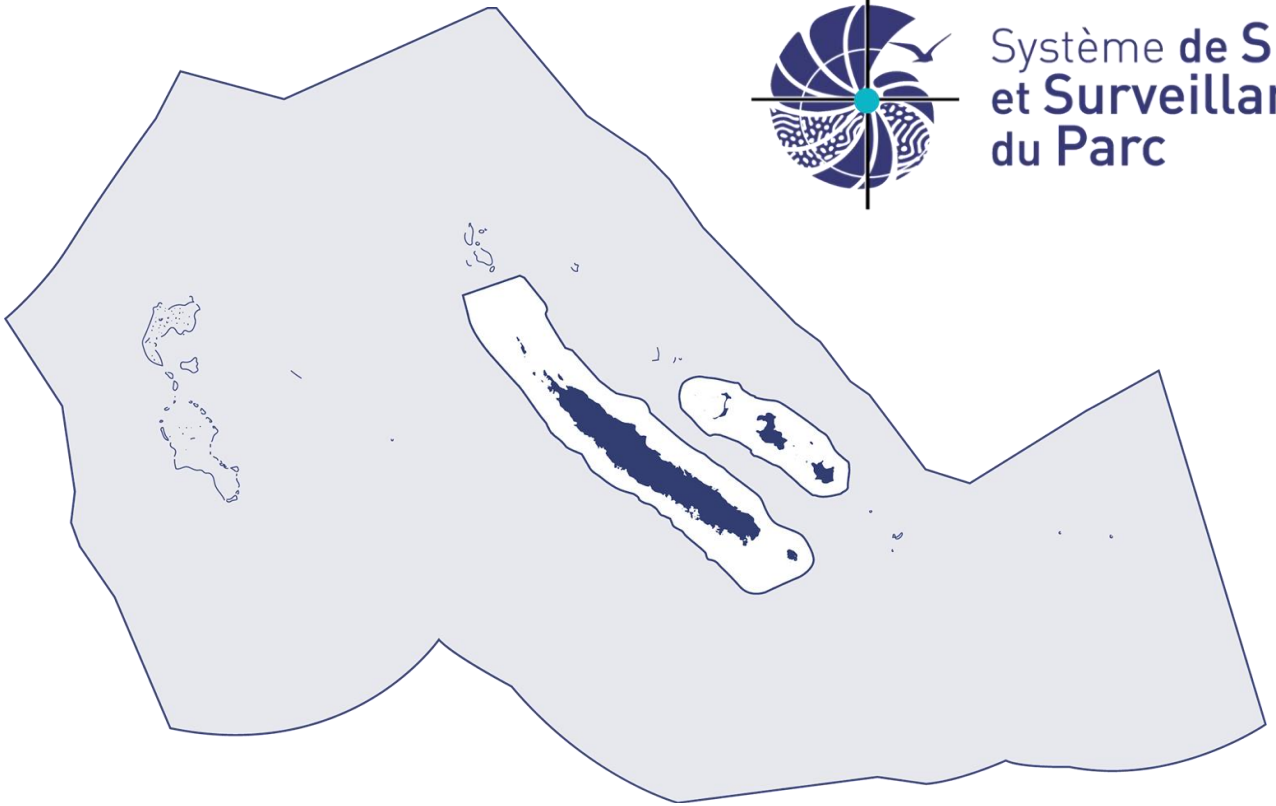


Système de Suivi et Surveillance du Parc

GOUVERNEMENT DE LA NOUVELLE CALÉDONIE

Parc Naturel Mer de Corail NOUVELLE-CALÉDONIE

Needs of the Natural Park of the Coral Sea and Fisheries Department in terms of attendance surveillance

Arnaud DUBOIS ; arnaud.dubois@gouv.nc

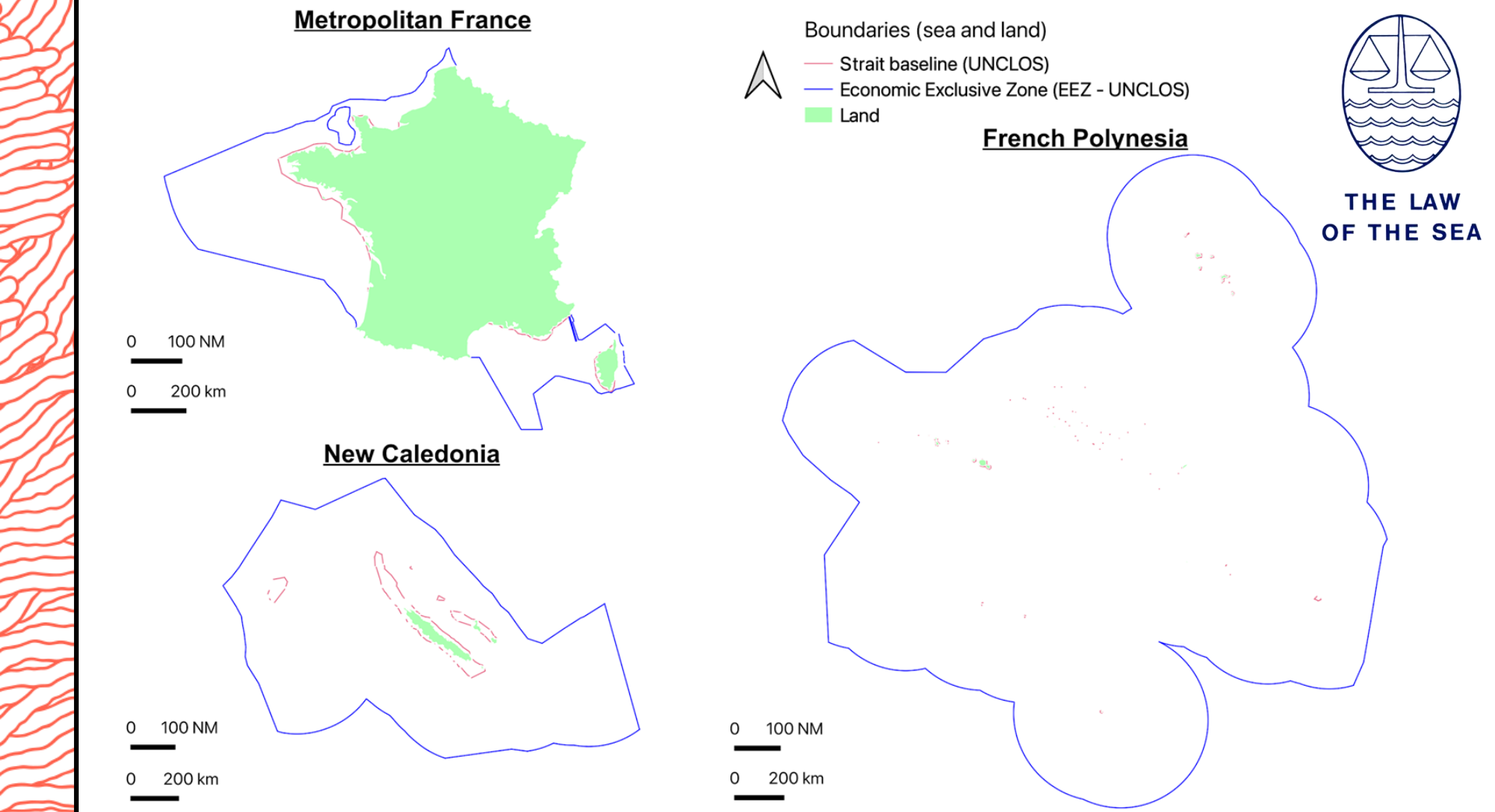
Introduction

Is the surveillance of the Natural Park of the Coral Sea sufficient in relation to issues and available means ?

How to develop an efficient surveillance system integrating all the particularities related to the organization and insularity of New Caledonia?

Characterize

Issues
&
New Caledonia's Insularity

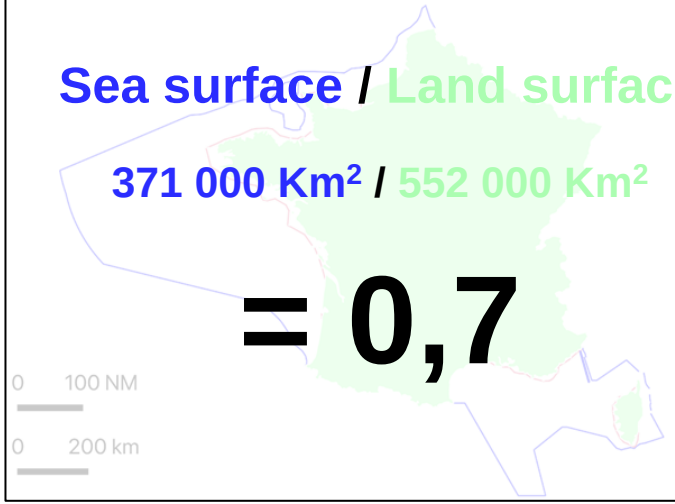

Metropolitan France
Boundaries (sea and land)
Strait baseline (UNCLOS)
Economic Exclusive Zone (EEZ - UNCLOS)
Land
French Polynesia
THE LAW
OF THE SEA
0 100 NM
0 200 km
New Caledonia
0 100 NM
0 200 km
0 100 NM
0 200 km

Metropolitan France

Sea surface / Land surface

371 000 Km² / 552 000 Km²

= 0,7

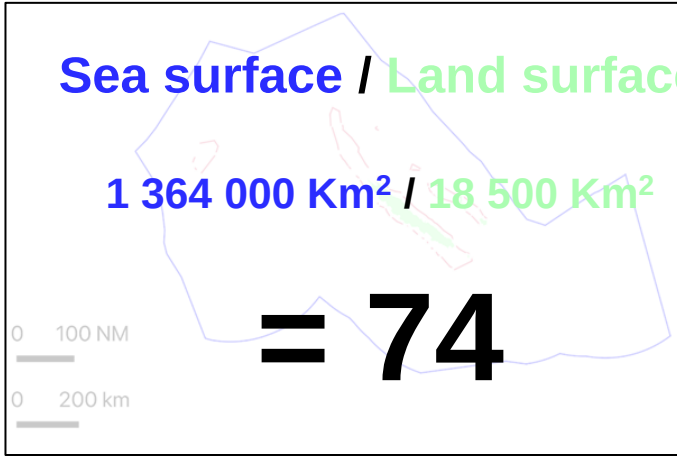


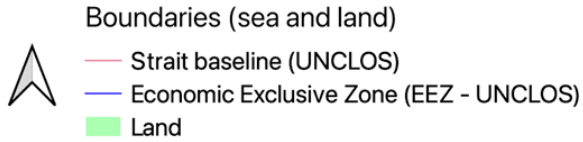
New Caledonia

Sea surface / Land surface

1 364 000 Km² / 18 500 Km²

= 74



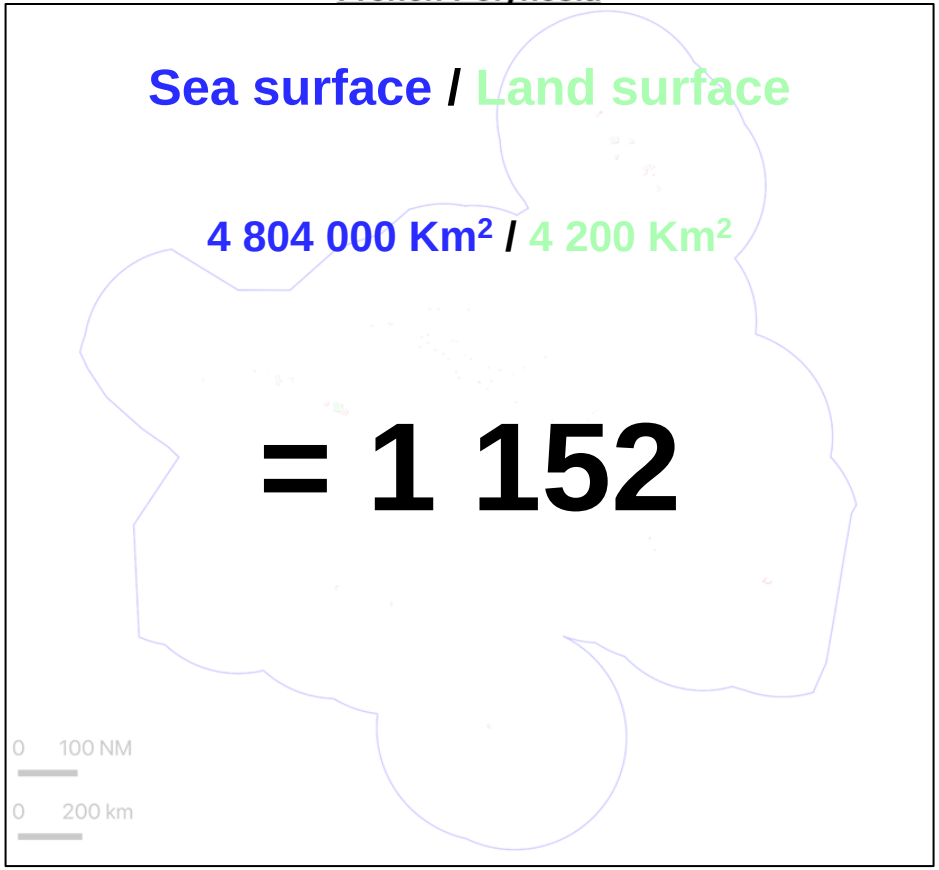


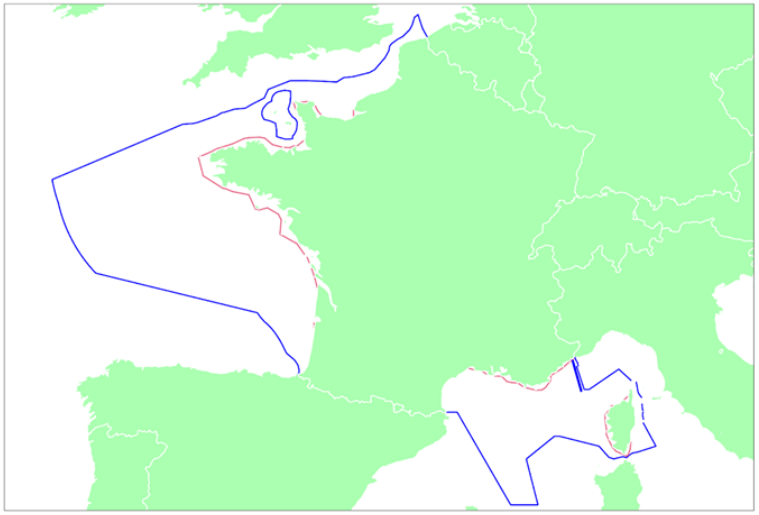
French Polynesia

Sea surface / Land surface

4 804 000 Km² / 4 200 Km²

= 1 152



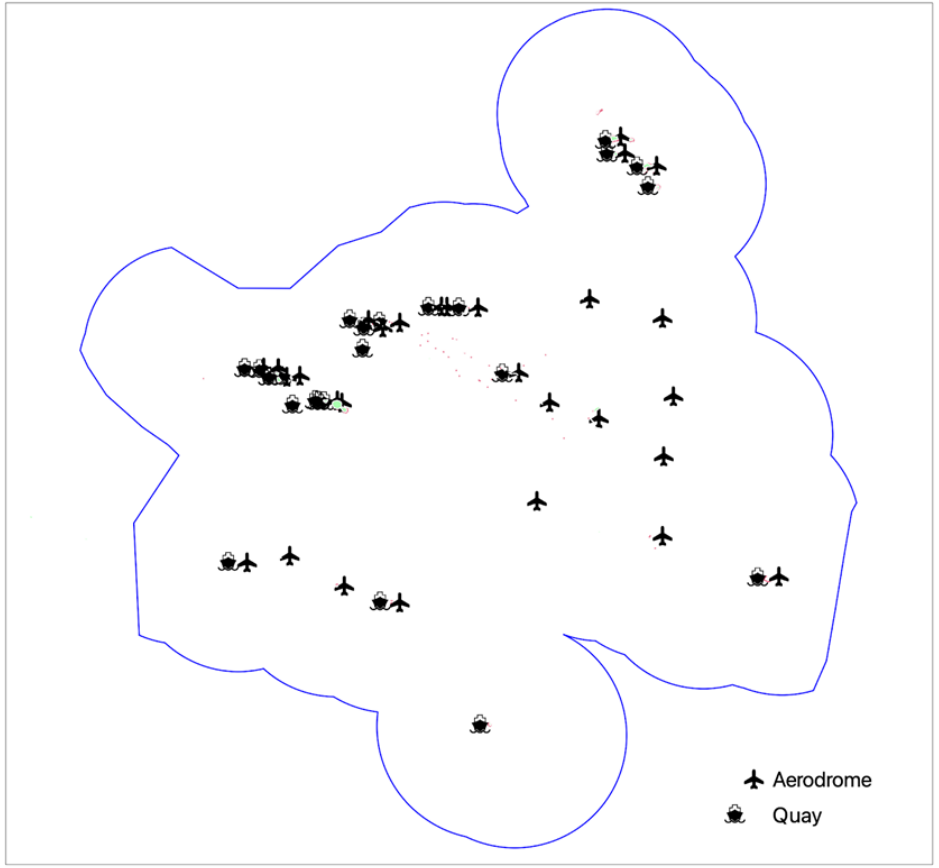


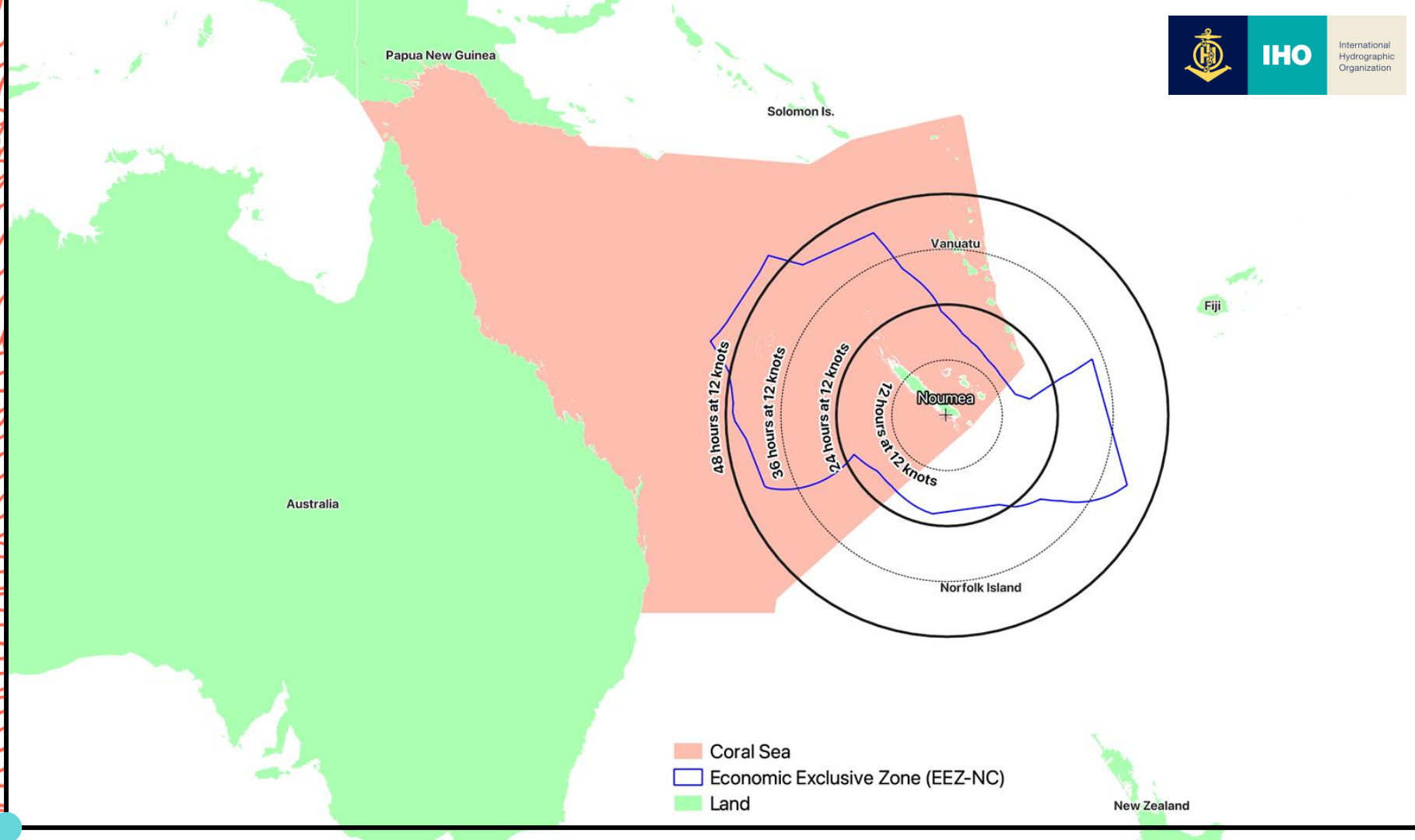
Boundaries (sea and land)

Strait baseline (UNCLOS)

Economic Exclusve Zone (EEZ - UNCLOS)

Land




Papua New Guinea
Solomon Is.
Vanuatu
Fiji
Australia
Noumea
48 hours at 12 knots
36 hours at 12 knots
24 hours at 12 knots
12 hours at 12 knots
Norfolk Island
New Zealand
Coral Sea
Economic Exclusive Zone (EEZ-NC)
Land

Characterize

Caledonian organization & Parallel with insularity

Skills: Who does what? (Qui fait quoi ?)

THE LAW OF THE SEA

United Nations Convention on the Law of the Sea (UNCLOS 1982 Adopted in **1994**)

Organic Law of New Caledonia (**1999**)

STATE

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

GOUVERNMENT

GOUVERNEMENT DE LA NOUVELLE CALÉDONIE

Others institutions (*Les provinces*)

THE LAW
OF THE SEA

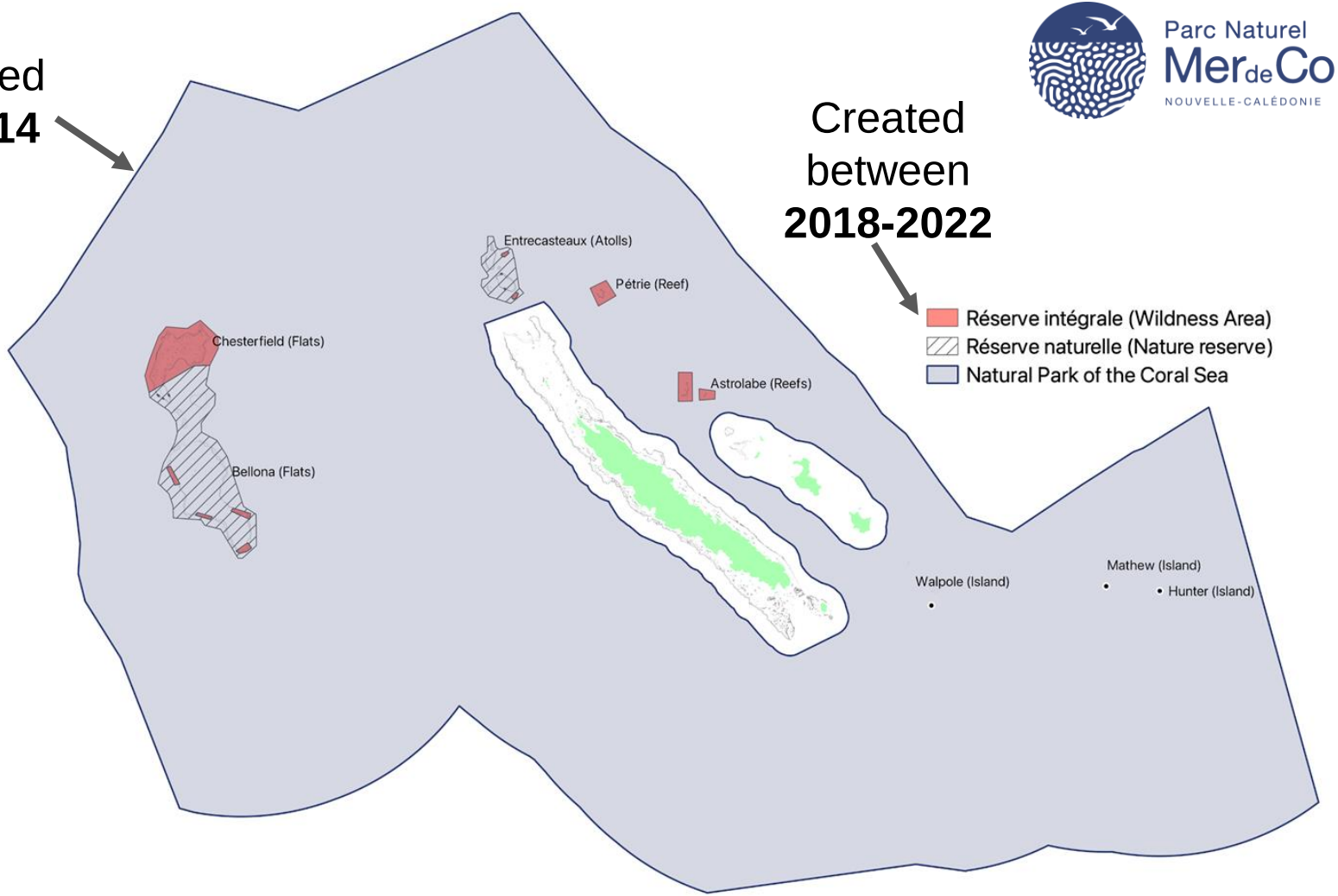
THE LAW
OF THE SEA

Adopted
in **1994**

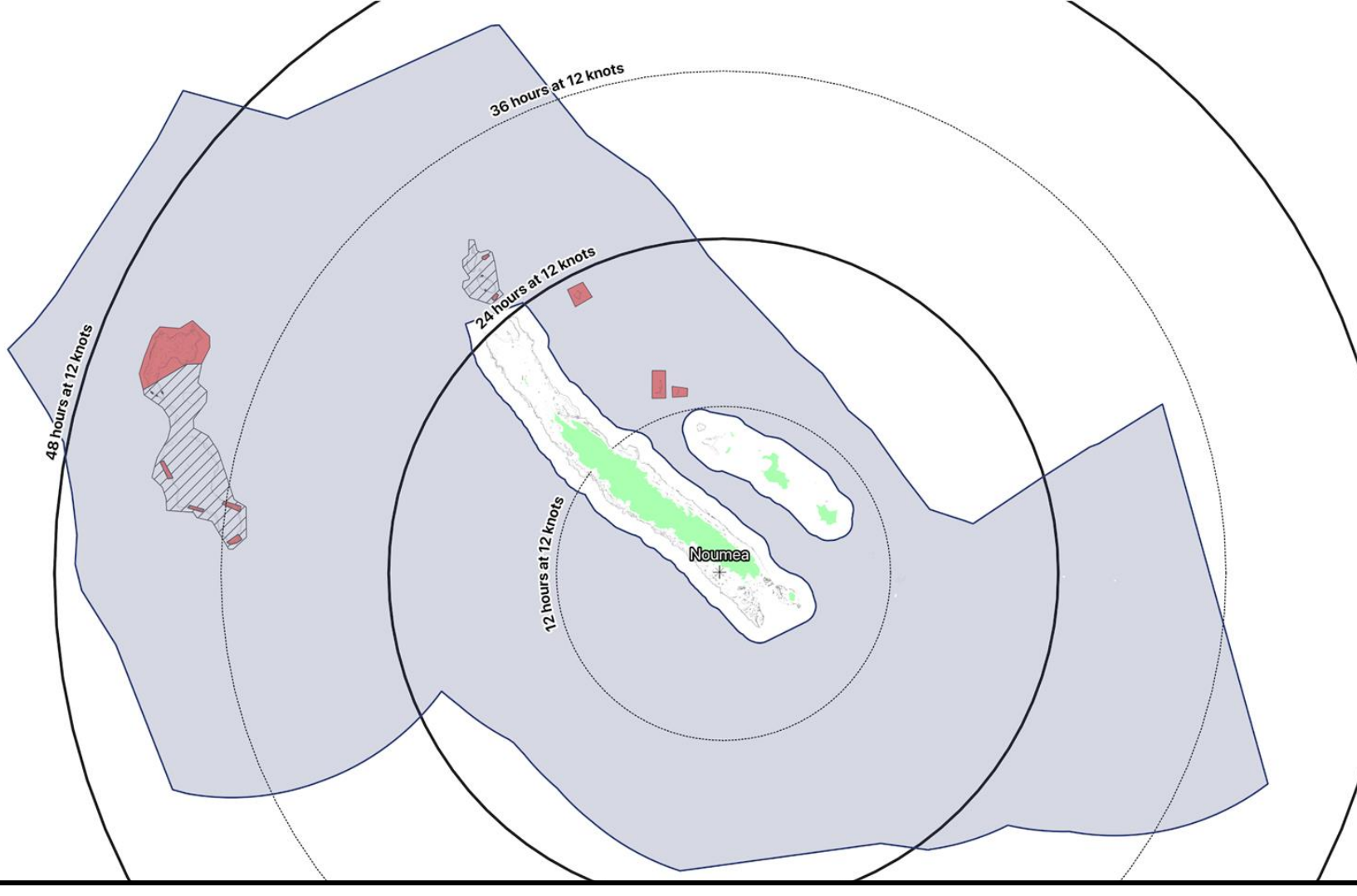
Parc Naturel
Mer de Corail
NOUVELLE-CALÉDONIE

Created in **2014**

Created between **2018-2022**



GOUVERNEMENT DE LA NOUVELLE CALÉDONIE


36 hours at 12 knots
48 hours at 12 knots
24 hours at 12 knots
12 hours at 12 knots
Noumea

Existing monitoring means analysis

Gilbert A, Guillemot N, Andreoli R (2018) Synthèse et recommandations sur les technologies de surveillance des activités humaines dans les aires marines protégées du Pacifique. Rapport AFB & Projet Pacific Biodiversity Blue Belt, 154p

2017

Pilot
High Resolution Optical Satellite Imagery

2018

Park management plan **2018-2022**

2019

Pilot
Satellite RADAR

Note

Park Surveillance

2020

Pilot
Sentinelles du Parc

Analysis report **AIS 2019**

2021

Analysis report **AIS 2020**

2022

Pilot
joint exercise & ROEM

Analysis report **AIS 2021**

Development of a surveillance system

Organisation

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

CENTRE DE FUSION DE L'INFORMATION MARITIME
CFIM
NOUVELLE-CALEDONIE

intermediary for an effective cooperation

GOUVERNEMENT DE LA NOUVELLE CALÉDONIE

Parc Naturel Mer de Corail
NOUVELLE-CALÉDONIE

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

GOUVERNEMENT DE LA NOUVELLE CALÉDONIE

S²P

Système de Suivi et Surveillance du Parc

a system with a surveillance component and a follow-up component

Organisation

- ensures smooth communication between the various parties involved (+ french national navy vessels)

- carries out analysis on vessel traffic
- Maintains the system in working order

FOLLOW-UP

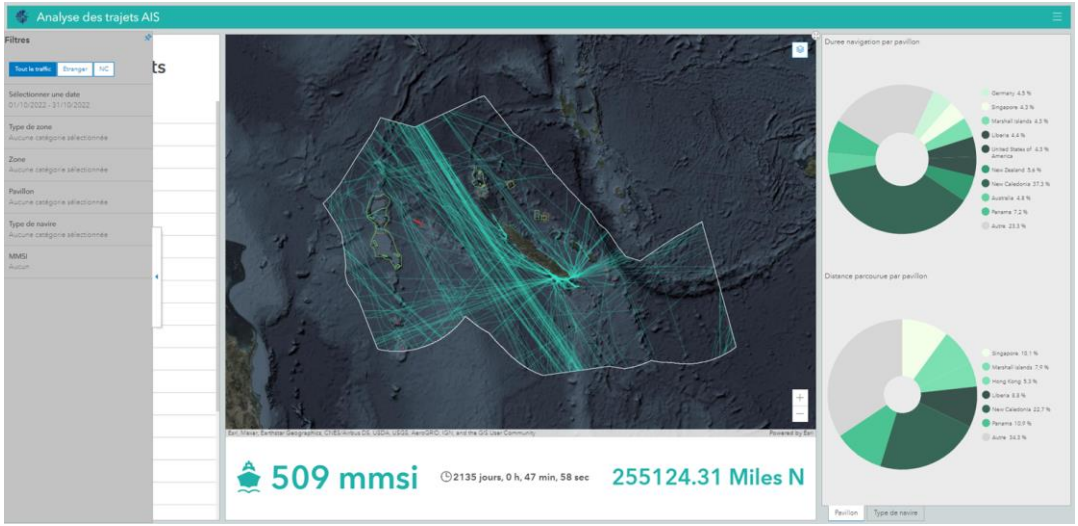
Système de Suivi et Surveillance du Parc

SURVEILLANCE

- Operational 24h/24
- Performs relay of alerts

Software (Application)

Event statistics for the whole month of October 2022



FOLLOW-UP

Système de Suivi et Surveillance du Parc

SURVEILLANCE

On-screen Application

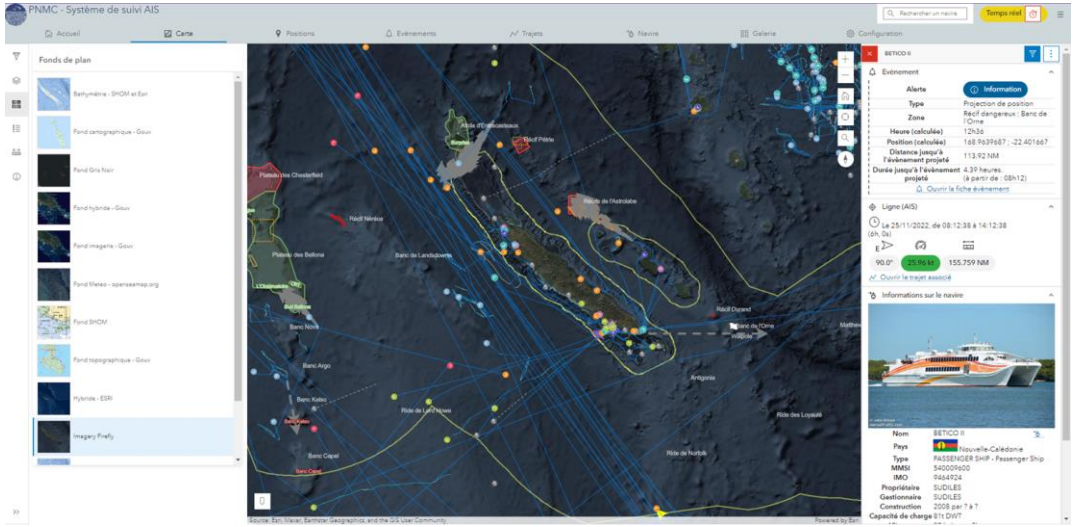
Analysis report **OCTOBER-DECEMBER**

Analysis report **JANUARY-MARCH**

Analysis report **APRIL-JUNE**

...

Software (Application)



FOLLOW-UP

Système de Suivi et Surveillance du Parc

SURVEILLANCE

On-screen Application

Software (processing logic)

Data

declared and undeclared **shuffled**

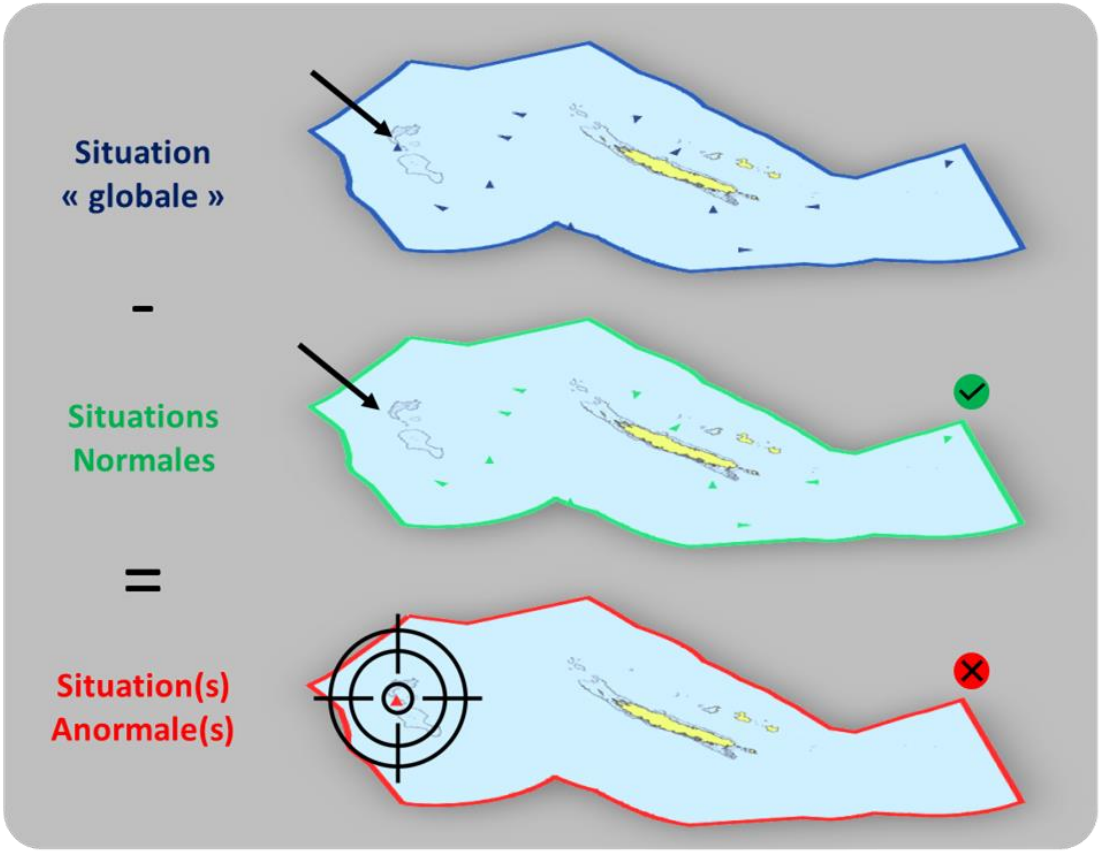
declared **only**

Vessel traffic

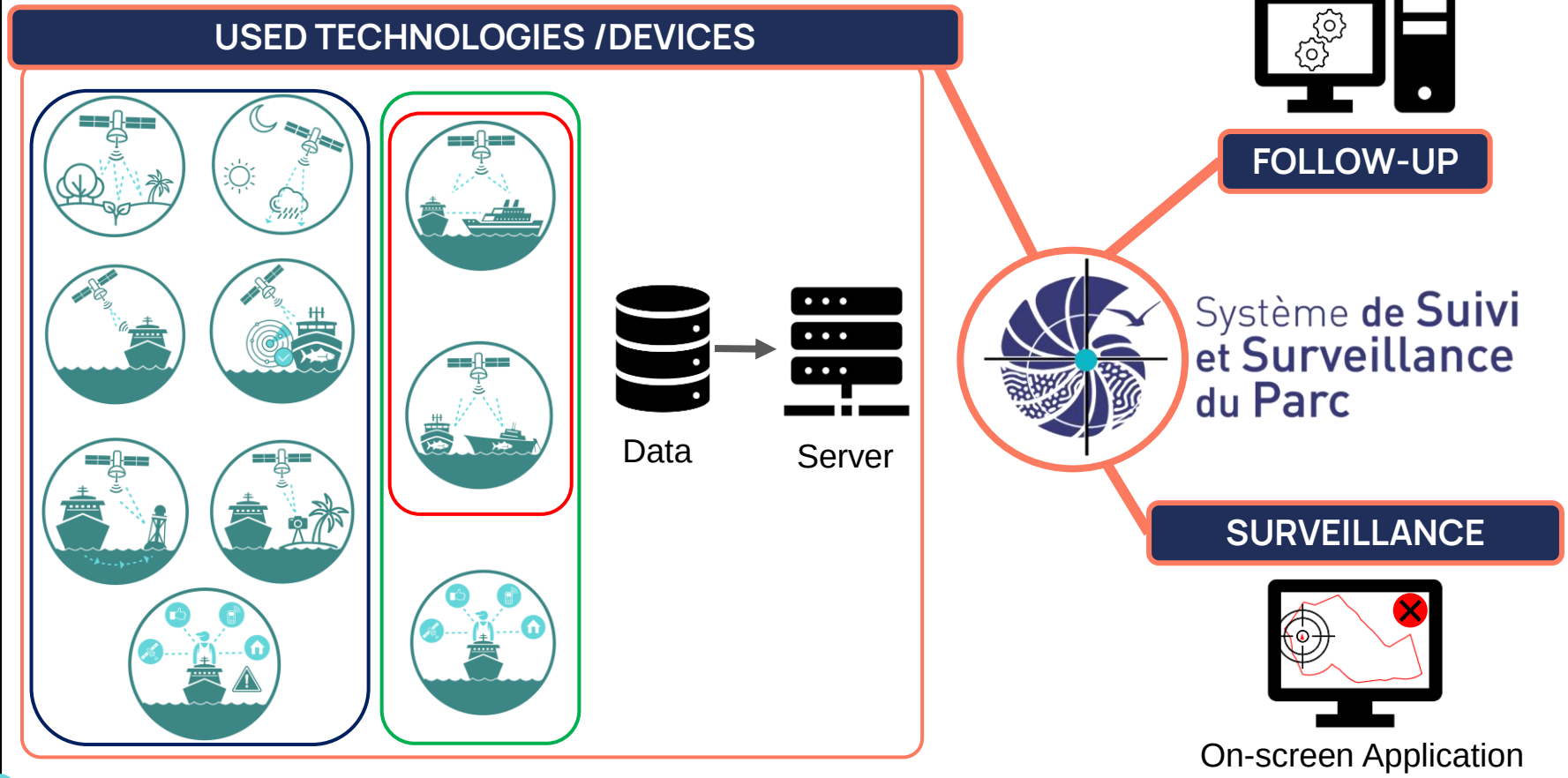
“GLOBAL” situation

NORMAL situations

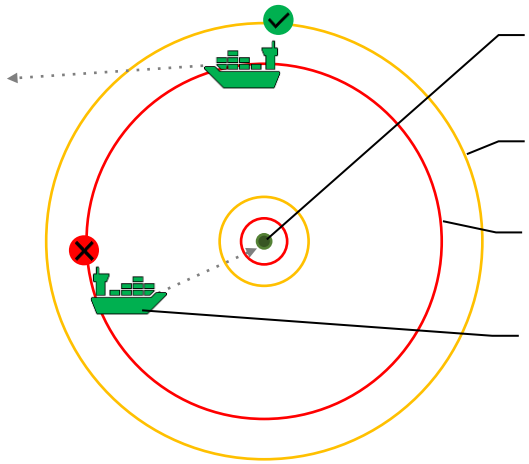
ABNORMAL situation(s)



Hardware


USED TECHNOLOGIES /DEVICES
Data
Server
FOLLOW-UP
Système de Suivi et Surveillance du Parc
SURVEILLANCE
On-screen Application

Technologies and devices

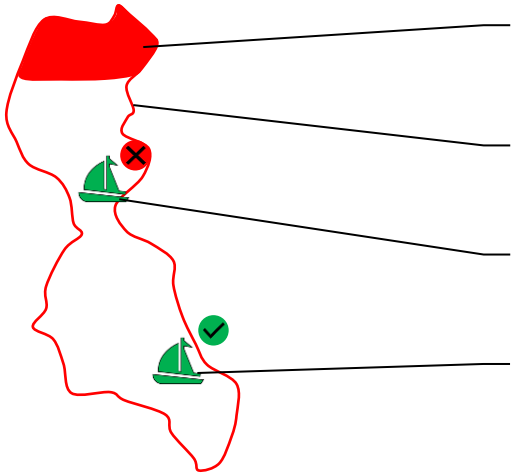


DURAND Reef

Zone alerte 1

Zone alerte 2
(Abnormal)

Ship with high risk of grounding



Wildness area (limit)

Nature reserve (limit)

Unauthorized vessel

Authorized vessel

Devices for declared vessels

S-AIS
Satellite Automatic Identification System

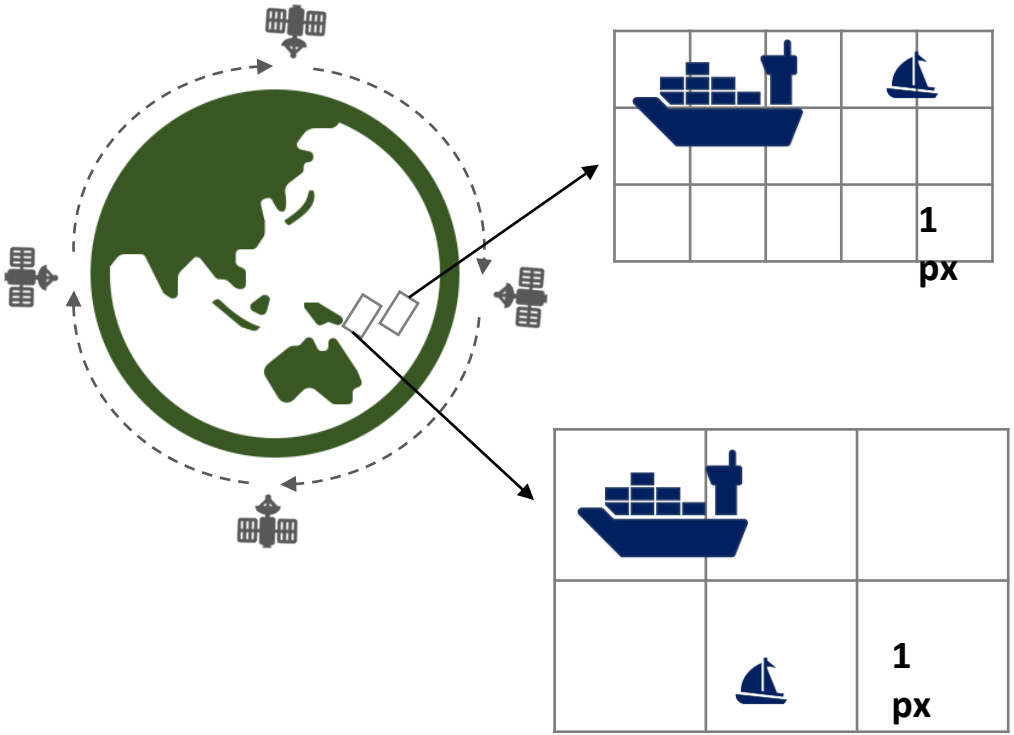
VMS
Vessel Monitoring System (only for fishing vessels)

ROHUM
special authorization registered by form

Acronymes français : Renseignements d'Origine HUMaine (ROHUM)

Technologies and devices

Satellite-based products



Devices for undeclared vessels

Optique

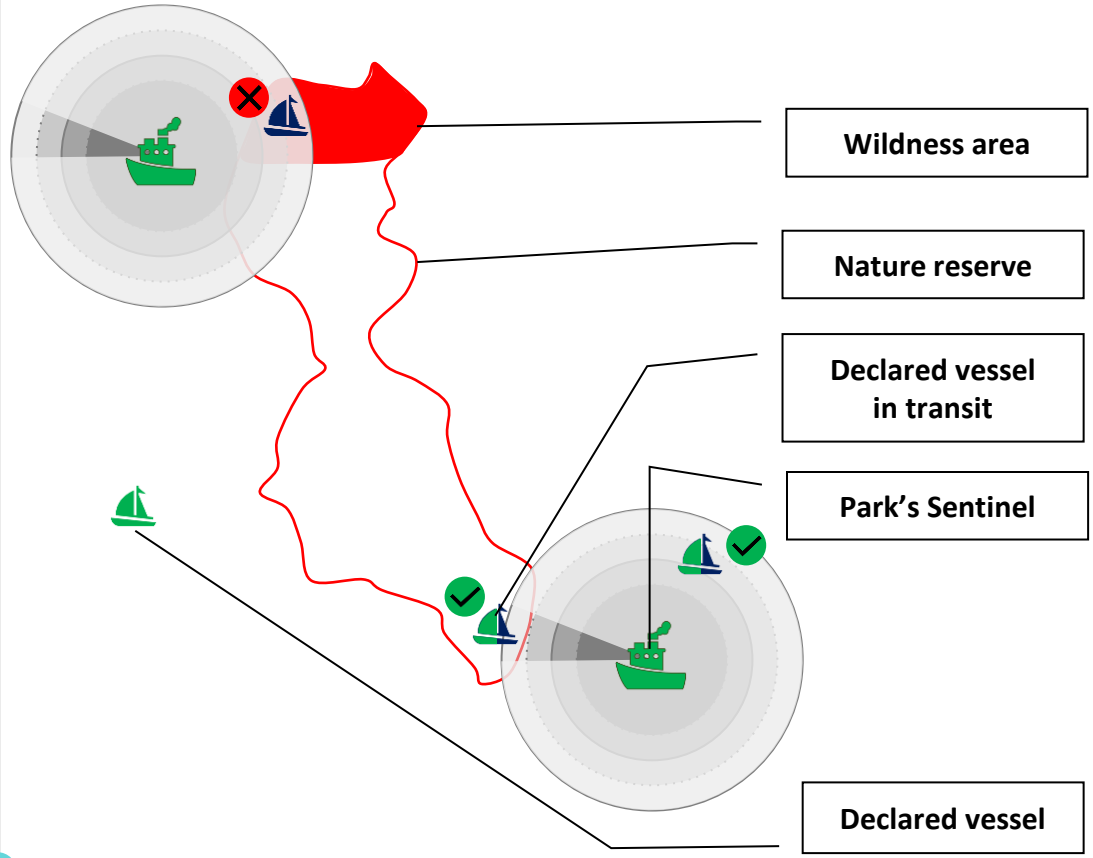
RADAR

ROEM

Acronyme/Abréviation français : Renseignements d'Origine ElectroMagnétique (ROEM) ; Pixel (px)

Technologies and devices

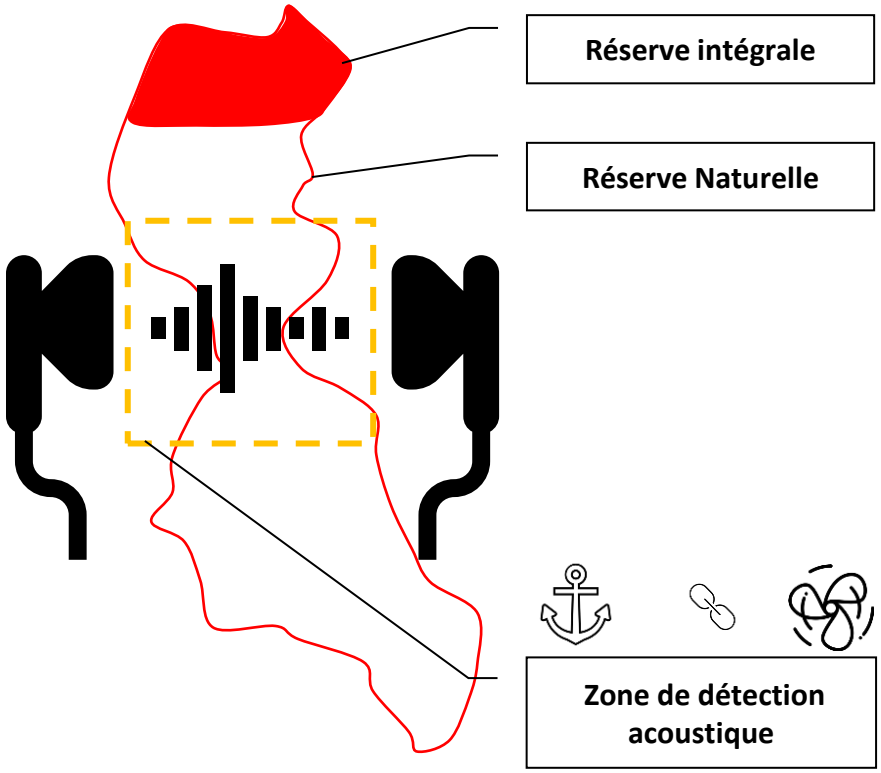
The Park's sentinels



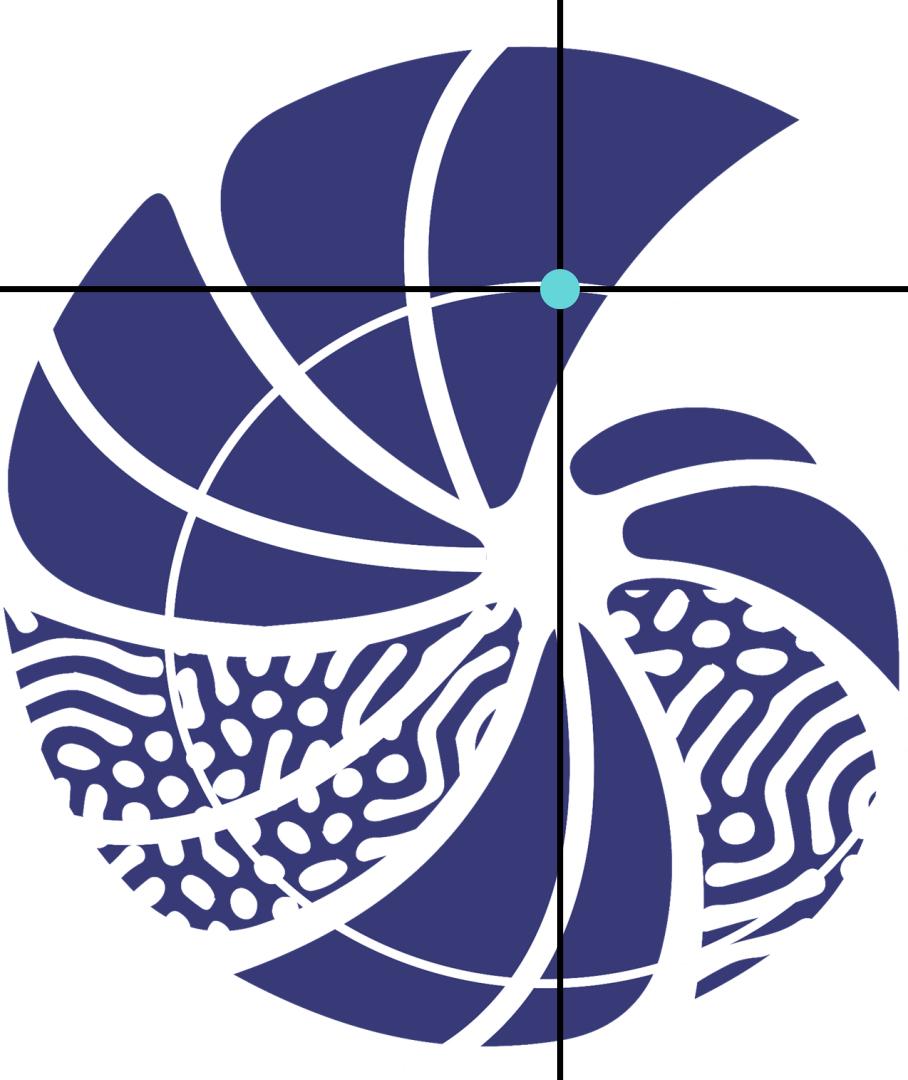
Devices for undeclared vessels

Technologies and devices

Acoustic buoys



Devices for undeclared vessels



Conclusion

2022 2023

Application
(for declared vessels surveillance)

Development

MAGIS
Créateur d'information géographique

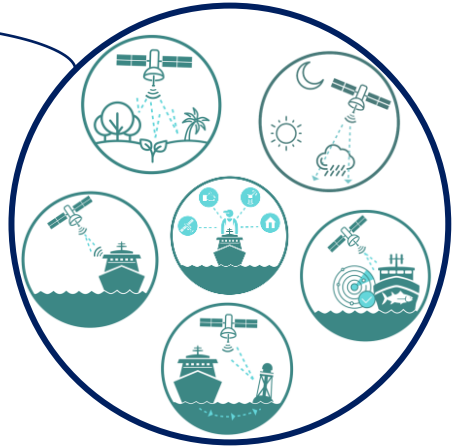
Acoustic Buoys companies consultation in progress

Park's sentinels
Development

ISLAND ROBOTICS

Application
S²P

Data for undeclared vessels

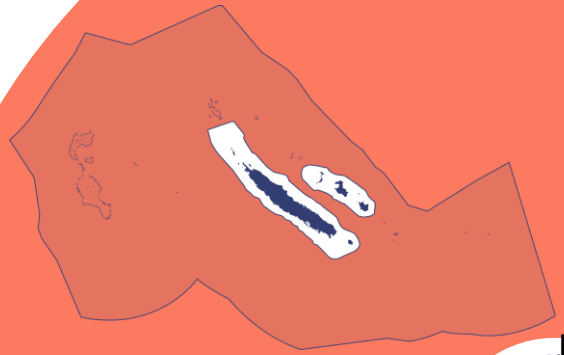


Equipment of the different reserves

Equipment of fishing vessels

Fine-tune and improve organisation

Parc Naturel
Mer de Corail
NOUVELLE-CALÉDONIE



SECURITY

maritime affairs
administration

Customs

SAFETY

Management tool for the park

Environmental management

Education, Research, Science, Knowledge...

Geo data sources

- https://www.marineregions.org
- https://www.naturalearthdata.com
- https://www.shom.fr
- https://georep.nc / https://data.gouv.nc / GNC: SPNMCP / DITTT
- Google satellite

Thinks for attention

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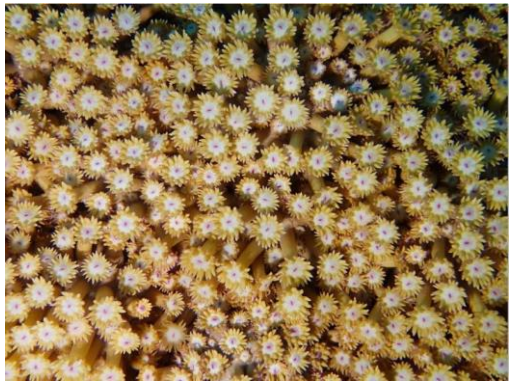

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GOUVERNEMENT DE LA NOUVELLE-CALÉDONIE

Système de Suivi et Surveillance du Parc

Parc Naturel Mer de Corail NOUVELLE-CALÉDONIE