G-SCOP
SCIENCES POUR LA CONCEPTION, L'OPTIMISATION ET LA PRODUCTION

https://g-scop.grenoble-inp.fr

GCSP TEAM

Management and Control of Production Systems

Developing methods able to cope with uncertainty to support the management and control of goods and service production systems

The research carried out by our team aims to develop models, methods and algorithms to improve performance and ensure the proper operation of uncertain dynamic systems subject to extensive uncertainty and whose precise behaviour cannot be fully known in advance.

Research Topics

- Flow management in supply chains and production systems: scheduling, planning and reactive control
- Management of energy and healthcare system flow: optimization of building energy management and healthcare organization
- Safety, Monitoring, Supervision and Risk management: fault detection and isolation based on interval models or Bayesian networks, maintenance for distributed systems
- Tools and methods for modeling, simulation and optimization of uncertain dynamic systems: model engineering, interval analysis, stochastic approaches

Scientific Challenges

- Consideration of societal changes, human factors and new environmental or geopolitical requirements for flow management
- Cybersecurity of physical systems and risks stemming from connected objects within the framework of flow control
- Model engineering and efficient tools for uncertainty propagation

Partnerships

- Industrial collaboration: Renault, Eurocopter, FAL VESTA SYSTEMS, PSA, AirbusHelicopter, SNCF, BASSETTI, etc.
- Institutional collaboration: CSTB, CEREMA, INERIS, INRS, LASPI, CIRRELT (Université Laval, Canada), OASIS (ENIT, Tunisie), LIG, G2ELab, LEPMI, GIPSALab