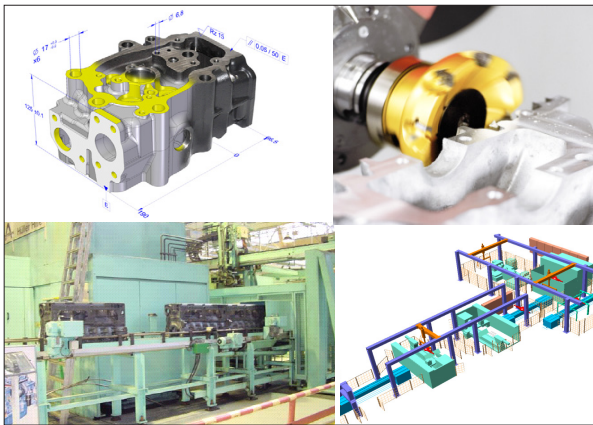


Component Manufacture



The component manufacture R&D cluster is focusing on R&D needs in the area of advanced manufacturing of components for the automotive industry and some expected results are:

- Reduced weight and energy losses in powertrains.
- Lower total cost/produced component, during the lifecycle of the equipment.
- Ramp up time of new system after installation decreased by 30–40 %.
- Minimising time for generation and editing process plans.
- Guidelines and demonstrators how to design human friendly systems.

Prioritised R&D areas

Human – (1) Human adapted process environment in operation, set up work, inspection, service and maintenance, (2) knowledge transfer from R&D projects.

Line/Cell – (1) Identify the strategic components for future powertrain, (2) Development of factory design processes supported digital models with standardised formats, (3) Demands of robustness and flexibility of new and existing production lines, (4) Design of efficient production lines / product flow.

Machines/Equipment – (1) Quicker feedback and corrective actions if problems occurs to minimize the possibility of machine failure, (2) Characterisation of machine tools and production equipment, (3) Robust and reliable systems for in-line measurement of the production equipment.

Tools and Process Planning – (1) Implementation of model driven work procedures for process planning, (2) Virtual manufacturing processes with process chain analysis capability for process planning to be introduced in industry in significant scale, (3) Awareness, utilisation and influence of international standardisation within STEP Manufacturing and other relevant groups.

Process – (1) Forming, (2) Heat treatment, (3) Cutting, (4) Surface integrity topics, (5) New advanced materials, (6) New combined processes, (7) Environmentally friendly manufacturing processes.

Material – (1) Casting and machining of high strength cast materials like CGI and ADI, (2) Combinations of different materials in joint structures and components, (3) New steels for induction hardening of transmission components, (4) Ultra clean steel for high performance transmission components, (5) Laser welding of powertrain components, (6) Coatings for powertrain components.

Project road-map.

Identified R&D topics	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Aims and Vision (short and long term)	
1. Human adapted process environment in operation, set up work, inspection, service and maintenance, (2) knowledge transfer from R&D projects.																						Human adapted process environment in operation, set up work, inspection, service and maintenance, (2) knowledge transfer from R&D projects.
2. Identify the strategic components for future powertrain, (2) Development of factory design processes supported digital models with standardised formats, (3) Demands of robustness and flexibility of new and existing production lines, (4) Design of efficient production lines / product flow.																						Identify the strategic components for future powertrain, (2) Development of factory design processes supported digital models with standardised formats, (3) Demands of robustness and flexibility of new and existing production lines, (4) Design of efficient production lines / product flow.
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4. Implementation of model driven work procedures for process planning, (2) Virtual manufacturing processes with process chain analysis capability for process planning to be introduced in industry in significant scale, (3) Awareness, utilisation and influence of international standardisation within STEP Manufacturing and other relevant groups.																						Implementation of model driven work procedures for process planning, (2) Virtual manufacturing processes with process chain analysis capability for process planning to be introduced in industry in significant scale, (3) Awareness, utilisation and influence of international standardisation within STEP Manufacturing and other relevant groups.

Cluster members



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**Meeting place for success
Katrineholm 17–18 May 2017**