



INTA

National Institute for Aerospace Technology

Research Centre, Spain.

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Coordination and Technical Support Unit for Research and Programmes

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General Subdirectorate of Corporate Relationships

PRESENTATION OF THE ORGANISATION

Public Research Establishment specialized in Aeronautics and Space RTD

(attached to the Spanish Ministry of Defence)

Founded in 1942 and with more than 1200 government employees



Participation in FP7 → 45 projects founded

8 of which in SPACE: ARCHES, ASTROMAP, GENIUS, MASE, MOONWALK, NORS, PBSA and RITD.

Satellite Navigation - Galileo

➤ Capacities:

- GNSS signal simulator
- Strategic opportunities INTA GSC
- Strategic opportunities INTA CPA

TOPIC	INTENDED CONTRIBUTION
<ul style="list-style-type: none"> • GALILEO-1-2015: EGNSS Applications • GALILEO-2-2015: Small and Medium Enterprise based EGNSS applications 	<ul style="list-style-type: none"> • Verification & validation: NGC systems based on GPS/EGNOS • SW and HW development (<i>ad-hoc</i> navigation solutions)
<ul style="list-style-type: none"> • GALILEO-3-2015: Releasing the potential of EGNSS applications through international cooperation 	<ul style="list-style-type: none"> • Analysis of third countries industry and/or government needs and requirements in the field of GNSS in order to develop specific applications based on EGNSS

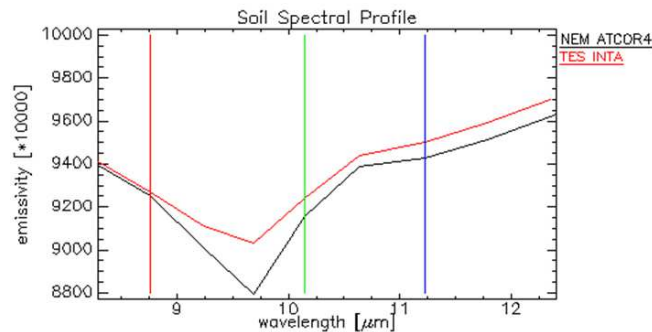
Earth Observation: Remote Sensing (1/2)

➤ Capacities:

R&D of applications and services related to airborne and spaceborne Remote Sensing.

Key activities are:

- Operation of an airborne hyperspectral remote sensing system, based on the AHS and CASI sensors on-board a tropospheric aircraft , CASA212-200.
- SW development for the processing and analysis of airborne and satellite remote sensing EO datasets
- Field spectrometry campaigns to support remote sensing projects



Earth Observation: Remote Sensing (2/2)

➤ Topics of interest for us:

TOPIC	INTENDED CONTRIBUTION
<ul style="list-style-type: none"> EO 1 -2015: Bringing EO applications to the market EO 2 -2015: Stimulating wider research use of Copernicus Sentinel Data 	<ul style="list-style-type: none"> Data Provider: acquisition and processing of airborne hyperspectral and thermal high-resolution imagery (AHS, CASI). Simulation of Earth Observation data, from acquisition of reference images to modelization of the full imaging and processing chain) Bridge from the Earth Observation users to the Engineering and Technology world (radiometric analysis, simulation, translation of requirements to specifications...)

Earth Observation: Observation Systems (1/2)

➤ Capacities:

- Geometric exploitation of Optical, SAR and LiDAR EO datasets.
- Radiometric exploitation of Optical and SAR data.
- Validation of EO algorithms, protocols and derived products.
- Algorithm development for EO data processing (SAR4ip offset project 2013-2015 with third parties such as e-Geos, Telespazio Iberica and Indra):
 - Automatic Target Recognition (ATR) using X-Band SAR data.
 - Automatic multisensor Co-registration (Optical / SAR).
 - Automatic DEM quality analysis (DEMQA tool).

Earth Observation: Observation Systems (2/2)

➤ Capacities:

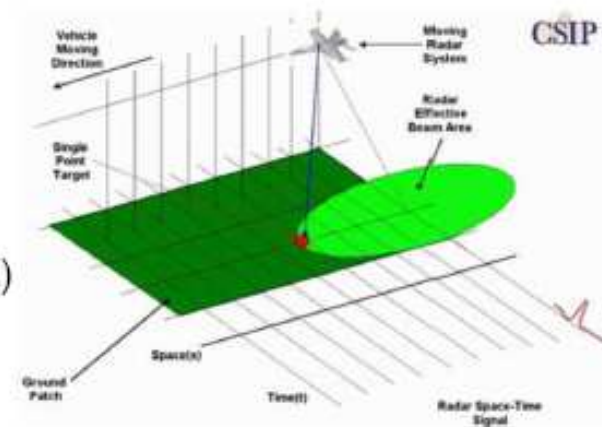
- Development of an unified manager of EO data (GUIA/SIGESTREDI project):
 - User segments integration: Helios, Pleiades, PAZ, etc
 - Commercial EO data integration.
 - Management of EO data (metadata standards)
 - Geo –processing of EO data.
 - Interoperable, high connectivity, OGC compliant.
 - Tasking of Helios/PAZ data.
 - Catalogue interface.
 - 2D/3D viewer interface.

TOPIC	INTENDED CONTRIBUTION
<ul style="list-style-type: none"> • EO 1 -2015: Bringing EO applications to the market • EO 2 -2015: Stimulating wider research use of Copernicus Sentinel Data 	<ul style="list-style-type: none"> • Exploitation of Optical, SAR and LiDAR data • Algorithm development for EO data processing

Earth Observation: SAR (Synthetic Aperture Radar)

➤ Capacities:

- Generation and acquisition of signals
- Configuration and control in real time
- SAR signal processing
- Antennas design
- Interferometry and polarimetry capacity
- Airborne and satellite prototypes development (PAZ)
- Submetric resolution (30 cm.)



Space Programmes

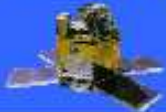























➤ Capacities:

- Design and development of space subsystems
 - Power system
 - Electrical architecture
 - Structures and mechanisms
 - OBDH (on-board data handling) modules.
 - OBSW (on-board software)
 - Thermal control.
 - ...
- Systems engineering including mission and space environmental analysis.
- Integration, validation and tests.
- In-orbit validation roadmap.

➤ Topics of interest for us:

TOPIC	INTENDED CONTRIBUTION
<ul style="list-style-type: none"> • PROTEC-1-2015: Passive means to reduce the impact of Space Debris 	<ul style="list-style-type: none"> • Development of small platforms.

INTA experience in Space - overview

INTA Satellites	MiniSat 01 	Nanosat 01 	Nanosat 1B 	Optos 
Solar Missions (a), Comets Missions (b), Earth Observation	Imax(a) 	SoPHI (a) 	Rosseta (b) 	Ingenio / Seosat (c) 
Planetary Missions	Meiga-Metnet 	RAMAn 	Dreams-Exomars 2016 	MEDA / Mars 2020 
Astrophysical Missions	Integral 	Miri / JWST 	SAFARI SPICA 	MXGS / 
	GAI 	WSO-UV 	JEM- E 	PLAT 
Some Technological developments	OWLS 	Instrum. Miniaturizada+ -Experiencias en Órbita 		Sentinel-3 

CONTACT INFORMATION

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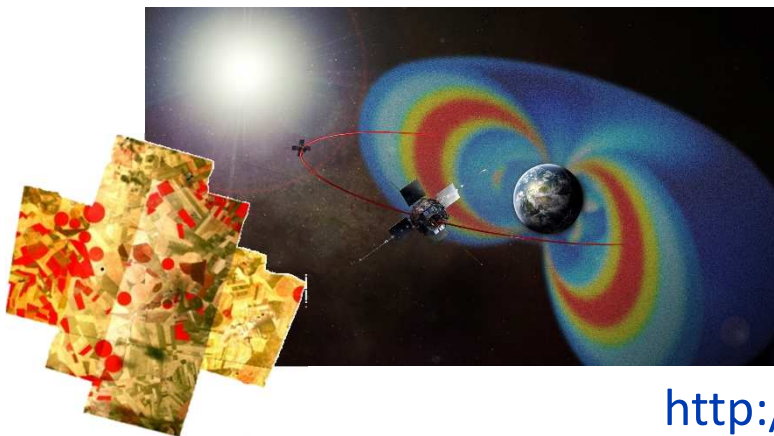
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