

## TECH SHOWCASE

### **“Engineering the Performance: New technologies and Design for the nautical and the automotive”**

Host: Matteo Zaccagnino

Introduction of the convention and the relators

Institutional Greeting

Delegate from Friuli Venezia Giulia authority

prof. Mitja Gialuz, President of Barcolana

prof. Paolo Rosato, University of Trieste

Daniele Maver, Jaguar Land Rover

#### Host's Speech

Thinking about this convention, we wanted to create a headline not far from being a provocation: engineering the performance, namely making the vehicles' performance more precise, predictable, economic and functional, whether these are the bigger Cruise Ships in the world, catamarans build-up for the America's Cup or the most beautiful cars on the market. Big companies and different project teams have a common target: reach the excellence increasing constantly performances of their products. A performance, made by different elements, as we may see in this convention: from the use of computers and sophisticated software for the analysis of performances, capability and the project engineers, and the more and more solid investments in research and development. Today we want tell and illustrate to our audience, towards skilled relators, the efforts payed in reaching and increasing the performance to win our challenge, whether it is a challenge of speed, comfort or a result in sport or business.

#### Maurizio Cergol's Intervention

Starting from the latest Fincantieri Ship's case history, now under construction in Monfalcone, the biggest ship under construction in Italy, the MSC Seaside (more than 150k tons), we will tell how Fincantieri is working in the engineering the performance. In the largest European naval construction center, based in Trieste, Fincantieri is using latest generation computing systems to analyse important elements in the project phase, such as the analysis of the vibrations consequences, the dynamic of emissions' behaviour, the pool water movement in the navigation phase in rough sea conditions or the wind effects outdoor. The expertise of Fincantieri, the technology and computers at disposition allow us to predict the users' on board experience and to design a more improved high quality ship.

#### Martin Whitmarsh and Mauricio Muñoz's Intervention

They will provide guests the opportunity to understand the depth of Land Rover's commitment to developing the world's fastest ACC foiling multihull catamaran.

Whitmarsh's speech will be more focused on the Land Rover BAR Innovation Partnership with Jaguar Land Rover Advanced Engineering team, telling the birth of the project and its mission linked to America's Cup, while Muñoz will showcase Land Rovers capabilities in engineering the performance, communicating Land Rover's commitment to developing cutting edge design, world-class innovations and technology solutions within its vehicles: on the road and on the sea.

He will describe the 3 main areas of focus: aerodynamics & CFD, crew power optimisation & personalisation and stability & performance

#### Prof. Hrvoje Jasak's Intervention

He will talk about the importance of guaranteeing to young students of the engineering field the instruments and software able to support them in designing and therefore in engineering the performance. The teamwork of the Jasak Project realised a fluid dynamics open source software, usable by students from all over the world to improve quality confront themselves with the market.

During his speech, he will clarify the state-of-art of wave modelling capability and its use to calculate wave loads on ship hulls and off-shore structures

There will also be an exhaustive explanation of the wave motion with a technical simulation of how irregular and breaking waves effect the sailing

The talk is completed with examples of sea keeping of 6-Degrees-of-Freedom (6-DOF) floating objects in regular and irregular seas