

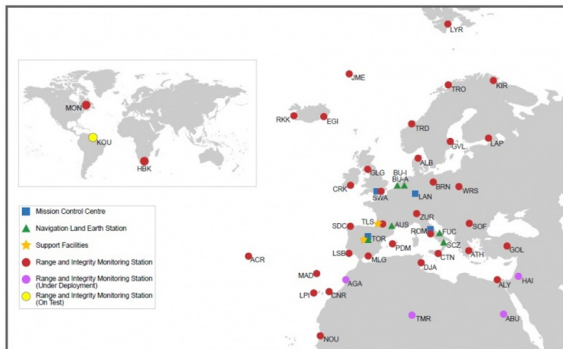
## STUDY FOR A MONITORING STATION FOR EGNOS TO SUPPORT SERVICES IN EASTERN EUROPE

### Goal of the project

The objective of the study is the automatic reporting of EGNOS performance over Romania as well as the assessment of corrections transmitted by other SBAS.

### Short description of the project

Due to its geographical location, Romania is an ideal candidate for system performance monitoring at the border of EGNOS service area. Receivers placed in most parts of Romania will be able to track, in addition to EGNOS, also the Russian Federation's System for Differential Corrections and Monitoring (SDCM) and India's GPS Aided GEO Augmented Navigation system (GAGAN). UPT implemented within ESA regulatory framework and based on ECSS standards, all activities related to: an automatic reporting of EGNOS performance over Romania and assessment of other SBAS visible from Romania.



EGNOS Ranging and Integrity Monitoring Stations (RIMS) Sites

### Project implemented by

UPT as contractor and Thales-Alenia Space France, Pildo Labs Spain as subcontractors

### Implementation period

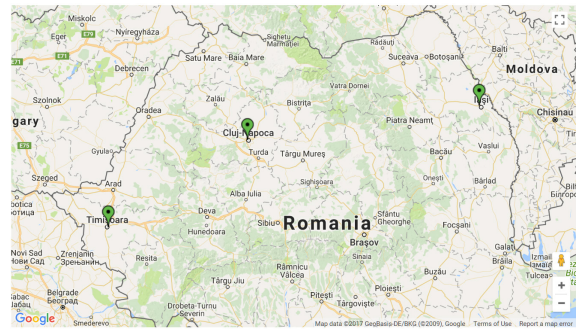
Sep 19 2016 – Mar 19 2018; 1 year of warranty after end of contract

### Main activities

- Management;
- Site Ranking;
- Site Selection;
- Deployment;
- Automatic Reporting & Performance Comparison;
- Communication

### Results

UPT deployed a monitoring site network, in Timisoara, Cluj-Napoca and Iasi, for the EGNOS service and all GNSS systems within Romania and archived the data for remote access by the Agency.

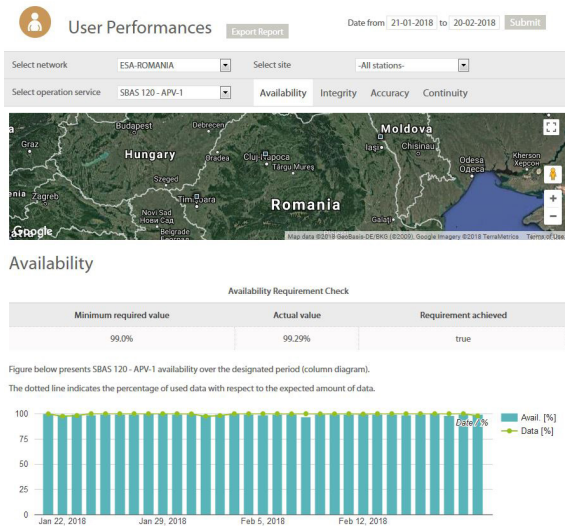


The three stations deployed at UPT-Timisoara, UTCN-Cluj and TUIASI-Iasi.

The respective locations were chosen at technical universities (UTCN and TUIASI), with whom UPT has signed hosting agreements. The user performances are monitored using the owl, a cloud service offered by Pildo Labs. The data is collected by PildoBoxes.

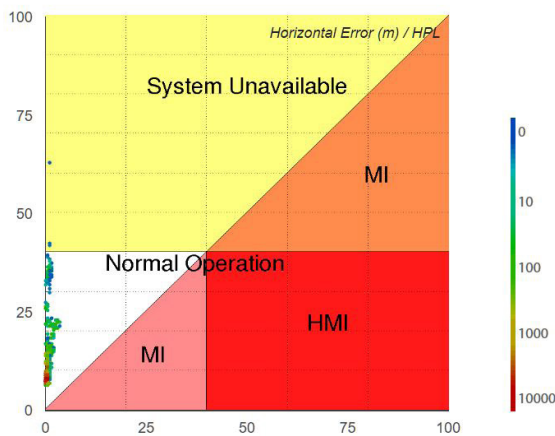


The antenna deployed at UPT.



User Performances monitored using the owl cloud service: availability (SBAS 120- APV 1). This is the probability of the system being available for any given user at any given time.

### Stanford Plot Horizontal



Integrity Stanford plot for UPT station (SBAS 120 – APV 1). Integrity is the system's ability to provide warnings to the user when the system is not available for a specific operation.

Deliverables: Site Selection Justification Document, Volume Simulation Plan, Service Volume Simulation Report, Hardware Deployment Plan, Hardware Deployment Report, Project Management Plan, Executive Summary Report, Financial Report, Final Report, Contract Closure Summary.

## Applicability and transferability of the results

The subject was evaluated at the start at technology maturity level 1 (Scientific Research) and is aimed to conclude the project at technology readiness level (TRL) 6: Model demonstrating the critical functions of the element in a relevant environment.

## Financed through/by

European Space Agency (ESA), contract number No. 4000 117 527 / 16/NL/CBi – UPT: 115000 EURO, Thales Alenia: 15000 EURO, Pildo Labs: 20000 EURO

## Research centre

Intelligent Signal Processing Research Centre (ISPRC)

## Research team

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