

newsletter

QUARTERLY INFORMATION REPORT FOR THE PRAI LIGURIA
REGIONAL PROGRAM OF INNOVATIVE ACTIONS

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PRAI LIGURIA
Programma
Regionale
di Azioni
Innovative



editorial

**October 7-15, 2006
Genoa**

**Prai-Liguria at
46° Salone Nautico**



The 46th International Nautical Show, organized by the Fiera di Genova S.p.A. and UCINA from October 7 to October 15, 2006, was extremely successful.

The Show represented an important turn for the international leadership of the event, thanks to the 1,650 exhibitors (7% more than in 2005), of which 36% foreign, and of the 2,200 exhibited crafts (up by 9%), 430 in water.

More than 60% of the watercrafts exhibited were rowboats, dinghies and other non-motorized crafts while 76 of them were pleasure watercrafts ranging from 24 to 43 meters in length.

The event counted 324 thousand visitors and amazing was the value of all business deals:

1 billion euros, value corresponding to 30-40% of the annual production of watercrafts in Italy.

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Liguria Region protagonist on Technological Innovation for the Sea at the 46th International Nautical Show

On October 10, 2006 the regional Councilor for Economic Development for the Liguria region, Renzo Guccinelli, presented during a press conference at the 46th Nautical Show some of the most significant projects on technological innovation for the sea, conceived in view of the Regional Program of Innovative Actions (PRAI).

Six of the projects financed by the PRAI were invited to be displayed at stand # U41 of section 'Marina 2 Mondoinvela' of the show, as testimony of the level of research accomplished in our region in the sea technology field. Also presented were the most advanced applications of material in the nautical sector, environment-friendly innovative antifouling devices and a meteorological station for the forecasting of tidal flows.

As Mr. Guccinelli stated: 'From an innovative point of view Liguria is a region of great traditions. In order to further promote such tendency and assure that in the future it may play a leading role on the European and Mediterranean level, we deemed necessary to identify and implement new regional policies to help boost innovative capability of

our businesses starting from knowledge the true strategic asset for businesses in the new millennium'.

It must be remembered that the PRAI, the Regional Program for Innovative Actions, supported by the Liguria Region and focused on the issue 'Regional economy based on knowledge and innovation', aims at two specific goals: draw up regional policies that will help promote economic growth, productivity and innovation processes in the region's businesses; promote the establishment of two high-tech centers in Savona and La Spezia, the former dedicated on issues such as, energy, environment and sustainable development and the latter concentrating in the fields of nautical materials and technologies and naval-mechanics.

The Program sees the participation of the University of Genoa and the National Research Council (CNR), also appointed as the coordinator and operations manager. The project has been granted 7,9 million euros in funds, 6 of which of public funding (European Union, through the European Fund for Regional Development; Ministry of the Productive Activities and the Region) and 1.9 millions from the active members.

The 26 financed projects are carried out by 29 businesses, small, medium and big, cooperating with universities and public research entities for activities concerning both the transfer of innovation and professional training for over 60 researchers.

**7-15 Ottobre 2006
 Genova**

**Prai-Liguria al
 46° Salone Nautico**

The new marine area was without doubt the center of attraction of the Show from an exhibition point of view: 60 thousand square meters of water surface were added to the pre-existing 40 thousand marine area, the four pavilions, the open areas and the canopy over the sea.

The stars of this year's show were, for the motorized watercrafts, the 43-meter Baglietto "AnnAmia" and, in the sailboat category, the Jongert 30T "BlackMolly III".

Guest of Honor in this edition was the Maltese Falcon, the 88-meter modern motorized clipper developed by Perini Navi.

With the USA 61, the vessel by Larry Ellison of the BMW Oracle team, at the entrance you could smell America's Cup in the air.

The 47th International Nautical Show is scheduled to run from October 6 to October 14 in 2007 at the Fiera di Genova.



The PRAI Liguria Stand

Thanks to the different explicative panels and to the distribution of information material, at the 30 square meter booth, in the 'Marina 2 Mondoinvela' section, the mass of visitors, attending the show, was able to learn and appreciate the variety and quality of the Regional Program's 26 projects on innovative technology.

Considering the magnitude and nature of the event, it was decided to give more exposure to the projects mainly tied to the subjects of technologies for the sea, navigation and naval-mechanics.

Here below are the information cards describing the above projects:

Project 2A [Proposer: AMGA S.p.A.]

Development and engineering of a sensor able to detect rain intensity (Meteorological Radar) used for surveying purposes.

The system, based on commercial marine radars, therefore low-cost, has been implemented and installed on the promontories of Genoa to test its reliability in capturing images of precipitations scattered on the territory. The model of propagation of the precipitations has been validated comparing the simulations results with the data collected during the monitoring campaigns of rains; the model has proved its reliability thanks also to the recent extreme weather conditions last August and September. The advancement of the project shows the tangible results, outlining the future development strategy as well as the possible relapses of the project. It is important to also point out its potential distribution on the public utilities market as well as its employment by public safety services.

Project 3 [Proposer: INGV - partners: CNR ISSIA; TECLAB Srl]

Development and demonstration of a seaport station for the forecasting of meteorological tidal flows based on Newtonian technology.

Its purpose is to become an entrepreneurial initiative based on the offer of services for the safety of vessels in the Gulf of La Spezia. One of the main obstacles to safety of navigation and port activities is the meteorological tides. We are dealing with variations of sea levels, for periods ranging from a few days to a few hours, caused by the wind and the differences of air pressure on the sea with the transiting of perturbations. Nowadays, we still do not have systems able



predict, in a relatively short period of time, the arrival of a baric tidal wave (therefore the amplitude of the formed wave). The project allowed for the establishment of a seaport station for the forecasting of meteorological tidal flows and it is already operative in the small Lotti Port in La Spezia. The installation is based on a gravimeter - device that has been integrated with a series of pieces of equipment provided by APAT (Agency for the protection of the environment and for technical-scientific services) - in order to be able to offer a 'seaport station kit', which may be used by all our national ports. This would allow avoiding tides: one of the main causes of financial loss in port activities. The High Council of Public Works has, after recognizing the applicative potential of the project, set up a National Committee for navigation safety in which both the author of the initiative and the project's partners are represented.

Project 6 [Proposer: CNR-ISMAR - partners: Brignola SpA, Sincomec SpA, Colorificio Tirreno SpA]

Establishment of a multi-purpose Laboratory, for the naval sector, to be intended as a holder of instruments, knowledge and competences, dedicated to the study, development and experimentation of new materials for the protection of vessels, of anti-corrosives and antifouling paints, with reduced environmental impact.

The activity of this lab, LABMAR-TAECO, has generated two sub-projects: The experimentation on both new biocides of natural origin with reduced environmental impact and biocide-free paints (silicon-based). Recently, much development has been seen in the study concerning natural substances extracted from marine organisms, study that was initially aimed primarily to identifying bioactive molecules for chemotherapeutical purposes. Natural products with antifouling activity have been isolated from a wide range of organisms with potential antifouling activity that function as toxins, anesthetics, inhibitors of settlement and metamorphosis and as repellants. Non-toxic technology, in the field of antifouling systems, was initially developed with the research of adequate polymers for the formulation of anti-adherent paints whose main characteristics was, once dried, a superficial low level of free energy. This way, the antifouling effect could be attained from a physical action rather than a chemical reaction, typical of toxic products released in the water by traditional paints.



**October 13, 2006
 Genoa**

**TITANIUM & NAVIGATION
 Event**

On October 13th, 2006, at the 46th Nautical Show in Genoa, the 'Titanium and Navigation' day took place. It is dedicated to the study and production of components and more for the marine industry and recreational crafts in titanium alloys, and promoted within the Regional Program of Innovative Actions.

One of the 26 projects funded by the PRAI is in fact entirely dedicated to the study of the technical feasibility and to verifying the commercial convenience of the use of titanium alloys in the productive sector of recreational navigation.

The project, that sees the participation of Oto Melara S.p.A. and the University of Genoa, developed from an initial survey on large scale that identified some specific field of research. Following the study of feasibility prototypes were built and consequently the functional analysis to find out the behavior of titanium and its alloys in the marine environment.

The prototypes created have been a display of elevated technological complexity, with function of cranes, for a maxi yacht and a wharf vehicle of variable shape.

Project 20 [Proposer: Oto Melara SpA - partner: UNIGE SDA]

Study on the technical feasibility and verification of the cost-effectiveness of employing titanium alloys in the production of pleasure watercrafts.

An initial wide-range investigation helped identify some specific field of research worthy of further exploring. Particularly, the research has focused on the following subjects:

01-BOARDING RAMP and CRANE: concept design to build a prototype of a titanium boarding ramp with crane functions to be used with maxi yachts.

02-"MARINA TENDER": concept design and technological demonstration for self-propelled wharf vehicle in titanium.

03-Testing structural soundness of titanium naval components.

04-Experimenting and testing the behavior of titanium and its alloys in marine environment.

Following this study begins the construction phase of pre-selected prototypes and the consequential testing of their functionality. Tests have been designed to determine the behavior of titanium and titanium alloys in the marine environment. The prototypes created were a titanium boarding ramp of elevated technological complexity, with crane functions, for maxi yachts and a wharf vehicle of variable shapes.

Project 23 [Proposer: Nuova Conavi Srl - partners: Oto Melara SpA, Fincantieri SpA, Sanlorenzo SpA, Intermarine SpA, CTS Srl, UNIGE DINAV, UNIPI]

Study and organization of production processes of pleasure watercrafts with E-Preg materials. The goal is to reduce polluting emissions, improve the conditions of working with polyester-based fiberglass and increase productivity of the E-Preg system. Both small to medium and big businesses participate in the development of the initiative. The benefits deriving from the use of such materials will promote: improvements in the level of hygiene in shipyards; reduction or disappearance of polluting emissions of reactive solvents (such as styrene); increase in the current production of the E-Preg system, making it competitive, even cost wise, with respect to the

traditional manufacturing methods. Various shipyards, partners in the project, started tests on surfaces, using an optical scanner, developed with the cooperation of the University of Pisa, with the ultimate goal to evaluate its uses to the advantage of the current project.

Project 25 [Proposer: INSIS Srl]

Planning and construction of a prototype equipped with a stabilized electro-optical system, with day and night vision capability.

The development of the prototype requires, through simulative analysis, the definition of safety parameters for the navigation process, the revising of system parameters and the development of an image processing software.

Its main employment ranges from serving as an observation tool, to a navigation aide and an anti-collision device, and more in general as a device for navigation safety.

The following activities have been completed: testing functionality in laboratory; testing sea operations, also with night vision and in different navigation conditions; perfecting the system according to the results of the experiments.

Innovation associated with the prototype is both technological-experimental, for the mechanisms of stabilization, and functional since it is guaranteed as a 24-hour navigation aide.

An additional feature on the prototype that would allow a sensor to reveal human presence in the water would make the system particularly effective and innovative for search and rescue operations, as well as for public safety.

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