



MINISTÉRIO DA
CIÊNCIA, TECNOLOGIA
E INOVAÇÕES



Copernicus Data Hub at INPE (Brazil)

Copernicus International Cooperation
Building Infrastructure for the world
Living Planet Symposium

Milton de Freitas Chagas Junior
National Institute for Space Research

A National Institute for Space Research



Amazon
Space Center
Belém, PA



Tracking
Station,
Alcântara, MA



Radio
Observatory,
Eusébio, CE



Northeast
Space Center,
Natal, RN



Radio Observatory
Pierre Kaufmann,
Atibaia, SP



Midwest
Space Center
Cuiabá, MT



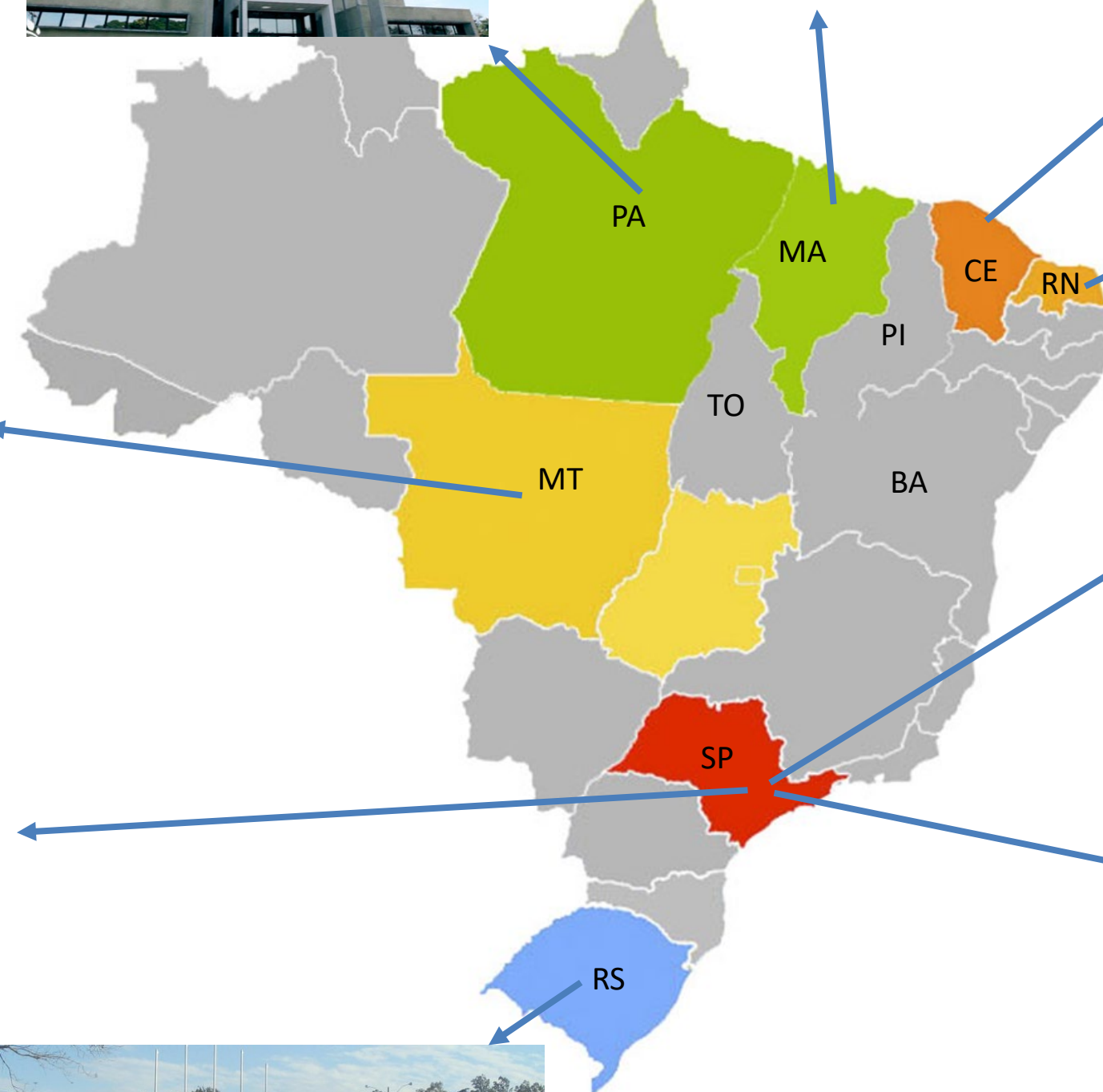
Cachoeira Paulista Campus, SP

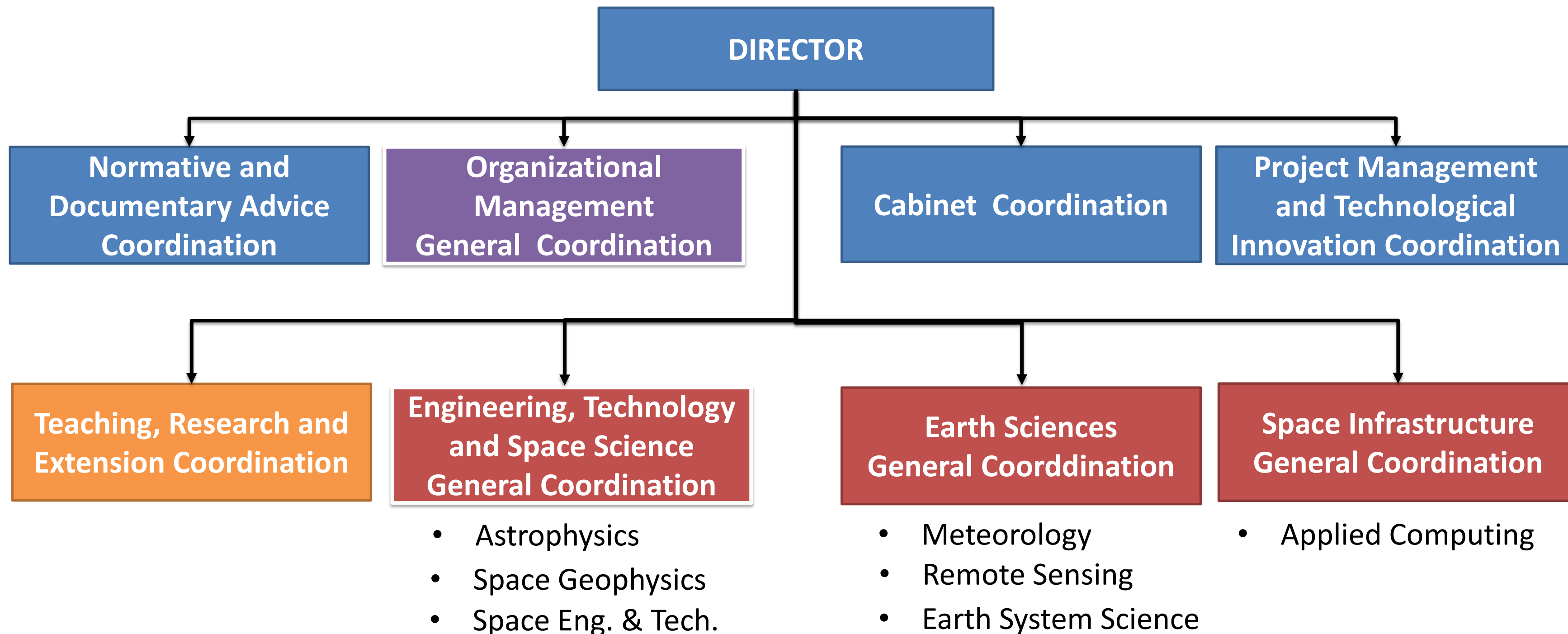


Headquarter: São José dos Campos, SP



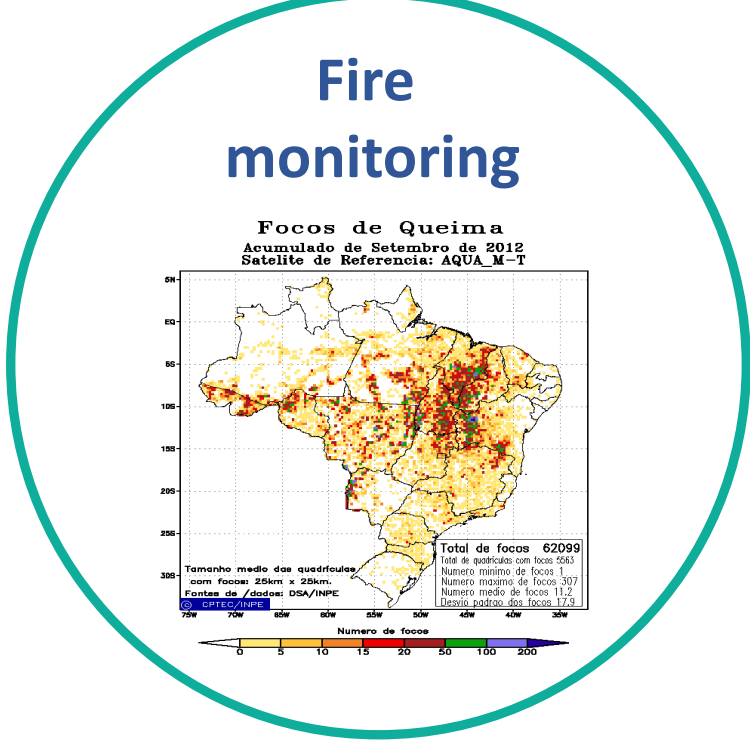
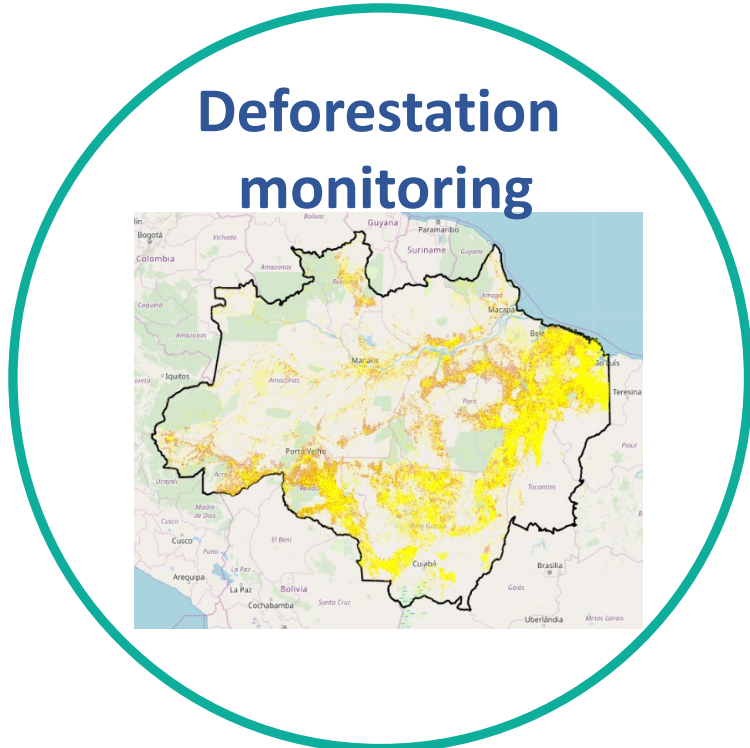
South Space Center,
Santa Maria, RS





**Earth Science
General Coordination
Earth Observation and Geoinformatics**

**Space Infrastructure
General Coordination
Supercomputing and Data Repository**



**Data Storage
8.2 Petabytes**

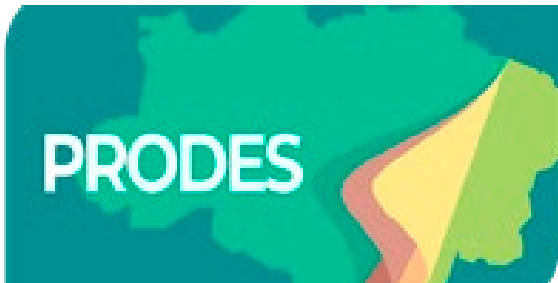
**Supercomputer Cray XE6 e
CRAY XC50
~413 Teraflops**



**Cluster HPC
~200Tflops**

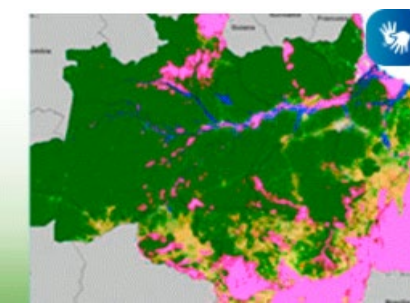
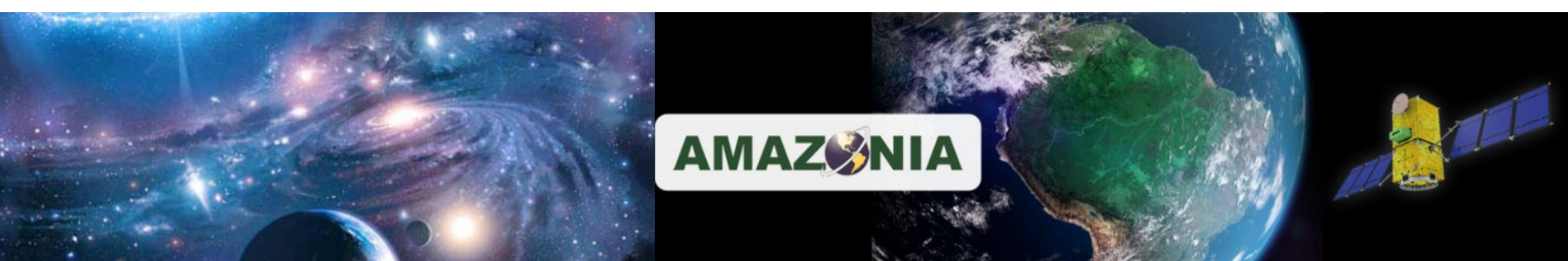


Major Operational Program



Connection networks:

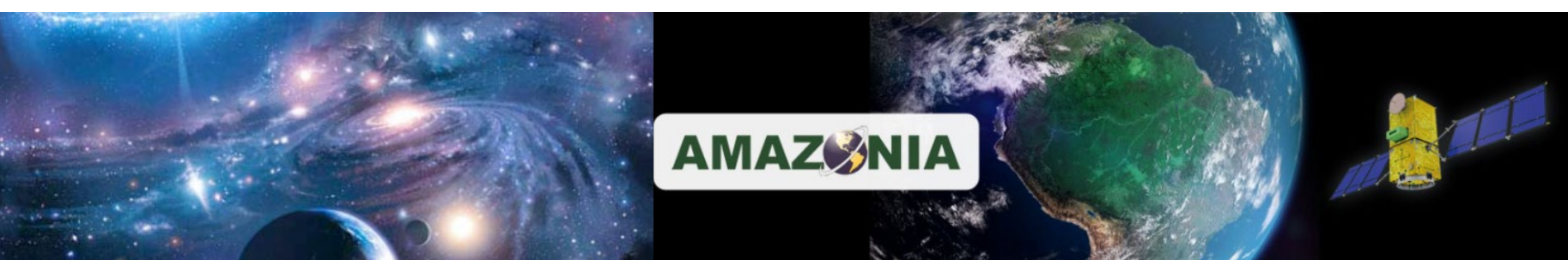
- **Ipê Network (<https://www.rnp.br/en/ipe-network>) – RNP** - Ipê network is the Brazilian academic network. Present throughout the country, it not only offers quality internet access, but also supports the transmission of large volumes of data for scientific projects and development of new technologies.
- **RedClara (<https://www.redclara.net/index.php/en/>)** – Strengthen the development of science, education, culture and innovation in Latin America through the innovative use of advanced networks. Through RedCLARA, the Ipê network currently with 15 Latin American countries and with European Géant network.
- **Bella Programme (<https://bella-programme.redclara.net/index.php/en/about-bella/the-bella-programme>)** – The BELLA Programme provides for the long-term interconnectivity needs of European and Latin American research and education communities.



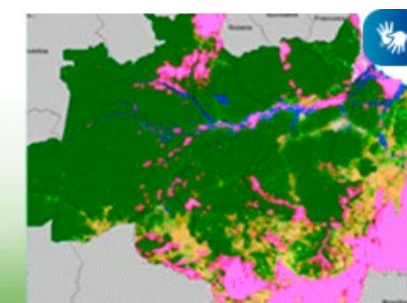
- **Cooperation Arrangement between the European Commission and the MCTIC (Brazil) on cooperation in the area of data access and use of Sentinel data of the Copernicus Programme (08/March/2018)** - management agreement, necessary to ensure access to Sentinel data.

Both Sides aim to foster cooperation activities in the area of data access and use of Sentinel data with the agencies entrusted with the operations of the Sentinel satellites and Brazilian Government satellites.

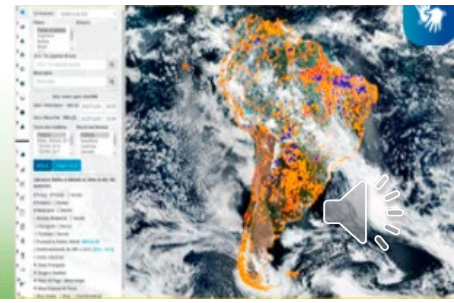
The European Commission intends to provide the National Institute for Space Research (INPE) with access to Sentinel data using high bandwidth connections from data hub to data hub with a view to foster the exchange of Earth Observation data between Europe and Brazil.



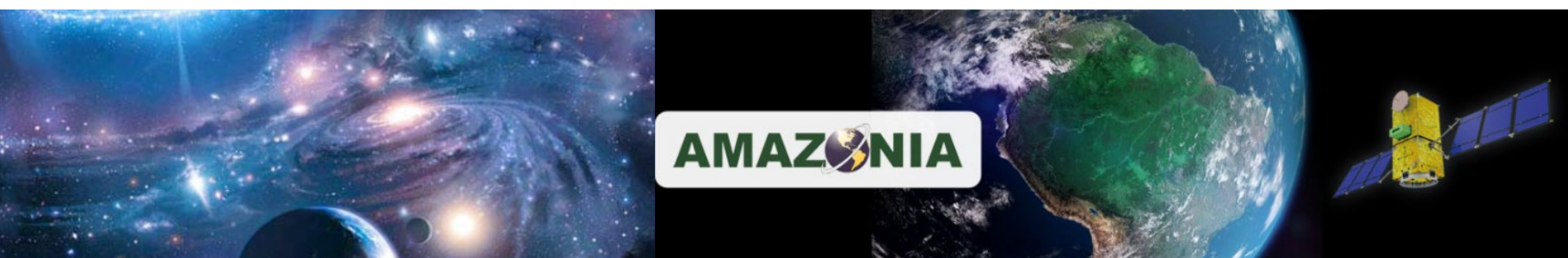
Mapeamento do Uso e
Cobertura da Terra na
Amazônia Legal



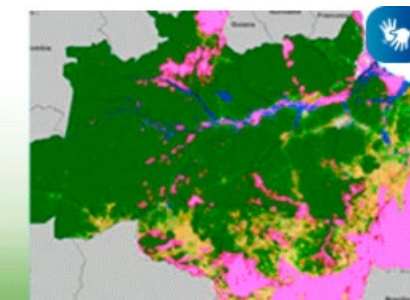
Monitoramento de Focos
de Queimadas e
Incêndios Florestais



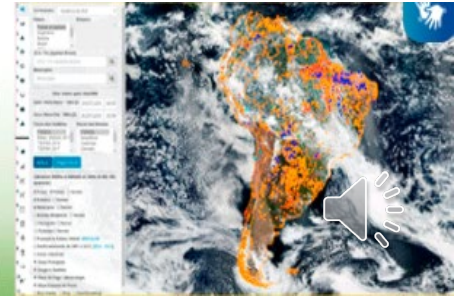
- **Copernicus Space Component Technical Operation Arrangement between ESA, AEB and INPE (14/March/2019)** - operational-level agreement, which specifies the terms and conditions under which INPE will receive, use and disseminate data from Sentinel-1 and Sentinel-2 Satellites.
- **Copernicus Space Component Technical Operation Arrangement between EUMETSAT, MCTI and INPE (to be signed)** - operational-level agreement, which specifies the terms and conditions under which INPE will receive, use and disseminate data from Sentinel-3, Sentinel-4, Sentinel-5 and Sentinel-6 Satellites.



Mapeamento do Uso e
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Monitoramento de Focos
de Queimadas e
Incêndios Florestais



Main Partners:

- **National Meteorological Network (INPE, INMET, CENSIPAM)**
- **INMET** - National Institute of Meteorology
- **CENSIPAM** - Management and Operational Center of the Amazon Protection System
- **EMBRAPA** - Brazilian Agricultural Research Corporation
- **IBGE** - Brazilian Institute of Geography and Statistics
- **INCRA** - National Institute of Colonization and Agrarian Reform



Main Partners:

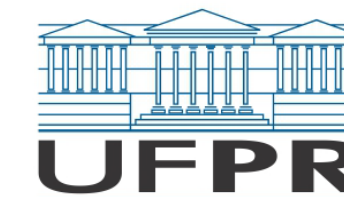
- **SisMOM** - Multi-User Oil Spill Detection, Prediction and Monitoring System at Sea

Involving 13 institutions:

- Brazilian Institute for the Environment and Renewable Natural Resources - IBAMA
- Management and Operational Center of the Amazon Protection System – Censipam
- Oceanographic Institute of USP – IOUSP
- Bahia Federal University – UFBA
- South Bahia Federal University – UFSB
- Espírito Santo Federal University – UFES
- Maranhão Federal University – UFMA
- Paraná Federal University – UFPR
- Navy Reseacher Institute – IPqM
- Navy Program Management Office – DGePM
- Navy Hydrography Center – CHM
- Navy's Admiral Paulo Moreira Institute for Sea Studies – IEMAPM



CENSIPAM
Centro Gestor e Operacional do
Sistema de Proteção da Amazônia



Thank you



UNIDADE DE PESQUISA DO MCTI

MINISTÉRIO DA
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BRASIL
GOVERNO FEDERAL