



GNSS Vulnerability and Mitigation in the Czech Republic

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Dr. Tomáš Duša

GNSS Centre of Excellence



Objectives of the project

- High level objective
 - to support Czech Republic's activities related to the GNSS/PNT vulnerability
- Specific objectives
 - to create a complex overview of (critical) infrastructure dependency on GNSS/PNT on national level
 - to prepare recommendations of mitigation measures against GNSS/PNT to particular stakeholders and governmental institutions

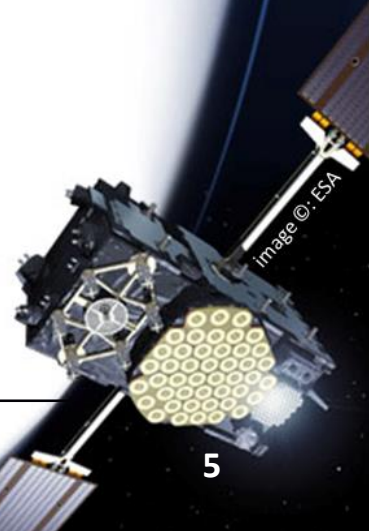
- Activities = WPs:
 - Overview and description of stakeholders using GNSS/PNT and infrastructure operators relying on GNSS/PNT
 - Detailed analysis of the vulnerability per specific infrastructure operator
 - On field validation of GNSS/PNT threats on infrastructure operator
 - Mitigation measures - recommendations for increase protection against threats

Results expected

- **WP1**
 - Broad picture of national (critical) infrastructure and its dependency on GNSS, understand range of fragmented activities, identify relevant stakeholders in individual industrial sectors (domains).
- **WP2**
 - Understanding RFI threats to GNSS/PNT in particular industry domains for government, state authorities & infrastructure operators
- **WP3**
 - Understanding GNSS RFI threats & real impact based on measurements on real campaigns
- **WP4**
 - Recommendations for mitigation measures for increase protection of CI, webpage with simple self-assessment tool

Addressed national needs

- ANSP's demand and historical testing campaigns
- Follow-up to the development of national GNSS RFI Detector
- Law No. 240/2000 The law on critical management (The critical act)
- Demand of the Ministry of Transport
- NCISA's activities & its demand
- New tolling system based on GNSS in the CR
- EC's European GNSS Interference Task Force



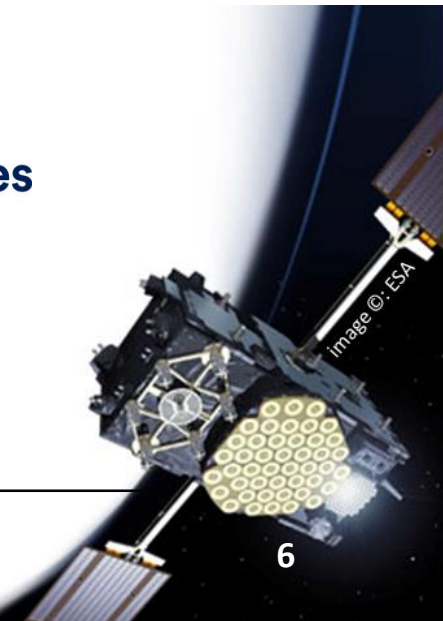
Consortium



Suppliers



Support & engagement



GNSS Centre of Excellence

GNSS Centre of Excellence (GCE) was founded in 2012

- Professional association of legal entities

- Founding members:

- ANSP of Czech Republic



Air Navigation Services
of the Czech Republic

- Czech Railways



**SPRÁVA ŽELEZNIČNÍ
DOPRAVNÍ CESTY**

- Railroad infrastructure
directorate

- Road & motorway directorate



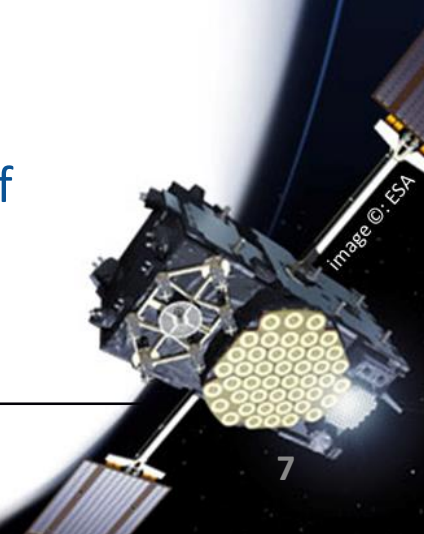
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- Associated members:

- SMEs, R&D companies & R&D centres, Universities

- Techniserv, WheelTug PLC, EXACT Control System,
CTU in Prague, Žilina University, VUGTK, Universita of
Pardubice, ŠKODA AUTO University, VUS BB, OHB CZ

- Czech & Slovak overlay





RDVELHO

SSF

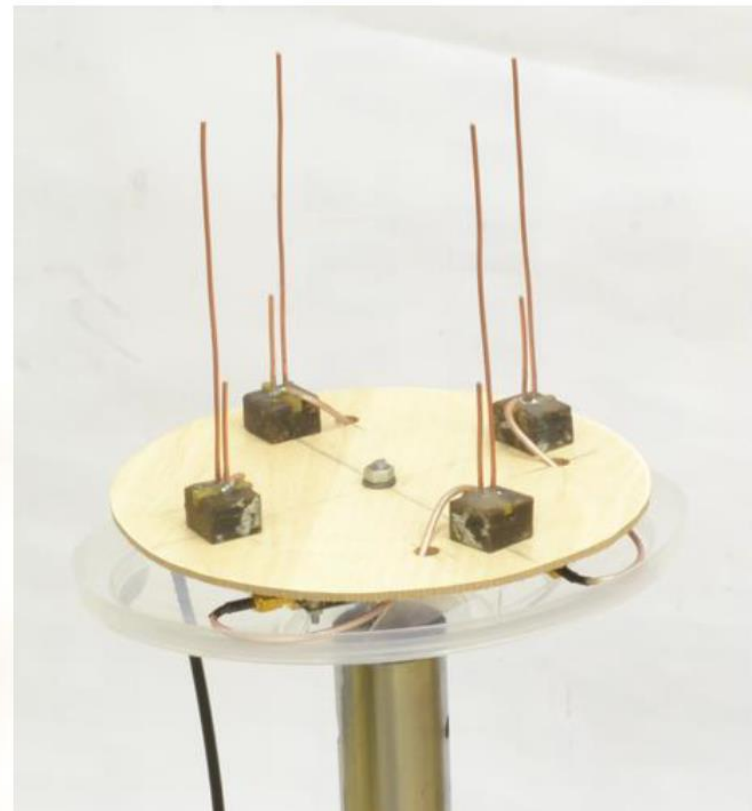
creating
an intelligent
world

SSC

Detection station & installation

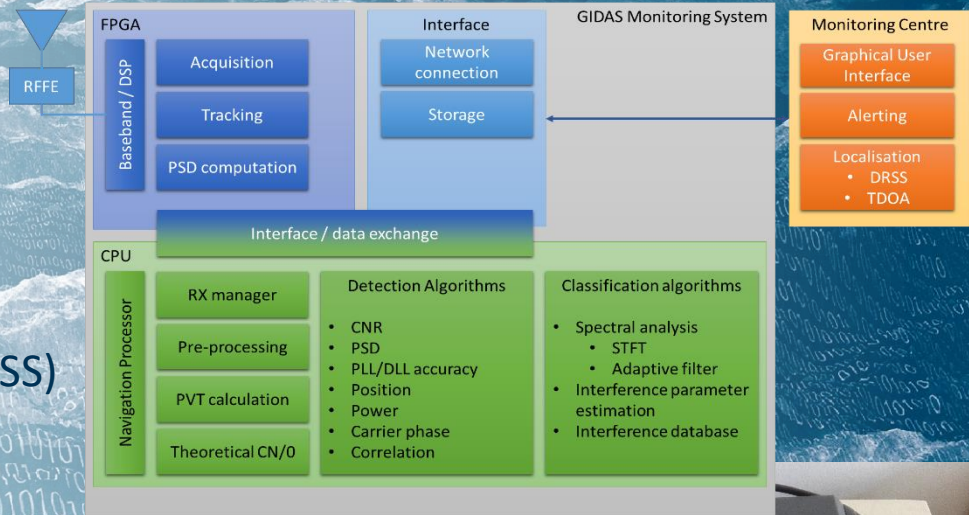
Czech

Detector



GIDAS - Interference detection & analysis system

- Multi-system multi-band GNSS interference monitoring system developed by OHB Digital Solutions Austria
 - GPS L1, L2, L5
 - Galileo E1, E5, E6 (optional)
 - GLONASS G1, G2
 - BeiDou B1, B2
 - SBAS (EGNOS, WAAS, SDCM, QZSS)
 - Detection
 - Classification
 - Localization
- Development together and with funding from European Space Agency





Dr. Tomáš Duša
director

e-mail: tomas.dusa@gnss-centre.cz

web: www.gnss-centre.cz

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