



System Improvements

DBCP 26 Meeting - Oban, SCOTLAND
September 2010



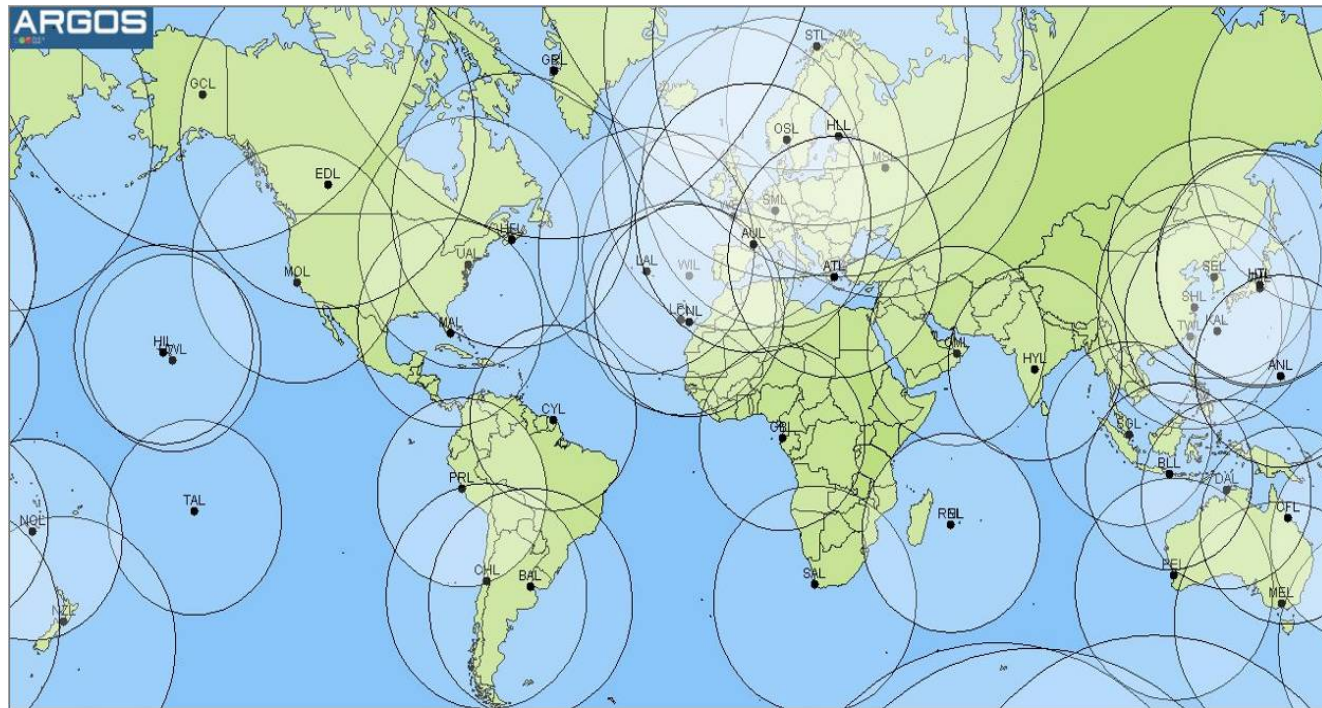
System Improvements

- **Ground segment and running Projects**
 - Regional receiving stations network/upgrade,
 - Web Service distribution,
 - Argos application software,
 - Argos-2 / Argos-3 platforms (PMT),
 - New location processing chain.

Real-time receiving stations network

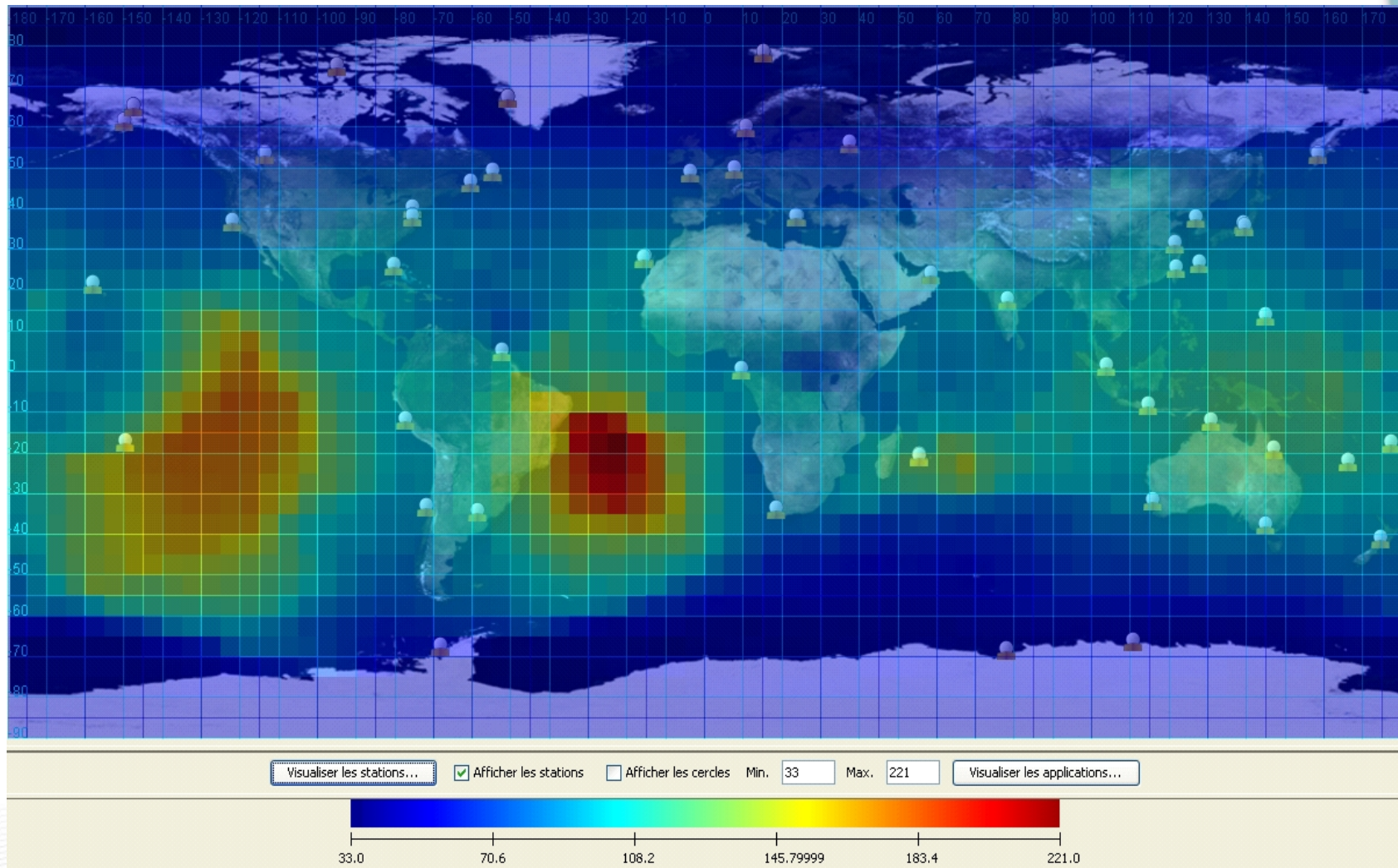
60 stations / 45 operational stations

Connection to the Eumetsat EARS network: Athens; Mas Palomas



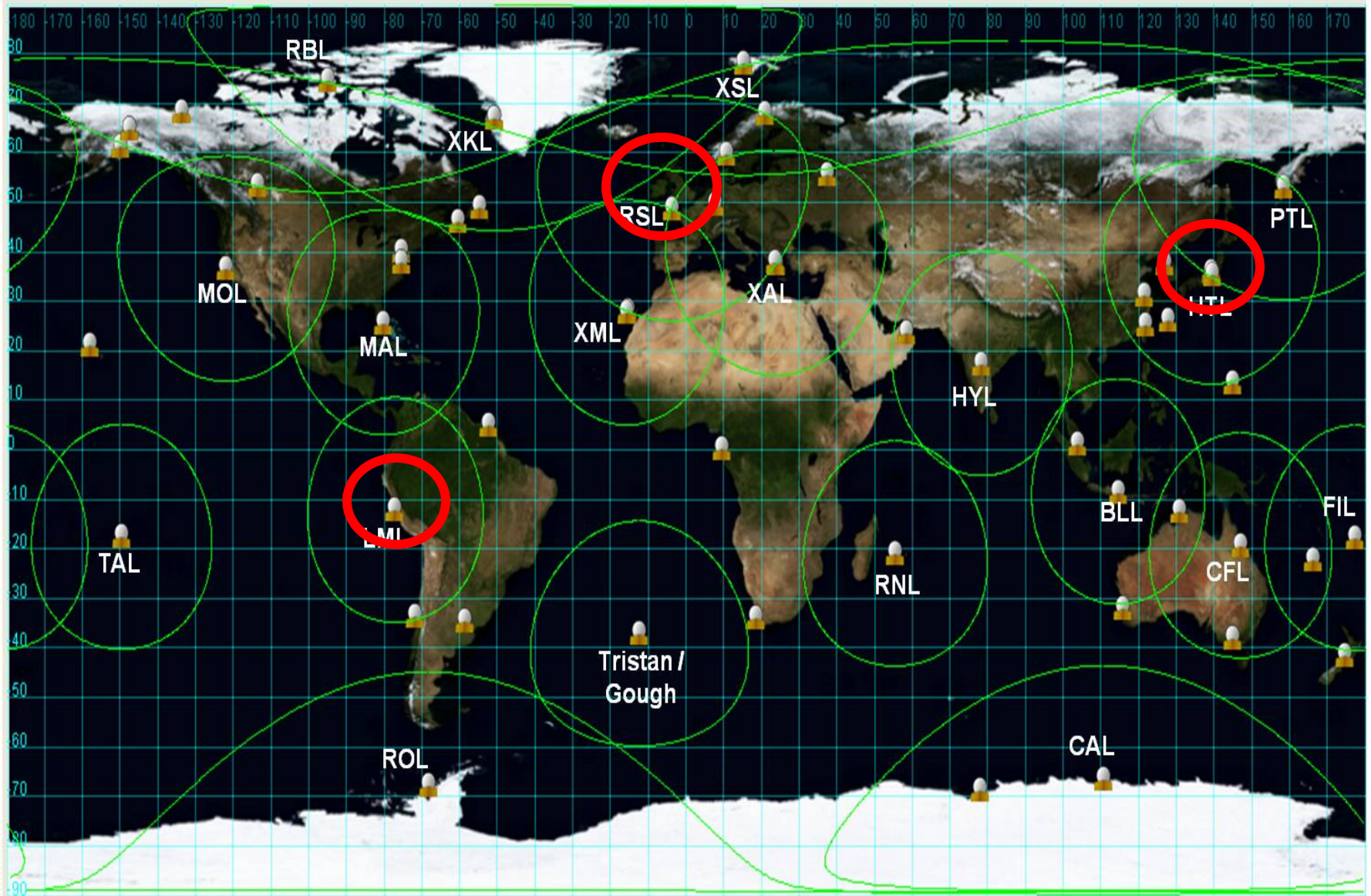
DBCP request : Better coverage of the Indian Ocean as well as South Atlantic

GLOBAL Data time availability (in minutes) with the current Argos real-time network



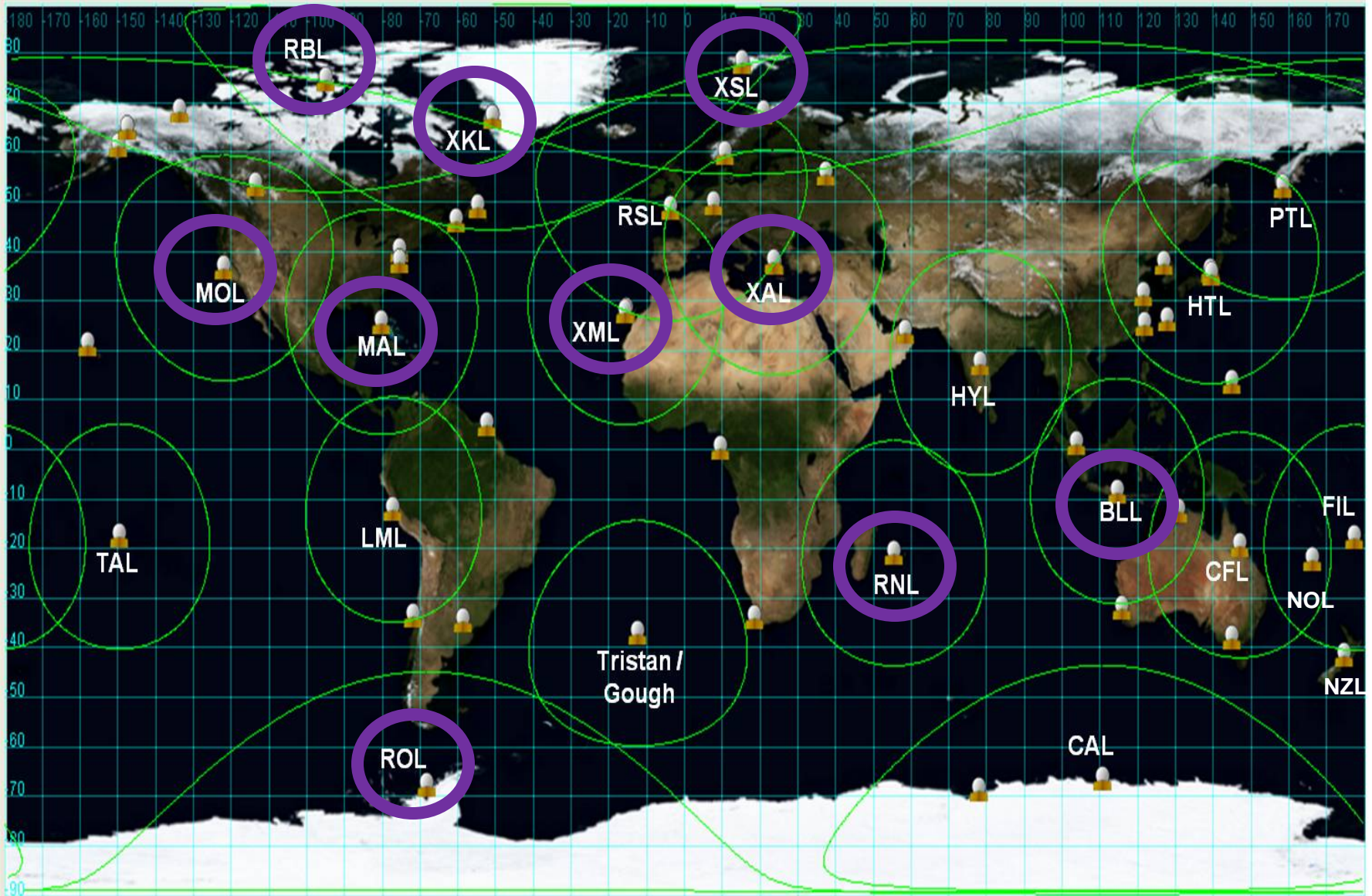


3 CLS stations to be upgraded by the end of 2010



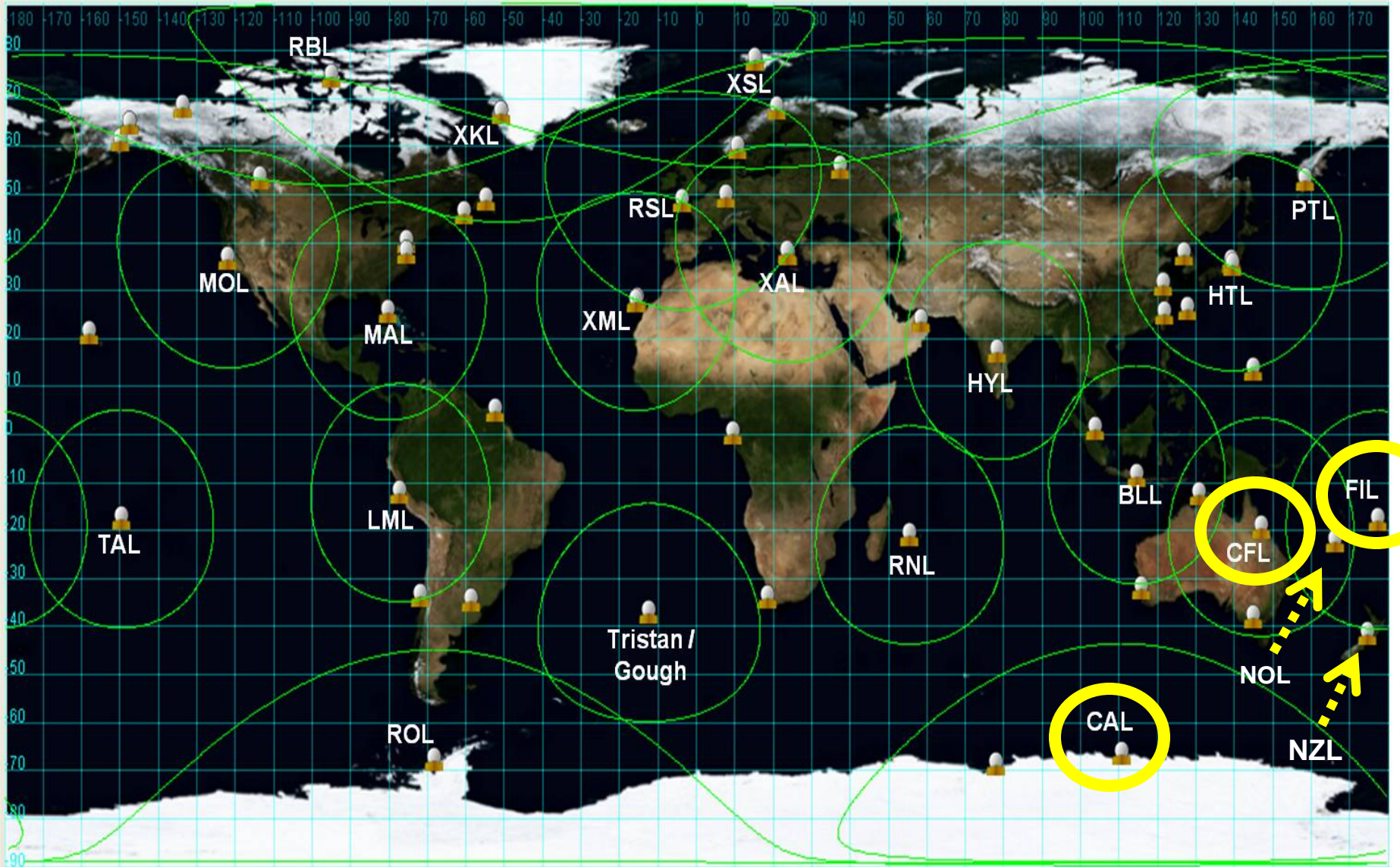


10 'NON-CLS' stations for 2011 upgrading

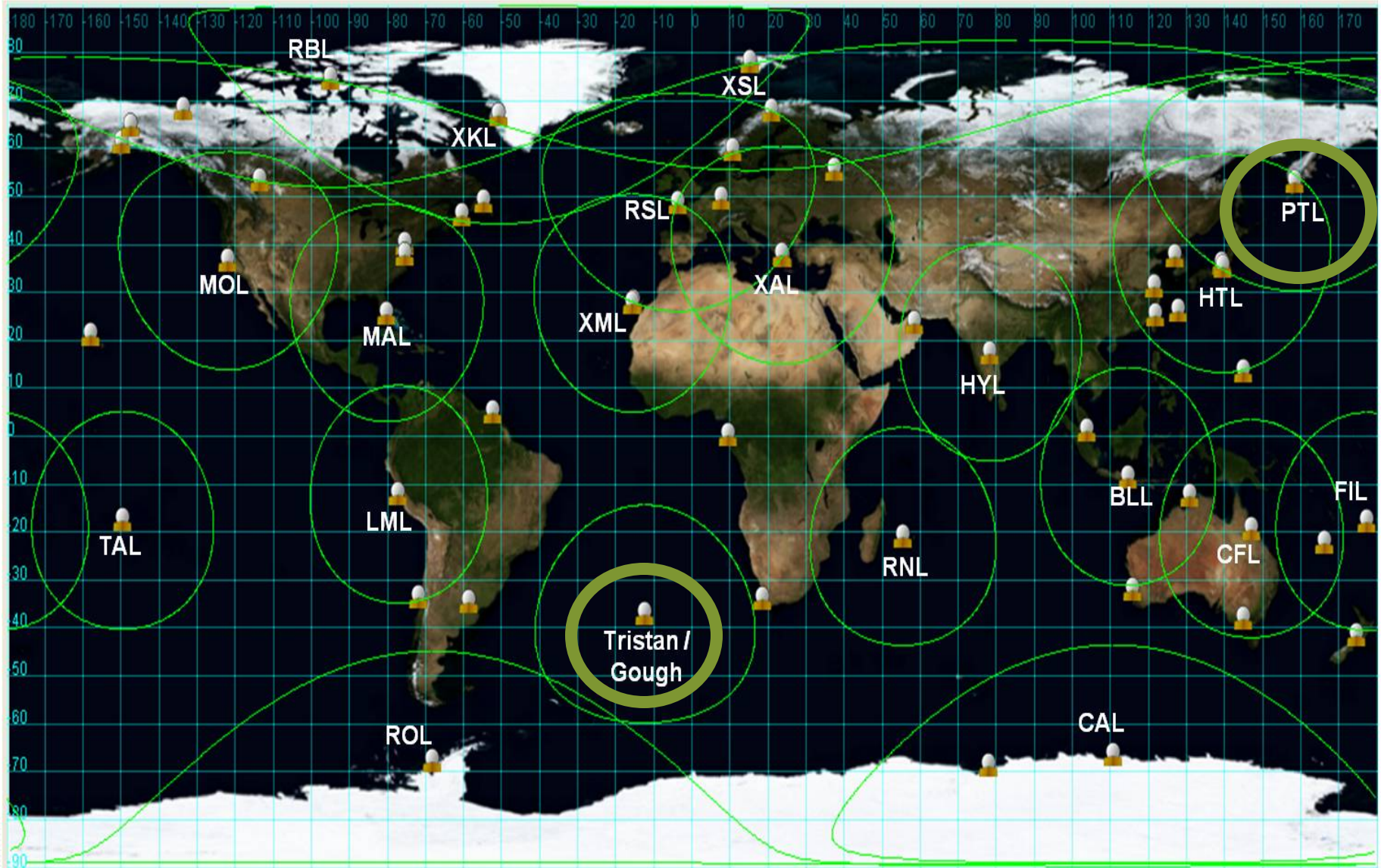




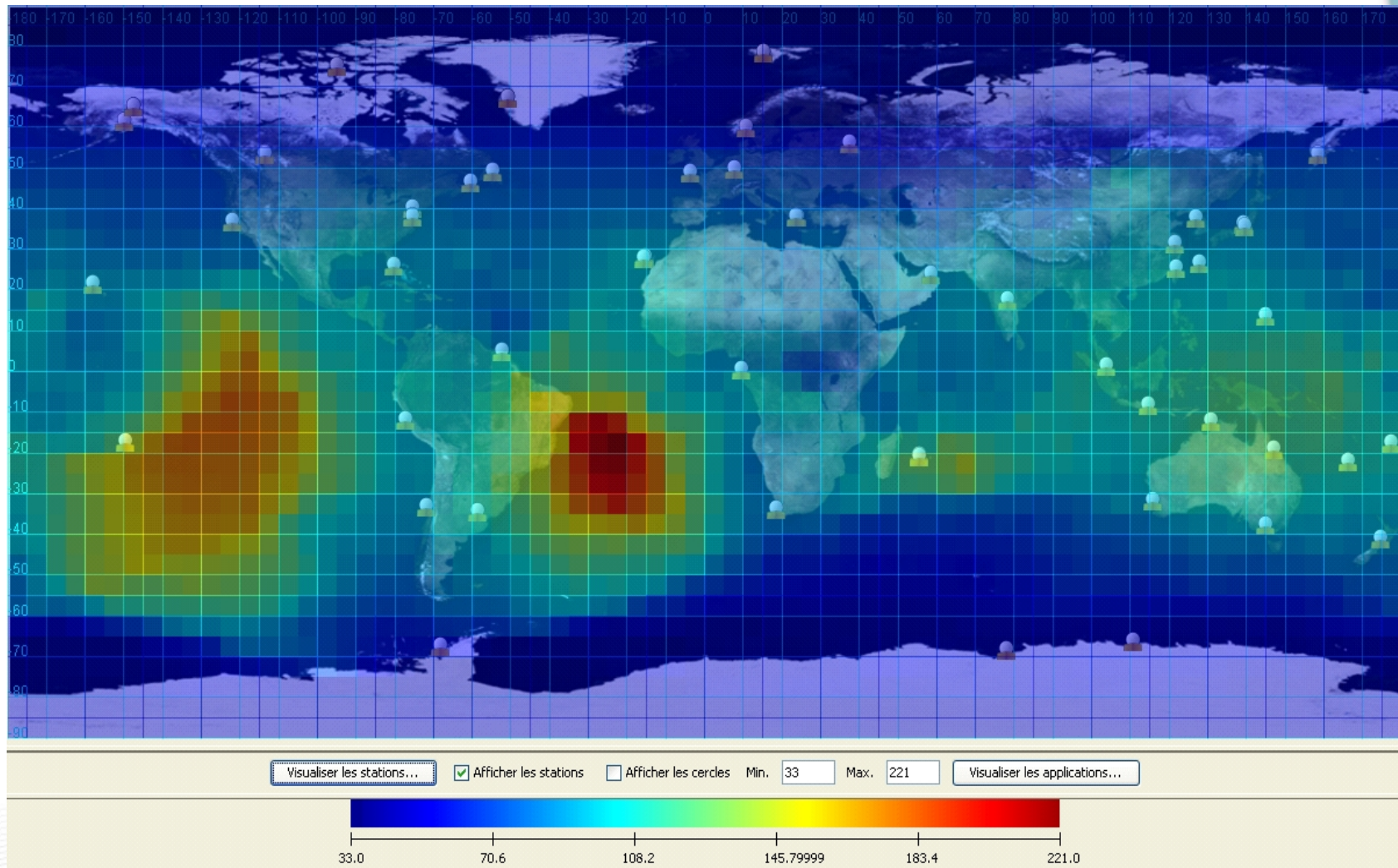
3+ stations for upgrading by ESS



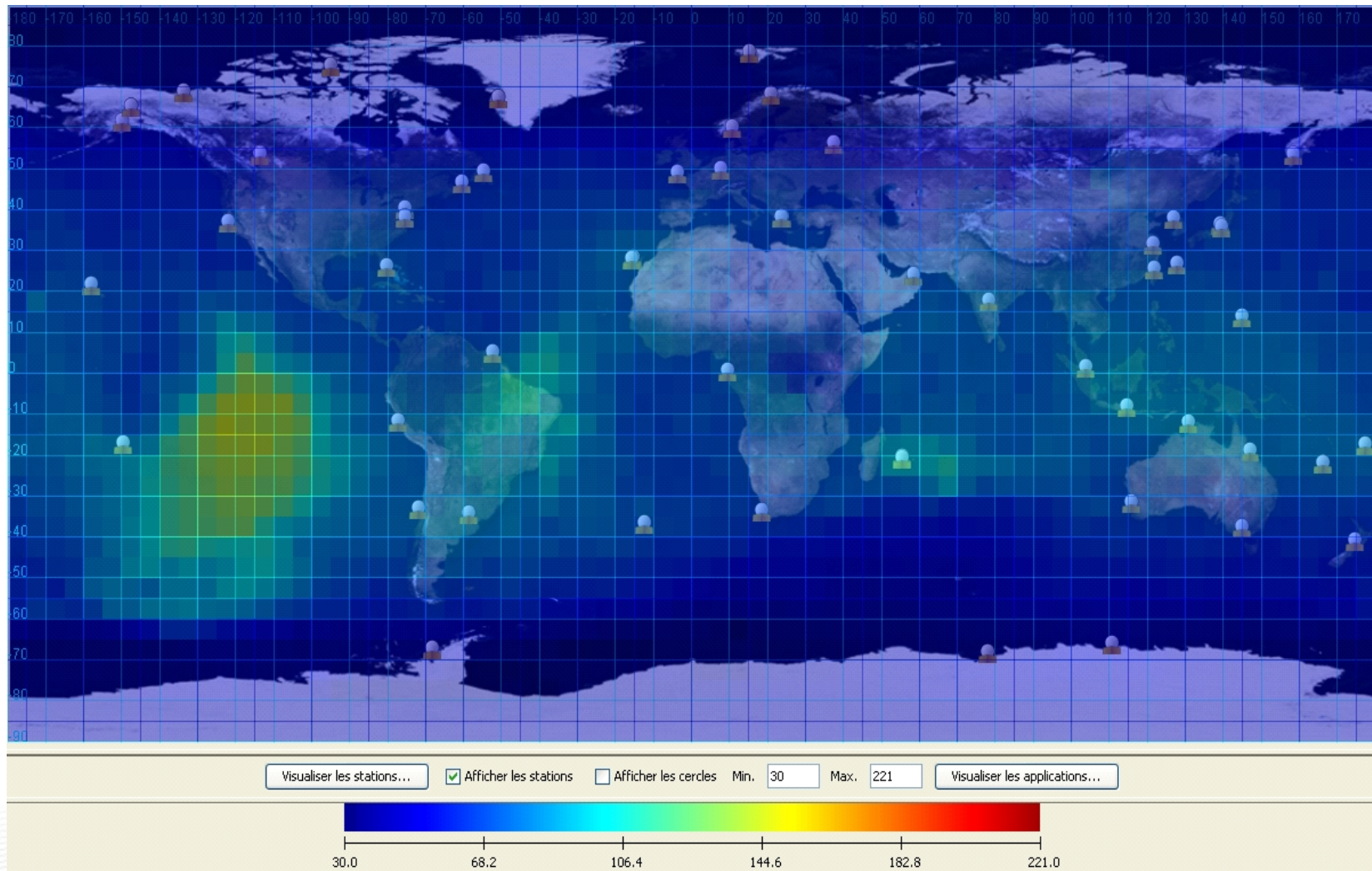
2 NEW STATIONS



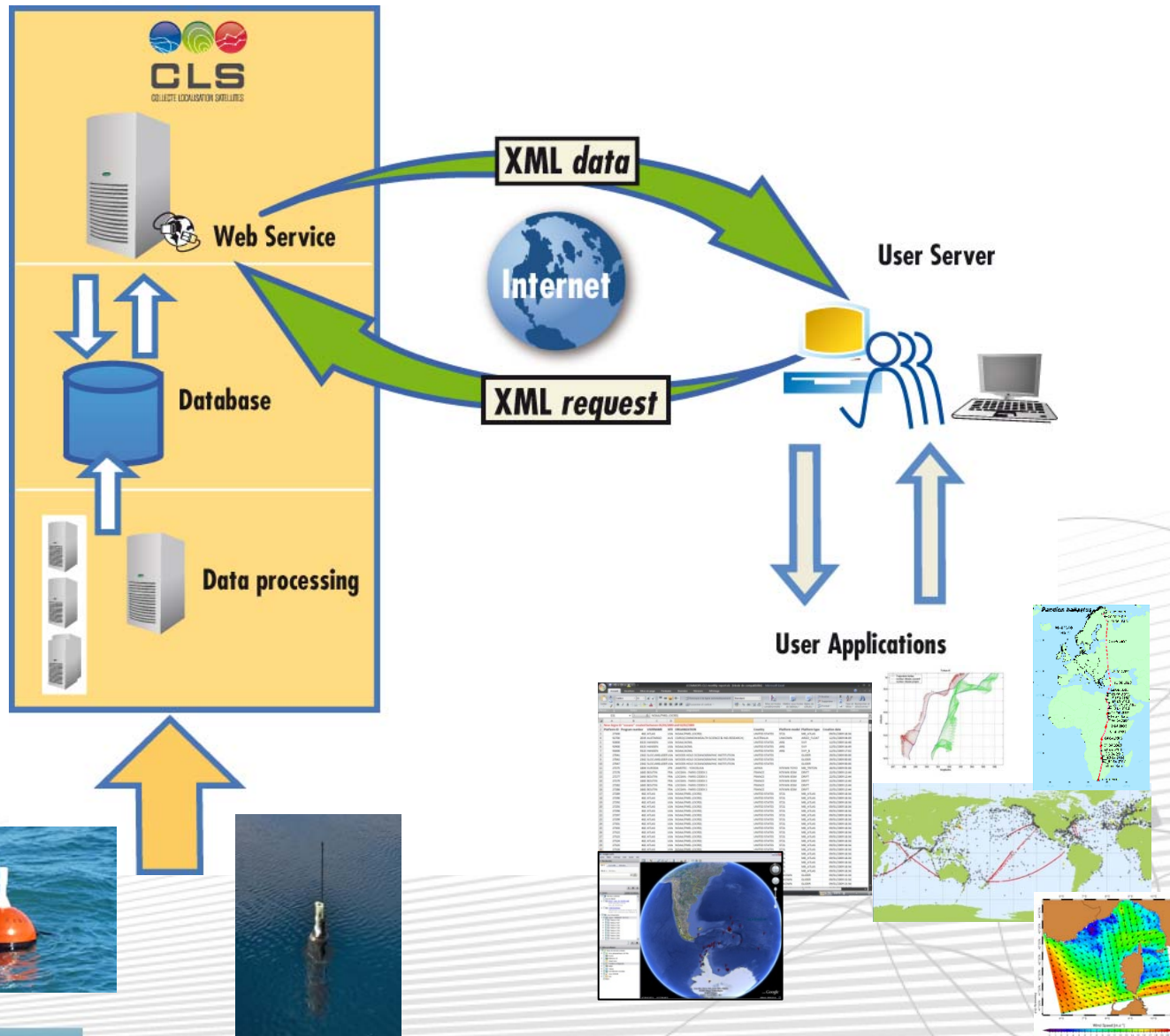
GLOBAL Data time availability (in minutes) with the current Argos real-time network



GLOBAL Data time availability (in minutes) with the Argos real-time network upgraded



Web Services for data distribution





A new distribution tool : a Web service

MAIN ADVANTAGES :

- ✓ Machine to Machine data distribution tool
 - ✓ New data formats: XML, CSV and KML
 - ✓ All data (sensors, raw data, diagnostics, ...) are displayed
 - ✓ XML format **flexible** and **complete**
-
- <http://ws-argos.cls.fr/argosDws/services>
 - <http://ws-argos.clsamerica.com/argosDws/services>

Argos application software

2009

- Implementation of the 6-digit platform identification number
- Surveillance of the satellites housekeeping telemetry
- Initialization of the Argos-3 PMTs location
- Development of the Argos-3 downlink simulator and consolidation of the Downlink Messaging Management center (DMMC)
- Access to the JTA reports through the Argos web
- Improvement of the Argos data processing performances

Argos application software

2010

- Access to the Argos data using Web services
- New formats for Argos data : XML and KML
- Data archiving in XML format
- Adding locations of the observations when accessing data through the Argos web
- SUA on line through the Argos web site
- Implementing the full BUFR format to distribute the data onto the GTS
- New location processing based on Kalman filtering. No more image locations and better location accuracy are the main improvements expected with this new version of the Argos location.
- Integration of SARAL in the Argos processing

Argos-2 / Argos-3 PMT



ARGOS-3 Instrument
New capabilities

Size
Consumption
Performances
Price

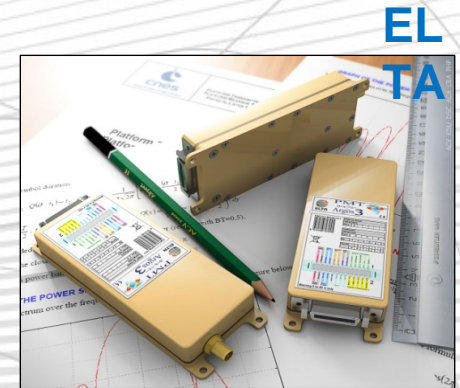
**Two-way
communication
link**

**High data
rate**

**New
modulations
(QPSK,
GMSK)**



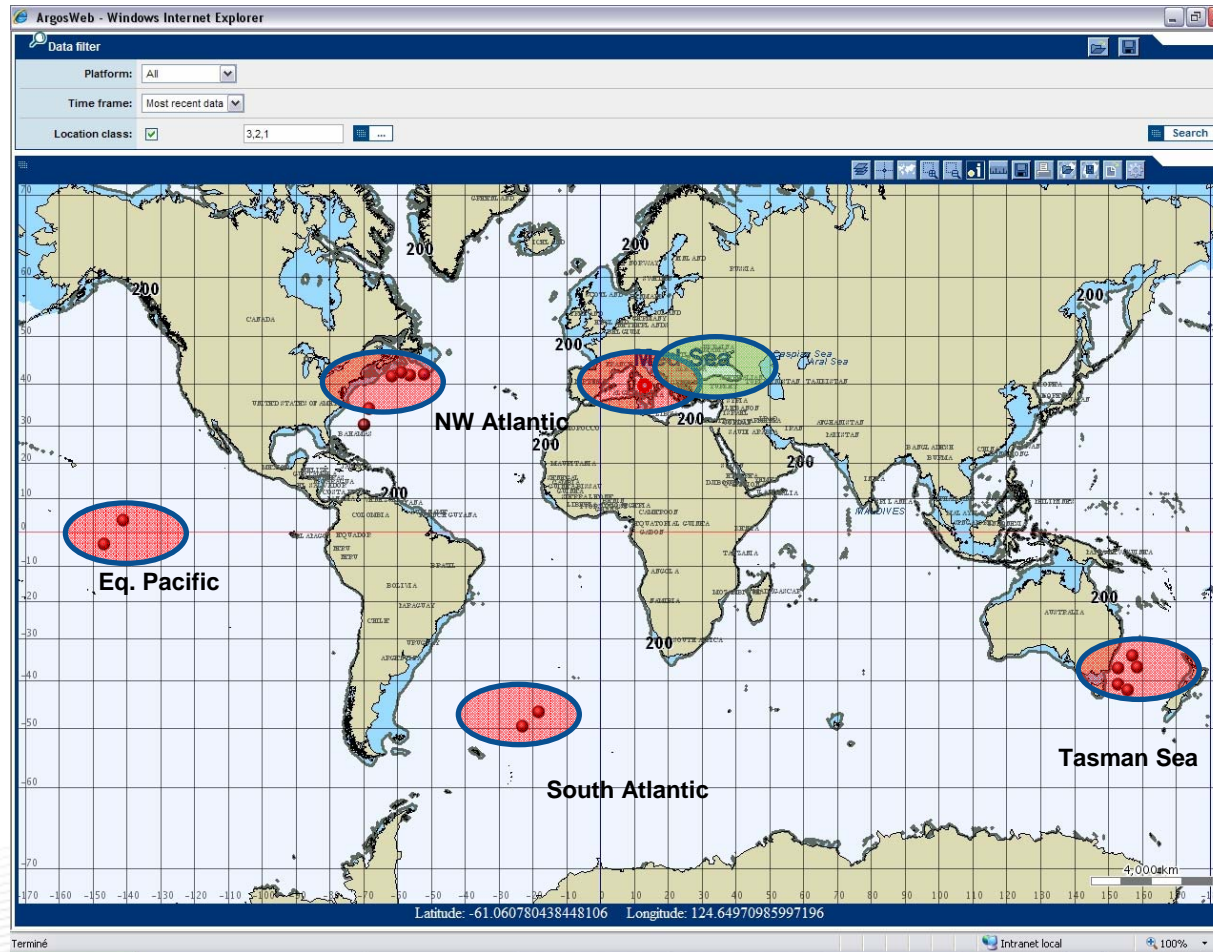
New PMT
**(Platform Message
Transceiver)**



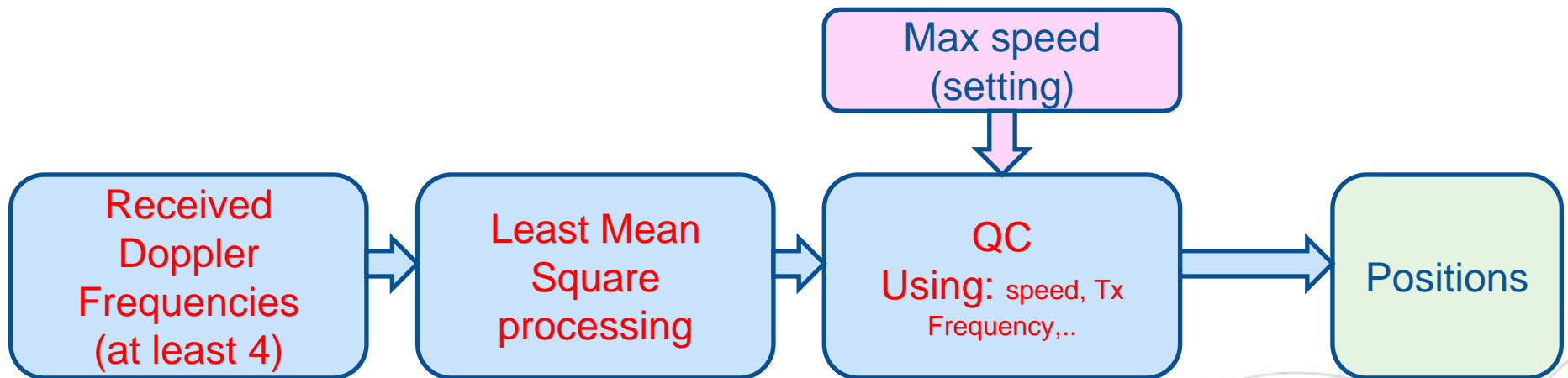
Argos-3 implementation plan

**To convince and to encourage
users and manufacturers to use
PMTs
and Argos-3 functionalities**

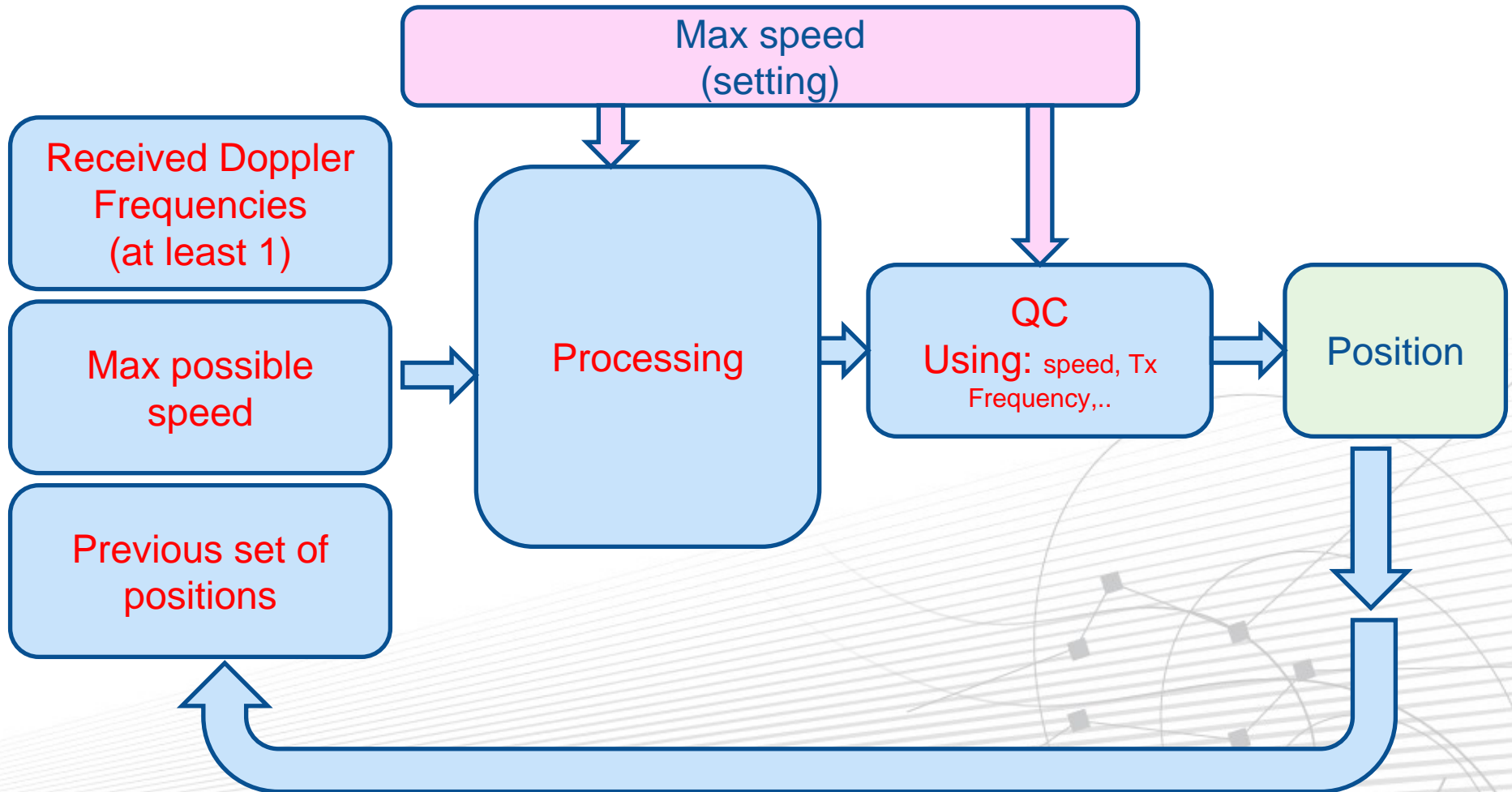
Deployment zones



Former processing



New location processing



Class locations with new processing

Class	Nb of received messages	Error Estimation (m)
3	At least 4	<250
2		250 - 500
1		500 - 1500
0		>1500
A	3	YES (*)
B	1 or 2	YES (*)
Classe		
Z	Invalid Positions	

(*) Could be better than Class 0

Better position accuracy

Gain on **Median** (position obtained from a GPS receiver)

Applications	4 messages and over	2 et 3 messages
Birds	0 %	40-45 %
Land Animals	2-6 %	60-65 %
Marine Animals	10-15 %	10-50 %
Boats	15-20 %	40-50 %
Drifters	13 %	50 %

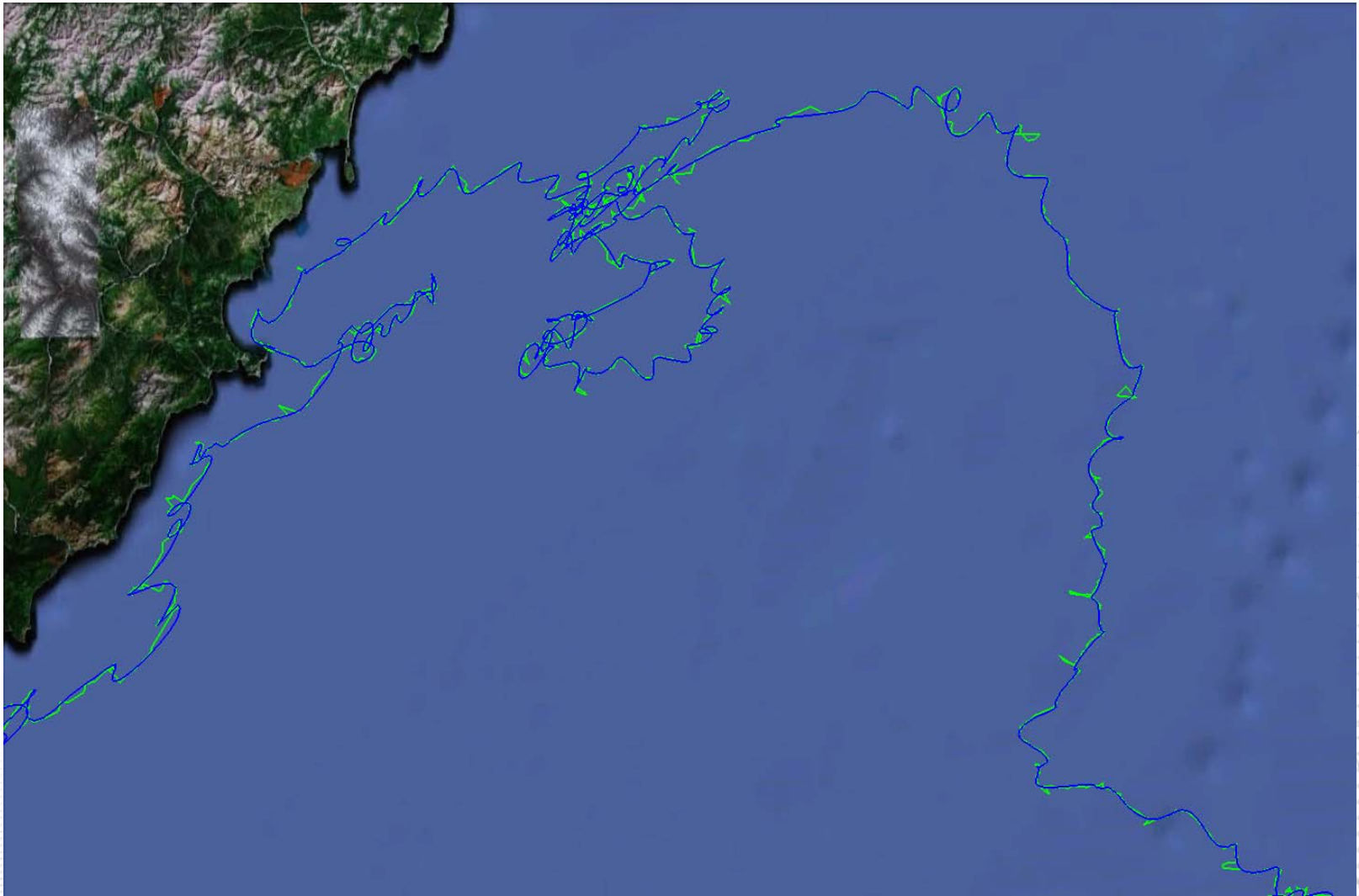
Gain on **95 % centile** (position obtained from a GPS receiver)

Applications	4 messages and over	2 et 3 messages
Birds	4-15 %	40-70 %
Land Animals	0-25 %	80-90 %
Marine Animals	75 %	45-75 %
Boats	30-35 %	40-70 %
Drifters	26 %	84 %

Ex: GPS & Former processing



Ex: GPS & New processing



- On Sept 21st CLS opened the new location system to **a few selected representatives beta testers** (Oceanography, Animals,..)
- FAQ will be provided to all Users,
- CLS will collect feedback from users until December 1st,
- After making an evaluation from these feedback, CLS will take a decision on the localization processing algorithm
- Question: who, within the DBCP Panel, can take the leadership for making these evaluations?