

International Buoy Programme for the Indian Ocean
~ an Action Group of the Data Buoy Cooperation Panel ~



IOC of UNESCO

Report of the IBPIO

2007/08 Intersessional Period

Presented to DBCP-XXIV

13-16 October 2008, Cape Town, Republic of South Africa

Graeme Ball
Chairman IBPIO

with contributions from Jean Rolland, Michel Trémant and Pierre Blouch



Outline

- Members, Meetings & Committee
- Program Review & Plans
- Network Status
- Performance Monitoring
- Discussion & Recommendations



Members, Meetings & Committee



Members of the IBPIO

AGENCY		JOINED
Australian Bureau of Meteorology	(ABOM)	1997
Global Drifter Center, NOAA/AOML, USA	(GDC)	1997
Météo France	(MF)	1997
National Institute of Oceanography, India	(NIO)	1997
South African Weather Service	(SAWS)	1997
National Institute of Ocean Technology, India	(NIOT)	2001
Navoceano, USA	(NAVO)	2001
Eduardo Mondlane University, Mozambique	(EMU)	2007
Tropical Moored Buoy Implementation Panel	(TIP)	2007
Kenya Meteorological Department	(KMD)	2008
Indian National Centre for Ocean Information Services	(INCOIS)	2008
Malaysian Meteorological Department	(MMD)	EOI
Mauritius Meteorological Service	(MMS)	EOI

IBPIO-XI (Cape Town, 2008)





Programme Review & Plans



Programme Review

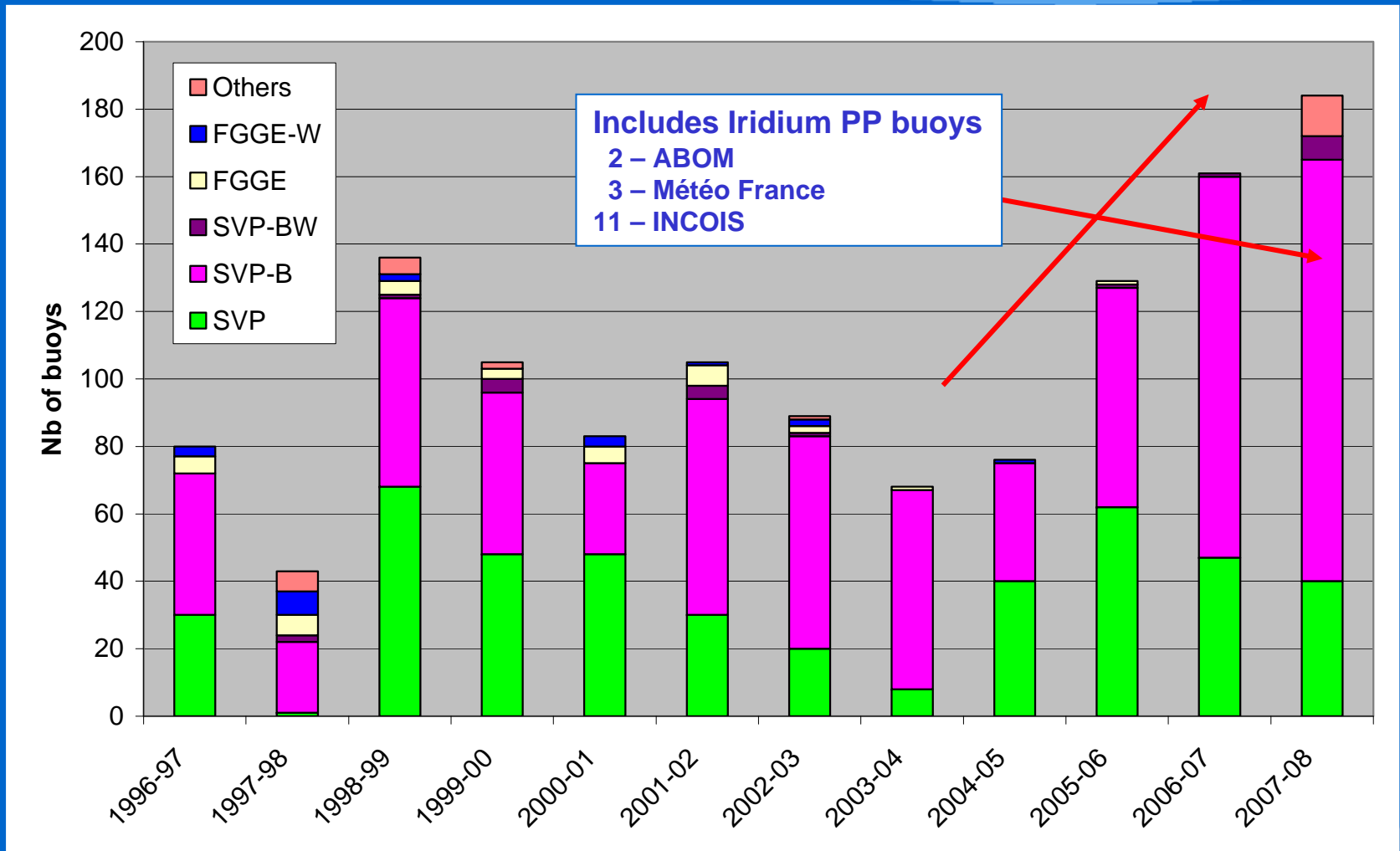
IBPIO CONSOLIDATED BUOY DEPLOYMENT PLAN - 2007/2008

AGENCY	AGENCY PROGRAMS					FOR GDP			TOTAL
	Moored	Other	SVP	SVP-B	SVP-BW	UPG	SVP	SVP-B	
GDC	0	0	55	6	0				61
ABOM	0	0	0	16	2	8	0	16	42
Météo France	0	0	0	3	0	25	0	0	28
Navoceanos	0	0	0	0	0	0	0	0	0
NIO	0	0	0	15	4	0	0	0	19
NIOT	0	0	0	0	0	0	0	0	0
SAWS	0	0	0	0	0	0	0	0	0
EMU	0	0	0	0	0	0	0	0	0
KMD	0	0	0	0	0	0	0	0	0
TIP	0	0	0	0	0	0	0	0	0
TOTAL	0	0	55	40	6	33	0	16	150

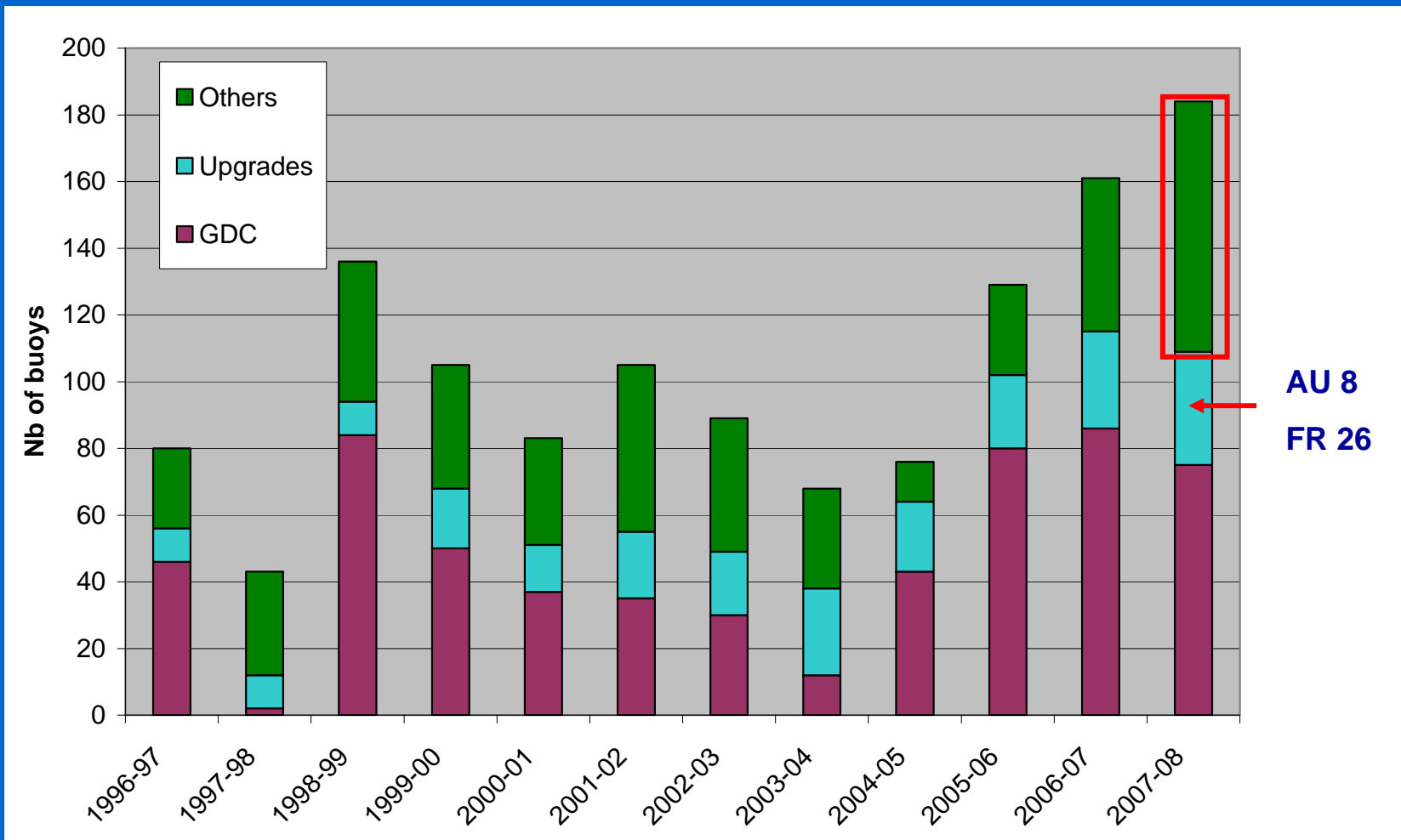
SUMMARY	
Moored	0
Other	0
SVP	55
SVP-B	89
SVP-BW	6

150

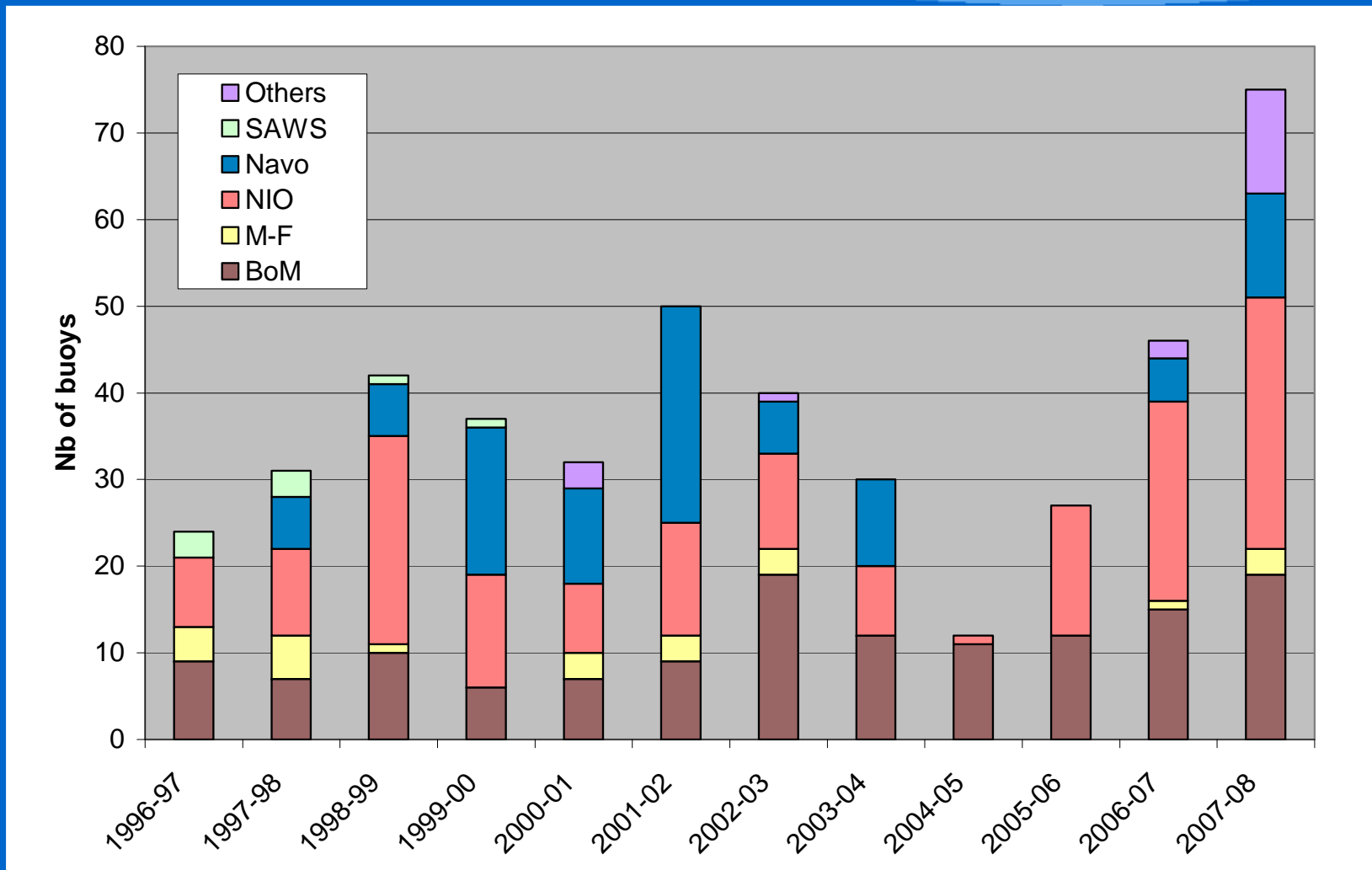
Drifting Buoy Deployments by Type



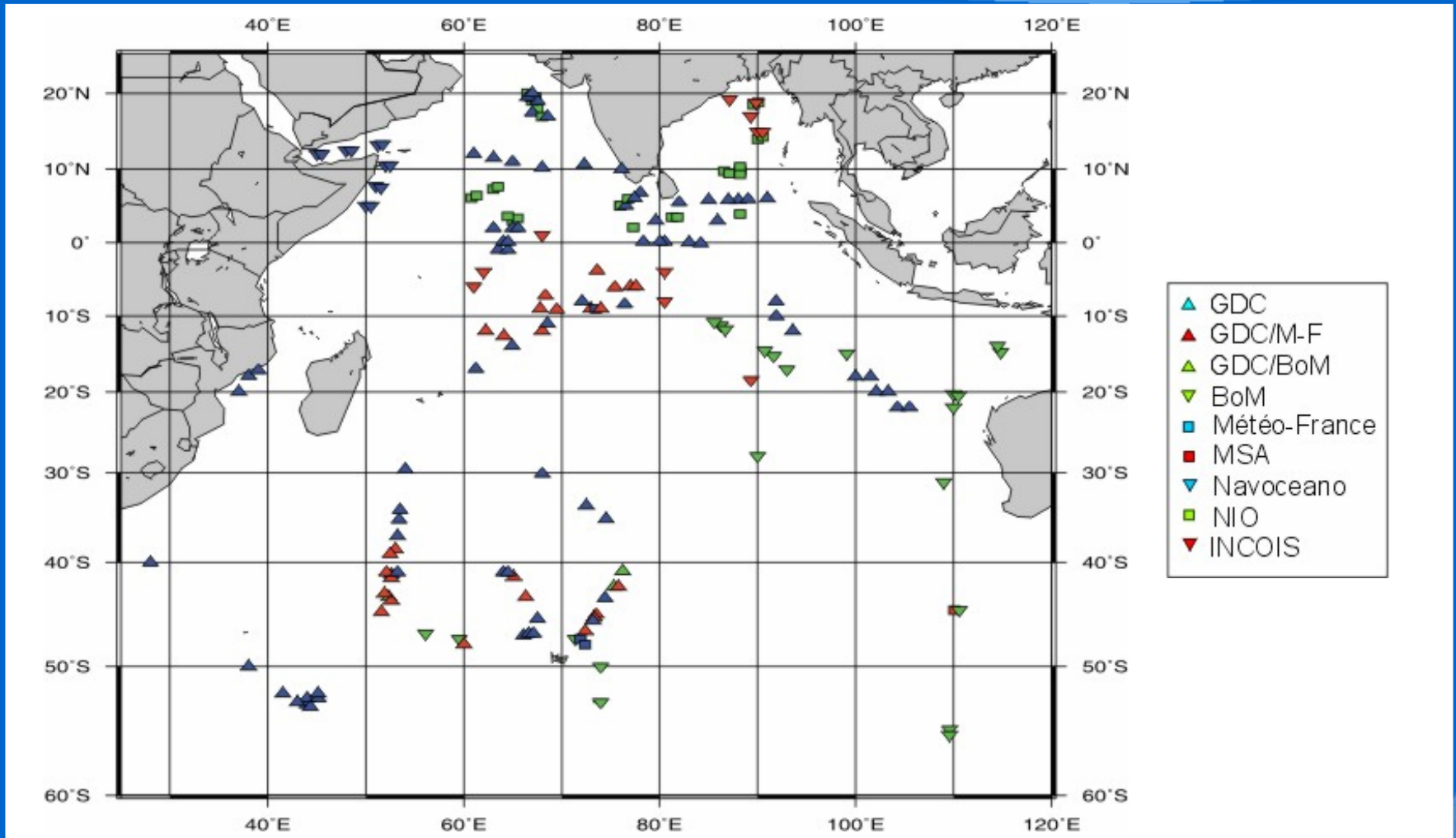
Drifting Buoy Contributions to IBPIO



Drifting Buoy Contributions by Others



2007/2008 Drifting Buoy Deployment Locations



Programme Plans

IBPIO CONSOLIDATED BUOY DEPLOYMENT PLAN - 2008/09

AGENCY	AGENCY PROGRAMS					FOR GDP			TOTAL
	Moored	Other	SVP	SVP-B	SVP-BW	UPG	SVP	SVP-B	
GDC	0	0	55	26	0				81
ABOM	0	0	0	18	2	8	0	20	48
MF	0	0	0	2	0	30	0	0	32
NAVO	0	0	0	0	0	0	0	0	0
NIO	0	0	0	15	4	0	0	0	19
NIOT	40	0	0	0	0	0	0	0	40
SAWS	0	0	0	0	0	0	0	0	0
EMU	0	0	0	0	0	0	0	0	0
KMD	0	0	0	0	0	0	0	0	0
TIP	33	0	0	0	0	0	0	0	33
INCOIS	0	0	0	10	0	0	0	0	10
TOTAL	73	0	55	71	6	38	0	20	263

Iridium

<u>SUMMARY</u>	
Moored	73
Other	0
SVP	55
SVP-B	129
SVP-BW	6

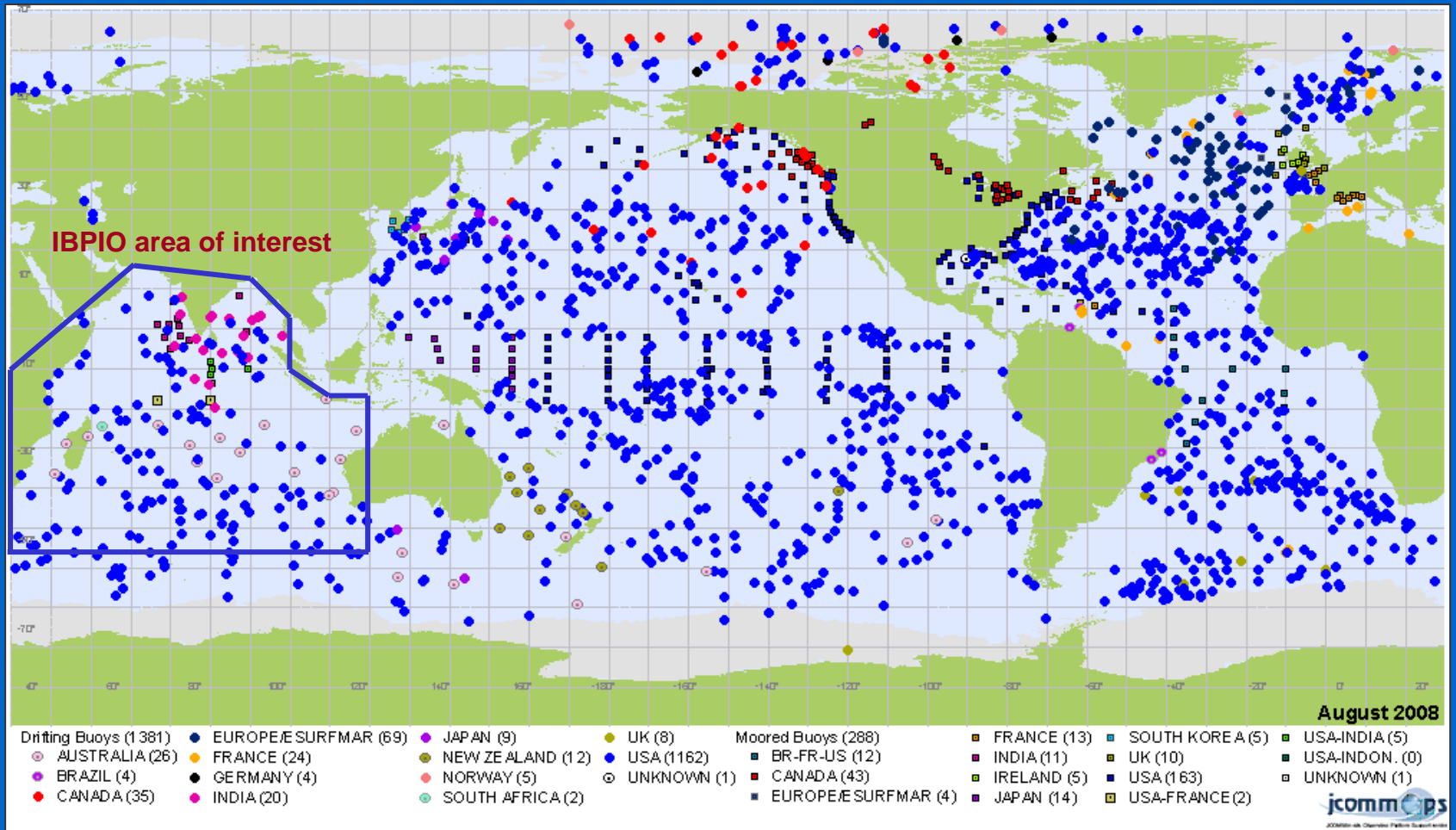
263



Network Status



Global Buoy Network



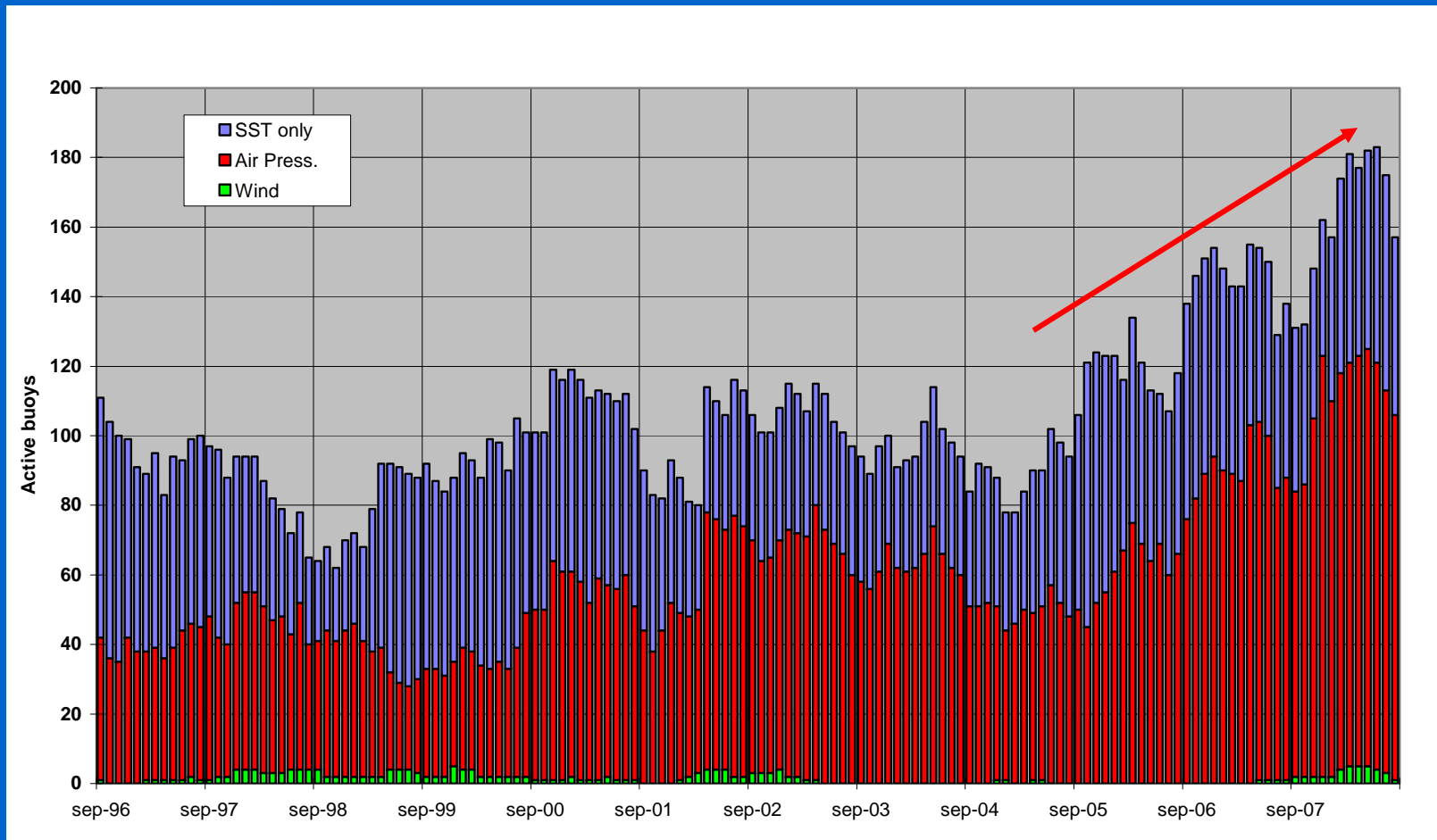
Operational Drifting Buoys

Agency	SST	AP	Wind
ABOM	-	14	1
GDC	50	79*	-
SAWS	1	0	-
MF	-	-	-
NIO	-	10	-
INCOIS	0	2	-
Total	51	105	1

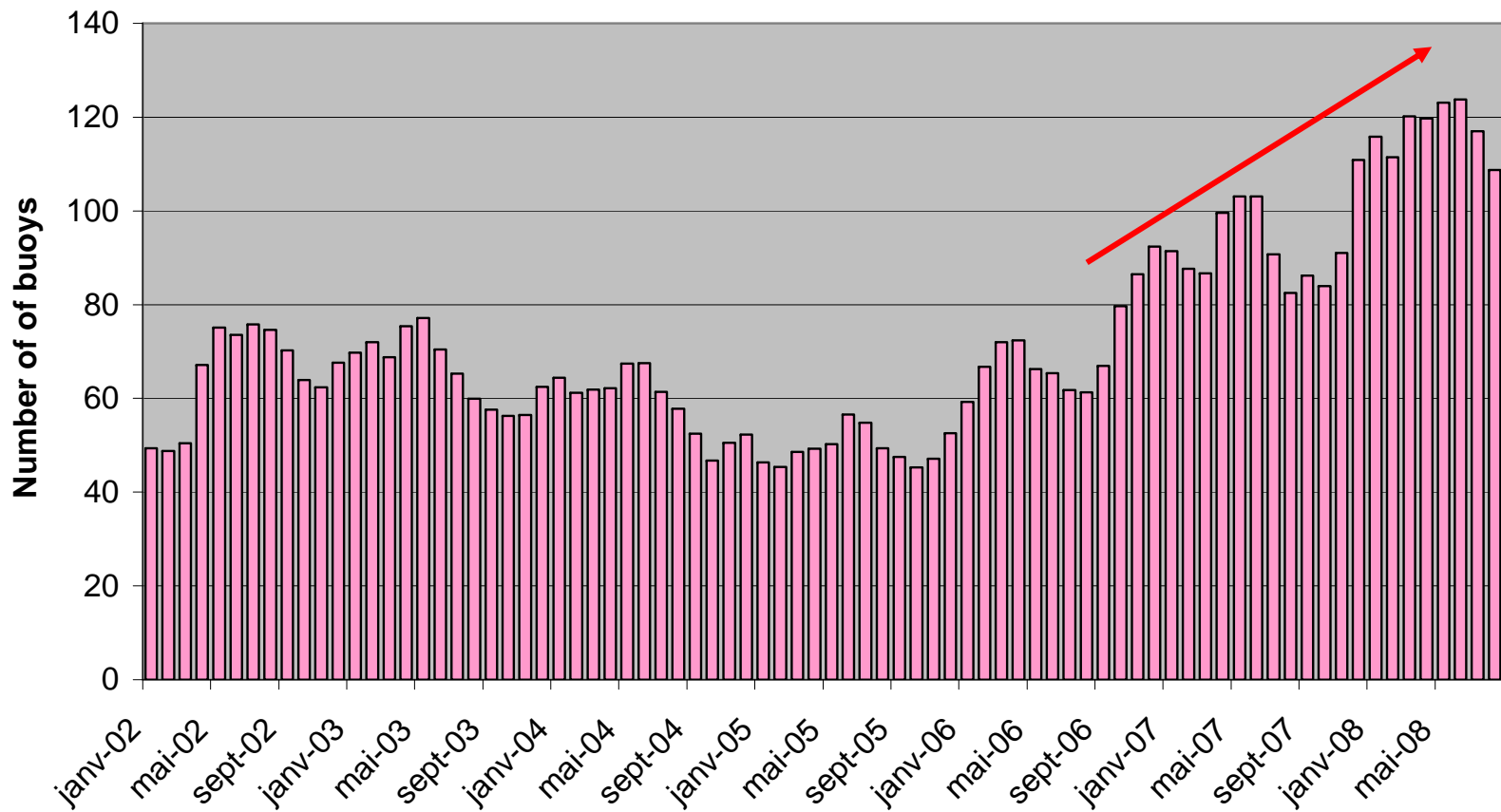
* Includes upgrades

(as at 31 August 2008)

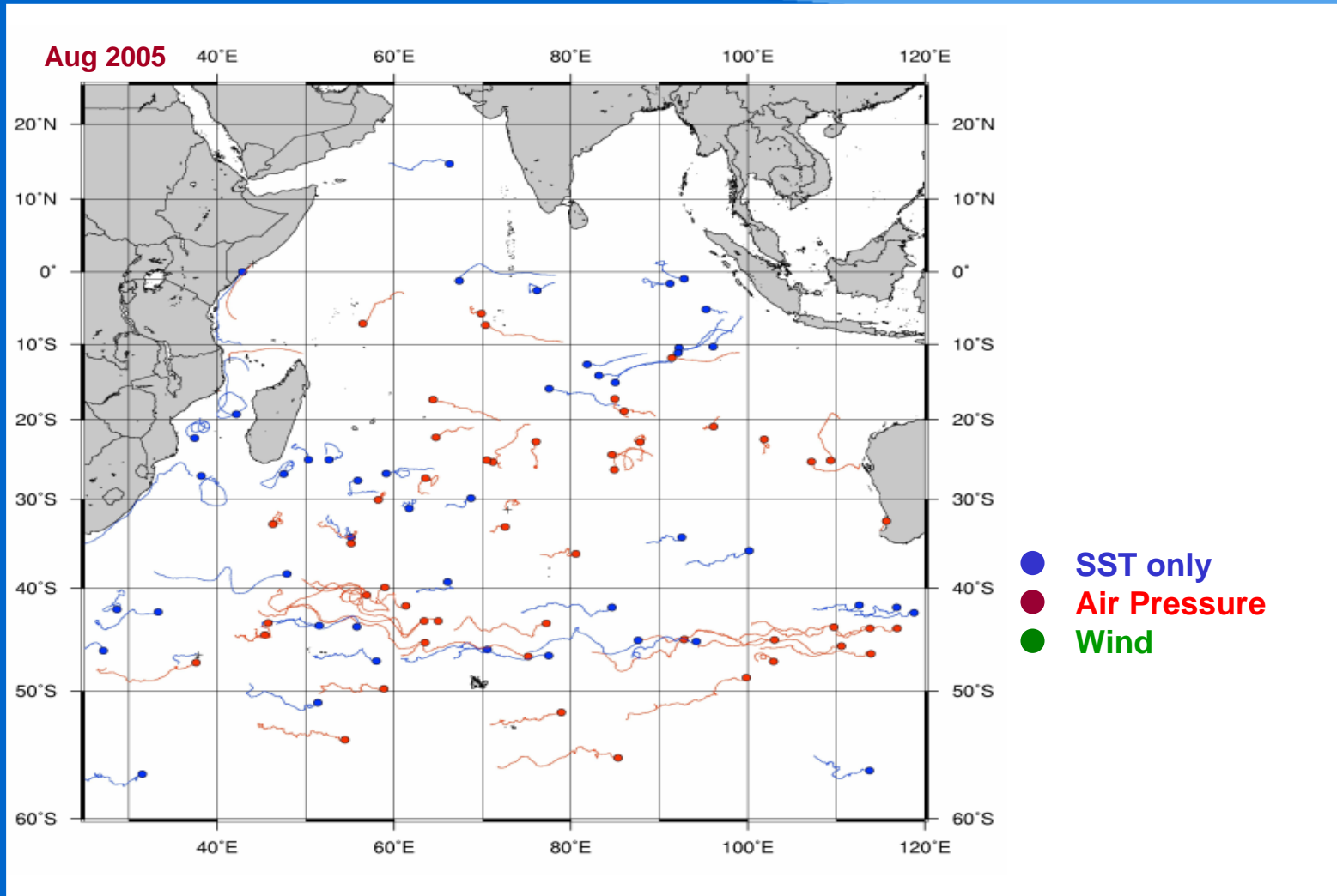
Network Growth (Drifting Buoys)



Number of Operational MSLP Buoys



Drifting Buoy Trajectories

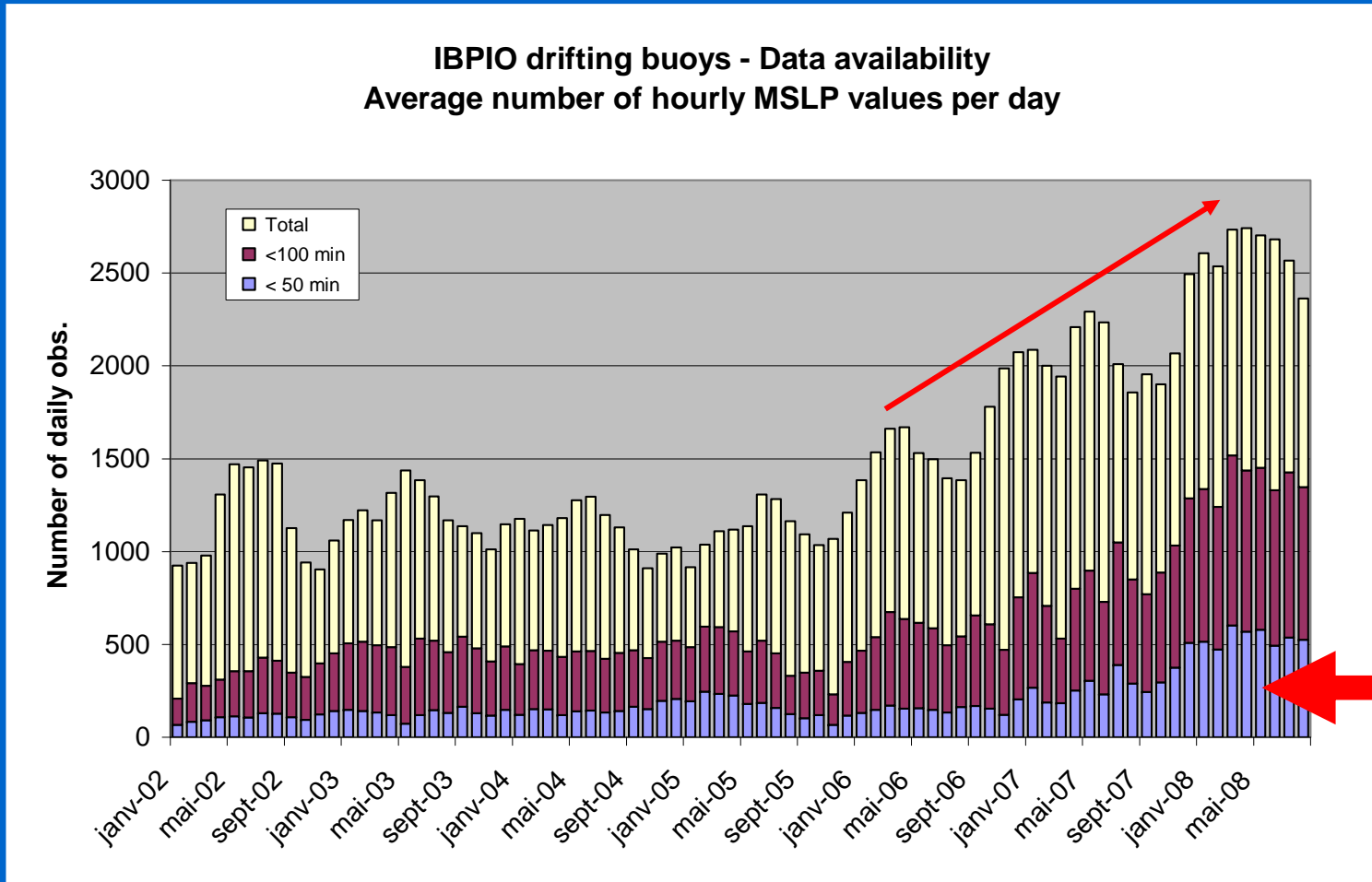




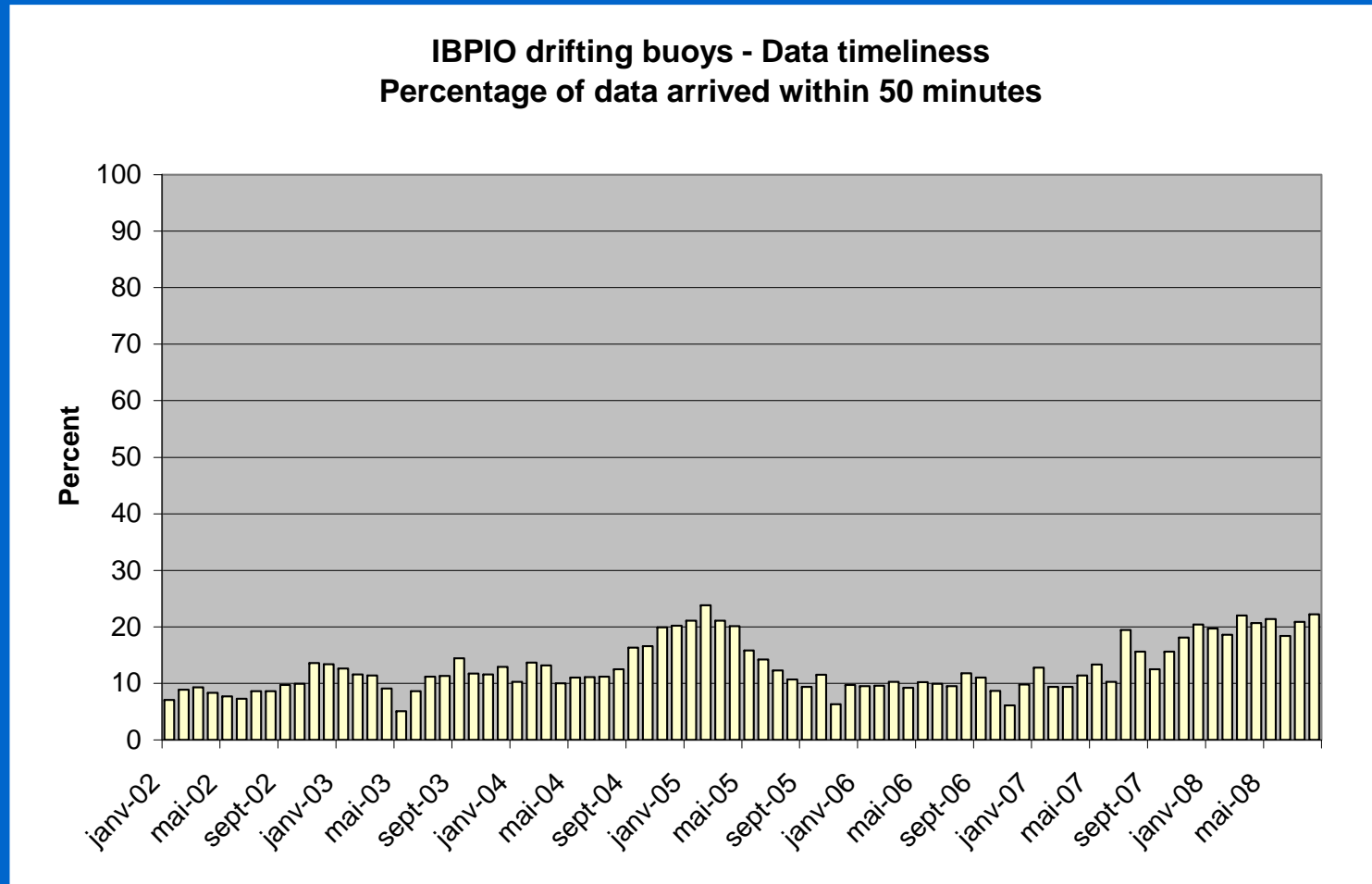
Performance Monitoring



Data Availability (Drifting Buoys)

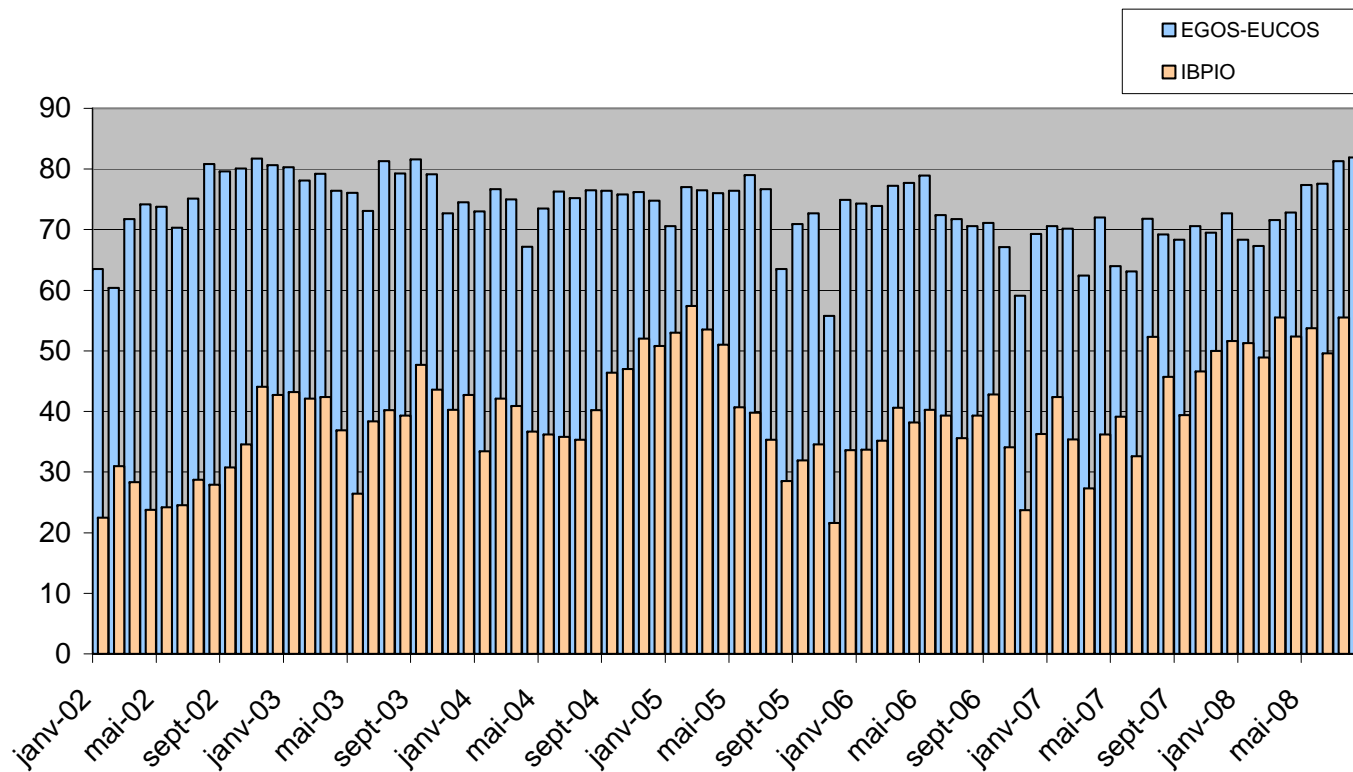


Data Timeliness (Drifting Buoys)



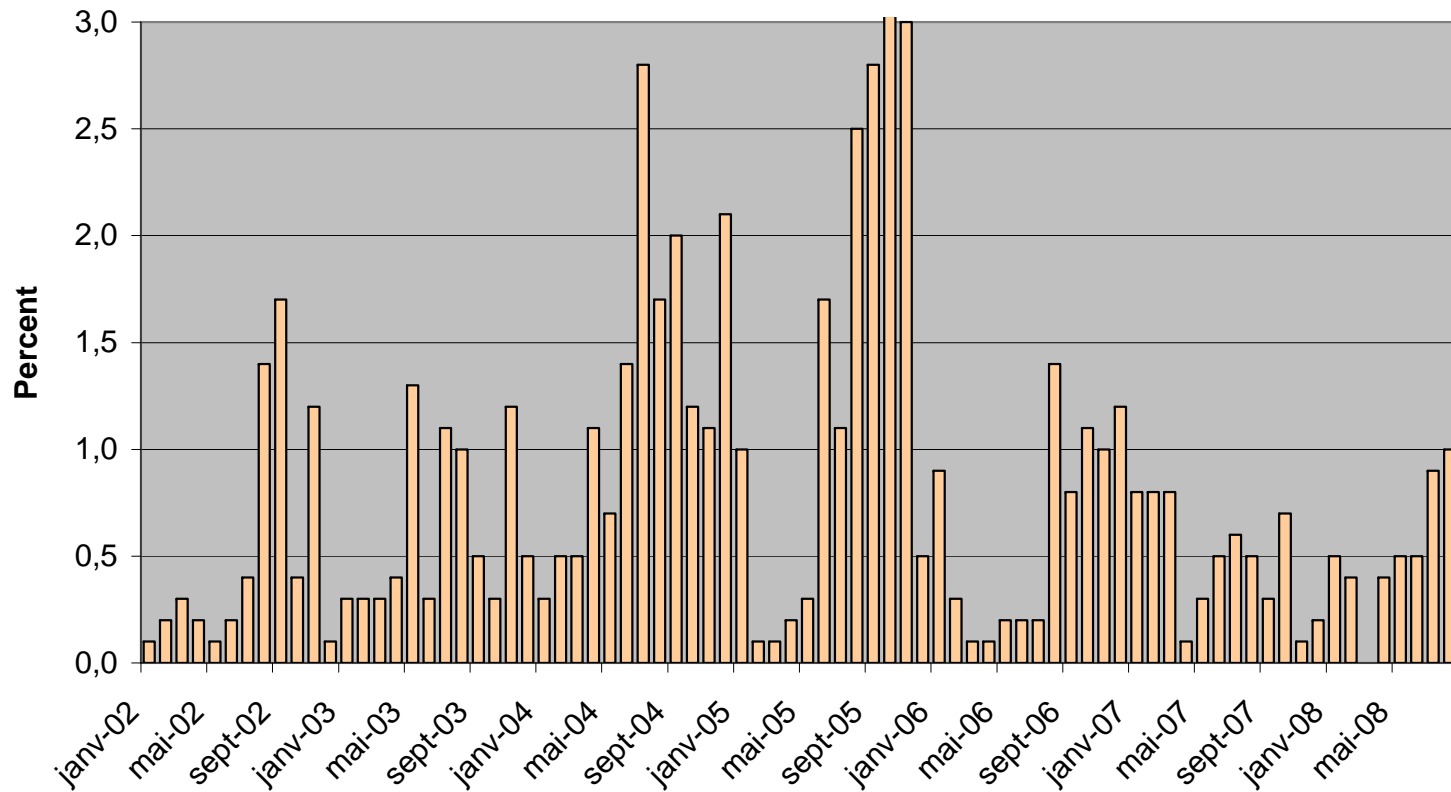
Data Timeliness Comparison (Drifting Buoys)

Data timeliness - Percentage of drifting buoys data arrived within 100 minutes

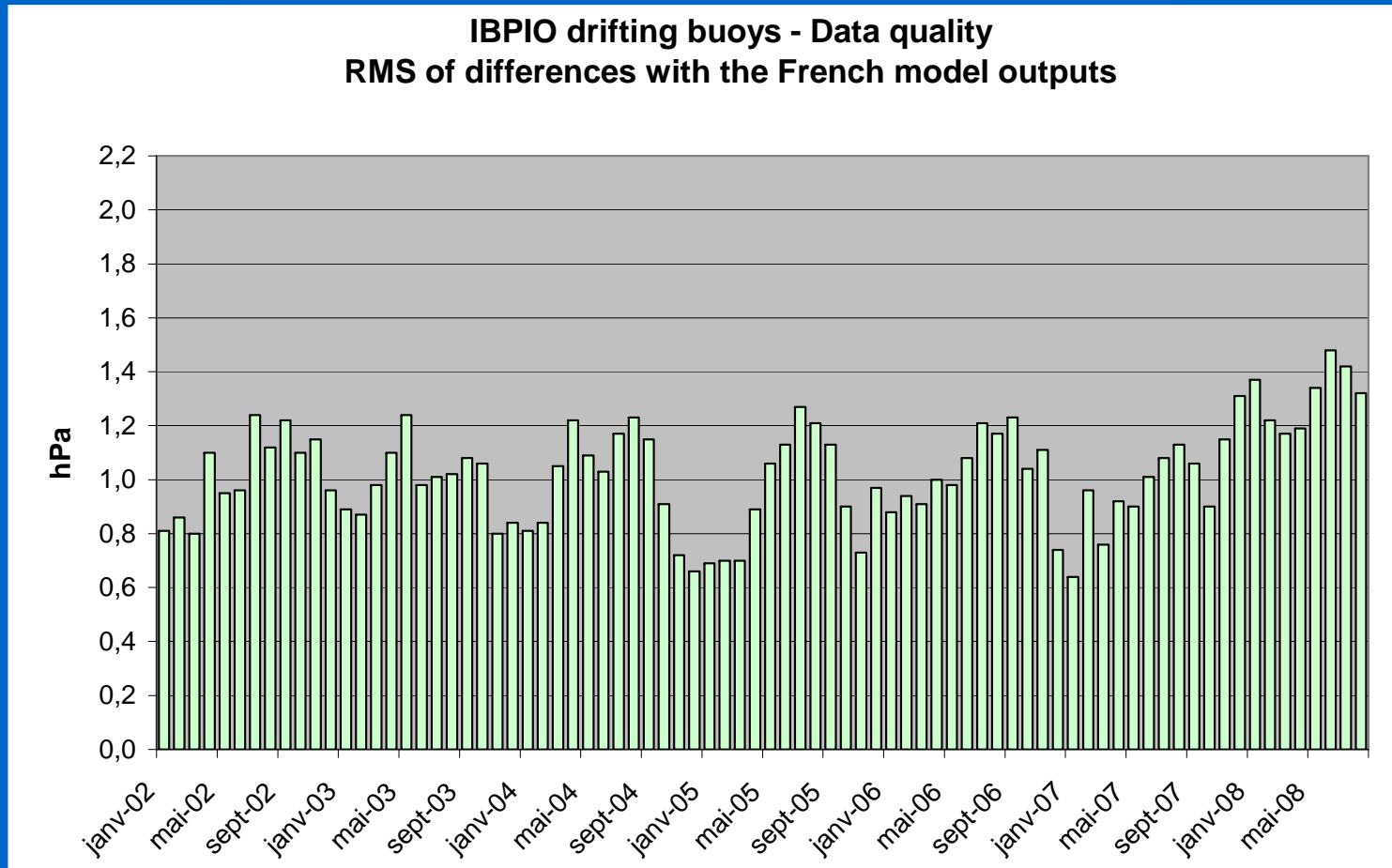


Gross Errors (Drifting Buoys)

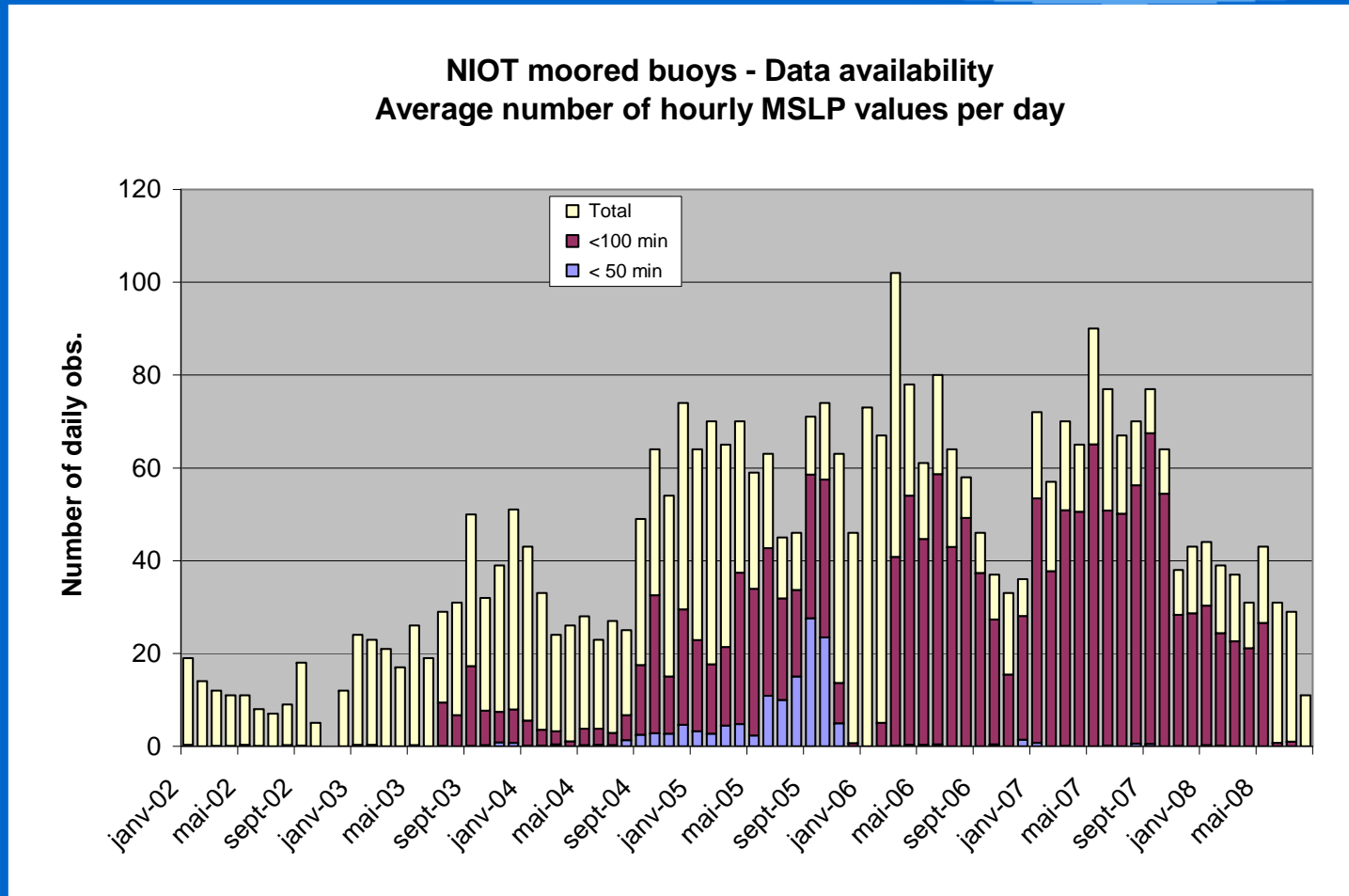
IBPIO drifting buoys - Data quality
Gross Errors of differences with the French model outputs



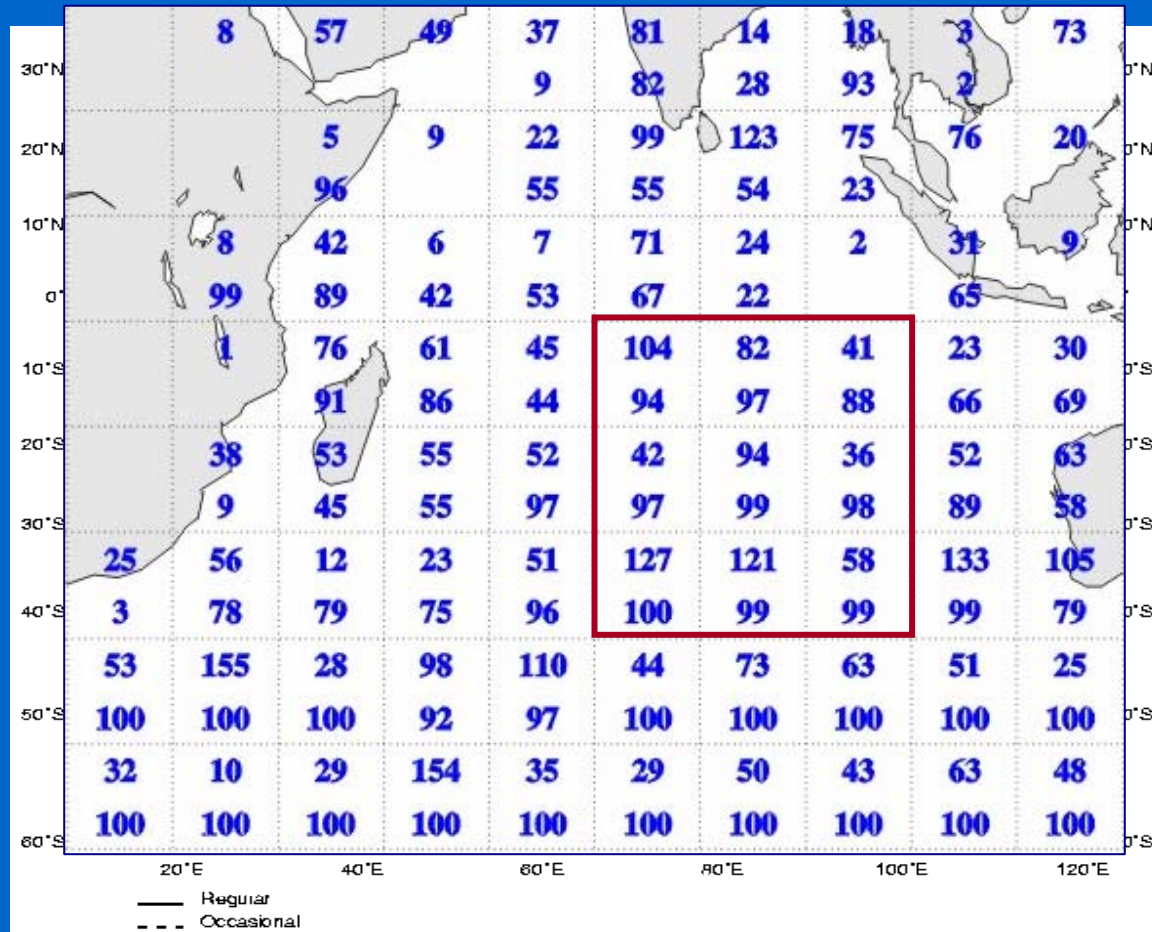
MSLP RMS Errors (Drifting Buoys)



Data Availability (NIOT)



Value of Buoy Observations



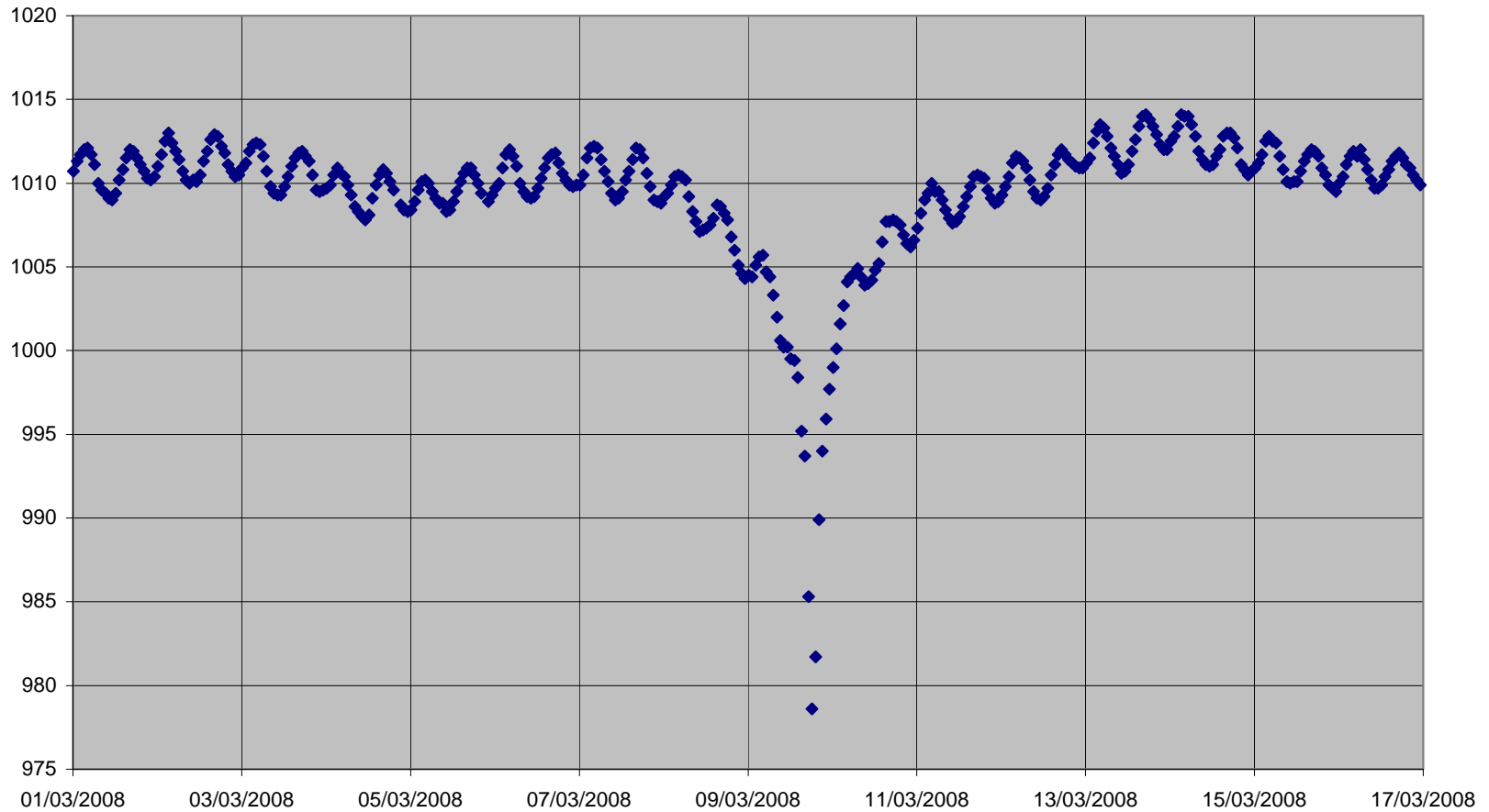
(top #): 100 = 8 obs (SHIP & BUOY) per day per 500 km x 500 km.

(bottom #): Percentage of BUOY reports

Tropical Cyclone Kamba

<http://australiasevereeweather.com/cyclones/>

**Buoy WMO 33520 and Cyclone Kamba
Indian Ocean - March 2008**



Category 4 Hurricane / Typhoon
Category 5 Hurricane / Typhoon



Discussion & Recommendations



Concerns About Data Timeliness

- IBPIO-XI expressed concerns about the delays in the Indian Ocean, particularly in the months July-Sept 2008:
 - » There were delays affecting moored and drifting buoys transmitting by INMARSAT via the Indian GTS Node, which have since improved.
 - » Other drifting buoys in the region transmitting via Argos had been affected by a problem with the Argos Antenna (Hyderabad).

Recommendation to DBCP-XXIV

1. That CLS reduce the delays in the region by both improving the performance of the existing antenna and enhancing the network. **(Action CLS)**
2. The panel to be informed about how well the region will be served by the new Argos-3 system in coming years. **(Action CLS, DBCP TC)**

