



**INECO
TIFSA**

GNSS application to Aviation and Rail (INECO-TIFSA activities)

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Overview of INECO-TIFSA

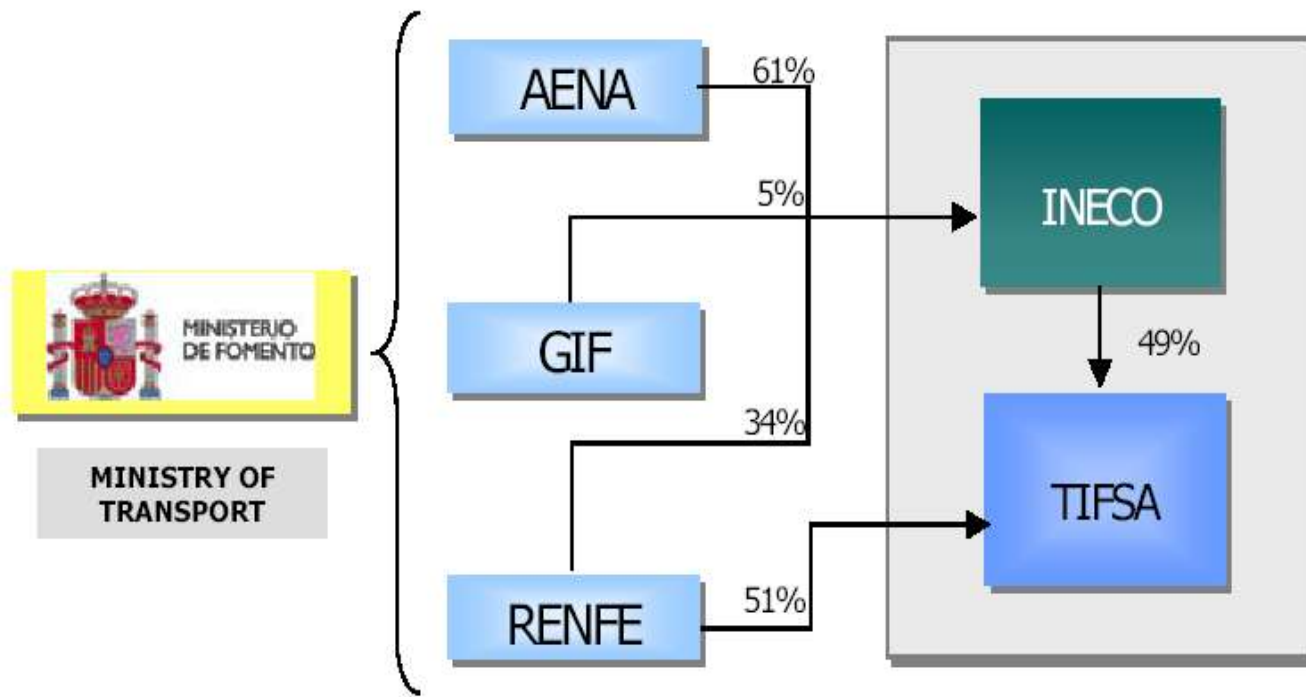


- Ingeniería y Economía del Transporte, S.A. (INECO) was founded on 1968 to offer independent technological support for the development of the investment programmes in the field of transport.
- Tecnología e Investigación Ferroviaria, S.A. (TIFSA) was created by the Spanish Railways (RENFE) to strengthen technological development in the railway field.
- INECO, in an effort to integrate the different areas of transport, thus providing a most exhaustive control of the final works, acquires 49% of TIFSA in 1999.
- Therefore, the association INECO - TIFSA is born to enlarge the range of services and technological solutions offered to both national and international clients.

Shareholders



ADMINISTRATION PUBLIC AUTHORITIES PUBLIC COMPANIES



GNSS Activities



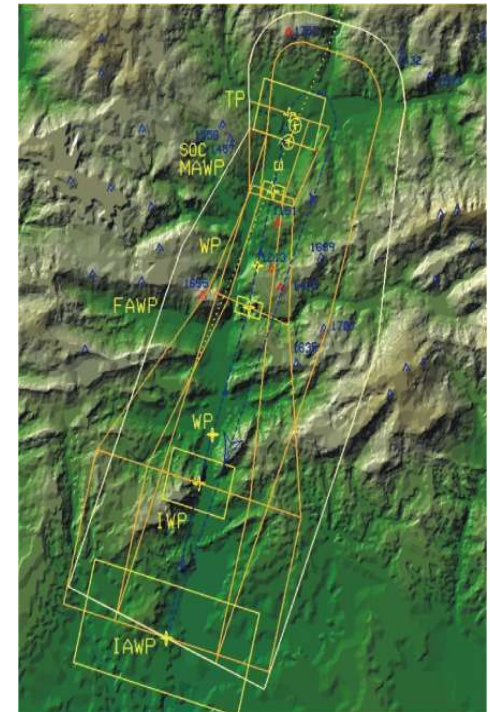
- Our vision:
Development, implementation and application of new technologies based on GNSS applied to the transport industry.
 - Aviation
 - Railway
- Main areas of activity
- Also Consultancy in Concessions, Intermodal transport, Road Transport.



Aviation GNSS related activities



- Air Navigation competencies:
 - GNSS trials
 - GBAS introduction in Spain
 - Flight Procedure design (AIP charts)
 - RNAV and RNP analysis
 - Airworthiness certification
 - GNSS implementation in Spain
- Participation in related European projects:
 - 5FP: APPROVE, SOURDINE II
 - 6FP: OPTIMAL, FRIENDCOPTER
 - Very active participation in GJU FP6 2nd call (still to be awarded)



Rail GNSS related activities



- **GADEROS: Galileo Pilot Project for Rail**
 - INECO (Coordinator), TIFSA (Technical lead)
 - Objectives:
 1. Feasibility of integration of GNSS locator for interoperability with ETCS On-Board
 2. Development of a Common Test Bed
 3. Feasibility of application of GNSS to support a Traffic Monitoring Centre
- **Other related European projects:**
 - APOLO (FP4), GEM (FP6), ERNP (EC)
 - Very active participation in GJU FP6 2nd call (still to be awarded)

