



NAVISP Industry Days

Day 1: 22nd January 2020, ESTEC, Erasmus High Bay Area

13:30 - 14:35	Session 1: Introduction	
	<i>Welcome</i>	Philippe Michel, Head of Navigation Strategy and Programme Department, ESA
	<i>The NAVISP Programme</i>	Pierluigi Mancini, Head of NAVISP Programme Office, ESA
	<i>Assessment of NAVISP</i>	Rafael Lucas, NAVISP Advisory Committee Secretariat, ESA
	<i>GNSS Market Report</i>	Invited Speaker: Flavio Sbardellati, Market Development Department, European GNSS Agency (GSA)
14:35 - 16:25	Session 2: NAVISP Element 1 – “Innovation in Satellite Navigation”	
	<i>Introduction</i>	Giorgio Solari, Head of NAVISP Element 1 Office, ESA
	<i>Innovation Beyond GNSS</i>	Invited Speaker: Diana Furchtgott-Roth, Deputy Assistant Secretary for Research and Technology, U.S. Department of Transportation
	<i><Industry Presentations></i>	Integrity Monitoring and Prediction Concept for Autonomous Car Resilience and Safety (IMPACARS), NSL Trusted Radionavigation Via Two-Way Ranging, Space Systems Finland Ltd Weather Monitoring Based on Collaborative Crowdsourcing, Airbus Defence and Space SAS High-Altitude Pseudo-Satellites (HAPS) for PNT, Sonaca S.A
16:25 - 16:45	Coffee Break	



16:45 - 18:00

Round Table: "Solutions for Autonomous Road Vehicles"

Chair: Rafael Lucas NAVISP Advisory Committee Secretariat, ESA

Panelists: Michael Baus Project Director, Vehicle Motion and Position Sensor, Chassis Systems Control,
Robert Bosch GmbH

Irma Rodríguez Head of GNSS Algorithms, Products and Services, GMV

Joop Veenis Project lead ESA ESTEC Connected and Automated Shuttles,
Dutch Automated Mobility

18:00 - 19:00

Networking Cocktail



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09:00 - 11:30

Session 3: NAVISP Element 2 – “Competitiveness in PNT”

Introduction

Alessandra Fiumara, NAVISP Element 2 Manager, ESA

*UAS Navigation Aspects and
Interaction with other Airspace Users*

Invited Speaker: Andreas Lipp, EUROCONTROL

<Industry Presentations>

Crowd-sourced platform for GNSS anomaly identification, isolation and attribution analysis (COLOSSUS), NSL

Space GNSS Receiver, Syderal

Triband antennas for automotive (MISSATO), Taoglas

10:30 - 10:50

Coffee Break

<Industry Presentations>

Robust Remotely Piloted Aircraft System (RPAS) Missions in Arctic Environments, Integrated UAV

Galileo Public Authenticated Server-Based Snapshot Positioning (G-PASSION), Intecs Solutions

SPACEKEYS, Flight Keys



11:30 - 13:00

Session 4: NAVISP Element 3 – “Support to Member States”

Introduction

Rafael Lucas, NAVISP Advisory Committee Secretariat, ESA

GNSS Vulnerability to Interference and Spoofing

Invited Speaker: Stefano Debei, CISAS, University of Padova

<Industry Presentations>

Maritime Resilience and Integrity of NAVigation (MARINAV), NLA International

Advanced RFI Detection, Alerting, and Analysis System (ARFIDAAS), SINTEF

Cybersecurity Test & Evaluation Facility for Belgian future space and air transportation system (CyTEF), Belgian Royal Military Academy

GNSS vulnerability & mitigation in Czech Republic, GNSS Center of Excellence

13:00 - 14:30

Lunch Break

14:30 - 16:00

Session 5: Closing Session

NAVAC Recommendations for NAVISP Phase 2

Invited Speaker: Roger McKinlay, NAVISP Advisory Committee Chair

Conclusions and Way Forward

Pierluigi Mancini, Head of NAVISP Programme Office, ESA

Final Remarks

Paul Verhoef, Director of Navigation

16:00

End of Meeting

At the event, several opportunities for rides in the “Orbiter” (ESTEC autonomous shuttle) will be organized during the breaks



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Industry Demonstrations

1. **AGORA**, system for the management of crowd and organiser staff leveraging on GNSS positioning in order to improve security and help organizing large public events. *Romanian InSpace Engineering.*
2. **DRACONAV**, industrial version of a secure GNSS module able to detect GNSS signal spoofing, replay and jamming attacks and provide an estimated PVT (Dead Reckoning) when an attack is detected. *FDC.*
3. **Galileo Public Authenticated Server-Based Snapshot Positioning (G-Passion)**, GNSS server-based position authentication service using the Galileo signal. *Intec Solutions.*
4. **GDARS**, advanced GNSS RF-bands record and playback instrument, combining the highest fidelity with first class flexibility and performances. *Saphyrion.*
5. **GIDAS**, scalable and flexible real-time GNSS Interference Detection & Analysis System which can be used as standalone monitoring station for interference detection and can be upgraded to a more complex network of stations which allows interference detection and interferer localization. *TeleConsult Austria.*
6. **High Accuracy Assistance Service (HAAS)**, high-precision, cloud-based corrections service. It contains highly accurate corrections for orbits, clocks, ionospheric and tropospheric delays. *RX Networks.*
7. **NextGen GNSS Antenna**, multi-frequency/multi-constellation GNSS antenna aiming at providing centimetric accuracy and intended initially for use in the driverless car market. *Helix Technologies.*
8. **SPACEKEYS**, RAIM prediction system offering easy integration into any flight planning system as well as introducing new innovative features that will allow an aircraft operator to avoid areas of low GNSS accuracy already during the trajectory creation process. *Flightkeys.*