Supporting the Competitiveness of the European PNT Ecosystem with navisp

ESA Industry Space Days, 17 September 2026

NAVISP, in support of the PNT Ecosystem

- NAVISP ambition is to support :
  - the European and Canadian Industry to succeed in the global market of PNT
  - the Participating States in achieving their national objectives in PNT
- NAVISP projects can address any step of the end-to-end PNT value chain to mitigate any risks preventing market success
- NAVISP encourages the emergence of new entrants as a mean to increase competition

NAVISP is structured in 3 Elements….

Element 1:
Innovation

Develop novel PNT-related systems and technologies along the entire value chain.

Pave the way for future products and services

ESA DRIVEN
BASED ON YEARLY WORKPLAN

FULLY FUNDED

Element 2:
Competitiveness

Improve European industry's capabilities in the global market for PNT technologies and services (products and services)

INDUSTRY DRIVEN
BASED ON OPEN CALL FOR PROPOSALS

CO-FUNDED

Element 3:
Support Member States initiatives

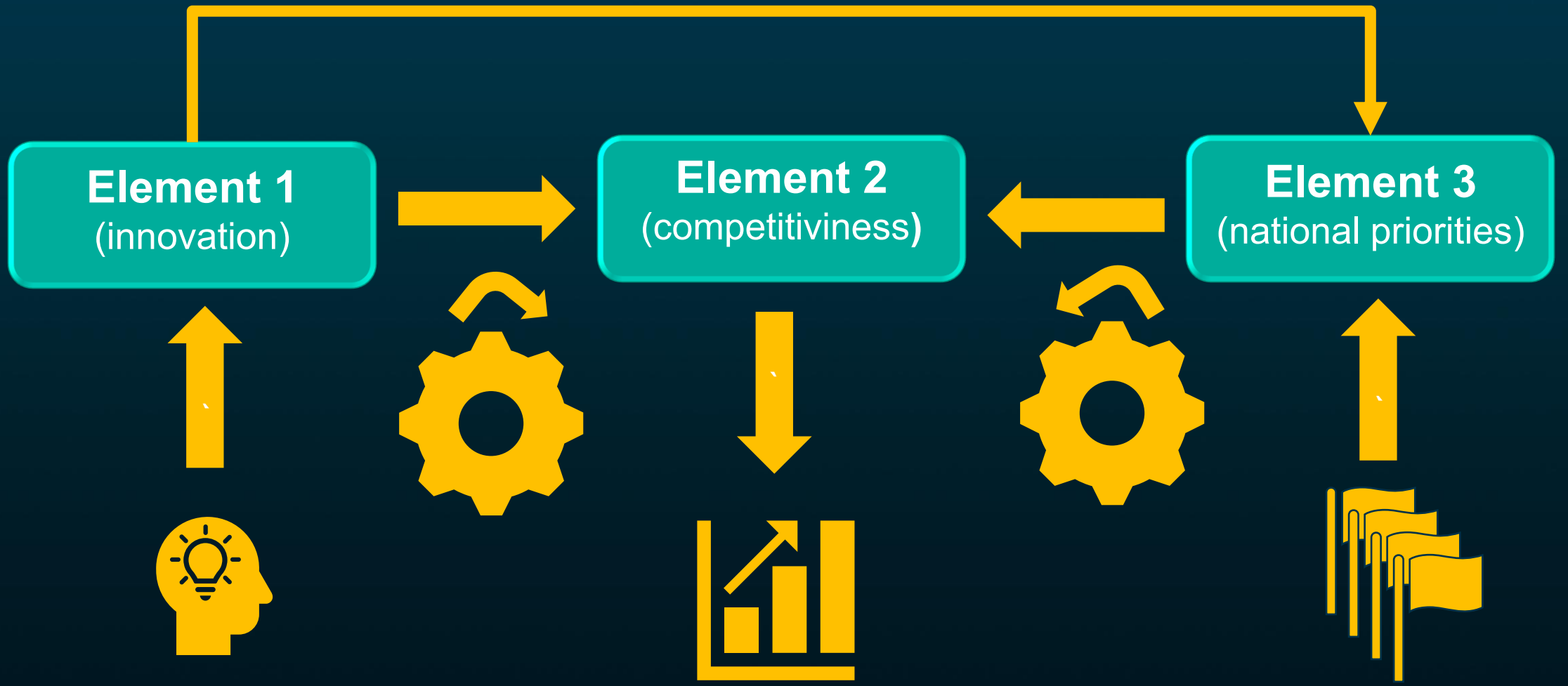
Support European National Programmes along the whole value chain

INSTITUTIONALLY DRIVEN
BASED ON OPEN CALL FOR PROPOSALS

FULLY FUNDED

navisp

…that work in synergy



Innovation in PNT

Enabling PNT Innovations across the value chain

Feasibility / Viability analysis of new groundbreaking PNT concepts

Formulation & implementation of PNT technology strategies & roadmaps

- ESA Driven
- Yearly Workplan
- Fully funded

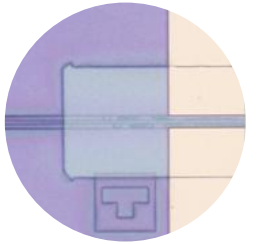
navisp Element 1 “firsts” in PNT

LEO-PNT Studies
2018

Quantum Sensor
2019

GNSS Lunar
2020

Photonics for PNT receivers
2022



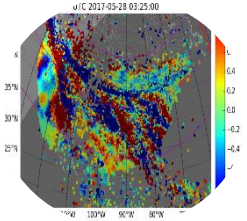
Lithium Niobate Photonic IC
2024

High-accuracy Formation Flying
2025

High-Altitude Pseudo-Satellites for PNT
2018

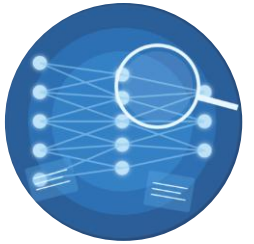
AI Studies applied to PNT
2019

Crowdsourced ionosphere mapping app
2021

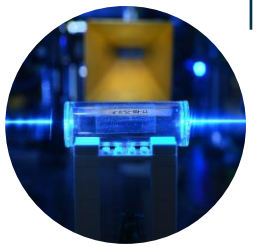


Miniaturised eLoran antenna
2022

Verifiable AI for PNT
2024



Quantum PNT receiver
2025



navisp Element 1 Tenders to be issued in Q4 2026

ID	Title
EL1-117	Resilience Techniques and Algorithms for GNSS Space Receivers in Interference, Jamming and/or Spoofing Conditions
EL1-118	On Demand PNT Services During Crisis
EL1-119	Dual Polarization Arrays for Compact Resilient GNSS Receivers
EL1-125	Receiver Architectures and Beam Scheduling Strategies for Fused PNT
EL1-132	Development and Validation of Flexible eLoran/GNSS Signal Simulator
EL1-133	Resilient PNT by a Combined eLoran/GNSS/INS Approach for U-Space Applications
EL1-134	All Wheather Laser Time and Ranging Links for Optical PNT Systems

The Elemen1 Workplan 2027 is under finalization with more than 20 new activities to be issued during 2027

Competitiveness in PNT

Boost European capabilities in global PNT markets

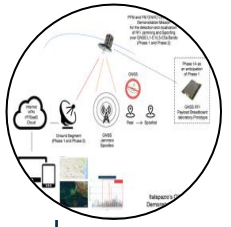
R&D industrial risk mitigation for commercially related PNT product development

Accelerating industrial return on investment

- Industry driven
- Open call
- Co-funded

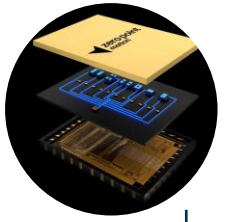
Supporting European PNT Industry with Element 2

GNSS CRPA
2019

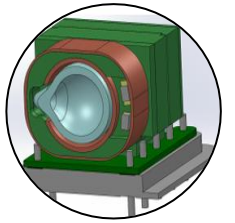


GNSS ISR (GINKO)
2021

Relative GNSS Navigation & Situational Awareness
2023



Photonics IMU
2024



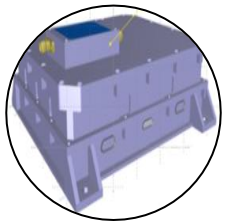
Space Clock Optimization for PNT in LEO (MIRA)
2025

GNSS threat detection
2026

Digital Tachograph with OSNMA
2018

Digital Modem for TWSTFT
2020

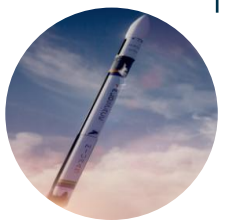
GNSS New Space Receiver (MARCONI)
2021



DORT - Dynamic Optical Ranging & Timing
2024

Flexible PNT Simulation (Stella NextGen)
2025

Hybrid PNT for Microlauncher (HALCON)
2025



Multi-resilient PNT chip
2025

navisp impact on the PNT ecosystem

Knowledge

- 370 OP received
- 247 Committed projects
- 123 Completed projects
- 115 ESA TO involved

Capital

- 234 M Investment in projects
- 88 M Industrial investment
- 71 Projects led by newcomers to ESA

Ecosystem

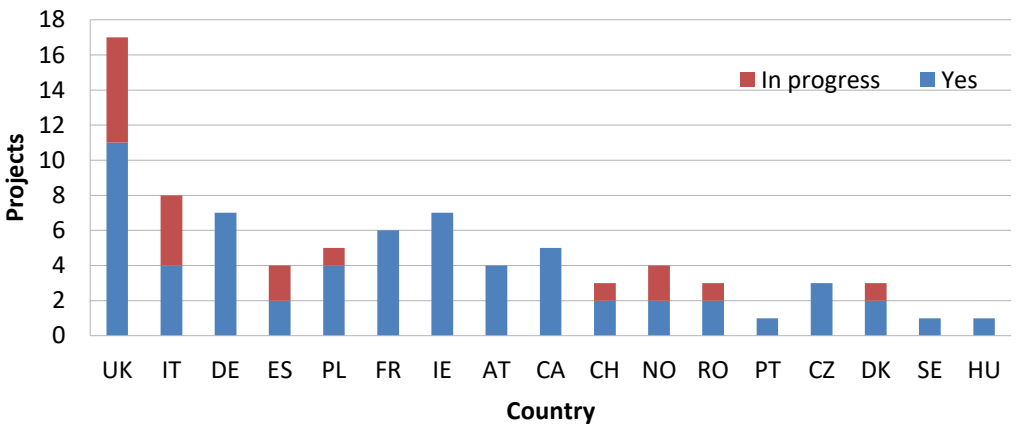
- 296 Industrial Entities
- 179 SME
- 19 Market owners involved

Customer

- 64 Products in the market
- 28 Standalone products
- 36 Upgraded products

Source: NAVISP Element 2 Data

Projects leading to commercial products



Space Programmes / Missions:

- OpSTAR
- VDES-R
- FreeGNSS
- GINKO
- WISDOM
- SAFIR-PNT

Element 2 – How to Apply

Outline Proposal:
https://ideas.esa.int/

National Delegation support:
https://navisp.esa.int/nationaldelegation/

Full Proposal (requires supplier reg):
https://esastar-publication.sso.esa.int/

Contract Negotiation and award

Support to Member States

Support European National Programmes across the value chain

- Preparation for public services
- Test-ranges

Understanding PNT resilience and mitigation measures

- Institutionally driven
- Open call
- Fully funded

Supporting Participating States PNT with Element 3

Interference Capture Device
2019

Space-based VDES-R
2020

PNT Automotive Test-Center
2021

Ground-based VDES-R
2023

TOUCAN

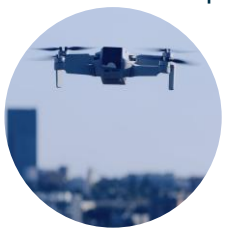
UK TWSTF National Time
2025

Trondheim Maritime Test Area
2019

UK eLoran Time Diss.
2021

Drone Cyber Evaluation Facility CYTEF
2022

BE Secure UTM
2024



PL GNSS Mon Network
2025

Grimaldi Innovation Lab
2026

GLIMS

NAVISP is supporting efforts to rebuild eLoran

Under the leadership of the UK PNT Office, an international conference of countries interested in e-Loran was organized at ESTEC in March'26

Combination of eLoran and signals from space

eLoran horizontal position accuracy can be < 10 m with differential corrections

eLoran can be a robust source of absolute time to improve the resilience of space-based PNT solutions

Element 3 – How to Apply

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element 3 – support to member states

4 months

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Contract Negotiation and award

How to reach navisp

- **NAVISP events**

https://navisp.esa.int/calendar

- **LinkedIn**

https://linkedin.com/company/navisp-esa/

Upcoming Events

- **Webinar: ”Using NAVISP to Support LEOPNT Downstream"**
  - **28/09/26, 14:00 – 15:00 CEST**
  - Learn roadmap to CELESTE broadcast signal availability and what developers can do to prepare
  - How NAVISP can help de-risk the development of downstream products and services

Using NAVISP for LEOPNT Downstream

- **NAVISP Industry Days**
  - **14/10/26 – 15/10/26, Rome**
  - Bi-annual event focusing on the PNT hot topics and trends
  - Opportunity to:
    - learn about the PNT hot topics and trens
    - to network with European PNT ecosystem
  - Detailed agenda at navisp.esa.int
  - Registration is free

NAVISP Industry Days 2026

NID26 High-level Agenda

Rome, 14-15 October 2026

October 14 - Session 1
14:30 - 16:00

Navigating the Storm
Strategies for PNT Resilience and Threat Mitigation

GNSS jamming and spoofing have surged since 2022, driven by conflicts and cheap hardware. Critical infrastructure, aviation, maritime, energy, finance, relies on GNSS for positioning and timing, yet its signals are extremely weak and easily disrupted. All these factors form the ingredients of a perfect storm.

This session will explore the key strategies being implemented to overcome these challenges in the introduction and deployment of commercial PNT products and services, highlighting practical approaches and emerging opportunities.

October 14 - Session 2
16:30 - 18:00

The Next Maritime PNT
PNT for Ports and Underwater Infrastructure Management

The session will bring port authorities, shipping companies and infrastructure operators together to discuss PNT needs in ports and underwater environments, where resilient positioning and timing are critical for goods handling, safe vessel berthing, and monitoring subsea infrastructure.

These use cases highlight the broad reliance on PNT and the need for robust solutions in complex maritime and near-shore conditions.

October 15 - Session 3
09:30 – 11:00

Unmanned Operations
Challenges of Scaling-up Drone Applications

Drone applications are rapidly moving from pilots to real-world deployment across sectors like transport, ports, and public safety, but scaling remains challenging. It requires not only mature technology, but also strong regulation, reliable PNT, and solutions to security risks like counter-UAS.

This session brings together regulators, authorities, and users to explore current drone use in traffic management, port operations, and safety-critical infrastructure monitoring.

October 15 - Session 4
12:00 – 15:00

eLoran and Indoor
And Complementary PNT Technologies

Enhanced long-range navigation (eLoran) is a high-power terrestrial system for positioning and timing in safety-critical sectors.

The March 2026 ESA/ESTEC conference confirmed its role as a GNSS complement or backup, including in Europe. NAVISP supports ongoing antenna, receiver, and timing developments.

This session will highlight eLoran test results alongside other complementary solutions, such as 5G broadcast positioning and advances in indoor positioning.

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