ERVO
EUROPEAN RESEARCH VESSELS OPERATORS

13° ERVO MEETING
ORISTANO, 10-11 MAY 2011

A New Marine Research Platform in the frame of "PARFAMAR" project

Ennio Marsella

PARFAMAR Project Scientific Head

CNR- Research Institution

The NRP Flag projects (2010/20

1. Epigenomica (30 M€)
2. Ritmare - ricerca italiana per il mare (450 M€)
3. L'ambito nucleare (39M€)
4. ASTRI – astrofisica con specchi a tecnologia replicante italiana (8M€)
5. La fabbrica del futuro (12 M€)
6. NanoMax (23M€)
7. InterOmics (25 M€)
8. Elettra-Fermi – EUROFEL (45 M€)
9. Super B factory (250M€)
10. SIGMA (80 M€)
11. Satellite ottico per telerilevamento (100 M€)
12. Ricerca e Innovazione tecnologica nei processi di conoscenza,tutela, valorizzazione e sicurezza dei Beni Culturali (30 M€)
13. Cosmo - Skymed II generation (600 M€)
14. IGNITOR (80 M€)

Total = 1.772 M€

The flag PROJECT : "RITMARE"

ITALIAN RESEARCH FOR THE SEA (CNR)

- The project proposes a scientific and technological research devoted to the sea and all its problems with the following key objectives:

-Maritime technologies;

-Technologies for sustainable fisheries;
-Technologies for the sustainable management of coastal areas;
-Establishment of an international network of laboratories around the Mediterranean;
-Adaptation of national research infrastructure including a rationalization of the national fleet of oceanographic research vessels through refitting.

Estimated cost: € 450,000,000 for 5 years
Covered by FOE (Ordinary Fund for Research Institutions)

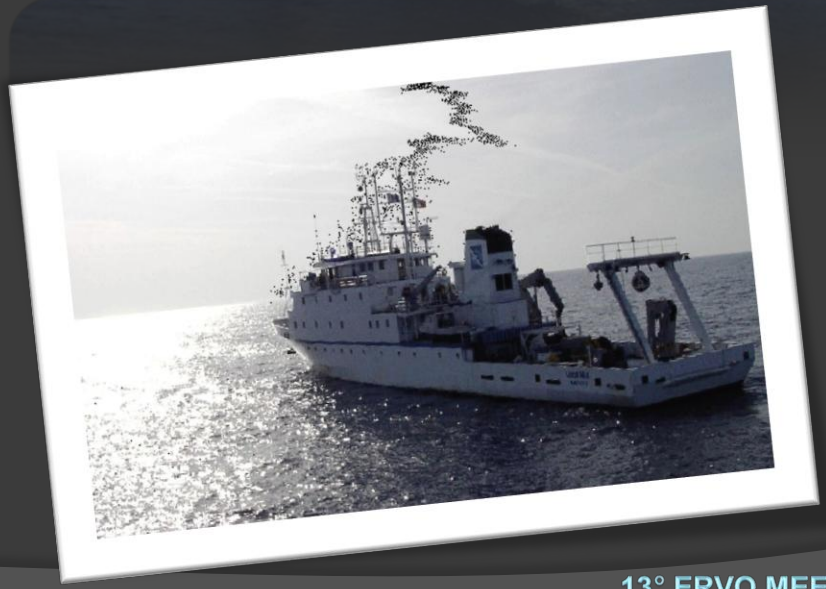
The Italian Research Fleet

- National Research Council, CNR (3 R/Vs e 4 oceanographic boats)
- National Institute of Oceanography and Experimental Geophysics, OGS (1 R/V)
- Institute for Environmental Protection and Research, ISPRA (1 R/V)
- Stazione Zoologica “A. Dohrn” (1 R/V)
- Hydrographic Institute of Marine Navy (3 "white-ships“ dedicated to hydrographic surveying for the scientific community)
- 4 oceanographic boats in regional assignment to ARPA (Campania, Sicily, Emilia Romagna and Tuscany), which are mainly used to carry out monitoring services of coastal waters

URANIA R/V (from eurofleets)

Operator: CNR - National Research Council
Country: Italy

Website:
http://www.cnr.it/sitocnr/UPO/gestione/infoce/navi/UPOnavi.html



Vessel Type: Multipurpose Research Vessel
Vessel Class: Regional
Operational Area: Mediterranean Sea
Endurance: 45 days
Scientist berths: 20
Length: 61.3m

The "Parfamar" constellation

Strengthening of the Research and Training on the marine environment in Southern Italy

MIUR - PROGRAMMA OPERATIVO NAZIONALE "RICERCA E COMPETITIVITÀ" (R&C) 2007-2013

Project n° 1 "Technological Platform for Geophysical and Environmental Marine Surveys" - PITAM.

Project n° 2 "Integrated Systems and Technologies for geophysical and environmental monitoring in coastal-marine areas"- STIGEAC.

Project n° 3 "TEchnology for the *Situational Sea Awareness*"- *TESSA*

Project n° 4 " Study for the environmental protection and the mitigation Anthropogenic Pollution in the Coastal environment of selected areas of Calabria"-AMICUS.

Project n° 5 "Integrated management system for Coastal erosion" - SIGIEC

Project n° 6 "**S**ubmar**I**ne **MU**ltidisciplinary monitoring **S**ystems" - SIMUS

Technological Platform for Geophysical and Environmental Marine Surveys (PiTAM)

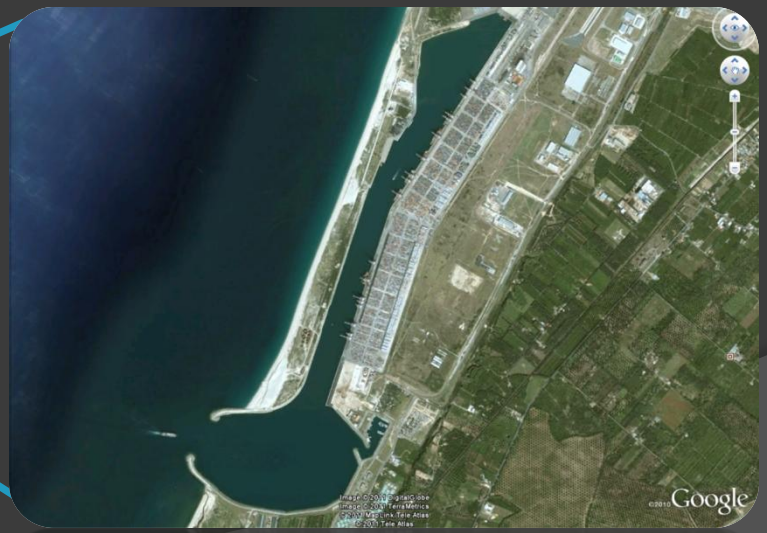
PON Ricerca e Competitività 2007-2013

Project Parners:

- So.Pro.Mar. S.p.A. (capofila)
- Zen Yacht s.r.l.
- Associazione Comitato EVK2-CNR
- CNR-IAMC

Sub-Contractors:

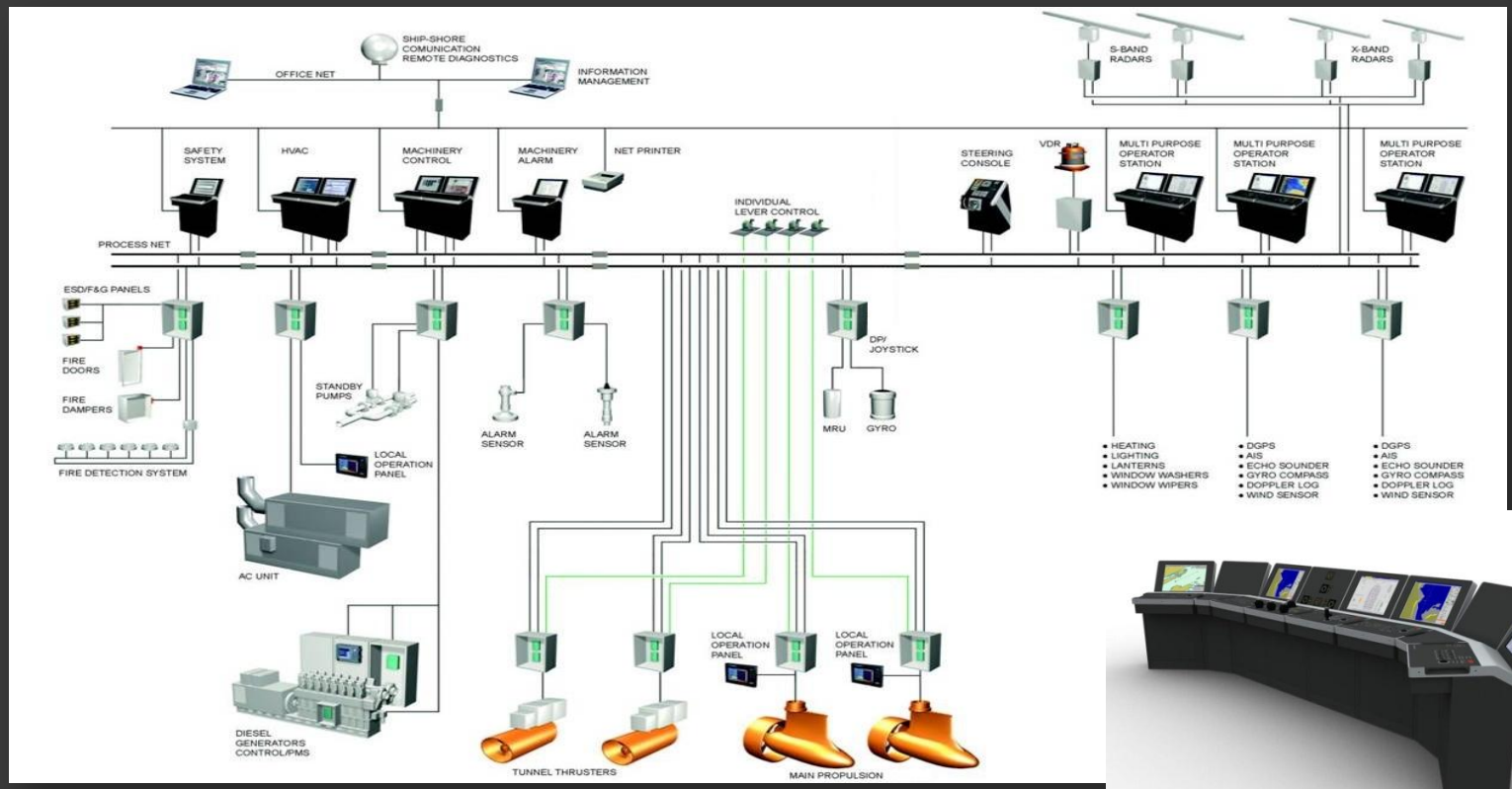
- Tecnimpianti S.p.A.
- Valerio Valla
- Università della Calabria
- Mountain Equipe s.r.l
- Cantieri Navali s.r.l
- Errenavi s.a.s



Geographycal areas:

Main Convergence Areas: Calabria (Reggio, Gioia Tauro), Campania (Naples)

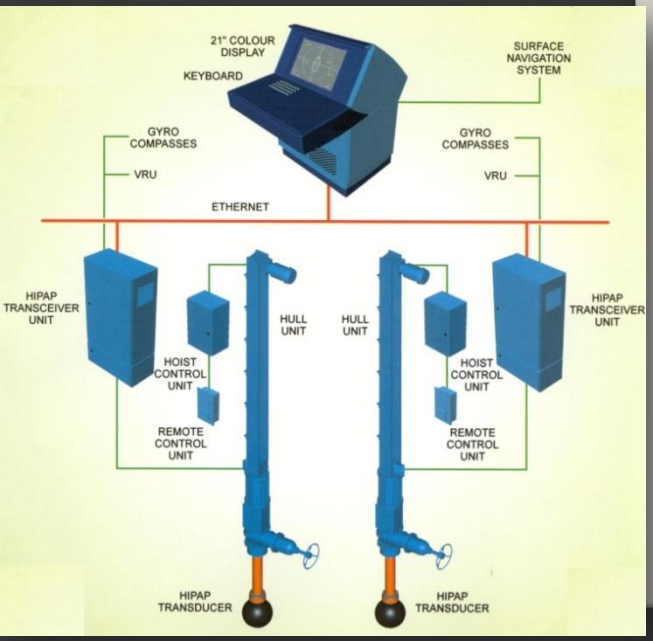
PiTAM project : Integrated Systems

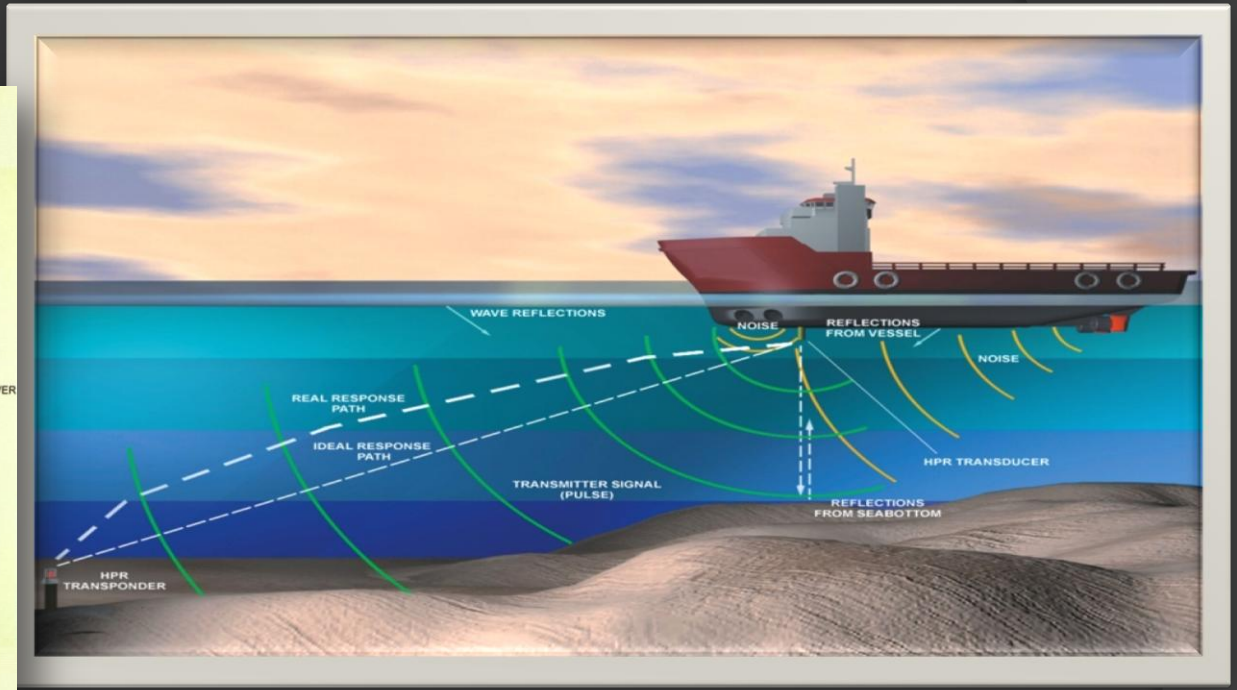


K-Bridge: Navigation System &Rudder control
K-Pos: DP system & joystick
K-Thrust: Control thrust & propulsion (control autopilot)

K-Chief: Marine Automation System & HVAC Automation
K-Safe: Safety Management System & Emergency Closure System

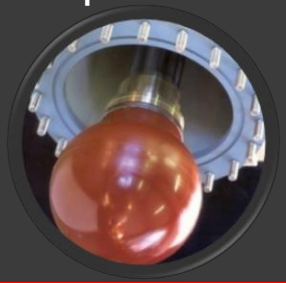
PiTAM project: Positioning System





HiPAP® 500 (High Precision Acoustic Position)

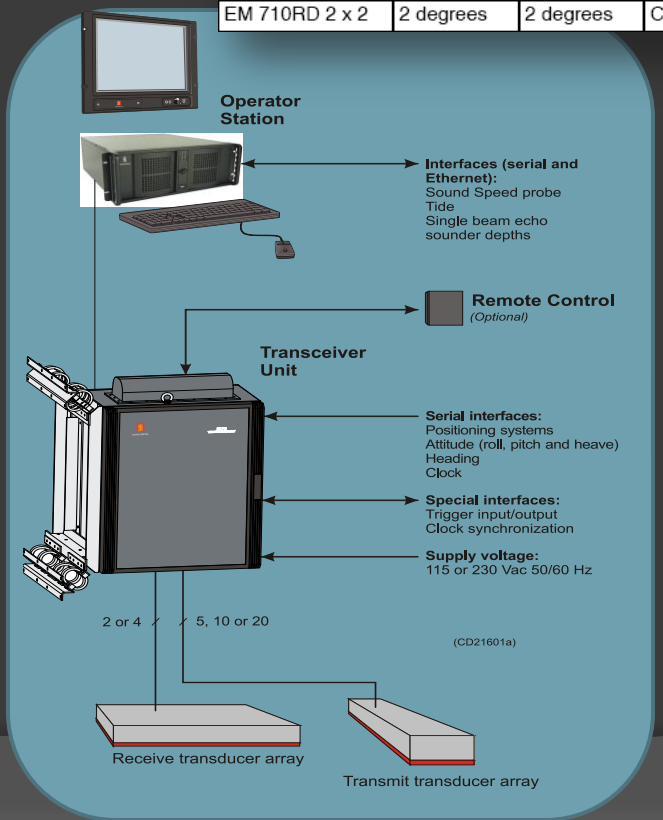
Spherical transducer

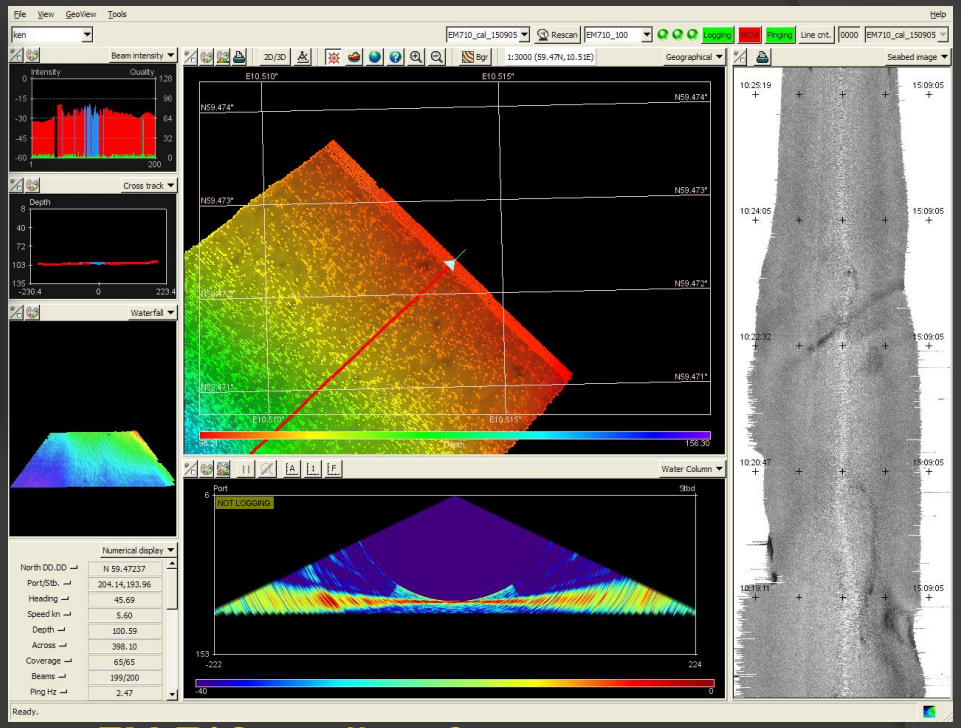


Full coverage with the same high level of accuracy
Range: 1-4000 m
Angular accuracy: 0.2 °
Distance Accuracy : 0.2 m

PiTAM project: Multibeam System (EM710)

Overview of the different EM 710 models			
Model	*Transmit beamwidth*	*Receive beamwidth*	*Transmit waveforms*
EM 710 0.5 x 1	0.5 degree	1 degree	CW + chirp
EM 710S 0.5 x 1	0.5 degree	1 degree	CW
EM 710 1 x 1	1 degree	1 degree	CW + chirp
EM 710S 1 x 1	1 degree	1 degree	CW
EM 710 1 x 2	1 degree	2 degrees	CW + chirp
EM 710S 1 x 2	1 degree	2 degrees	CW
EM 710RD 1 x 2	1 degree	2 degrees	CW short
EM 710 2 x 2	2 degrees	2 degrees	CW + chirp
EM 710S 2 x 2	2 degrees	2 degrees	CW
EM 710RD 2 x 2	2 degrees	2 degrees	CW short

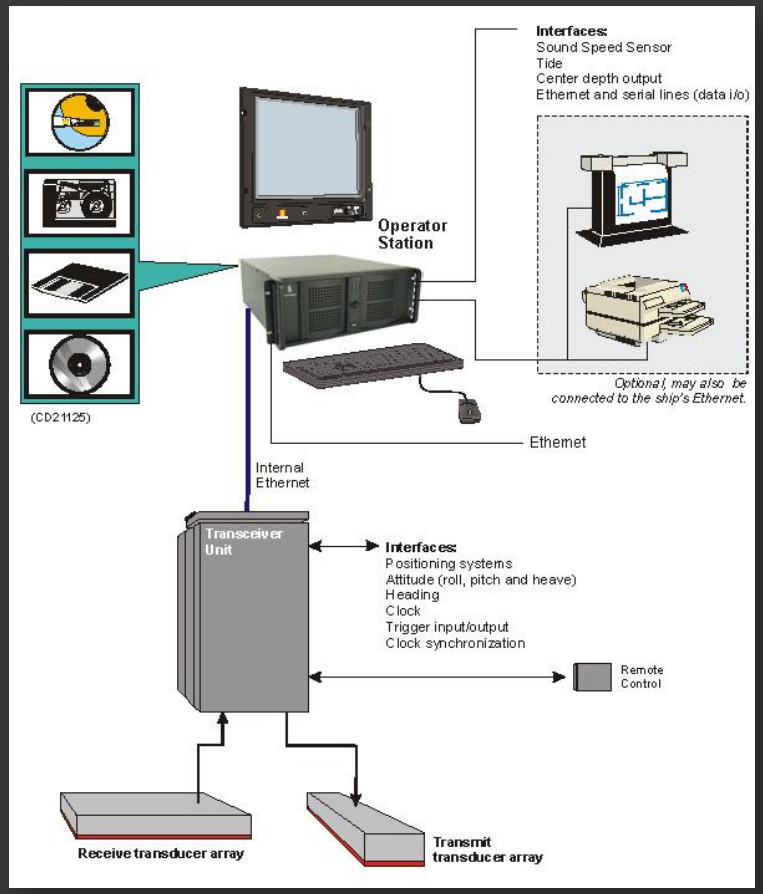




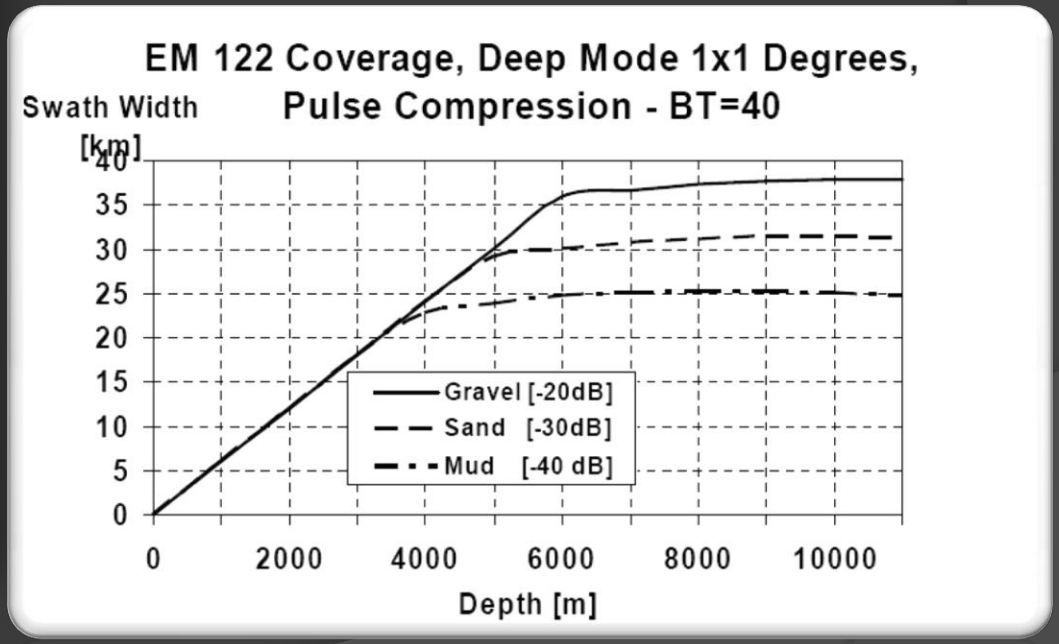
EM 710:medium frequency Multibeam Echo Sounder

Max ping rate: 30 Hz
Number of beams and soundings per ping:
Models 1 ° x 2 ° and 2 ° x 2 °: 128 200 soundings mode beams with High Density
Models 1 ° x 1 ° x 1 ° and 0.5 °: 256 400 soundings mode beams with High Density Double Swath: 512 beams with 800 soundings.

PiTAM project: Multibeam System (EM122)

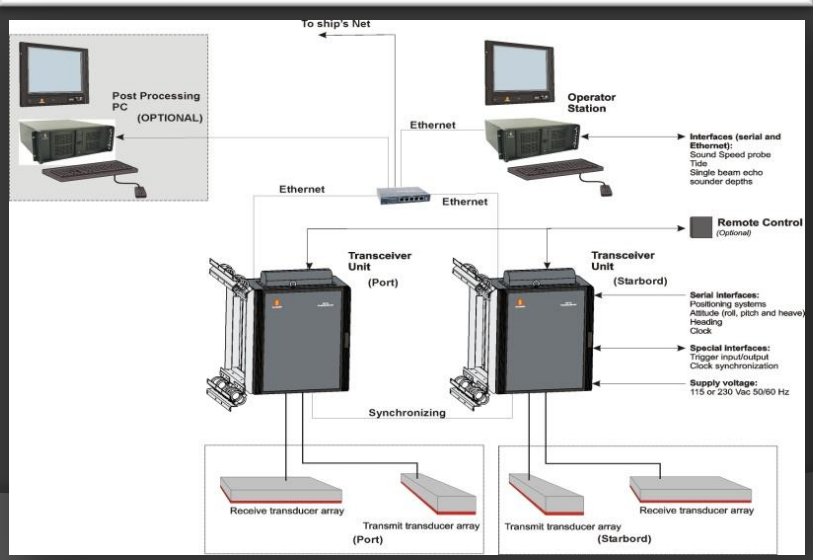


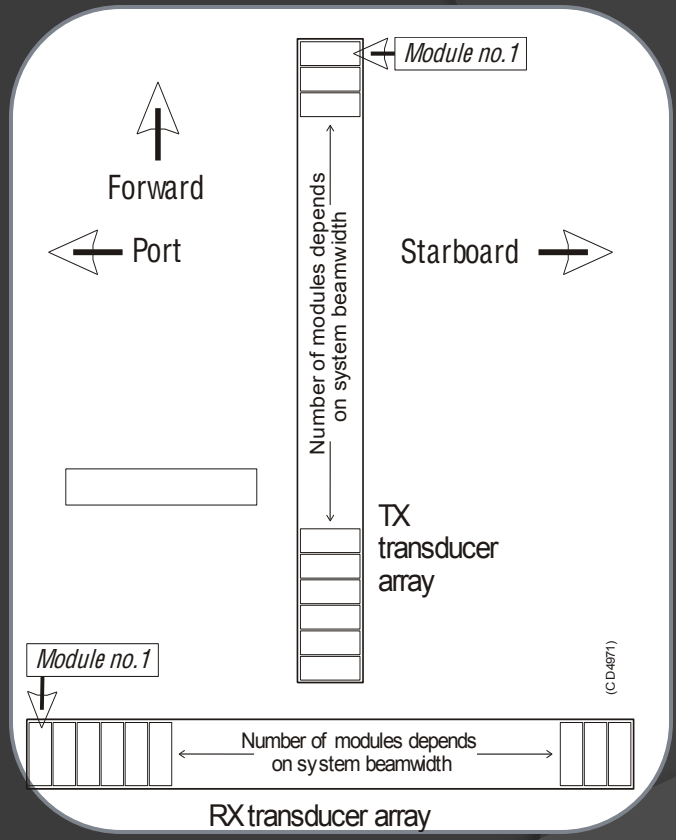
EM 122: low frequency
Multibeam Echo Sounder



PiTAM: Multibeam EM 120 Transducer

Configuration & System Installation

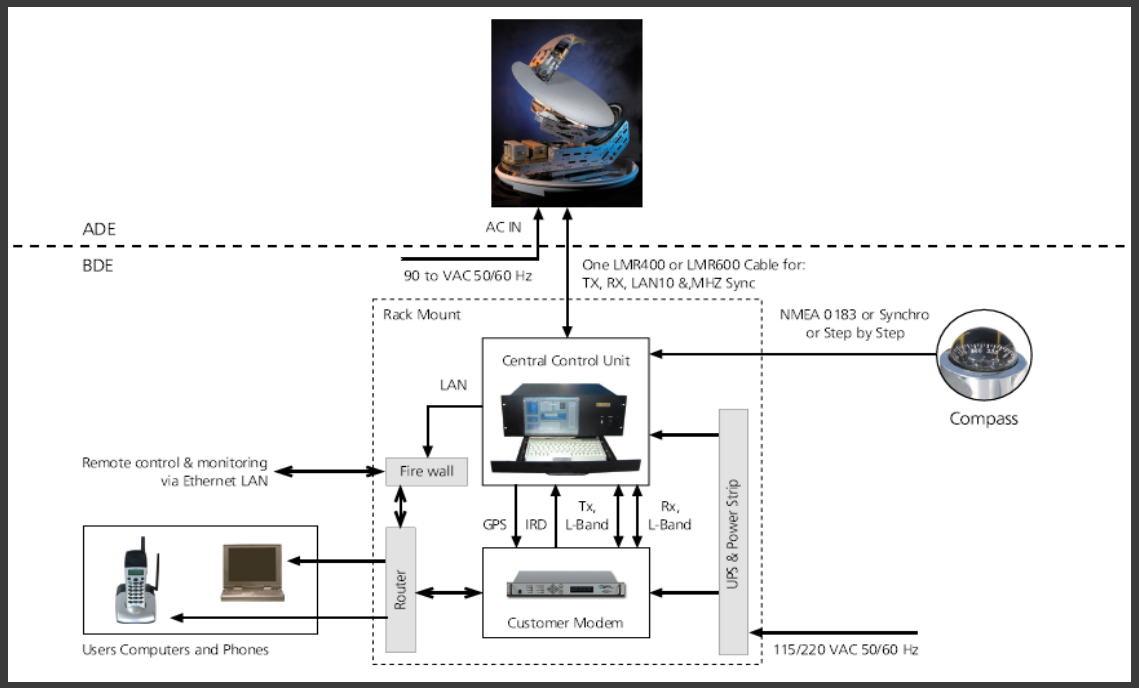




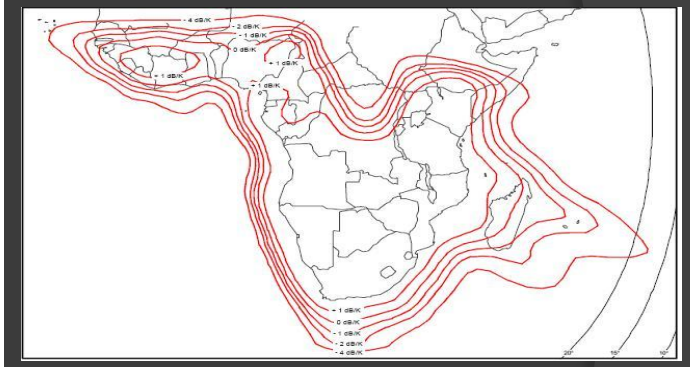
No of modules:

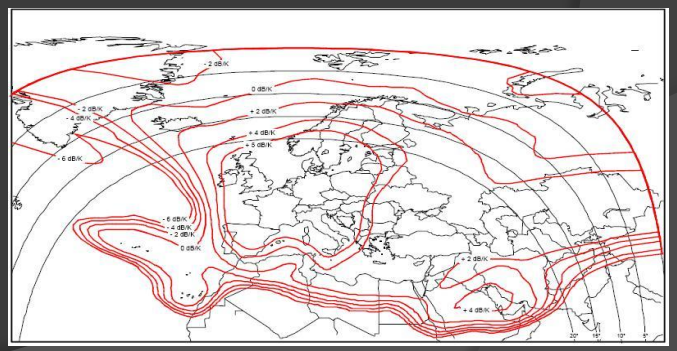
1 degree transmitter system: 48
2 degree transmitter system: 24
1 degree receiver system: 16
2 degree receiver system: 8

PiTAM project: Platform Connectivity



V-Sat Service Coverage KU-Band

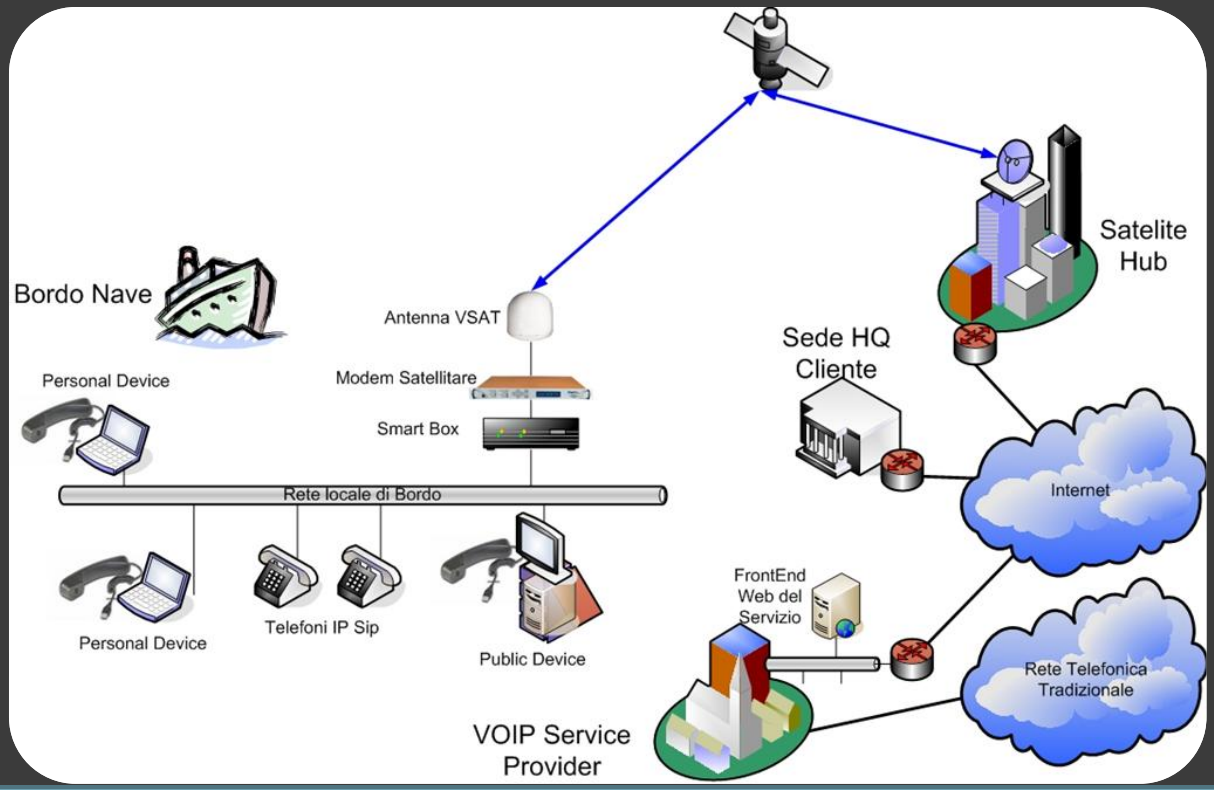




The service provides access to a dedicated satellite fleet belonging to each customer, the total capacity can be shared between the boats belonging to the same fleet and among the various VAS services in ways defined by the customer.

DEDICATED BANDWIDTH - The service, operating only in Europe (Hot Bird 13 °), provides access to satellite bandwidth reserved and guaranteed for each ship

PiTAM project: VOIP Service & Vessel Tracking

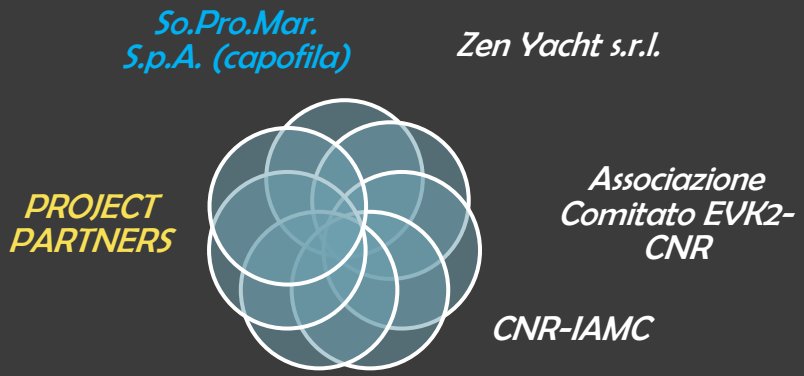


The service can detect the main location data such as Date, Time, Speed, Latitude and Longitude

By Web access (using a user name and password), the position vector map and route navigation are automatically displayed.

Platform Equipments: STIGEAC project

"Integrated Systems and Technologies for geophysical and environmental monitoring in coastal-marine areas".



- The STIGEAC project foresees *Research and Development* actions for a new platform for the acquisition of multidisciplinary (geophysical and environmental) data in marine areas with high operational performances.

- Alignment of the Italian companies with *Research and Development* strategies in the European and international sphere, as prescribed in the framework of the European Community program GMES (Global Monitoring for Environment and Security).

- Critical aspects related to data transmission and remote survey problems, today's key elements in the so-called *early warning* systems and real-time monitoring, will also be considered.

Equipments: STIGEAC project

Integrated Systems and Technologies for geophysical and environmental monitoring in coastal-marine areas.

In particular, the project foresees the creation of:

- An integrated system for the acquisition of morphological data with fixed cable instruments SSS, magnetometer, multi-parametrical drill, vibro-core barrel).
- An integrated system for the acquisition of very high definition seismic data (2D+1, 3D): analysis aimed at innovation of the launching, control and recovery of hydrophones; the air gun shot and acquisition system.
- An integrated system for the launching and recovery of a cable instrument for deep water: analysis for the innovation of the cabling system and data transmission.

Platform Equipments: STIGEAC project

Integrated Systems and Technologies for geophysical and environmental monitoring in coastal-marine areas.

Additional project objectives include all innovations of products and processes that will arise from the upgrades of various ICT sectors.

The connections created include other sectors and end users, like the oil industry or the sea plant engineering industry, which base the main part of their activities on the survey of the sea floors also in view of a sustainable exploitation of environmental resources.

New Builds...."Ideas & Innovation"...

Thank you for your attention!

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