

PTC Innovatum a Unique Arena for Production Research and Development

Aerospace Technology Congress 2016

Elis Carlström

elis.carlstrom@swerea.se

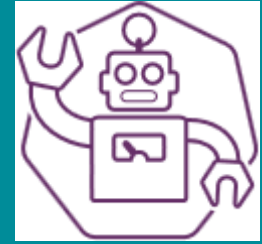


PART OF RISE

swerea
swedish research

PTC – Productions Technology Centre

Production arena for metal components



- Run by Innovatum together with 10 partners (en small number of employees)
- Research and Innovation projects within production technology together with industry and universities
- The partners pay a yearly service charge and make decisions about the goals of the activities



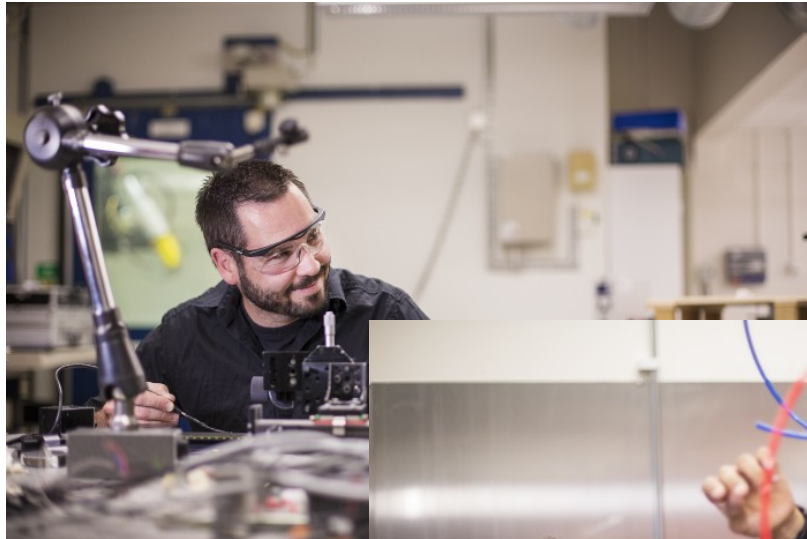
INNOVATUM



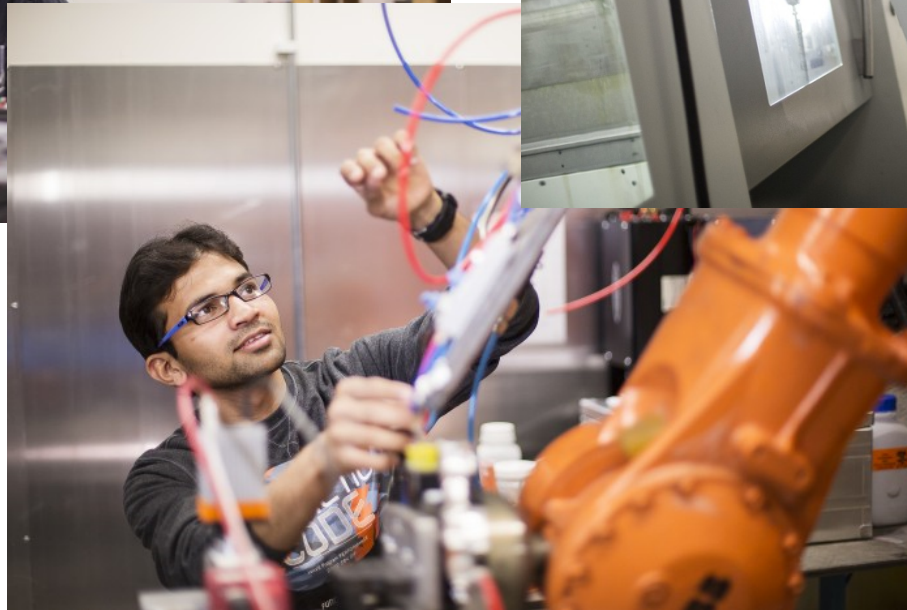
PTC Innovatum in Trollhättan a collaborative arena

- PTC Innovatum in Trollhättan is a unique area for collaboration
 - university
 - institute researchers,
 - students
 - industry
- There are five main technical areas within production technology are flexible industrial automation, machining, thermal spray and welding and additive manufacturing.

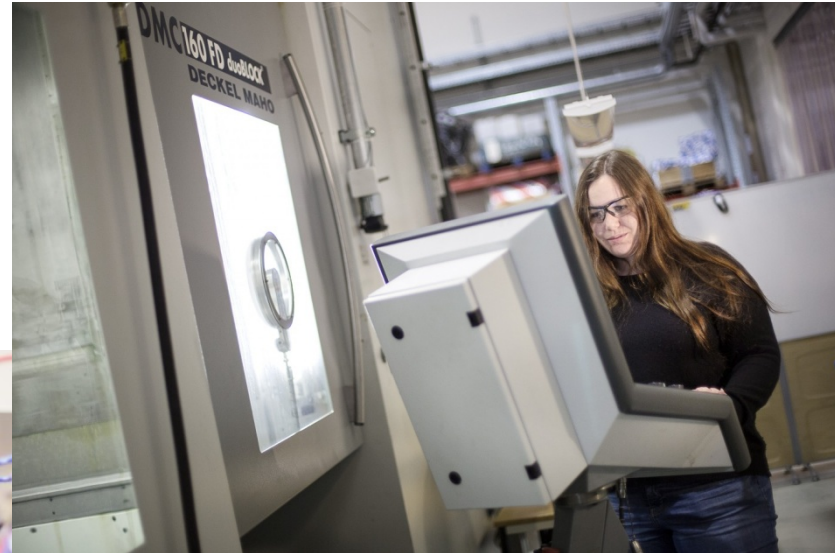
Facilities used both by industry and in research



NDT lab



Laser welding



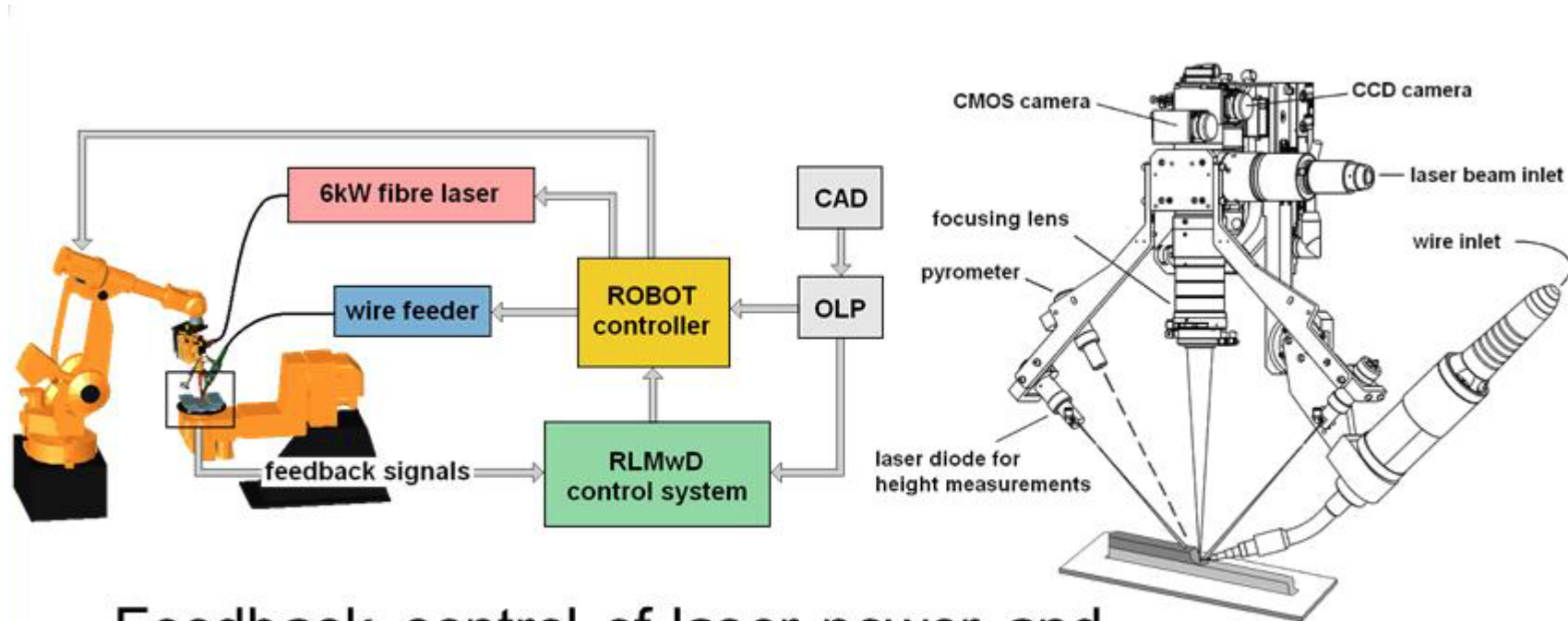
Machining

Additive manufacturing

- Wire or blown powder
- Laser melting deposition
- Development of production cells
- Implemented in production at GKN
- Powder bed additive manufacturing using EBM has started

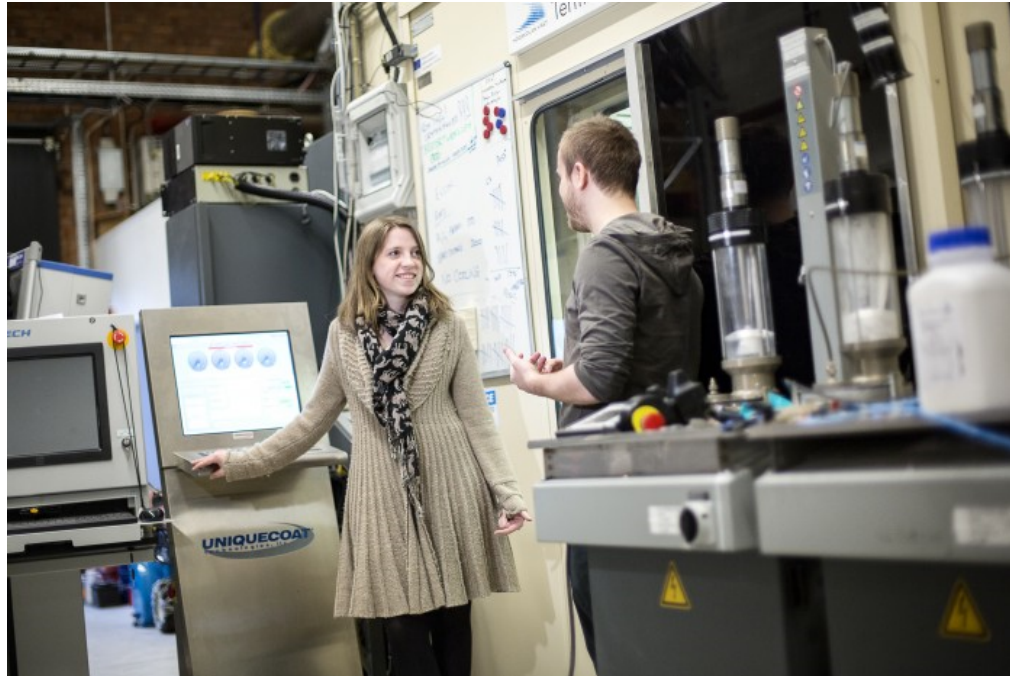


Research at University West

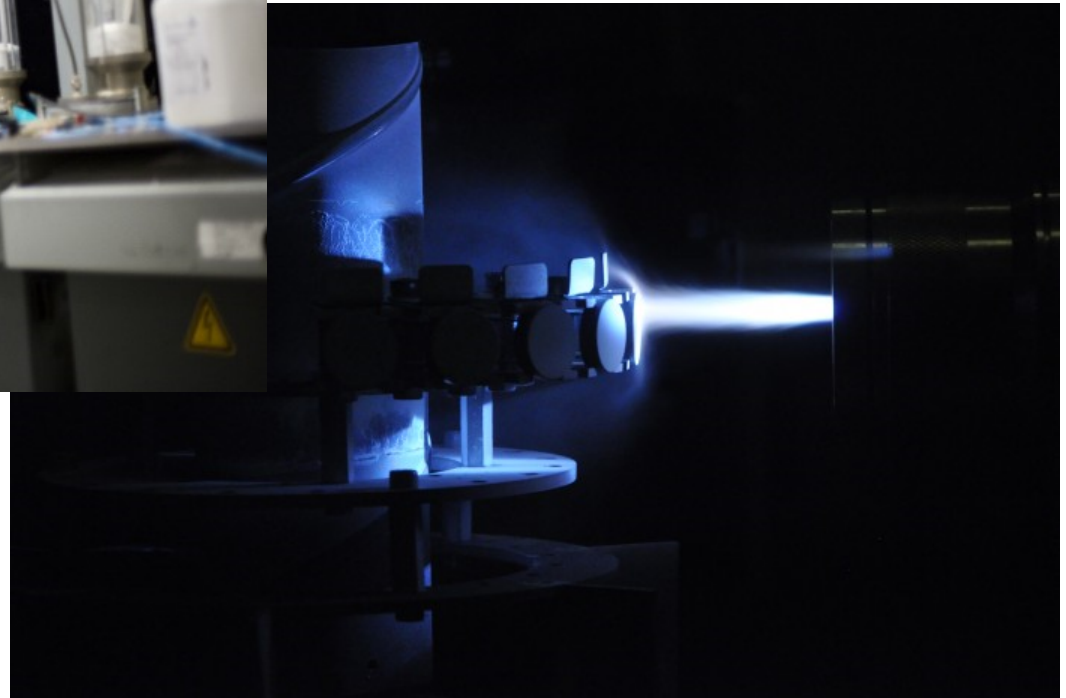


Feedback control of laser power and
wire feed rate for metal deposition

Thermal Spraying



- Suspension plasma spraying
- Thermal barriers with unique properties



Aeronautics National Research and Innovation Agenda NRIA Flyg 2013

2013 – pointed out four necessary steps to strengthen innovation

1. Demonstrator project
2. Strengthen the production research arenas
 - PTC: metal technology Trollhättan
 - Compraser Labs: composites Linköping
3. Strengthen for the research networks
4. Establish a strategic research forum



PTC is the official Swedish Arena for metallic parts for the areospace industry

Role of Swerea

- Create a better structure to involve SME:s
- Keep a larger part of the innovation chain in Sweden
- Develop skills and technology to enable SME:s to become suppliers to the areospace industry

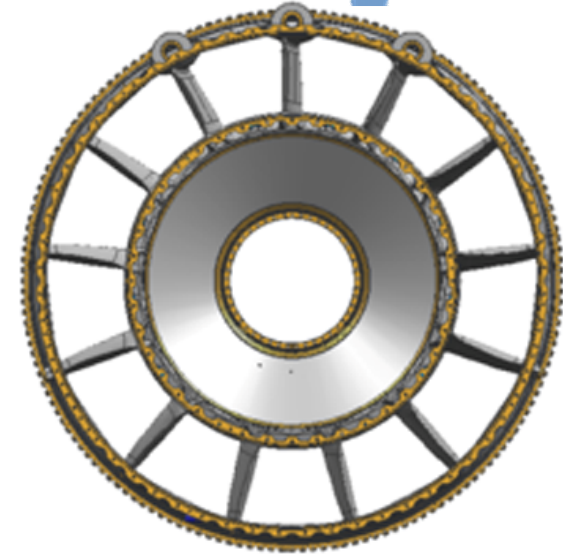
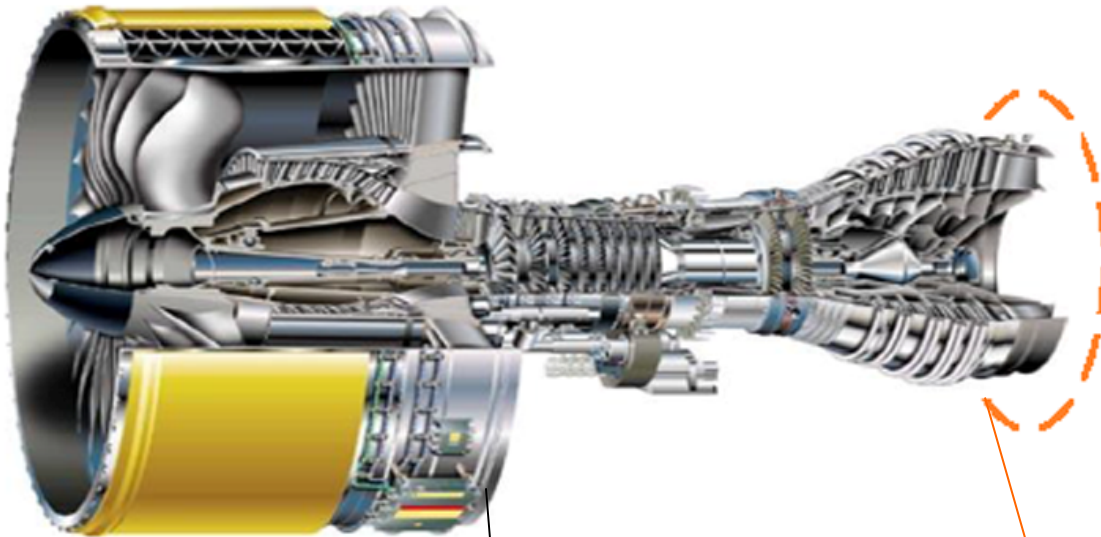
SME Aerospace

The goal is to

- Strengthen the competitiveness of the aerospace industry by involving leading SME:s
- Increase the number of highly specialized SME:s that are approved as suppliers to the aerospace industry
- Cutting edge technology developed in aerospace industry is transferred to other sectors by SME suppliers



SME Aeronautics



- ITE Fabriks: Hot stamping of Inner Duct,
- 3D Mekaniska, Speedtool, SVB Tyringe, Exova: Pre and post machining of Inner Duct

- Tooltec: Machining
- HDL: Hydroforming of Vane
- Brogrens: Simulation fo stamping and laser welding

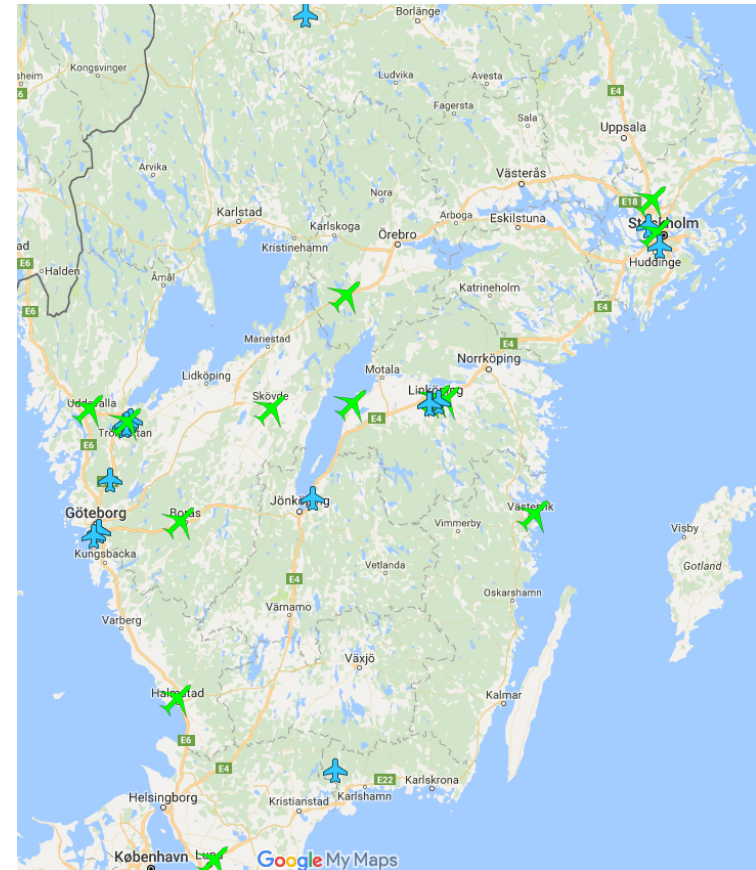
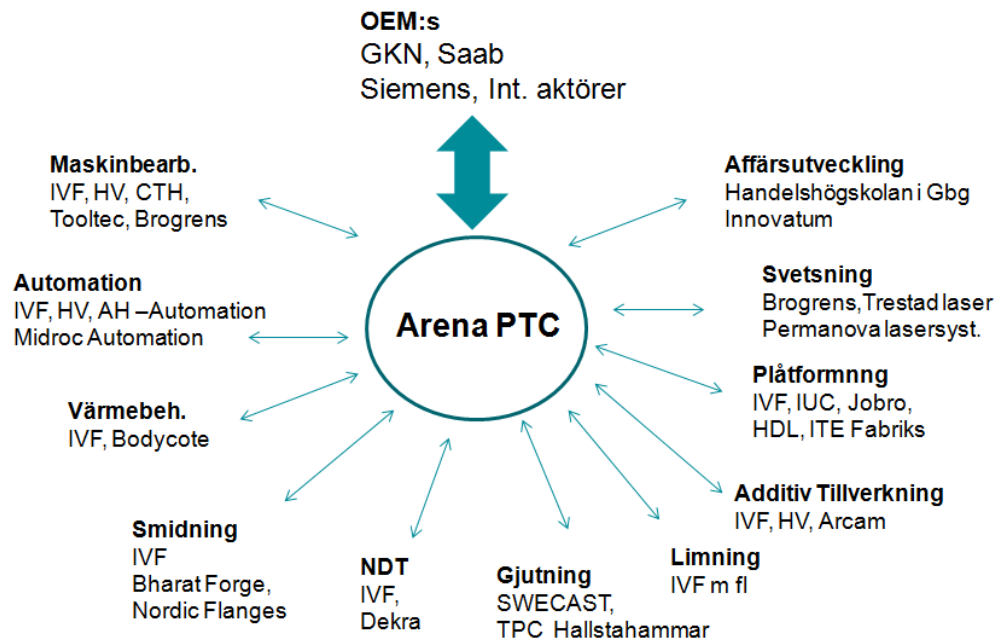
- AH Automation: Change of cutting tools with collaborative robot
- HDL, Sanco, Mekanotjänst, ITE Fabriks: Gap-analysis

PART OF RI.SE

mats.werke@swerea.se

swerea
swedish research

Vision: Cluster of SME:s in collaboration



Collaboration with other Strategic Innovation Programs (SIP)

Lighter Metallic Materials, Production 2030

- LIGHTer a regional node for West Sweden to create competitiveness with lightweight technology
- DINA – Digitalization of a complex production flow for additive manufacturing
- SME Digitalization – A national service for enhancing SME:s ability to use digital development