



Australian Government

Bureau of Meteorology

Australian National Report

PMO-V | 20-24 July 2015 | Vina del Mar, Chile.





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Bureau of Meteorology

Outline

Port Meteorological Officers:

- Description / Network.

Australian Voluntary Observing Fleet:

- Status / Description / Equipment / Monitoring.

Support Activities:

- XBT SOOP.
- Drifting Buoys.



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Port Meteorological Officers



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Port Meteorological Officers (PMO)

Fremantle, Melbourne & Sydney:

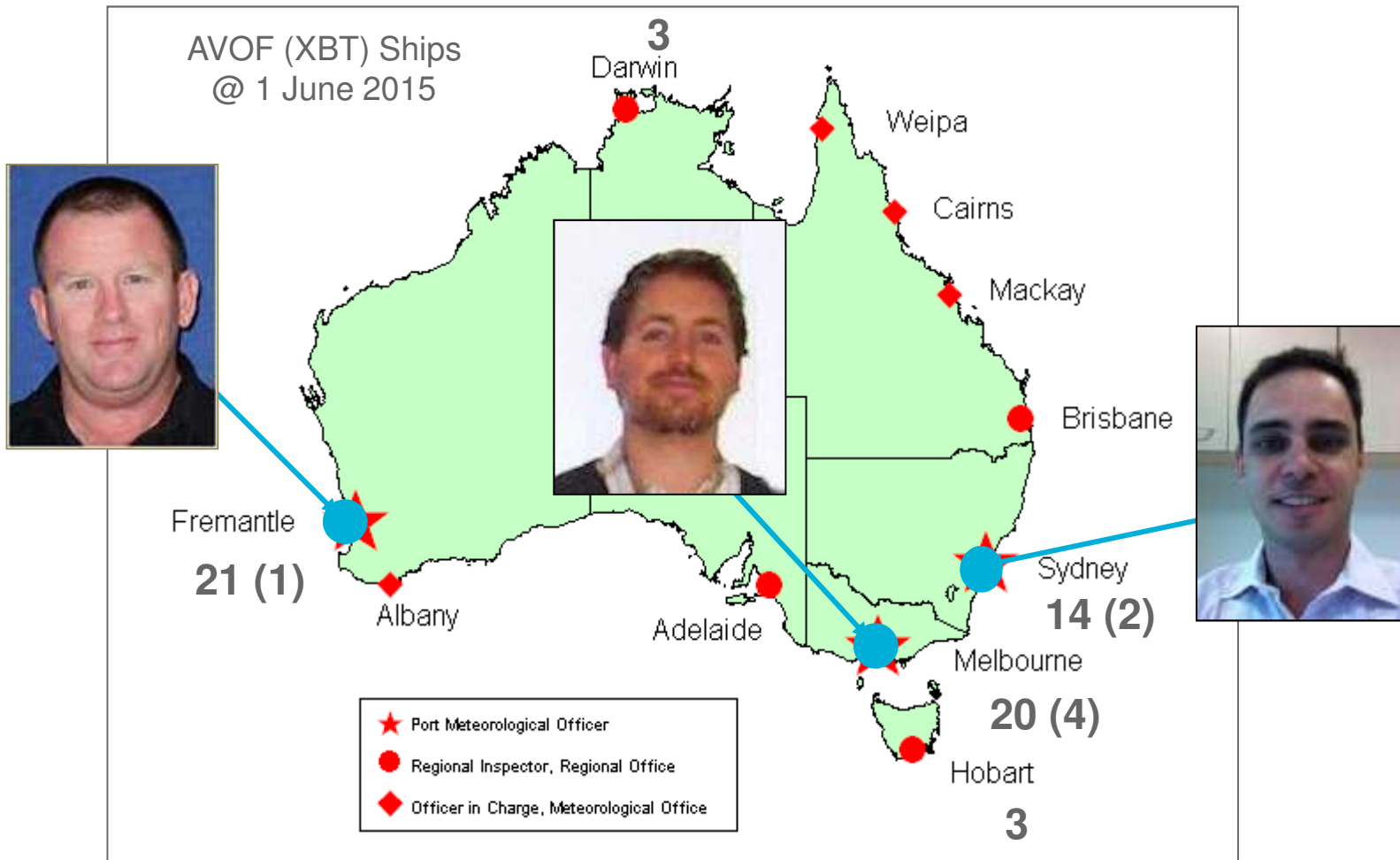
- ABOM Observations Inspectors
- Full range of PMO services to the AVOF & the global VOF.
- Ship-greetings to the ABOM's XBT SOOP.
- Regular support to the ABOM's other marine programs.

Other capital city & provincial ports:

- Full-time ABOM Regional Office.
- Full-time Field Office staff, but limited opportunities due staffing.
- Limited range of PMO services, generally provided 'on-request'.
- Occasional support to the ABOM's other marine programs.



PMO Network





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Australian Voluntary Observing Fleet



Status of the AVOF

Class	Manual		AWS	
	Fully Manual	TurboWin	ShipAWS	Other
Selected	1	46	5	0
VOSClm	0	5	0	0
Supplementary	0	0	0	0
Auxiliary	0	4	0	0

Total	1	55	5	0
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61

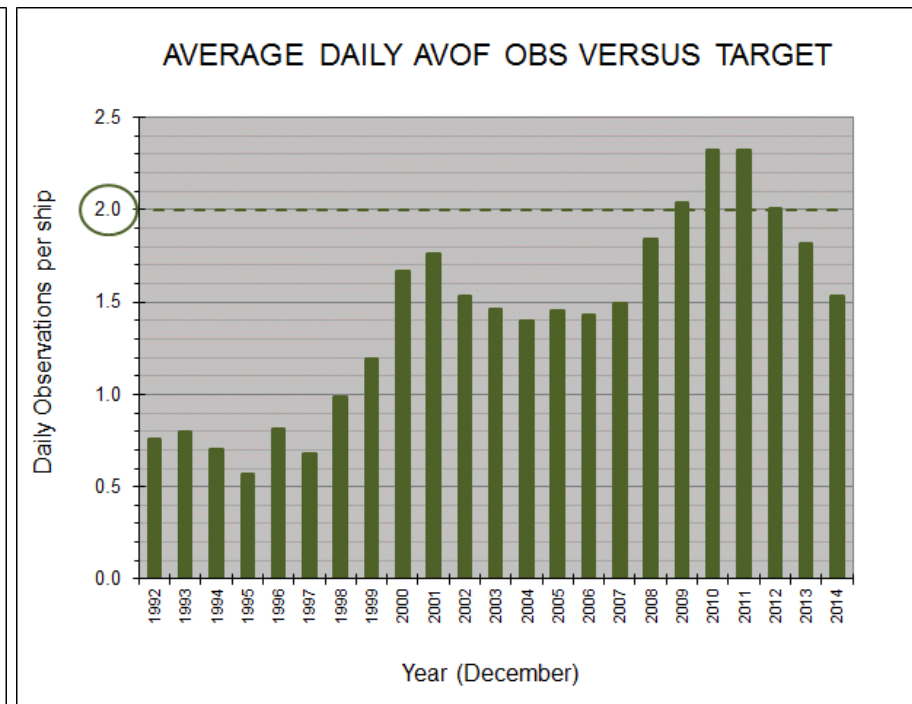
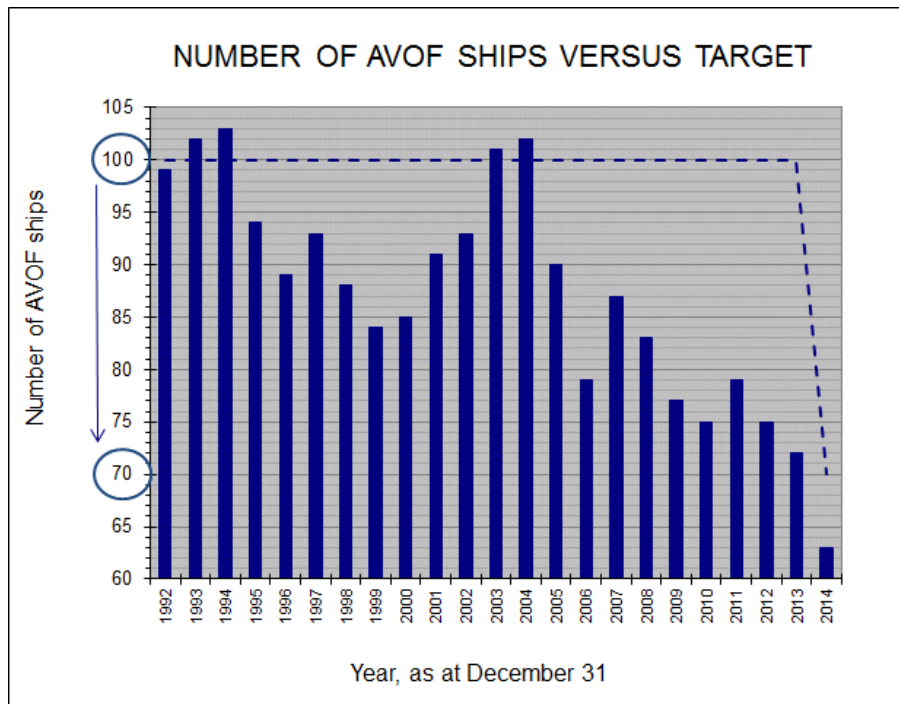
Target	70			
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98 %

@ 1 June 2015



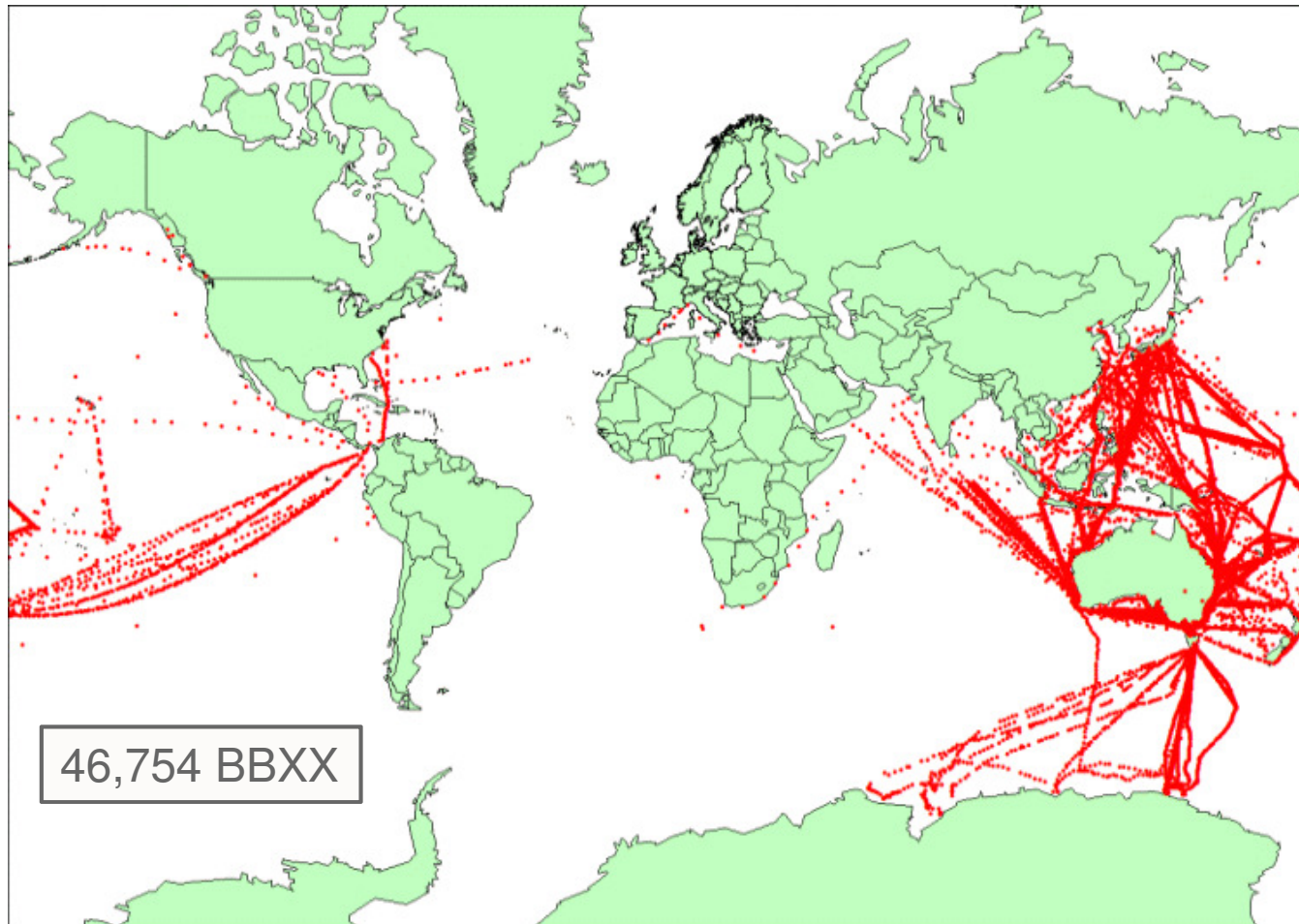
Fleet Size & Reporting





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AVOF Observations on the GTS in 2014





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AVOF Observing Program

Component	Manual Observation	ShipAWS Observation
Observation times	0000, 0600, 1200 & 1800 UTC	Configurable, but generally every hour when moving
Recording	TurboWin (preferred) or paper logbook	Electronic
Transmission	Inmarsat to a LES using free service <i>SAC41</i> (<i>SAC1241</i> in the AU region)	Inmarsat <i>data reporting mode</i> to IOR 312 / POR 212 (formerly Perth)
Data format	BBXX	Binary subset of the BBXX which is converted to a full BBXX by the Bureau
Lodgement on GTS	NMS in the country hosting the receiving LES	Bureau



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AVOF Meteorological Instrumentation

Instrument	Standard (VOSCLim compliant)	ShipAWS
Barometer *	Vaisala PTB220B or PTB330	PTB220B
Barograph *	Marine Electronic Barograph (software)	
Screen	Marine (generally 2 per ship)	Vaisala DTR13 radiation shield
Thermometers	2 x Mercury-in-glass (wet & dry bulb) per screen	Vaisala HMP45 humidity probe & RTD temperature probe
Anemometer	Beaufort Scale (preferred) or ship's- own anemometer	Vaisala WAA151 anemometer & WAV151 wind vane
Sea Temp	Engine intake	Seabird SBE-48 hull-contact sensor

* Set to read station level pressure



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AVOF Weather Reporting System



Vaisala PTB220B or PTB330 electronic barometer connected to a laptop running:

- KNMI's TurboWin,
- ABOM's TurboWin Extras, and
- ABOM's Marine Electronic Barograph.



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ShipAWS

Remotely sensed:

- AP, AT, RH, SST, Apparent WS & WD.

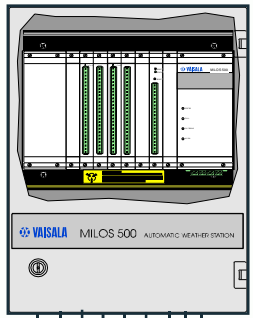
Derived values:

- DP, WB, PT, True WS & WD.

Manual input of visual elements:

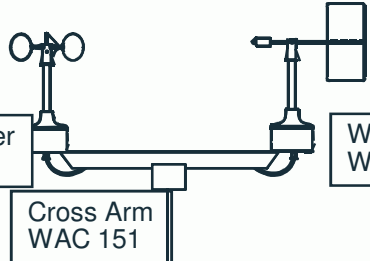
- Cloud, weather, visibility, sea, swell.



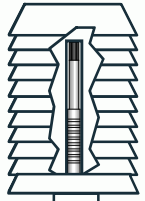


MILOS 500
Data Collection and Processing System
INSIDE
BOX50S
Equipment Enclosure

Anemometer
WAA 151



Wind Vane
WAV 151



HMP 45D Humidity probe
and RTD temperature probe
inside DTR 13 Radiation
Shield

PTB 220B
Barometric pressure
transmitter installed
on ship's bridge

RS232 Standard/RS422

RS232

Data from Ship's compass
Koden gyro interface GRA-20A



Gyro type _Tokyo Keiki Model 5000



RS232



CapSat
TT-3020B

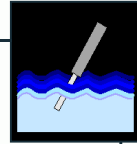


Iridium
Modem

RS232

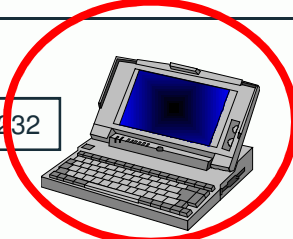
Inbuilt GPS

Inside the AWS




Sea Surface
Temperature

RS232



'Yourlink' console
on Ships bridge

ShipAWS
SYSTEM DIAGRAM
 UPPER AIR AND MARINE LAB, SRUM JULY 2004





ShipAWS Console

Your Link [view] - REALTIME

Close

REALTIME DISPLAY for INSTANT VALUES

Date: 2001 03 27 Air Temperature °C: 25.6
 Time: 06 : 15 UTC Wet Bulb Temperature °C: 16.3
 Latitude: 37.82 S Dew Point Temperature °C: 10.2
 Longitude: 144.97 E Relative Humidity %: 38
 Track: 145 deg. 0 kt. Station Level Pressure: hPa: 998.0
 Heading deg: 355 Mean Sea Level Pressure: hPa: 1010.6

Instantaneous
 TRUE WIND 169 deg. T 9 kt.

Average Variation (deg. T) Range (kt.)
 Max. Min. Min. Max.
 2 min: 160 deg. T 7 kt. 076 V 282 3 to 12
 10 min: 160 deg. T 8 kt. 351 V 254 3 to 15

Your Link [edit, time 07:50] - SHIP

Send Cancel

SHIP'S SURFACE WEATHER REPORT

Call sign: YY GG Iw LaLaLa Qc LoLoLo IR Ix h WV N dd ff fff
 BBXX ROOF 27 18 4 99 378 3 1450 4 6 (00)

Sn TTT Sn TdTdTd PoPoPoPo PPPP a ppp ww W1W2 Nh CLCM CH
 1 0 243 2 0 100 3 9978 4 0012 5 2 003 7 8

DsVs Ss TwTwTw Wind waves: Swell waves: 1st Swell waves: 2nd Swell waves:
 PwPw HwHw dw1dw1dw2dw2 Pw1Pw1 Hw1Hw1 Pw2Pw2 Hw2Hw2
 222 0 0 0 2 3 4 5

IsEsEsRs Sw TbTbTb ci Si bi Di zi
 6 8 ICE

Previous SHIP message
 BBXX ROOF 27154 99378 31450
 46/// /1709 10141 20076 39989 40120 52006
 22233 85106

Ship Call Sign



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VOS Quality Monitoring

Source	Frequency	Parameters
Real-time feedback	Occasional	All parameters
Météo-France - VOS QM Tools	Weekly	AP, AT, RH, WD
RSMC - QM Report	Monthly	AP, SST, AT, RH, WS, WD
RSMC - Suspect Ship List	Monthly	AP, SST, AT, RH, WS, WD
RTMC - VOSClm Suspect Ship List	Monthly	AP, SST, AT, RH, WS, WD
RSMC - Timeliness of Observations	Monthly	Timeliness of BBXX at RSMC
RSMC - Rejected Ship Reports	Monthly	Errors in BBXX at RSMC
ABOM - Performance Report	Monthly	Count of received BBXX



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XBT SOOP



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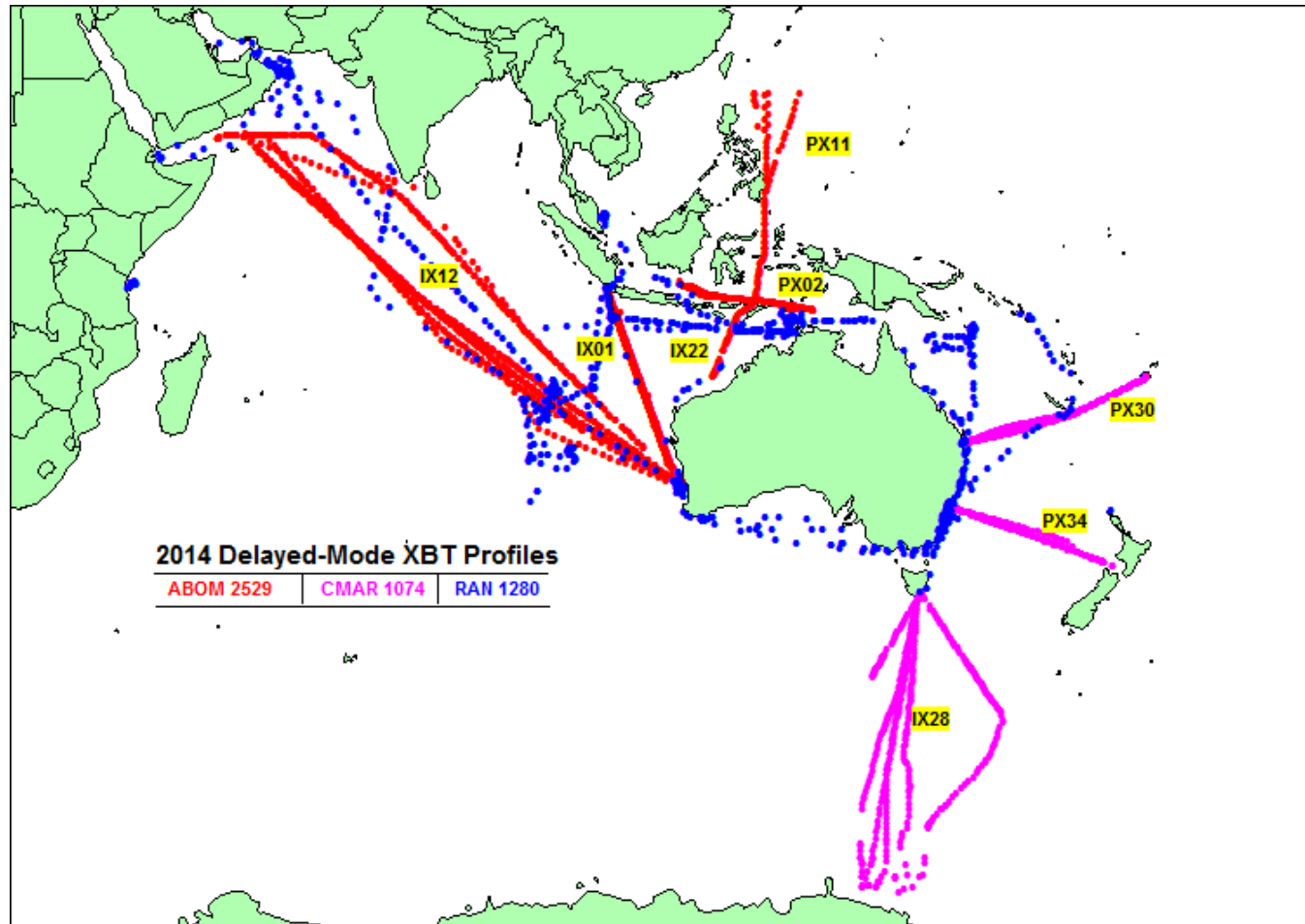
Devil XBT System





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Delayed-Mode XBT Profiles in 2014





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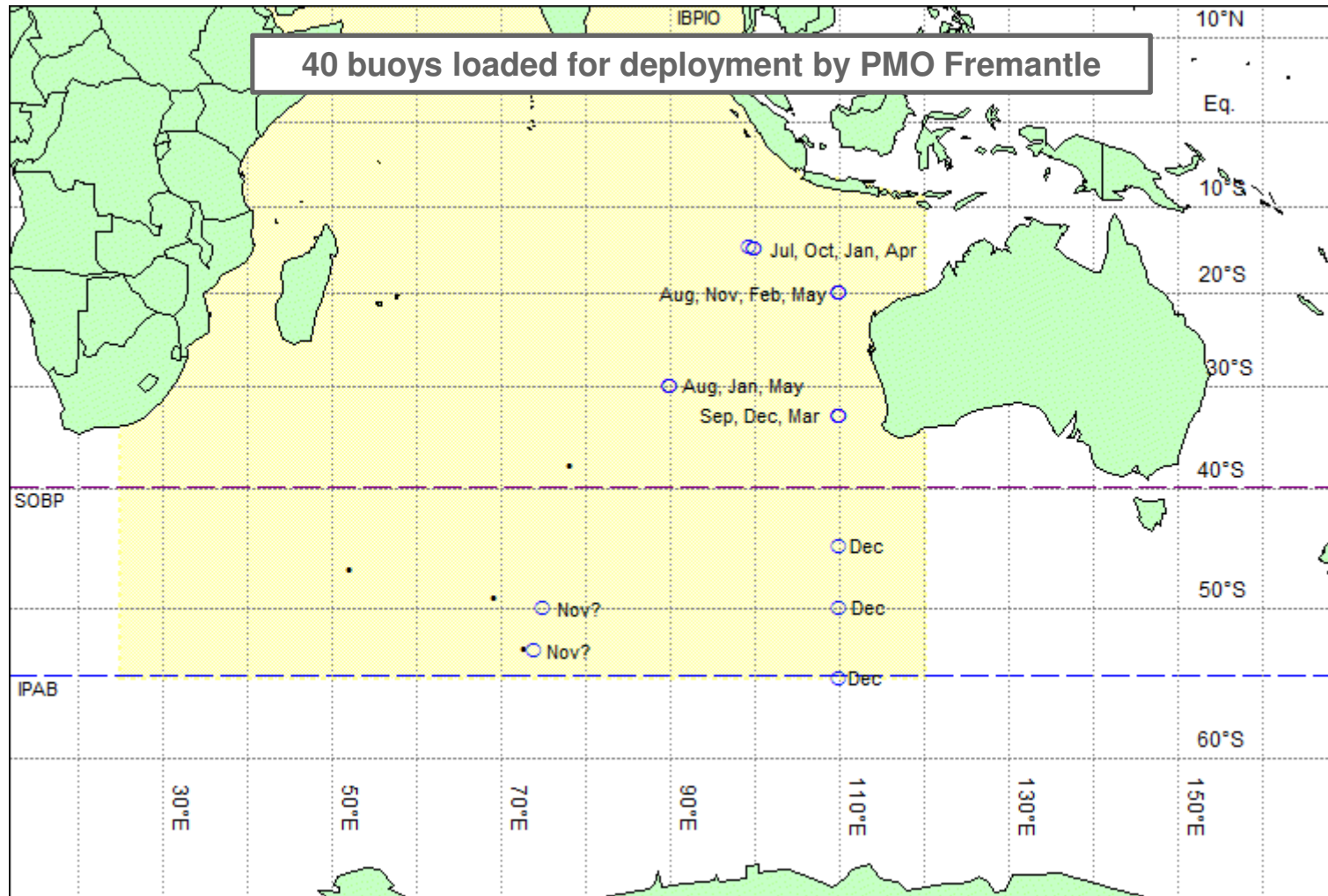


Drifting Buoys



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Drifting Buoy Deployments 2014/15





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Thank you...

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