



The European Materials Modelling Council

Solutions for a knowledge-based manufacturing of materials

Project proposal:

Solutions for a knowledge-based manufacturing of materials

Call: NMBP-09-2018: Accelerating the uptake of materials modelling software (IA)

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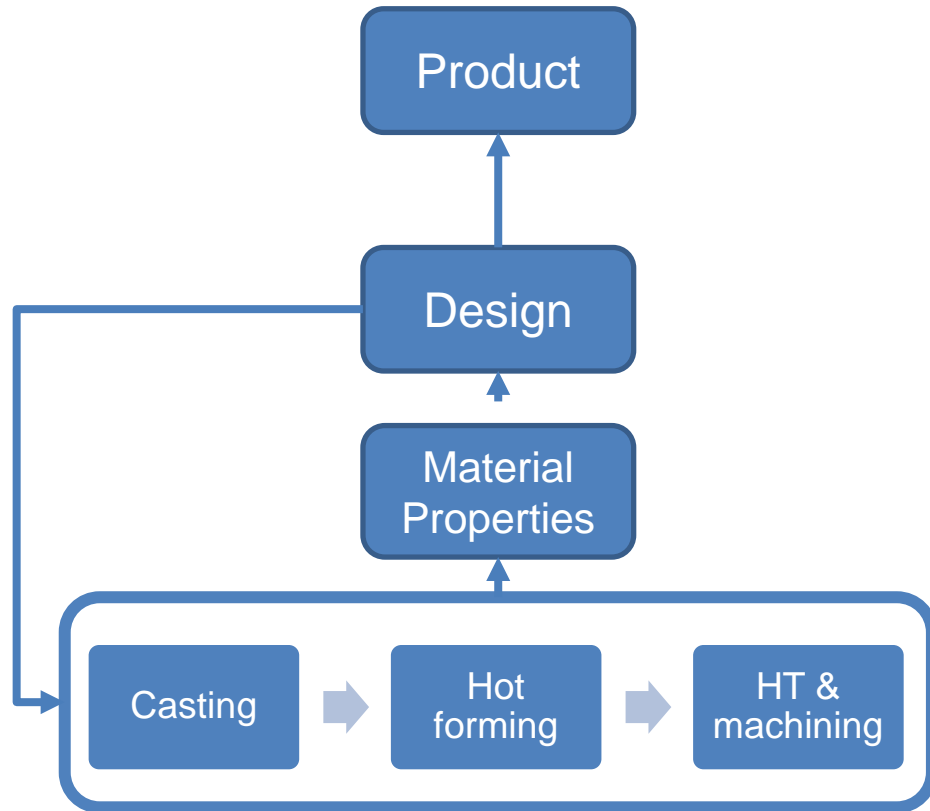


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Problem:

- Increasing demand of industry of **reducing the weight and cost** of materials and components.
- Manufacturers must **tighten their design criteria** without compromising performance.
- This requires a **complete understanding** of the microstructure and final properties of materials.



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Objective:

- Develop models that correctly describe the evolution of the microstructure during each manufacturing process and predicts the anisotropy and heterogeneity of final mechanical properties.
- Create a framework that integrates existing and developed models and material databases involved in the entire process chain relevant to the design of materials/components.

TRL: Between TRL 4 (new models must be developed) and 7 (final integrated framework)

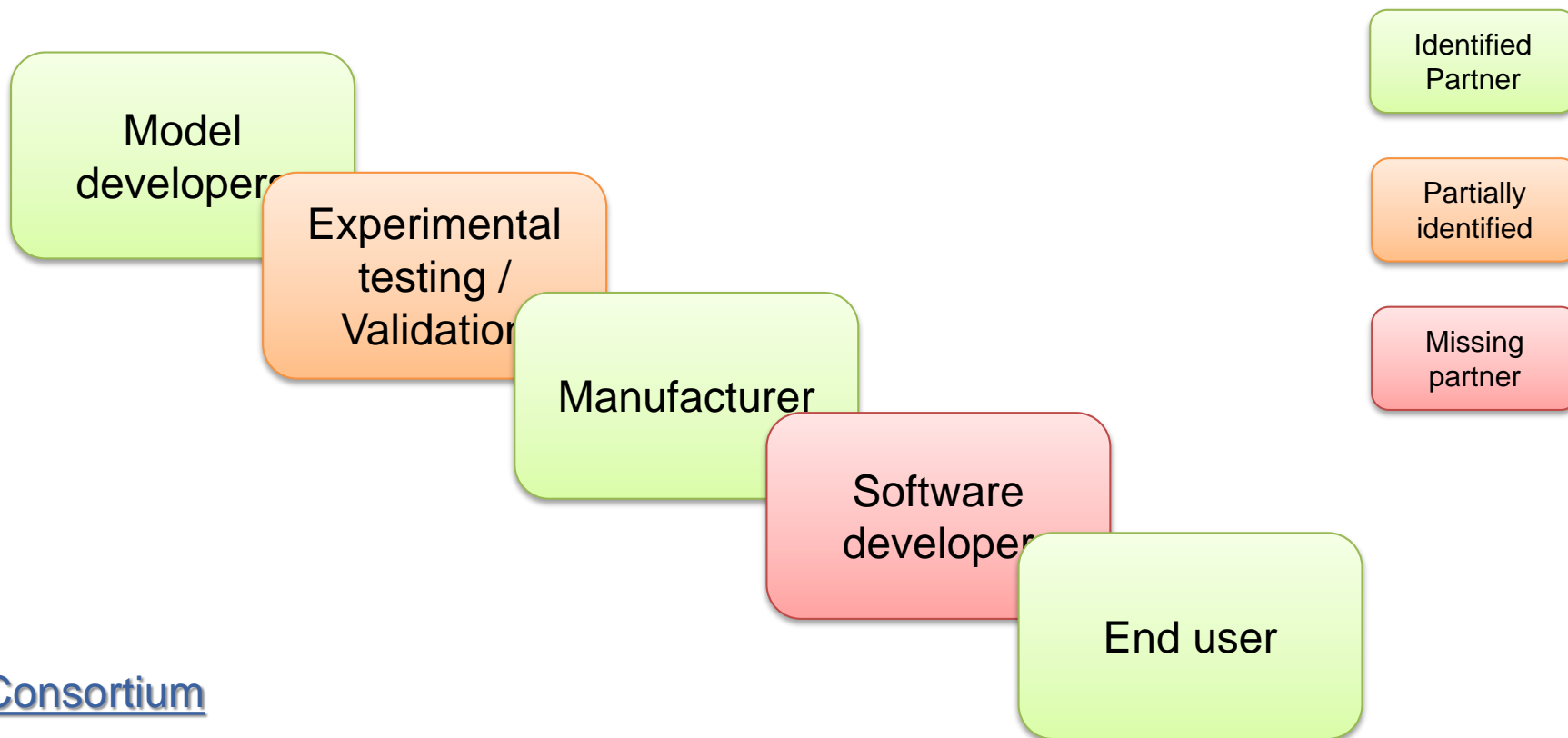
Impact:

- The access of industry and SME to an integrated modelling framework that embraces the whole manufacturing process chain will have a large impact in the design time (enables a rapid business decision making) and costs (single tool for the entire processing chain)
- The need of trial-error experiments by a factor of 5 (or more for those components that require the combination of different processing techniques).



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