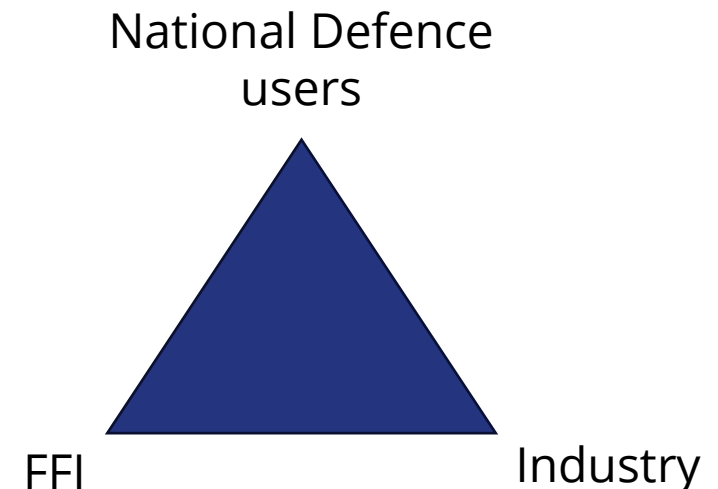


# FROM IDEA TO PRODUCTS & SERVICES



## ■ PARTNERSHIPS AND COLLABORATION

- TTO: Inven2 – industrialization of technology
  - m-NLP
  - MSS
  - FPP
- Academia: UIO, NTNU, UIT, and SFI's: CENSSS, CCIS etc
  - Master & PhD
  - NOSA Innovation funded project: GNSS-R
- Student organization: Orbit NTNU
  - Gold sponsor, cash & in-kind contributions PDR, SE courses,
- Andøya Space Education
  - In-kind: AIT and SE competency transfer to help build capabilities
- Norwegian Space Cluster
- NDRE (FFI) & National Defense
  - Innovation and R&D for National Security needs
  - Trekantmodellene: user driven & iterative
    - Arising needs
    - New technological solutions
    - Changes in surroundings/envrionments



# ROADMAP AND GOING FORTH

## In EIDELs Roadmap

- Increased focus on standardization
  - Why: more efficient, lower cost, lower risk, adoption and support
- Miniaturization, Modular
- Software defined functions
- Focus on Product Development
  - Why: Products produce outcome and value faster
  - Repeatable solutions vs «one offs»
- Focus on Synergy between new technology in R&D projects and existing products
- Focus on Security and Dual Use
  - Both for civil and military use when relevant
  - Implementing new technology, e.g. PQC

## Some topics important to EIDEL

- We focus on technology that solves problems and cover user needs and has a commercial potential
- We need access to «the right» competencies
  - Electronics, FPGA, Embedded, Software, System Design
  - Student organizations and projects build valuable experience and broader system understanding
  - We need specialists more than generalists, i.e. high competencies and experience in the different areas
- Security concerns
  - Academia is by definition «Open» and some projects require more secrecy which may be challenging
  - All EIDEL employees needs security clearance -> security clearance requirements

# STANDARDIZATION

EIDEL is currently developing several products for the upcoming European standardized avionics platform, the Advanced Data Handling Architecture.

Examples are a Payload interface unit (EPICU) and the CCSDS USLP encoder/decoder module, which consolidates communication protocols between NASA, ESA, JAXXA and others. These initiatives enable standardization which will be provide outcomes such as, more robust supply chains, lower production time, lower risk of unexpected events and failures and lower cost.



→ THE EUROPEAN SPACE AGENCY



TEC  
Directorate of Technology, Engineering and Quality

WHAT WE DO COLLABORATE WITH US WHO WE ARE

HOME / ADVANCED DATA HANDLING ARCHITECTURE (ADHA)

## ADVANCED DATA HANDLING ARCHITECTURE (ADHA)

TO CONTRIBUTE TOWARDS THE EUROPEAN SPACE AGENCY'S (ESA) OBJECTIVES OF REDUCING SPACECRAFT DEVELOPMENT TIME, ACHIEVING COST EFFICIENCY, AND PROMOTING FASTER ADOPTION OF INNOVATIVE TECHNOLOGIES, THE ON-BOARD COMPUTER AND DATA HANDLING SYSTEMS SECTION (TEC-EDD) IS CURRENTLY ENGAGED IN SEVERAL ACTIVITIES WITH EUROPEAN INDUSTRY PARTNERS.

The aim is to develop across ESA member states an Advanced Data Handling Architecture (ADHA) based on standardized, interchangeable, and interoperable electronics modules equipped with the latest generation of microelectronics components. This architecture is intended for utilization in Low Earth Orbit (LEO) satellites, particularly for Earth Observation missions.

CONTACT

RESOURCES

- OLIVIER MOURRA**  
H/ On-Board Computers&Data Handling  
Email ↗
- KOSTAS MARINIS**  
On Board Computers and Data Handling  
Engineer  
Email ↗
- FELIX SIEGLE**  
Payload Data Handling Engineer  
Email ↗
- DAVID STEENART**  
On-Board Payload Data Processing  
Engineer  
Email ↗



## ■ QUESTIONS?

*EIDEL is continuously pioneering innovative trusted technological solutions for a more secure and sustainable future.*

*By Empowerment, Synergy and Curiosity*

Thank you for your attention!

Contact me at [ah@eidel.no](mailto:ah@eidel.no)