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# Welcome to

## SPACE FOR INNOVATION IN RAIL



13-14 September  
Madrid

## #Satellite4Rail





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23



Jose Bertolín

CLUG 2.0

# CLUG Demonstration of Readiness for Rail



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# CLUG 2.0 In a Nutshell



Partners: 10



Duration: 24 months



Starting date: Feb 23



End date: Jan 25



# CLUG 2.0 OBJECTIVES

Demonstrate and complement the existing European Train Control System (ETCS) odometry system through an on-board GNSS+EGNOS based multi-sensor fusion architecture enabling absolute safe train positioning and navigation whilst also transforming the way train localisation is done today

The main objectives of CLUG 2.0 are based on work performed in CLUG (along the track)

- Consolidation of user needs and system requirements (**Along Track**, Start of Mission and Track selectivity)
- Consolidation of safe localization system architecture and prototype new critical functionality
  - Track Selectivity and Safety
  - Sensor and system levels FDE algorithms
  - Confidence Intervals computation and global Integrity concept
- RAMS analysis on the consolidated functional architecture of the system.
- Live demonstration/Replay (Switzerland) to consolidate readiness of the CLUG multi-sensor fusion algorithms

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# CLUG 2.0 Reasoning & Links

- Demonstrate the feasibility of using EGNSS in rail signaling solutions (in term of operations and performance)
- Validate and contribute to the critical points regarding standardization

