Presentation to PMO IV Workshop 2010

Met Éireann Marine Unit

- Sub division of our Research and Applications Division.
- Evelyn Murphy – Head of Marine Unit.
- 3 PMOs – 1 full time + 2 part time.

Marine Unit

- Quality Control of marine observations.
- Monitoring of the buoy network.
- PMO duties.
- Compiling statistics for climate enquiries.
- Dealing with legal enquiries
- Miscellaneous

Marine Weather Observing Network

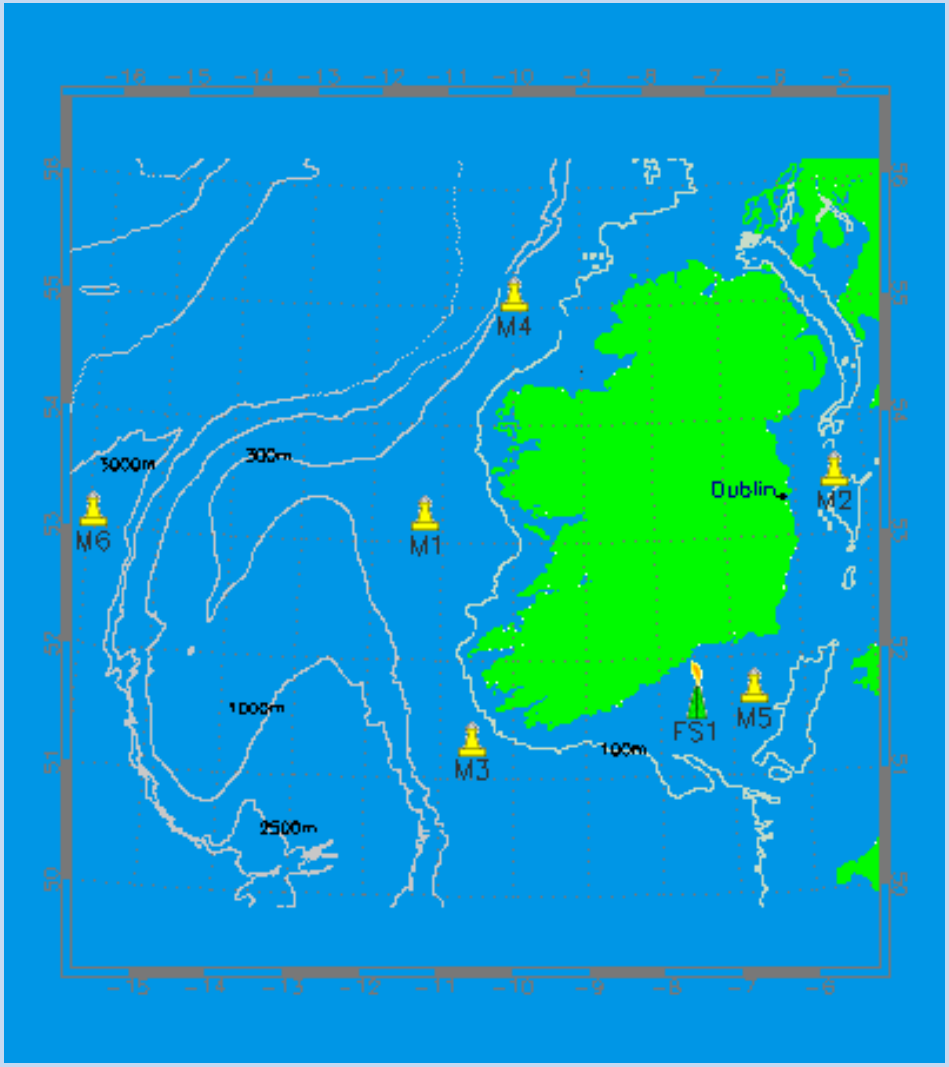
- 12 VOS
- 5 moored buoys
- 1 Gas platform
- 2 coastal stations – 1 manned, 3 automatic
- Lighthouses – provide visibility.

MV Ulysses


© Ray O Donoghue
MarineTraffic.com

Celtic Voyager

L.E. Eithne


M4
M6
M1
M2
M3
M5
FS1
Dublin
5000m
300m
1000m
2500m
100m


ODAS 25
Marine Institute

Fugro buoy

Quality Control of Ship Observations 1

Using analyzed synoptic charts

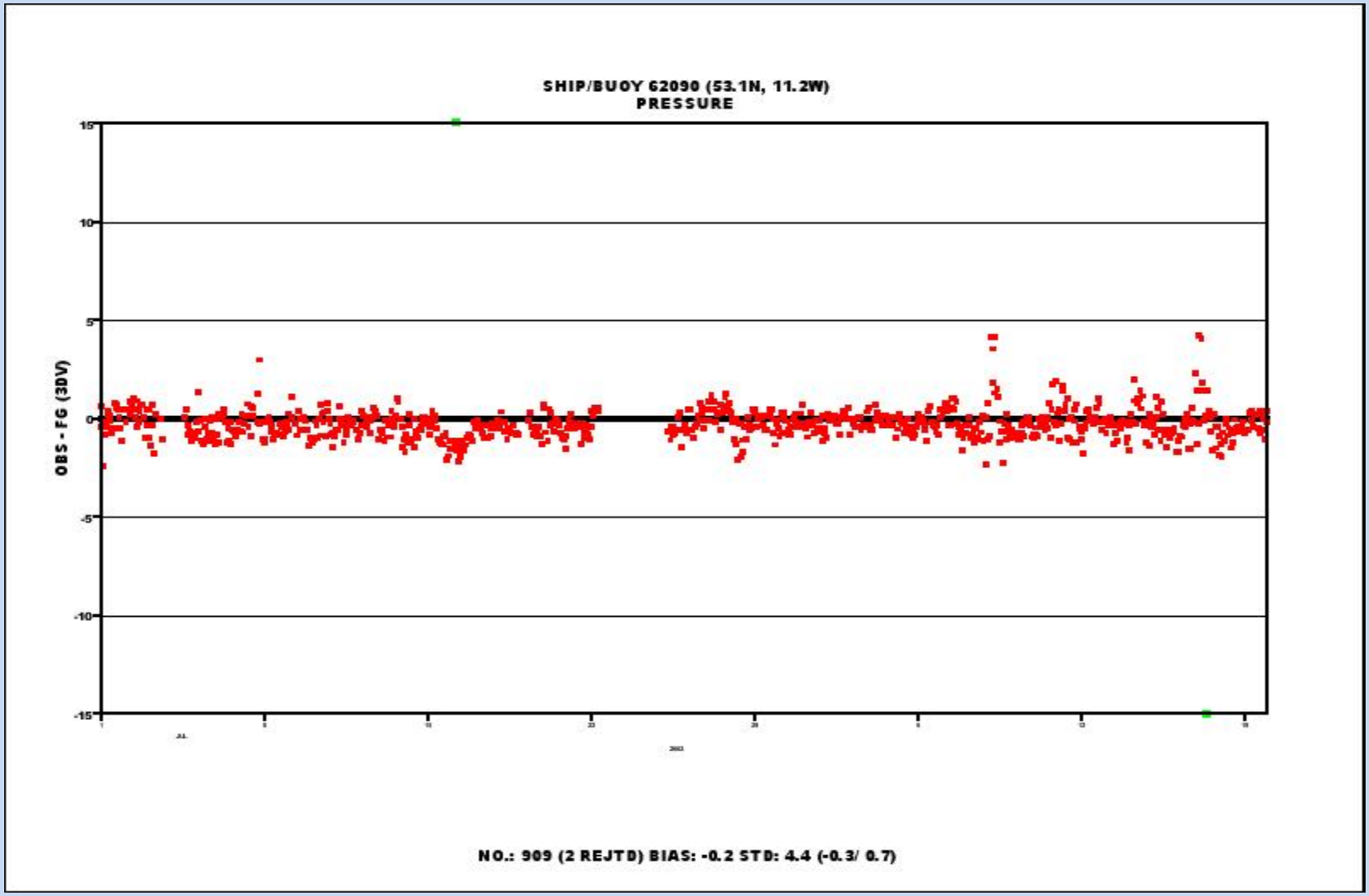
- Check location of ship
- Check wind speed and direction and note any large variations deduced from geostrophic wind scale
- Check calculation of dew point

Quality Control of Ship Observations 2

- Check MSL reading and note estimated errors deduced from isobars on map and readings from adjacent sites
- Check pressure tendency and characteristic by comparing with readings from adjacent land sites
- Check cloud and ww groups and note any coding errors

Quality Control of Ship Observations 3

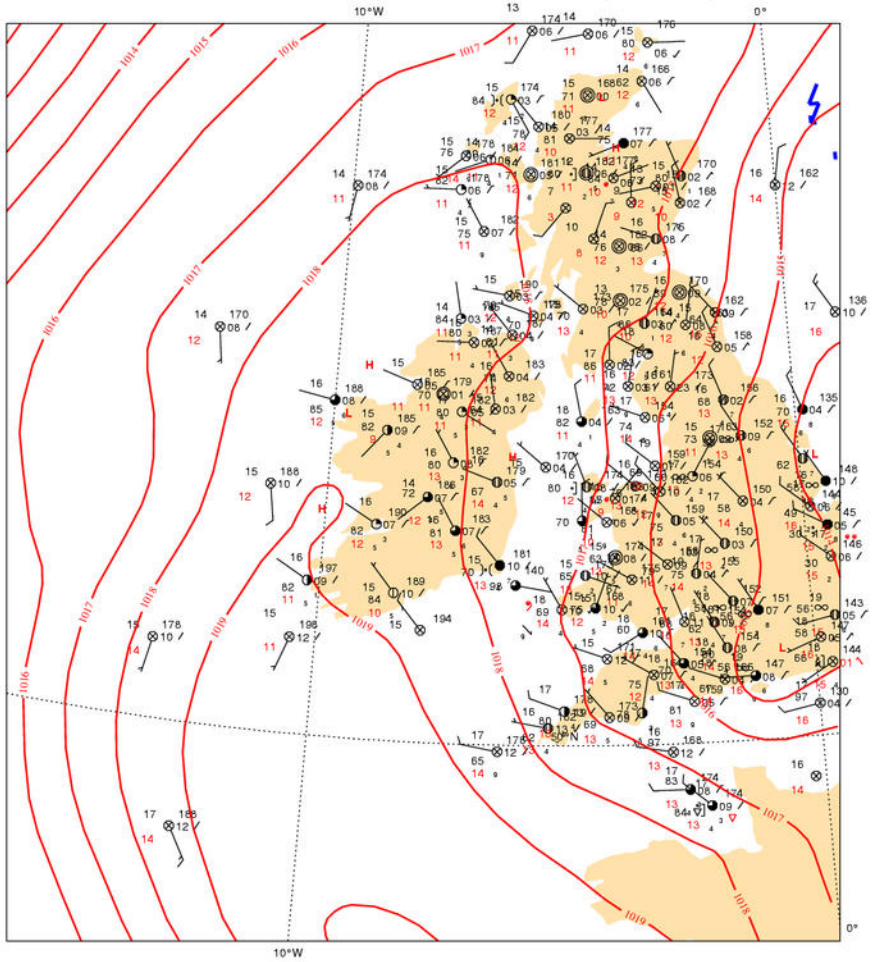
- Note sea temperatures and check for gross errors
- Examine sea, swell, wave and period and note any gross errors deduced from wind speed and direction
- Note the time the observation was received.



An automatic check of the observations against the model analysis

980 000 92429	965 000
978	962 000
976 000	960 000
974 000	957 000 92438
973 000	955 000
971 000	953 000 92428
970 000	952 000
	62090 12
967 000	62091 08

MSL PRESSURE ANALYSIS FOR: 10 UTC 20 AUG 2002
PLOTTED OBSERVATIONS: SYNOP, SHIP, BUOY, SFLOC



Quality Control of buoys - Stage 1

First look

- Confirm Buoys on Station
- Duplicate Rows
- Automated QC
- Find Nulls

Quality Control of buoys - Stage 2

Model V's Buoy

- Meteo France
- R & A Division Met Eireann.
- ECMWF wave model data.

Quality Control of buoys - Stage 3

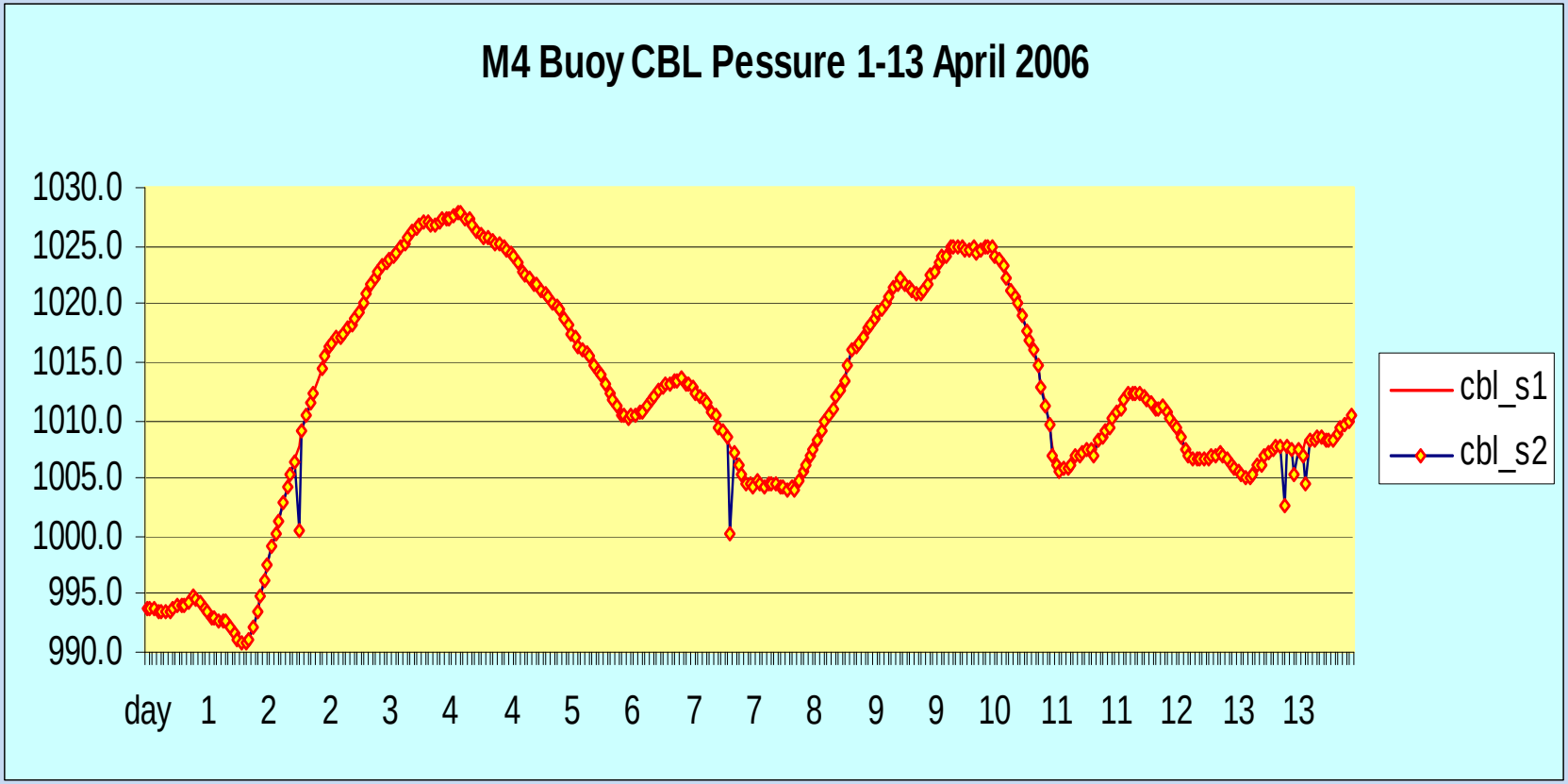
Closer look at

- Wind Speed
- Wind Direction
- Gust
- Sea Height
- Sea Period
- Atmospheric Pressure
- Air Temperature
- Relative Humidity
- Sea Temperature

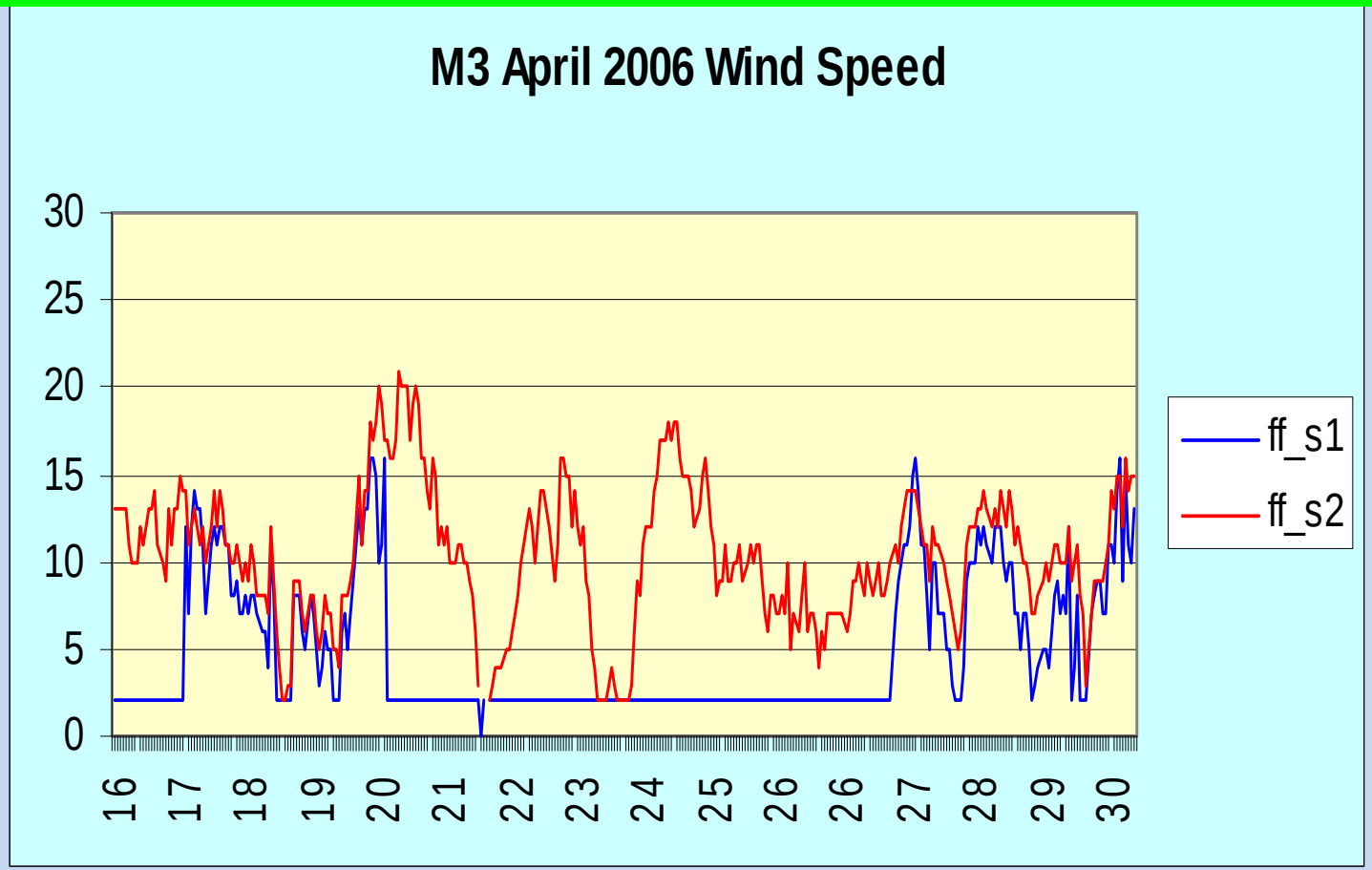
Quality Control of buoys – Stage 4

- Sensor 1 v's Sensor 2
- Adjacent Land Observations
- Graph Each Parameter
- Over Thresholds- Check Individual Observation

Quality Control of buoys - example



Quality Control of buoys - example



Future Developments

- Installation of BATOS AWS on the research vessel Celtic Voyager – December 2010 or early 2011.
- Installation of Turbowin on Naval Service vessels – to begin in early 2011,
- Replacement of fixed Marine buoys.


ODAS 25
Marine Institute

Fugro buoy

Replacement of fixed marine buoys

- 5 ODAS buoys to be replaced by Fugro buoys.
- A Marine Institute project.
- ODAS buoys in operation since 2000.

Fugro buoy changes

- Smaller superstructure.
- All meteorological instruments upgraded.
- Ultrasonic anemometers.
- Battery powered but with lithium battery backup also.
- Data transmission via Iridium and Inmarsat.
- 2-way communication facility.

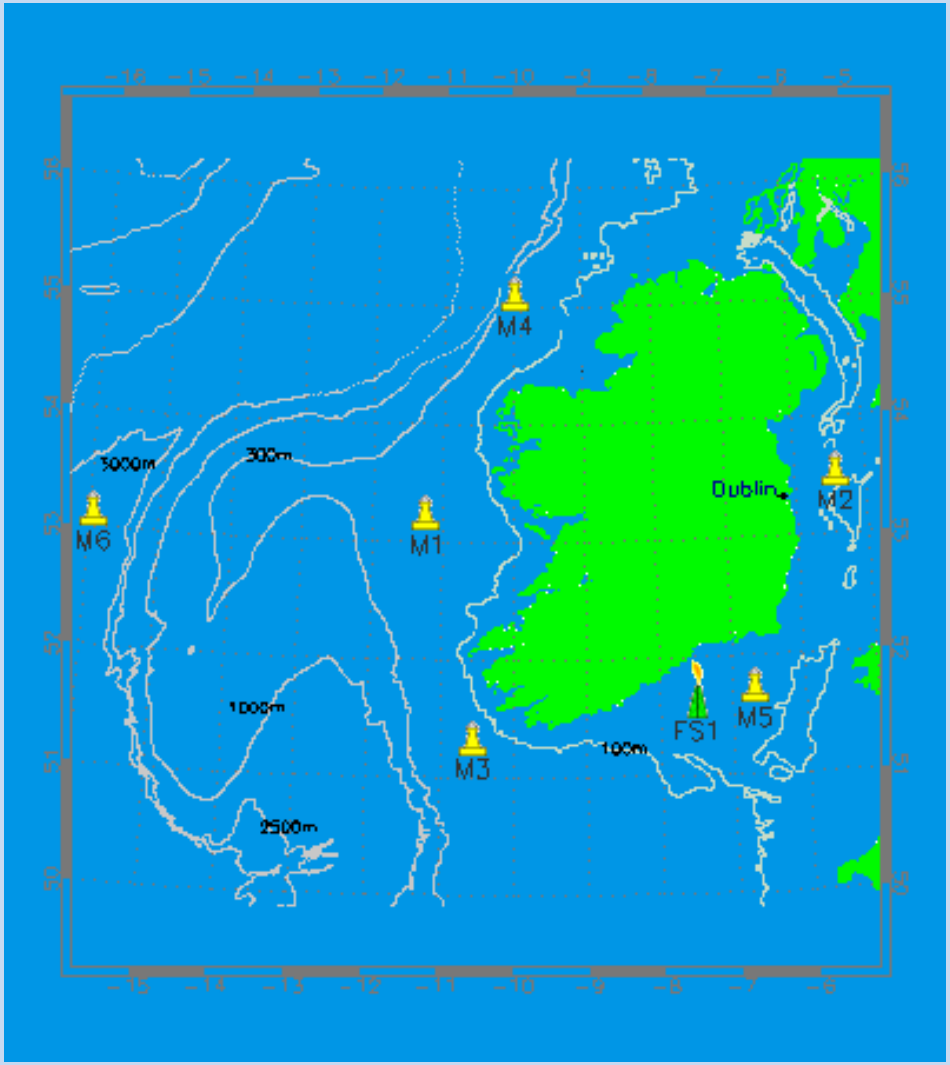
Fugro buoy changes

In addition to the standard suite of parameters the Fugro buoy will also transmit:

- Salinity.
- Wave direction.
- Maximum wave height and period.
- Configurable wave spectra.

Buoy replacement schedule

- M2 deployed as a Fugro buoy – October 2009.
- 1 buoy on trial at position M5 alongside present ODAS.
- M3, M4 and M5 to be replaced in 2011.
- M6 to be replaced in 2012.


M4
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