

MIAS

A topographic map project in South America

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 - Description of the project
 - Current situation
 - Future
- Joining the project
 - Presentation of French Guiana
 - Integration into the ERM production workflow
 - Differences between ERM and MIAS
 - Benefits for ERM FR



What to know about MIAS

An organiser's tale

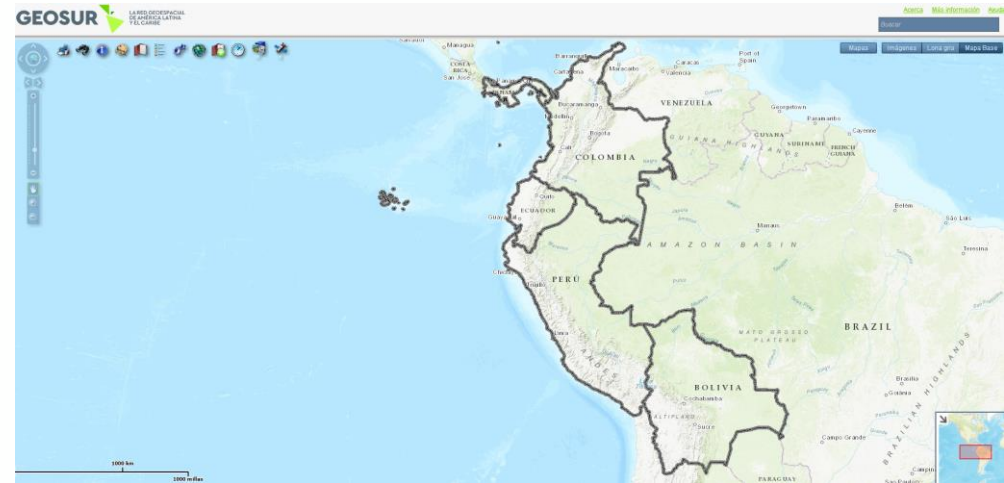
What is MIAS?

- South America Integrated Map
- IPGH Cartography Commission (CAF, USGS) create GEOSUR in 2007
- GEOSUR promote the use and dissemination of geospatial information
- 2009-2013: MIAC (Central America Integrated Map)
 - Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama
 - 1:250.000
 - WMS/WMTS
 - Updated in 2018



MIAS: Background

- In 2015 CNIG-Spain enters to participate as technical responsible for MIAN project
- USGS in charge of the river network
- MIAN: extension of MIAC; “*North Andean Integrated Map*”.
- 5 countries: Bolivia, Colombia, Ecuador, Panama, Peru
- 1:250.000
- 6 themes. 15 objects. Geodatabase format
- 4 Workshops. First version: September, 2016
- WMS/WMTS



MIAS: general information

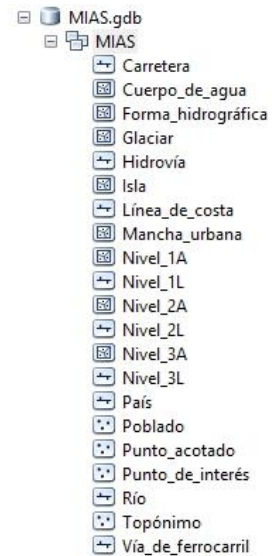
- Extension of MIAN
- Countries: Argentina, Bolivia, Brazil, Colombia, Chile, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela
- French Guyana
- From November, 2016 to November, 2018
- 5 Workshops
- Official digital data at 1:250.000 scale of South America
- Topographic database
- Seamless. Homogeneous. Harmonized

MIAS: general information

- Vector-based product
- Common specifications
- 6 Themes. 21 objects. Geodatabase format
- Geometry: edge matched, quality controls. Full topology
- Production Mapping. GIS Data Reviewer. FME.
- National borders without legal value, used just for cartographical purposes
- Added value: river network
- Updated regularly
- WMS/WMTS

MIAS: general information

- 18.200.000 Km²
- 455.000.000 inhabitants
- Geodatabase:



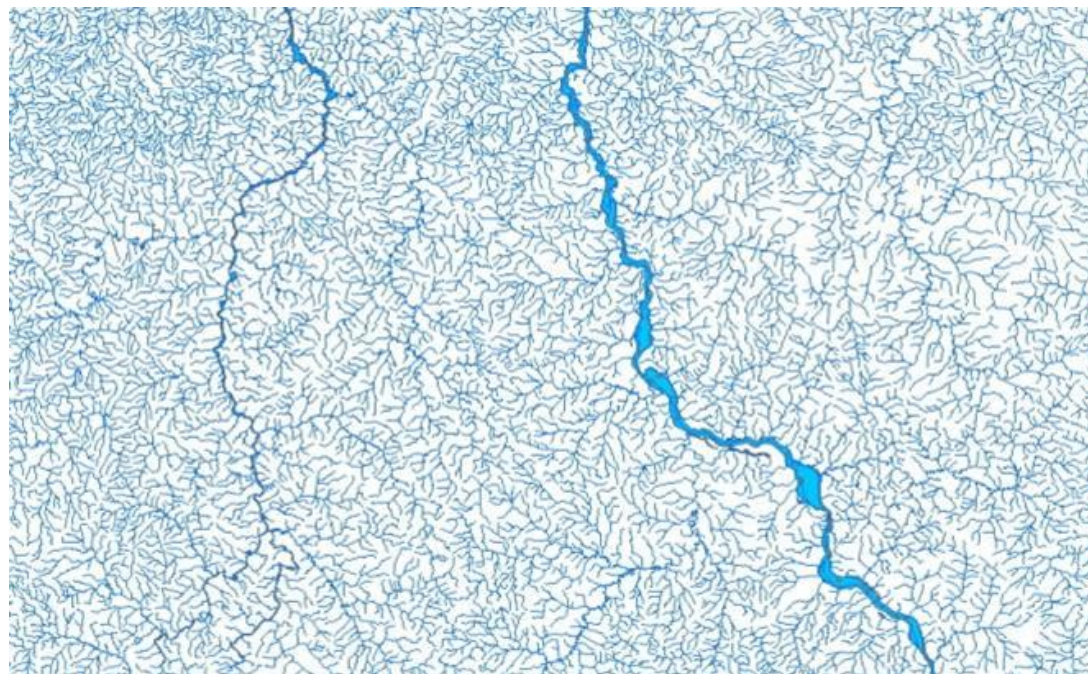
MIAS: National boundaries



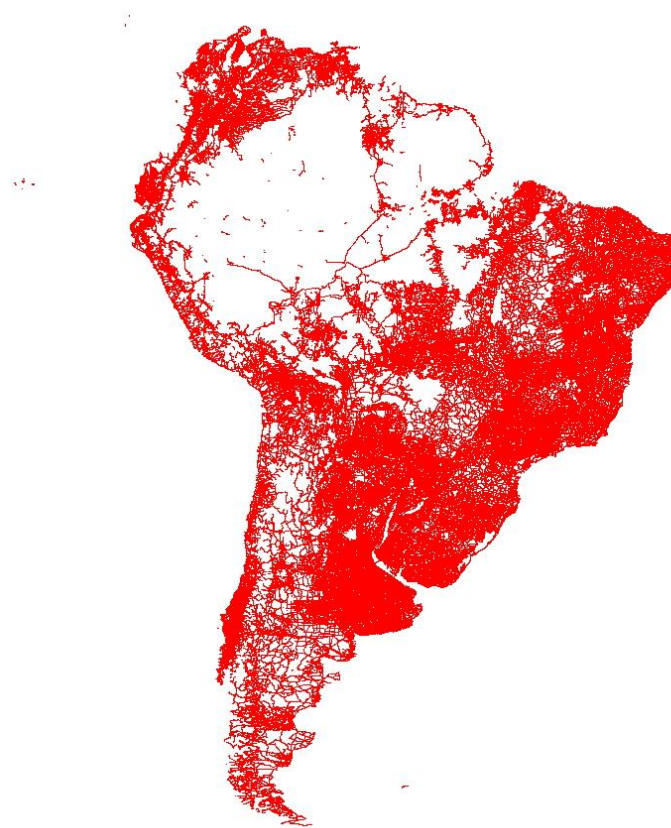
MIAS: “River” object



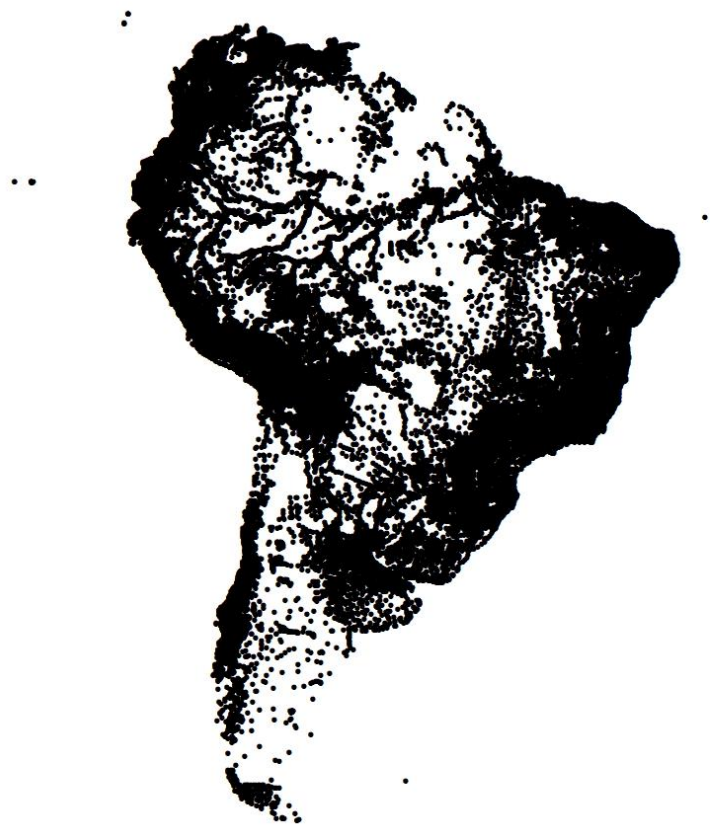
MIAS: “River” object. Detail.



MIAS: “Road” object



MIAS: “BuiltupP” object



MIAS: part of a process



MIAC 2013, 2018



MIAS 2018



MIAdN 2020



MI America 2020

MIAS. In conclusion...

- Big challenge
- Big experience
- Big amount of work
- First experience of this kind in the continent
- Many different organizations, many different situations
- Excellent attitude of the technical teams

Joining the project

A national producer's tale



What is French Guiana?

- French semi-exclave in South America
 - bounded by Suriname, Brazil, and the Atlantic Ocean
- Legal status: French department and region
 - Formally established in 1946
 - Local deliberative assembly (like any other French region)
 - Same laws, same citizenship than in metropole
- Part of the Outermost Regions of the European Union
 - Like the Azores or Madeira (PT), the Canary Islands (ES), or other French overseas departments
 - Unique continental territory of France and the EU in South America
 - Part of the eurozone, Single Market, EU Customs Union
 - Not part of the Schengen Area

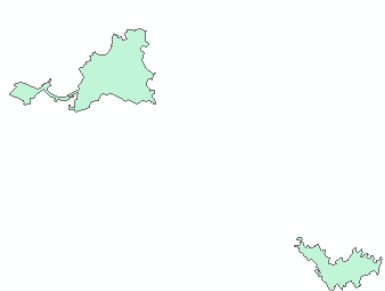


Constraints to join the project

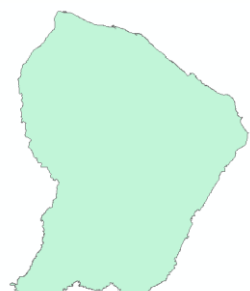
- In mid-2017 IGN said yes to a technical participation in the project
 - It's been instructed the team that in charge of France's implication in EuroGeographics products
 - No extra position in the team
 - Integrating the production of French Guiana's part for MIAS into the production of France's part for ERM as much as possible
- Adopting the following workflow:
1. Producing ERM on French Guiana
 2. Transforming ERM data into MIAS data
 3. Adding extra data (missing from ERM)

Effects on ERM FR

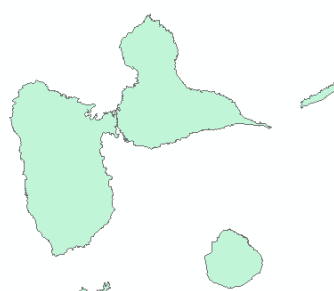
- Because data on French Guiana will be produced in the ERM format, they'll be included into the French contribution
 - For political reasons, the other French overseas departments (plus Saint-Barthélemy and Saint-Martin) will be produced as well
- Perfect opportunity to meet Eurostat's demand



Saint-Barthélemy
Saint-Martin



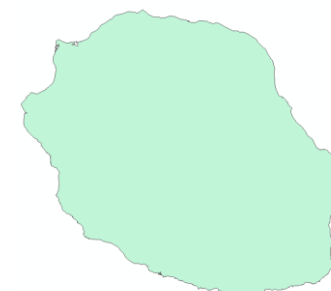
French Guiana



Guadeloupe



Martinique



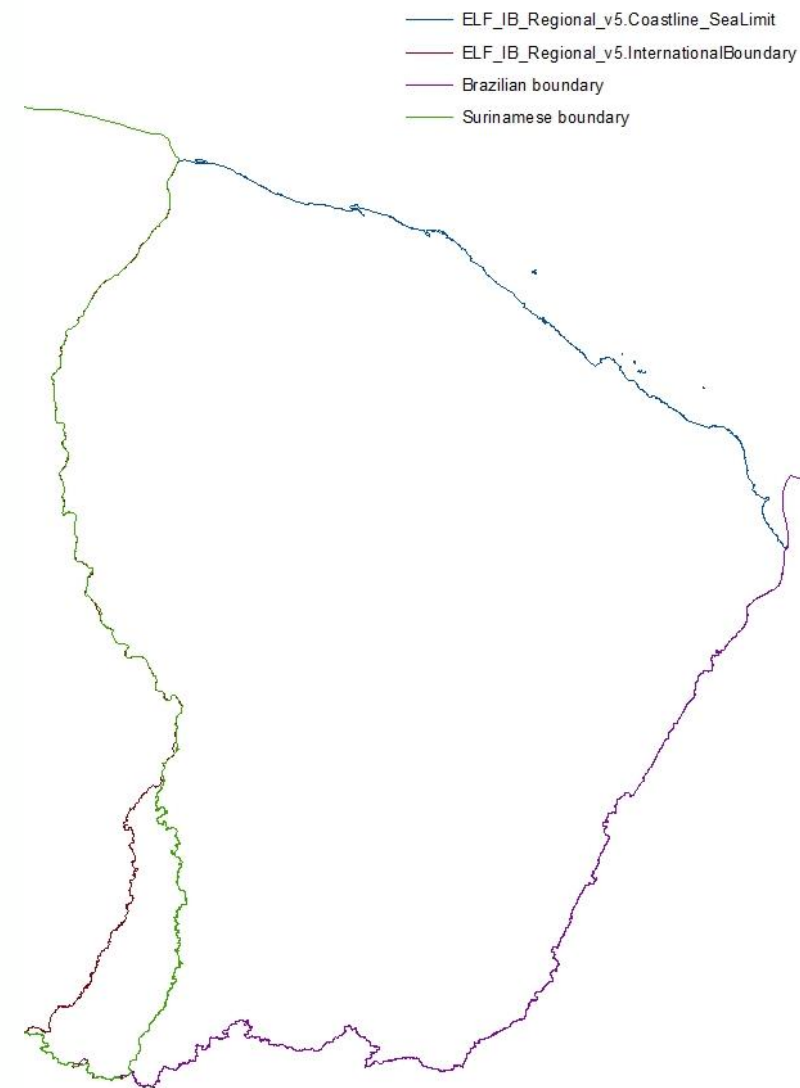
Réunion



Mayotte

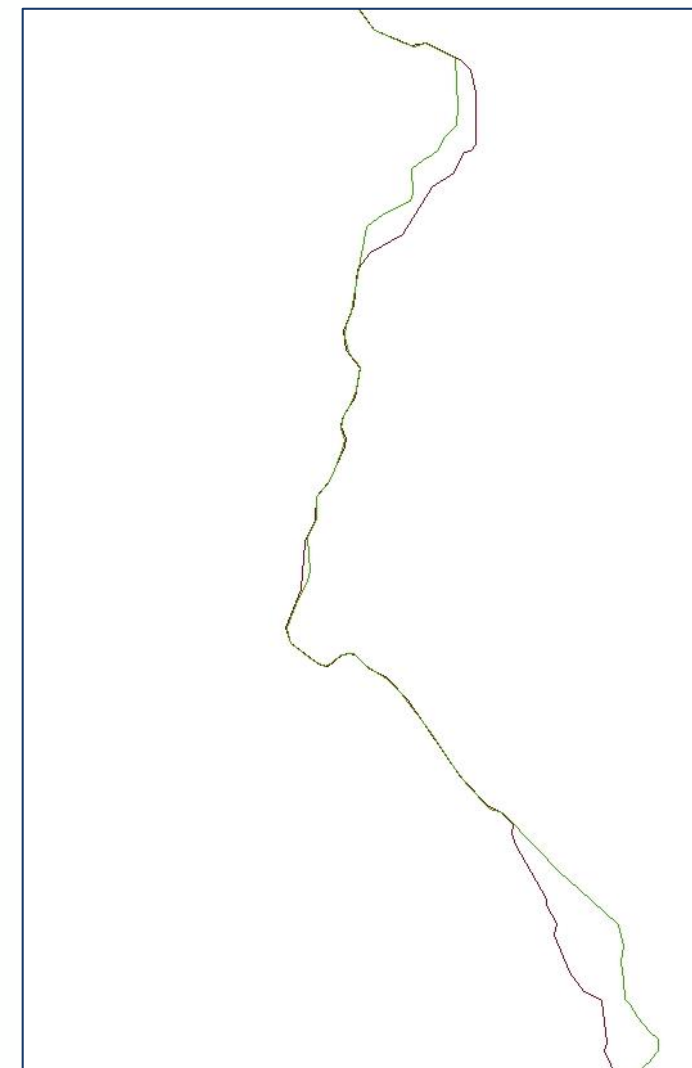
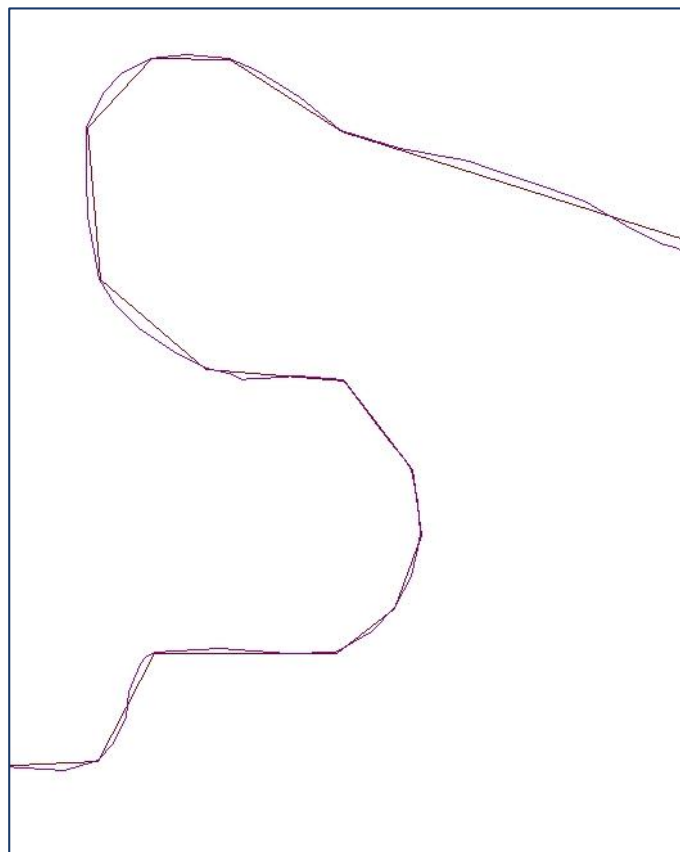
First workshop

- ...in fact it was the third workshop already
 - Montevideo, Uruguay
 - November 2017
- Main objective: Agreeing on the international boundaries with neighbouring countries
- Data at my disposal
 - ELF International Boundary Regional
 - Used for EBM (overseas departments are portrayed in it)
 - Brazilian and Surinamese boundaries



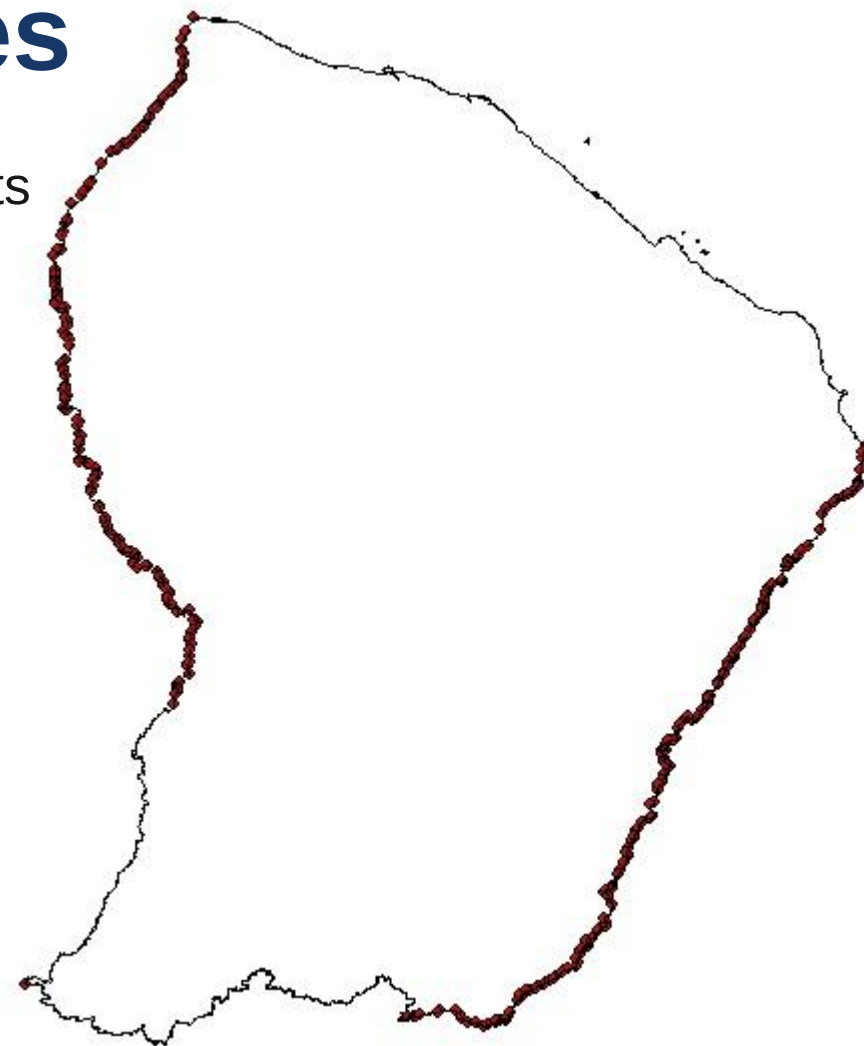
Main issues and results

- Difference of levels of detail
 - In-dispute areas
- The result line has been integrated to ELF IB Regional v6 and used for production this year



Next step: connecting features

- Fortunately enough, the boundaries follow topological objects
 - The Maroni River in the west
 - The Oiapoque River in the east
 - A watershed in the south
- Almost all connecting features are related to rivers
- Only one road between Brazil and French Guiana

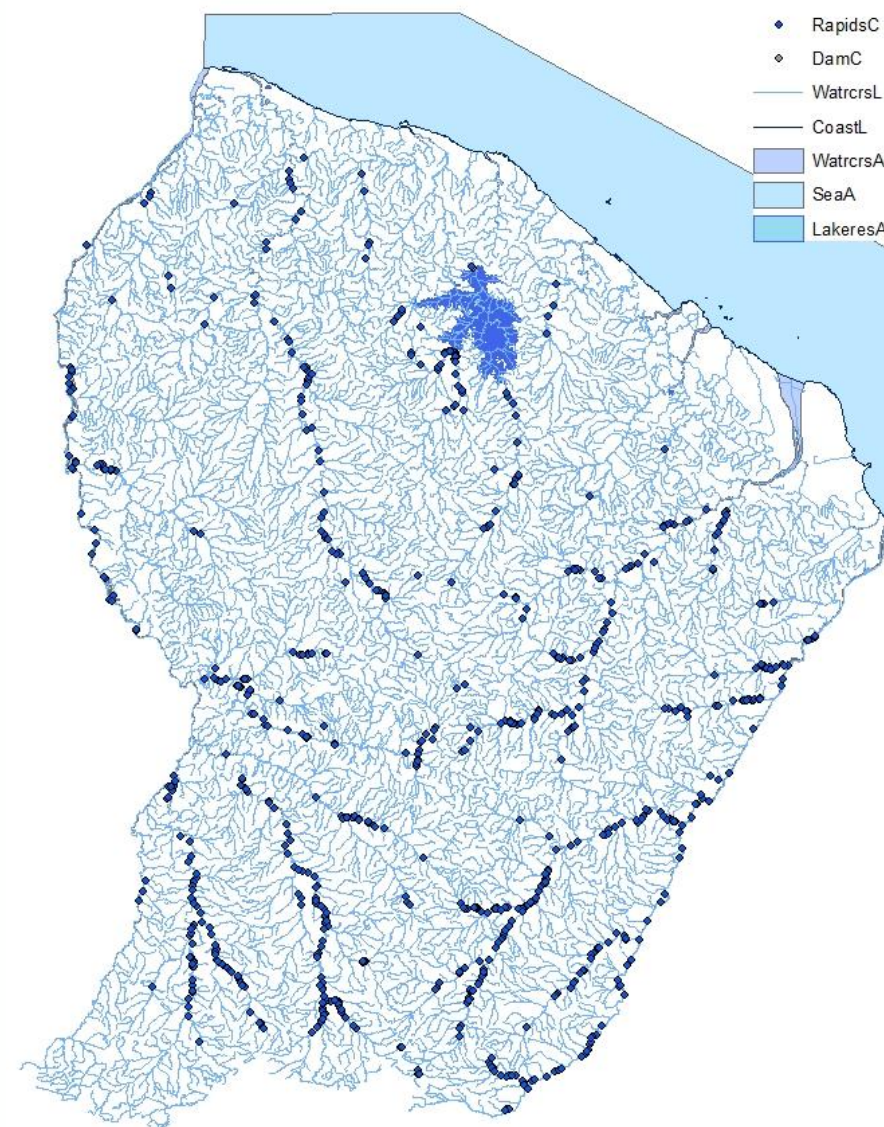


Producing ERM GF

- First, adapting the ERM production tools
 - Same input data as for ERM FR (IGN's production database, 1:100,000)
 - The tools have to manage several territories now
 - It's been decided the tools would manage the various territories a similar way the EGM production tools manage the various countries
- Second, we had to check if the selection criteria used for metropolitan France would give a satisfying result on French Guiana (and the other overseas departments)

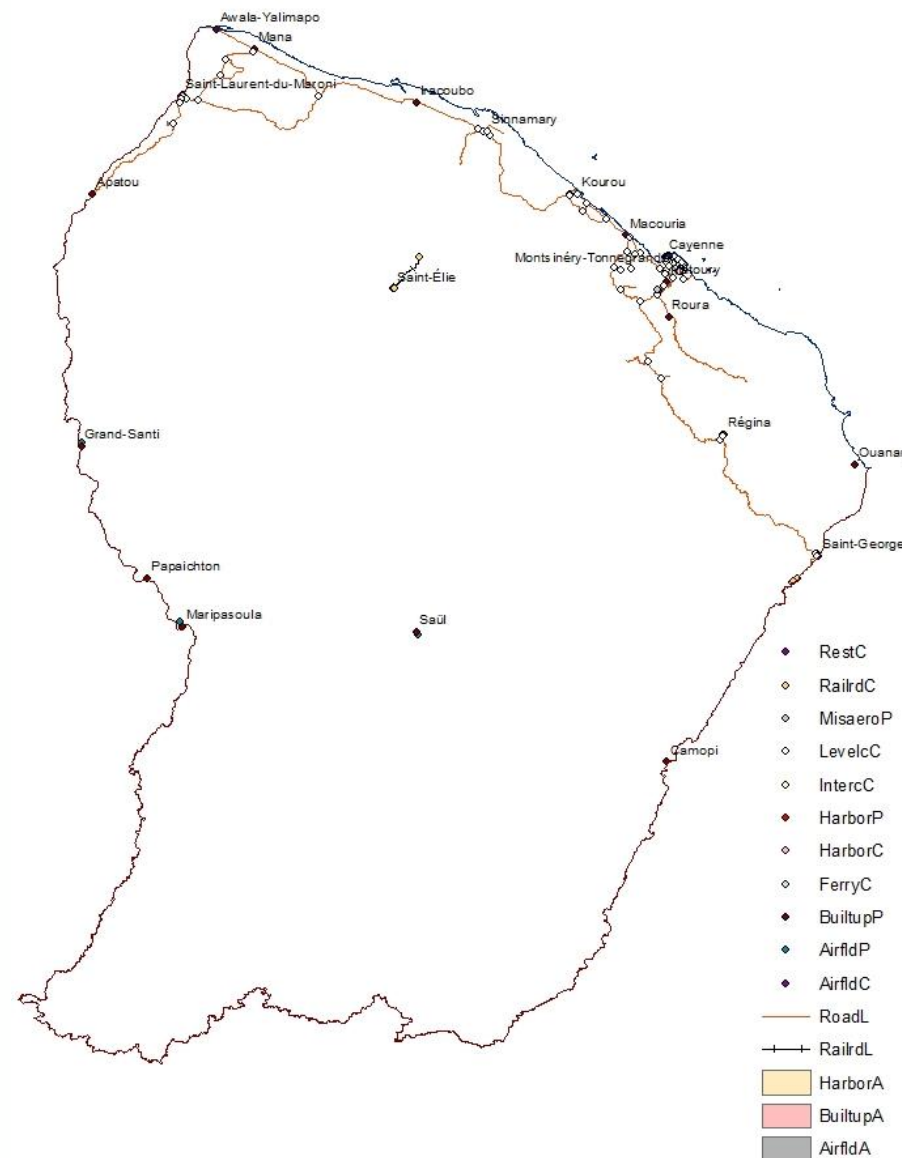
Theme HYDRO

- Available feature classes
 - DamC, RapidsC
 - CoastL, WatcrsL
 - IslandA, LakeresA, SeaA, WatcrsA



Other themes

- BND
 - Will be done by BKG from EBM
- TRANS
 - AirfldC, AirfldP, FerryC, HarborC, HarborP, IntercC, LevelcC, MiasaeroP, RailrdC, RestC
 - RailrdL, RoadL
 - AirfldA, HarborA
- POP
 - BuiltupP
 - BuiltupA
- MISC and POI



Transforming ERM GF into MIAS GF

- Mostly a change in names (names of feature classes, names of attributes, string values translated into Spanish...)
- Made with FME workbenches
- Some geometrical changes

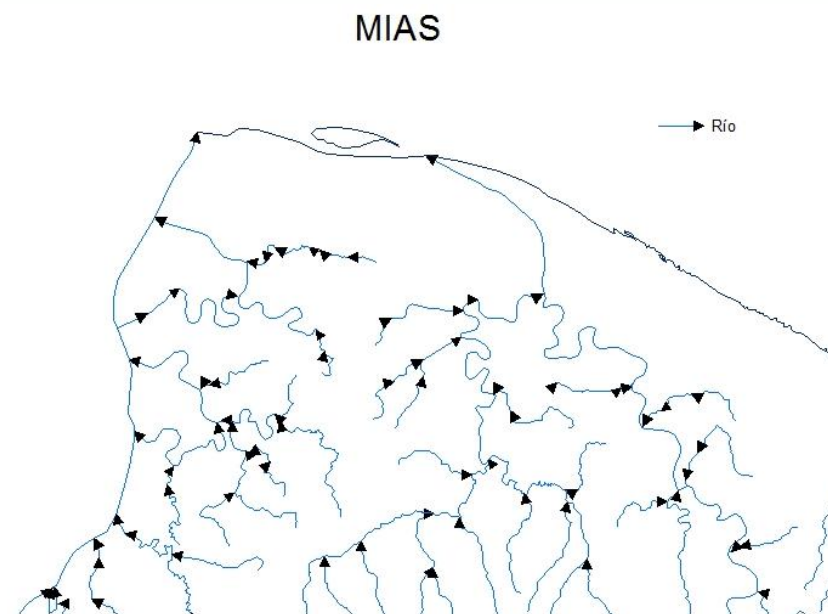
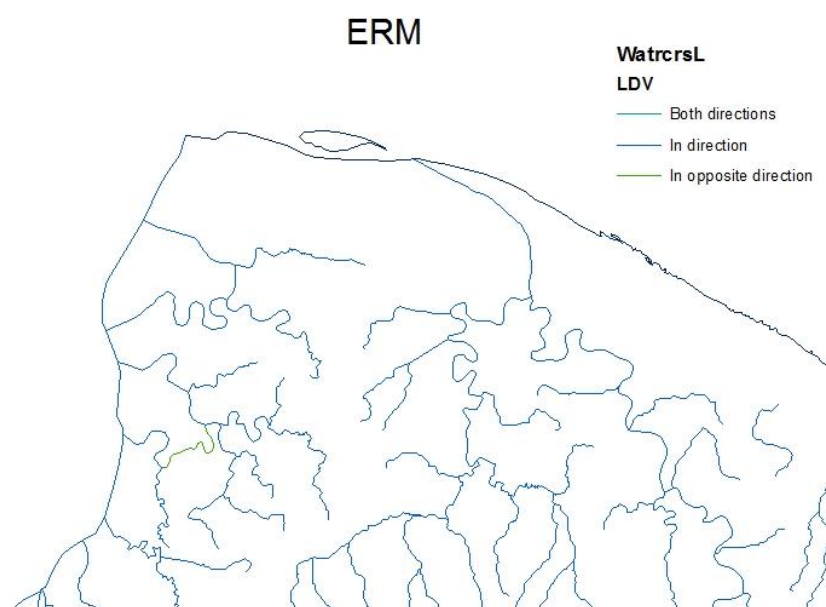
e.g.: Because rapids aren't portrayed in MIAS, the ERM feature class RapidsC create pseudonodes in the MIAS feature class *Río* (rivers).



Differences between ERM and MIAS

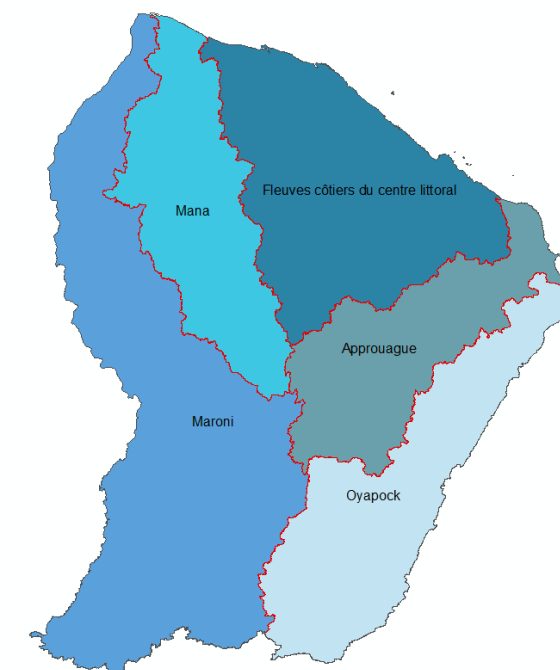
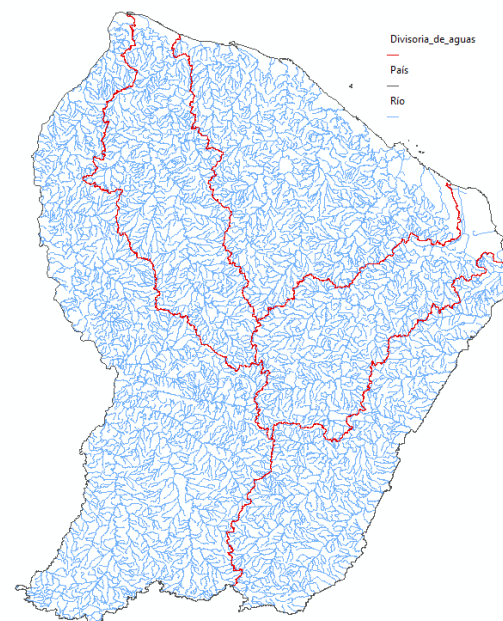
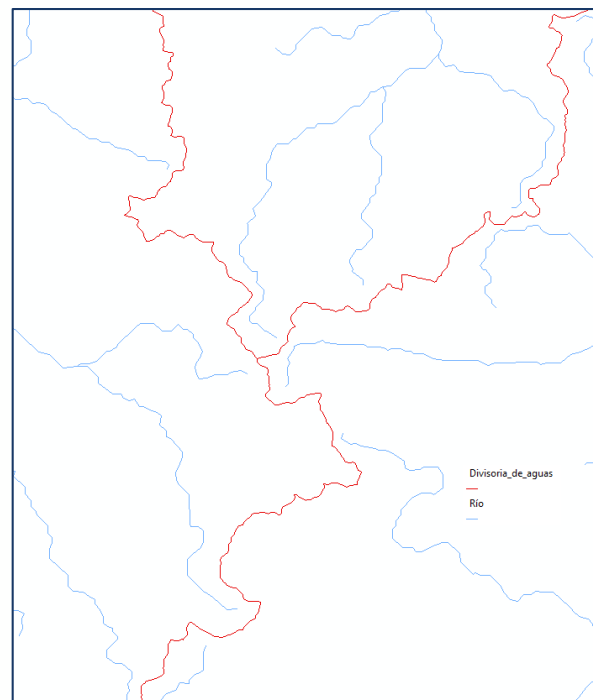
The rivers constitute a genuine hydrographic network

- The direction of the line is relevant
- Unlike ERM where the direction is stored in an attribute (LDV)



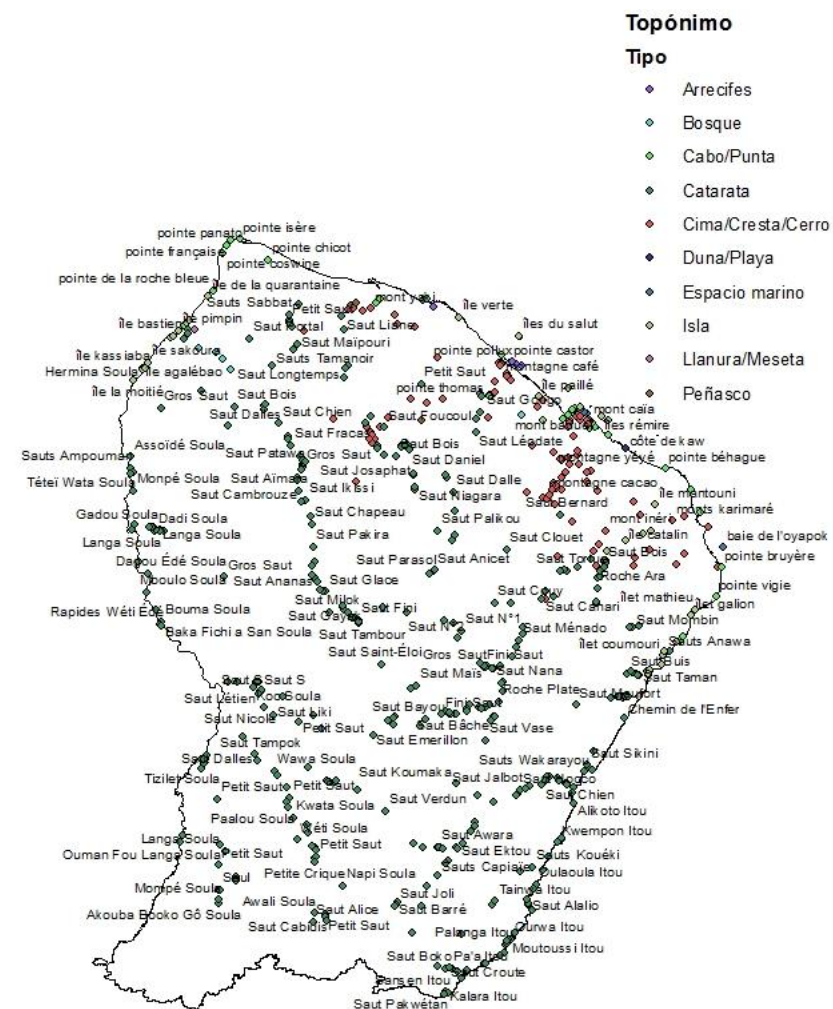
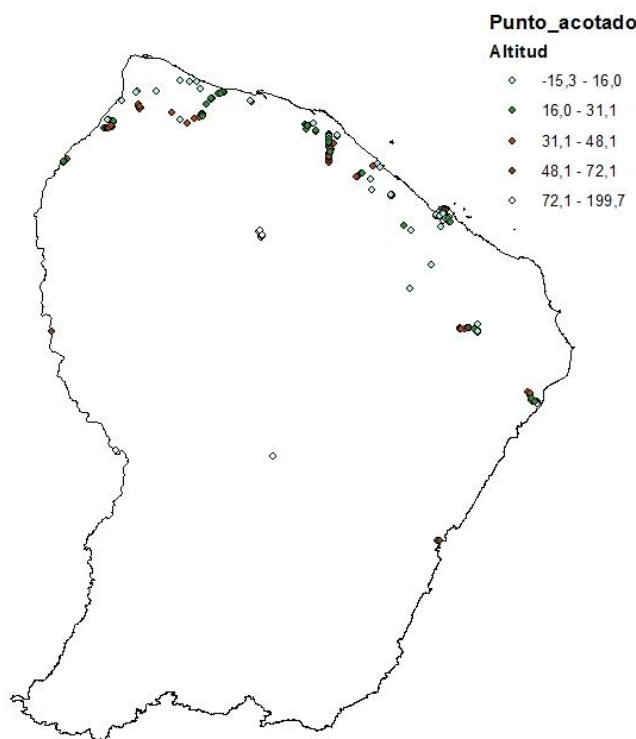
Specific HYDRO feature classes

- *Cuenca hidrográfica* (drainage basin)
- *Divisoria de aguas* (watershed)
- *Hidrografía* (waterway)



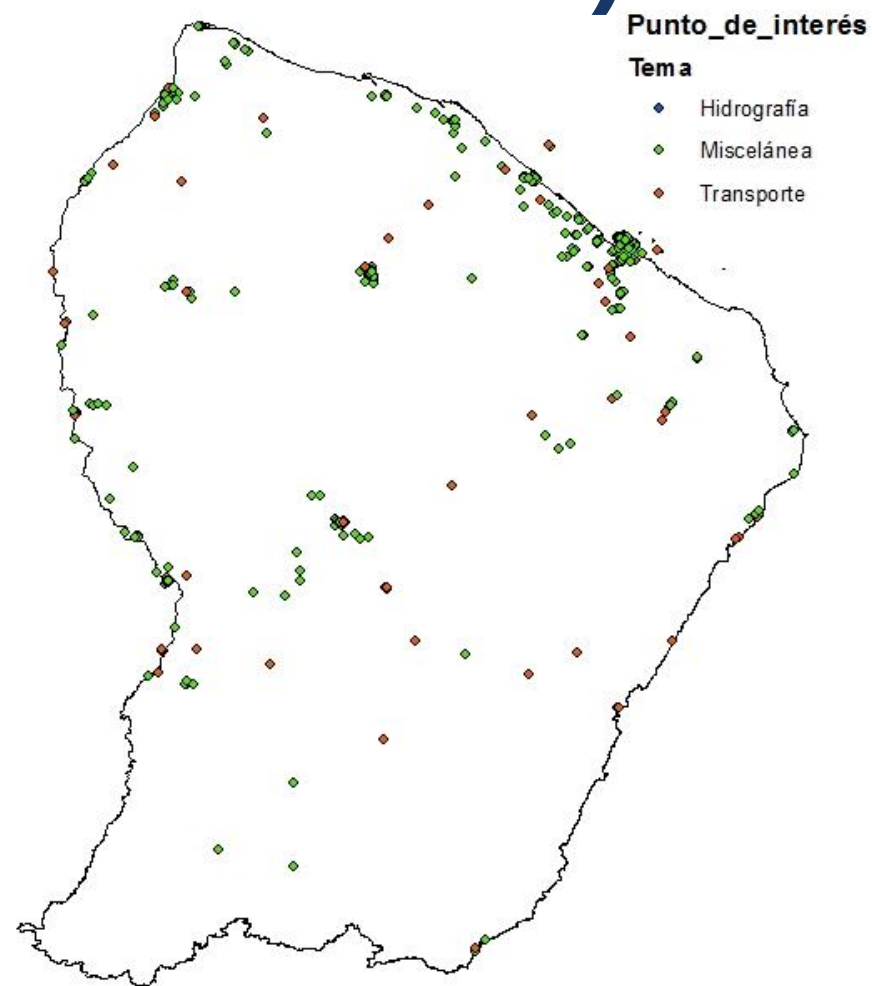
Specific MISC feature classes

- *Topónimo* (place name)
 - Reefs, headlands, hills, sand dunes, rocks
 - Forests, plains
 - Waterfalls, islands, sea areas
- *Punto acotado* (elevated point)



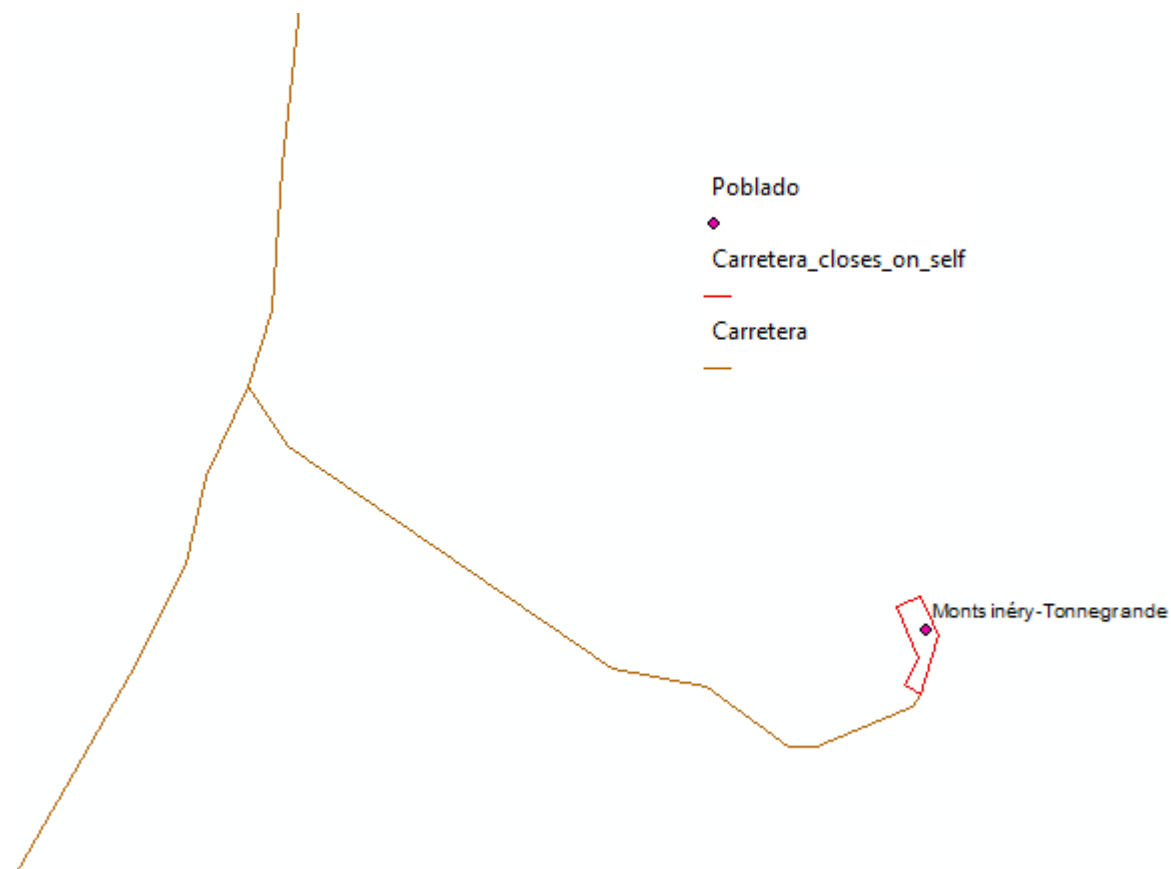
Punto de interés (point of interest)

- Hydrography
 - Dams
- Miscellaneous
 - Churches, museums
 - Excavations, factories
 - Schools, hospitals
 - ...
- Transport
 - Airports
 - Train stations
 - Harbours
 - ...



Difference in data specifications

- In the road network, loops are not allowed
- Unlike ERM
- Two solutions
 - Manual correction
 - Declaring it as an exception



Benefits for the production of ERM FR

- More data delivered (French overseas departments)
- An increased checking on water network
- New objects in POI and MISC feature classes
- Opportunity for IGN-France to have a better homogenisation between the production tools for ERM FR and for EGM

Gracias

Благодара

Bedankt

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Go raibh maith agat

Tack

Dziękuję

Danke

Grazie

Tak

Ačiū

Hvala

Děkuji

Takk

Tānan

Obrigado

გმადლობთ

Ďakujem

Grazzi

Paldies

Ευχαριστώ

Thanks

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