



XBT Network, Status and Implementation

Francis Bringas

Cooperative Institute of Marine and Atmospheric Studies (UM/CIMAS)

and

Atlantic Oceanographic and Meteorological Laboratory (NOAA/AOML)

Francis.Bringas@noaa.gov

SOT-VI - Sixth Session of the JCOMM Ship Observations Team

11 - 15 April 2011, Hobart, Australia

Global XBT Transects



Source: IFREMER



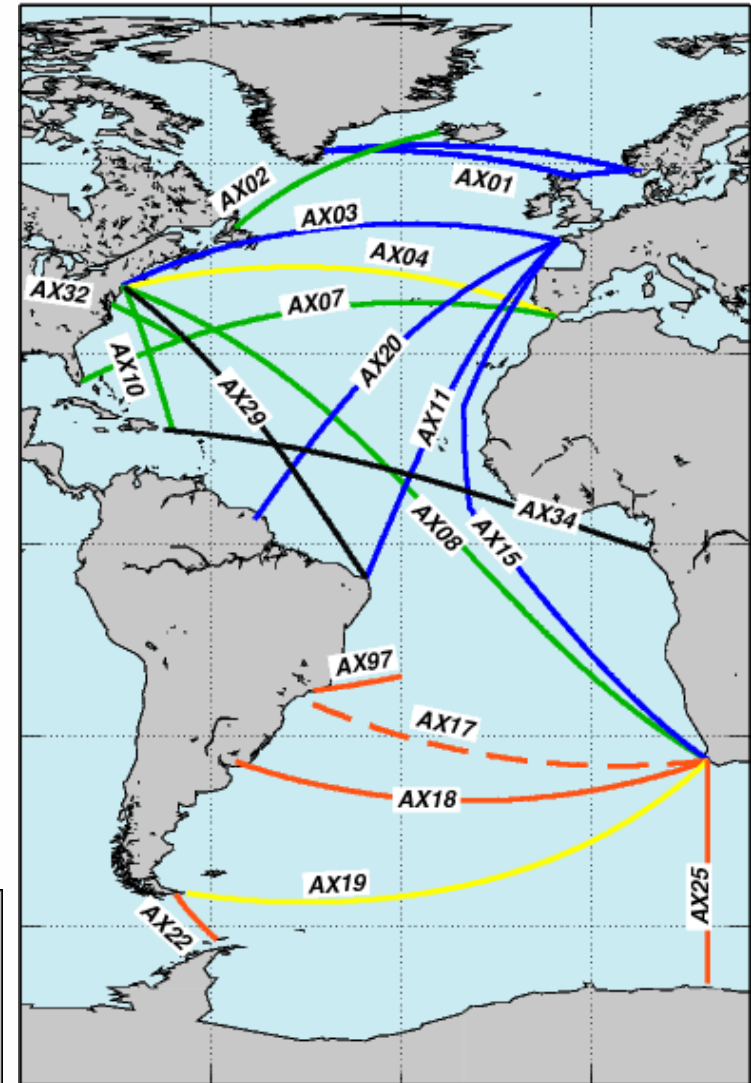
Atlantic Ocean XBT Transects

Transect	Agency	Mode (Target) 2010	Status	Year
AX01	5, 1, 23	FR (5)	Active	1997
AX02	1, 23	HD (1)	Active	
AX03	10	FR (3)	Active	1989
AX07	1	FR (9) / HD (4)	Active	1995
AX08	1, 6	FR (5) / HD (4)	Active	2000
AX10	1	FR (20) / HD (5)	Active	1997
AX11	10	FR (8)	Active	1990
AX15	5	FR (5)	Active	1997-2010
AX18	1, 11, 6	HD (3)	Active	2002
AX20	5, 1, 23	FR (9)	Active	
AX22	2, 1, 11	HD (9)	Active	1996
AX25	1, 6	HD (2)	Active	2004
AX29			Inactive	
AX32	1, 3	FR (2) / HD (8)	Active	1981
AX34			Inactive	
AX97	1, 13	HD (2)	Active	2004
AX04	1	FR (1)	Targeted	
AX19	1	HD (1)	Targeted	

1 USA-NOAA/AOML 10 GER-BSH
 2 USA-SIO 11 ARG-SHN
 3 USA-NMFS 13 BRA-FURG
 5 FRA-IRD/BREST 23 FRA-UP
 6 ZAF-UCT

— Active (FR)
— Active (HD)
— Active (FR and HD)
— Inactive
— Not Recommended

Atlantic Ocean XBT transects (2010)

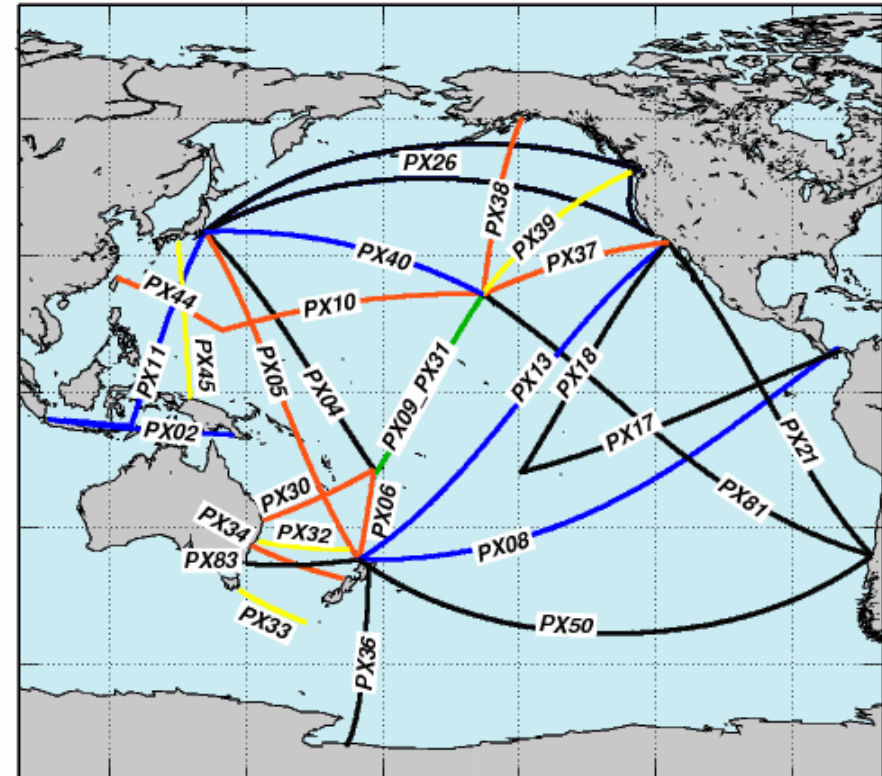




Pacific Ocean XBT Transects

Transect	Agency	Mode (Target)	Status	Year
PX02	9	FR (20)	Active	1983
PX04	7		Inactive	
PX05	2, 7	HD (8)	Active	2009
PX06	2, 7, 1	HD (7)	Active	1986
PX08	2, 1	FR (6)	Suspended	2004
PX09	2, 1	FR (2) / HD (1)	Active	1987
PX10	2, 1	HD (4)	Active	1991
PX11	9	FR (8)	Active	1986
PX13	2, 7, 1	FR (5)	Active	1986
PX17			Inactive	
PX18			Inactive	
PX21			Inactive	
PX26			Inactive	
PX30	4, 2, 7	HD (4)	Active	1991
PX31	2, 7, 1	HD (7)	Active	1986
PX34	4, 2	HD (1)	Active	1991
PX36			Inactive	
PX37	2, 1	HD (10)	Active	1991
PX38	2	HD (1)	Active	1993
PX40	8	FR (3)	Active	1998
PX44	2, 1	HD (4)	Active	1991
PX50	18, 2		Inactive	1993
PX81	2		Inactive	1997
PX83			Inactive	
PX32	4	HD-(2)	Active	
PX33	4	HD-(1)	Active	
PX39	25	FR-(1)	Targeted	
PX45	16	FR-(1)	Targeted	

Pacific Ocean XBT transects (2010)



- 1 USA-NOAA/AOML
- 2 USA-SIO
- 4 AUS-CSIRO
- 7 FRA-IRD/NOUMEA
- 8 JPN-TOHOKU-U
- 9 AUS-BOM
- 16 JPN-JMA
- 18 NZL-MSNZ
- 25 CAN-DFO

- Active (FR)
- Active (HD)
- Active (FR and HD)
- Inactive
- Not Recommended



Indian Ocean XBT Transects

Transect	Agency	Mode (Target)	Status	Year
IX01	9, 1	FR (37)	Active	1987
IX06	6, 2		Suspended	2007
IX07			Inactive	
IX08	12		Inactive	1992
IX09			Inactive	
IX10			Inactive	
IX12	9, 2	FR (14)	Active	1986
IX14	12	FR (1)	Active	1990
IX15	2, 4, 6	HD (3)	Active	1994
IX21	2, 4, 6	HD (3)	Active	1994
IX22	9	FR (7)	Active	1986
IX28	4, 2	HD (5)	Active	1993
IX31	2		Suspended	2006
IX02	2	HD (1)	Targeted	
IX29	4	HD (1)	Active	

1 USA-NOAA/AOML

2 USA-SIO

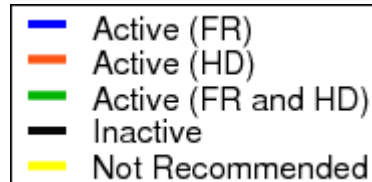
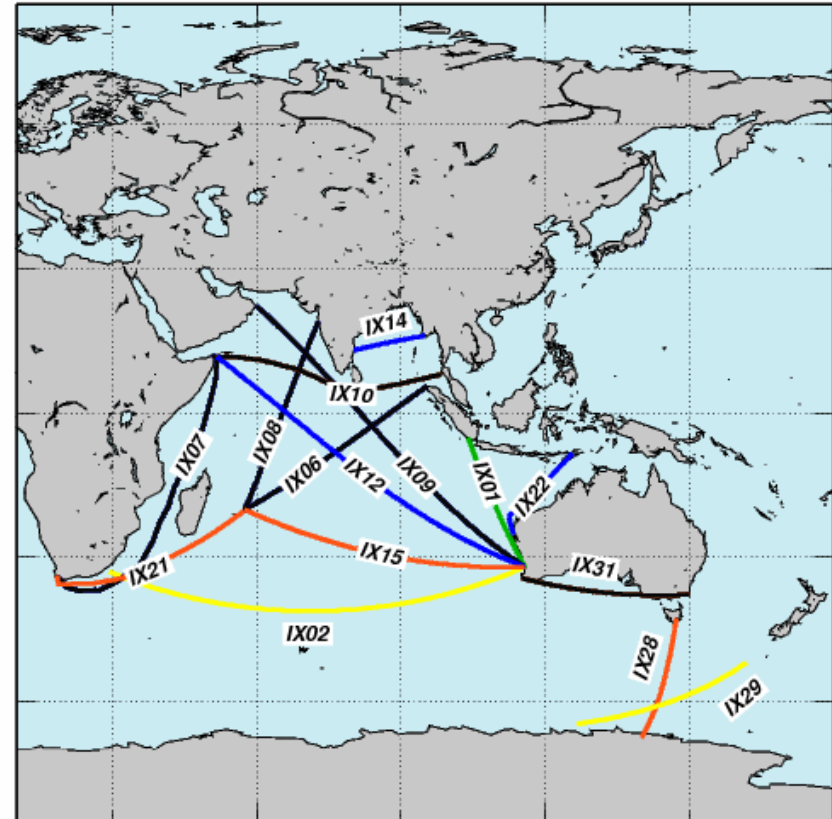
4 AUS-CSIRO

6 ZAF-UCT

9 AUS-BOM

12 IND-NIO

Indian Ocean XBT transects (2010)



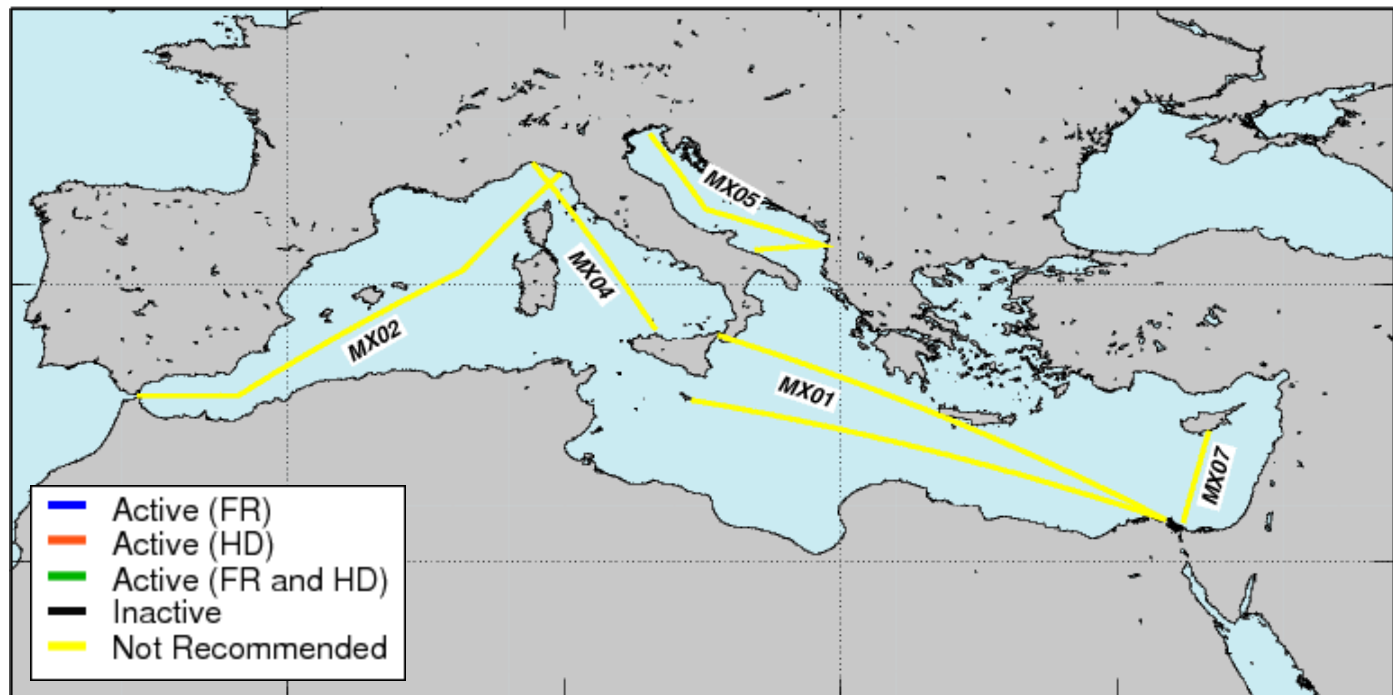


Mediterranean Sea XBT Transects

Transect	Agency	Mode (Target)	Status	Year
MX01	21, 9	HD	Active (until 2011)	1999
MX02	21, 9	HD	Active (until 2011)	1999
MX04	21, 9	HD	Active (until 2011)	1999
MX05	21, 22		Suspended	1999-2010
MX07	21, 24		Suspended	1999-2010

9 AUS-BOM
 21 IT-ENEA
 22 IT-INOGS
 24 CY-U.Cyprus

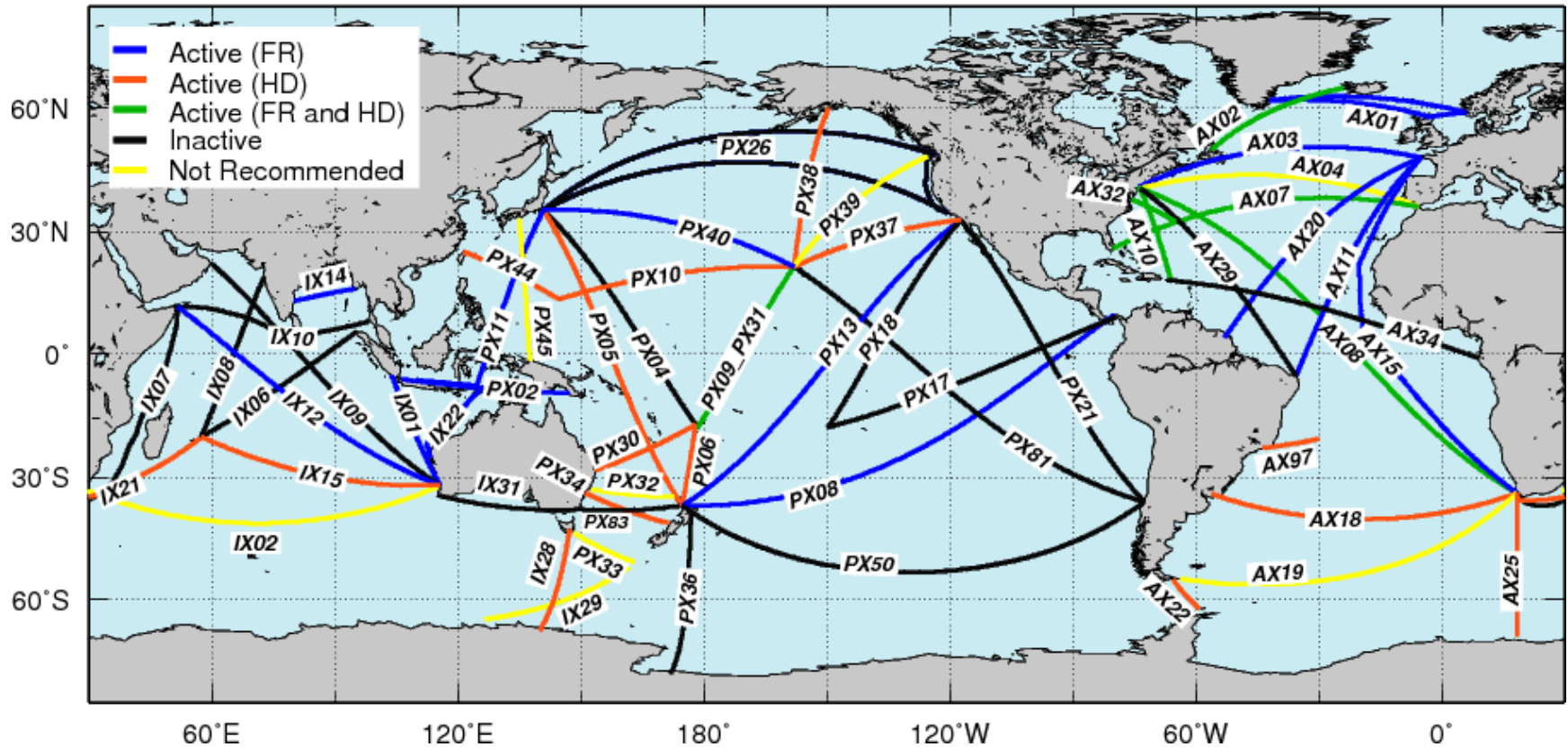
Mediterranean Sea XBT transects (2010)





Global XBT Transects

Current Status and Implementation of XBT Transects (2010)



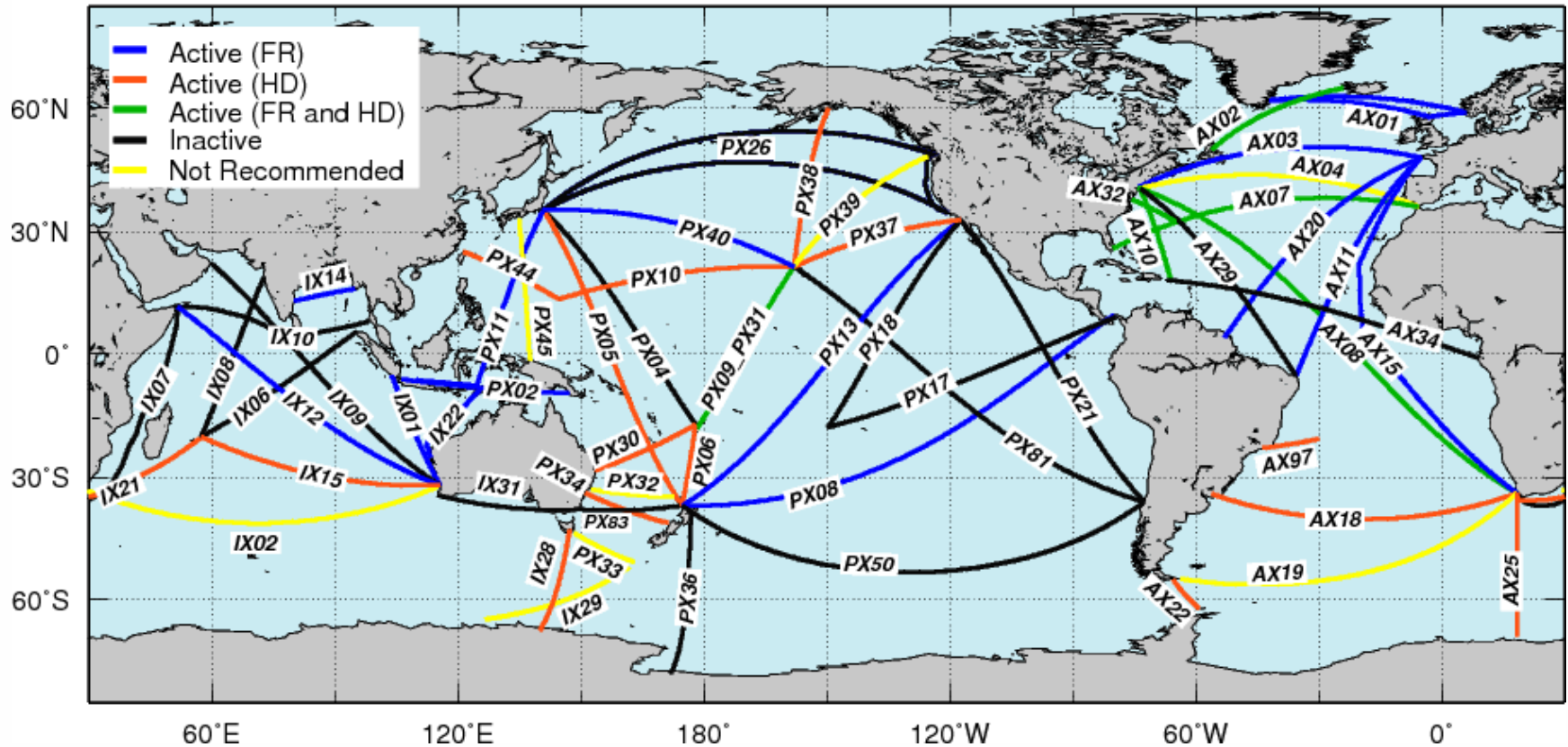
There are 12 countries participating in XBT deployments (2010):

Argentina	Canada	Germany	Japan
Australia	Cyprus	India	South Africa
Brazil	France	Italy	USA



Global XBT Transects

Current Status and Implementation of XBT Transects (2010)



- 66% of recommended transects are active, 54% in FR, 63% in HD

Atlantic Ocean: 14 (78%)

FR: 64% HD: 64%

Indian Ocean: 7 (54%)

FR: 57% HD: 43%

Pacific Ocean: 14 (58%)

FR: 43% HD: 71%



Difficulties for the Implementation of Other (Recommended) Transects

- Funding dependant
- Shipping industry dependant
- Changing scientific and operational goals
- Changing interests (national, regional, institutional)

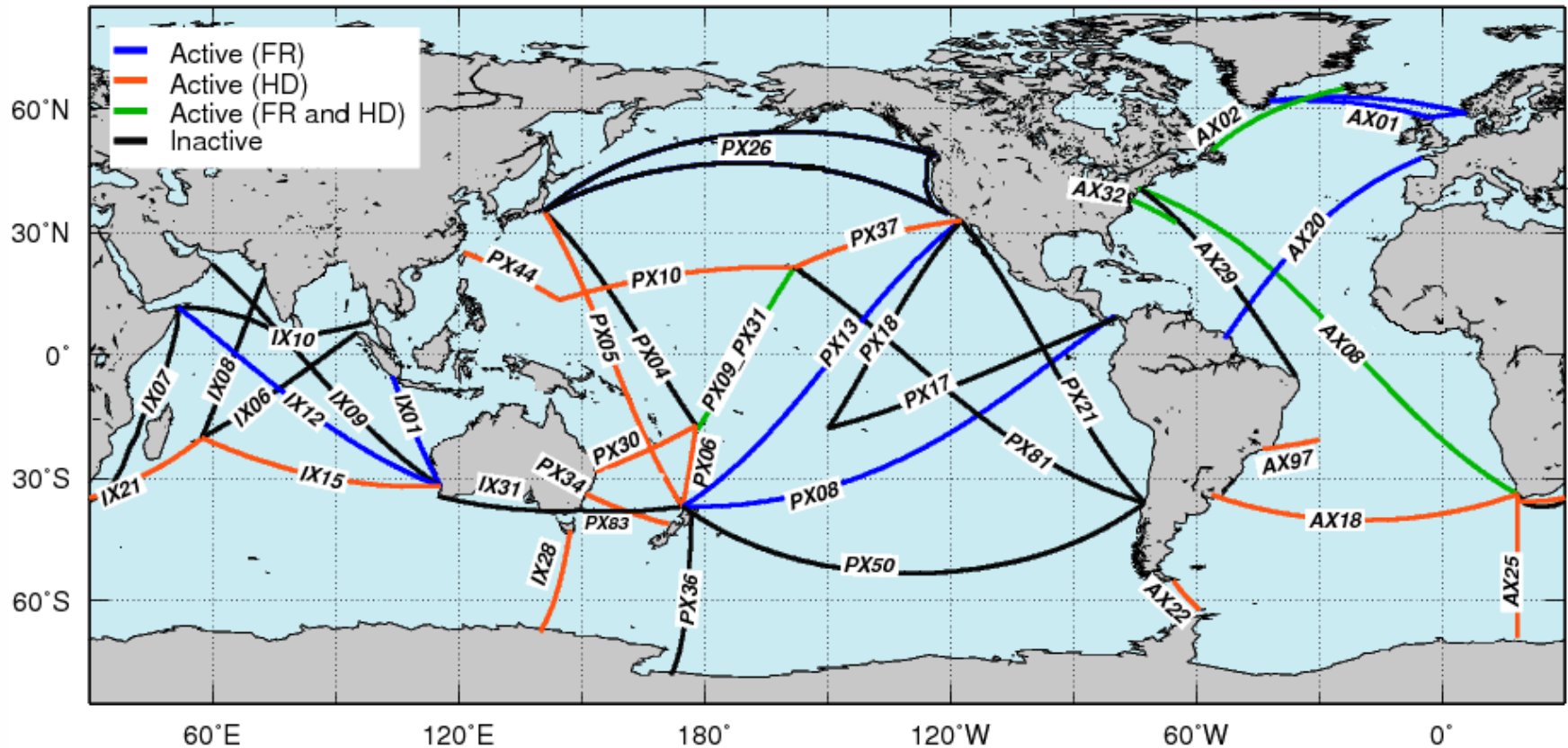
Solution ↔ Collaboration

- logistics
- equipment and probes
- data transmissions



XBT International Collaboration

International and/or Multi-Institutional Collaboration (2010)



27 of all active transects (51%) were done by more than one institution or country

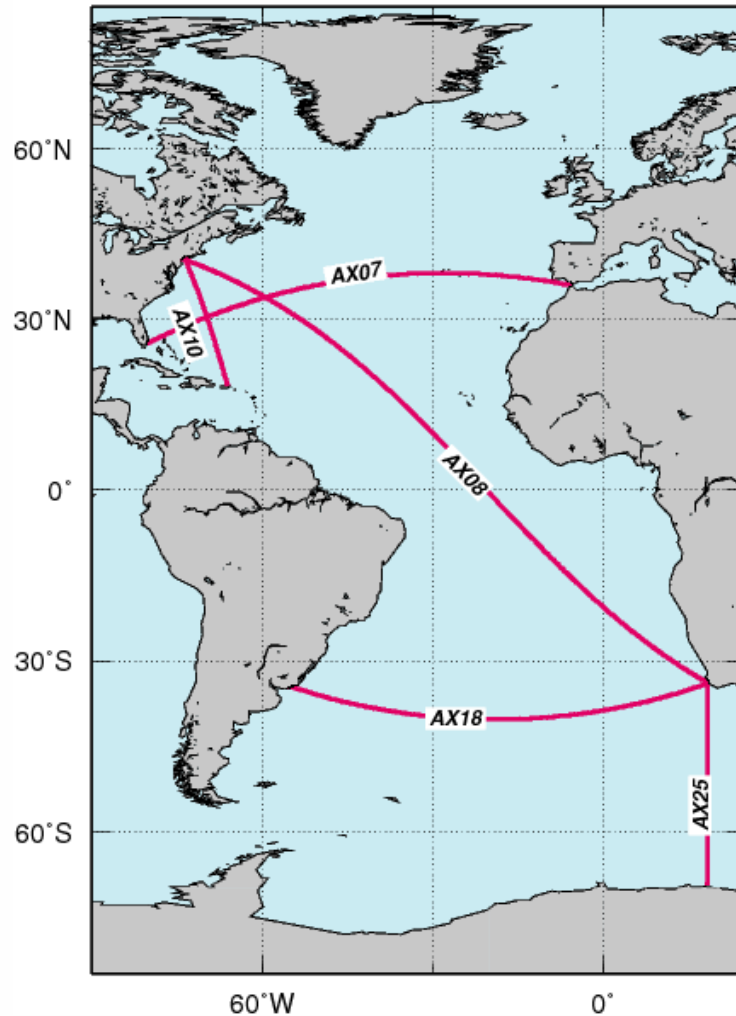
Examples:

- AX01, AX02, AX20: IRD/France + UP/France + NOAA/US
- IX01: BOM/Australia + NOAA/US
- MX01, MX02, MX04: Australia/BOM + ENEA/Italy



Synergy Between SOOP XBT Operation and other programs

AOML deployments of XBT, Drifter and Argo Floats (2009–2010)



Number of Drifters and Argo deployments during XBT HD cruises (2009 – 2010)

	Drifters	Argo
AX07	47	0
AX08	16	25
AX10	1	0
AX18	5	7
AX25	0	6
Total	69	38