

PHIMECA

MICROMECHANICS & WATCHMAKING

Mission-driven company since 2021



PHIMECA draws on its expertise in physical modeling and data sciences to help you design, operate and maintain your systems and structures with robustness and reliability.

To achieve this, Phimeca provides studies, training, consulting and development of customized software tools.

YOUR CHALLENGES

MECHANICAL STRENGTH

- Simulate the behavior of watch movements;
- Validate the mechanical strength of components under static or dynamic loads.

ROBUSTNESS

- Assess the impact of manufacturing tolerances on mountability;
- Assess the impact of external variability on the performance of a movement's functions.

PRODUCTION

- Control the assembly process using Artificial Intelligence;
- Use simulation to limit the back-and-forth between design and production;
- Reduce time-to-market.

EXPERTISE & SKILLS AT YOUR SERVICE

DESIGN

- Mechanical and thermal computation
- Computational-fluid dynamic
- Test specification and monitoring
- Probabilistic modeling
- Reliability and sensitivity analysis
- Robust optimization
- Performance computation

MAINTAIN

- System-level modeling
- 3D modeling
- Fatigue lifespan
- Predictive maintenance
- Data analysis
- Artificial intelligence
- Digital twins

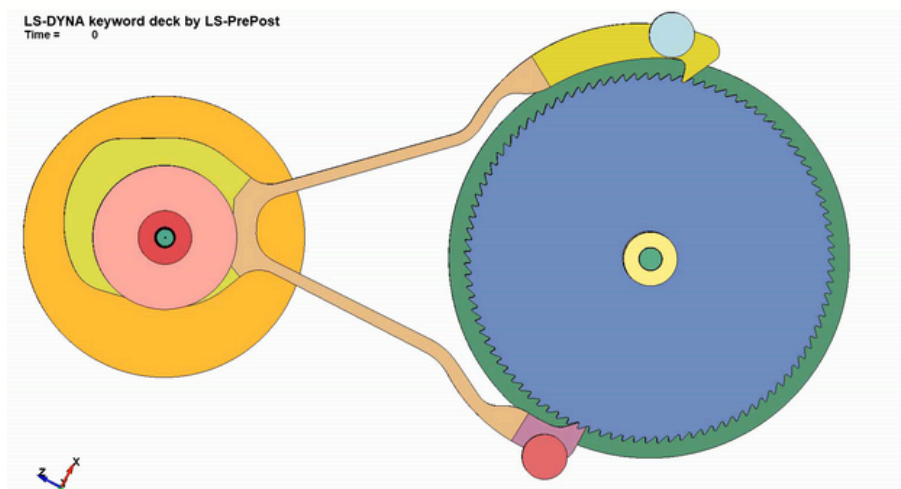
OUR TOOLS & ASSETS



- 34 employees, including 30 engineers and PhDs.
- Software: Ansys, Code_Aster, LS-DYNA, Persalys, OpenFOAM, Python, R, OpenTURNS, SALOME, Abaqus, Simcenter (NX), MODELICA.

EXAMPLES OF PROJECTS

- Simulation of watch movements: manual and automatic winding, first mechanism, chronograph and clutch.
 - Extraction of stresses, forces and contact pressures;
 - Post-processing of system performances (energy balance, arming coefficient, rotation speeds, etc.).
- Training of a movement quality prediction model based on production process data:
 - Maximize quality control success rate and reduce time-to-market.



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