

SmartBay

PLACENTIA BAY, NEWFOUNDLAND

Technology solutions for integrated management



In partnership with



Why Placentia Bay?

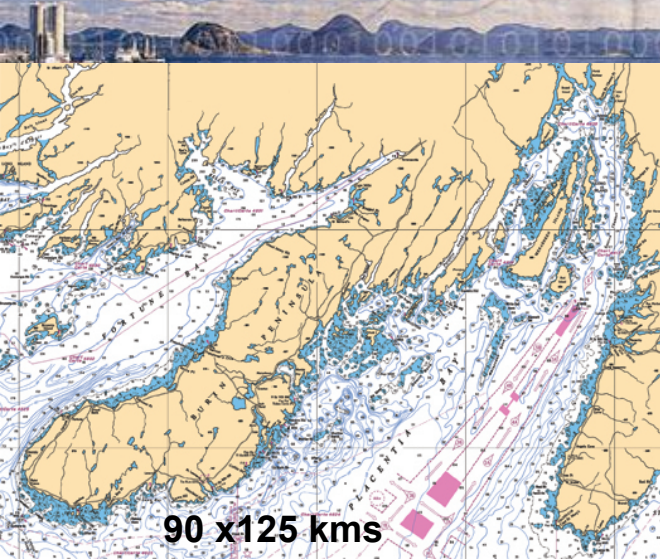


Photo: Newfoundland LNG Limited



- **Economic importance**

- Year round activity
- Fishery, oil and gas, transportation, tourism, new heavy industry proposed and under development.
- 2nd to Vancouver in value of goods shipped
- Over 500 fishing enterprises
- 1200+ tanker movements/yr. >320Mbbls

- **Environmental sensitivity**

- Brander-Smith Report (1990), Transport Canada (2008)
- 30+ years without a major incident

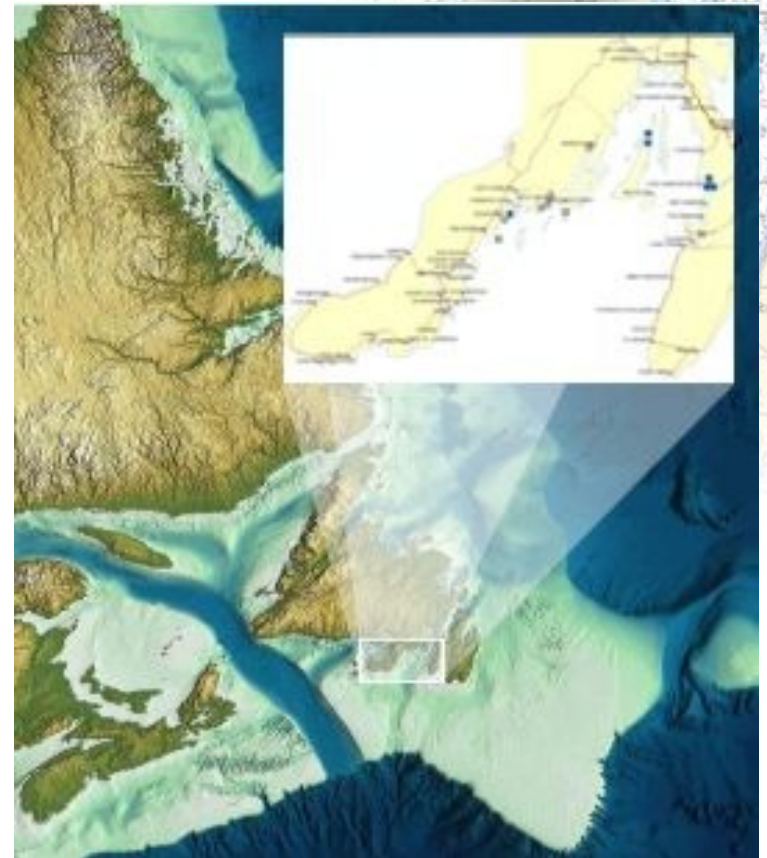
The SmartBay Vision



“Simple access by all stakeholders to data and information in support of maritime operations, sustainable development of coastal ocean resources and the safety and security of life at sea.”

or simply put:

Better Information....Better Decisions



Back to the future.....

An ocean observing system should enable access to organized data and information such that—

"each may have before him, at a glance, the experience of all."

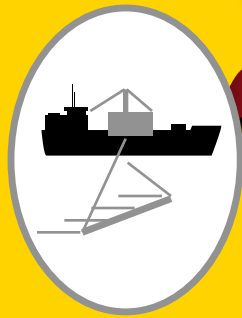
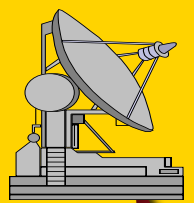
Matthew Fontaine Maury, circa 1842

[The 'father' of modern oceanography. While others built railroads across the trackless interior of North America, Maury mapped the highways of wind and current over the previously trackless sea. After roughly 160 years, the global ocean observing system concept will take Maury's accomplishment to the next level.]

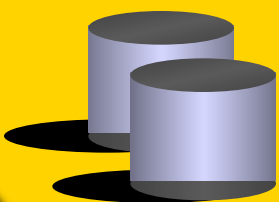
Conceptual architecture...



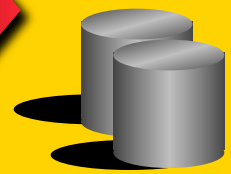
Data Collection



Value Added Processing



Clean Data



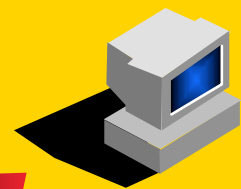
Info Products



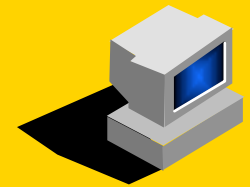
Services Interface "MEH"

- Open
- Flexible
- Fast
- Easy

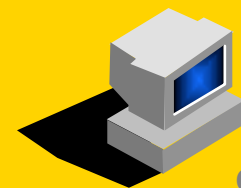
Applications



Analysis Tools

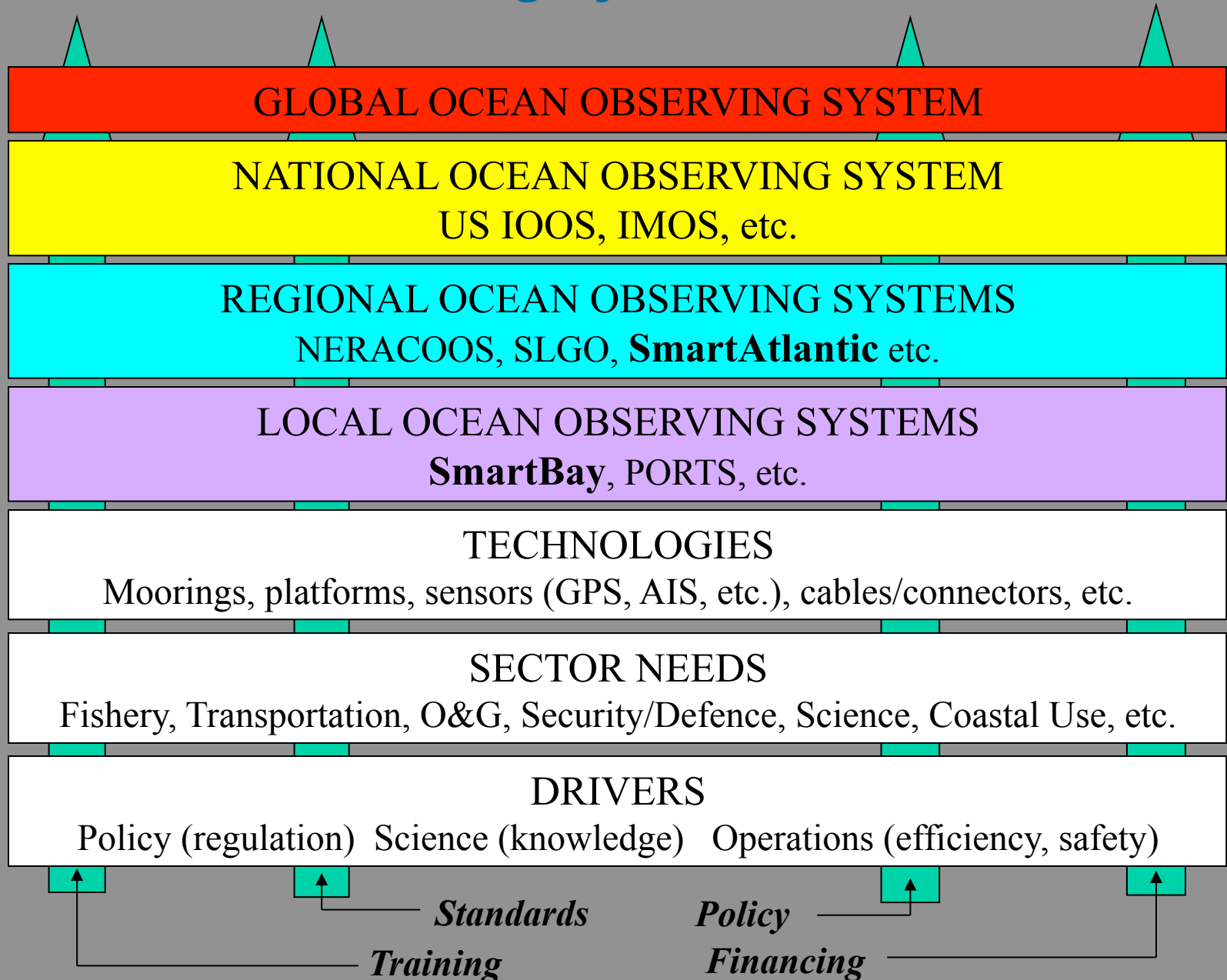


Visualization Tools



Collaboration Tools

Ocean observing systems framework



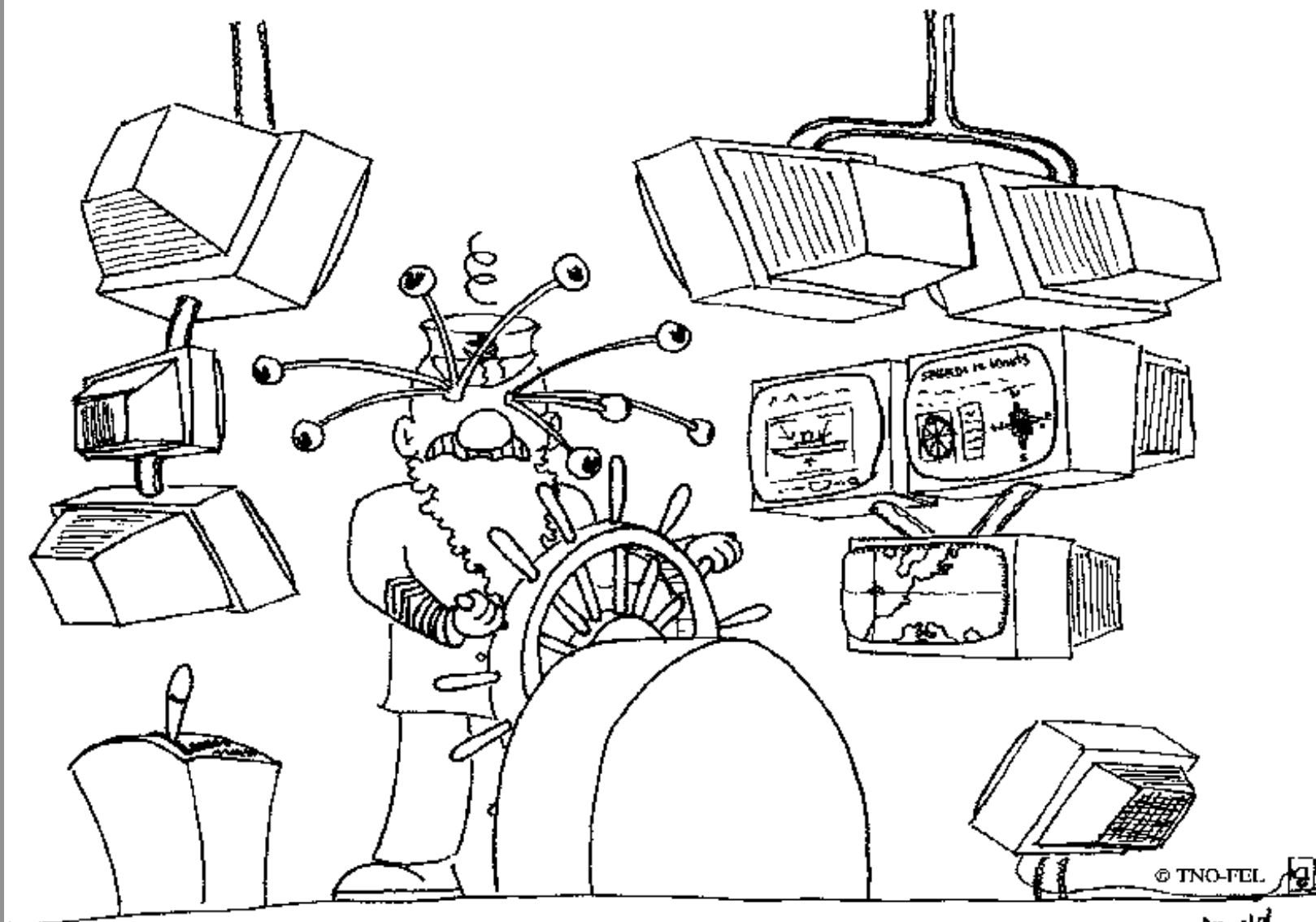
Ocean Observing System Guiding Principles

- **Open**: specifications are available for the world to take, to use, and to modify
- **Transparent**: complexities of the underlying technology are invisible to the user
- **Cooperative**: based on common technologies and standards rather than proprietary solutions
- **Extensible**: must evolve to meet changing requirements
- **Self-organizing**: no centralized administration, access, or warehousing
- **Self-sustaining**: relevant to the needs of a broad base of participating agencies and users
- **Timely**: real-time distributed access to information and 'location-based' services.

Ocean Observing System Goal

- “To deliver the right information to the right person at the right time”
 - Any person with a legitimate need for information must be able to acquire it quickly regardless of where it is or where that person is physically located.
 - Each user should be able to add to the picture as operations develop or situations change (Volunteer Geographic Information – data in, information out)

(Source: Captain John Pace)



© TNO-FEL

PESSEN

Think globally.....Act locally.....



Fundamentals of SmartBay



- Focus on information, not technology
- Outputs must be readily accessible and practical – in other words useful to a broad base of end users
- Applications from research to practical (maximize the user community)
- Provide information in support of improved safety and operational efficiency

*Better Information....Better
Decisions*

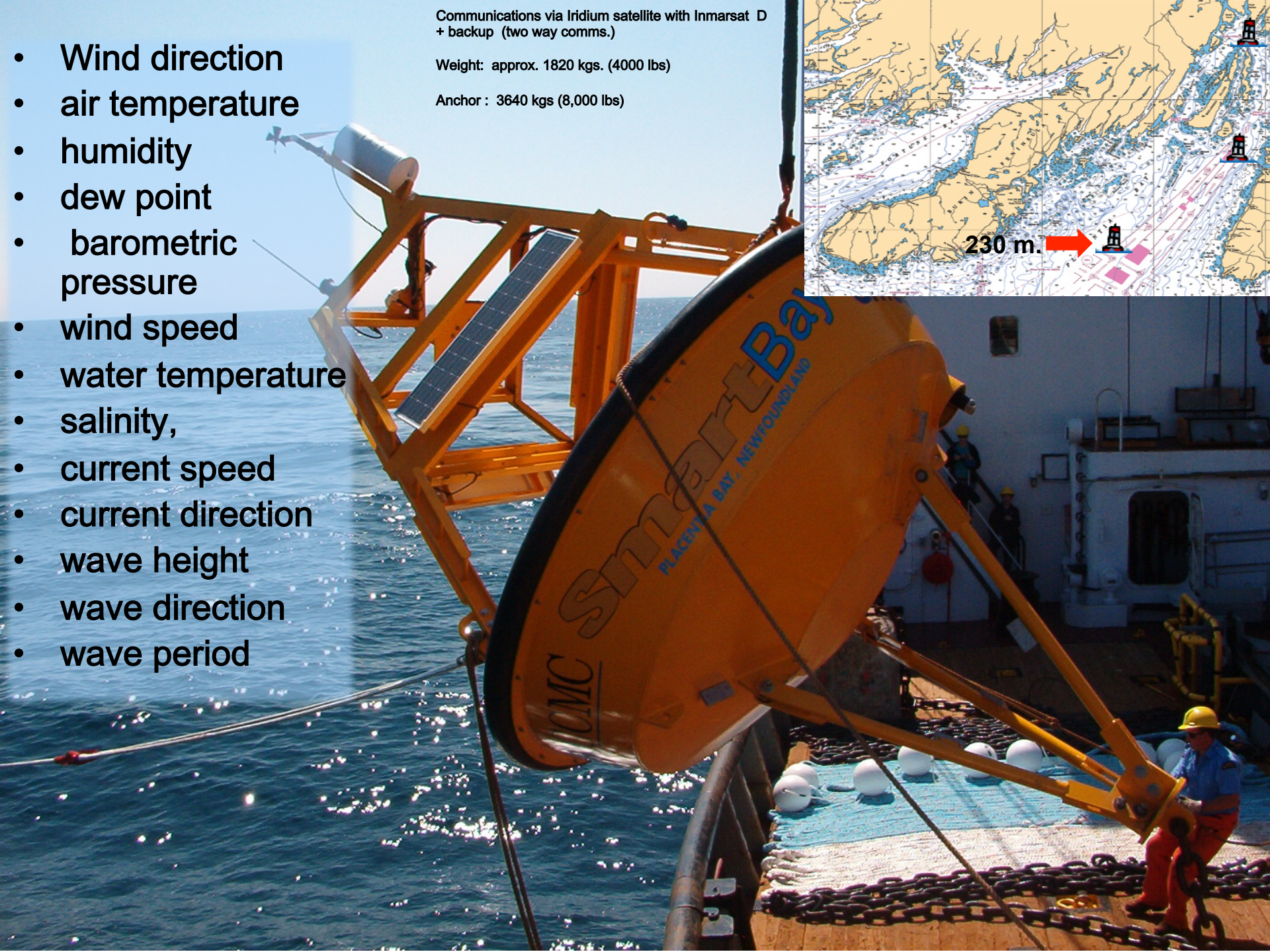
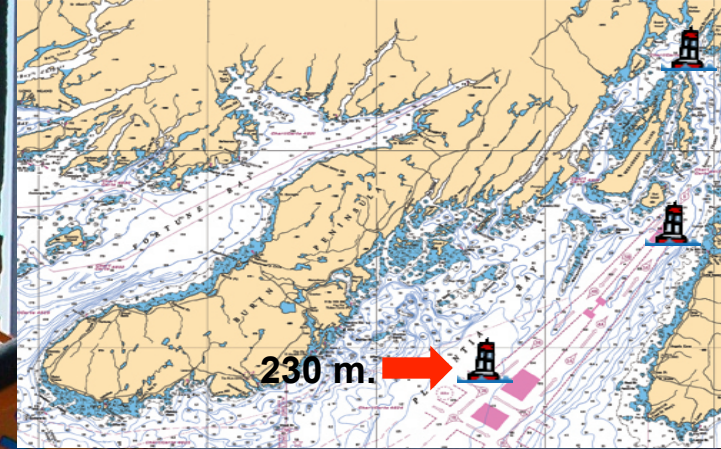


- Wind direction
- air temperature
- humidity
- dew point
- barometric pressure
- wind speed
- water temperature
- salinity,
- current speed
- current direction
- wave height
- wave direction
- wave period

Communications via Iridium satellite with Inmarsat D + backup (two way comms.)

Weight: approx. 1820 kgs. (4000 lbs)

Anchor : 3640 kgs (8,000 lbs)



Come by Chance Point (trans-shipment facility)

- Wind direction
- air temperature
- humidity
- dew point
- barometric pressure
- wind speed
- water temperature
- salinity,
- current profile
- wave height
- wave direction
- wave period

Communications via VHF Spread Spectrum I with Inmarsat /Iridium backup (two way comms.)

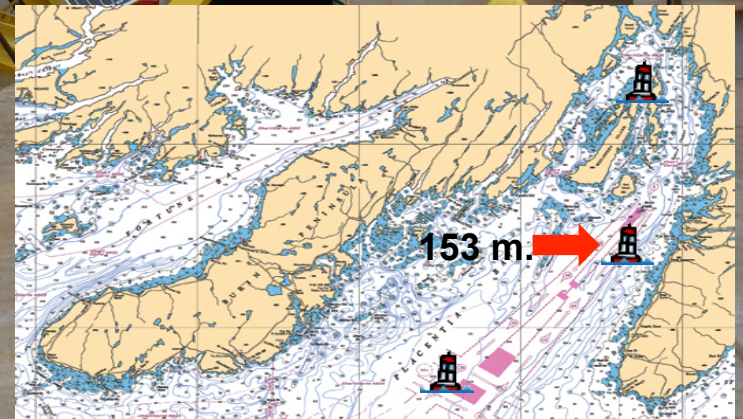


Red Island Shoal Pilot Boarding Station

- Wind direction
- air temperature
- humidity
- dew point
- barometric pressure
- wind speed
- water temperature
- salinity,
- current speed
- current direction
- wave height
- wave direction
- wave period

Equipped with ATONiS –
Aids to Navigation
Information System

VHF Spread Spectrum
communications with
Inmarsat/Iridium backup





All maintenance, sensor integration and computer/server support is handled in-house.



Value Added Products

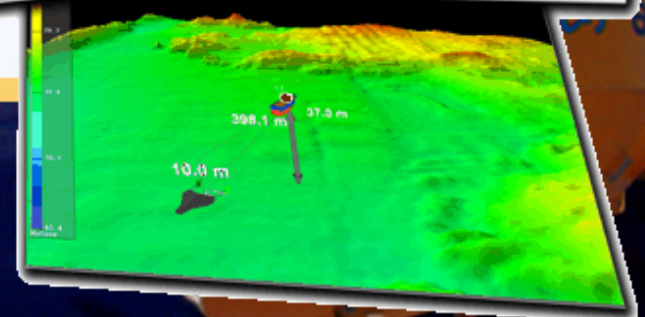
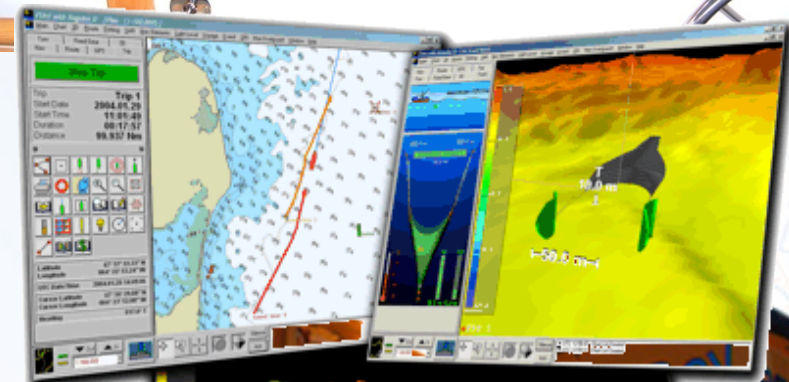


- General weather synopsis (4/day)
- High Resolution forecasts for areas of interest (2x2/day)
 - *SmartBay is the first commercial application of the Weather Research and Forecast (WRF) hi-res. forecast model in Canada*
- Prediction of wind, waves, air, sea temperature, precipitation, icing potential

Marine Operations

- Aimed at mariners
 - Transport, Fishing and workboats
 - ECS based user interface
 - AIS as primary communications backbone
 - “live” met and oceanographic information
- 40+ vessels equipped with ECS and AIS
- SmartBay buoys equipped with ATONiS

Improves vessel safety and situational awareness in the bay



www.SmartBay.ca

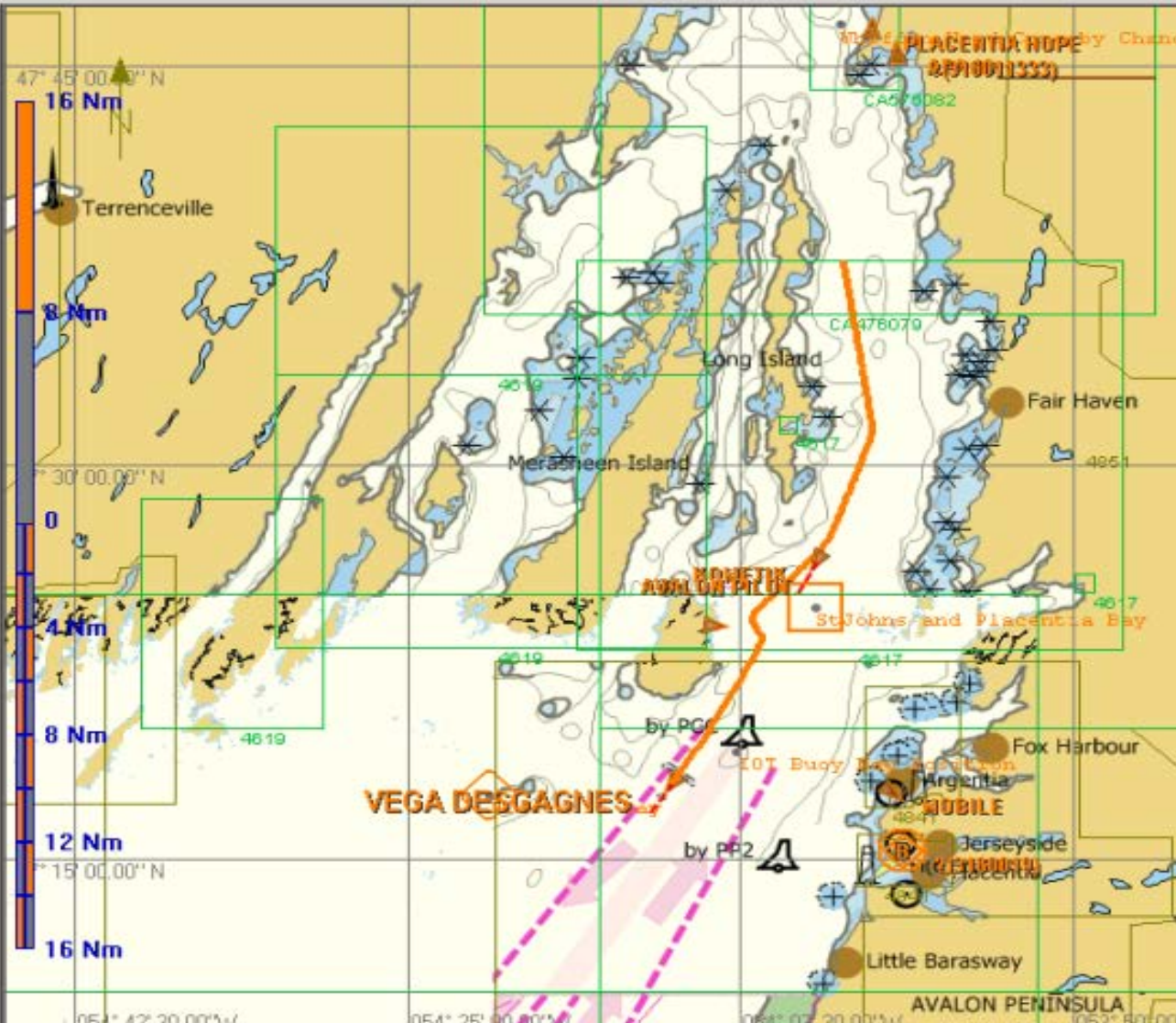
Automatic Identification System (AIS) - Improved vessel safety, efficiency and situational awareness

Horizon - [Automatic Chart Loading (1:500,000) 4624 BSB 1:80,000 DU=METRES
 Main Chart Route SAR Nav Elements AIS Light Level Window Help

S57 ? Smart Bay Buoy Display 3M Met/Ocean Data
 Chart Fixed Views AIS Info AIS Rx S57

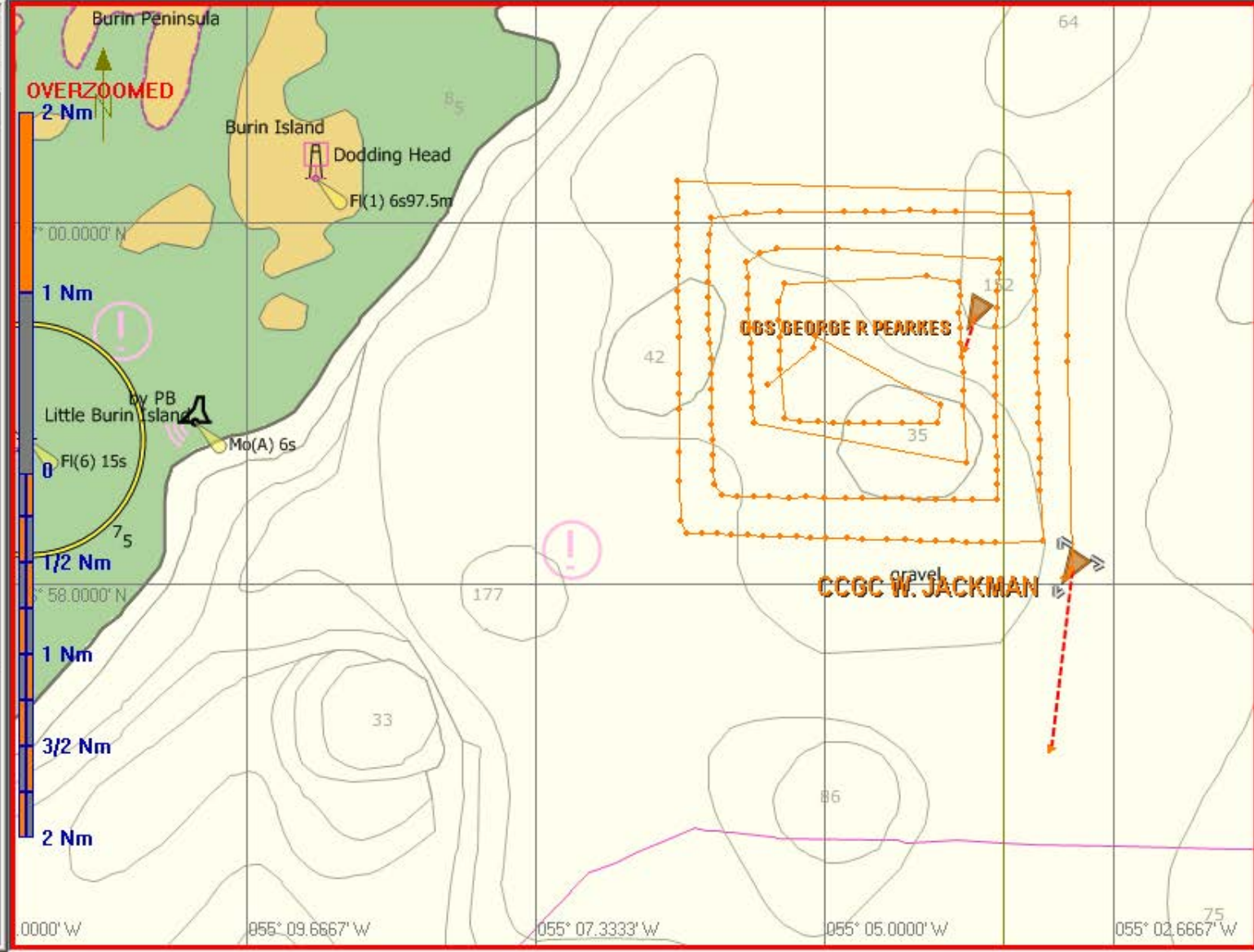
Remote Name VEGA DESGAGNES
MMSI Number 316003770
Call Sign VOCQ
Latitude 47° 18' 00.37" N
Longitude 054° 11' 11.30" W
COG 216.5° T
SOG 14.900 Kts
ETA to Cursor Local 11:42:30
Nav Status Under Way Engine
Destination MONTREAL
Length 141.0 m
Beam 21.0 m
Type of Ship Tanker
Cargo IMO Hazard or Pollutant Category A
Channel Management Own Position
DTE Status N/A
Positional Accuracy High
Time Since Last Update 00h 00m 04s
Operating Mode Autonomous
IMO Number 7927960
Draught 6.7
ETA To Destination 1/20/2008 12:00:00 PM
Nav Sensor GPS

Targets	CPA	Type	Stat
PLACENTIA PRI...	N/A	Class A	N/A
SHAMOOK	N/A	Class A	N/A
WILFRED TEM...	N/A	Class A	N/A
?(3160019)	N/A	Base Station	N/A
MOBILE	N/A	Class A	N/A
N.A.PETREL	N/A	Class A	N/A
PLACENTIA HO...	N/A	Class A	N/A
MAERSK PLAC...	N/A	Class A	N/A
ATLANTIC HAWK	N/A	Class A	N/A
GEORGIS NIKO...	N/A	Class A	N/A
VEGA DESGAG...	N/A	Class A	N/A



AIS Rx S57 S57 ?
 Smart Bay Buoy Display
 3M Met/Ocean Data
 Chart Fixed Views AIS Info

Name CCGC W. JACKMAN
MMSI Number ? 0
Call Sign ? G3068
Latitude 46° 58.0920' N
Longitude 055° 03.0120' W
COG 187.0° T
SOG 10.100 Kts
ETA LOC 15:11:32
Stat Under Way Engine
Destination N/A
Length N/A
Beam N/A
Type of Ship N/A
Type of Cargo N/A
Channel Managem Position N/A
DTE Status N/A
Positional Accuracy Low
Last Update 00h 01m 14s
Mode Autonomous
IMO Number 1040218908
Draught 25.5
ETA 12/1/2008 1:00:00 AM
Nav Sensor GPS



Out In 1:50,000 Silence Ack

- UTC 03:30:00 Data332b.08Elogfile closing.
- UTC 03:30:00 Data336a.08Elogfile closing.

Better Information.... Better Decisions

[About](#) | [Contact](#) | [Links](#)

-  [Buoy Data](#)
-  [Weather & Tides](#)
-  [News](#)
-  [Seabed Mapping](#)
-  [Water Quality](#)
-  [Ocean Science](#)
-  [Communities](#)
-  [Harbours](#)
-  [Industrial Sites](#)
-  [Downloads](#)
-  [Committees](#)
-  [Using SmartBay](#)

Welcome to **SmartBay**

SmartBay improves access to information for management and sustainable development of the diverse coastal and ocean resources in Placentia Bay.

Weather Report

Light and variable winds this morning under a ridge freshen to westerlies of 15 to 25 knots later today in behind a trough. Southwesterly winds of 15 to 20 knots on Wednesday between the trough and a ridge building south of the Island. Northwesterlies near 10 knots Thursday as high pressure builds from the west. Fair to poor visibility this morning becomes good later today. Good visibility on Wednesday. Temperatures near zero this morning remain steady through Wednesday.

[Read More...](#)

Help Us Grow

Thank you for visiting **SmartBay.ca**. We hope this web site will become your essential source for timely information about Placentia Bay - like regional weather forecasts & real-time sea conditions.

[Read More...](#)

Notice Board

- 12.Feb.2010**
GOOD NEWS!!! We are back on the air!!! We have replaced Buoy4 at the Red Island location with a new buoy, it is reporting as per normal.
- 06.Feb.2010**
Due to a power outage and subsequent server crash, Placentia Bay Buoy Data will not be available until early next week. We are working on the problem and the Smartbay team hopes to have the problem resolved as soon as possible.

 Holyrood SmartBuoy







Buoy Data

[About Our Buoys](#)



Buoy 1

 STATION INFO	 HISTORY	 SITE FORECAST	 DATA REQUEST
--	---	---	--

Today: 11-Dec-2009 14:09 NST
Last Update: 11-Dec-2009 13:45 NST

Latitude: 46° 58.8567' N
 Longitude: 054° 40.8813' W

Avg Wind Speed: 32 knots
 Peak Wind Speed: 39 knots
 Air Temperature: 0.2 °C
 Dew Point: -2.5 °C
 Barometric Pressure: 98 kPa **Trend: UP**

Sea Surface Temperature: 3.5 °C
 Current Velocity: 0.9 knots
 Current Direction To: 309 ° True (NW)
 Significant Wave Height: 4.5 m (14.8 ft)
 Maximum Wave Height: 9.6 m (31.5 ft)
 Wave Direction From: 224 ° True (SW)
 Wave Period: 7.7 sec

[About Our Buoys](#)

Buoy 4





 STATION INFO	 HISTORY	 SITE FORECAST	 DATA REQUEST
---	---	---	--

Today: 11-Dec-2009 14:14 NST
Last Update: 11-Dec-2009 14:00 NST
Next Update: 11-Dec-2009 14:30 NST (approx.)

Latitude: 47° 19.535' N
 Longitude: 054° 07.899' W

Significant Wave Height: 4 m (13.1 ft)
 Maximum Wave Height: 6.8 m (22.3 ft)
 Wave Direction From: 226° True (SW)
 Wave Period: 8.5 sec



	SmartBay Buoys
	Other Buoys
	Archived Data
	Land Station

[Reserved. Terms and Conditions](#)

Forecasting

SmartBay
PLACENIA BAY, NEWFOUNDLAND

Better Information..... Better Decisions

Local: Tuesday, March 9, 2010 09:42:25
UTC: Tuesday, March 9, 2010 13:12:25

Home | About | Contact | Links

Weather & Tide Forecasts

Weather Home | Forecasts | About Our Forecasts

SmartBay Forecast | Regional Tides

CMC GEM Regional Weather Forecast Charts by amec

- Surface Winds
- Pressure and Precipitation
- Visibility
- About the CMC GEM weather forecast model (Canadian Meteorological Centre - Global Environmental Multiscale model)

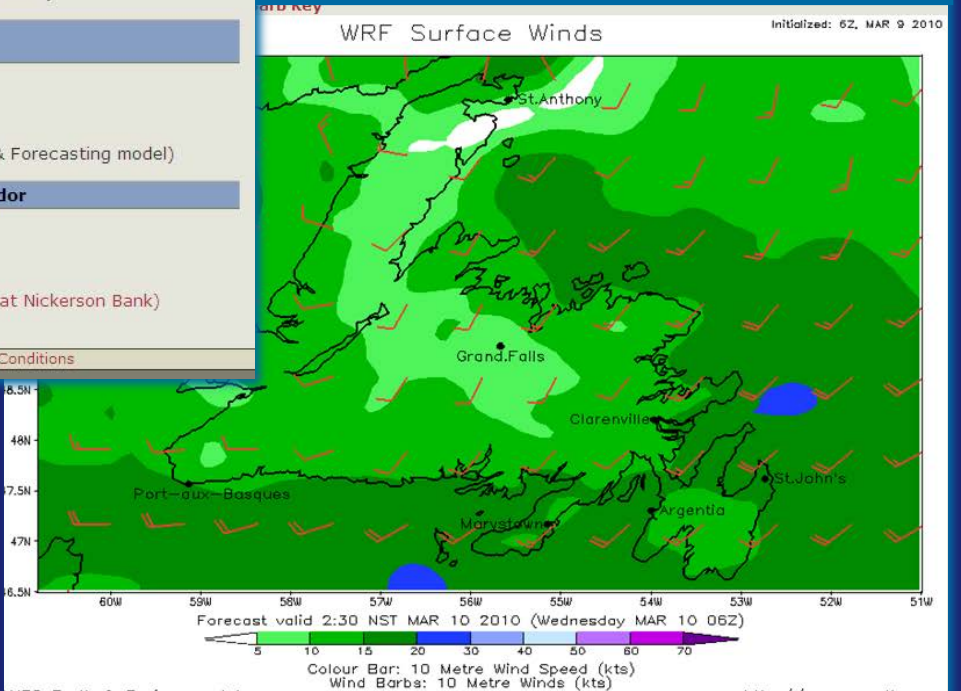
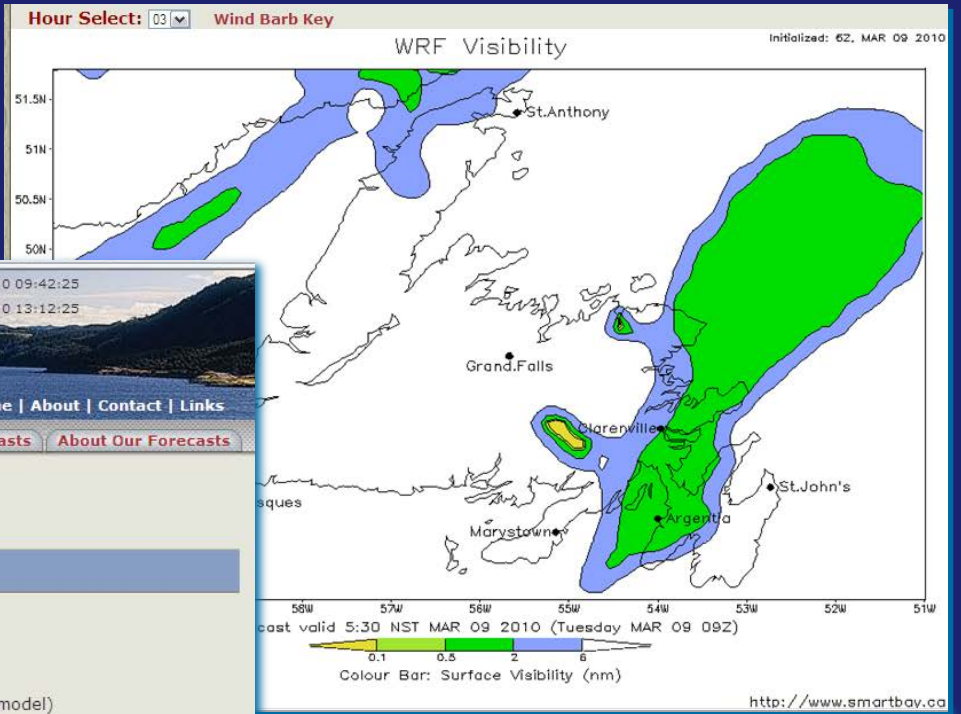
WRF Regional Weather Forecast Charts by amec

- Surface Winds
- Pressure and Precipitation
- Visibility
- About the Amec WRF weather forecast model (Weather Research & Forecasting model)

Environment Canada Weather Forecasts - Newfoundland & Labrador

- Argentia Forecast
- Marystown Forecast
- St. Lawrence Forecast
- Environment Canada Marine Weather - South Coast (Observations at Nickerson Bank)
- Environment Canada Weather for Newfoundland & Labrador

© Marine Institute of Memorial University of Newfoundland. All Rights Reserved. Terms and Conditions



-  Buoy Data
-  Weather & Tides
-  News
-  Seabed Mapping
-  Water Quality
-  Ocean Science
-  Communities
-  Harbours
-  Industrial Sites
-  Downloads
-  Committees
-  Using SmartBay

Weather & Tide Forecasts

[Weather Home](#) [Forecasts](#) [About Our Forecasts](#)

SmartBay Weather Forecasts by amec

Warnings in Effect

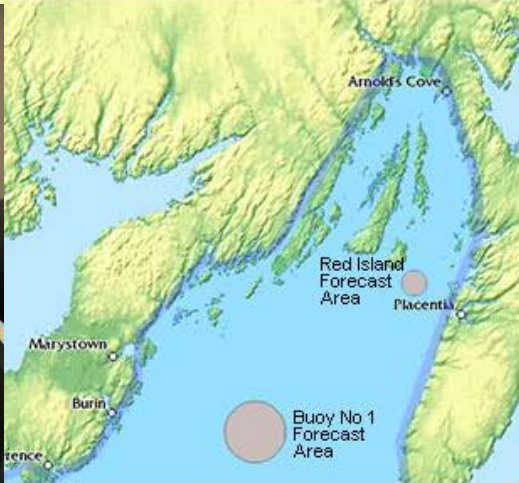
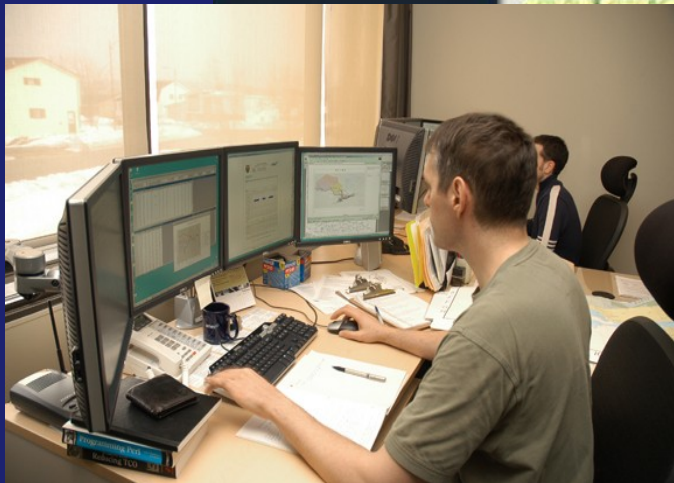
NONE

Placentia Bay Marine Forecast issued at 04:30 Tue 9 Mar 2010

Light and variable winds this morning under a ridge freshen to westerlies of 15 to 25 knots later today in behind a trough. Southwesterly winds of 15 to 20 knots on Wednesday between the trough and a ridge building south of the Island. Northwesterlies near 10 knots Thursday as high pressure builds from the west. Fair to poor visibility this morning becomes good later today. Good visibility on Wednesday. Temperatures near zero this morning remain steady through Wednesday.

Next Placentia Bay Marine Forecast will be issued at 10:30 Tue 9 Mar 2010

Site Specific Forecasts



- The blue outline of the Bay represents the Placentia Bay Marine Forecast coverage area. For a Site-Specific Marine Forecast **click a site forecast area on this map.**
- The **circles** represent site-specific forecast coverage areas.

View Forecast and Outlook Graphs:

- [Buoy No 1 Area](#)
- [Red Island Area](#)

Marine Site Forecast For Pilot Boarding Station

AMEC Forecast for Pilot Boarding Station



Issued At: Tuesday 9 March 2010 0630 NST
Valid Until: Wednesday 10 March 2010 0630 NST
Outlook Until: Saturday 13 March 2010 0230 NST

Forecast

Date	Time(NST)	Wind Dr (from)	Wind Avg Speed(kt)	Wind Max Speed(kt)	Wave Sig Hgt(m)	Wave Max Hgt(m)	Tide Hgt (cm)	Precip Type (code)	Temp (C)	Vis(km)
Tue 9	0530	SSW	10	15	1.0	1.8	n/a	SW	0.6	1
Tue 9	0630	SSW	9	12	1.0	1.8	n/a	SW	0.6	2
Tue 9	0730	SSW	8	11	0.9	1.6	n/a	SW	0.5	4
Tue 9	0830	SW	7	10	0.9	1.6	n/a	SW	0.5	6
Tue 9	0930	SW	6	9	0.9	1.6	n/a	SW	0.6	6
Tue 9	1030	SW	5	8	0.8	1.4	n/a		0.8	8
Tue 9	1130	WSW	4	7	0.8	1.4	n/a		0.9	8
Tue 9	1230	WSW	4	7	0.8	1.4	n/a		0.9	8
Tue 9	1330	W	4	7	0.8	1.4	n/a		0.9	8
Tue 9	1430	W	5	8	0.8	1.4	n/a	SW	0.9	8
Tue 9	1530	W	7	10	0.8	1.4	n/a	SW	0.9	8
Tue 9	1630	W	10	15	0.7	1.3	n/a	SW	0.8	8
Tue 9	1730	W	13	18	0.7	1.3	n/a	S	0.8	4
Tue 9	1830	W	15	20	0.7	1.3	n/a	SW	0.5	8
Tue 9	1930	W	16	21	0.8	1.4	n/a		0.2	12
Tue 9	2030	W	18	23	0.8	1.4	n/a		-0.1	12
Tue 9	2130	W	18	23	0.8	1.4	n/a		-0.2	13
Tue 9	2230	WSW	17	22	0.9	1.6	n/a		-0.2	14
Tue 9	2330	WSW	17	22	0.9	1.6	n/a		-0.3	15
Wed 10	0030	WSW	16	21	0.9	1.6	n/a		-0.3	14
Wed 10	0130	WSW	16	21	1.0	1.8	n/a		-0.3	13
Wed 10	0230	WSW	15	20	1.0	1.8	n/a	SW	-0.3	12
Wed 10	0330	WSW	15	20	1.0	1.8	n/a		-0.3	12
Wed 10	0430	WSW	16	21	1.1	2.0	n/a	SW	-0.2	12
Wed 10	0530	WSW	16	21	1.1	2.0	n/a		-0.2	12

Outlook

Date	Time(NST)	Wind Dr (from)	Wind Avg Speed(kt)	Wind Max Speed(kt)	Precip Type (code)	Temp (C)
Wed 10	0830	SW	13	18		-1.8
Wed 10	1430	WSW	14	19		-0.2
Wed 10	2030	WSW	15	20		-2.3
Thu 11	0230	WSW	12	17		-2.7
Thu 11	0830	W	8	11		-3.4
Thu 11	1430	WSW	8	11		-1.6
Thu 11	2030	WSW	12	17		-2.3
Fri 12	0230	NW	7	10		-3.8

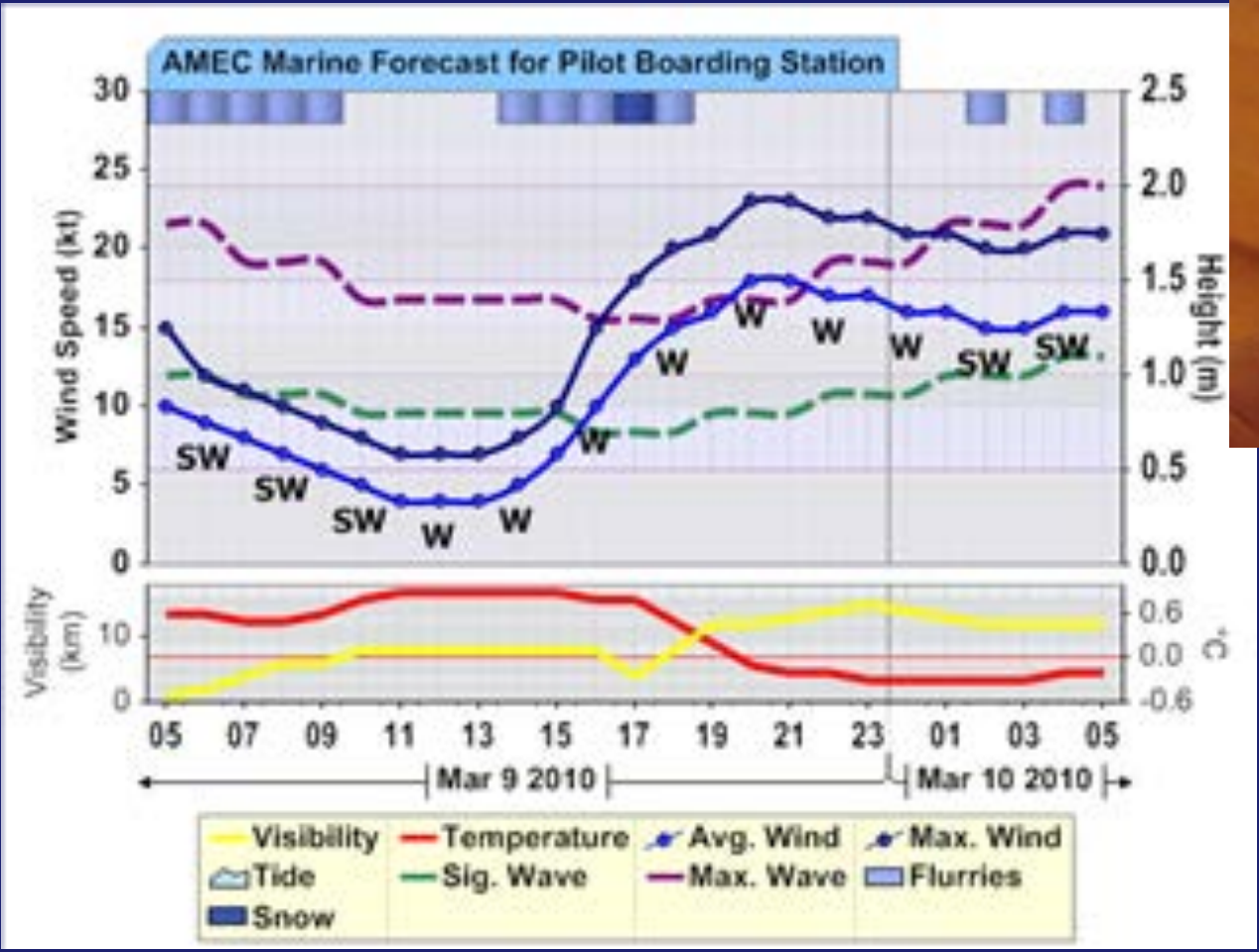
Discussion

Light and variable winds this morning under a trough freshen to moderate to strong westerlies later today behind the trough. Moderate southwesterly winds on Wednesday between the trough and a ridge building south of the Island.

Fair to poor visibility becomes good by evening. Good visibility on Wednesday.

Seas between 1.0 and 1.5 metre.

SmartBay via PDA



Responding to evolving user needs

Buoy History

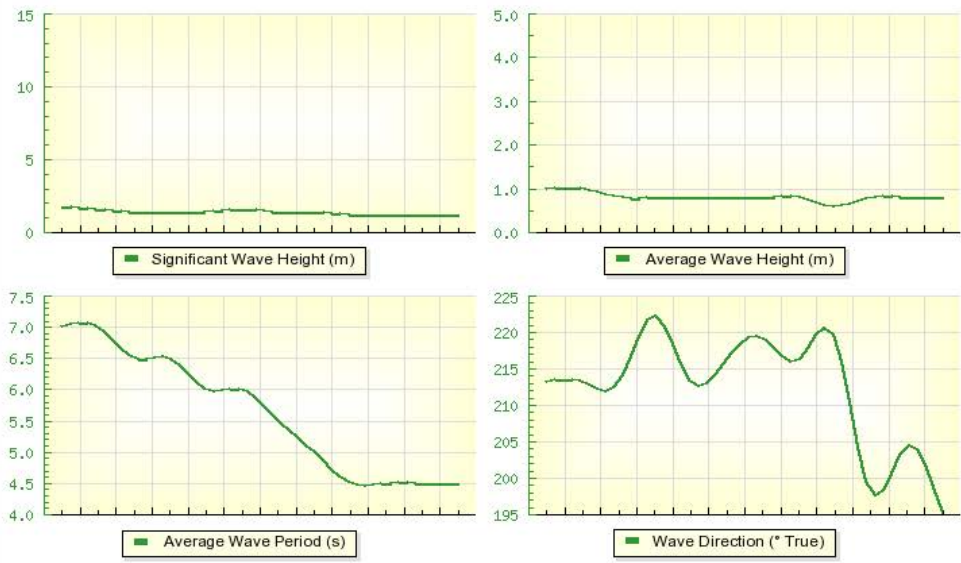
Record Paging

Page: 1

Time Zone:

Amount of Data to View:

From: 2010-02-22 02:30:00
To: 2010-02-22 13:30:00



Timestamp (Local)	Maximum Wave Height (m)	Significant Wave Height (m)	Average Wave Height (m)	Wave Period of Spectral Peak (s)	Significant Wave Period (s)	Average Wave Period (s)	Wave Direction (* True)	Wave Spread (*)
2010-02-22 13:30:00	1.80	1.20	0.80	10.50	6.50	4.50	195.20	30.00
2010-02-22 12:30:00	2.40	1.20	0.80	10.50	6.50	4.50	204.20	30.00
2010-02-22 11:30:00	1.80	1.20	0.80	11.00	6.50	4.50	198.20	30.00
2010-02-22 10:30:00	1.80	1.20	0.60	10.50	7.00	4.50	219.20	30.00

Buoy History

SmartBay: Buoy No. 1 - 7 day history - Windows Internet Explorer

http://www.smartbay.ca/buoy/DisplayBuoyHistory.php?page=1&timeZone=Local&offset=2007-02-15+17%3A46%3A59&numRecs=128&ShowCustomGraphing=&ShowTableData=1

Timestamp (Local)	Latitude	Longitude	Average Wind Speed (knots)	Peak Wind Speed (knots)	Average Wind Direction (° True)	Average Air Temperature (° C)	Average Humidity (%)	Average Dew Point (° C)	Average Pressure (kPa)	Average Con Heading (° T
2007-02-15 14:16:59	46° 58.9867' N	054° 41.2256' W	36.91	45.07	119.20 ESE	-3.30	99.90	-3.30	99.68	
2007-02-15 13:47:00	46° 58.9793' N	054° 41.2242' W	35.94	44.29	31.20 NNE	-5.50	99.90	-5.50	99.71	
2007-02-15 13:16:59	46° 58.9771' N	054° 41.2257' W	35.16	45.07	22.20 NNE	-6.70	99.90	-6.80	99.80	
2007-02-15 12:47:00	46° 58.9694' N	054° 41.2262' W	35.74	46.23	31.20 NNE	-8.00	99.90	-8.00	100.00	
2007-02-15 12:17:01	46° 58.9620' N	054° 41.2211' W	33.99	43.12	121.20 ESE	-2.70	99.90	-2.80	100.25	16
2007-02-15 11:47:01	46° 58.9631' N	054° 41.2186' W	31.86	40.79	128.20 SE	-2.00	99.90	-2.00	100.53	
2007-02-15 11:16:59	46° 58.9696' N	054° 41.2193' W	29.92	37.88	133.20 SE	-2.20	99.90	-2.20	100.65	27
2007-02-15 10:46:59	46° 58.9723' N	054° 41.2214' W	30.89	41.57	136.20 SE	-2.10	99.90	-2.10	100.79	27
2007-02-15 10:17:00	46° 58.9757' N	054° 41.2229' W	30.11	38.07	272.20 W	-1.80	99.90	-1.80	100.87	28
2007-02-15 09:47:00	46° 58.9768' N	054° 41.2216' W	29.92	38.46	270.20 W	-1.90	99.90	-1.90	100.98	28
2007-02-15 09:17:00	46° 58.9734' N	054° 41.2186' W	29.92	39.63	224.20 SW	-1.90	99.90	-1.90	101.09	28
2007-02-15 08:47:00	46° 58.9809' N	054° 41.2221' W	29.72	37.49	135.20 SE	-2.20	99.90	-2.20	101.18	28
2007-02-15 08:17:01	46° 58.9778' N	054° 41.2213' W	29.14	35.94	143.20 SE	-2.20	99.90	-2.20	101.28	28
2007-02-15 07:47:00	46° 58.9823' N	054° 41.2239' W	27.78	35.35	262.20 W	-2.30	99.90	-2.30	101.34	28
2007-02-15 07:17:02	46° 58.9886' N	054° 41.2272' W	29.14	35.55	265.20 W	-2.50	99.90	-2.50	101.42	28
2007-02-15 06:47:01	46° 58.9883' N	054° 41.2236' W	26.61	34.97	264.20 W	-2.50	99.90	-2.50	101.51	28
2007-02-15 06:17:00	46° 59.0010' N	054° 41.2231' W	27.58	33.80	265.20 W	-2.50	99.90	-2.50	101.59	28
2007-02-15 05:47:00	46° 59.0105' N	054° 41.2220' W	25.25	33.22	265.20 W	-2.50	99.90	-2.50	101.72	28
2007-02-15 05:17:02	46° 59.0130' N	054° 41.2186' W	26.22	33.02	264.20 W	-1.90	99.90	-1.90	101.79	28
2007-02-15 04:47:01	46° 59.0206' N	054° 41.2159' W	24.48	29.72	271.20 W	-0.80	99.90	-0.90	101.86	28
2007-02-15 04:17:00	46° 59.0118' N	054° 41.2179' W	24.86	31.47	4.20 N	-0.30	99.90	-0.30	101.99	
2007-02-15 03:47:00	46° 59.0138' N	054° 41.2140' W	24.09	29.33	268.20 W	-1.90	99.90	-1.90	102.01	28

Done

Internet

100%

start

Partnering Annou...

2 Microsoft Outl...

Internet Expl...

Microsoft PowerP...

2:28 PM

-  Buoy Data
-  Weather & Tides
-  News
-  Seabed Mapping
-  Water Quality
-  Ocean Science
-  Communities
-  Harbours
-  Industrial Sites
-  Downloads
-  Committees
-  Using SmartBay

 Holyrood SmartBuoy

Data Request

Data Request Instructions

The following files contain archived data from February 22nd, 2007 to April 5th, 2007. For new data collected from January 12, 2008 to present, please fill out the form below.

Microsoft Excel(XLS)
Adobe Acrobat(PDF)
Comma-Separated Values(CSV)
Open Document Spreadsheet(ODS)

Select Data Types:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Timestamp(UTC) | <input type="checkbox"/> Longitude/Latitude |
| <input type="checkbox"/> Significant Wave Period(s) | <input type="checkbox"/> Avg Wave Height(m) |
| <input type="checkbox"/> Avg Wave Period(s) | <input type="checkbox"/> Max Wave Height(m) |
| <input type="checkbox"/> Significant Wave Height(m) | <input type="checkbox"/> Peak Wave Period(s) |
| <input type="checkbox"/> Wave Mean Direction(°True) | <input type="checkbox"/> Wave Mean Spread(°Relative) |

[Check All](#) | [Uncheck All](#)

Select Date Range:

Start Date: Year Month Day
End Date: Year Month Day

Enter Name And Email For Notification:

First Name Last Name
E-mail Address

User Statistics

Web Page

Average/month

Buoys	6844
Weather	2004
Harbours	525
Communities	316
Seabed Mapping	134
Ocean Science	81
Water Quality	205
Industrial	81
IM Committee	87

Quick Links

- WEATHER
- COMMUNITIES
- HARBOURS
- BUOY DATA
- SEABED MAPPING
- WATER QUALITY
- OCEAN SCIENCE
- INDUSTRIAL SITES
- COMMITTEES
- NEWS
- Placentia Bay INTEGRATED MANAGEMENT

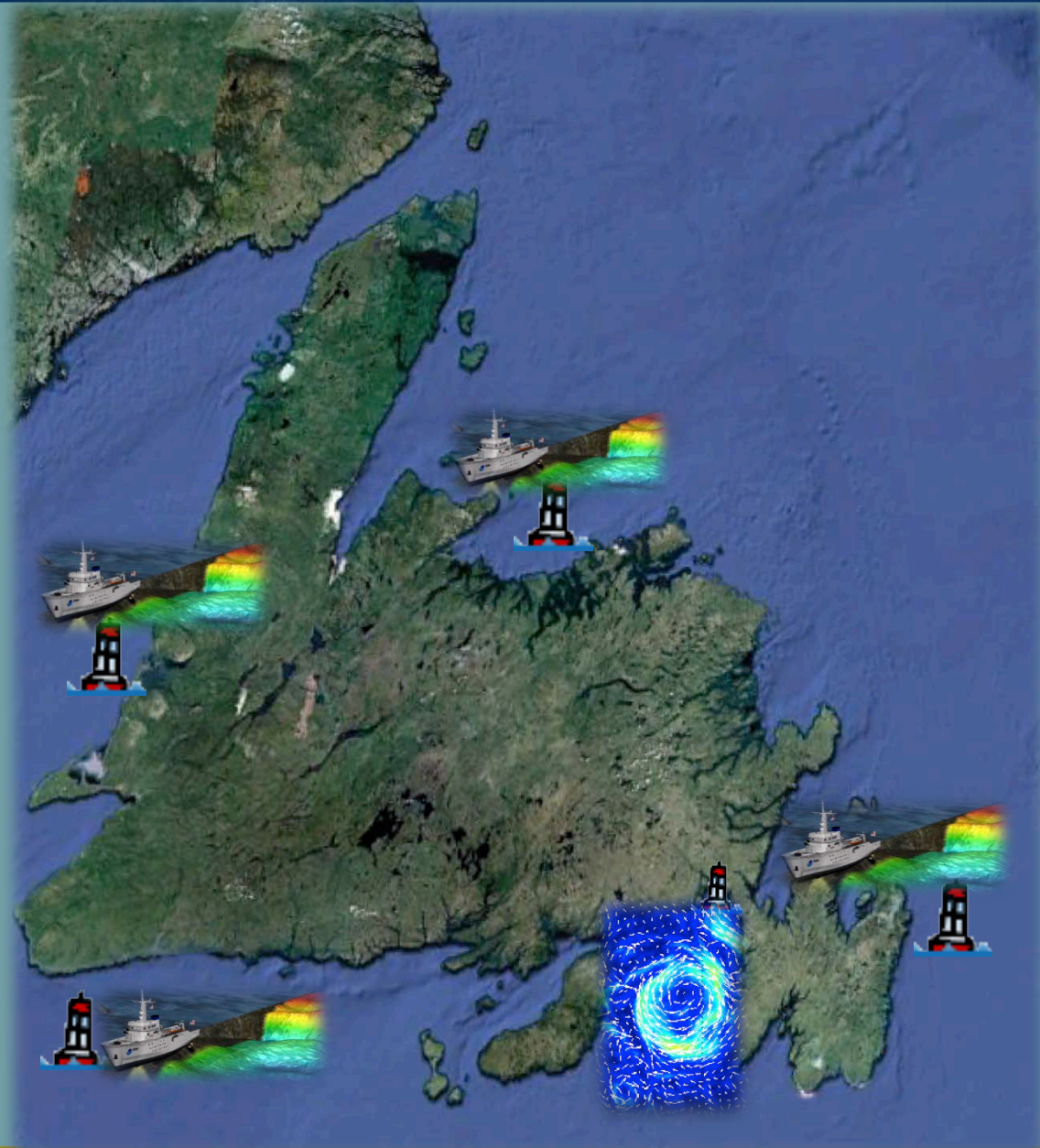


www.SmartBay.ca



SmartBay Gateway

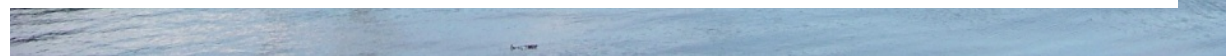
Two year, \$5M initiative of the Government of Newfoundland and Labrador and Transport Canada



Vessels of opportunity doing ocean observation (VOODOO)



Fishing vessels in Placentia Bay equipped with met stations
and feeding data to regional and local forecast





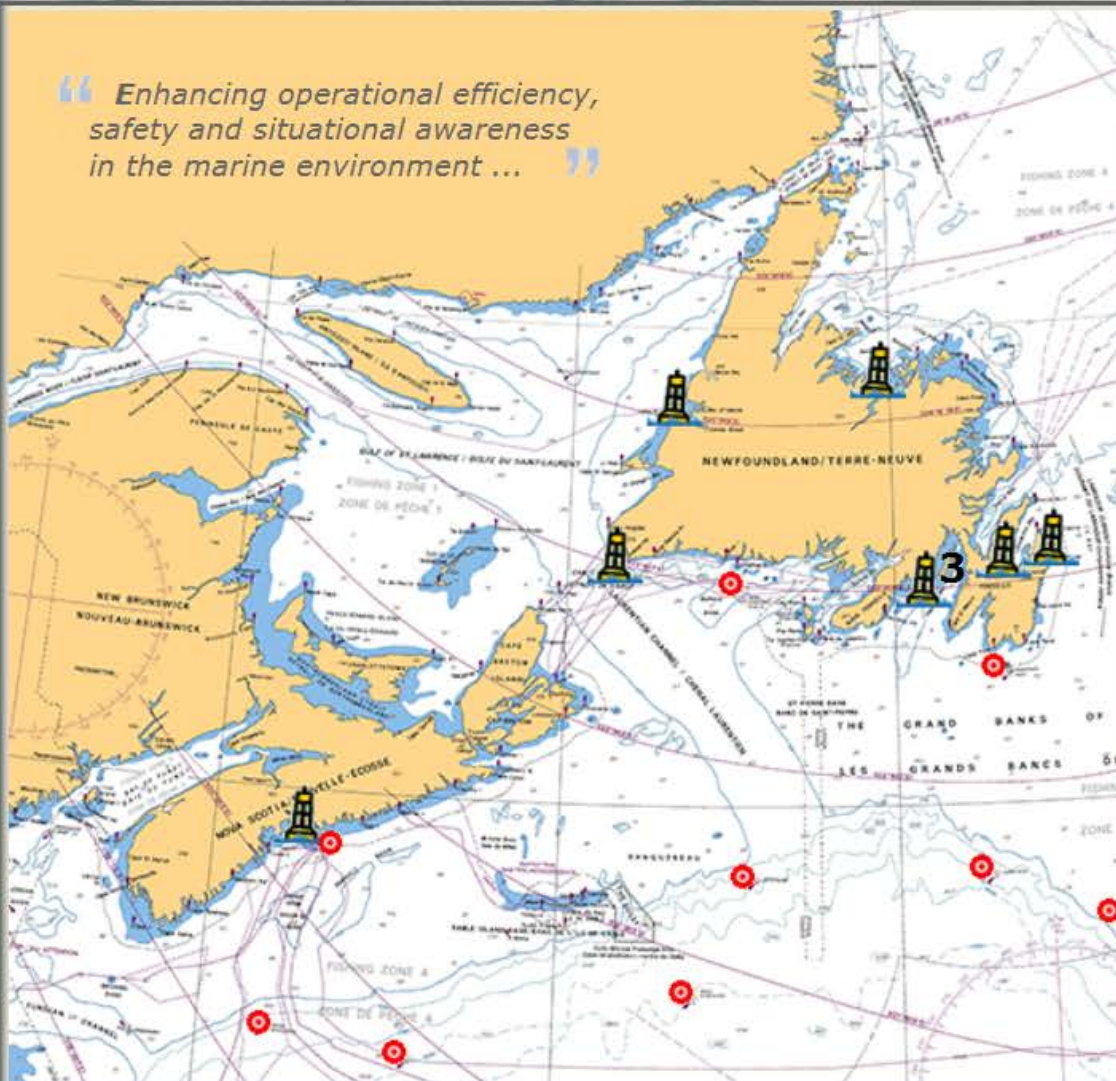
SmartAtlantic Alliance

About the
SmartAtlantic Alliance

Terms of Use

Contact Us

“ Enhancing operational efficiency,
safety and situational awareness
in the marine environment ... ”



SmartAtlantic Notices

19.Mar.2014

Please be advised that we are still experiencing problems with the SmartBay buoy at the Head of Placentia Bay. We will need to replace this buoy as soon as an opportunity presents. The SmartBay team apologizes for any inconvenience this may cause.

05.Mar.2014

Please be advised that we are experiencing communication issues with the buoy at the Head of Placentia Bay and, as a result, the

Better
Information
... Better
Decisions

Aquaculture Real-time Integrated Environmental System (ARIES)



- Water quality: dissolved oxygen, salinity, temp at 3 depths
- Met Data: wind speed & direction, air temperature, barometer
- Collected every 15 minutes; transmitted by cellular and satellite
- Secure web access by site operators - www.ariesaqua.com

SmartBay Data

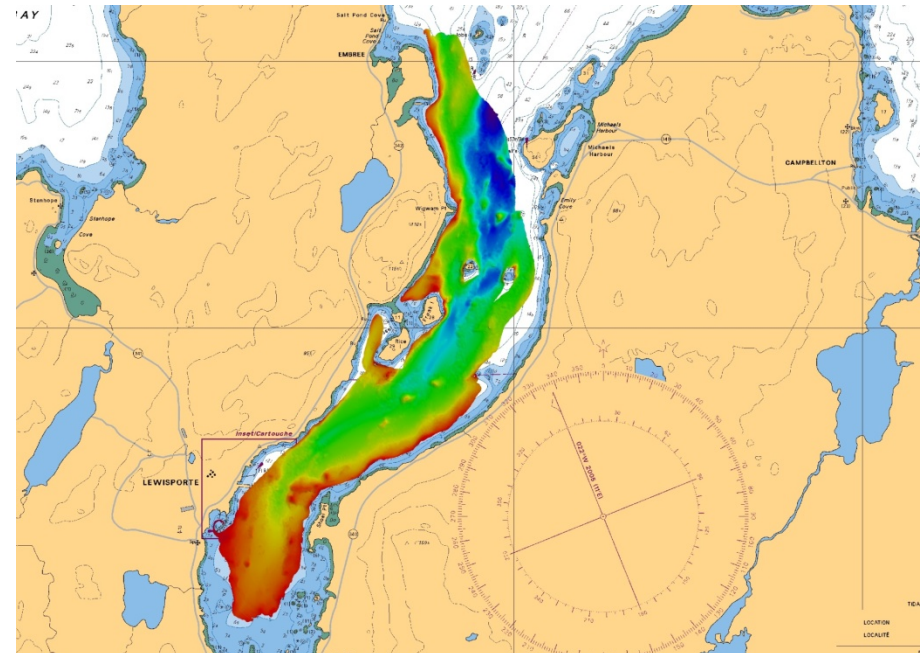


Met/ocean + AIS:

- MySQL database (~ 3 Gigs to date)

Multibeam sonar:

- Placentia Bay, Port aux Basques, Lewisporte, Corner Brook, St. John's
- Depth + backscatter
- Native + various formats



Working Locally – Thinking Globally

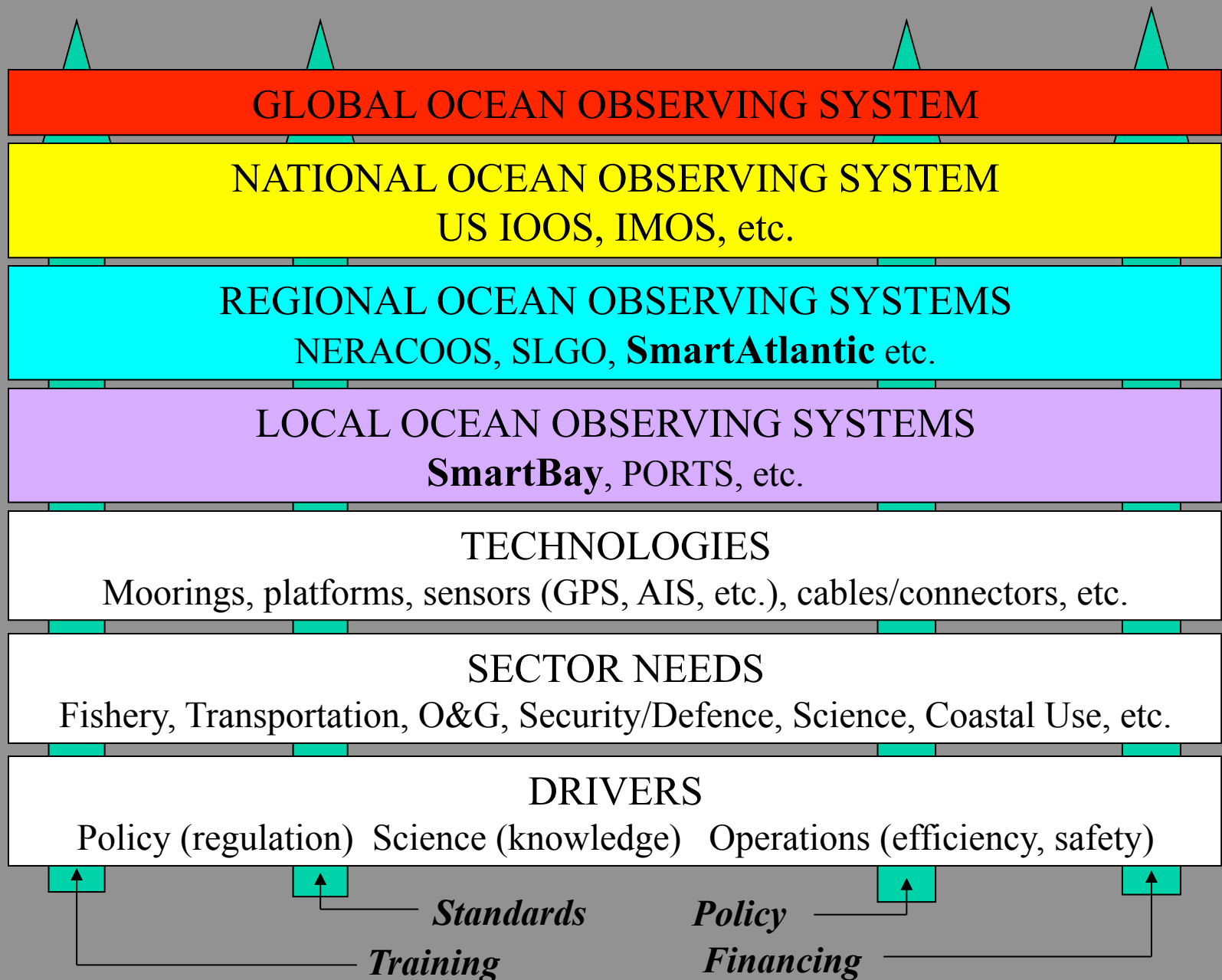
*Part of the ocean observation big picture –
not an orphan*



- *SmartBay portal incorporates Canadian Geospatial Data Infrastructure (CGDI) and Open Geospatial Consortium (OGC) standards (MI is OGC member).*
- *Active contributor to OGC Sensor Web (OpenIOOS.org) North American sensor interoperability project - currently over 1400 sensor platforms reporting.*
- *Data contributor to Northeastern Regional Association of Coastal Ocean Observation Systems (NERACOOS).*
- *Organized inaugural meeting of Smart Ocean Sensor Consortium – Charlotte, North Carolina, 2009.*



Ocean observing system framework



So what have we learned from the SmartBay experience..... ??

- *Still room for improvement and innovation in sensor (e.g. robustness) and buoy (e.g. mooring systems, power management) technology*
- *'Infrastructure' approach (standards based, wide area network, simple access, serving needs of broad user base) is key to long term sustainability.*
- *User needs vary from place to place and over time. Shared infrastructure framework design enables 'organic' growth.*
- *Ocean observing system business model remains elusive. Mix of public and private good.*



www.SmartBay.ca

Looking Forward.....

Acquisition of additional met/ocean buoys (SmartBay Gateway and SmartAtlantic)

Development of circulation and high resolution spill trajectory models incorporating real-time weather and seastate data (fishing vessels of opportunity)

Enhanced information exchange to users – AIS, ATONiS, text messaging, PDA's etc.

Expansion to Port aux Basques, Corner Brook, Lewisporte, St. John's (SmartBay Gateway) and Halifax (SmartAtlantic)

Strengthen linkages with international initiatives and organizations e.g. SmartBay Ireland, NERACOOS, IOOS.



www.SmartBay.ca

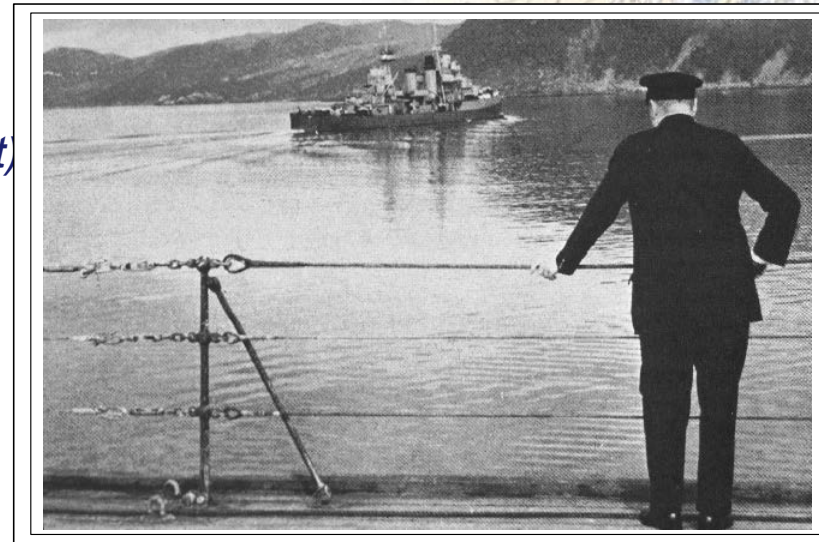
Financial sustainability??

- *Public good (e.g. safety, industrial development)*
- *Industry good (e.g. operational efficiency, safety)*

Financing Options

- *Volunteered user contributions? – requires industry coordination and cooperation*
- *Levy?*
- *Pay for use?*

Note: Currently over \$8 million in user fees being collected in Placentia Bay – the users argue that a percentage of these fees should go toward SmartBay operations



Final Points to Ponder

Ocean observation is with us to stay

*Standards, standards, standards (GeoConnections,
OGC (Metocean DWG), GSDI*

*Cannot ignore operational costs – sustainable
operating model is the Holy Grail*

(SmartBay currently approx. \$200,000/yr not including MI and CCG in-kind)

*If you think the cost and effort to maintain/operate are
excessive.....just have an accident!!!*

www.SmartBay.ca



SmartBay

PLACENTIA BAY, NEWFOUNDLAND

Bill Carter
SmartBay Project Manager
Phone: (709) 778-0762
Email: bill.carter@mi.mun.ca

www.SmartBay.ca

