Enhancing European maritime collaboration through exchange of service, technology and information

MarTech LNG event
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- Overview

- Case studies
  - Inter-departmental collaboration of multidisciplinary ship design optimisation
  - Providing remote automated ship analysis service
  - Call for new technology providers
  - Search providers for structural design of Inland Barge

- Participation in EuroVIP
EuroVIP

Information organised
Applied to company’s needs
Collaboration orchestration
Matching, negotiation

Looking for expertise
Providing expertise

Bringing the best expertise together

Accessing information about contracting, timing, planning

Knowledge exchange

Grant agreement no: SCS0-GA-2011-266054
What do we offer?

Technical Collaboration Platform

European Maritime Collaboration Portal
Case studies

- TCP: Inter-departmental collaboration of multidisciplinary ship design optimisation
  - TCP: Providing remote automated ship analysis service
  - EMCP: Call for new technology providers
  - EMCP: Search providers for structural design of Inland Barge
TCP case study – Inter-departmental collaboration of multidisciplinary ship design optimisation

- Medium enterprise in the Netherlands
- Main activities: Ship simulation, analysis, and model test; Analysis software; Consultancy
- Background: multidisciplinary optimisation
- Requirements: Automate the process and conduct optimisation between different departments
TCP case study – Inter-departmental collaboration of multidisciplinary ship design optimisation

- **Disciplines**
  - Resistance
  - Behavior in waves (seakeeping)
  - Maneuverability

- **Inter-departmental collaboration**
  - Each criterion analyzed by different person at MARIN
  - People located at different floors in the company
TCP case study – Inter-departmental collaboration of multidisciplinary ship design optimisation

1. **Geometry generation**
   - **Panels Generation**
     - Run RAPID
     - Visualize (SURFVIS)
     - Resistance
   - **Sections Generation**
     - Appendage description
     - Run PRECAL
     - Visualize (MATLAB)
     - Seakeeping
   - **Run SURSIM**
     - Visualize (MATLAB)
     - Maneuverability

2. Analyse overall performance

**Software tools used:**
- RAPID
- PRECAL
- SURSIM
- MATLAB
- SURFVIS
TCP case study – Inter-departmental collaboration of multidisciplinary ship design optimisation
EuroVIP brings the company:

- Automated multi-disciplinary project
- Automated data flow
- Time saving 60%
- Guaranteed data consistency
- Error reduction: Free of error if configured correctly
EuroVIP brings the company:

Time saving

Reduced cost

Improved efficiency
Case studies

- TCP: Inter-departmental collaboration of multidisciplinary ship design optimisation
- **TCP: Providing remote automated ship analysis service**
- EMCP: Call for new technology providers
- EMCP: Search providers for structural design of Inland Barge
TCP Case study – Providing remote automated ship analysis service through ticket system

- Medium enterprise in Sweden
- Main activities: Ship design, analysis, and model test; Port terminal development; Consultancy

- Background: SHIPFLOW
- Requirement: To provide online CFD analysis service
TCP application 2 – Providing remote ship analysis to customers through ticket system
TCP application 2 – Providing remote ship analysis to customers through ticket system

Select service & provide input

Execute

Receive results

Integrated customer service

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EuroVIP brings the company:

- Integrated customer service
- Preconfigured automatic SHIPFLOW process
- Automatic generation of offset file based on user’s uploading a 3D file describing the ship
- Transparent communication with customers
- Reduced management workload
- Enable to provide cheaper service to customers
EuroVIP brings the company:

- Time saving
- Reduced cost
- Improved profit
Case studies

- TCP: Inter-departmental collaboration of multidisciplinary ship design optimisation
- TCP: Providing remote automated ship analysis service
- EMCP: Call for new technology providers
- EMCP: Search providers for structural design of Inland Barge
EMCP case study: Call for new technology providers

- Large enterprise in UK
- Main activities: support services company specialising in managing complex assets and infrastructure in safety- and mission-critical environments. (inc: ship manufacture)
- Background: Liquid Gas Systems of Ship3
- Requirements: to cut costs for fire alarms and control and monitoring system
European Maritime Collaboration Portal

http://portal.euro-vip.eu/
EMCP case study: Call for new technology providers

- Call for collaboration – to be online by end Sep 2013
- Tenders will be reviewed and communicated online during October 2013
- Decision will be made based on cost and quality by October 2013
Expected benefits by using the EMCP

- Disseminate the call to a wider audience
- Access to latest innovative technologies and services
- Find alternative service providers with good value

For supply chain providers:
  - Access previous established closed supply chain
  - Expose technologies and services to a wider maritime audience
EMCP brings industry:

- European Maritime Community technology and service dissemination
- Global visibility and collaboration development support
- Access to latest innovative technologies and services
- Provisions reviewed and rated by users
- Communication facilities
- Forging alternative easy to use links between collaborators
- User groups – open or private
Case studies

- TCP: Inter-departmental collaboration of multidisciplinary ship design optimisation
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EMCP case study: Search providers for structural design of Inland Barge

- FORKOR: Small enterprise in Szczecin, River Odra, Poland
- Main activity: repairing of small floating vessels
- Background: to extend activity towards building of innovative hulls of pushed barges
- Requirement: to develop collaboration with other enterprises which are able to give efficient technological support
Required capabilities

- FORKOR needs capability or experience in
  - innovative push barge hull structure
  - structural analysis
  - hull structural optimisation

- European Maritime Collaboration Portal
Innovative design of inland barge hull for shallow water
Innovative design of inland barge hull for shallow water

INBAT is the acronym for Innovative Barge Train and describes a low draught inland waterway transport system that was developed to operate with economic benefit with a barge draught ranging from 0.60 to 1.70 m. The project objectives were achieved by application of new lightweight construction materials with innovative structural design, engineering and production methods to improve barge payloads and to obtain lower production costs, optimized shallow draught propulsion systems and hull forms for best overall operating efficiency. Main objectives: - Reduction of fuel costs due to higher propulsive efficiency - Total reduction of time requirement per trip, allowing more trips per year - Increase of payload capacity due to lesser light weight of barges. - Better utilization of particular river operation profiles for optimized efficiency. - Capability to transport on barges heavy bulk cargo (iron ore) at maximum permissible draught. - Capability to carry also container and special large volume project cargoes. - Increase of operation time by utilization of also low water level periods in the river. - Additional waterway stretches with low water depth that can be utilized for navigation. - Reduced time for maintenance and repair due to modular outfitting and better accessibility. - The increase of navigation at average operating draught will be 25.4%. The power consumption required to obtain a transport work of 1000 ton will be reduced from 27 kWh to then 20 kWh with an INBAT barge train.
Hull structure analysis

Network of Excellence on Marine Structures

The overall objective of the Network, which has a duration of 5 years, is to improve the comfort, effectiveness, safety, reliability and environmental behaviour of ship structures through the application of advanced structural and reliability assessment within design, fabrication and operation, leading to increased public and commercial confidence in the competitiveness and use of waterborne transportation. This objective will be achieved by strengthening the European competitiveness aiming at a permanent organisation of the type of a virtual institute, which will ensure the integration of the various European groups in a European Centre of Competence for structural analysis of ships with improved safety environmental behaviour and comfort. The objective will be achieved through a programme for jointly executed research in the area of structural analysis of ships, the creation of research facilities and platforms and a continuous programme of dissemination and communication of research results. The way in which the programme is designed contributes to the mutual specialisation and complementary through building up of strengths and the shrinking of weaknesses of the participants. This programme will strengthen the scientific and technological excellence of the European Research Area by integrating at a European level a critical mass of resources and expertise that will be able to provide European leadership in the design of efficient and safe ship structures. The activities of the Network will cover the different areas related with advanced structural analysis such as: - Specification of the loading appropriate for the various modes of structural response and strength - Methods and tools for the analysis both numerically and experimentally of the structural strength and performance, including aspects such as ultimate strength, fatigue, crashworthiness, fire and explosion, resistance, and noise and vibration - Influence of fabrication methods and new and advanced materials on the structural strength and performance of ships - Tools for design and optimisation of ship structures - Tools and methods of structural reliability, safety and environmental protection of ships.

Acronym: MARSTRUCT
Link: http://www.marstruct.eu

Associated Organisation

Project category
EU Funded Projects

* EuroVIP will be present at Europort Exhibition in Turkey 20-23 March 2013

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Hull structure optimisation

MARIN Ship design

The Ship business unit pursues, as main objective is to provide assistance to owners, shipyards and governments in order to improve the quality of their vessels regarding all hull resistance, propulsion, seakeeping and manoeuvring aspects. Our services are based on experience with nearly 8,000 ships. The business unit plays a leading role in this field worldwide and is involved in a vast amount of significant ships each year. The hands-on experience includes a wide range of ship types and propulsion units, conventional and innovative. Within the ship business unit six market teams and four knowledge groups are integrated in a matrix structure. Within the market teams specialists of each knowledge group focus on the needs of a specific market. This gives the a good working knowledge on the important topics for your type of vessel, resulting in one answer to your question. The market teams are: Cruise & Ferry, Navy, Special Purpose Vessels, Inland Ships, Merchant Vessels & Work Boats, Yachts.

Street address: Haagseweg 2

City: Wageningen

Post code: 6708 PM
Hull structure optimisation

Design of Improved and Competitive Products using an Integrated Decision-support System for Ship Production and Operation

Background & policy context: European ship building has achieved an important market share through its ability to innovate. This is achieved both through new concepts and the structural optimisation of the entire ship development cycle. Such optimisation has the possibility to produce smarter ships that are better both in terms of operation and cost. IMPROVE applies this innovation to produce critical innovative improvements to three product categories. These are: 1. Gas carriers (LNG). Europe has constructed several LNG gas carriers of between 72,000 and 140,000. Several key issues are associated with the development of new LNG structural concept: - combining fatigue assessment reliably within the early design stage; - developing concepts concerning new markets for very large LNG gas carriers; - optimising design for production in terms of workload distribution between the different workshops. 2. RoPax RoPax is an increasingly important class and in the last five years. This has been an important sector for some yards such as the Ulljanik Shipyard in Croatia. To be competitive against strong global competition, the ship concept must be in line with ship owners' needs in terms of the current and future market conditions. 3. Chemical tanker. Basic tankers are ordered by owners for the short term. Most by low cost producers, typically outside the term operational and maintenance costs, lower total life cycle costs. These are a generic objectives of the project are: - to design tankers, large RoPax; - to improve and apply models of multiple criteria ship design, specific objectives for each new product include: - investigate such new products so as to - fatigue assessment at the early design at Large RoPax: the arrangement of a large and a smaller gross tonnage. The challenge solution with the IMPROVE tools and may integrate all these models with the design and estimate overall life cycle savings. Methodology: The IMPROVE Research and Technical Development tasks include: - identification of new product concepts and stakeholders’ requirements; - establishing problem and model definitions; - identification of structural load and response calculation modules; - assessment of production and operational aspects; - integration of identified models from above-mentioned work packages; - development of an integrated IMPROVE platform for the design of three new generations of products; - exploitation and dissemination activities of the project.

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Search results:

- **INBAT, Safety at Sea** provide potential innovative concepts related to inland barge hull for shallow water.

- **MARIN, MARSTRUCT** provide potential service related to structural analysis hull structure.

- **MARIN, IMPROVE** provide potential service to structural optimisation of hull structure.
European Maritime Collaboration Portal can be a very useful tool for supporting companies in the search for innovative technologies in particular where personal contacts between the employees of small businesses are not sufficient.
Main functionalities

Find a Technology Service or Product
- Search for a Technology
- Search for a Service
- Search for a Project

Submit New Content
- Register Technology/Project/Service
- Publish a Call for Collaboration
- Submit Tender

Register
- Fill in the Registration Form

What would you like to do?

Start or Resume Collaboration
- Start/Resume Collaboration
- Start/Resume Technology/Service Collaboration
- Form a Networking Group

Explore Collaboration Options
- Search Calls
- Search Proposals
- Find Collaboration Partners
- Contact a Potential Partner

Explore
- Start/Resume Collaboration Orchestration
- Start/Resume Technology/Service Collaboration
- Form a Networking Group

Start or Resume Collaboration
- Start/Resume Collaboration Orchestration
- Start/Resume Technology/Service Collaboration
- Form a Networking Group
Opportunities for involvement in EuroVIP:
Participant group

- No contractual obligations to the project.
- Free marketing and exposure.
- Free access to the EuroVIP events and systems.
- Facilitated expansion of collaboration potential.
- Will be invited for project shows, workshops, and demonstrations.
- Will be informed of project advances through newsletters.
- Will constitute as a potential collaborative partner.
Participant group

- Become a member of the participant group
  - Free access to the portal and the platform during the project
  - gain access to all of the facilities, influence its development to suit your needs
- [http://euro-vip.eu/](http://euro-vip.eu/)
- Simply fill in a form, or register in the portal and use its main features
Thank you!

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