



ARGOS-3 PP – Phase 1 & 2 Test results

DBCPC 27 Meeting - Geneva
September 2011



Argos-3 PP

- Project decided during DBCP 24,
- Goal: 50 Argos-3 drifters / 60 were deployed
- 5 trained Manufacturers : Clearwater, Pacific, Gyre, Metocean, Marlin Yug, Technocean
- Only 4 Manufacturers involved in developments
- Two-phase Project:
 1. Technology Transfer towards the community & evaluations,
 2. Barometer integration and evaluations

- i. Foster developments by buoys manufacturers,
- ii. Evaluate Argos-3 for use by the global buoy community,
- iii. Phase 1: 32 drifters offered by CLS with hourly sensor (T, P) acquisition,
- iv. Phase 2: Barometer implementation on all drifters & 28 drifters offered by CLS with hourly sensor (T, P) acquisition.

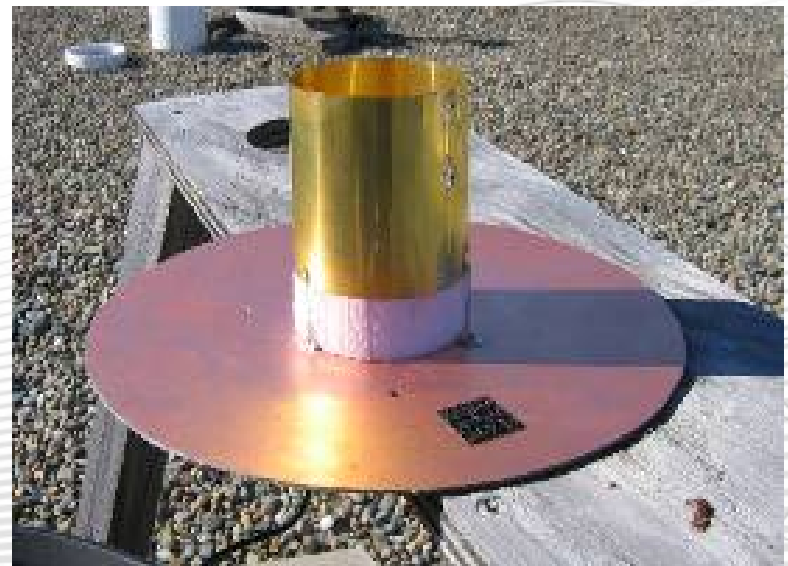
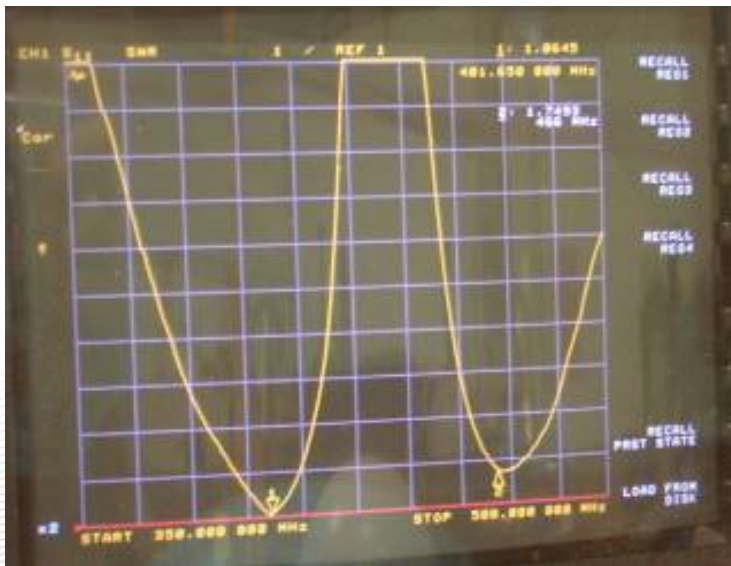
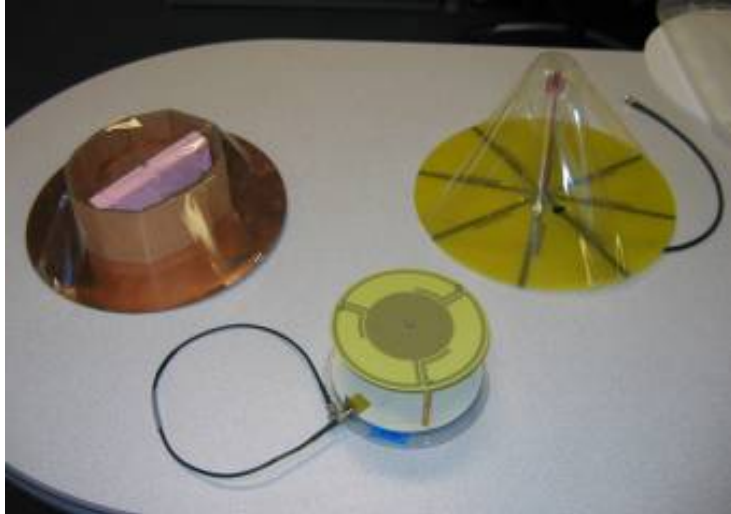
Product definition phase 1

Manufacturers	Buoy type	Tx Management
Metocean	5 SVP B	ACK + Pseudo (5) + HK
	5 SVP	ACK + Pseudo (5) + HK
Clearwater	5 SVP B G	ACK + Pseudo (3)
	5 SVP B	ACK + Pseudo (4)
Pacific Gyre	10 SVP	Pseudo (4) & LIFO + HK LIFO management
Marlin Yug	1 SVP	Pseudo (5) + HK
	1 SVP B	

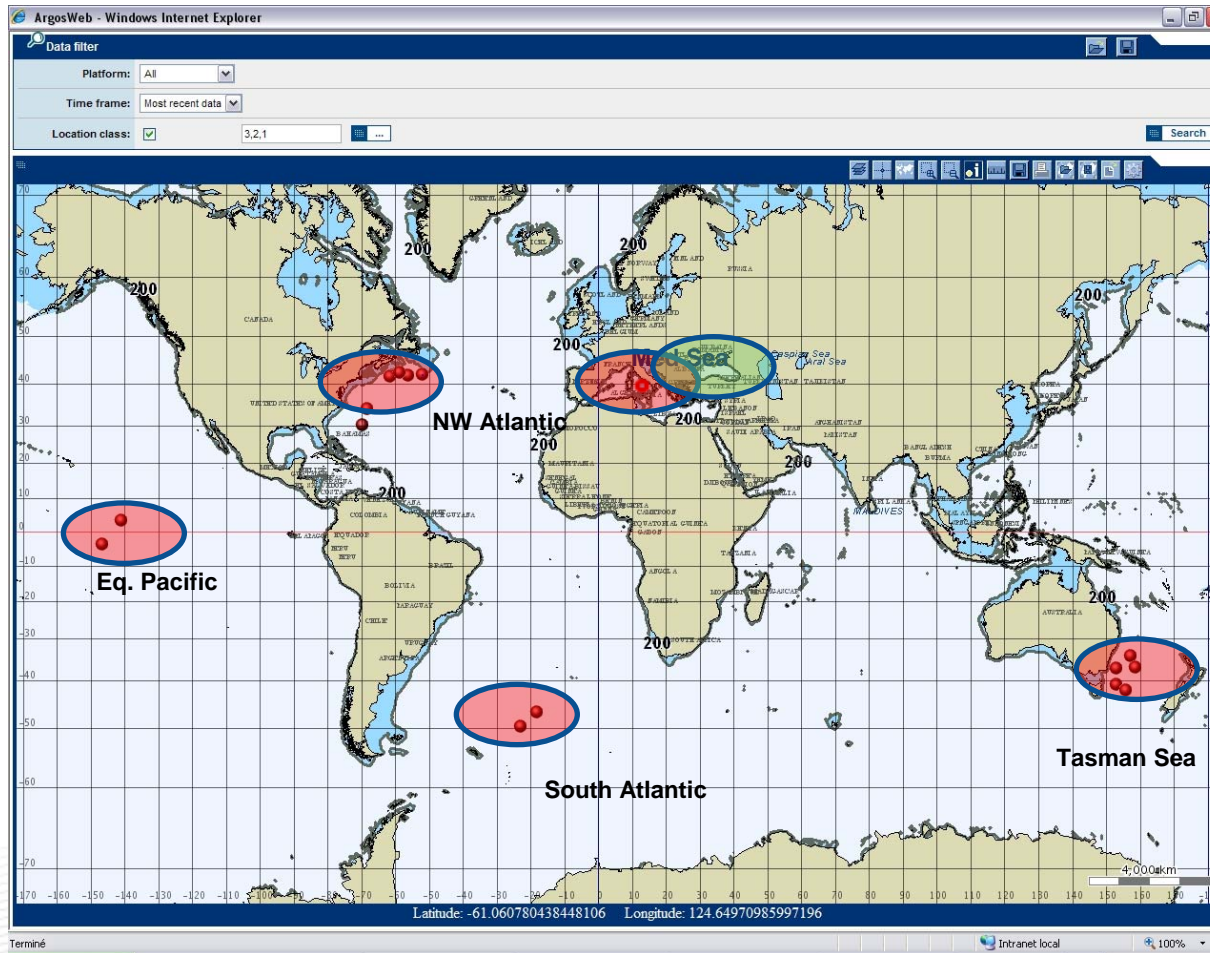
Typical Argos-3 buoy integration



New antennas were developed



Deployment zones



Drifters were deployed



Deployment South of Majorca



Deployment South of Majorca

Product definition phase 2

Manufacturers	Buoy type	Tx Management
Clearwater	10 SVP B	ACK + Pseudo (4)
Pacific Gyre	10 SVP B	Pseudo (4) & LIFO + HK LIFO management
Marlin Yug	8 SVP B	Pseudo (5) + HK



Firmware was improved to implement the Barometer.

Phase 2: Clearwater Drifters

Drifters	Deployment area	Working Status	
82540	Not yet deployed		
82542	Central Pacific		
82544	Central Pacific		
82545	Atlantic sea		1 week-report
82546	Atlantic sea		1 week-report
82547	Not yet deployed		
82549	Central Atlantic		
82583	South Atlantic		No report upon deployment
82584	South Atlantic		No report
82585	Central Atlantic		

Conclusion: 8 deployments,
4 drifters did report correctly.

Phase 2: Pacific Gyre Drifters

Drifters	Deployment area	Working status	
42652	Bay of Bengal		
42658	Bay of Bengal		
42708	Bay of Bengal		
42716	South Atlantic		
42737	South Atlantic		Irregular reports
42750	South Atlantic		
42755	South Atlantic		
42757	South Atlantic		
42758	South Atlantic		
42759	South Atlantic		

Conclusion: 10 deployments
9 drifters did report correctly; 1 with irregular information.

Phase 2: Marlin Yug Drifters

Drifters	Deployment area	Working status	
41803	Tasmania Sea	Green	
41882	Tasmania Sea	Green	
41885	Ligurian Sea	Red	shallow water deployment
42957	Tasmania Sea	Green	
42961	Tasmania Sea	Green	
42964	Tasmania Sea	Pink	Short lifetime
42965	Med Sea	Green	
42973	Tasmania Sea	Light Green	Performance degradation since March

Conclusion:

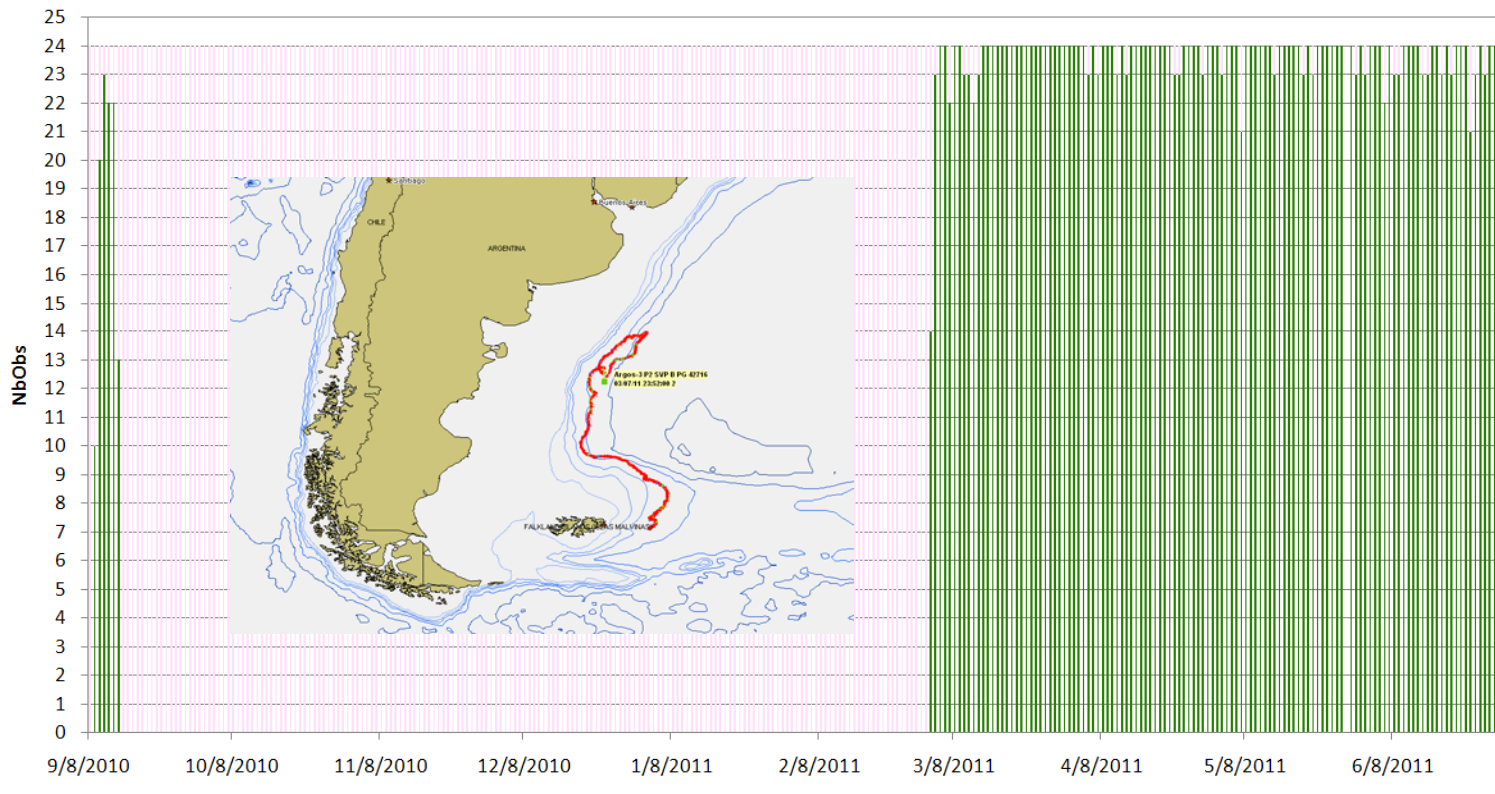
8 deployments

6 drifters did report correctly 1 had a short lifetime .

Argos-3 PP implementation was a success with a high level of performance with more than 23 Observations/day for working units over a one-year period (August 2010 – August 2011)

Manufacturers	Nb of Hourly Observations (P, T) per day
Pacific Gyre	23.8
Clearwater	23.3
Marlin Yug	23.2
Metocean	23.0

Pmt 42716
August 2010 to July 2011
Nb of observations per day



Performances over 15 days (6 drifters)

	Nb of loc/day	Class 1	Class 2	Class 3
Before Kalman	32	1317	1304	264
After Kalman	33	900	1374	671
		46 > 30%	45 > 47%	9 > 23%

PP Conclusions

- Positive and constructive technology transfer,
- High performance for collecting hourly sensor acquisitions (over 98%)
- Nominal 50% reduction on Power Consumption on battery lifetime
- Optimization of the transmission leading to a better use of the satellite network and then better performances for users,
- Secured Tx (check sum control),
- Remote command to change the drifter mission,
- GPS free-system

Two new Argos-3 satellites will be added to the constellation in 2012 (MetOpB: April 2012 – Saral June 2012).

Special thanks you to:

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Andy & Glen

Sergey

Tony & Emily

Shaun & Mayra

As well as all those who invested in
deployments

For their investment for the Argos-3 PP