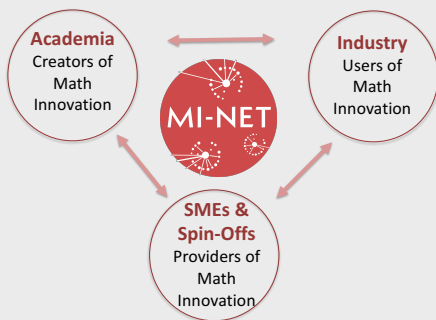


Doing the math on science in industry

COST Action TD1409 Mathematics for industry network (MI-NET)

A new European network will enable mathematicians across the continent to work together applying mathematics to a range of industrial problems from speeding up clinical trials of new drugs to improving the accuracy of weather forecasts.

Fostering links between mathematicians and industry

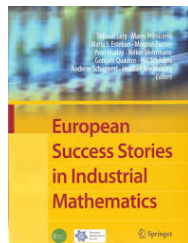


MI-NET will stimulate greater interaction between mathematicians and industrialists across Europe.

Follow us on Twitter @Maths4Industry, Linked in, or Facebook
Web page: www.mi-network.org

Why COST, why now

By supporting industry workshops, training weeks, and research visits, we have a real opportunity to both increase the number of problems solved for industry and inspire the next generation of industrial mathematicians.



There is an urgent need to ensure European competitiveness and a huge potential to leverage existing activity.

Study groups with in Industry

The Portuguese experience

European Study Groups with Industry (ESGI) originated in the UK in 1968. The concept has been adopted in several countries and, since then, this one week meetings have become the leading workshop for interaction between Mathematics and Industry in Europe. The first study group to be hosted in Portugal was the 60th in the ESGI series, in 2007. The Portuguese Network of Mathematics for Industry and Innovation (PT-MATHS-IN) was recently created and is responsible for its organization.

Table: 10 years of successful collaboration between mathematics and industry

<p>2007 - ESGI 60</p> <ul style="list-style-type: none"> Time travel for a single origin-destination Inverse kinematics for Stewart platform Warehouse sorting and collecting of parts Electrostatic separation of rubber and textiles Cooling of a rotor Optimization of task assignment in a factory 	<p>2012 - ESGI 86</p> <ul style="list-style-type: none"> Service scheduling in garden maintenance Optimal scheduling of the engine repair process Modeling floor flow in fiberboard manufacturing Modeling drying process in paper manufacturing Modeling power networks Modeling percolation and fractal structure in aerogels Model to Estimate and Monitor the progress of System Testing Phase Customer's expected energy consumption Picking optimization
<p>2008 - ESGI 65</p> <ul style="list-style-type: none"> Fraud detection in plastic card operations Optimizing a complex hydroelectric cascade in electricity market Reliability of a customer relationship management 	<p>2014 - ESGI 101</p> <ul style="list-style-type: none"> AMT (airline maintenance technicians) scheduling optimization Identification of energy supply units Optimizing crane operations in railways and subways Packing and shipping cardboard tubes efficiently
<p>2009 - ESGI 69</p> <ul style="list-style-type: none"> Estimating the price elasticity of water Management of stock surplus Licensing and Scheduling in BA Video How far can we go in aluminum extrusion Food distribution by a food bank among local social solidarity institutions Evaluation of taxi services provision on airport terminals carsheds for picking up passengers Checkout area design 	<p>2015 - ESGI 109</p> <ul style="list-style-type: none"> Modeling and optimization of production scheduling Physical model of PDF boards Setting the Reserve Fleet Surgical cases packages Prediction model to textile parameters Stock and production planning Time Reduction of the Packaging Process Reverse Management Picking in Diverse Hotels Pattern simulation Improving the grape reception process - Harvest Optimization of Production Planning
<p>2010 - ESGI 74</p> <ul style="list-style-type: none"> Reliability of a customer relationship management Management of stock surplus Licensing and Scheduling in BA Video BLUESHAPEMA How far can we go in aluminum extrusion Food distribution by a food bank among local social solidarity institutions Evaluation of taxi services provision on airport terminals carsheds for picking up passengers Checkout area design 	<p>2016 - ESGI 119</p> <ul style="list-style-type: none"> Stock and production planning Time Reduction of the Packaging Process Reverse Management Picking in Diverse Hotels Pattern simulation Improving the grape reception process - Harvest Optimization of Production Planning
<p>2011 - ESGI 81</p> <ul style="list-style-type: none"> Multiplex effect of the Engineering & Tooling sector in Portugal Innovation effect on the Engineering & Tooling sector Balanced Scorecard: objectives and its relationships Annual Components Maintenance Shop Production Planning: Random events prioritization 	

A success story in Portugal

Modelling, simulation and optimization of stock of an automotive spare parts wholesaler

Develop a tailor-made mathematical tool to control the stock management in the companies of NORS group that operate on the aftermarket sector.

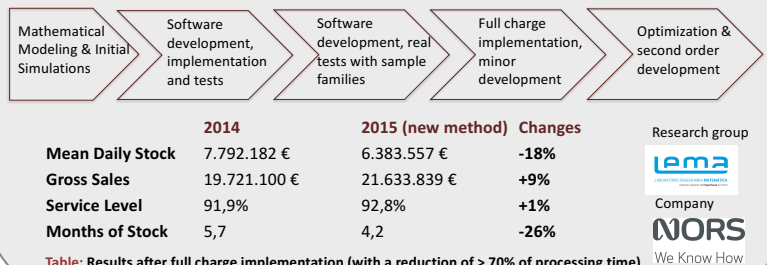


Table: Results after full charge implementation (with a reduction of > 70% of processing time)

Maths network will help solve real-world industry problems!