

## Process simulation service

### From feasibility studies to justifications for stakeholders

Expertise in materials and in-depth knowledge of manufacturing are key to ensuring quality components.

#### Challenge

Combining metallurgical knowledge of steel ingots with manufacturing program know-how to predict mechanical characteristics and quality of finished parts.

#### Solution

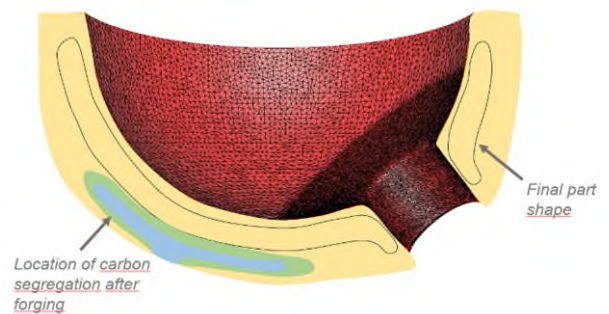
Framatome proposes a range of process simulations for forged components, including forging and heat treatment steps. In the design phase, simulations ensure the feasibility of components. In addition, simulations provide input to manufacturing programs to obtain the required level of quality, optimize costs, and manage lead-times.

During production, simulation models can take into account process parameters, and so, increase the level of knowledge of components characteristics, for a single part or serial production.

#### Customer Benefits

- Components feasibility (steel ingots, industrial means,...), risk analysis (prediction of metallurgical behaviour, reduces number of test parts)
- Manufacturing program validation, product and process optimisation
- Add value during qualification process
- Demonstrate conformity and quick solutions for production issues
- Enable management of serial production
- Increase knowledge of components' metallurgy and help justify their predicted life time

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#### Our simulation services

- Metallurgical expertise service for forging processes
- Production follow-up service (single part or series):
  - First part follow-up and simulation
  - Instant simulation with real production parameters
  - Serial parts comparison with first one thanks to process simulation
- Manufacturing program optimisation service

#### References

- CEA
- EDF
- Naval Group

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