

PRESS RELEASE

FROM: Mavel, a.s.
Jana Nohy 1237, 256 01 Benesov, Czech Republic
+420 317 728 483 info@mavel.cz



MAVEL PARTICIPATES IN EUROPEAN UNION PROJECT “EXPERTISE” COORDINATED BY POLITECNICO DI TORINO TO DEVELOP ADVANCED COMPUTATIONAL TOOLS FOR TURBOMACHINERY

15 international young researchers at work to improve virtual testing of turbines, useful in many sectors, from aircraft engines to hydrocarbons extraction and energy production

Torino, April 24, 2018 – Mavel announced that it is participating in the EU project EXPERTISE - models (the “Expertise Project” or the “Project”), which is an acronym for *EXperiments and high PERformance computing for Turbine mechanical Integrity and Structural dynamics in Europe*. The Expertise Project is coordinated by professor Stefano Zucca of Politecnico di Torino and involves a research consortium of 11 beneficiaries and nine partner organizations from eight countries. The Expertise Project brought together 15 Ph.D. students from all over the world and 15 parallel and complementary research projects. The goal is to define a virtual testing system for turbomachinery, which will simulate the entire machine and not just single components.

The Project is based on the conclusion that turbines are expected to play a major role as a disruptive technology for energy and mobility and the European research community should prepare for the upcoming challenges. Simulation is crucial in designing turbomachinery, which is used in many applied fields such as energy production, gas extraction, civil or military airplane or ship engines and turbochargers.

The Project notes that rotating elements are critical because high rotation speed can cause damage and threaten the structural integrity of the entire machine. For an airplane engine, the worst-case scenario could include human injury or death. The design and certification of these components is a complex and expensive process, which requires significant experimental testing. The use of efficient and accurate simulations could considerably decrease development costs and improve the final project reliability, thus reducing time to market.

The Expertise Project’s methodology to reach this goal foresees 15 individual projects performed by 15 ESR- Early Stage researchers (the Ph.D. students), selected and supervised by Consortium researchers. The exchange among those young researchers involved in the project will contribute to a **new generation of international researchers**

used to tackle complex challenges by working as a team. Moreover, researchers will benefit from multidisciplinary training in the fields of structural mechanics and parallel computation, developing their competence to contribute to the demanding tasks in numerical simulation for mechanical project and design.

The following table lists the full Research Consortium for the Expertise project and is composed of 11 Beneficiaries and nine partner organizations:

Expertise Beneficiaries	Expertise Partner Organizations
Politecnico di Torino (Italy, project coordinator)	Samara University (Russia)
Imperial College of Science Technology & Medicine (UK)	Rolls-Royce PLC (United Kingdom)
Universitaet Stuttgart (Germany)	NEC Deutschland GmbH (Germany)
University of Oxford (United Kingdom)	Doosan Skoda Power (Czech Republic)
Ecole Centrale de Lyon (France)	SAFRAN Aircraft Engines (France)
Middle East Technical University (Turkey)	General Electric Deutschland Holding (Germany)
Technische Universitaet Muenchen (Germany)	Nuovo Pignone Tecnologie srl (Italy)
Barcelona Supercomputing Center (Spain)	SAFRAN (France)
VŠB – Technical Univ. of Ostrava, IT4Innovations (Czech Republic)	University of Bristol (United Kingdom)
Cray UK Limited (United Kingdom)	
Mavel AS (Czech Republic)	

More information on the project website: <http://www.msca-expertise.eu/>

Mavel is a global leader in the supply of turbines (Kaplan, Francis, Pelton, and Micro) for hydroelectric power plants from 30 kW to 30+ MW. Founded in 1990, the company has installed or signed contracts for over 500 turbines at more than 300 sites in 42 countries around the world. Mavel designs and manufactures its turbines and related equipment at its ISO certified facilities in the Czech Republic.