E-MONITORING AND E-REPORTING WORKSHOP

Pacific Islands Forum Fisheries Agency Headquarters, 31 March – 1 April 2014
Honiara, SOLOMON ISLANDS

CLS presentation to WCPFC E-Monitoring and E-Reporting Workshop

31 March 2014

Guan Oon

CLS

WCFPC E-MONITORING AND E-REPORTING WORKSHOP

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Topics

- Company Background
- Applications
- E-reporting (E-R) and E-monitoring (E-M)
- Operational Example – “MARLIN” in the Philippines
- Future
- Summary
- Acknowledgements

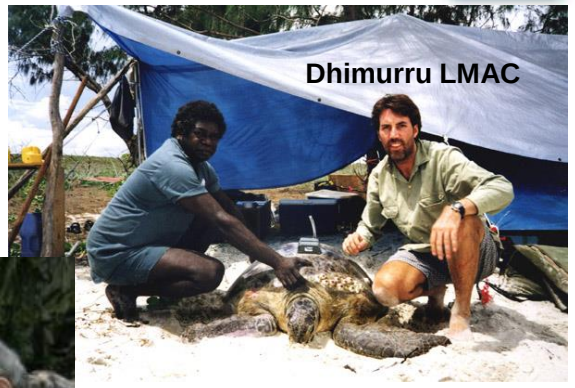
Company Background

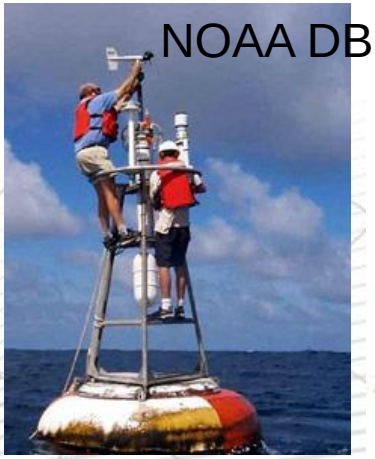
- CLS = Collecte Localisation Satellites
- (Data Collection & Tracking via Satellites)
- HQ = Toulouse, France.
- Offices = US, JP, KR, ID, VN, PE, CL, PA, AU & PH (end of 2014 / early 2015).
- Operational ~ 30 years.
- Satellite based / derived:
  - Monitoring, Data Collection, Tracking, Surveillance, Detection, Turn key projects, Ground stations….

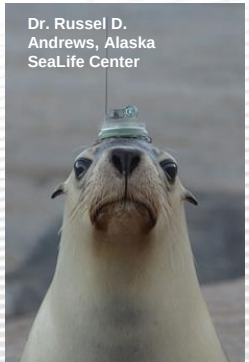
Marine resources and/or maritime applications

- VMS – flag, coastal, licensing states, RFMO (WCFPC, CCAMLR, ICCAT (using CLS VMS software) and non RFMO (FFA)).
- Marine species tracking – tuna, billfish, turtles, sharks, whales, mantarays, seals, …
  - AUST: CSIRO, JCU, AIMS, UQ; NZ: NIWA, Region: SPC
- Satellite derived and in-situ monitoring of ocean conditions – SLA, SST, Colour, Currents….
- Vessel detection & Oil spill detection via satellite radar
- Satellite tracking of non fishing vessels: LRIT, SSAS, AIS.

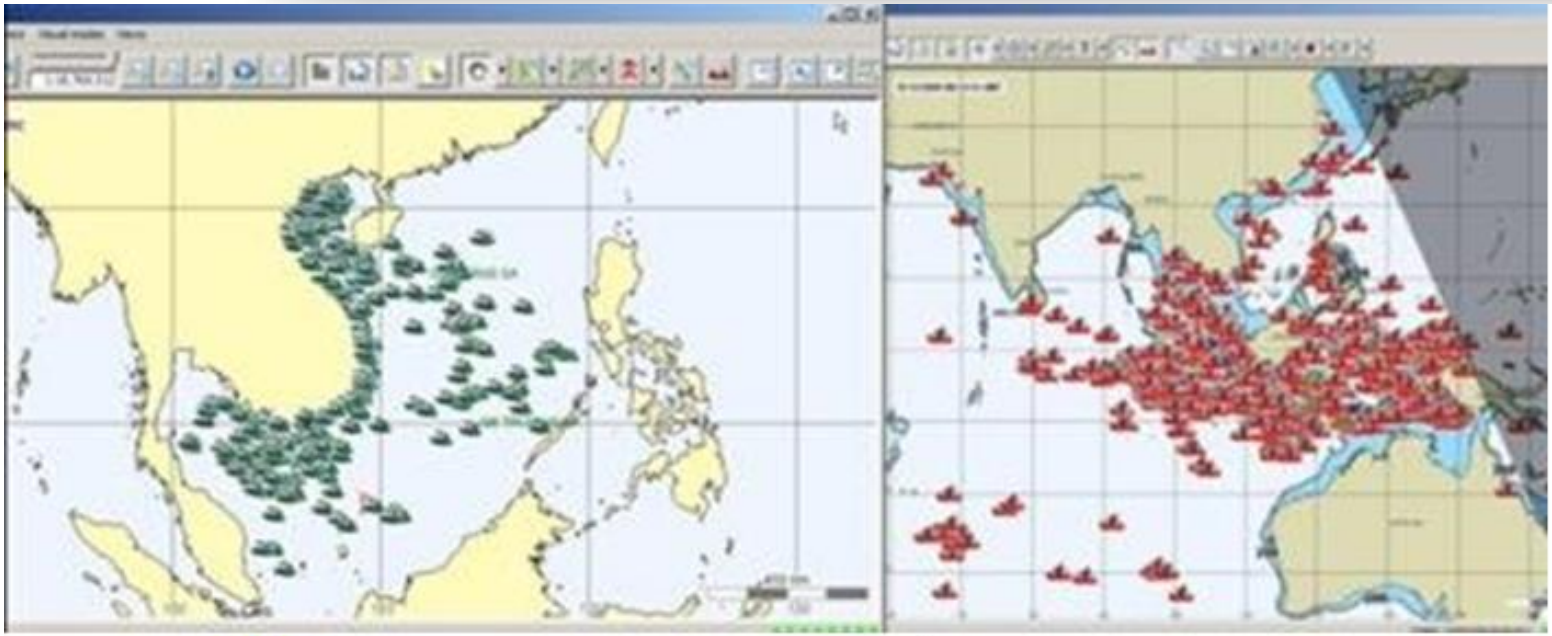
Non E-R / E-M applications that we are involved in….

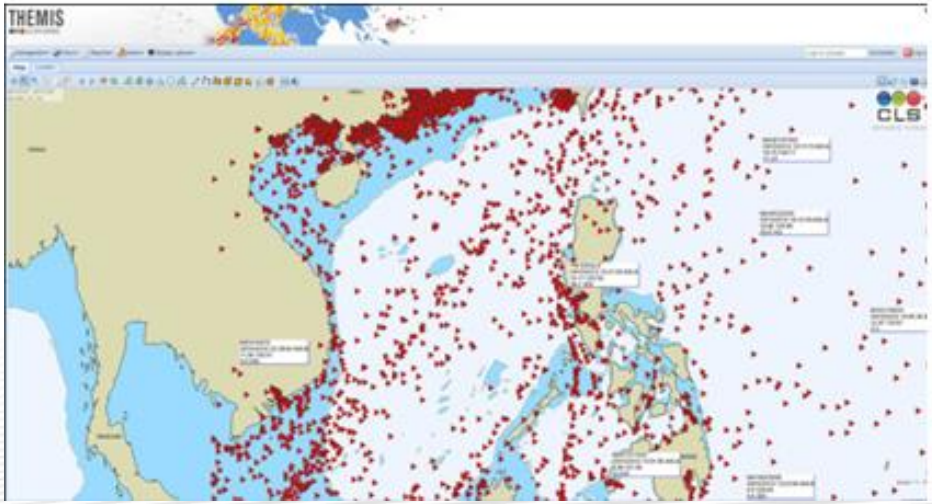


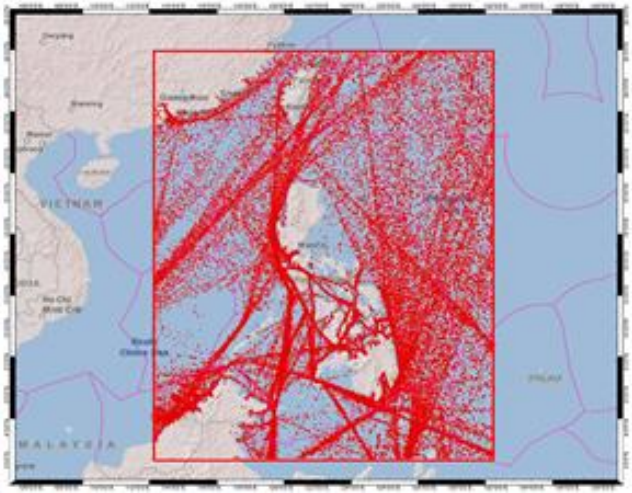




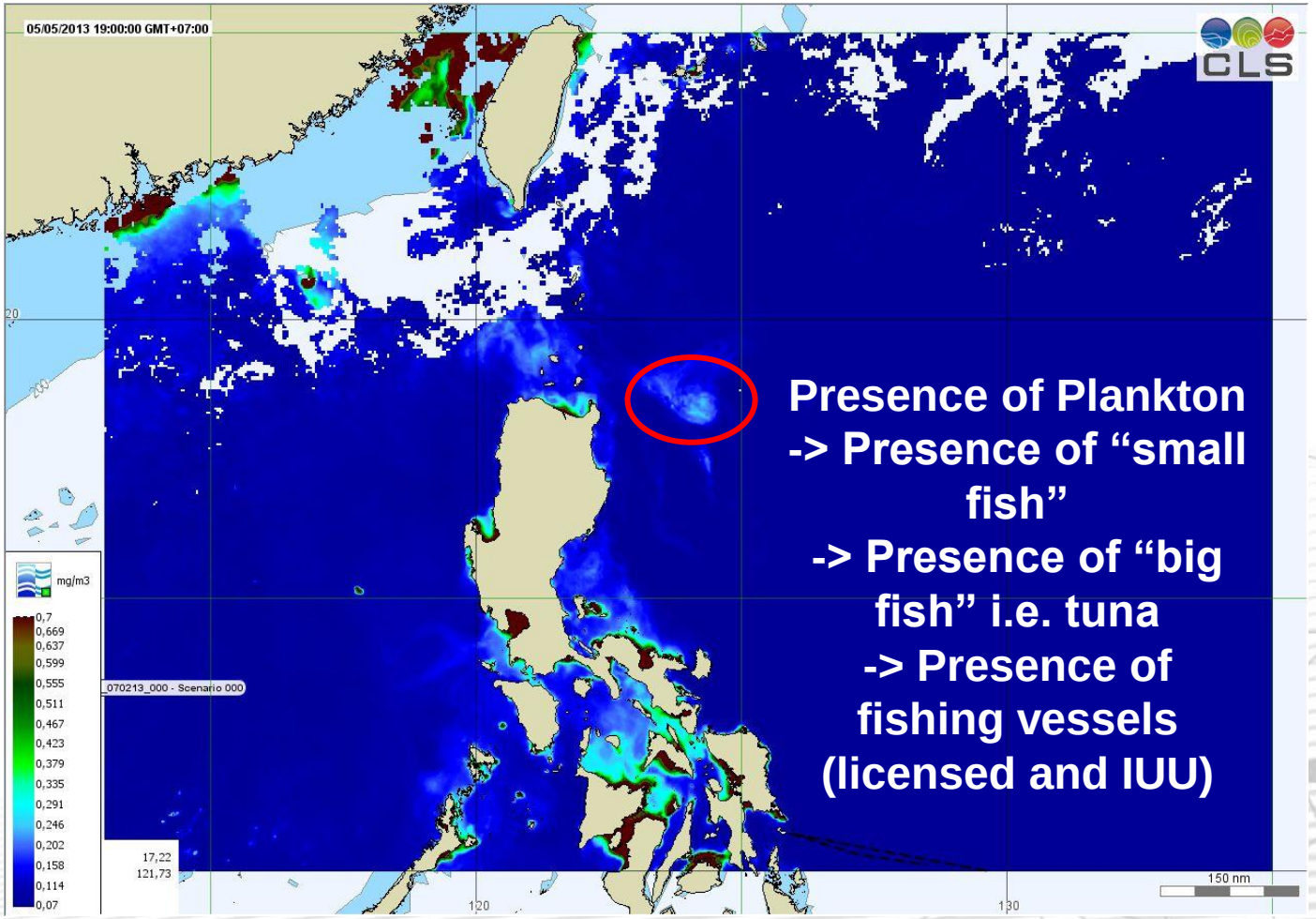
Snapshot of VMS & AIS







In addition to VMS: Ocean Data to PH BFAR



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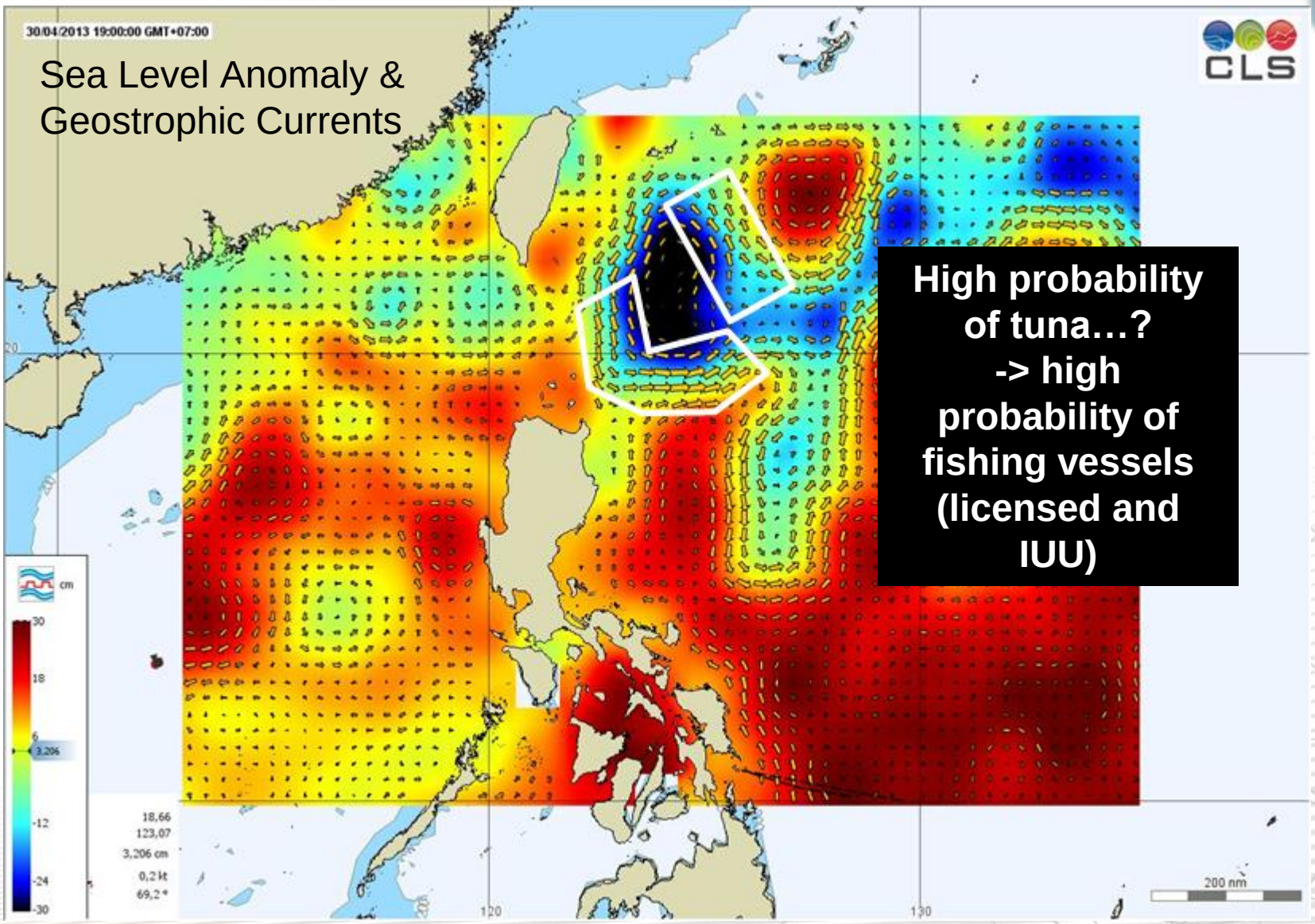


CLS E-M, Philippines

- IF extending the term of “E-M” to include VMS:
  - Catchers (Purse Seiners) and Carriers ~100.
  - Area of operation: Everywhere and in particular WCPFC HSP1 SMA as per WCFPC CMM for VMS and SSP & BFAR Fisheries Administrative Order (No.245 Series of 2012)
  - Started 3rd quarter 2012.
  - Real time hourly positions on the hour every hour.
- VMS positions sent SIMULTANEOUSLY to Bureau of Fisheries and Aquatic Resources (BFAR) and WCPFC.
- Fishing company – individual web access.

CLS E-M (VMS): WCFPC HSP1 SMA

CLS MTU/ALC: Thorium TST100 (FFA Type Approved)

CLS E-R, Philippines

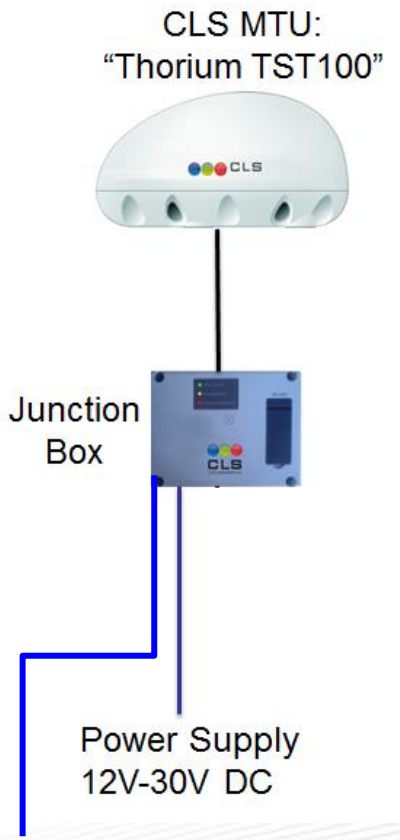
- Deployed and Operational: Connect to CLS MTU.
- E-R:
  - “MARLIN” – Marine LogBook Information
  - Originally designed for Vietnam – 3000 units to be connected to 3000 CLS MTU “LEO” (FFA type approved as well).
  - Vietnamese MARLIN – simple – local species, predefined zones, messaging (send-receive), weather reports, typhoon alert.
  - Typhoon alert = PRIORITY function.

CLS E-R ↔ E-M

- Advantages:
  - Utilises the SAME SECURED satellite communications channel as VMS
    - MTU and MCSP already type approved.
    - Essentially an E-MTU: VMS, Sensors, Catch reporting + additional data/functions.
  - No additional (separate) subscription to another ‘satellite comms service provider’ to send the catch reports
    - E.g. CLS for VMS+on board sensors and “XYZ” for catch reports.
  - No additional satellite transceiver h/ware to connect to a data entry terminal to send the catch reports.
    - E.g. CLS for VMS+on board sensors and “XYZ” satellite dome to send catch reports.

2 separate systems for E-R & E-M

CLS E-M
VMS and sensors



Sensors (analogue / logical)
Pump or winch

"XYZ" E-R

- E-M and E-R from separate service providers.
- Two satellite domes required.
- Two boxes in wheelhouse…
- Two contracts, two invoices…

One (CLS) system for E-R & E-M

CLS MTU:
"Thorium TST100"

"MARLIN"

Junction Box

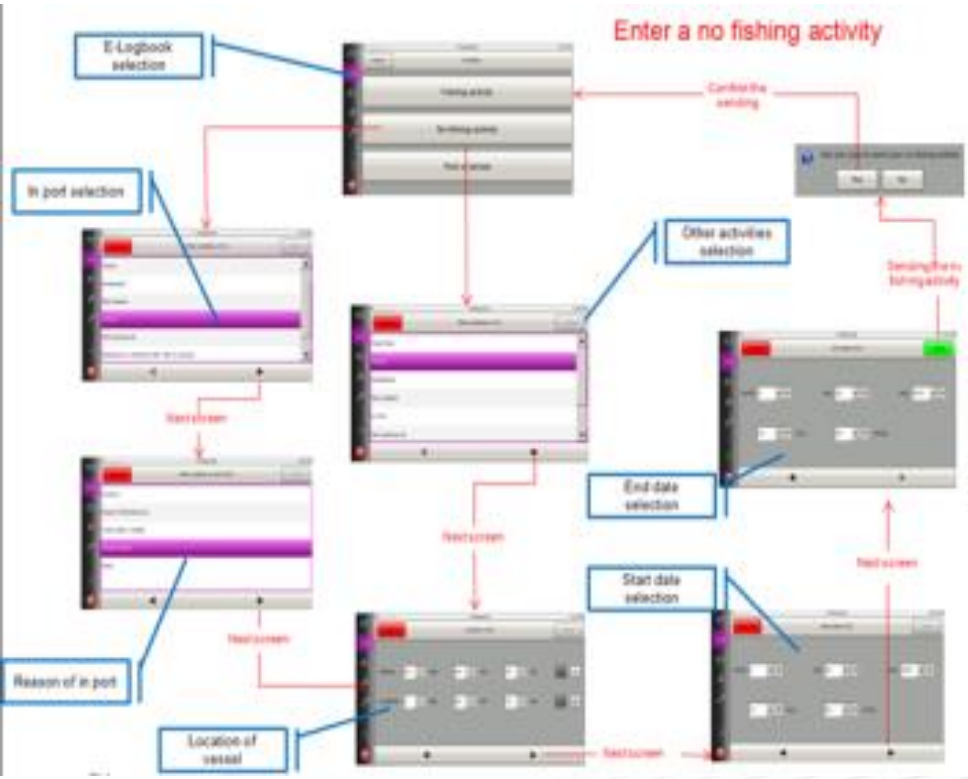
Serial Cable

Power Supply 12V DC

Power Supply
12V-30V DC

Sensors (analogue / logical)
Pump or winch

PH MARLIN: “E” vs. Paper



Content of no fishing
Activity code
Start date
End date
Position
Reason in port (if in port is selected)

PH MARLIN Menu E-R

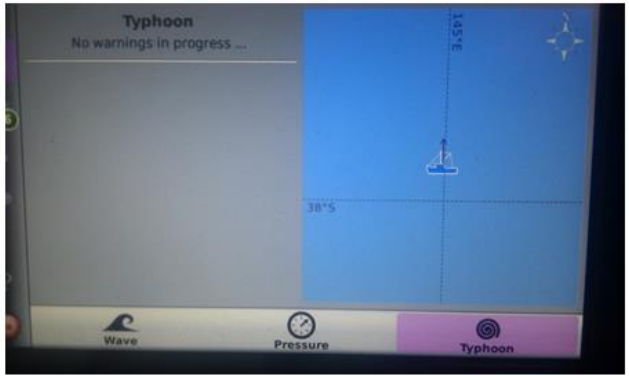
PH MARLIN Menu E-R

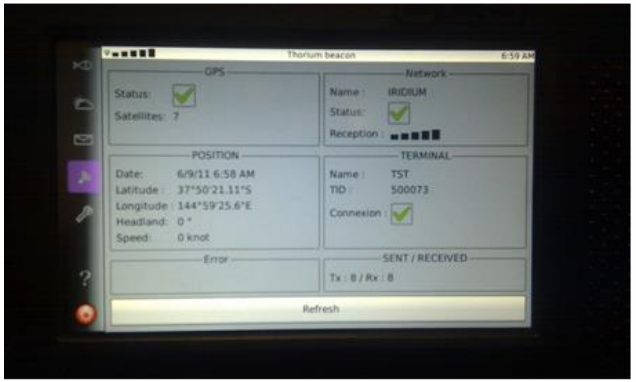
PH MARLIN Menu **NON** E-R

Weather forecast* in 4°x4° grid ~ 240nm x 240nm with vessel location derived from MTU GPS

Typhoon alert in text format entered by Fisheries Monitoring Centre (FMC) sent to vessels that may be affected

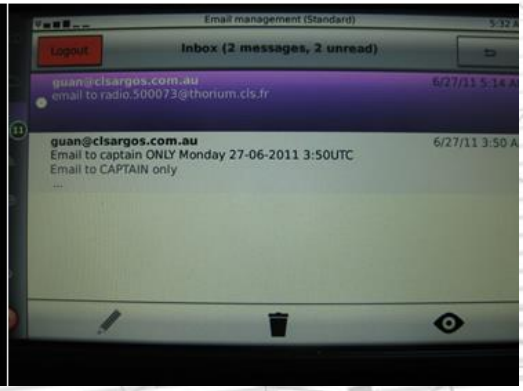
Can send email to as many recipients as possible, BUT can only receive from a pre-defined / white-list email addresses.





Status of MTU

Captain, Standard, Radio Officer etc…..

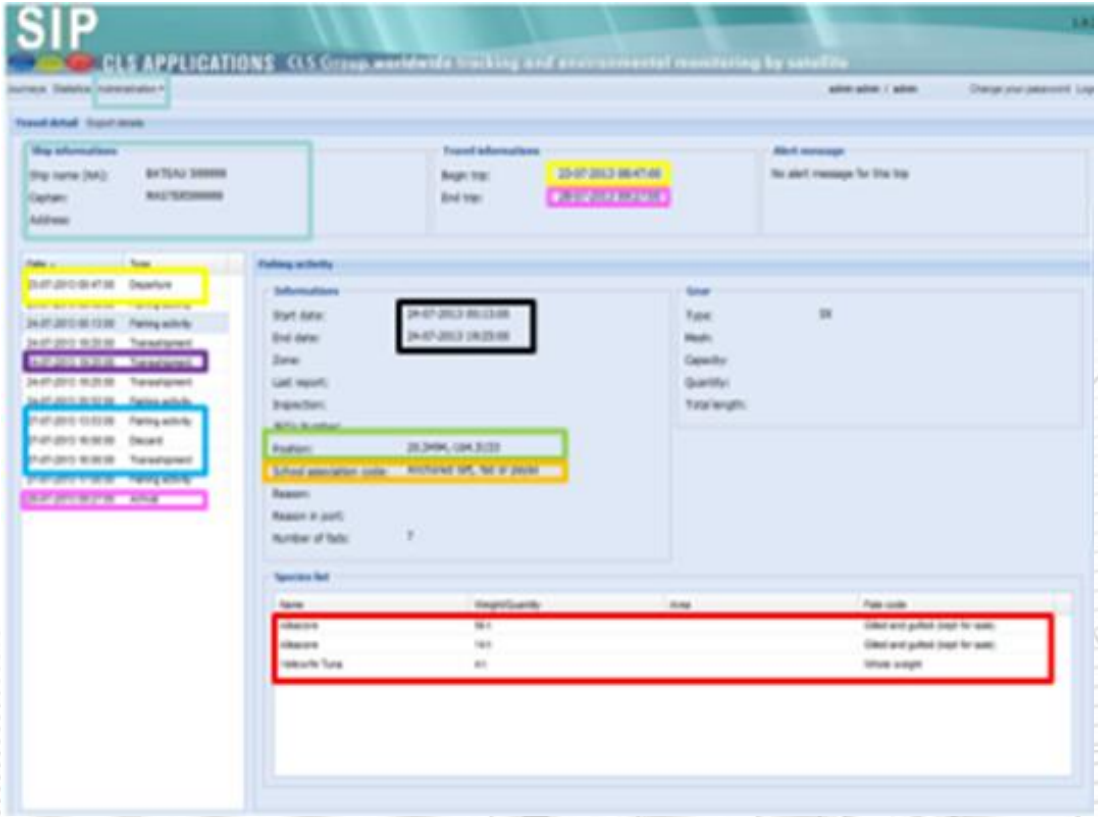


Emails

*weather forecast is sent from the PH FMC (i.e. from BFAR)

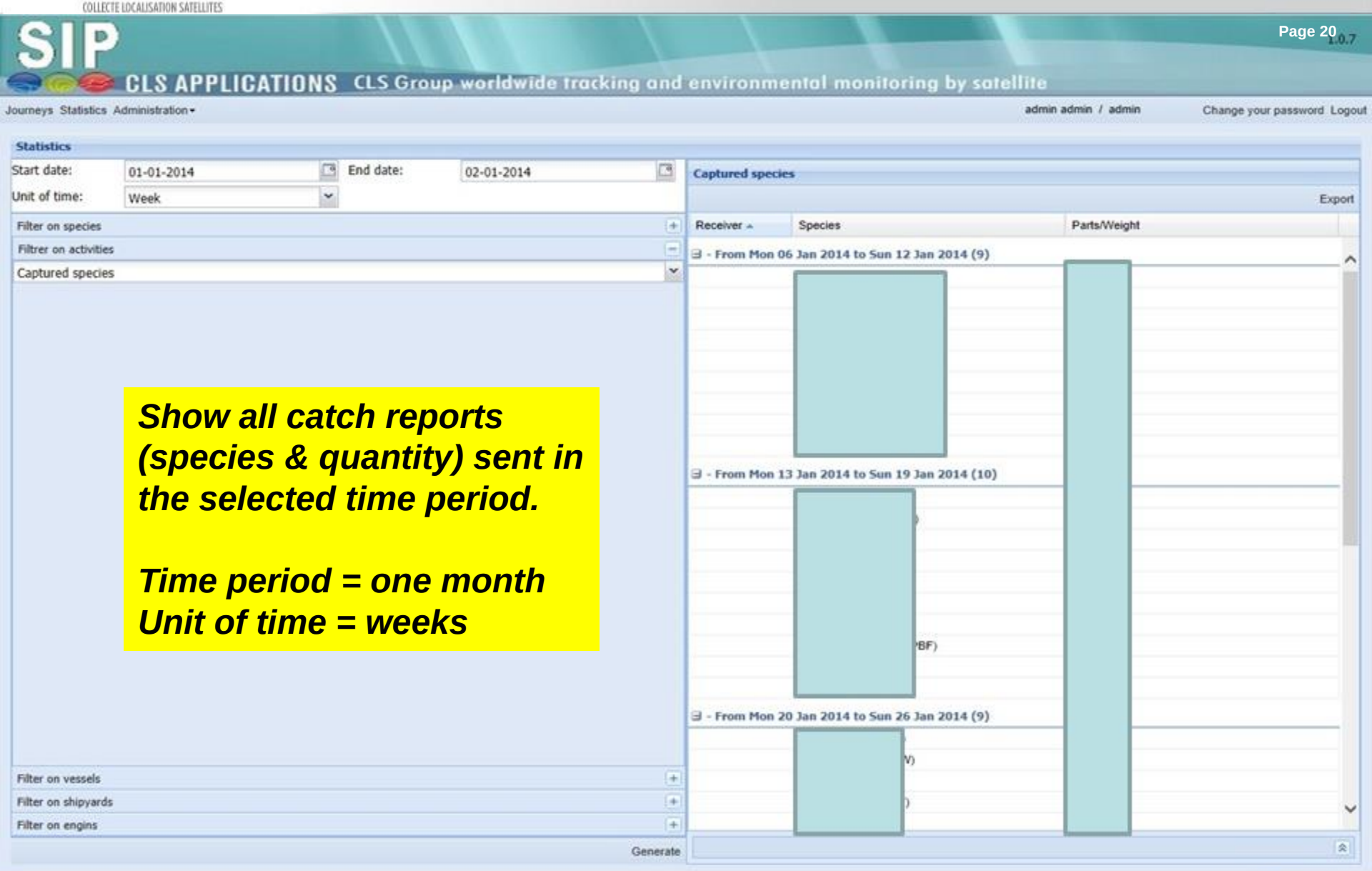
Validation

- Info sent from vessel at sea = Info displayed on dry land



SIP = Systeme d'Information des Pêches = FIS = Fisheries Information System

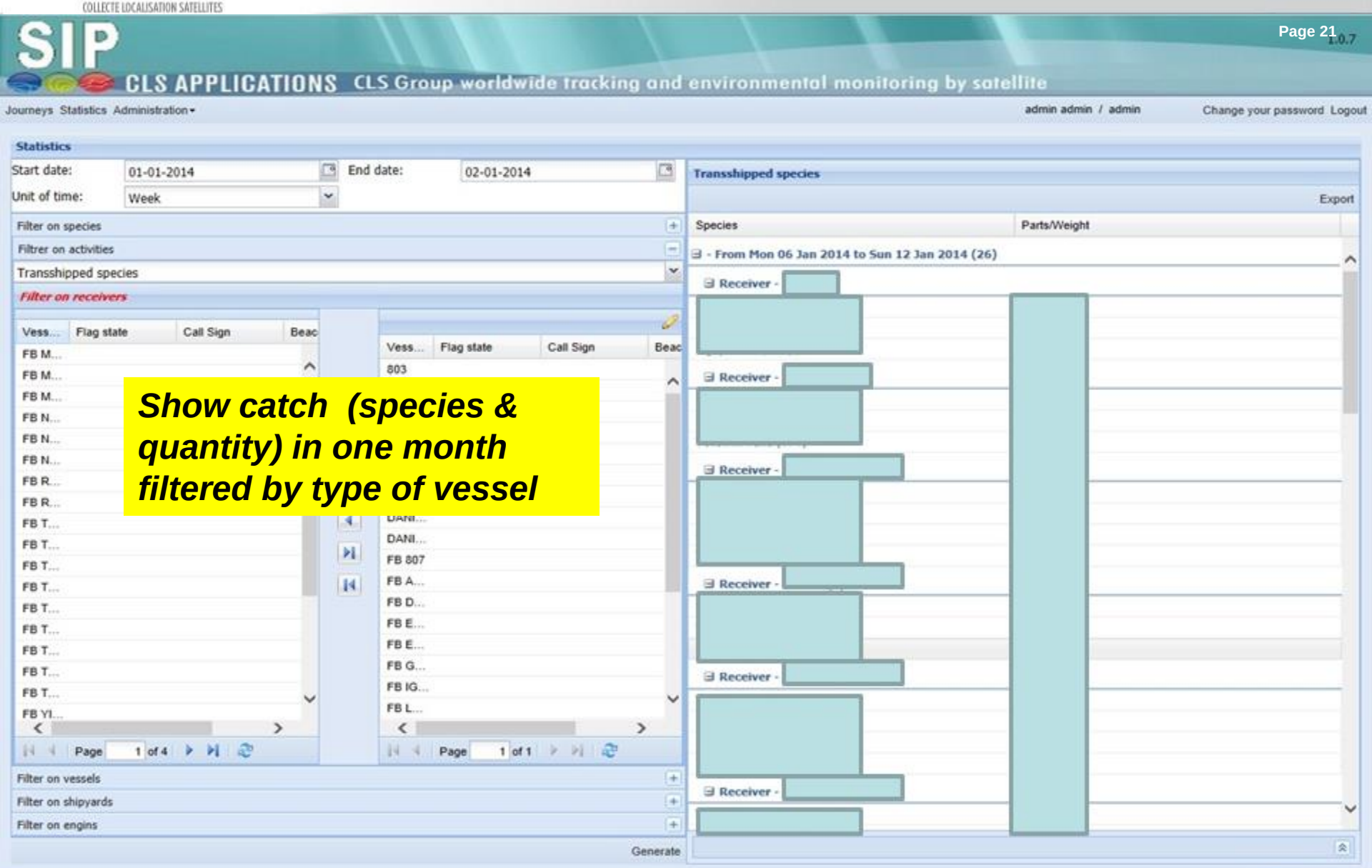
Data Example 1



Show all catch reports (species & quantity) sent in the selected time period.

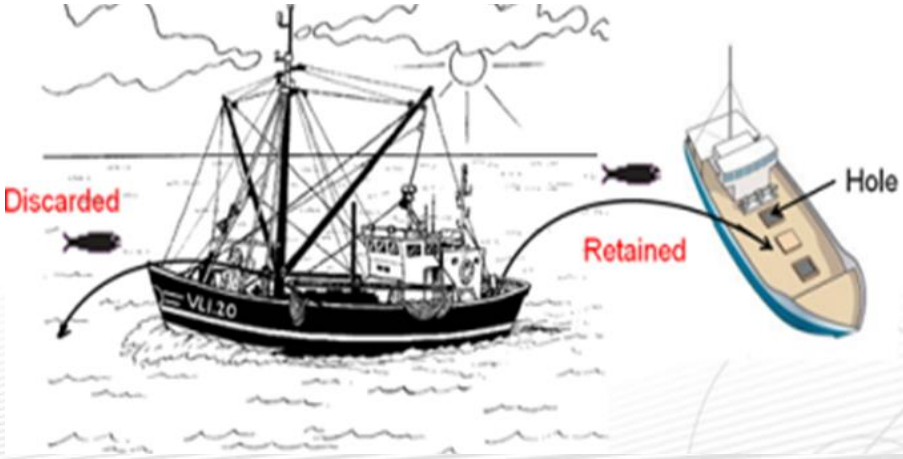
Time period = one month
Unit of time = weeks

Data Example 2



PH MARLIN -Timeline

- Commenced discussions July 2012 i.e. from Vietnam version to Philippine version.
- Additional input from SPC – Peter Williams (late 2012 to early 2013)
- Training sessions towards 3rd quarter of 2013 just prior to re-opening of HSP1 SMA.



Quezon City (BFAR)
VMS, Scientific, IT

Quezon City (BFAR Director)

Navotas (BFAR)
VMS, Observer, Scientific

General Santos (BFAR + Industry)

Philippines – Summary 1/2

- Fully Operational.
- Challenges = The usual, but easily overcome….
  - One authority i.e. BFAR
  - One ‘fleet’ i.e. all PH flagged HSP1 SMA vessels (VMS)
  - One ‘gear type’ i.e. (group) purse seiners (E-R)
  - One home port and hence one venue for industry training
  - Clear directives and objectives:
    - national (BFAR Fisheries Administrative Order)
    - regional (WCPFC CMM for VMS)
    - use existing VMS to send catch reports
  - Established relationship between BFAR and CLS (since 2010)
  - CLS local presence/representation/exclusive installer: Propmech Corporation

Philippines – Summary 2/2

- Hardware (recap):
  - VMS MTU = Thorium TST100 (type approved by BFAR, FFA, NMFS).
  - Data entry terminal "**MARLIN**" – **stand alone, sole purpose and function for:**
    - Sending catch reports
    - Sending-receiving messages (e-mail client functions)
    - Receiving weather reports - alerts
      - Automatic - pressure, wind, wave height
      - Manual - typhoon alert (by VMS operator)
    - NO USB port, NO head phone jack, NO DVD.

Stock (h/ware) Status

- **Philippines** –
  - E-mon: VMS: **Thorium MTU (low on stock)**
  - E-rep: Catch Reports, Weather, Emails: **MARLIN (out of stock)**

- **Now**:
  - E-mon: (VMS): **Thorium or LEO MTU** (FFA type approved)
  - E-rep: Catch Reports: **Android tablet** (or Android Smartphone)
    - (some degree of) Flexibility
      - End user could provide their own tablet
      - If tablet supplied by CLS, then partial locked down
      - (optional) apps that could utilise same satellite channel (?) and or cellular

- **Future**
  - E-mon: (VMS): **LEO and LEO Mk-II C** ~ 1st qrt 2015.
  - E-rep: **Tablet (several OS)**

Now: LEO + Android tablet*

DOME

Apart from the usual, back up internal battery for 72 hours of operation.

Memory of logged GPS = 8700 positions e.g. every 15 mins = 90 days

(irrespective of automatic GPS reporting interval) cf 300 positions for THORIUM

JUNCTION BOX

Cable to Dome

Cable to Power supply

*works with Android smart phone

LEO + Android Regional Pilot

- Pilot test for Longliners
  - Vanuatu (3 vessels) – May 2014
    - CLS LEO for VMS
    - Catch report via Android tablet – TBD source of tablet e.g. supplied or end user.
    - Who pays - TBD.
- Requirement-development?
  - Current CLS Android is already configured for US NMFS.
  - Adapt to SPC Regional LogSheet for Long line – simple.
  - Transmitted catch reports on CLS SIP-FIS secured server accessible by VU Dept of Fisheries.
  - VMS to
    - Vanuatu Dept of Fisheries as per normal – secured web access.
    - FFA + WCPFC + vessel owner simultaneously (TBD)

- Video of the Android sending a catch report.

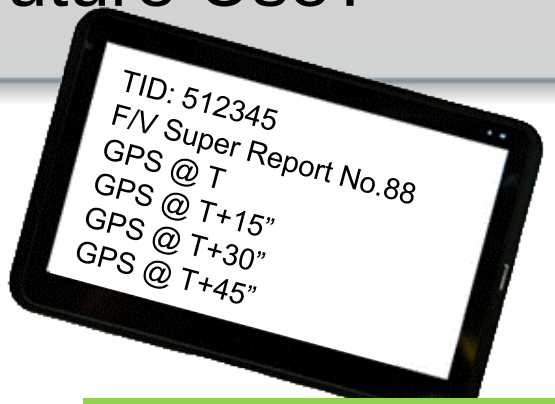
Android tablet

- What ELSE can we do with this?

- As all tablets are wifi enabled, when in (stable) cellular coverage e.g. in or close to port; can be tethered to a smart phone with a cellular broadband connection:
  - COULD send anything-everything in addition to what was already sent whilst at sea.
  - Receive updated forms/regulation/weather reports etc.

Android – Concept? Future Use?

At sea: VMS hourly – default.
GPS refreshed every second.
Refreshed GPS logged every 15 mins inside the dome.
When tablet is connected to send catch reports etc COULD retrieve all the logged information from the dome.
(compliance/data handling issues)



In port / cellular coverage

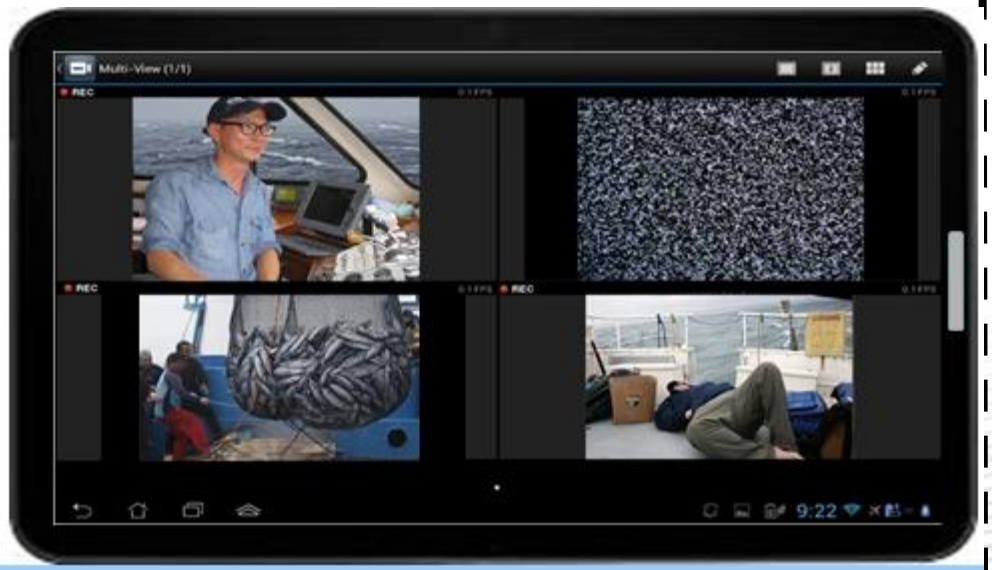


Image grab from video, filename: "CAM3_2013_12_09_0528_04N37M06S_146E11M09S.jpg"
Geotagged from VMS or on board recording system.

In port / cellular coverage

At sea: Connect to on board recording system, use in wheel house as video streamer or controller (*.mpg to hard disk drive of recording system).

Android tablet

- From previous scenario, the tablet then becomes more than just a hardware platform to send catch reports:
  - “Unofficial” VMS.
  - “Data Collector”

- Who supplies the tablet?
  - If supplied by CLS – full or partial lock down - TBD e.g. disable all social media apps?
  - For user supplied tablet (or smartphone or notebook) – issue of h/ware type approval.

SUMMARY

DONE / AVAILABLE

- VMS – type approved MTU (Thorium & LEO) and type approved MCSP (CLS) as per FFA standards and hence WCFPC.
- Satellite transmission of VMS, sensors, catch reports in real time to primary recipient and simultaneously to authorised recipient(s).
- Dedicated (locked down-limited functions) Android tablet or app (user supplied h/ware) with wifi-cellular via tablet/mobile broadband.

FUTURE

- Additional-optional functions/apps and capability to use non satellite comms i.e. **cellular via MTU** in addition to wifi-cellular via tablet/mobile broadband.

Acknowledgement (1/2)

- **PH Bureau of Fisheries & Aquatic Resources**:
  - National Director Atty. Asis Perez
  - Director Tong, Region XII
  - Dr. Alma Dickson, Head of National Marine Fisheries Development Center
  - Mr Raffy Ramiscal, Chief Scientist
  - Zaldy Perez, Marlo Demo-os, Paquito Relucio Jr, Jerry Jay Magno, MJ Mabanglo, Navotas Team & Quezon City Team, Region XII team.

- **Socsksargen Federation of Fishing and Allied Industries, Inc. (SFFAII)**
  - Mdm Rosanna Contreras, Executive Director -

Acknowledgement (2/2)

- **Vanuatu**
  - **Fisheries Department**
    - William Naviti, Wesley Obed, Tony Taleo and of course Moses Amos Tinapua (ex Director and now Director FAME, SPC)
  - **Tunafishing Limited**
    - MP Christophe Emelee
- **SPC** – Peter Williams, Principal Fisheries Scientist, Data Management, OFP.
- Venue host: **FFA**
- Organiser: Kerry Smith (**AFMA / WCPFC**) & **WCFPC** Secretariat
- WCFPC ER EM Report: **Dr Ian Knuckey & Steve Dunn**
- **Propmech Corporation** – CLS (exclusive) certified installer in the Philippines - 10 offices-service centres nationwide/Maritime support – engines, boat builders, fishing, shipping.

CLS
F/B VERGENE
DUL-6105
THANK YOU