

**Keywords for Modelling, Simulation and Optimisation (MSO)**  
to be incorporated into the Horizon 2020 Work Programmes

- Uncertainty quantification
- Robustness of control/optimisation/algorithms (robust design)
- Risk analysis/sensitivity/management
- Virtual and Augmented Reality
- Patient specific, data driven modelling and simulation
- Medical Image processing
- Systems Engineering (Cyber-physical systems)
- Systems Biology & Biomedicine
- MSO in Mechanical & Biomechanical problems
- MSO for plasma physics
- Multiphysics/multiscale MSO in engineering
- Hybrid MSO of Complex Systems with Functional Networks
- MSO for telecommunication internet, data security and data coding
- MSO Methods for the Cultural Heritage
- MSO in additive/subtractive manufacturing
- MSO in virtual product development and prototyping via MSO
- MSO of smart materials
- MSO of technical processes
- MSO of transport phenomena
- MSO for environmental sciences (e.g. ecology, resource efficiency)
- MSO for aerospace (e.g. fluid and gas dynamics)
- MSO for Big Data and data mining
- MSO in Urban planning of energy, transportation, water, etc. systems
- MSO in management and decision making

Mathematical subjects:

- Scientific computation
- Numerical Mathematics & Methods for DAE, PDE, control, optimization, identification
- Matrix Analysis
- Applied Analysis
- Asymptotic analysis
- Discrete and continuous geometry
- Mathematical visualization
- Continuous and discrete optimization
- Applied statistics and stochastics
- Automated mathematical modelling
- Regularization, scaling, reduction and simplification of models