GENESIS
Towards an SSV for Galileo

13th ICG Meeting, Xi'an, China

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Project Overview

GENESIS - **G**ALIL**E**O I**N**NOVATIV**E** **S**PACE SERV**I**CE **S**OLUTION

- 🪐 The GENESIS Project's overall objective is to evaluate a **possible new Galileo 2nd Generation (G2G) service** targeting **Space Users**
- 🪐 Review **Galileo's capabilities,** identify **if** specific **user needs** not met

- 🪐 Project Kick-off, April 2017 and ending December 2018
- 🪐 Consortium:
  - 🪐 Thales Alenia Space and SpaceTec Partners
- 🪐 Project overall coordination:
  - 🪐 European Commission, DG GROW
- 🪐 Technical coordination:
  - 🪐 European Commission, Joint Research Centre

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Project Main Objectives

GENESIS - **G**ALIL**EO** I**N**NOVATIV**E** **S**PACE SERV**IC**E **S**OLUTION

🪐 GALILEO 1ˢᵗ Generation

- 🪐 Characterize GALILEO Space Service Volume (LEO – MEO – GEO), **in- line with ICG activities and outcomes**
- 🪐 Characterize GALILEO satellite emissions/antennas

🪐 GALILEO 2ⁿᵈ Generation

- 🪐 **Define Mission level requirements for Space Service**
- 🪐 Investigate Signal Processing techniques specific for Space users
- 🪐 Investigate the use of GALILEO for missions above GEO altitude

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GALILEO Mission requirements for Space Services 1/2

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Definition Approach

- Extensive survey of **user needs** was conducted, including:
  - Satellite manufacturers and operators
  - Space receiver manufacturers
  - Launcher operators
- User needs translated into **mission requirements**
- The user requirements assessed with a view to:
  - **ICG WG outcomes**
  - G1G gaps (w.r.t. user requirements)
  - potential features for G2G to cover gaps and overall system impact
- GALILEO Mission requirements derived for different **user classes**

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GALILEO Mission requirements for Space Services 2/2

GENESIS - GALILEO INNOVATIVE SPACE SERVICE SOLUTION

G1G SSV CAPABILITIES

SURVEY → USER NEEDS → USER REQUIREMENTS →

GAP ANALYSIS
Cost/Benefit analysis
SSV ANALYSIS
CONSORTIUM EXPERTISE, LITERATURE SURVEY
ICG OUTCOMES

G2G Space Service requirements
User 1
User 2
User n

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