CNES Organisation Overview
CNES

4 centres for complementary vocations

PARIS

KOUROU

TOULOUSE

EVRY
The centres

Launch base
Ariane 5
Soyouz
Vega
Preparation of the future

Launchers
study, design, development of Ariane, Soyuz, Vega launch systems, preparation for the future

Orbital vehicles
study, design, development and control of satellites
56.5 hectares
(140 acres)
146,000 m² of buildings
(1.5 million sq ft)

70% of the CNES workforce

75% are engineers and managers

The average age is 45
and has been stable for 3 years
The Toulouse Space Centre

Leads

- the orbital system Projects (satellites and onboard payloads, ground segments),
- satellite station acquisition & keeping Operations – Exploitation
- Technical policy
- Preparation of the future

Ensures

- use of data and innovative applications.

Develops

and executes scientific balloon-borne experiments.
DCT/ME: Mission and data Exploitation Department...

... in the project life...

- Phases: 0, A, B, C/D, E1, E2, F
- Experience feedback → project
- Project Start @ DCT/ME
- Full responsibility DCT/ME

... to carry out functions ...

- Space systems operations
- Data exploitation

<table>
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<tr>
<th>Platform operation</th>
<th>Payload operation</th>
<th>Calibration/Validation</th>
<th>Users services</th>
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<tbody>
<tr>
<td>✓ Plateform control ✓ Ground Station system (Delegated to DCT/OP)</td>
<td>✓ Planning, Scheduling ✓ HK monitoring ✓ Data processing ✓ Data delivery</td>
<td>✓ Quality ✓ Performance</td>
<td>✓ Data centers</td>
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1 data quality office

ME/EI

... Organized in ...

4 thematic offices

- ME/OT: Earth Observation
  - Spot, VGT, Hélios, Pléiades, IASI, Parasol, Calipso, Polder, Jason, Doris, Champ, Grace, Goce, Altica, HY2, Cryosat, ...

- ME/EU: Space Science and Exploration
  - Corot, Rosetta, T2L2, ChemCam, Picard, Planck, Herschell, Exomars, Bepi, ...

- ME/EM: Microgravity experiment
  - CADMOS expériences nationales, CADMOS ESA, Cardiolab, Cardiomed, Cassette végétales, Declic, Vols Paraboliques, ...

- ME/NC: Navigation and Data Collection
  - Cospas-Sarsat, EGNOS PACF, GPS, TM Ariane

Pôles (ICARE, ETHER, POSTEL), GIP Mercator-ocean, altimétrie, Océanographie, Imagerie, Météo, ...

CDPP, Medoc, CDS, SPASE, ...

ULISS, ...

1 computer science support office

ME/PRM
Pôle Exploitation Navigation

- Operation and maintainance of CNES navigation facilities
- Daily processing of data provided to internal or external users
- Integration, test, and qualification of new tools

Exploitation
- Plateform NTM-F
- Plateform SPEED
- GNSS stations network

REGINA development
- Stations network deployment
- Mission center development
CNES NAVIGATION FACILITIES

Exploitation (ME)
- Stations network (IGS)
- Performances Services (NTM-F)
- New Services (ODTS)
- System Performances (SPEED)

Laboratories (RF)
- Temps/Fréquence (PTS)
- Radio Navigation (G6PO & BTR)

PF régionale (GUIDE)
- Moyens de Tests (PTSG)
- Zones de Tests (TOULOUSE OPEN)
POLE NAVIGATION FACILITIES

■ NTMF (Navigation and Time Monitoring Facility)
  ♦ Navigation systems performances assessment
    • Accuracy, continuity, availability, integrity and compliance with the standards (MOPS, ICD)
    • GPS,
    • EGNOS,
    • WAAS,
    • In the next future GLONASS, GIOVE / IOV GALILEO
  ♦ Collection of public datas from internet and partners
  ♦ Dedicated or off the shelf tools (Pegasus)

■ SPEED (Support Platform for Egnos Evolutions and Demonstrations)
  ♦ EGNOS Simulation platform to perform experimentations
    • Preparation of the future
    • New services demonstrations
    • Follows an Experimentation plan to test new concepts (authentication, ionospheric models, new modulations, multi constellation, multi frequencies,…)

■ Network of GNSS stations for IGS contribution
  ♦ Existing GPS stations in Toulouse, Libreville, Tahiti, Kerguelen, Hartebesthoek, Grasse
  ♦ New GNSS stations : REGINA