

## BMM Experimentation Phase

### Operational Assessment of Scenarios

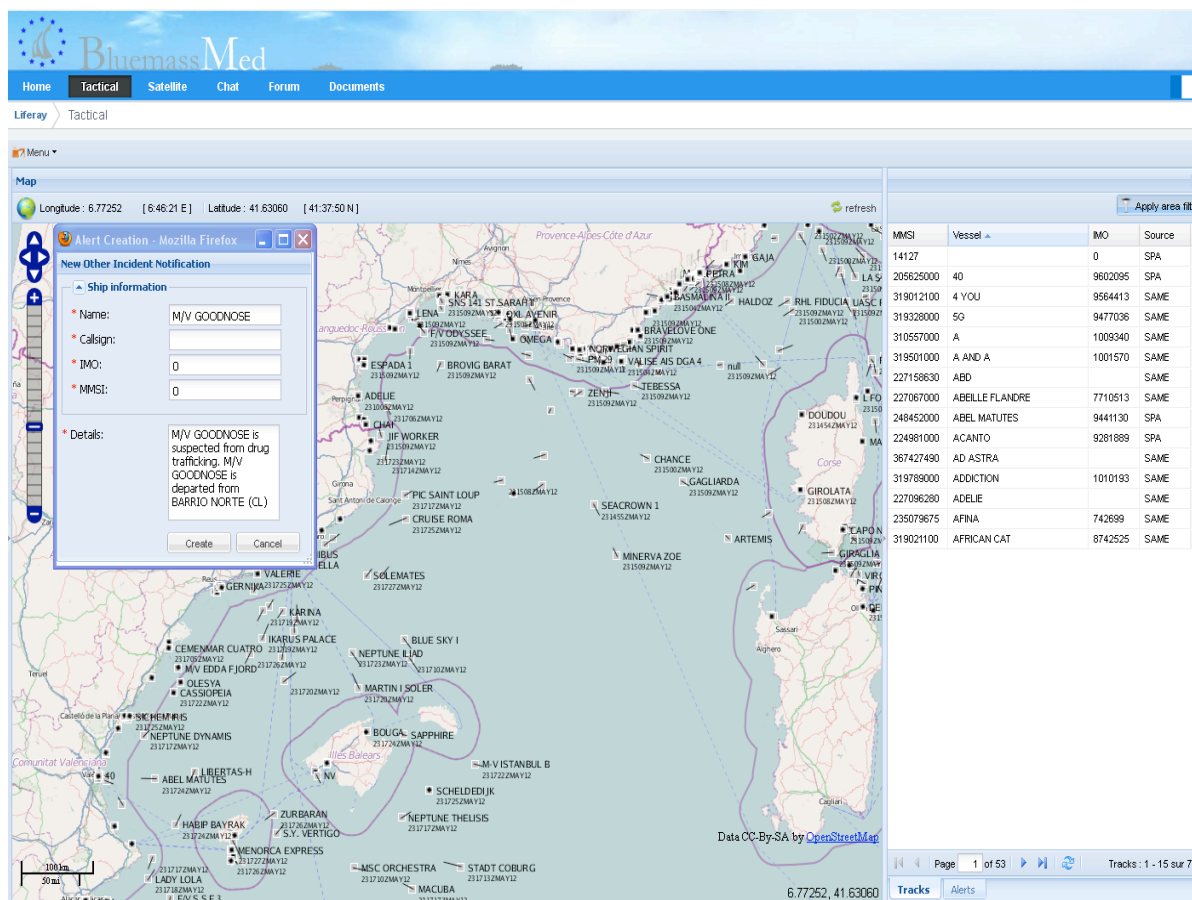
#### CROSS SECTORIAL EXCHANGE OF ALERTS

##### USE CASE 1

*FR Customs informs PT on MV Good Nose heading for the Mediterranean to unload her cocaine cargo. MAOC N suggests PT to use BMM network to track, identify MV Good Nose (GN) and to help law enforcement authorities to interdict the vessel once enough evidence is gathered.*

*Thanks to the BMM Service Federation, alerts generated within a specific Community are associated to ships in the SBCMP and shared among the other communities according to established privileges*

The PT GNR notifies to all Users connected on the BMM Network an alert for suspect illegal activities on the M/V Good Nose.



The screenshot displays the BlueMassMed web application interface. At the top, there is a navigation bar with 'Home', 'Tactical', 'Satellite', 'Chat', 'Forum', and 'Documents'. Below this, a 'Map' section shows a geographical view of the Mediterranean Sea with various vessels plotted. A 'New Other Incident Notification' dialog box is open, containing the following information:

- Ship information**
  - Name: M/V GOODNOSE
  - Calign: [empty]
  - IMO: 0
  - MMSI: 0
- Details:**

M/V GOODNOSE is suspected from drug trafficking. M/V GOODNOSE is departed from BARRIO NORTE (CL).

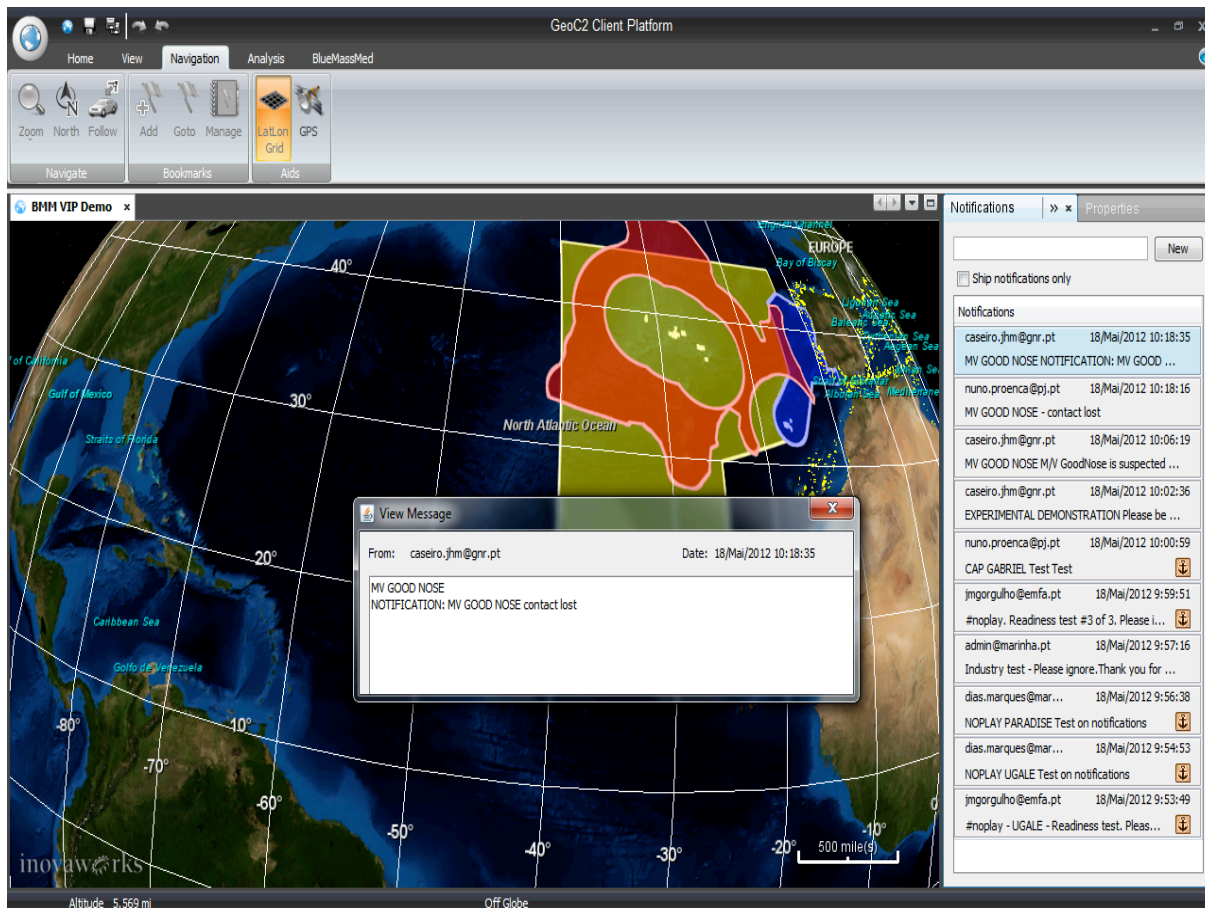
Buttons for 'Create' and 'Cancel' are visible at the bottom of the dialog. To the right of the map, a table lists vessel data:

MMSI	Vessel	IMO	Source
14127		0	SPA
205625000	40	9602095	SPA
319012100	4 YOU	9584413	SAME
319328000	5G	9477036	SAME
310557000	A	1009340	SAME
319501000	A AND A	1001570	SAME
227158630	ABD		SAME
227067000	ABELLE FLANDRE	7710513	SAME
248452000	ABEL MATUTES	9441130	SPA
224981000	ACANTO	9281889	SPA
367427490	AD ASTRA		SAME
319789000	ADDITION	1010193	SAME
227096280	ADELIE		SAME
235079675	AFINA	742699	SAME
319021100	AFRICAN CAT	8742525	SAME

The map shows coordinates of Longitude: 6.77252 and Latitude: 41.63060. A scale bar indicates 200m. The bottom status bar shows 'Page: 1 of 53' and 'Tracks: 1 - 15 sur 791'.

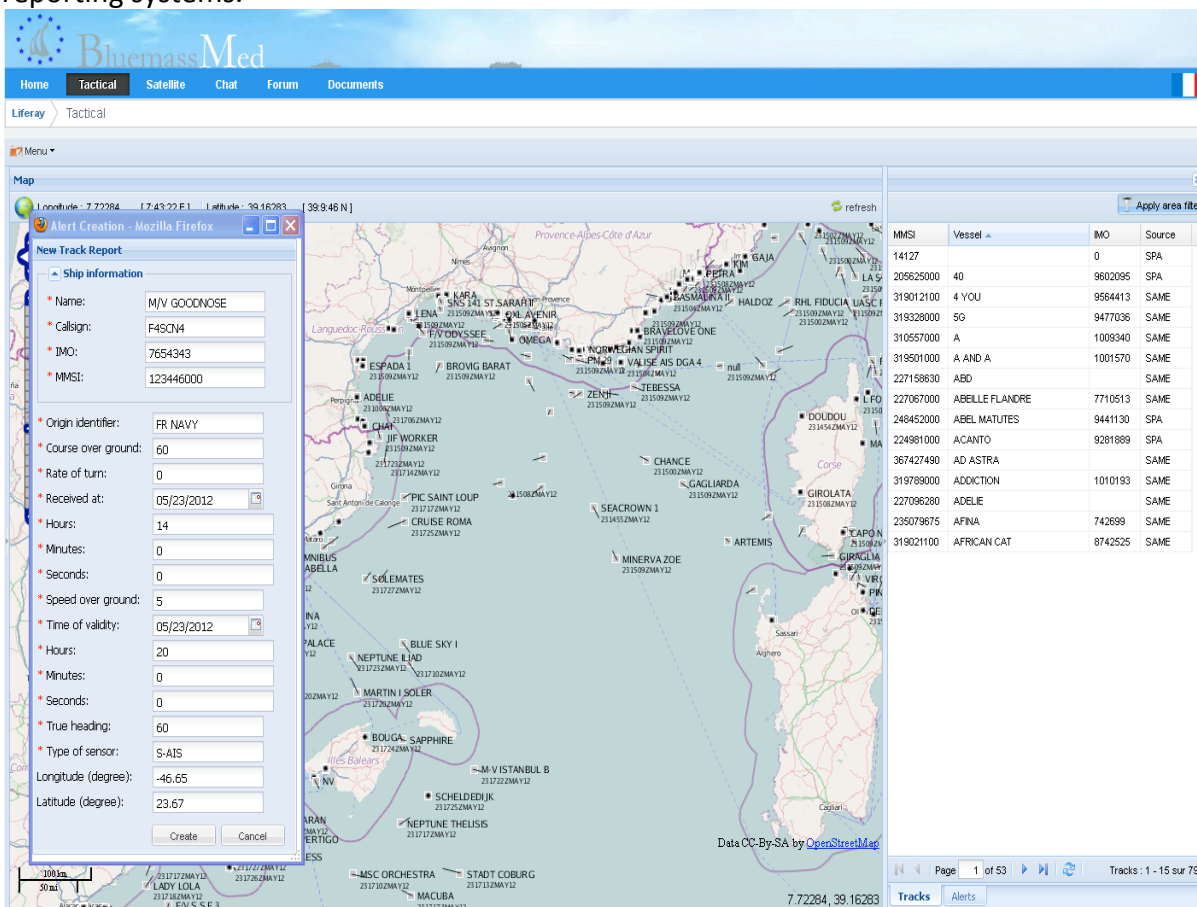


The Greek Coast Guard provides the last known position of the M/V GOODNOSE obtained by the LRIT reporting systems. However after 5 days, the M/V GOODNOSE changes its Basic Id data, therefore the PT GNR notifies that the M/V GOOD NOSE contact is lost and determines the expected time to reach Portuguese waters in about 3 days.





The FR Navy provides the last known position of the M/V GOODNOSE obtained by the S-AIS reporting systems.



The screenshot displays the BlueMassMed web application interface. On the left, a 'New Track Report' form is open, detailing the ship M/V GOODNOSE. The form includes fields for Name, Callsign, IMO, MMSI, Origin identifier, Course over ground, Rate of turn, Received at, Hours, Minutes, Seconds, Speed over ground, Time of validity, True heading, Type of sensor, Longitude, and Latitude. The 'Received at' field is set to 05/23/2012. The form also has 'Create' and 'Cancel' buttons.

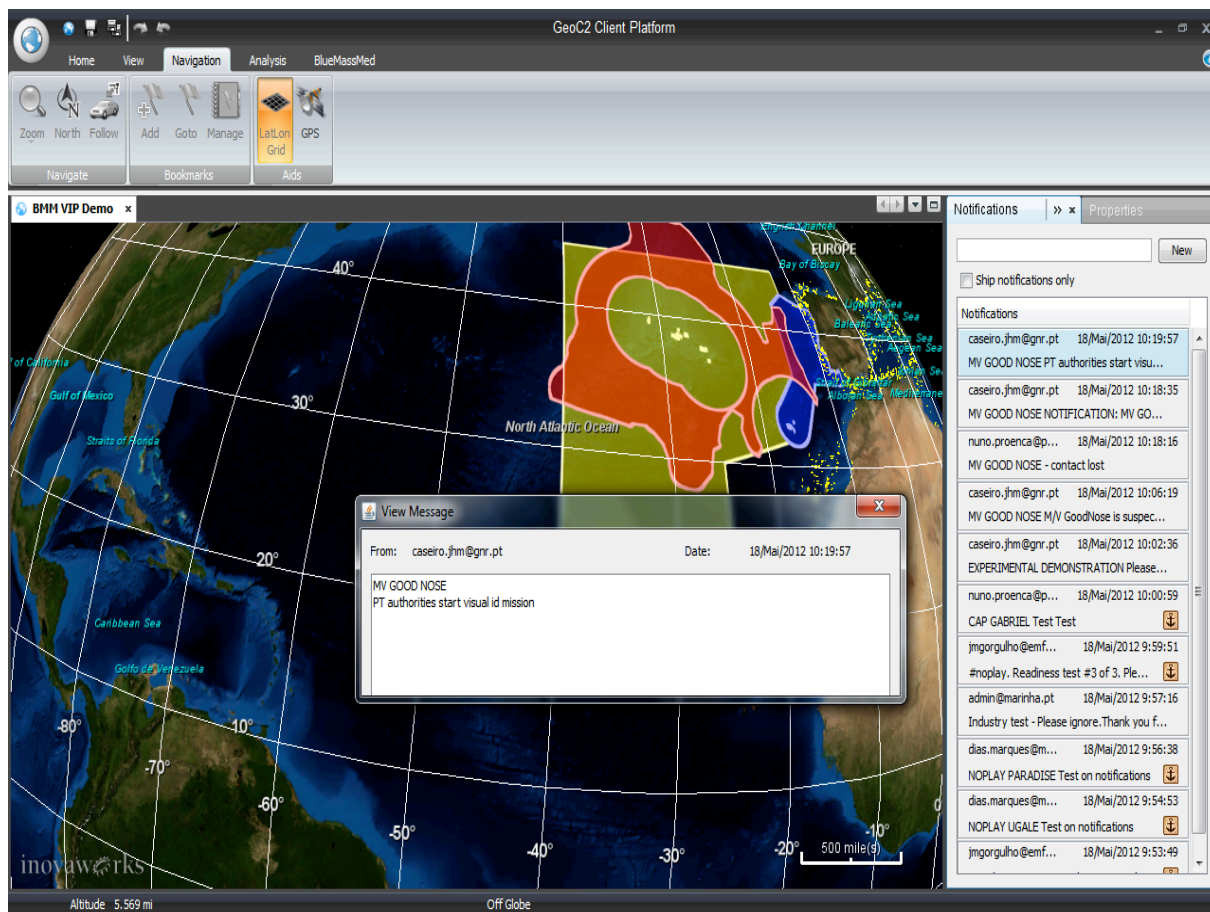
The main area shows a map of the Mediterranean region with various vessel tracks and labels. A table on the right lists vessel information:

MMSI	Vessel	IMO	Source
141127		0	SPA
205625000	40	9602095	SPA
319012100	4 YOU	9564413	SAME
319328000	5G	9477036	SAME
310557000	A	1009340	SAME
319501000	A AND A	1001570	SAME
227158630	ABD		SAME
227067000	ABELLE FLANDRE	7710513	SAME
248452000	ABEL MATUTES	9441130	SPA
224981000	ACANTO	9281889	SPA
367427490	AD ASTRA		SAME
319789000	ADDOCTION	1010193	SAME
227096280	ADELE		SAME
235079675	AFINA	742699	SAME
319021100	AFRICAN CAT	8742525	SAME

At the bottom of the interface, there are navigation controls including 'Page 1 of 53', 'Tracks: 1 - 15 sur 791', and 'Alerts'.



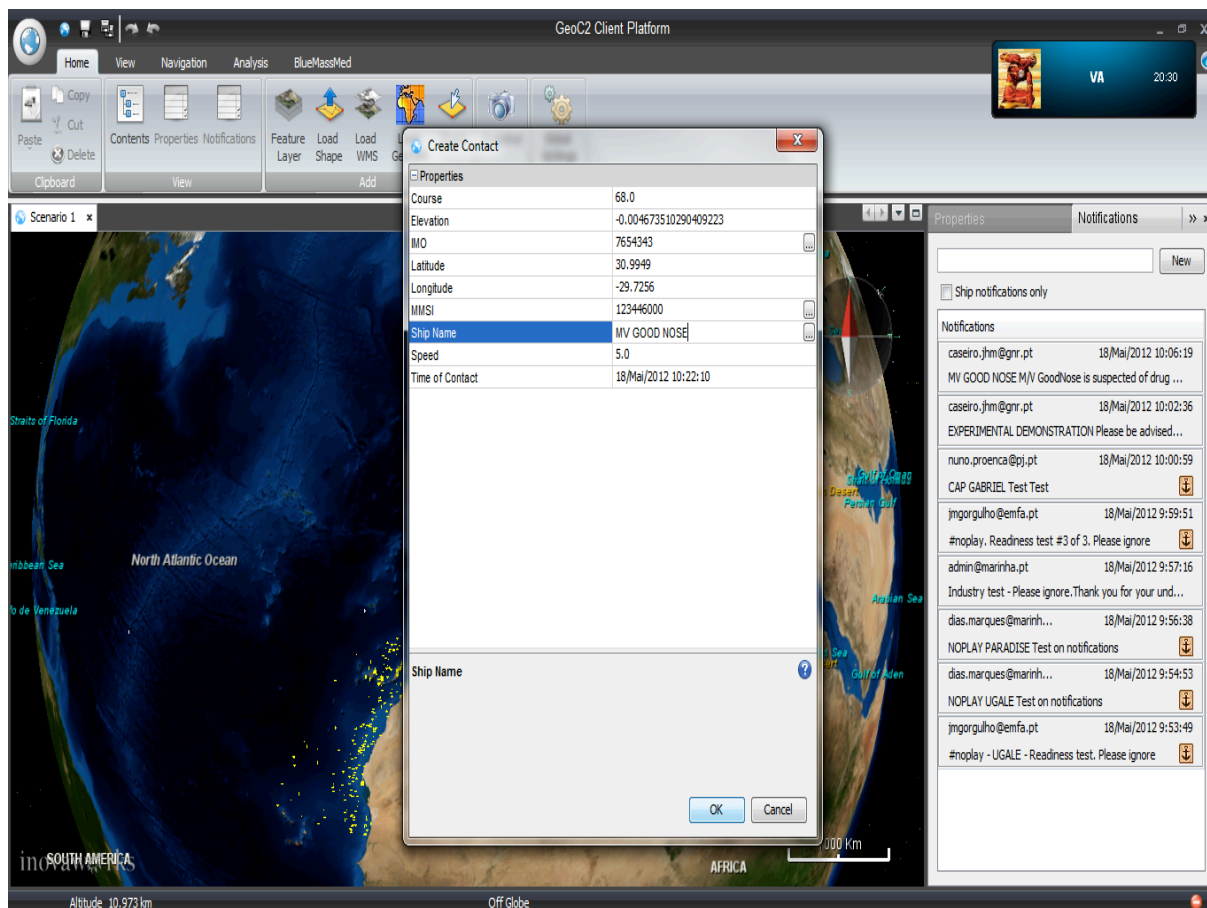
After 3 days, in order to locate the M/V GOODNOSE, PT GNR notifies the launch of a visual identification mission.







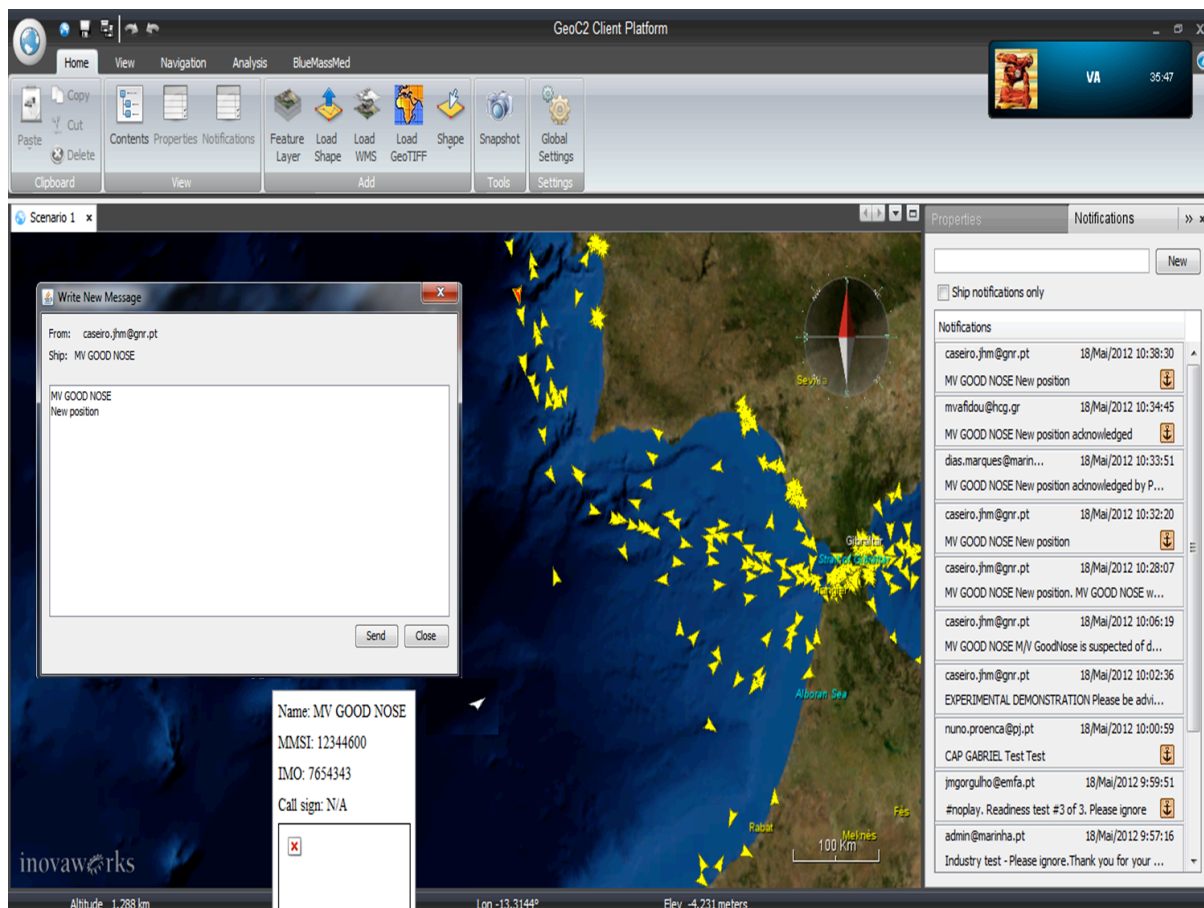
Four hours later the M/V GOODNOSE is located and identified by the PT Maritime Patrol Aircraft and PT GNR injects the updated position and ship id information in the Maritime Picture through the PT Navy Primary Node.





Thanks to the Visual Identification obtained, the PT PN tracks the M/V GOODNOSE on the AIS picture, and the new IMO number and MMSI number are associated to the M/V GOODNOSE.

When the M/V GOODNOSE is about to leave the PT territorial waters and approaches the Gibraltar strait, the Ship data are handed over to Spain Guardia Civil and Spain Armada Primary Nodes





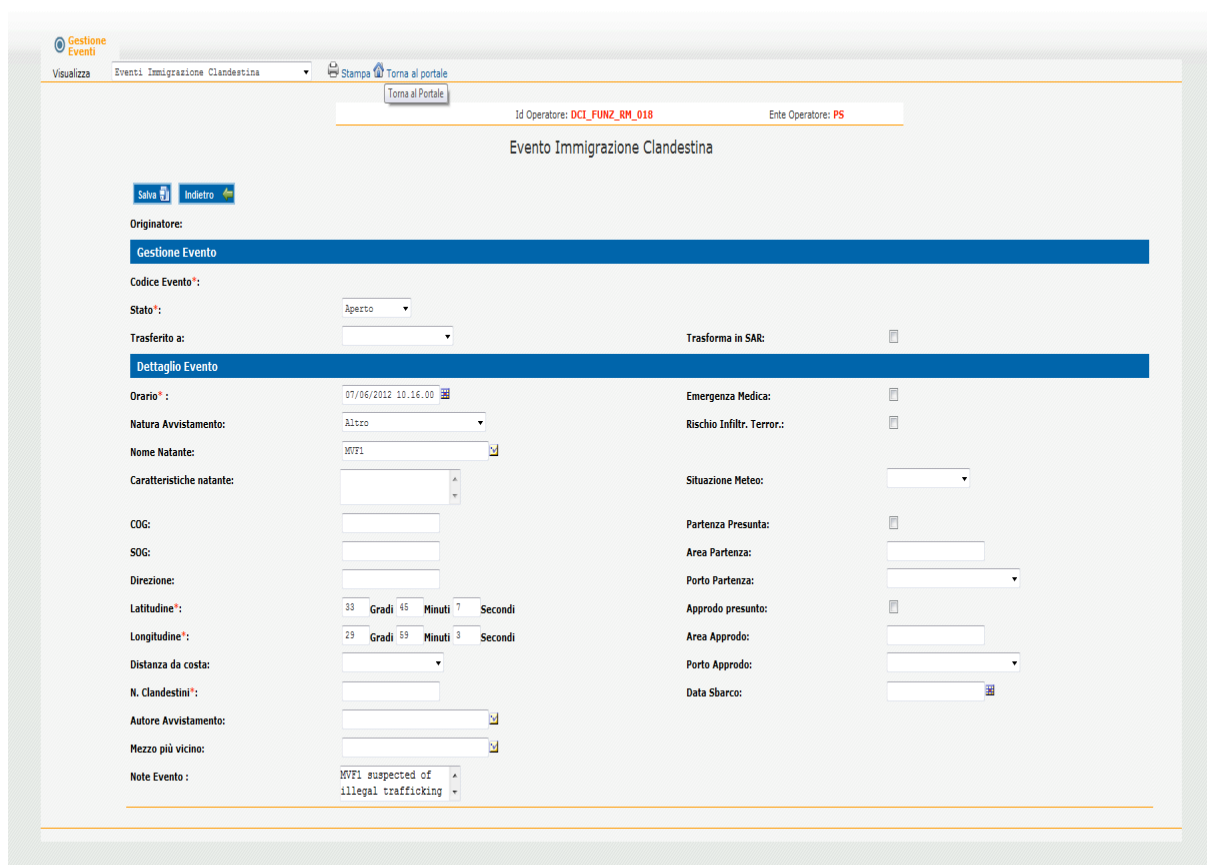
USE CASE 2

*Europol informs Italian Ministry of Interior on the presence, in the Suez Canal, of a Liberian-flagged cargo ship (MV Fortress) which sailed from a port in the Pacific, carrying a cargo of goods in bulk and heading to Barcelona.*

*Thanks to the direct connection to the BMM Network Italian Ministry of Interior gets intelligence info, publishes an alert on MV F1 and asks reinforced monitoring including satellite monitoring to military and civilian authorities.*

Italian Ministry of Interior gets intelligence info about the M/V F1 potentially involved in illegal trafficking, left from Port Said and cruising in the Suez channel and heading towards Barcelona (Spain). An alert is created at the Italian National Control Centre managed by the Ministry of Interior (SIA).

Gestore Eventi

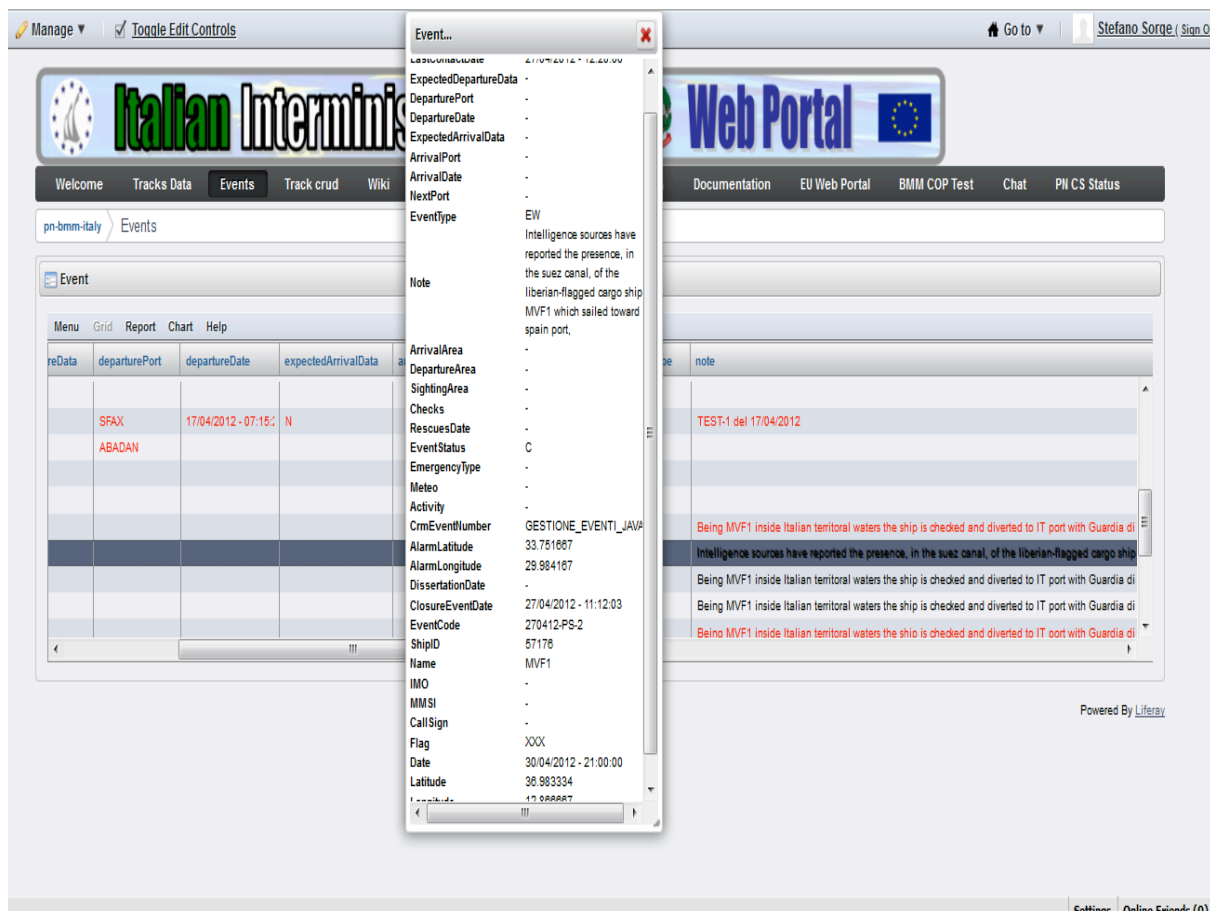


The screenshot shows a web application interface for managing events. At the top, there is a navigation bar with 'Gestione Eventi' and 'Visualizza' options. The main content area is titled 'Evento Immigrazione Clandestina' and includes the following fields and sections:

- Operatore:** Id Operatore: DCI\_FUNZ\_RM\_018, Ente Operatore: PS
- Originatore:** Gestione Evento
- Codice Evento:** (empty field)
- Stato:** Aperto (dropdown menu)
- Trasferito a:** (empty dropdown menu)
- Trasforma in SAR:**
- Dettaglio Evento:**
  - Orario:** 07/06/2012 10.16.00
  - Natura Avvistamento:** Alto (dropdown menu)
  - Nome Natante:** MVF1 (dropdown menu)
  - Caratteristiche natante:** (empty dropdown menu)
  - COG:** (empty field)
  - SOG:** (empty field)
  - Direzione:** (empty field)
  - Latitudine:** 33 Gradi 45 Minuti 7 Secondi
  - Longitudine:** 29 Gradi 59 Minuti 3 Secondi
  - Distanza da costa:** (empty dropdown menu)
  - N. Clandestini:** (empty field)
  - Autore Avvistamento:** (empty dropdown menu)
  - Mezzo più vicino:** (empty dropdown menu)
  - Note Evento:** MVF1 suspected of illegal trafficking (dropdown menu)
- Emergency and Risk Fields:**
  - Emergenza Medica:**
  - Rischio Infiltr. Terror.:**
  - Situazione Meteo:** (empty dropdown menu)
  - Partenza Presunta:**
  - Area Partenza:** (empty field)
  - Porto Partenza:** (empty dropdown menu)
  - Approdo presunto:**
  - Area Approdo:** (empty field)
  - Porto Approdo:** (empty dropdown menu)
  - Data Sbarco:** (empty field)



Thanks to the direct connection with the BMM network, the alert is notified to the whole BMM community through the Italian Interministerial PN, and reinforced monitoring including satellite SAR acquisitions are requested to military and civilian authorities



The screenshot shows the 'Italian Interministerial Web Portal' interface. A modal window titled 'Event...' is open, displaying detailed information for an event. The event details include:

- ExpectedDepartureData: 27/04/2012 - 12:00:00
- DeparturePort: -
- DepartureDate: -
- ExpectedArrivalData: -
- ArrivalPort: -
- ArrivalDate: -
- NextPort: -
- EventType: EW
- Note: Intelligence sources have reported the presence, in the suex canal, of the liberialn-flagged cargo ship MVF1 which sailed toward spain port,
- ArrivalArea: -
- DepartureArea: -
- SightingArea: -
- Checks: -
- RescuesDate: -
- EventStatus: C
- EmergencyType: -
- Meteo: -
- Activity: -
- CrnEventNumber: GESTIONE\_EVENTI\_JAV
- AlarmLatitude: 33.751667
- AlarmLongitude: 29.984167
- DisserationDate: -
- ClosureEventDate: 27/04/2012 - 11:12:03
- EventCode: 270412-PS-2
- ShipID: 57176
- Name: MVF1
- IMO: -
- MMSI: -
- CallSign: -
- Flag: XXXX
- Date: 30/04/2012 - 21:00:00
- Latitude: 36.983334
- Longitude: 17.986667

In the background, a table lists events with columns: reData, departurePort, departureDate, and expectedArrivalData. One event is visible:

reData	departurePort	departureDate	expectedArrivalData
	SFAX ABADAN	17/04/2012 - 07:15:	N

The main page also features a 'Web Portal' header with a European Union flag, navigation tabs (Documentation, EU Web Portal, BMM COP Test, Chat, PN CS Status), and a list of notes including 'TEST-1 del 17/04/2012' and several entries about MVF1.





USE CASE 3

*Pedro y Nines VIII, a Spanish vessel, sends an EPIRB emergency message. SP SASEMAR notifies the emergency to the whole BMM community and coordinate SAR operations.*

*Thanks to the BMM service federation, law enforcement authorities diverts their assets in order to support the SAR operation.*

Pedro y Nines VIII send an EPIRB emergency message (unknown position). SP SASEMAR notifies the emergency to BMM community.





IT GdF notifies that a patrolling aircraft diverted to survey Pedro Y Nines VIII sea area, has detected the M/V Pedro Y Nines VIII. The corresponding updated position is injected in the Maritime Picture through the Italian Interministerial Primary Node.



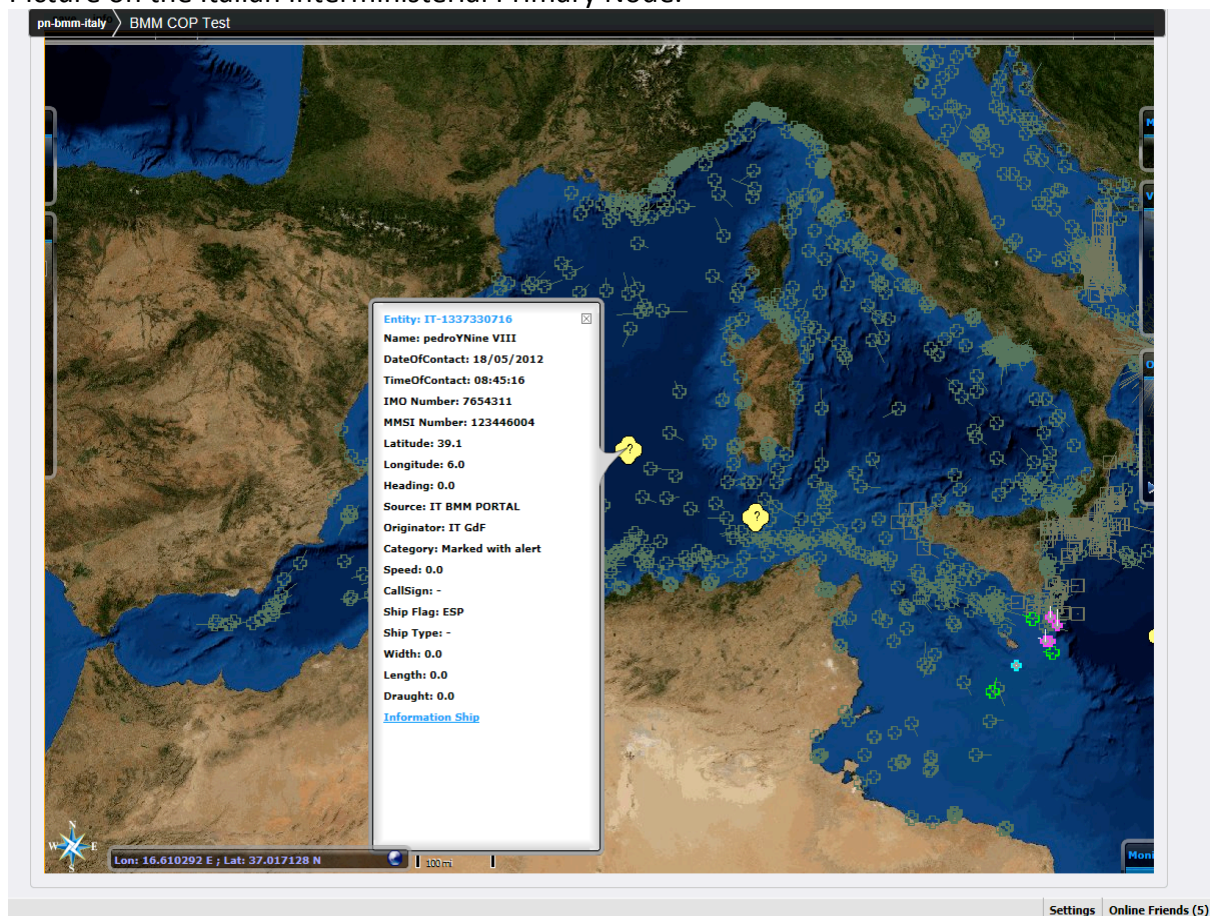
The screenshot shows the 'Italian Interministerial Node Web Portal' interface. A 'Track' modal window is open, displaying the following information:

- Track Information:**
  - Name: pedroYNine VIII
  - ImoNumber: insert imoNumber
  - MmsiNumber: insert mmsiNumber
  - CallSign: insert callSign
  - Flag: [Dropdown]
  - Length: 0.0
  - Width: 0.0
  - Type: [Dropdown]
  - Draught: 0.0
  - Originator: IT GdF
  - Source: IT BMM PORTAL
  - Classification: insert classification
  - Detail: insert detail
  - Category: Marked with alert
- Position Information:**
  - Altitude: 0.0
  - Latitude: 39.1
  - Longitude: 6.0
  - CourseOverGround: 0.0
  - Heading: 0.0
  - RateOfTurn: 0.0
  - SpeedOverGround: 0.0
  - Date: 18/05/2012 - 08:45:16
- Arrival and Departure Information:**
  - Arrival Name: insert name
  - Arrival Date: insert date
  - Arrival Country: insert country
  - Departure Name: insert name
  - Departure Date: insert date
  - Departure Country: insert country

Buttons at the bottom of the form include 'Use GIS to change position', 'Save', and 'Cancel'. The background shows a table with columns for 'id', 'name', 'altitude', 'latitude', and 'lon'.



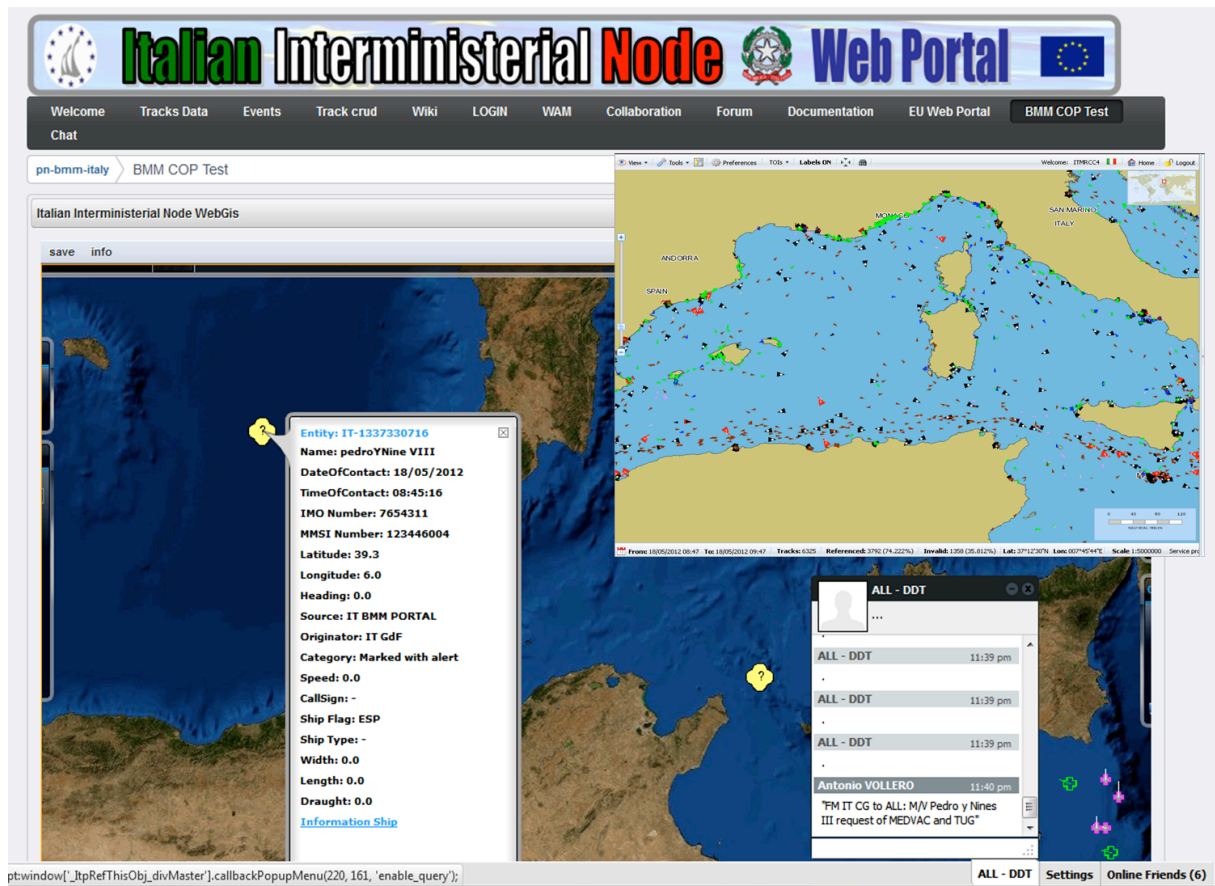
The updated position and ship information on Pedro Y Nines VIII are shown in the Maritime Picture on the Italian Interministerial Primary Node.





The Italian Coast Guards report the Pedro Y Nines VIII information on its VTMIS system and manage to establish a voice communication session with Pedro Y Nines VIII.

The Italian Coast Guards then notify to all the BMM community that a VHF communication was established with the Pedro Y Nines VIII, and that accordingly, MEDVAC and TUG services are requested.



The screenshot displays the 'Italian Interministerial Node Web Portal' interface. The main content area features a map of the Mediterranean region with a detailed information popup for a specific entity. The popup contains the following data:

- Entity: IT-1337330716
- Name: pedroYNine VIII
- DateOfContact: 18/05/2012
- TimeOfContact: 08:45:16
- IMO Number: 7654311
- MMSI Number: 123446004
- Latitude: 39.3
- Longitude: 6.0
- Heading: 0.0
- Source: IT BMM PORTAL
- Originator: IT GdF
- Category: Marked with alert
- Speed: 0.0
- CallSign: -
- Ship Flag: ESP
- Ship Type: -
- Width: 0.0
- Length: 0.0
- Draught: 0.0
- Information Ship

Overlaid on the bottom right of the map is a chat window titled 'ALL - DDT'. The chat history shows several messages from 'ALL - DDT' at 11:39 pm, followed by a message from 'Antonio VOLLERO' at 11:40 pm: "FM IT CG to ALL: M/V Pedro y Nines III request of MEDVAC and TUG".





The Spanish SASEMAR notifies that an helicopter and a vessel will be sent to rescue Pedro Y Nines VIII



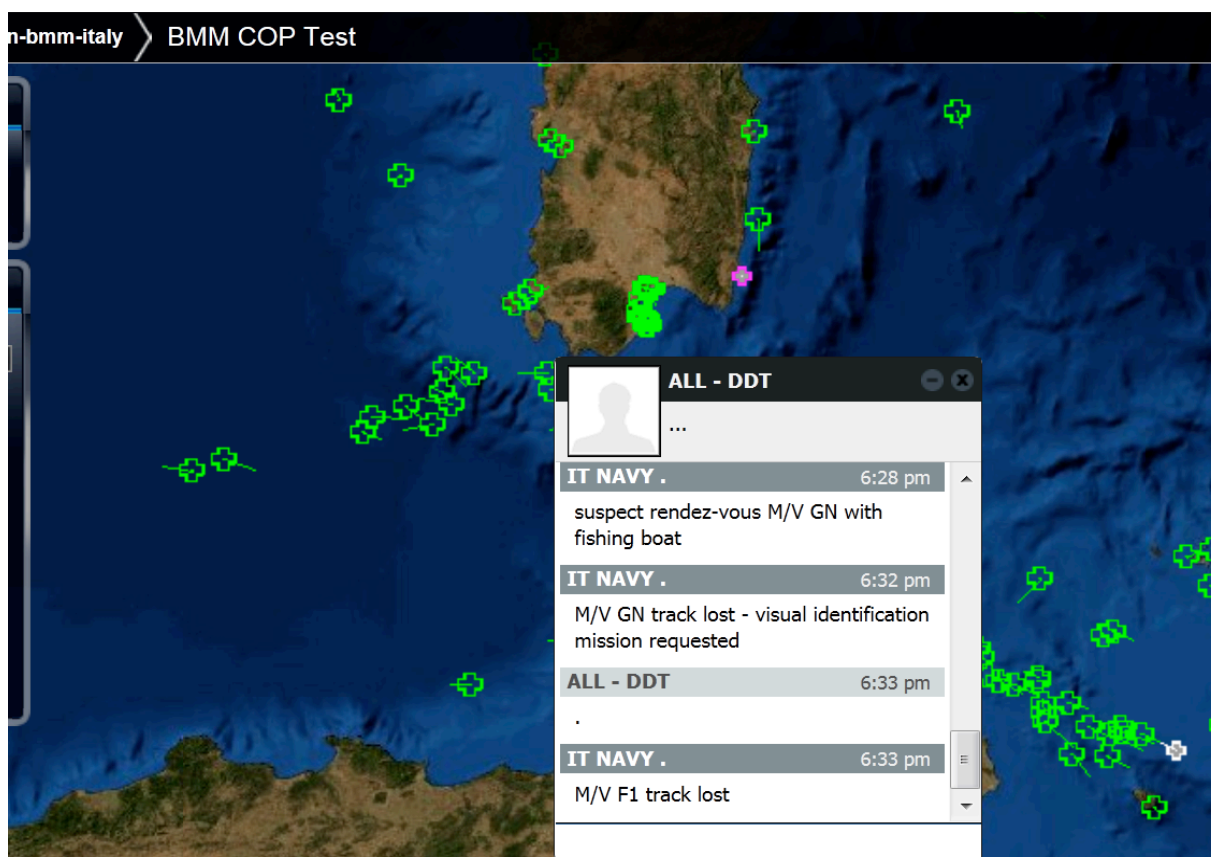
IMPROVING AWARENESS ON SHIPS OF INTEREST

USE CASE 1

*After a diversion maneuver and switching off the AIS the M/V F1 is lost on the AIS/Radar Picture.*

*Thanks to the BMM services federation, a Naval Patrol active in the area gets a potential contact of the M/V F1 track. IT GdF commands an Air Patrol active in the area to survey the potential "F1" ship. Track is visually identified as the MV F1. Identification is published on SBCMP and shared within the BMM community.*

IT Navy notifies that M/V F1 contact is lost on the Maritime Picture because of a probable diversion maneuver and AIS switch off. IT Navy orders a naval patrol active in the area to survey the area in order to identify potential non cooperative ships





An Italian GDF Maritime Patrol Aircraft locates by visual identification the M/V GOODNOSE.



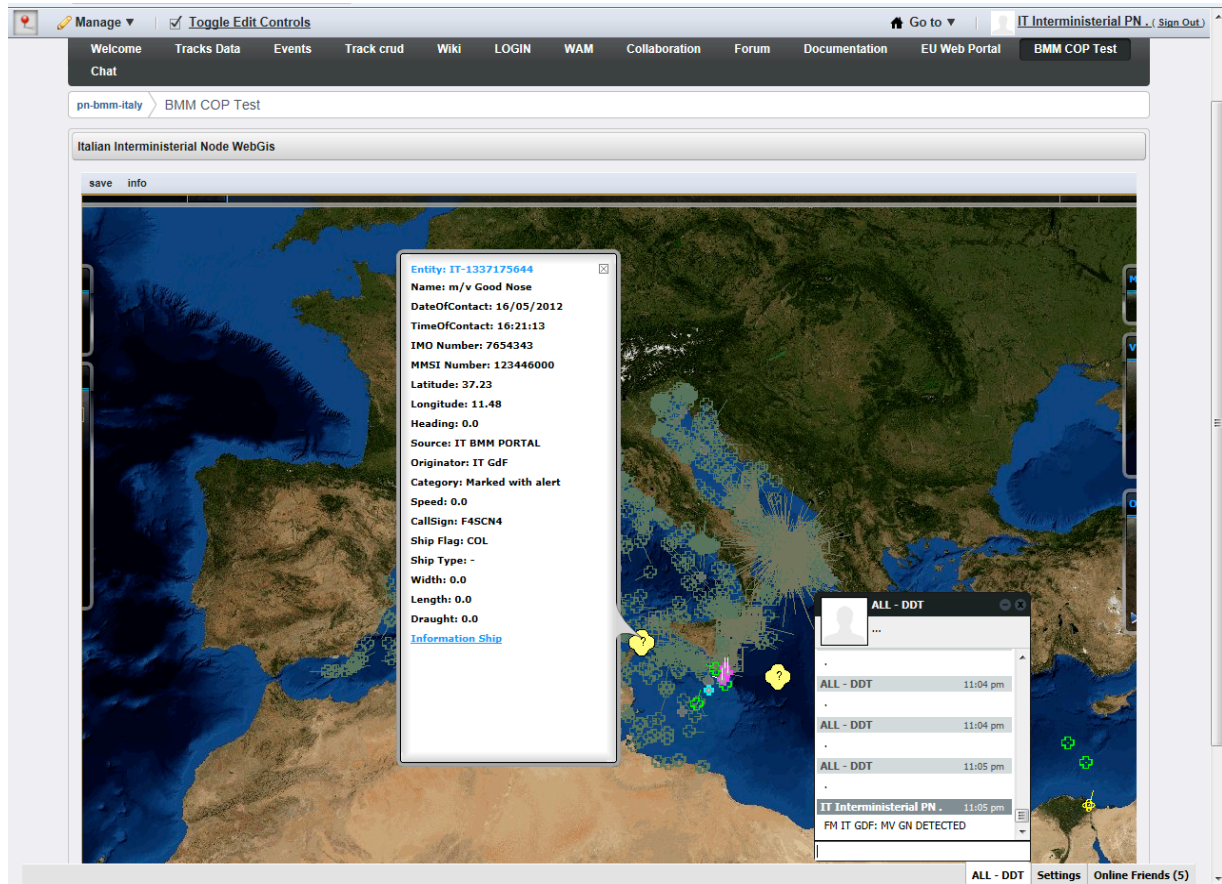
The screenshot shows the 'Italian Interministerial Node Web Portal' interface. A 'Track' modal window is open, displaying the following information:

- Track Information:** Name: m/v Good Nose; ImoNumber: 7654343; MmsiNumber: 123446000; CallSign: F4SCN4; Flag: COL; Length: 0.0; Width: 0.0; Draught: 0.0; Type: (dropdown); Originator: IT GdF; Source: IT BMM PORTAL; Classification: insert classification; Detail: insert detail; Category: Marked with alert.
- Position Information:** Altitude: 0.0; Latitude: 37.23; Longitude: 11.48; CourseOverGround: 0.0; Heading: 0.0; RateOfTurn: 0.0; SpeedOverGround: 0.0; Date: 16/05/2012 - 16:21:13.
- Arrival/Departure:** Name: insert name; Date: insert date; Country: insert country.

The background shows a table of tracks with columns for 'id', 'name', 'altitude', 'latitude', and 'lon'. The entry for 'm/v Good Nose' is highlighted.



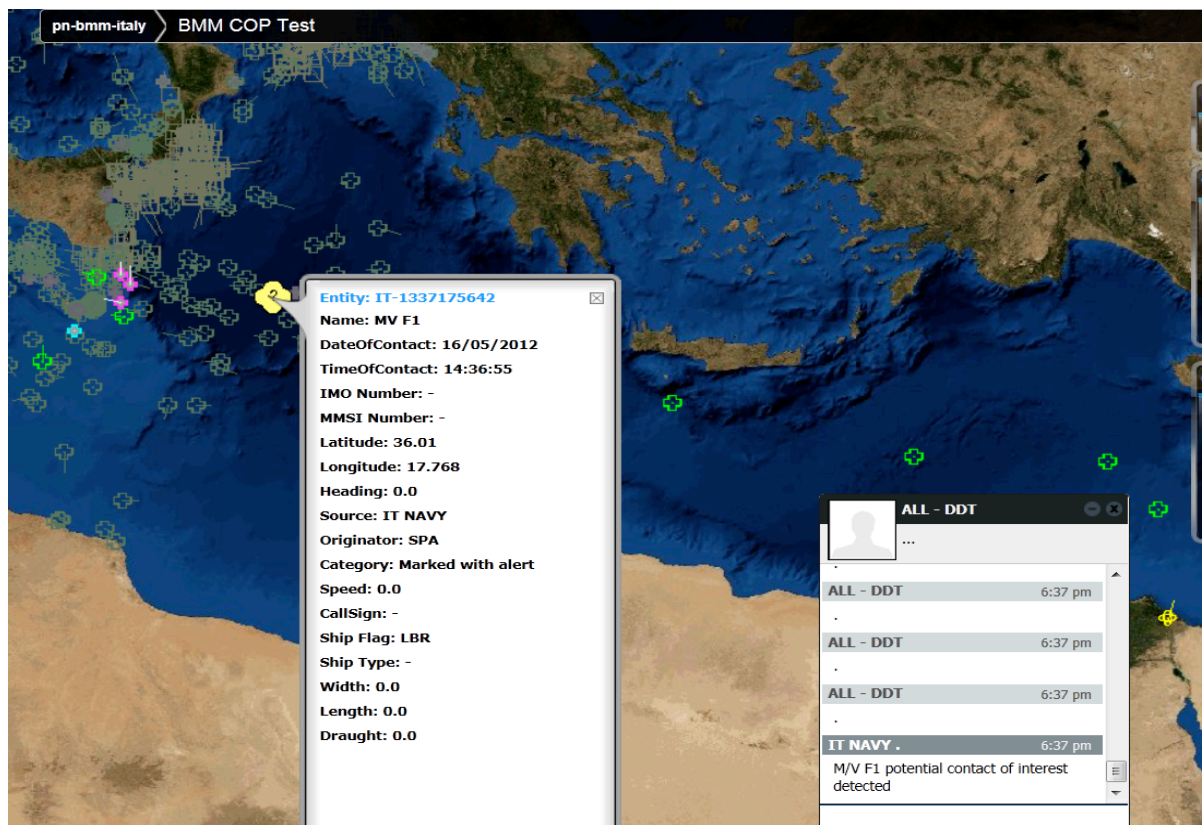
The Greek Coast Guard provides the last known position of the M/V GOODNOSE obtained by the LRIT reporting systems. However after 5 days, the M/V GOODNOSE changes its Basic Id data, therefore the PT GNR notifies that the M/V GOOD NOSE contact is lost and determines the expected time to reach Portuguese waters in about 3 days.





After 10 hours, IT Navy notifies to the BMM community that a contact of interest matching with the M/V F1 features and voyage data has been detected by the Maritime Patrol Vessel.

A visual identification mission is requested through a MPA of the Italian GdF in order to confirm identification.







The MPA (ATR42) of the Italian Guardia di Finanza, on operation in area is diverted to survey the potential contact of interest of the M/V F1. The visual identification is successful and the identity of the M/V F1 is confirmed to the C4I operational centre of the Guardia di Finanza, which injects the information in the BMM Maritime Picture through the Italian Interministerial Primary Node.





The updated identification and position of the M/V F1 is notified by the Italian Interministerial PN to the BMM Community. Italian MOI requests continuous monitoring and confirms suspect involvement of the M/V F1 in illegal activities



The screenshot displays the 'Italian Interministerial Node Web Portal' interface. At the top, there is a navigation menu with options like 'Welcome', 'Tracks Data', 'Events', 'Track crud', 'Wiki', 'LOGIN', 'WAM', 'Collaboration', 'Forum', 'Documentation', 'EU Web Portal', and 'BMM COP Test'. Below the menu, a search bar contains 'pn-bmm-italy' and 'BMM COP Test'. The main content area is titled 'Italian Interministerial Node WebGis' and features a satellite map of the Mediterranean Sea. A data popup window is open over the map, displaying the following information:

- Entity: IT-1337175642
- Name: MV F1
- DateOfContact: 16/05/2012
- TimeOfContact: 14:36:55
- IMO Number: -
- MMSI Number: -
- Latitude: 36.01
- Longitude: 17.7
- Heading: 0.0
- Source: IT GDF
- Originator: IT GDF
- Category: Marked with alert
- Speed: 0.0
- CallSign: -
- Ship Flag: LBR
- Ship Type: -
- Width: 0.0
- Length: 0.0
- Draught: 0.0

Overlaid on the map is a chat window titled 'ALL - DDT' with a list of messages:

- IT Interministerial PN . 11:06 pm
- IT Interministerial PN . 11:06 pm
- IT Interministerial PN . 11:07 pm
- IT Interministerial PN . 11:07 pm
- FM IT GDF: MV F1 LOCATED AND IDENTIFIED

At the bottom of the chat window, it shows 'ALL - DDT', 'Settings', and 'Online Friends (5)'.



USE CASE 2

MT AF detects a suspected ship on its own national back-end system.

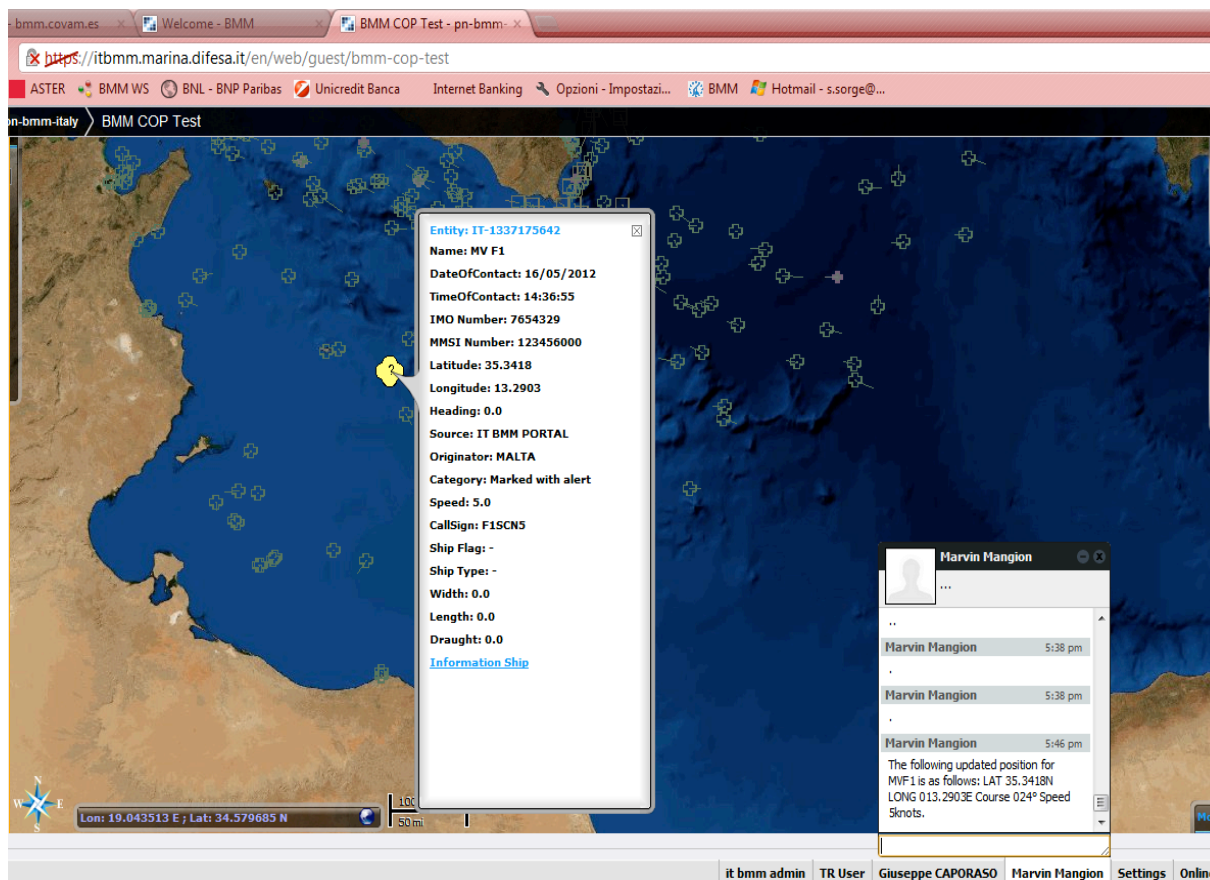
Updated positions are inserted on the SBCMP through a simple web portal access.

The Malta Armed Forces detect an update of the M/V F1 heading towards Lampedusa, and injects the new position in the Maritime Picture through the Italian Interministerial Primary Nodes.





Malta AF notifies the localisation and identification of the M/V F1 to the BMM community. The Italian Ministry of Interior updates the M/V F1 information through the Italian PN.







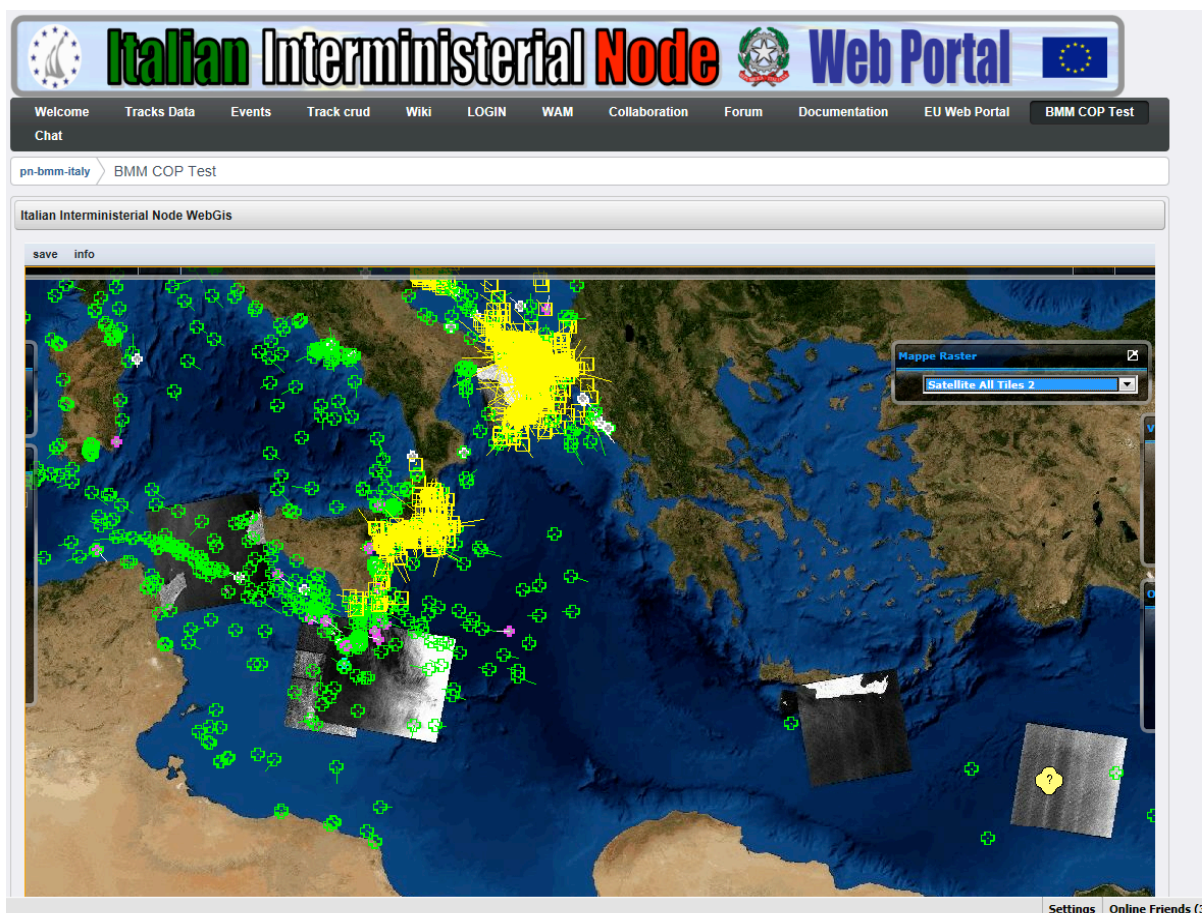
EXPLOITING SATELLITE ASSETS

USE CASE 1

Thanks to the direct connection to the BMM Network, IT ASI provides satellite images on Suez Channel, on the Sicily Channel and in the Eastern Med area where no coverage from terrestrial sensors is available.

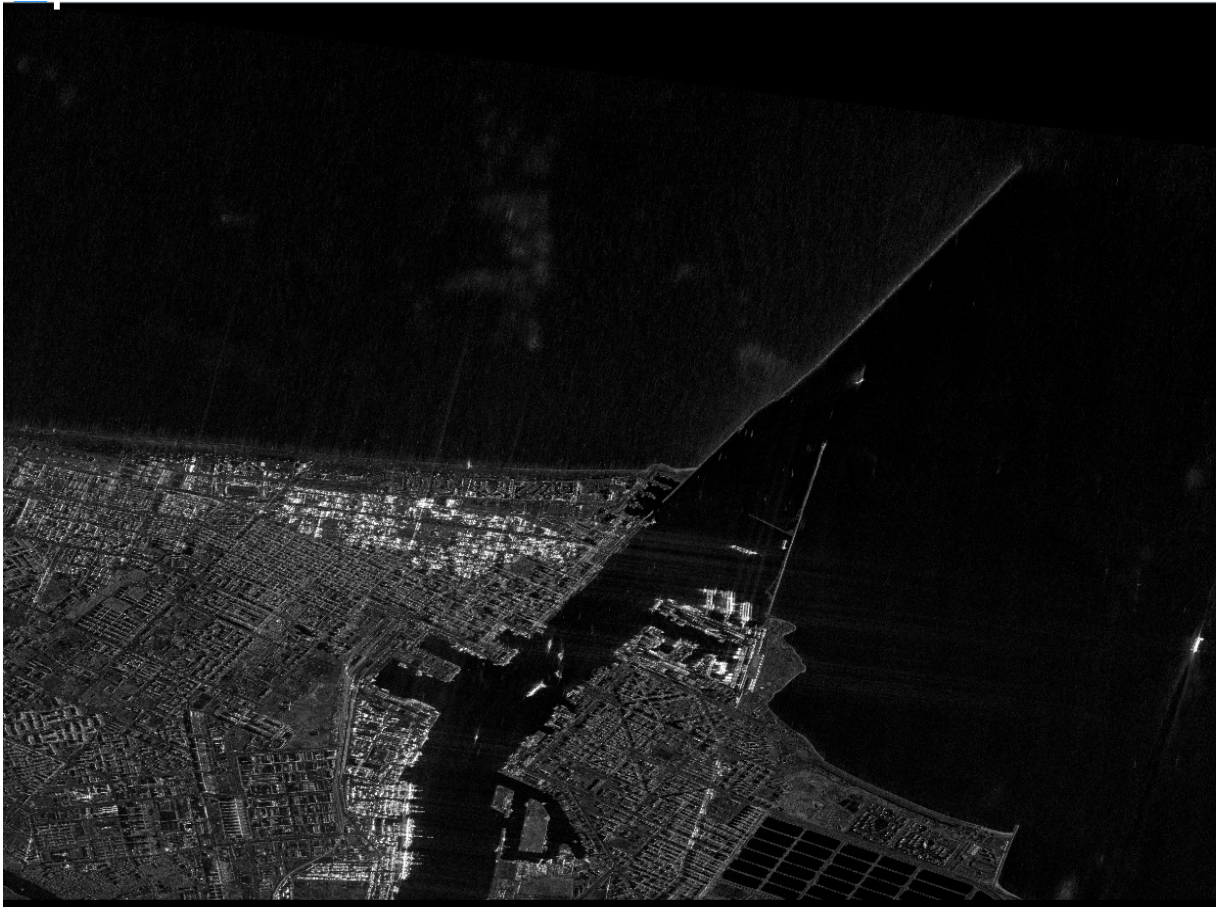
Thanks to the Ship Detection Services, ships of interest are detected and located

The Italian Space Agency (ASI) provides Satellites Radar Images over the areas of interest through the Italian PN. Available SAR images are processed and detected ships are fed to the Maritime Picture.





The Italian Ministry of Interior analyses a SAR image of the Suez Channel (Port Said) area showing a ship with features compatible with the M/V F1. This confirms the information received from the intelligence report.

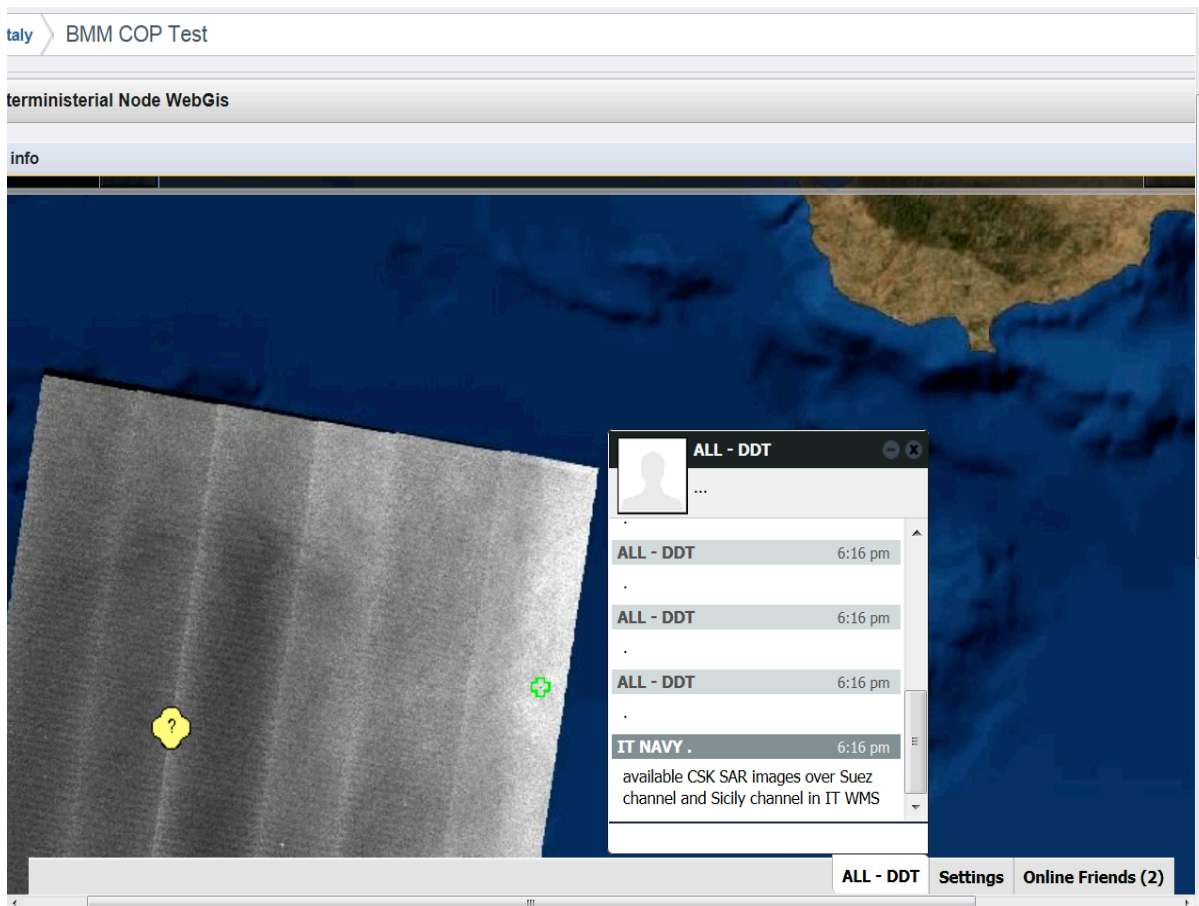




# BlueMassMed Final Report – TWG



The last LRIT report position of the M/V F1 provided by Spanish SASEMAR is correlated to a Ship Detection Report coming from the provided SAR images. The M/V F1 position is correspondingly updated on the Maritime Picture.





DETECTING ILLEGAL ACTIVITIES

USE CASE 1

SP (DAVA) Maritime Patrol Aircraft locates M/V GN during a rendezvous with a fishing boat, visually identifies the suspected ships and take pictures of drug transfer.

Pictures are transferred to the BMM community and automatically associated to the suspect ships as proofs of the illegal activities

The SP DAVA locates through a Maritime Patrol Aircraft the M/V GOODNOSE south of the Spanish coastline and injects the ship position in the maritime picture through the SP Armada Primary Node







The SP DAVA notifies that the M/V GOODNOSE had a rendez-vous with the fishing vessel TRAWLER 2 and a transfer occurred among the two ships. The rendez-vous is shown and recorded in the Maritime Picture as an investigation evidence.



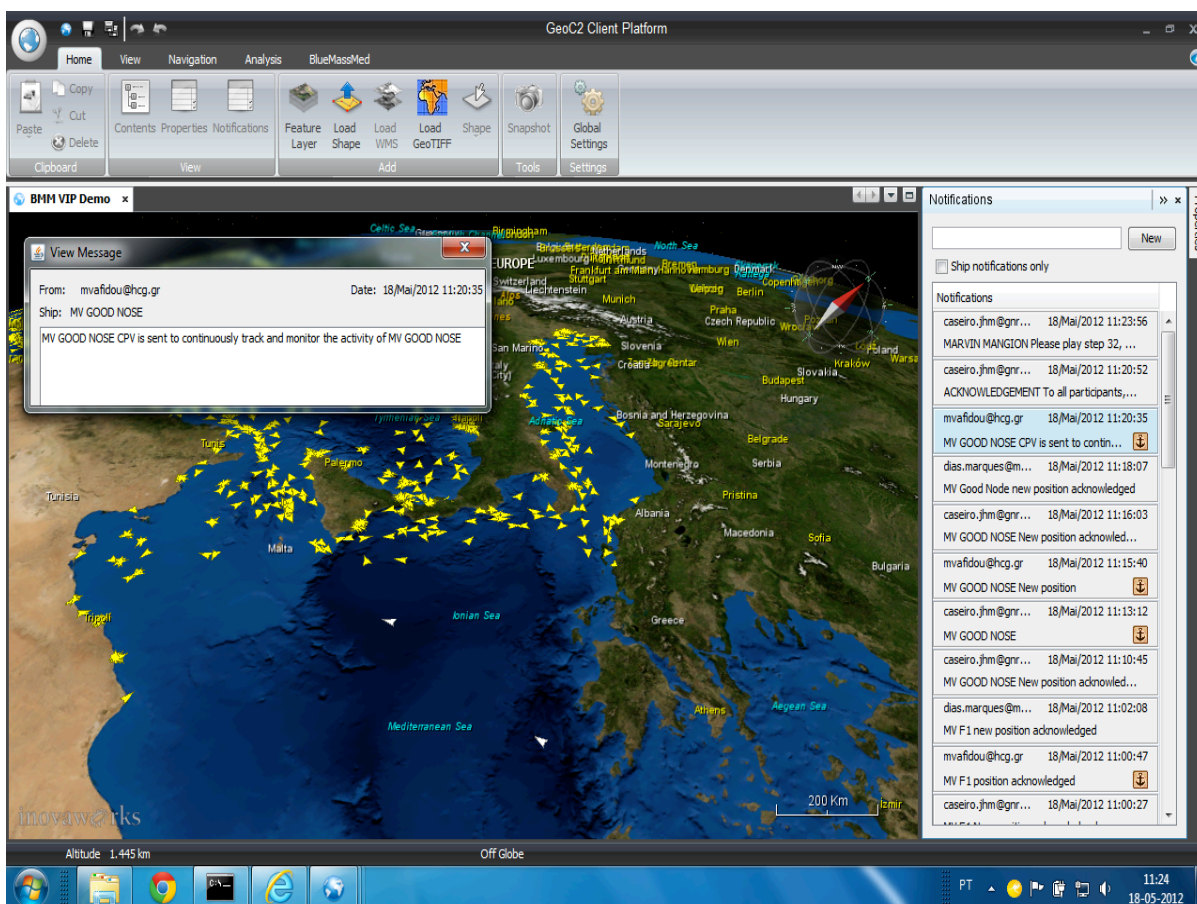


USE CASE 2

*MV GN reaches the Port of Pyreus, where she prepares to off load 25.000 Tons of bulk sugar and cocaine*

*Thanks to the information collected through the BMM network, GR authorities have enough evidence to conduct police operation. At the end, a report on this operation is published on BMM to inform the BMM community on the police operation results.*

When the M/V GOODNOSE approaches the Greek territorial waters, a GREEK COAST GUARD vessel is sent to monitor and perform the interdiction operation. The ship is followed on the Maritime Picture by all BMM users until the operation is closed by the Greek Authorities at the Port of Piraeus.



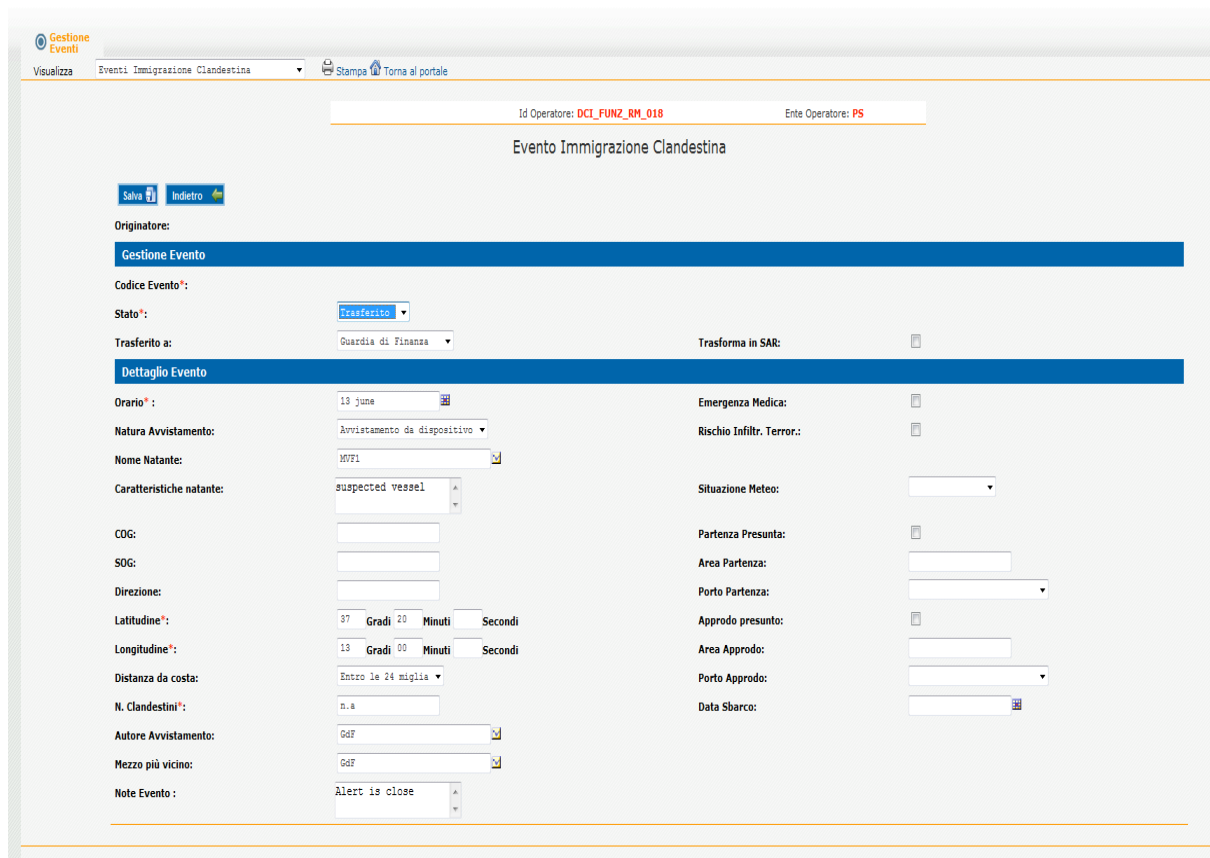


USE CASE 3

Thanks to the evidence collected through the BMM network, the Italian Ministry of Interior closes the alert and provide the authorized BMM partner with information collected during the interdiction

The Italian Ministry of Interior updates the alert and starts an interdiction operations as soon as the M/V F1 enters the Italian territorial waters near the Lampedusa Island.

Gestore Eventi

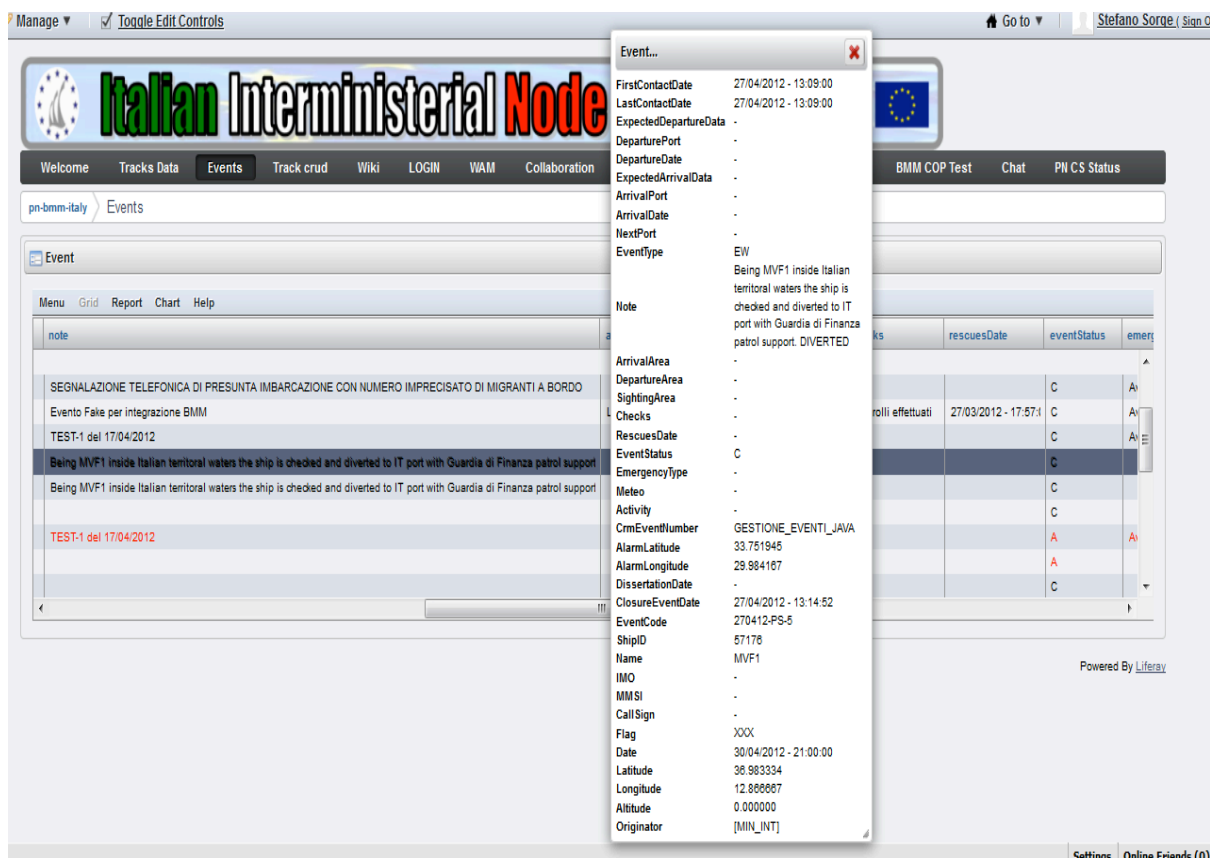


The screenshot shows the 'Gestore Eventi' interface with the following details:

- Header:** Gestione Eventi, Visualizza, Eventi Immigrazione Clandestina, Stampa, Torna al portale. Id Operatore: DCI\_FUNZ\_RM\_018, Ente Operatore: PS.
- Event Title:** Evento Immigrazione Clandestina
- Buttons:** Salva, Indietro
- Originatore:** Gestione Evento
- Codice Evento\*:** (empty)
- Stato\*:** Trasferito
- Trasferito a:** Guardia di Finanza
- Trasforma in SAR:** (checkbox)
- Dettaglio Evento**
- Orario\*:** 13 June
- Natura Avvistamento:** Avvistamento da dispositivo
- Nome Natante:** M/F1
- Caratteristiche natante:** suspected vessel
- COG:** (empty)
- SOG:** (empty)
- Direzione:** (empty)
- Latitudine\*:** 37 Gradi 20 Minuti Secondi
- Longitudine\*:** 13 Gradi 00 Minuti Secondi
- Distanza da costa:** Entro le 24 miglia
- N. Clandestini\*:** n.a
- Autore Avvistamento:** GdF
- Mezzo più vicino:** GdF
- Note Evento:** Alert is close
- Emergency/Status Fields:** Emergenza Medica, Rischio Infiltr. Terror., Situazione Meteo, Partenza Presunta, Area Partenza, Porto Partenza, Approdo presunto, Area Approdo, Porto Approdo, Data Sbarco.



The alert is automatically injected on the BMM network through the Italian PN and all the authorised BMM partners are provided with information collected during the interdiction operation.



The screenshot shows the 'Italian Interministerial Node' web interface. A popup window titled 'Event...' displays the following metadata for an event:

- FirstContactDate: 27/04/2012 - 13:09:00
- LastContactDate: 27/04/2012 - 13:09:00
- ExpectedDepartureData: -
- DeparturePort: -
- DepartureDate: -
- ExpectedArrivalData: -
- ArrivalPort: -
- ArrivalDate: -
- NextPort: -
- EventType: EW
- Note: Being MVF1 inside Italian territorial waters the ship is checked and diverted to IT port with Guardia di Finanza patrol support. DIVERTED
- ArrivalArea: -
- DepartureArea: -
- SightingArea: -
- Checks: -
- RescuesDate: -
- EventStatus: C
- EmergencyType: -
- Meteo: -
- Activity: -
- CrnEventNumber: GESTIONE\_EVENTI\_JAVA
- AlarmLatitude: 33.751945
- AlarmLongitude: 29.984187
- DissertationDate: -
- ClosureEventDate: 27/04/2012 - 13:14:52
- EventCode: 270412-PS-5
- ShipID: 57178
- Name: MVF1
- IMO: -
- MMSI: -
- Call Sign: -
- Flag: XXXX
- Date: 30/04/2012 - 21:00:00
- Latitude: 38.983334
- Longitude: 12.888667
- Altitude: 0.000000
- Originator: [MIN\_INT]

The background interface includes a navigation menu with 'Events' selected, a list of event notes, and a table with columns for 'rescuesDate', 'eventStatus', and 'emerg'. The user 'Stefano Sorace' is logged in.