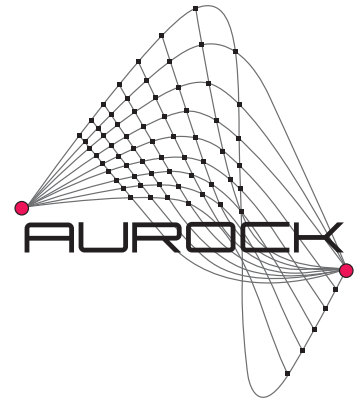


Manufacturing Process Simulation



*Hot stamping
of Titanium sheet*



Virtual analysing
for better understanding...

For quick solution overview, sensitivity analysis or complex phenomena apprehension, simulation is a robust way as an aid to your decision in the definition & optimisation of manufacturing process.

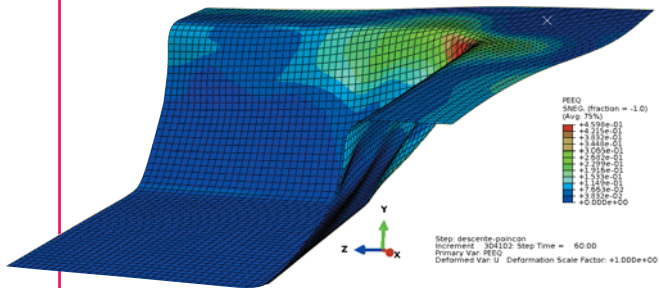
Aurock has a strong experience and high expertise in the field of process simulation & operational support to manufacturing & engineering.

Skills

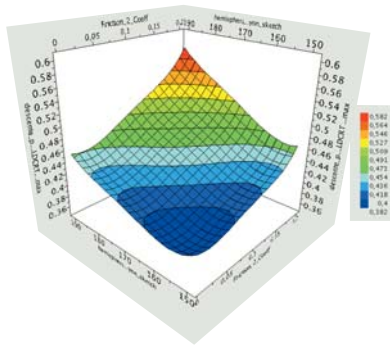
Numerical analysis

- Implicit & explicit schemes
- DOE, optimisation techniques
- External routine programming

Stamping of titanium sheet



DOE - influence of friction & sheet design on thickness

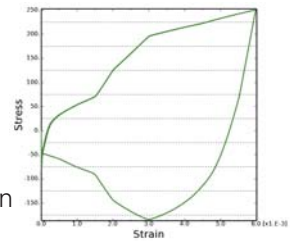


Software means

- Design: CATIA V5®
- FEM: Abaqus®, Code Aster®
- DOE: Isight®
- OPTIMISATION: Internal solutions

Materials

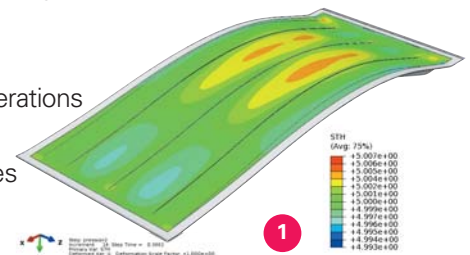
- Constitutive law identification
- Consideration of strain rate & thermo-dependence issues
- Failure limit diagram implementation
- Virtual testing



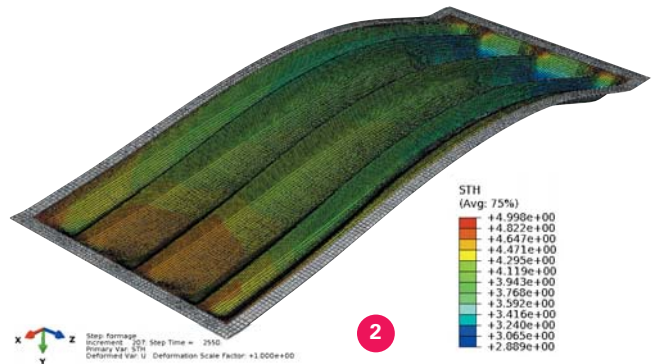
Implementation of elastoviscoplastic constitutive law for load cycling

Processes

- Sheet forming
- SuperPlastic Forming (SPF)
- Hot forming
- Stamping
- Straightening operations
- Forging
- Special processes



Pre-forming (1) & SPF (2) of titanium aeronautical part



Services

- Thermal & mechanical simulation for manufacturing process and structural analysis
- Aid to design & definition of process parameters
- Optimisation of manufacturing processes according to technical & economical criteria
- Sensitivity analysis to process parameters
- Technical & scientific support on manufacturing processes
- Academic R&D issues transfer to industry



Think differently !

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