Study for the Implementation of a high-resolution image satellite reception facility in New-Caledonia.

The study entitled above has been granted by the Government of New Caledonia to "Ocean Avenir NC,", a New-Caledonia-based company, specialized in scientific and maritime-economy prospective analysis & consultancy and to his partner Mea Intuis SARL, a France-based company, specialized in operational implementation of satellite receiving stations using optical and radar technologies.

In order to ensure success to this mission, the work will associate participation of competent secondary entities in and outside New-Caledonia.

The study aims at estimating the interests and the benefits of such a new infrastructure, including:

- financial aspects,
- current and existing competitions,
- listing the needs of operable uses by :
    - scientific governing bodies: universities and research institutes,
    - main public administration bodies and local public entities responsible for managing natural resources, environment, economy, human resources, safety of people and land.
    - private sector entities: engineering and consultancy firms, service companies, susceptible to offer services and added value to outsourced data.

As first approach the project will consider, without excluding any other technical possibility, the solutions offered by the earth observation European satellite missions, i.e. Sentinel mission of the European Space Agency (10m ground spatial resolution) or missions Pleiades and SPOT 6-7 (down to 50cm ground spatial resolution in the optical domain) and for the radar missions such as Terra SAR X and Cosmo Skymed of equivalent ground spatial resolutions.

The revisit capabilities for a same area offered by such a tool are a radar acquisition twice a day and once per day in the optical domain.

Within the framework of such a project, New Caledonia would have the capability of receiving the support of satellite imagery to satisfy its own needs regarding knowledge, mapping, inventory or monitoring of natural resources as promoting protection, management or development process for land and marine habitats and environments. As well such opportunity may also boost technological innovation in the Pacific insular context for the observation and the remote surveillance of land and marine territories and favor the regional cooperation relative to the equivalent needs for his neighbors.

A focus on those subjects, representative of questions related to a South Pacific Archipelago, would be addressed to the international organizations and programs, acting in the region regarding surveillance (diverse traffics, illegal fishing, natural disasters impacts as fires,

hurricanes, floods, tsunamis, etc…), inventory, monitoring and protection of natural resources and environments (land and coral ecosystems in particular) or still human, social and cultural sustainable development.

A strong and thorough relationship and cooperation between the technical operators of the project and the Service of Regional Cooperation and the External relations of New Caledonia is a key of success.

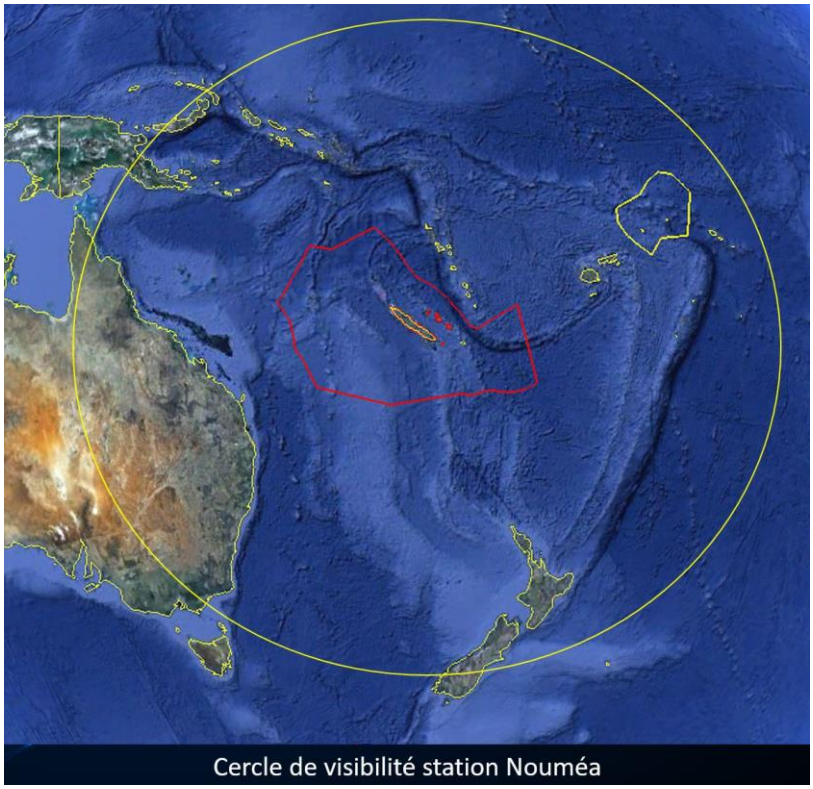
This study of prefeasibility will also estimate the perspectives regarding training local and regional human resources on new carriers: mapping and finding the way on the ground, IT engineering, storage of data, image processing, ground truth operations, and diverse services regarding spatial planning, disaster evaluation or risks analysis…

Moreover, this study will assess the possibilities to promote a Public-Private partnership following the guidelines of a pre-business plan, in which users, shareholders, and national and international financing sources will be identified.

A particular analysis will be carried out to estimate the opportunity of creating a Regional Center of Intelligence based at the station reception enabling New Caledonia to guaranty to the involved partners a co-control of the acquired data, their added values and services created by the analysis of these data.

We find below, for information:

1. Bird's eye view of the ground area covered by the reception station installed in New-Caledonia.



2/Flow chart of the implemented tool and its 3 main levels:

a) Top: the reception station and operation.

b) Center: the archive and data center function.

c) Bottom: added value services: science and knowledge, monitoring, spatial planning, associated services, training…