

Seminar objectives & introduction to PROGYSAT

PROJET RÉGIONAL D'OBSERVATION DES GUYANES PAR SATELLITE

REGIONAL PROJECT FOR EARTH OBSERVATION IN THE GUIANAS

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Progysat coordination

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Seminar: Program overview & objectives

2nd Seminar: mid-term

Day 01 – Opening & PROGYSAT sessions

Opening

Seminar objectives & introduction to PROGYSAT

PROGYSAT advances and first results

Day 02 – Thematic trends sessions

Climate change

Water management

Forest and biodiversity

Environment & health, urbanization

Day 03 – Workshops, round table and Closure

Workshops, SEAS Guyane tutorial

Restitutions and Round Table

Closure

Day 04 – Field trip

- Share and discuss results and advances obtained by the project during year 01
- Discuss current trends in PROGYSAT's themes of interest
- Organize year 02, adapt to current advances
- Gather prospects on EO priorities in the Guiana Shield, identify relevant orientations for future actions
- Enjoy the Fieldtrip to Bird Paradise, have good social time with all participants

PROGYSAT Guideline

Exploit Earth Observation data, methods & tools to produce spatial geo-commons useful to the management of natural and social patrimonies in the Guianas Region

Funding IACP Axis 3 & 4

Protection of biodiversity, of natural and social patrimonies; preserve and protect the environment; encourage rational use of natural resources

Co-funding CNES, IRD

Leader IRD

30 Partners involved in French Guiana, Bresil, Suriname, Guyana. More than 70 participants.

Submission: june 2019; Notification: December 2020; Financial agreement: April 2021

Kick off meeting: June 2021

Previsional Closure: June 2023

Earth observation: challenges in the Guianas

Knowledge & study of natural patrimonies

Complex ecosystems submitted to climate changes

- Great extension of tropical rain forests and associated systems
- Complex water - soil - vegetation interactions
- Dynamic coastal fringe under influence of the Amazon river
- High biodiversity and ratio of endemic species



Territorial & Environmental planning

Human development – fragile resources

- Soil artificialization, Urban sprawl, agriculture
- Formal and informal florestal exploitation, mining
- Vector diseases, health & environment
- Management plans: water resources, coastal areas, protected areas
- Health & vector epidemics control
- Pollutions, degradations...



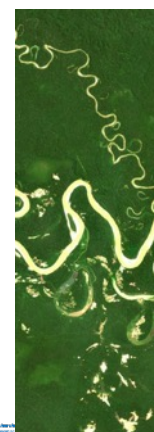
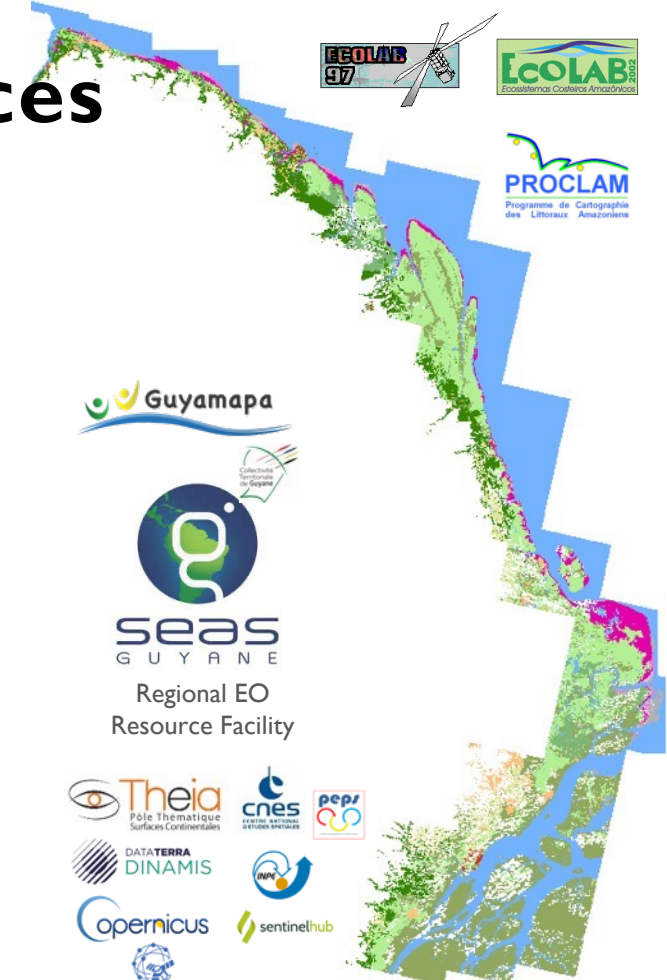
Earth
Observation

- normatized measures & data sets
- proxys, indexes, indicators
- metrics; contributing to models

- basemaps, landcovers, thematic maps
- indicators, metrics
- detection, monitoring systems

Earth observation: background, advances

- History of regional cooperation in the Guianas/north Brazil based on EO applications: Ecolab, Biodam, Guiana Shield Initiative, Proclam, OSE-Guyamapa...
- Multiplication of new sensors; Sentinel (ESA) : revolution in spaceborn monitoring
- SEAS Guyane reactivation: from a VHR direct reception antenna to a Regional EO Ressources Facility
- Multiplication of national, international, private sector plateforms: variety of data sets, products (nature, quality, coverages), formats...
- Openscience standards in EO data/products: Findable – Accessible – Interoperable and Reproducible (FAIR) data, products & service



PROGYSAT – global approach

Reactivate regional interactions between scientists & institutionnals

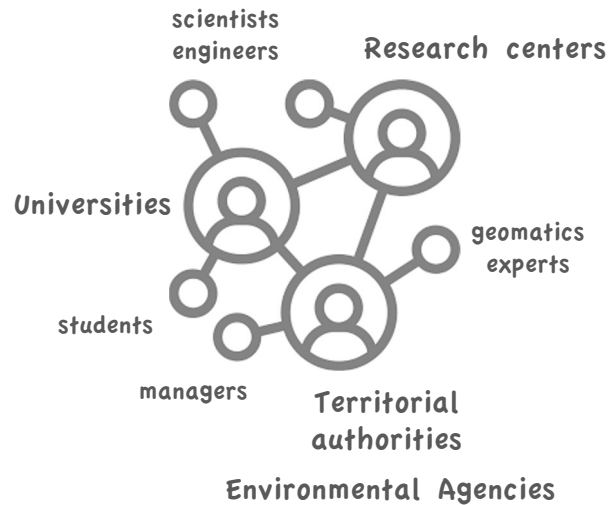


Focus on 4 themes of high priority for territorial and environmental management

Deliver pilot applications resulting of scientific advances



Capitalize on SEAS Guyane
Empower communities, offer training and support to endusers



PROGYSAT – general objectives

- Generate geo-informations, tools and tutorials in priority themes
- Pool, disseminate and communicate towards all potential communities of endusers
- Contribute to academical capacitation in the region
- Share Earth Observation resources within network of participants, favor FAIR standards
- Contribute to EO awareness, capacity building and empowerment
- Contribute to collect needs, to foster future cooperation

PROGYSAT – working plan

WP 01 - Regional network of participants, capacitation, dissemination

Co-lead: IRD & INPE

- Organize collegial events
- Provide satellite data & data processing capacities
- Contribute to training in Earth Observation methods and tools
- Implement a catalog of Project outputs
- Offer technical support to endusers
- Explore / exploit Data Cube expertise, tools, and products



Earth Observation Resources Facility

Reactivation: on going

Expertise in EO
Satellite data
Processing chains
Products & tools
Processing capacities
Training capacities



Sentinel 1 & 2
Spot 6-7
Pléiades
Pléiades Neo



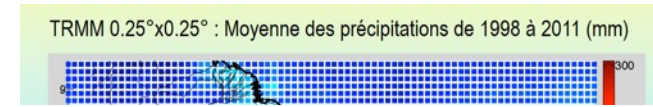
Data storage
Data process
DRS Terminal
Webserver

PROGYSAT – working plan

WP 02 - Six EO applications, six specific teams and working plans

Water resources

Change indicator based on time series analysis: distinguish climatic impact from human impact



Forest biodiversity

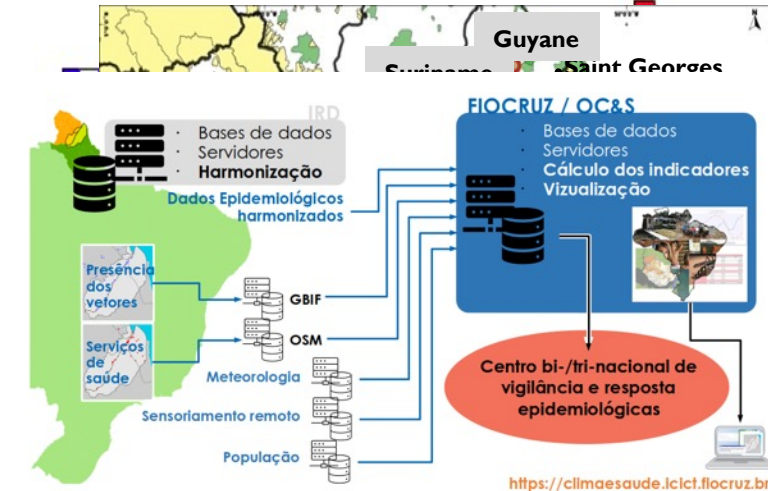
Biodiversity indexes: species communities along physical or environmental spatial gradients

Urban sprawl

Urban footprints and urban dynamics indicators: evolutions in main cities of the Guina Shield

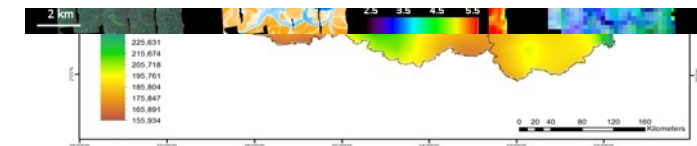
Vector disease & environment

Spatialization, modeling and updating of a Risk indicator: vector-borne diseases transmission



Water and air pollution

Monitoring methods and geoproducts: anthropogenic and / or natural pollution by fine particles



Landscape management and public policies

Environmental geo-informations and semi-automated indicator: human actions & impacts on forests landscapes

Expected outputs / fallouts

Spatial products and indicators in pilot sites - Tutorials

in the region of the Guiana Shield, in the domains of application of the Project

Tools and data processing algorithms - Tutorials

for geomatics staff in scientific or institutional organizations of the region

On-line portal: dissemination and information

linked to the SEAS Guyane Facility portal to be developed

Trained students or professionals / Academic degrees

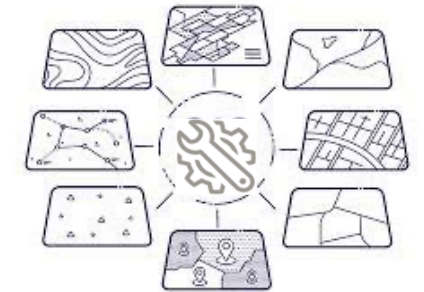
trainings in EO techniques and methods provided by the Project / obtained by students co-supervised during the Project

Scientific publications / Innovations in EO Applications in the region

in the domains of interest of the Project

Technical notes / Recommendations for future actions

Originating from Project Seminars



Road map

Reactivate a Regional network of partners involved in EO

Deliver Pilot applications useful to territorial & environmental monitoring

Capitalize, share and promote Project outputs in the region

June 2021

we are here

June 2023



Kick off Meeting

Develop six Earth Observation Applications 06/2021 – 06/2023

Final Meeting

Transverse actions 06/2021 – 2023 and beyond

- Validate or adapt specific working plans
- Organize Project activities 2021-2023

- Conduct specific scientific workshops
- Carry out field campaigns, data collection
- Elaborate and qualify methods, analytics, tools, products
- Co-supervise Masters and PhD

- Share Project results and advances
- Share trends in fields of common interest
- Share feedbacks and difficulties
- Collect needs and prospects for future actions

- Provide data access or collaborative processing capacities, package reusable tools
- Carry out training sessions
- Implement and sustain a webportal for dissemination to endusers
- Offer support to project endusers or external endusers, collect feedbacks

- To Be Determined

Thank you for your attention

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PROGYSAT Mid-Term Seminar

September 27th - 29th 2022
Paramaribo, Suriname