

Getting ready for SWOT over inland waters

Cal/Val : French activities
(French Guyana, Maroni River)

September 15, 2021

Stéphane CALMANT and many others



**Reminder : Places where field work is still planned
(according to sanitary limitations worldwide...)**



Sao Francisco
Partnership Ok
1 campaign
Altim in progress
No model
No red light

Parana
Partnership Ok
1 campaign
Altim in progress
No model
No red light

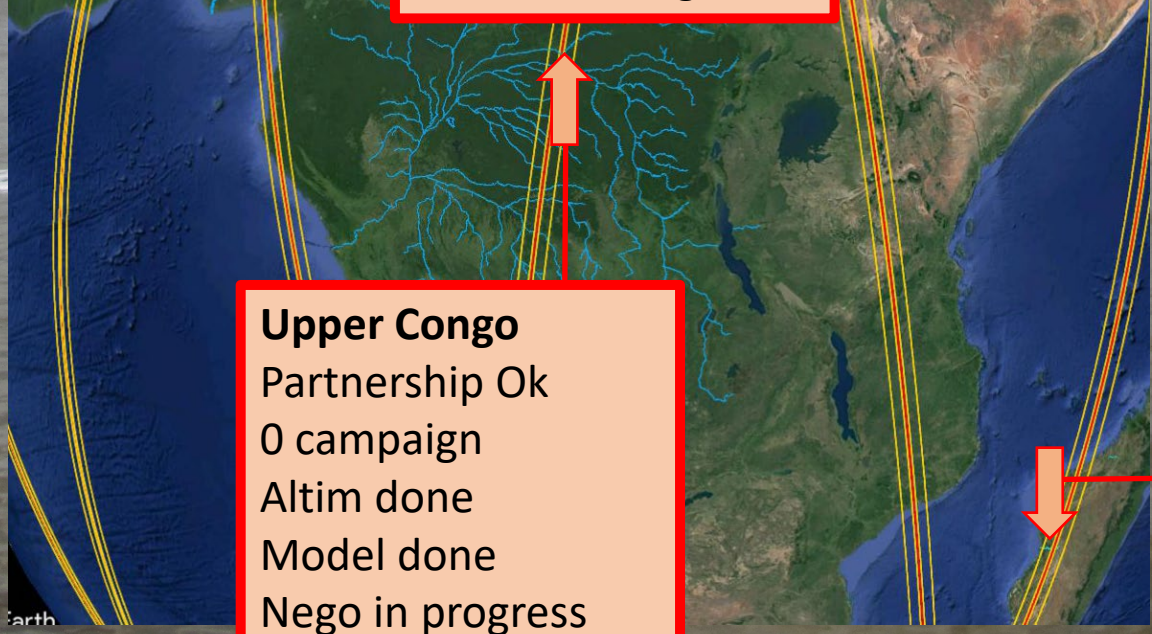
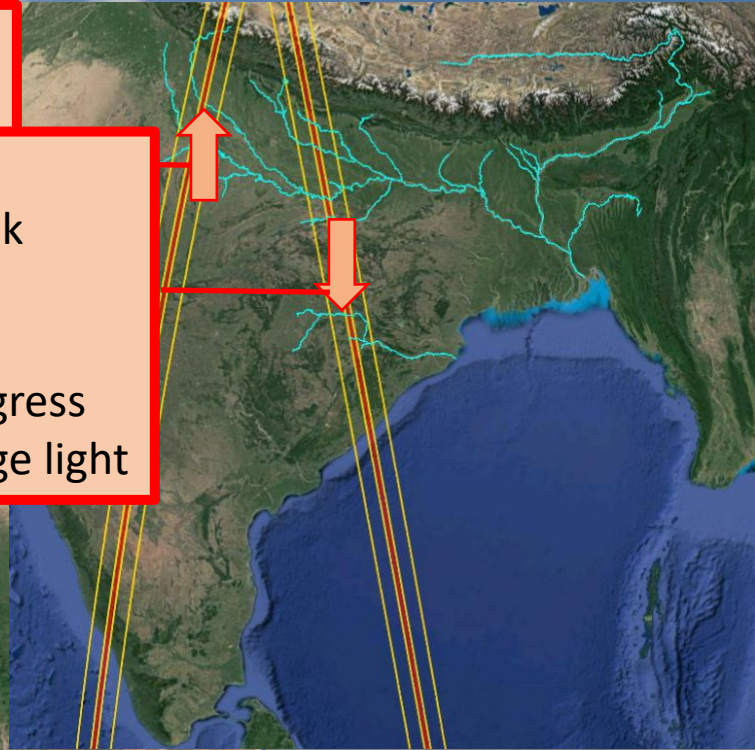
Maroni
Partnership Ok
3 campaign
Altim in progress
Model in progress
No red light

M
P
3
A
M
No red light

Upper Ganges
Partnership Ok
0 campaign
Altim done
Model in progress
Political orange light

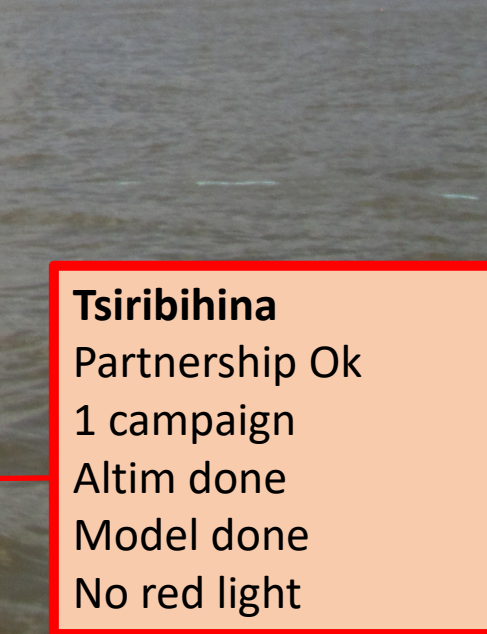
Mahanadi
Partnership Ok
1/2 campaign
Altim done
Model in progress
Political orange light

Niger
Partnership Ok
0 campaign
Altim done
Model done
Political red light



Upper Congo
Partnership Ok
0 campaign
Altim done
Model done
Nego in progress

Tsiribihina
Partnership Ok
1 campaign
Altim done
Model done
No red light



Actions to be undertaken asap (before launch)

- Build another CalNaGeo device and repair the one damaged in last campaign
- Purchase pressure sensors
- Plan / secure logistics with partners and
- perform at least one campaign on each site before launch, including :
 - CalNaGeo survey
 - Pressure sensor installation
 - ADCP measurements
 - Levelling of the sensors and in-situ gauges, whenever possible
- Organize data storage, processing & distribution
- Proceed with basin models implementation

... all in progress

MARONI SITE (has become our 1st priority)

Maroni River is altogether :

- A river in a french territory (access facilitated)
but also a transboundary river of major political interest**
- A river in the Tropical band (not so many in our countries)**
- A river 1- in South America 2- shared w a Least Developed Country
(good to motivate other-than-Northern stakeholders)**
- A river fully overflown by SWOT during the first orbital phase (Cal/val)
and by current missions (S3A, S3B and S6, good for sat-sat comparison)**
- A river with large spatial and temporal changes in height and slope**

JASON 3



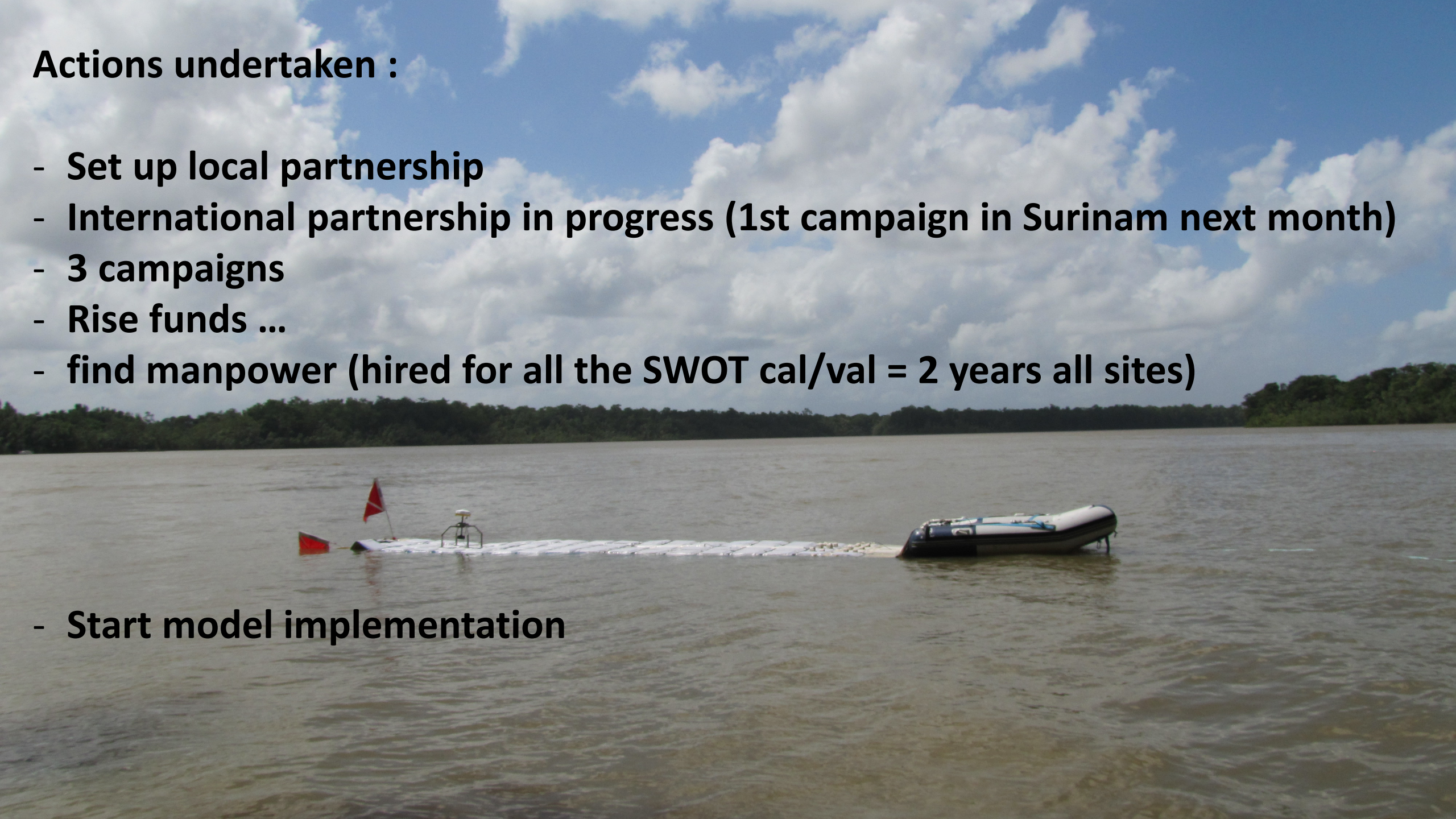
A close-up photograph of a dark, textured surface, possibly a rock or mineral. A red arrow points to a small, circular, light-colored feature, which is likely a mineral inclusion or a specific crystal grain. The surface is dark and has a rough, crystalline texture.

[illegible]

Actions undertaken :

- Set up local partnership**
- International partnership in progress (1st campaign in Surinam next month)**
- 3 campaigns**
- Rise funds ...**
- find manpower (hired for all the SWOT cal/val = 2 years all sites)**

- Start model implementation**



Tapanahony

Maroni

SWATH (1 day orbit)

start

2019

2021

Google Earth

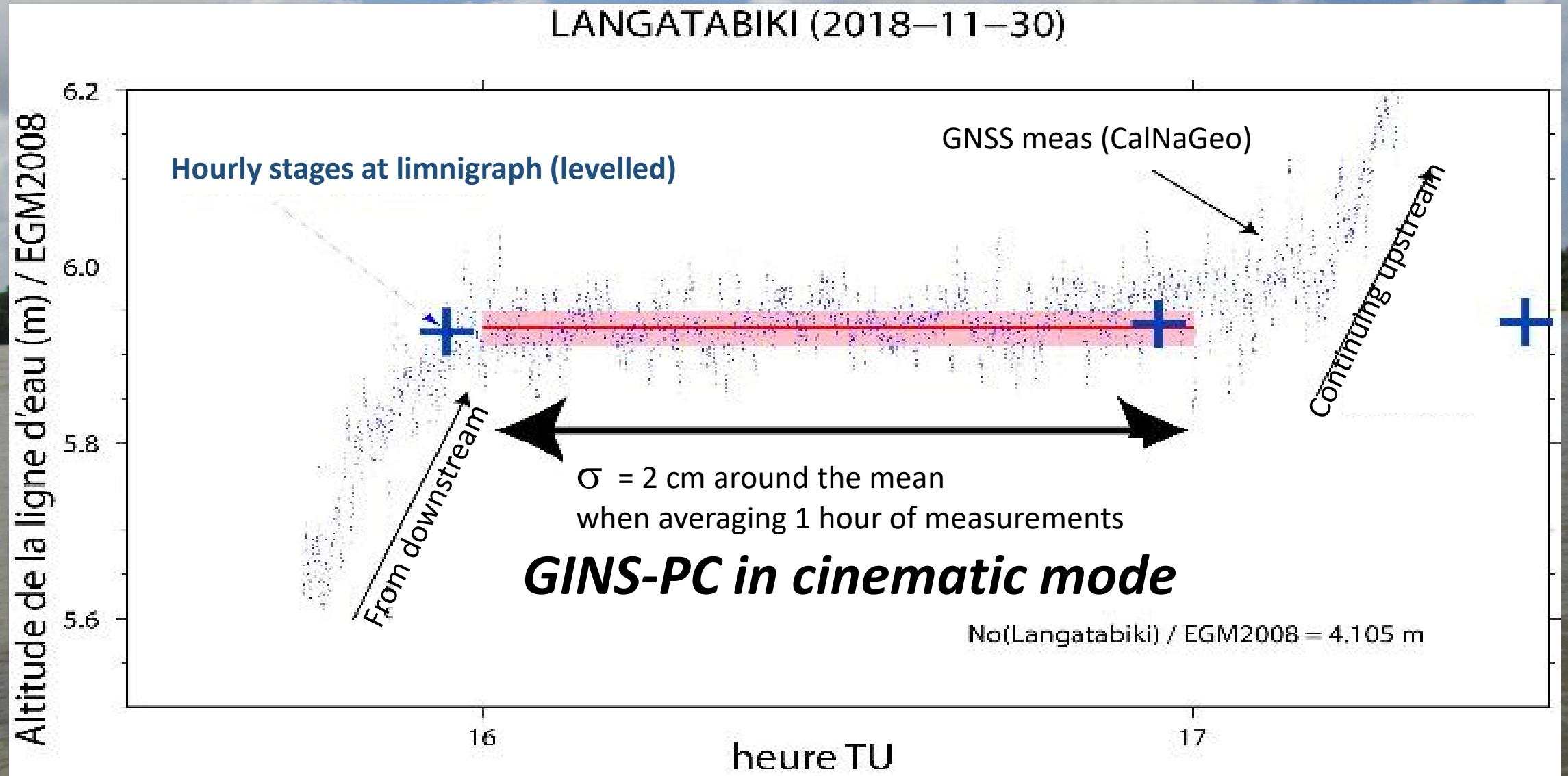
Image © 2021 Maxar Technologies

Image Landsat / Copernicus

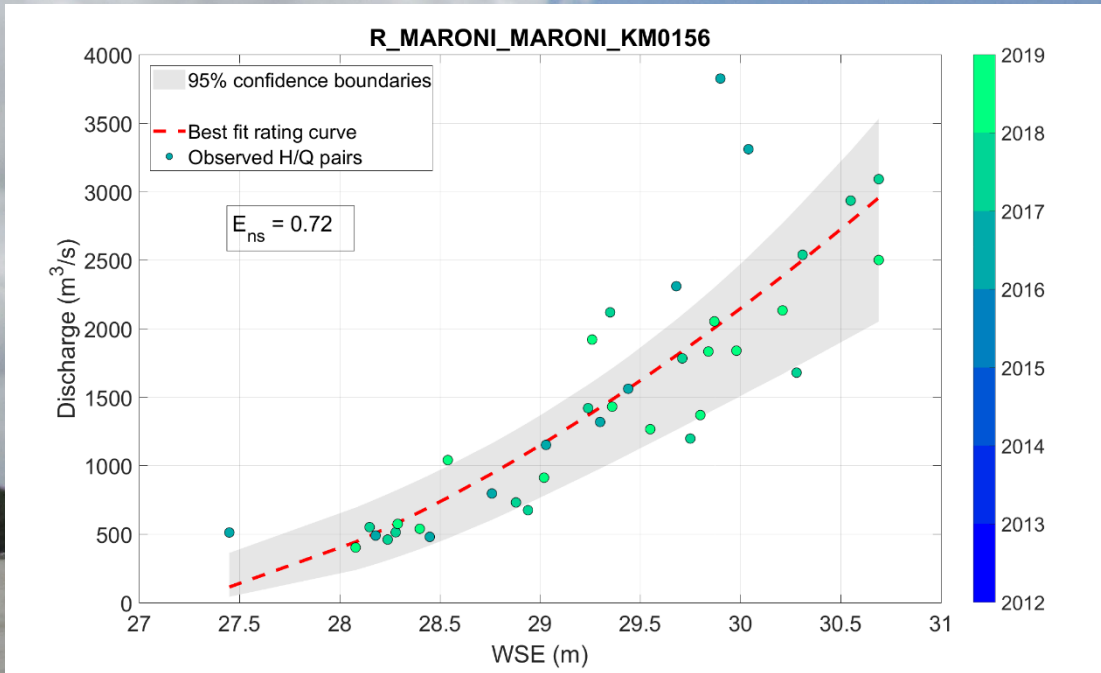
Image © 2021 CNES / Airbus



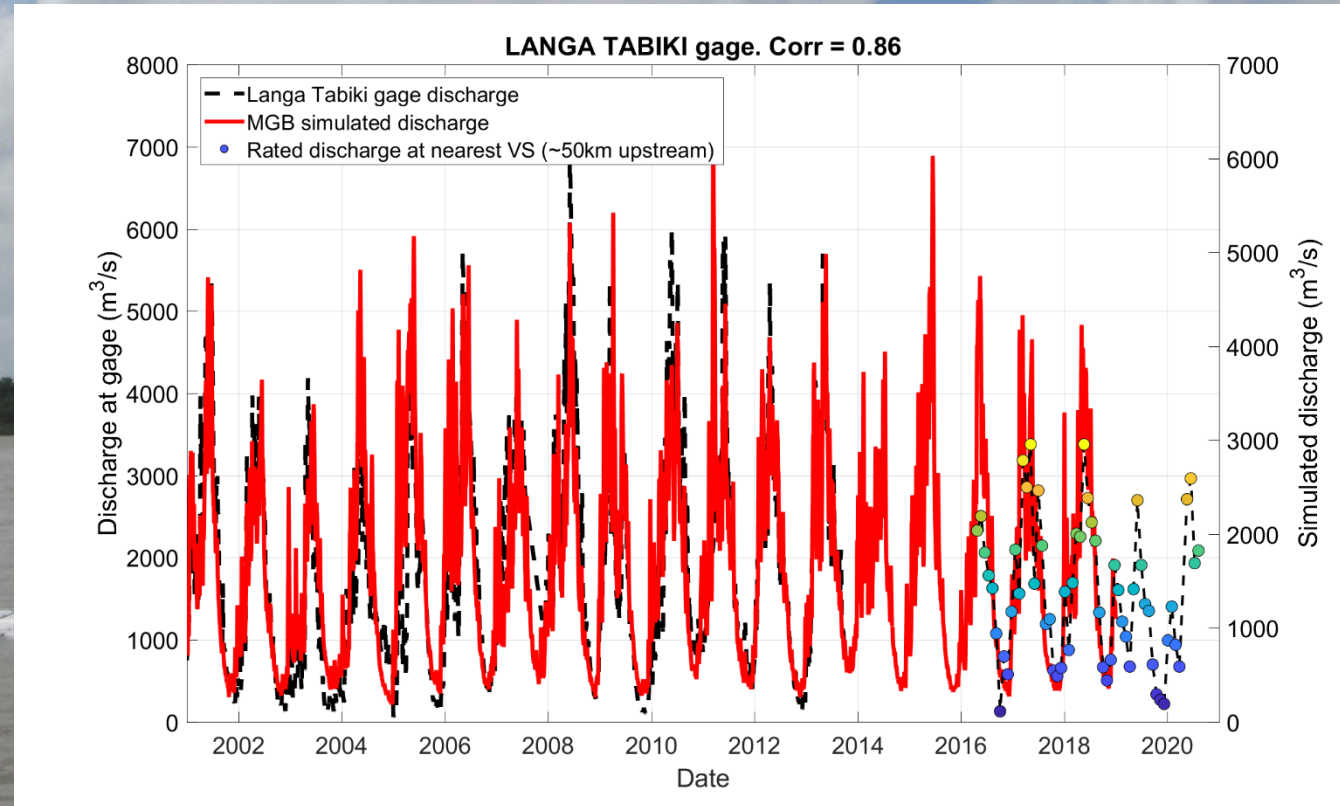
Levelling of the operational limnigraphs



Hydrological modelling including current altimetry



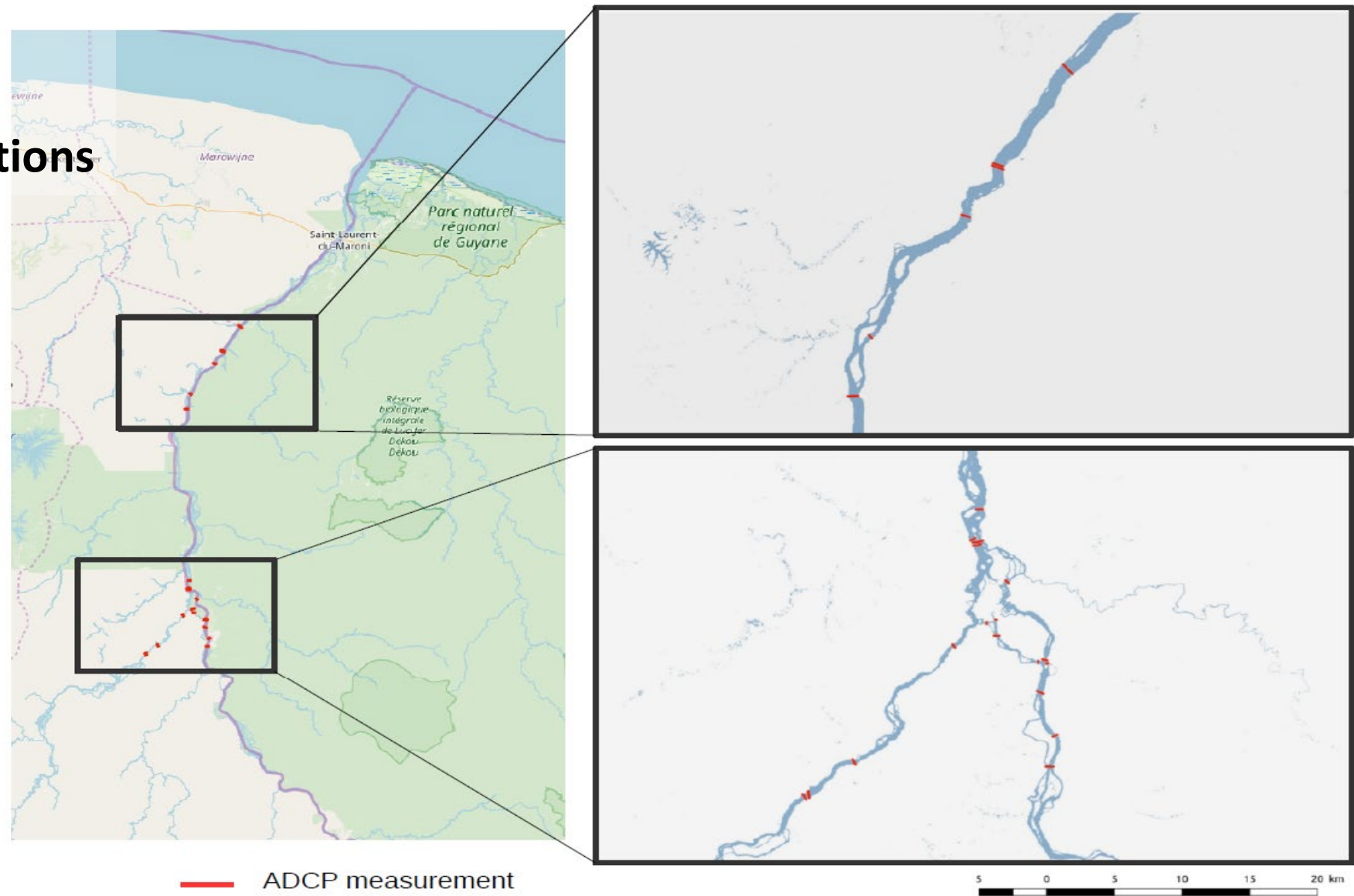
Courtesy A. Paris



Hydrodyn. modeling in progress (Master thesis)

ADCP measurements for

- flow magnitude ,
- flow partitionning in complex areas
- bathymetry of cross sections



To be Continued

