

# Regional Cooperation of the Alpe-Adria Maritime Clusters

### 3rd Revision

June 2013 © 2012 by J. R. Kuehmayer



# **European Maritime Day Conference**

#### General

First contacts between the maritime cluster in Northern Italy (FVG) and AMEM were established already during the Maritime Day in Rome in May 2009, when Marcello Guaiana from the Area Science Park in Padriciano Trieste and Livio near Marchesini from DITENAVE. Trieste had presented very attractive cluster initiatives under the leadership of the great industrial conglomerates in the region - FINCANTIERI and WÄRTSILÄ.





AREA Science Park Padriciano Guglielmo Marconi's "Elettra"



Giuseppe Bono Fincantieri, Chief Executive Officer



Carl-Henrik Björk Wärtsilä Italia



Marcello Guaiana AREA Science Park



Dr. Mario Dogliani

Dr. Enrico Maria Pujia Ministry of Infrastructure



**Livio Marchesini** Fincantieri / Assonave / Ditenave

Lucio Sabbadini Fincantieri / RINAVE



AREA Science Park, Trieste



### Region Friuli Venezia Giulia FVG The Big Three in the Region

#### **FINCANTIERI**

### **FINCANTIERI**

#### **Head Office**

via Genova, 1 34121 Trieste , Italy, Europe

Telephone + 39 040 319 3111 Telefax + 39 040 319 2305

URL www.fincantieri.it

#### **Monfalcone Shipyard**

Piazzale Cosulich, 1 34074 Monfalcone, Italy, Europe

Telephone + 39 0481 492111 Telefax + 39 0481 711449

URL www.fincantieri.it

#### **WÄRTSILÄ**



#### **Delivery Centre Trieste**

Bagnoli della Rosandra, 334 San Dorligo della Valle 34018 Trieste, Italy, Europe

Telephone + 39 040 319 5000 Telefax + 39 040 319 5728

URL www.wartsila.com

#### **RINA**



#### **Trieste Office**

Viale Miramare, 9 34135 Trieste, Italy, Europe

Telephone + 39 040 419 4911 Telefax + 39 040 419 4922

URL www.rina.org



### **FINCANTIERI**

#### General

FINCANTIERI is one of the largest high end shipbuilding groups in the world. The company's core business is the construction of complex ships with a high technological content such as cruise ships and large ferries in the commercial and aircraft carriers, frigates and submarines in the naval sector. The company is also highly specialised in designing and building high value mega yachts of over 70 meters for the very demanding luxury niche market.

State owned FINCANTIERI's outstanding success and technological leadership is predominantly based on the partnership driven close cooperation with suppliers and subcontractors. A framework of technological districts in a number of regions where FINCANTIERI has construction sites, facilitate a secure transfer of technologies to, preferably SMEs and the diffusion of a culture of innovation.

However there is a growing competitive pressure. Shipbuilding overcapacities in Korea and the PR of China together with massive government subsidies have resulted in strong efforts to penetrate into the high end, high value domain of European cruise ship building, while naval shipbuilding is in transition from large numbers of blue water surface and subsurface battle ships to a limited number of highly specialised, multifunctional platforms for littoral combat scenarios and the fight against pirates who are obstructing more and more international shipping lanes. Another important competitive pressure is generated by the fact that FINCANTIERI's merchant vessel business is heavily depending on one single group of cruise line operators – CARNIVAL Group. Admittedly the largest in the world, comprising eleven individual cruise line brands, operating a combined fleet of 96 ships.

In order to meet the new challenges in preserving FINCANTIERI's leadership, it will be worthwhile to further expand the regional research and supply base across the borders to neighbouring countries like Austria and Slovenia.



# Region Friuli Venezia Giulia FVG FINCANTIERI

FINCANTIERI shipyards are receptive for two kinds of products and services:

- systems and components for the building of ships and yachts, preferably dual use (off-the-shelf) products for commercial and naval applications
- ▶ investment goods for the modernisation of the yards with special emphasis on new materials, new processes, lean production, environmental friendly and energy efficient technologies

As ships are getting bigger and bigger, transporting more goods and passengers, they pose a threat no longer exclusively to the shipping community but also to the public in the case of an accident. The availability of the propulsion system and the rigorous demand for safe return to port, in combination with new fuels will lead to completely new engine room and propulsion concepts. Monfalcone is the biggest shipyard in the FINCANTIERI organisation with approximately 1700 employees. The Monfalcone shipyard has delivered more than 30 cruise ships for a value of more than 13.5 \$ so far since 1990.

### FINCANTIERI Group Code of Conduct

http://www.cetena.it/eng/general/codeofconduct.pdf



Corporate Headquarter Trieste



## Region Friuli Venezia Giulia FVG FINCANTIERI CETENA



FINCANTIERI CETENA S.p.A.

#### Headoffice

via Ippolito d'Aste 16121 Genova, Italy, Europe

Telephone +39 010 599 460 Telefax +39 010 599 5790

URL www.cetena.it

#### **Trieste Office**

Passegio S. Andrea, 6/b 34123 Trieste, Italy, Europe

The Trieste Office of CETENA is located inside the FINCANTIERI building "Palazzo della Marineria" in Trieste.

#### General

CETENA – Centro per gli studi di tecnica navale is a FINCANTIERI company dedicated to research and consultancy services in the naval and maritime field. National research activities are carried out with the support of the Ministry of Transport and Navigation and of the Ministry for Scientific Research and Technological

Innovation, of which CETENA is an authorised laboratory. Internationally, CETENA participates in European Research Projects and is – among others – a member of important consortia such as ITTC International Towing Tank Conference, ISSC International Ship and Offshore Structures Congress, and ECMAR European Cooperation in Maritime Research. The main objectives of CETENA are the promotion and development of applied research in the naval field and the development of methods and technologies for the design, construction and operation of the ship, structures and materials, vibrations and noise, ship vulnerability, survivability and signatures, monitoring systems, hydrodynamics and virtual prototyping.

CETENA is ISO 9001-2000 quality certified by RINA Registro Italiano Navale for "Research and Development in the Fields of Shipbuilding and Ship Propulsion, Sea Trials and Information Technology".

CETENA is headquartered in Genoa, with offices in Trieste, Muggiano, Castellammare di Stabia, Palermo and a laboratory in Riva Trigoso. CETENA is actively involved in EU funded research projects like fuel cells, new concepts for vessels and floating structures, safety related design, operation and regulation (SAFEDOR) as well as intermodal freight transport.



### Region Friuli Venezia Giulia FVG FINCANTIERI Isotta Fraschini Motori



#### **FINCANTIERI**

Isotta Fraschini Motori S.p.A.

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E-Mail isottafraschini@isottafraschini.it

URL www.isottafraschini.it

#### General

Isotta Fraschini is a FINCANTIERI company headquartered in Bari, well known in the industry as a supplier of high performance diesel engines, both for marine and industrial applications in the range from 200 to 2.500 KW. The company also produces non-magnetic propulsion and generating systems for minehunting vessels for the navies of the world. One of the prime customers for naval applications is the US Navy for their fast attack Littoral Combat Ships (LCS).

Isotta Fraschini manufacturers SULZER medium speed diesel engines of the S 20 series in addition to its own brands.



# Region Friuli Venezia Giulia FVG FINCANTIERI Cooperation with Ansaldo



#### Ansaldo Sistemi Industriali

#### Headquarter

Viale Sarca, 336

20126 Milano, Italy, Europe

Telephone +39 02 6445 1 Telefax +39 02 6445 4401

URI www.asiansaldo.com

#### **Motors, Generators & Drives**

Via Marconi, 1

34074 Monfalcone, Italy, Europe

Telephone +39 0481 717 11 Telefax +39 0481 717 330

URL www.asiansaldo.com

#### **Industrial Systems & Automation**

Corso Perrone, 11

16152 Genova, Italy, Europe

Telephone +39 010 6063 1 Telefax +39 010 6063 773

URL www.asiansaldo.com

#### General

Ansaldo Sistemi Industriali is one of the world's leading suppliers of electrical power and control systems, electric motors and generators, low and medium voltage drives, power electronics and industrial automation. Ansaldo is a Lynn Tilton Company, managed by Patriarch Partners a "vertically integrated distressed private equity firm". Fincantieri has a close relationship already with Ansaldo in the field of generators deployed in cruise ships.

Fincantieri and Ansaldo have joined forces in 2010 to expand their renewable energy business and thus counterbalance the rise of the world's largest shipbuilder – HHI Hyundai Heavy Industries – a licensee of AMSC American Superconductor Corporation, towards a major global

supplier of wind turbine driven offshore power plants. The two Italian companies are also scaling their production of solar cells, just like the "US – Korea Alliance" in an attempt to diversify their businesses.



#### **Answer Drives**

SS 11 – Cà Sordis, 4 36054 Montebello Vicentino

Italy, Europe

Telephone + 39 0444 449268 Telefax + 39 0444 449276 URL www.answerdrives.com



## Region Friuli Venezia Giulia FVG FINCANTIERI

#### **FINCANTIERI** Administration and Shipyards

#### **HEAD OFFICE**

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#### **ROME OFFICE**

00198 Roma, Italy, Europe Via Tevere, 1/A Telephone +39 06 84514111 Telefax +39 06 84514243

#### **MERCHANT SHIP**

34123 Trieste, Italy, Europe Passeggio Sant'Andrea, 6/a Telephone +39 040 3193111 Telefax +39 040 376969

### SHIP REPAIRS AND CONVERSIONS

34123 Trieste , Italy, Europe Passeggio Sant'Andrea, 6/a Telephone +39 040 3193111 Telefax +39 040 3193890

#### **NAVAL VESSELS**

16129 Genova, Italy, Europe Via Cipro, 11 Telephone +39 010 59951 Telefax +39 010 5995379/272

#### MARINE SYSTEMS

16129 Genova, Italy, Europe Via Cipro, 11 Telephone +39 010 59951 Telefax +39 010 5995508

#### **MEGA YACHTS**

19126 Muggiano (La Spezia), Italy Viale S. Bartolomeo, 446 Telephone +39 0187 543238 Telefax +39 0187 543239

### ARSENALE TRIESTINO SAN MARCO

34143 Trieste, Italy, Europe Via Von Bruck, 32 Telephone +39 040 3185840 Telefax +39 040 3185822

#### MONFALCONE SHIPYARD

34074 Monfalcone (Gorizia), Italy Piazzale Cosulich, 1 Telephone +39 0481 492111 Telefax +39 0481 711449

#### MARGHERA SHIPYARD

30175 Marghera (Venezia), Italy Via delle Industrie, 18 Telephone +39 041 666111 Telefax +39 041 666415

#### GENOVA - SESTRI SHIPYARD

16154 Sestri (Genova), Italy, Europe Via Giacomo Soliman, 47/r Telephone +39 010 5996636 Telefax +39 010 5996013

#### **ANCONA SHIPYARD**

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#### CASTELLAMMARE DI STABIA SHIPYARD

80053 Castellammare di Stabia (Napoli), Italy, Europe Piazzale Amendola, 5 Telephone +39 081 8720111 Telefax +39 081 8714403

#### PALERMO SHIPYARD

90142 Palermo, Italy, Europe Via dei Cantieri, 75 Telephone +39 091 6206111 Telefax +39 091 547228

#### **RIVA TRIGOSO SHIPYARD**

16037 Riva Trigoso (Genova), Italy Via Erasmo Piaggio, 161 Telephone +39 0185 4831 Telefax +39 0185 482511

#### **MUGGIANO SHIPYARD**

19126 Muggiano (La Spezia), Italy Viale S. Bartolomeo, 446 Telephone +39 0187 543111 Telefax +39 0187 543550



# Region Friuli Venezia Giulia FVG WÄRTSILÄ Italia Trieste



#### WÄRTSILÄ Italia Trieste

#### General

Wärtsilä Italia Trieste WIT is part of the Wärtsilä Corporation, a Finnish engineering company. The company focuses on the marine and energy markets with products and solutions as well as services for the shipping and power generation markets.

The factory in Trieste is one of the major employers in the region with a workforce of about 1400 persons. The premises in San Dorligo della Valle extend over an area of more than 530.00 square meters.

Wärtsilä Italia has been investing until now more than 18 million Euro in new processes and equipment for warehouses, flexible production, assembly and testing as well as the new Wärtsilä Land & Sea Training Center and will continue to make further investments in what is called the Delivery Center Trieste.

There are three R&D laboratories in the Wärtsilä organisation, located in Trieste (4-stroke), Vaasa (4-stroke) and Winterthur (2-stroke).





### Region Friuli Venezia Giulia FVG RINA Registro Italiano Navale



#### **RINA Registro Italiano Navale**

#### General

The Genoa headquartered Italian classification society RINA has been responsible for ship classification and certification since its establishment in 1861. A founding member of IACS, RINA is authorised to act on behalf the Italian Administration in accordance with EU Directive 94/57 and by approximately 70 other flag administrations. RINA is actively involved in many or almost all projects of the maritime clusters in FVG.

RINA has a long tradition in the classification of yachts. Close to 1000 pleasure craft are classed with RINA at present. 25 percent of the order book for mega-yachts worldwide and all ships of the Italian brand cruise line Costa Crociere are classed with RINA.

RINA's Office in Trieste is not only in charge for the FVG region but also for the shipyard in Marghera (Venice) and the equipment industry in the Province of Veneto as well as Slovenia and Croatia down the Adriatic coast line. Furthermore the office is in charge for countries like Austria, the Czech Republic, Serbia, Slovakia, Bosnia and Herzegovina, Montenegro as well as Albania. Head of Office: Mauro Rinaldi.

RINA operates a fire test and research laboratory which was established in 1965. The RINA Test Laboratory is listed as a national reference laboratory for tests in connection with the International Code for Application of Fire Test Procedures (FTP Code) by IMO.



Mauro Rinaldi



### Region Friuli Venezia Giulia FVG Maritime Clusters, platforms and projects



DITENAVE

www.ditenave.it





Adriatic Sea Network www.adriaticseanetwork.it



www.novaregio.net



**AREA Science Park** www.area.trieste.it

**Shipbuilding & Boating Competence Centre** nautica@innovationnetwork.it





progettoMare www.progettomare.fvg.it



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### Region Friuli Venezia Giulia FVG



#### **DITENAVE**

Distretto Tecnologico Navale e Nautico del Friuli Venezia Giulia

Naval and Nautical Technological District

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via C.Cosulich, 20 34074 Monfalcone, Italy, Europe

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Contacts Livio Marchesini, President

Telephone + 39 040 319 2389 Sergio Bisiani, Managing Director Telephone + 39 0481 723 440

Danilo Farinelli

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DITENAVE is a public / private partnership with founding members of different typologies: administrations of the autonomous region of Friuli Venezia Giulia, industrial leaders – first and foremost world class shipbuilder FINCANTIERI and diesel engine manufacturer WÄRTSILÄ, research centres, classification societies – understandably RINA in the forefront, industrial associations, scientific parks, chambers of commerce, local administrations, and educational organizations.

One of the most important issues covered by DITENAVE, is the combined use of European funding, including structural funds like ERDF European Regional Development Fund and ESF European Science Foundation, as well as national funding.



### Region Friuli Venezia Giulia FVG

### Partners of DITENAVE Associati a DITENAVE

- Regione Autonoma Friuli Venezia Giulia
- Fincantieri Cantieri Navali italiani S.p.A.
- RINA S.p.A.
- Cetena S.p.A. Centro per gli Studi di Tecnica Navale
- Confindustria FVG
- Confapi Gorizia (Associazione PMI)
- Confartigianato FVG
- CNA FVG Udine, CNA FVG Trieste
- Camera di Commercio, Industria, Agricoltura e Artigianato di Trieste
- Camera di Commercio, Industria, Agricoltura e Artigianato di Udine
- Consorzio per l'Area di Ricerca scientifica e tecnologica

- Consorzio per l'Alta Ricerca Navale RINAVE
- Scuola Internazionale Superiore di Studi Avanzati SISSA
- Università degli Studi di Trieste
- Friulia S.p.A.
- Comune di Lignano
- Comune di Muggia
- Comune di Trieste
- Enaip FVG
- Enfap FVG
- IAL FVG
- Provincia di Trieste



### Region Friuli Venezia Giulia FVG



#### **RINAVE**

Consiglio Scientifico RINAVE Consortio per l'alta ricerca navale

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E-Mail info@rinave.it
URL www.rinave.org
Contact Lucio Sabbadini

Daniele Collenz

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Stefano De Monte

Telephone + 39 335 6067253

RINAVE – Consortio per l'alta ricerca navale" is a non-profit consortium, established in 2006 as the first step towards the creation of DITENAVE.

The main objectives of RINAVE are

- ▶ to stimulate and organise the cooperation among the shipbuilding industry, research centres and universities
- ▶ to promote, carry out and manage common research projects relevant for the maritime cluster

All shareholders in RINAVE have a seat in the Scientific Council, where research proposals both from universities and companies are collected and selected. The innovation needs of the maritime sector are collected by a centre of competence in the AREA Science Park organisation. The projects are carried out by the Universities of Trieste and Udine, monitored by RINAVE.

RINAVE has an impressive record of research projects, which have been identified according to the research themes for the transport sector of the 7<sup>th</sup> Framework Programme.

RINAVE's annual work programme includes a collection of project ideas from both sides, universities and industry – the cross evaluation of the project ideas, the setting up by joint teams and the final submission of the projects to the approval of the Board.



### Region Friuli Venezia Giulia FVG AREA Science Park



#### **AREA Science Park**

Parco Scientifico e Technologico

Padriciano, 99

34012 Trieste, Italy, Europe

Telephone + 39 040 375 511
Telefax + 39 040 226 698
E-Mail info@area.trieste.it
URL www.area.trieste.it



#### SciencePark

#### **AREA Science Park**

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E-Mail info@area.trieste.it
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### Region Friuli Venezia Giulia FVG AREA Science Park



#### General

The AREA Science and Technology Park was established in 1978. It was the first in Italy and is now one of the leading multisectoral technology parks in the world. The Park currently hosts more than 80 companies, including some international research centres, in two campuses – Padriciano and Basovizza. The number of scientists is well above 2400. The mission of the AREA Science Park is, to boost the region's competitiveness and business attractiveness by supporting the development of businesses and spreading innovative products, processes and methods as well as distinctive knowledge and skills.

Major fields of research are:

Biotechnologies for the agricultural and food industry, biomedical technologies, physics, materials and nanotechnology, electronics and telecommunications, energy and environment, marine ecology, etc.

The AREA Science Park is managed by a Consortium which – because of its outstanding success – became a first level National Public Research Body under the umbrella of the MiUR Ministry of Education University and Research.

The Science and Technology Park acts as a central link between the academic world and the industrial sector.



# Region Friuli Venezia Giulia FVG Shipbuilding & Boating Competence Center

#### **Shipbuilding & Boating Competence Center**

Centro di Competenza Cantieristica & Nautica

via Timavo, 69/8 Zona Industriale Lisert Porto 34074 Monfalcone, Italy, Europe

Telephone + 39 0481 412029 Telefax + 39 040 226698

E-Mail nautica@innovationnetwork.it

URL

Contact Raphaela Gutty

The Shipbuilding & Boating Innovation Network Competence Center is based in the Monfalcone Industrial Zone and operates closely together with DITENAVE and the Consortium for the Industrial Development of Monfalcone, which supports the initiative.

Major topics on the research agenda are:

- new hull materials (fibres and composites)
- propulsion systems (propellers)
- new materials for structural partition systems
- new design techniques for sails and hulls
- renewable sources for power supplies in pleasure boats

Literature: "I cluster del mare"

Nautica da diporto e cantieristica navale in Friuli

Venezia Giulia

Andrea Tracogna, Professor, University of Trieste



# Region Friuli Venezia Giulia FVG NOVAregio



#### **NOVAregio**

URL www.novaregio.net

Contact Gabriele Gatti

Head of Institutional Relations and Networks

#### General

NOVAregio is a project under the authority of AREA Science Park the purpose of which is to connect three territorial areas: Slovenia, the County of Rijeka in Croatia and the Friuli Venezia Giulia region. It should be noted in this context that Slovenia – a small country like Austria – has been joining this maritime cluster as a state and region. When founded in 2007, this project was considered to fit perfectly into the concept of DG MARE's "Integrated Maritime Policy". NOVAregio is a project supported by the European Commission. It started under the 6th Framework Programme.

NOVAregio has established interactions between two major European organisations:

- Central European Initiative CEI www.ceinet.org
- Conference of Peripheral Maritime Regions of Europe www.cpmr.org

NOVAregio was a forerunner of STARNETregio where the three areas FVG, Slovenia and the County of Rijeka are now "homeported".

#### Partners of / Associati a NOVAregio

The present partners of NOVAregio are:

- AREA Consortio per l'AREA di Ricerca Scientifica e Tecnologica di Trieste
- INNOVA Technology Transfer & Valorisation S.p.A.
- SFG Steirische Wirtschaftsförderung
- TIA Slovenian Technology Agency
- FORTH Foundation for Research & Technology Hellas
- ITC Instituto Tecnológico de Canarias
- STRDA South Transdanubian Regional Development Agency



# Region Friuli Venezia Giulia FVG progettoMare



#### progettoMare

URL www.progettomare.fvg.it

#### General

The vocational education and training cluster for the development of the maritime economy progettoMare provides – in collaboration with DITENAVE – a wide range of educational services and training opportunities in compliance with the regional enterprises and the employment agency.

Following the principles of the cohesion policy, progettoMare is financed from sources of the European Social Fund (ESF), the Ministry of Labour, the autonomous region Friuli Venezia Giulia, and the Programma Operativi Regionale POR 2007-2013 initiative.













# Region Friuli Venezia Giulia FVG progettoMare

#### **Training Schemes**

#### **Professional Scheme**

#### ENAIP

Ente Nazionale ACLI Istruzione Professionale Friuli Venezia Giulia

#### • ENFAP

Ente nazionale per la Formazione e l'Addestramento Professionale

#### • IAL FVG

Innovazione Apprendimento Lavoro

#### • ICMP

Istituto di Cultura Marittimo-Portuale di Trieste

#### • IRES FVG

Istituto di Ricerche Economiche e Sociali del Friuli Venezia Giulia

#### **Enterprise Scheme**

### CETENA Centro per gli Studi

Centro per gli Studi di Tecnica Navale

#### • CNA

Confederazione Nazionale dell'Artigianato e della Piccola e Media Impresa Regionale del Friuli Venezia Giulia

#### Confartigianato FVG

Confartigianato Imprese del Friuli Venezia Giulia

#### Federazione Regionale delle Piccole e Medie Industrie del FVG

#### Fincantieri

Fincantieri – Cantieri Navali S.p.A.

### Research & Innovation Scheme

# AREA Science Park Consorzio per l'AREA di ricerca scientifica e tecnologica di Trieste

#### RINA

Registro Italiano Navale

#### **University Scheme**

- Università di Udine Università degli Studi di Udine
- Università di Trieste Università degli Studi di Trieste
- SISSA

Scuola Internazionale Superiore di Studi Avanzati

#### **Scholastic Scheme**

- I.S.I.S Istituto Statale di
   Istruzione Superiore di
   Monfalcone e Grado
- ITI Malignani Istituto Tecnico Industriale "Arturo Malignani"
- ITIS Volta
   Istituto Tecnico
   Industriale "A. Volta"



# Region Friuli Venezia Giulia FVG STARNETregio



#### **STARNETregio**

URL www.starnetregio.eu

#### General

STARNETregio is a project supported by the European Commission under the 7<sup>th</sup> Framework Programme.

The project regions are:

- Friuli Venezia Giulia
- Slovenia
- The County of Rijeka (Croatia)

The goal of STARNETregio is to encourage and support the performance of "research driven marine clusters" Based on the

triple helix model, associating universities and research centres, enterprises (industry clusters) and public regional authorities. Special emphasis is placed on the role of SMEs.

The four major objectives to be achieved are:

- Improved coordination and implementation support among the partner regions
- Development of regional and trans-national capabilities aimed at sustaining the capacity for investing in RTD, carrying out research activities, and developing future research strategies
- Initiating concrete steps for sustainable trans-national cooperation
- Broad dissemination activities and awareness building

#### Main dissemination tools are:

- the International Shipbuilding Dissemination Forum www.forum-maritime.eu
- the Joint RTD Strategy & Policy Formulation Event



# Region Friuli Venezia Giulia FVG STARNETregio

### Partners of STARNETregio Associati a STARNETregio

- Consorzio per l'AREA di Ricerca Scientifica e Tecnologica di Trieste
- Consorzio per l'alta ricerca navale
- Fincantieri Cantieri Navali Italiani SpA
- INFORMEST Service and documentation center for international economic cooperation
- INNOVA Technology Transfer & Valorisation S.p.A.
- TIA Slovenian Technology Agency

- University of Ljubljana Faculty of Maritime Studies and Transport
- Luka Koper, port and logistic system, d.d.
- Regionalna razvojna agencija Porin d.o.o.
- Pomorski fakultet u Rijeci
- Megaflex-cijevni sustavi d.o.o.
- Teri-Crotek d.o.o.



# Region Friuli Venezia Giulia FVG Universities



#### **University of Udine**

Università degli Studi di Udine via Palladio, 8 33100 Udine, Italy, Europe

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#### **University of Trieste**

Università degli Studi di Trieste

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URL www.units.it



# Region Friuli Venezia Giulia FVG Colleges



#### International School for Advanced Studies

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### Region Austria Key Target Industries

#### **Commercial Shipbuilding**

Austrian companies have been serving the world wide shipbuilding and ship repairers community since many decades. Their innovative top quality products have quite often won them a place on the preferred makers' list. Austrian marine equipment has achieved international recognition



both in commercial and naval shipbuilding. A specific area where products Made in Austria experience highest appreciation is cruise ships and mega yachts.

Austrian companies like **baumann** (Textiles), **Kalmar** (Chandeliers), **KRAL** (Pumps and Flowmeters), **List** (Interiors), **Thermax Fipro** (non combustible boards) or **SVA Schiffbautechnische Versuchsanstalt in Wien (Vienna Model Basin)** (Towing Tank) are much valued partners of interior designers and architects like Teresa P. Anderson, Joseph Farcus or Maurizio Cergol as well as naval engineers.

www.baumann.co.at www.kalmarlighting.com www.kral.com

www.list.at www.sva.at www.fipro-ag.com

#### **Naval Shipbuilding**

A limited number of selected Austrian dual-use component manufacturers has the capability to supply products and services to paramilitary organisations like coast guards and naval defence forces world wide. They more and more recognise that maritime defence exhibitions are a valuable complement to the international events in the commercial shipbuilding arena.



ROK NAVY LPH 6111 *Dokdo* Cornelius Geislinger Matthias Geislinger Martin Uhlig (bst)

www.bst-firestop.com www.geislinger.com



### Region Austria Key Target Industries

#### **Offshore**

Since the beginning of offshore petroleum oil and gas prospection in the North Sea, **LIEBHERR** has been involved in the development of appropriate cranes for offshore applications. Apart from oil and gas exploration and production platforms, Liebherr cranes are employed in subsea work, handling of



**ENI SAIPEM Scarabeo 9** 

remote controlled underwater vehicles, installing pipelines and telecommunication subsea cables as well as installation of offshore wind structures and turbines.

To quote only one exceptional reference – **SAIPEM** *Scarabeo* 9, an innovative 6<sup>th</sup> generation drilling rig for ultra deepwater operating for **ENI** in the Gulf of Mexico. An impressive number of Austrian companies has been supplying their products and systems for production and accommodation platforms, for FPSOs as well as OSVs and all other kinds of mobile and fixed offshore structures.

www.liebherr.com

### Off-shore Wind Parks

Several Austrian companies have gained a high level of experience in on-shore wind park projects over the last two decades, which have paved the way for complex offshore installations. Off-shore wind parks offer high-tech companies excellent



chances (based on their problem solving capability) to enter a very challenging new segment of maritime business and become attractive partners in research projects which are expected to materialise in a relatively short period of time. They now have reached a very high reputation in both – shallow waters and deep sea installations. To name only one company from Austria:

www.bachmann.info



### Region Austria Key Target Industries

#### **Pleasure Boat Building**

Although a landlocked country without a single port to its name, Austrian boat builders and equipment manufacturers excel in research and development, so whilst their manufacturing base isn't large compared to the world's leader Italy, they are becoming increasingly



specialised, and very high-tech. There are two principle builders in Austria: **Frauscher**, which produces sleek and stylish motorboats and yachts up to 9.9 meters (32ft) and **Sunbeam Yachts**, which builds 10 models of high performance sailing cruisers up to 15.9 meters (53ft). The R&D department of Frauscher has been spending a great deal of time and money in developing hybrid and electrical applications,working closely with three other Austrian pioneers, **Fronius**, **Steyr Motors** and **Bitter**, to produce viable hybrid and fuel-cell powered boats.

www.frauscherboats.com www.bitter.at www.fronius.com www.steyr-motors.com www.sunbeam.at

#### **After Sales and Maintenance**

Improvement of vessel reliability, prevention of major breakdowns and dramatic costs savings can be achieved through planned maintenance and repair plus on-time delivery of replacement and spare parts, thus reducing inventory and tools on board ships and delayed arrival time caused by less expertly work carried out under adverse conditions on board. Planned mainte-



nance is a prerequisite for a shift from time-based maintenance and on board repair works to highly professional on-shore proactive trouble shooting not only because of the ever increasing complexity of processes and technologies on board ships, but also because of the fact that it is almost impossible to provide appropriate state-of-the-art training for on-board personnel. Maritime clusters can assist ship owners / managers and their crews – in close cooperation with the shipyard which holds all the technical documentation of the newbuild – in developing well founded concepts for a comprehensive mix of on board condition monitoring equipment, wireless ship-shore communication, detailed equipment history and spare parts lists, OEM product performance records and guaranteed tracking and tracing records over the entire supply chain in order to avert the risk of installing faked/copied products.



# Region Austria Austrian "Mittelstand" Industry

#### General

"Mittelstand" refers to small and medium-sized enterprises in German-speaking countries, Germany in the forefront, closely followed by Switzerland and Austria. "Small is beautiful" is not only a nicely-sounding proverb, it has become the explanation for the amazingly quick recovery of the Austrian industry in the wake of what has been the most severe crisis in modern, global shipbuilding! Big is not yet dead, but it is dying!

"Mittelstand"-companies form the majority of the Austrian mature, marine equipment manufacturing industry.

They are typically privately owned, focus on innovative and high value products and are export-orientated. Many of the successful "Mittelstand" – companies combine a cautious and long-term orientated market approach, with modern management practices. They stay away from large, price—driven mass markets, rely on their tailor-madehigh-end problem solving capabilities and foster quality, trustworthiness and lifelong customer and product services.

"Mittelstand"-companies are very focused on a long-term strategy – they think in generations – and they have made it to their competitive advantage identifying worldwide niche markets! In fact they

"don't dance where the elephants play".

Austrian companies are masters of incremental innovation and compete through superior value, not costs!

The small have the agility, vision, and speed to gobble up the gargantuan!



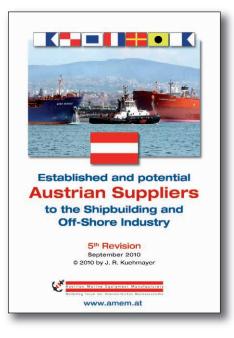
# Region Austria Marine Equipment Manufacturers and Service Providers

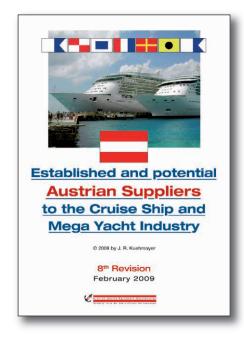
#### Small is beautiful -

this applies for Austria as a country and the Austrian Marine Equipment Manufacturers as an association likewise. In a certain way this fact considerably contributes to the competitiveness of this very active community of high tech companies, many of them being world market leaders in their particular fields of activities.

Small – in international terms – mostly family owned companies are searched after reliable partners in sharing knowledge-driven technology and development processes. They look for reliable partners with whom they can develop new technologies and products, and this reduces the risk of violating the intellectual rights of third parties. It also makes them less susceptible to takeover mania, so long term relationships can be established with their customers.

These typical "Mittelstand" companies are capable of meeting their clients high level expectations in product design because of innovation processes based on structured and documented performance feedback about their products over the entire life cycle.





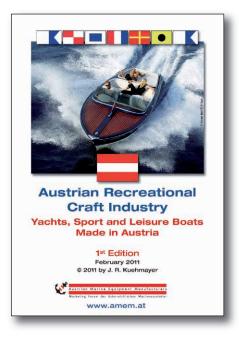


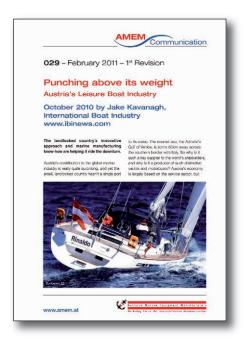
# Region Austria Marine Equipment Manufacturers and Service Providers

#### Punching above its weight

A glance down the list of leisure boat builders and highly specialised equipment suppliers reveals an impressive list of names, with several companies straddling both the leisure and commercial sectors. With all of these manufacturers, there is a very strong research base and this industry therefore can meet the high expectations in product design, quality, functionality and compliance with the most demanding international standards.

Austria has always been at the forefront of electric boating, mainly due to the restrictions imposed on the lakes, especially the Lake Constance (Bodensee) but recently the country has been spearheading exciting developments in propulsion from renewable sources. Austrian companies, the majority of them family owned, having long and unbroken histories, will continue to strive toward high performance with a low ecological footprint.









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Contact Ao.Univ.-Prof. Dr. Andreas Wimmer

Head of Research Area LEC and CEO of FVT

No longer an independent competence center. Since 1<sup>st</sup> of January 2010 part of the Institute for Internal Combustion Engines and Thermodynamics.



# Region Austria University of Applied Science



#### AC2T research GmbH

Austrian Center of Competence for Tribology Institute for Surface Engineering and Tribology Österreichisches Kompetenzzentrum für Tribologie Institut für Oberflächentechnik und Tribologie c/o University of Applied Science Wiener Neustadt Fachhochschule Wiener Neustadt

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Telephone + 43 2622 81 600-10 Telefax + 43 2622 81 600-99

E-Mail office@ac2t.at URL www.ac2t.at

Contact Dr. Andreas Pauschitz, Managing Director

Major Project "XTribology" COMET - K2 - Center

COMET - Competence Centers for Excellent

**Technologies** 



#### **Austrian Tribology Society**

Österreichische Tribologische Gesellschaft ÖTG

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# Region Austria The Austrian Internal Combustion Engine Community

#### General

Close to 10 world class companies – with one exception, **Steyr-Motors** a renowned manufacturer of small diesel engines for work boats and pleasure crafts, famous for its hybrid motor – form the Austrian Internal Combustion Large Engine Community. They are spearheaded by the engineering company **AVL List**, headquartered in Graz, Styria. **Boehler, Bosch, Geislinger, Hoerbiger, KRAL** and **MIBA** are manufacturers of components and systems for large diesel engines employed in seagoing ships. They all invest a significant portion of their earnings in research and development and are – with almost no exception – technology and innovation leaders in their particulate fields of activity – is it forged valve spindles, fuel injection systems, couplings and dampers, crankcase relief valves, pumps and flowmeters or bearings for both, two and four stroke engines.

Admittedly, **GE-Jenbacher** has become a synonym for "green" gas engines worldwide, but it should be noted in this context that all the other companies develop, design and manufacture components for dual fuel and genuine gas engines likewise. So they will not have a problem with the trend toward LNG.



CIMAC
International Council on
Combustion Engines
www.cimac.com

The Austrian companies of the ICE community engage themselves very actively in the work of CIMAC International Council on Combustion Engines and attend the CIMAC Congresses, held every three years, which bring together the manufacturers of diesel, dual fuel and gas engines and the users of these prime movers for ship propulsion.

The engine communities face a myriad of challenges today and there is an endless list of technical possibilities under serious investigation upstream and downstream the engine superimposed by the discussion on emissions. The Austrian high tech companies share a common view: the green shipping hype must not compromise on engine room safety!



# Region Austria The Austrian Internal Combustion Engine Community

م م AVL	AVL LIST	Graz	Powertrain Engineering	www.avl.com
BÖHLER SCHMIEDETECHNIK	Böhler Schmiedetechnik	Kapfenberg	Forged Valve Spindles	www.bohler-forging.com
(a) BOSCH	Robert Bosch	Hallein	Fuel Injection Systems	www.bosch-hallein.at
GEISLINGER 👉	GEISLINGER	Hallwang	Couplings & Dampers	www.geislinger.com
HOERBIGER because performance counts	HOERBIGER	Wien	Crankcase Relief Valves	www.hoerbiger.com
GE Energy	GE Jenbacher	Jenbach	Gas Engines	www.gejenbacher.com
Pumpen-Volumeter	KRAL	Lustenau	Pumps & Flowmeters	www.kral.at
Miha	MIBA	Laakirchen	Bearings	www.miba.com
STEYRMOTORS (INNOVATION WITH LIBITINGS)	STEYR MOTORS	Steyr	Diesel Engines	www.steyr-motors.com



# Region Austria The Austrian Welding Technology Community

#### General

Shipbuilders are making substantial efforts to further improve their production methods. An uncompromising attempt coupled with the move of the robotics industry toward providing intelligent machines has been providing an excellent opportunity for the introduction of a new generation of flexible production. Some highly specialised Austrian companies are capable to supply welding products for the shipbuilding industry. The arch spans from welding consumables via manual to automated welding equipment, milling technology and high tensile shipbuilding steel.



BÖHLER WELDING – dedicated to sophisticated applications – is a pioneer supplier of arc welding consumables for the offshore and shipbuilding industry. An increasing number of deep water projects as well as special floating structures in the offshore oil and gas industry require long term corrosion resistance to prevent failures, repairs and accidents. The product range of BÖHLER WELDING encompasses a wide array and homogenous inventory

of welding consumables for the welding of mild steels, high strength low alloy steels, standard and super austenitic steels, duplex and super duplex stainless steels as well as for nickel base, copper base, nickel and titanium alloy. If there is a need, BÖHLER WELDING technicians will develop new welding consumables to comply with the shipyard's specific requirements.



FRONIUS – an innovation leader in welding processes and power sources – offers a new generation of digital MIG/MAG welding equipment which can be individually programmed. The increased use of microelectronics and digital technology results in lighter power sources, faster controlled movements and improvements in the ignition process. This technology offers shipyards a great opportunity to raise the quality and simultaneously reduce the non-calculated costs of portable/mobile welding processes. MMA Manual Metal Arc welding or stick welding represents a quantum leap in rod-electrode welding due to what Fronius calls the "resonance concept" in



# Region Austria The Austrian Welding Technology Community

other words – the arc directly influences the power. The ideal characteristic ensures that the arc is always stable, even with long mains leads of up to 100 metres or fluctuating mains voltage.

Close to 70 percent of all welding operations on a modern cruise ship can be covered by LaserHybrid welding, which combines the excellent gap-bridging properties and simple seam preparation of MIG/MAG welding with the advantages of laser welding, such as focused head input, good weld depth and speed.

Fronius is also a leader in photovoltaic, hydrogen and fuel cell technology.



**igm Robotersysteme** has many decades of experience in welding-robots for all non-contact welding and cutting processes, which contribute to a substantial improvement of the shipyard's welding accuracy. Higher productivity in the form of more welded meters per time unit can be achieved by implementing flexible manufacturing in the ship prefabrication stage. Depending on material - and sheet thickness, high deposit welding processes like Tandem welding can be applied.



**Linsinger**, a subsidiary of the Weingaertner group, is known for its niche products in the field of milling technology. Plate edge milling machines deliver tight plate tolerances, a prerequisite for high accuracy joining techniques and subsequent laser or laser-hybrid welding thus enhancing efficiency, reliability and customer satisfaction.



voestalpine Grobblech is a synonym for innovation and top quality in standard and higher-strength heavy plates for the shipbuilding and offshore industry in a wide range of dimensions and grades. The shipbuilding steel from voestalpine features very good flatness, excellent welding characteristics and best workability.



# Region Austria The Austrian Welding Technology Community

Bö	ihler	Boehler Schweisstechnik	Kapfenberg	Arc Welding Consumeables	www.boehler-welding.com
Franil	US	FRONIUS	Wels	Welding Technology	www.fronius.com
igi		igm Robotersysteme	Wiener Neudorf	Welding Roboter Systems	www.igm.at
LINSINGE	<b>R</b> stria	Linsinger	Steyrermuehl	Milling Technology	www.linsinger.com
voestalpine		voestalpine Grobblech	Linz	Special Heavy Plates	www.voestalpine.com/grobblech



## Region Austria Funding of Research Programmes



#### **Austrian Research Promotion Agency**

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A joint organisation established by the Federal Ministry of Transport, Innovation and Technology (BMVIT) and the Ministry of Science, Research and Economics (BWFW) with the goal of monitoring the funding of research and development projects under the Framework Programmes of the European Union.





#### **BMVIT**

Bundesministerium für Verkehr, Innovation und Technologie

Abteilung Mobilitäts- und Verkehrstechnologien

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Telephone + 43 1 711 6265 0 URL www.bmvit.gv.at Contact Sarah Krautsack E-Mail sarah.krautsack@bmvit.gv.at Telephone + 43 1 711 62 65 3211





#### **BMWFW**

Bundesministerium für Wissenschaft, Forschung und Wirtschaft

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URL www.ec.europa.eu/dgs/regional\_policy/

The most promising contacts – apart from the Commissioner Johannes Hahn – will be Nicola De Michelis, Italian and Stefan Zotti, Austrian with regard to the idea of expanding DITENAVE across the borders to Austria and Slovenia.





Johannes Hahn Commissioner

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### **European Commission DG Maritime Affairs and Fisheries**

## EU2009.CZ

Maritime Clusters in Landlocked Countries **Conference & Workshop** Liechtenstein Palace, Prague, Czech Republic 27 April 2009

#### **AMEM Austrian Marine Equipment Manufacturers Best Practice Landlocked Maritime Cluster**





**David Chmelik** CZ Presidency





Chairman of the European Network of Maritime Clusters



Patrick O'Riordan European Commission DG ENTR



Freddy Bracke Luxembourg Maritime Cluster



John Kuehmayer Austrian Maritime Cluster



Stephan Hesselmann Federal Republic of Germany Ministry of Economy and Technology



Ronald Vopel European Commission DG MARE



Jean-Noel Durvy European Commission DG ENTR

Page 43 www.amem.at



## AMEM – best practice landlocked maritime cluster!



The majority of maritime clusters-admittedly-is concentrated in coastal areas, but the maritime economy stretches far beyond coastal regions. Landlocked Bavaria and Baden Württemberg are giving the best example. They account for more than 40 percent of Germany's marine equipment manufacturing potential!

The Conference in Prague gave a proof that maritime clusters in landlocked countries perfectly fit into the concept of an integrated maritime policy, a point passionately promoted by Commissioner Joe Borg, Head of DG Maritime Affairs and Fisheries. When highlighting a few examples, Joe Borg stressed his opinion that clusters with landlocked countries are essential to build a

knowledge based economy, as the know-how quite often is located in the "Hinterland". Addressing the economic crisis in worldwide shipbuilding, he raised another essential aspect: it is easy to relocate individual companies, but it is almost impossible to relocate a cluster.

Joe Borg concluded his speech, expressing his gratitude to AMEM –Austrian Marine Equipment Manufacturers – the smallest but very active maritime cluster in Europe – for having provided substantial input and experience for the preparation of this unique event during the Czech Presidency in 2009.



## **European Commission DG Enterprise and Industry**

The future of the European Shipbuilding Industry was discussed on June 24, 2010 in the European Parliament upon the invitation of MEP Andrea Cozzolino, Italy and MEP Ville Itälä, Finland. Although protagonists of totally different political and ideological camps, both Members of the European Parliament were united in their well founded and serious concern about the future of Europe's shipbuilding industry.

Andrea Cozzolino's election district is Naples in the South of Italy, almost a synonym for the omnipresent shipowner and liner operator Emanuele Grimaldi and Fincantieri's Castellammare di Stabia shipyard. Ville Itälä's private and political roots are in Turku, in the South of Finland famous for the yard where the world's largest cruise ships were built before the inroads of the Koreans (STX).

Shipyard workers not only in these two economically weak regions fear for their jobs. A total of 500.000 highly experienced workers all over Europe are facing greater uncertainties than ever before!

It caused the audience a minor shock when Italian Ruth Paserman was asked if there is anything that can be done for shipbuilding, the European Commission official and member of the Cabinet of Italian Commissioner Antonio Tajani took an unexpected frank line. "No", was the simple response. In other words:

## DG Enterprise and Industry had thrown in the towel on EU shipyards.

The hopes of the European shipbuilding and equipment manufacturers community are now directed to **DG REGIO**.



Ruth Paserman
European Commission Cabinet
Vice-President Antonio Tajani

Aiello Isabella AREA Science Park		Cergol Maurizio	FINCANTIERI, Cruise Vessel Chief	
Ambrosio Luca	FINCANTIERI, Offshore Business Unit		Designer	
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Fabris Lorenzo	Combustion Engines University of Trieste, RINAVE	Guglia Paolo		
			•	
Farinelli Danilo	DITENAVE	Gutty Raphaela	Shipbuilding & Boating Competence	
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Segatti Ketty	Regione Autonoma FVG, Director	Tracogna Andrea	University of Trieste, Professor	
	Universities	Troberg Mikael	Wärtsilä Italy Trieste, Testing &	
Skalar Komljanc Mojca			Performance	
Sprocati Marco	Triboo Management, Director	Varrocchi Stefano	FINCANTIERI, Operation Planning & Control	
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Taccani Rodolfo	University of Trieste, Fuel cells & batteries	Vopel Ronald	DG Mare	
Tessarolo Alberto	University of Trieste, RINAVE, Electrical	Wijnolst Niko	European Network of Maritime Clusters	
	Engineering	Wimmer Andreas	Vienna University of Technology, Professor	
Tomasella Marco	University of Udine, RINAVE	Zotti Stefan	DG Regional Policy, Member of the Cabinet	
Tondo Renzo	Regione Autonoma FVG, President	Zotu Stelali		

### **Abbreviations & Acronyms**

AMEM	Austrian Marine Equipment	EU	European Union	PRC	Peoples Republic of China
	Manufacturers	FPSO	Floating Production Storage Offloading	PROINCO	R Proactive Innovation Support for SMEs
BIC	Business and Innovation Centres	FTP	Fire Test Procedures		
CEI	Central European Initiative	FVG	Friuli Venezia Giulia	POR	Programma Operativo Regionale
CETENA	Centro per gli studi di Tecnica Navale	IACS	International Association of Classification Societies	RINA	Registro Italiano Navale
CIMAC	Conseil International des Machines	1140		RINAVE	Consortio per l'alta Ricerca Navale
	a Combustion	IMO	International Maritime Organisation	R&D	Research and Development
COMET	Competence Centers for Excellent	ISO	International Standards Organisation	KID	Research and Technological Development
	Technologies	ISSC	International Ship and Offshore		
CONFINDUSTRIA Confederazione Generale			·		Safety related Design, Operation
	dell'Industria Italiana	ITTC	International Towing Tank Conference		and Regulation
DG	Directorate General	LCS	Littoral Combat Ship	SFG	Steirische Wirtschaftsförderung
DITENAVE	Distretto Tecnologico Navale e	LNG	Liquified Natural Gas		Scuola Internazionale Superiore di Studi Avanzati
	Nautico del Friuli Venezia Giulia	MAG	Metal Active Gas		
ECMAR	European Cooperation in Maritime Research	MEP	Member of the European Parliament	SMEs	Small and Medium Sized Enterprises
<b>EnAIP</b> Ente	Ente ACLI Instruzione Formazione	MIG	Metal Inert Gas		South Transdanubian Regional Development Agency
	Professionale	MMA	Manual Metal Arc		
ERDF	European Regional Development	MiUR	Ministry of Education and Research, Rome	TIA	Slovenian Technology Agency
	Fund			TIG	Tungsten Inert Gas
ESF	European Science Foundation	OSV	Offshore Supply Vessel	WIT	Wärtsilä Italia Trieste