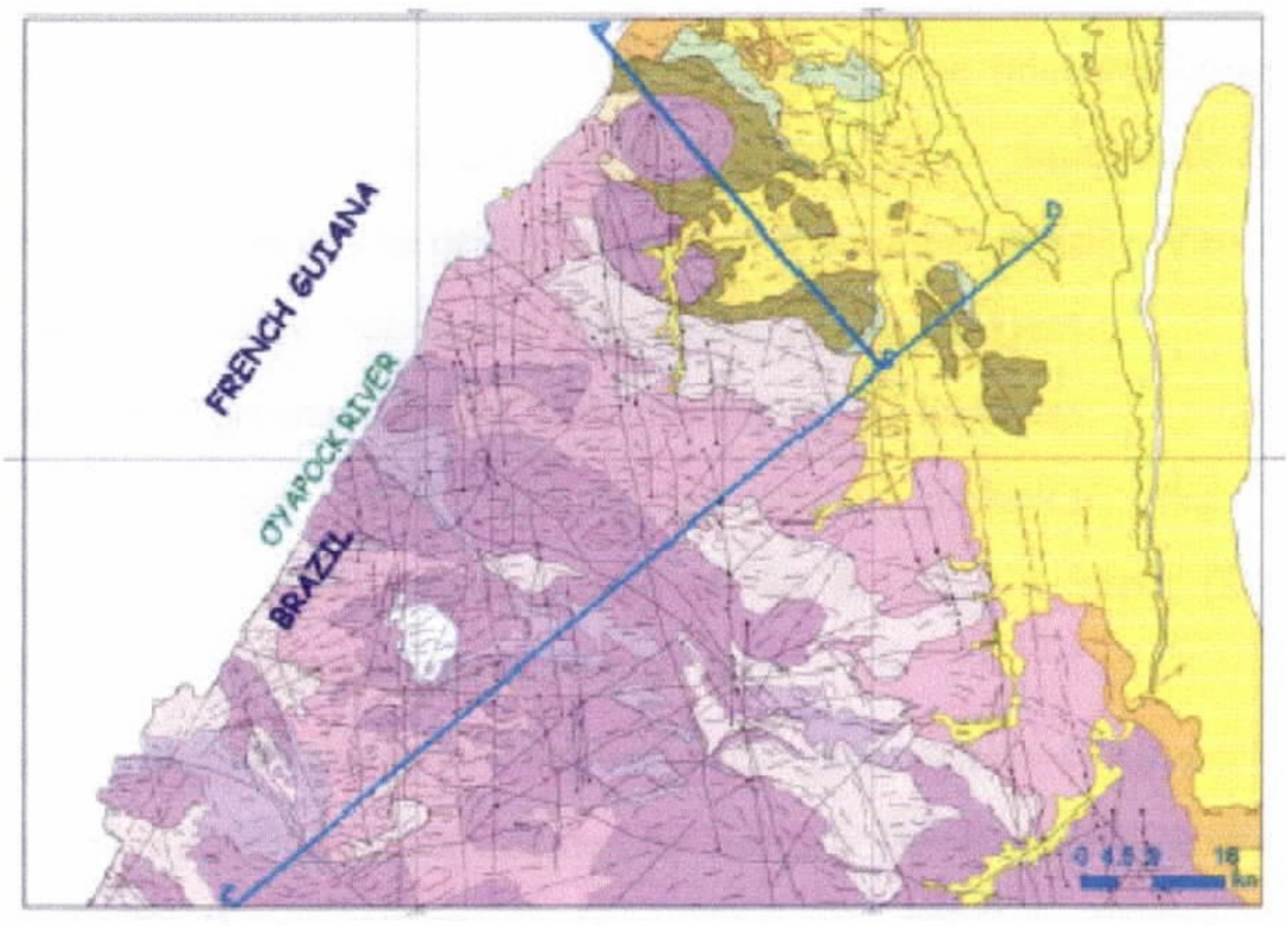
MINISTÉRIO DE MINAS E ENERGIA
SECRETARIA DE MINAS E METALURGIA
CPRM – SERVIÇO GEOLÓGICO DO BRASIL

Carta Geológica da região de fronteira Brasil - Guiana Francesa

RELATÓRIO DE VIAGEM À FRANÇA



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Serviço Geológico do Brasil

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BRGM - CPRM COOPERATION REPORT

GEOLOGICAL MAPPING OF THE BRAZIL - FRENCH GUIANA BOUNDARY (NA.22-V-B SHEET)

By: Maria Telma Lins Faraco

1. OVERVIEW

According to "Agreement for the Development of Bilateral Project Transboundary Geological Map *GéOyapock* ", the Brazilian head of the bilateral project from CPRM visited BRGM office in Orléans, from 9th to 23th of September 2007 , to attend the integration of the geological map on the border Brazil - French Guiana, together with Dr. Hervé Théveniaut, French head of the project.

BRGM provided all arrangement to Telma Faraco during her stay.

The French-Brazilian 1:250.000 transboundary geological map with a French/Portuguese legend, corresponding to the NA.22-V-B Sheet (3° to 4° N latitud and 51°W to 52°30'W longitud - Figure 1).

The reached results at the end of the two weeks joint BRGM - CPRM work were:

* Drawing the 1:250.000 geological map by merging the geological data or drawn maps done by BRGM on the French Guiana side and by CPRM on the Brazilian side;
* Integrating of other available data such as geochronological, paleomagnetic, geochemical, etc;
* Establishing of the common legend in French and Portuguese;
* Creating the Transboundary Geological Map lay-out

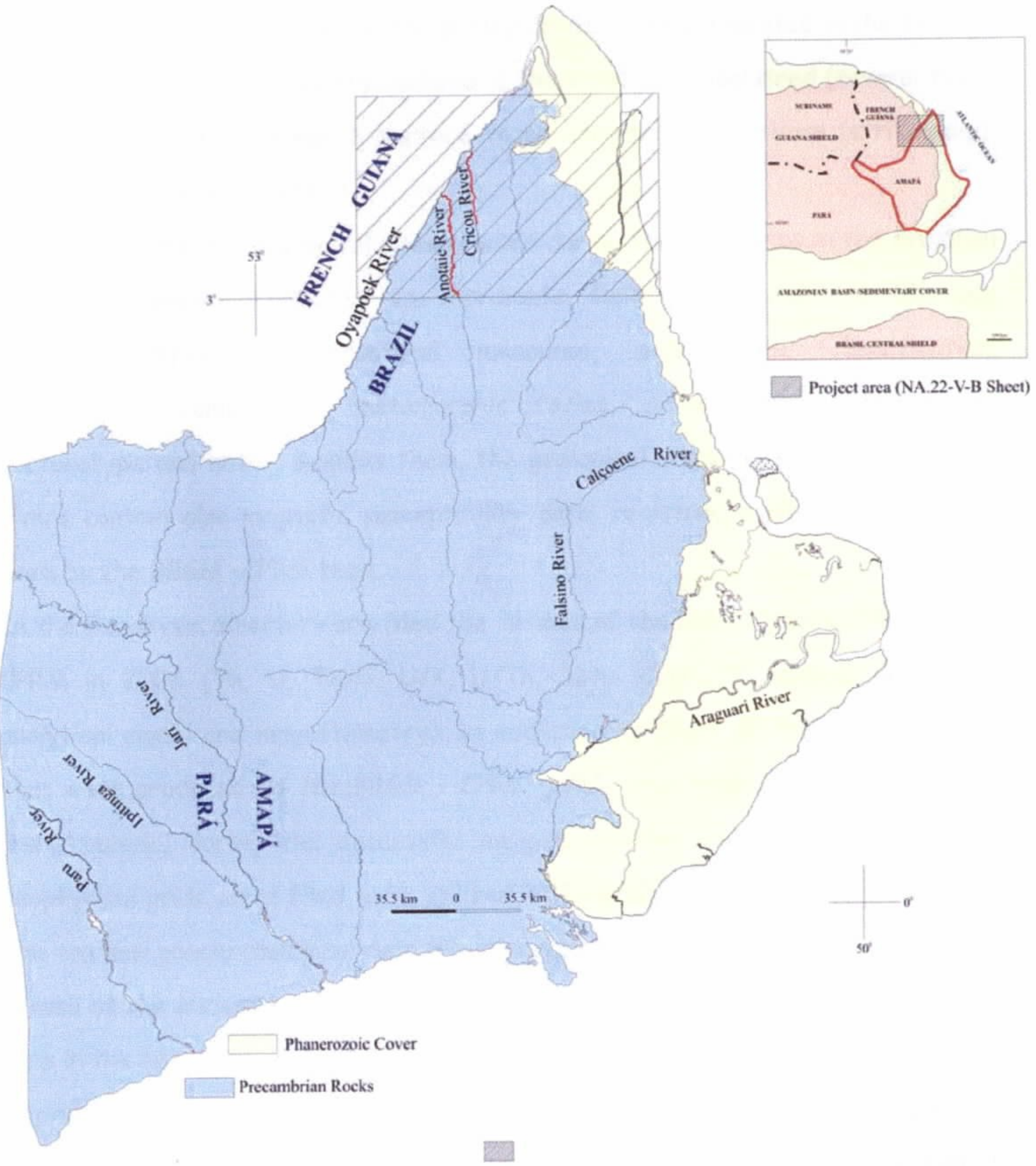


Figure 1 - GéOyapock Project area

2. CONSISTENCE STUDIES

The Brazilian side data of the NA.22-V-B Sheet were organized in a ArcGIS 9/ ArcMap 9.1 project. All of them have been geo-referenced on the WGS 84 datum. The subjects were distributed in several folders (Geology, Geological Stations, Structural, Geophysical grids, Images (SRTM, radar, radarsat, Mr. Sid), Hydrography, Altimetry, Planimetry, Boundary).

The lithostratigraphic units and the geological contacts are located in the Geology directory. Structural directory contains al the structures registred (several types of faults and shear zones, S surface trace lineaments, foliations (strike, dip), dikes, lineations, veins, etc.

Each one of the 356 geological sites studied during the field trips in the Brazilian side holds several attributes: x,y coordinate, field number, toponym, lithology (field classification), structural measures, petrographic classification, mineralogical composition, metamorphic facies, deformation/recristalization, tectonotype and notes. Besides them, the geological sites at *Anotaie* and *Cricou* rivers contain also magnetic susceptibility data, registred during the last field work by the BRGM -CPRM team.

In the Geophysic directory are filed the shapes of the new airbore carried out by CPRM in 2006 (Th, U, Th/U, U/K, U/Th, Total Cont, 1st vertical derivative, analytical signal and magnetometry). In addiction to them, all the principal maps that were produced by the BRGM - CPRM geophysical team (Martelet, Andrade and Azevedo) during the successful merging of the high resolution airborne geophysical grids, were filed to be utilized in the geological integration.

The ten new geochronological data (Pb-Pb zircon evaporation) in the Brazilian side, as well as the ancient ones, provided more insight in the merging of the geological data in the two sides of the NA.22-V-B sheet.

A preliminary Brazilian side 1:250.000 geological map was created before the consistence work at BRGM, to be compared with the 1:100.000 geological map of the French side (Figures 2 and 3).

On the French side of the NA.22-V-B Sheet, BRGM carries out the GéOyapock Project which aims to produce three new 1:100.000 geological maps of the French Guiana (Armontabo, Saint - Georges de l'Oyapock and Camopi - Alicoto) and the French - Brazilian 1:250.000 transboundary geological map with a French/Portuguese legend. As BRGM has more and more detailed geological data from the French side of the NA.22-V-B Sheet than CPRM has from the Brazilian side, it was needed to fit the two sides data to the 1:250.000 scale.

All the fitting was successful done. The French-Brazilian team achieved to draw 1:250.000 geological map by merging the geological data and integrating the other available data (geophysical, geochronological, paleomagnetic, etc).

The common legend and the lay out of the Transboundary Geological Map in French and Portuguese were created.

The 1:250.000 Transboundary Geological Map has been printed in Orléans, at BRGM.

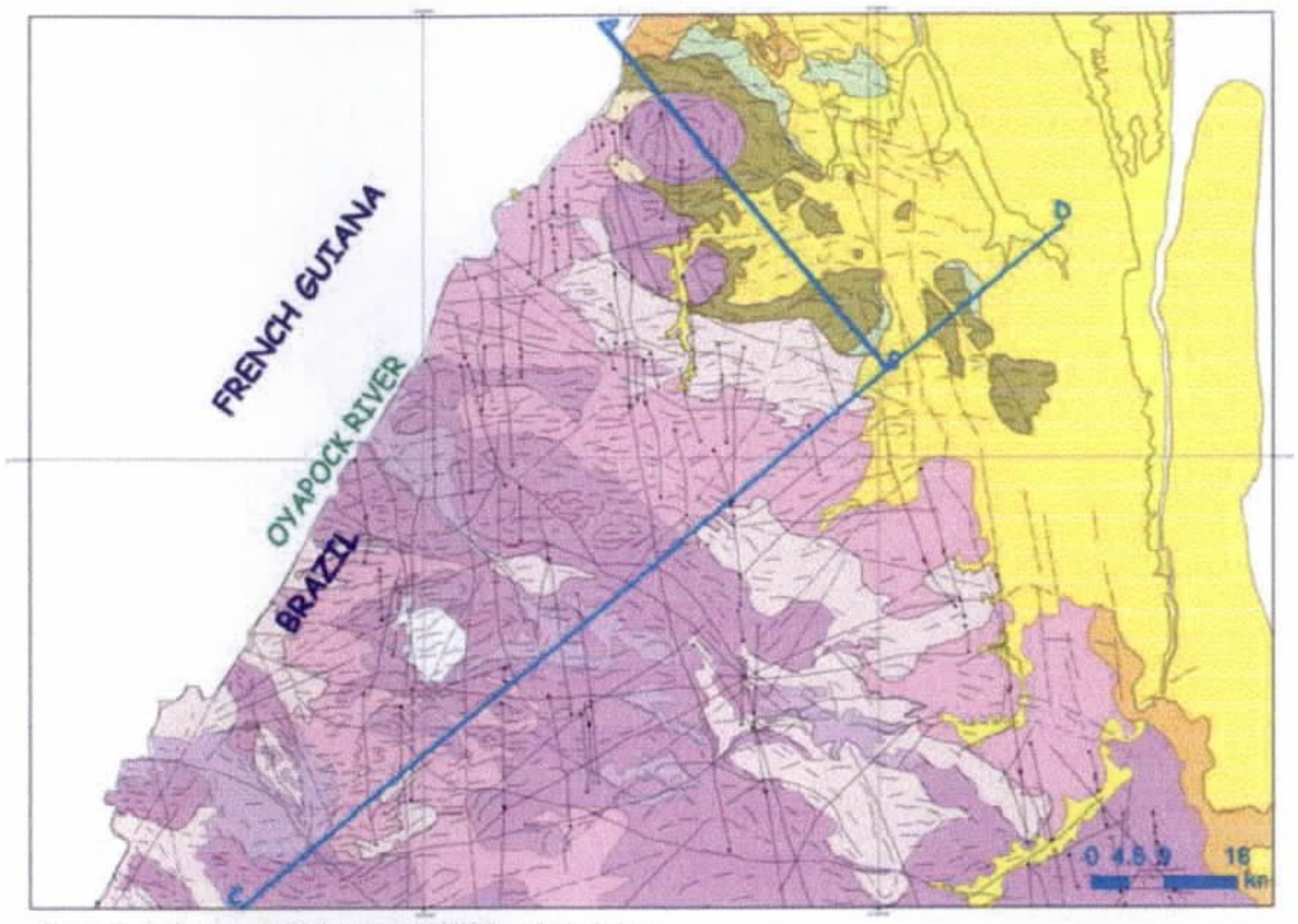


Figure 2 - Preliminary Brazilian side 1:250.000 geological map

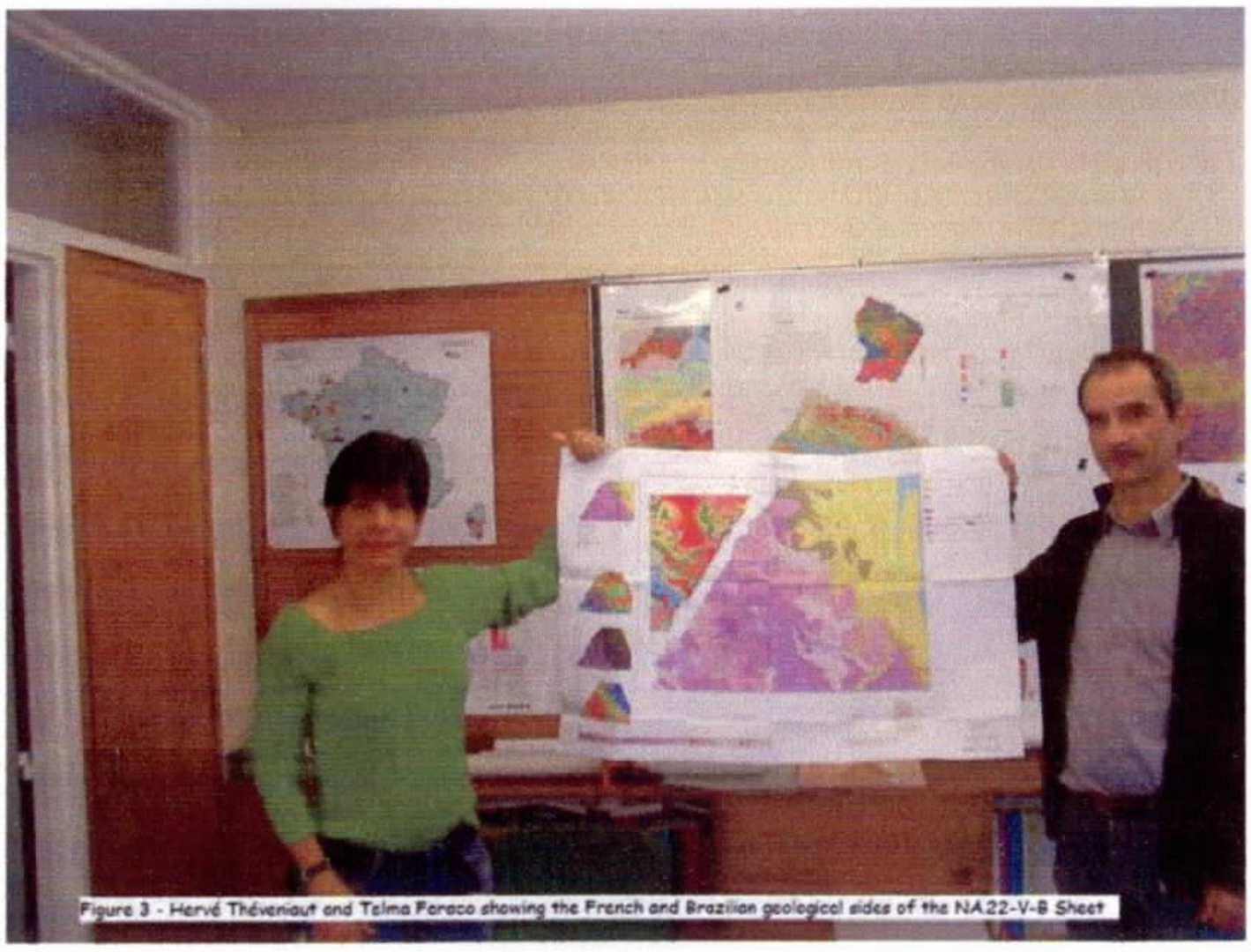
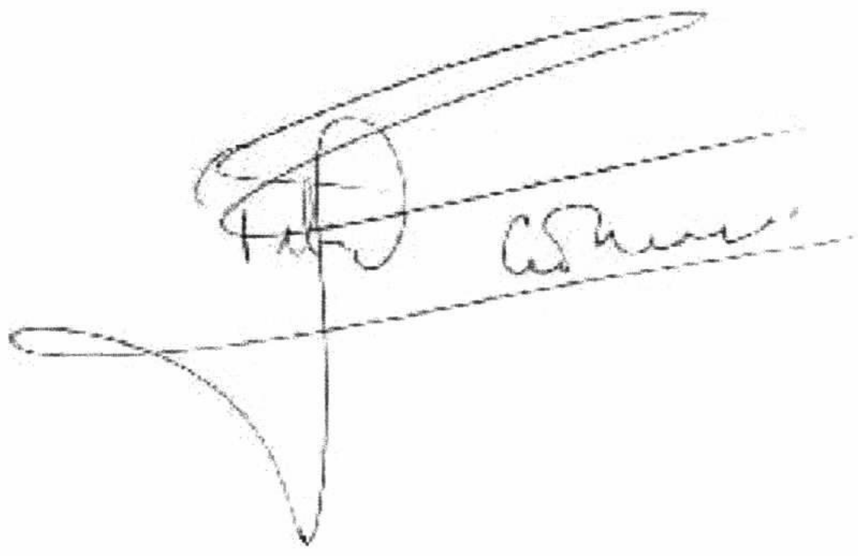


Figure 3 - Hervé Théveniaut and Telma Fonseca showing the French and Brazilian geological sides of the NA22-V-B Sheet

3.BRGM - CPRM COOPERATION FOLLOW UP

According to BRGM decision, the final presentation of the *GéOyapock* Project will take place in Cayenne, French Guiana, on Monday the 12th of November, during a French-Brazilian meeting.

Belém, the 11th of October 2007



Telma Faraco