Additive Manufacturing of metals - 3D Print

Partners: University West, GKN. Brogrens Industries, Sandvik, Quintus, Arcam, Siemens, Elements)

Financing: Region Västra Götaland, Swedish Agency for Economic and Regional Growth
April 2016 - July 2019

Scope: Ni-based superalloys by powder bed fusion for high-temperature applications

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3DPrintPlus

Chalmers, University West, GKN, Siemens, Automotive Industry…

Courtesy of EOS, Arcam, Volvo Cars, GKN Aerospace

Tillväxtverket/EU, Västra Götalandsregionen, Chalmers and UW
Sep 2016 - Sep 2019

Scope: Assure leading position of the region in additive manufacturing through the development of the metal additive manufacturing for fabrication of the high-performance components with focus on laser sintering (LS) at Chalmers and electron beam melting (EBM) at University West.

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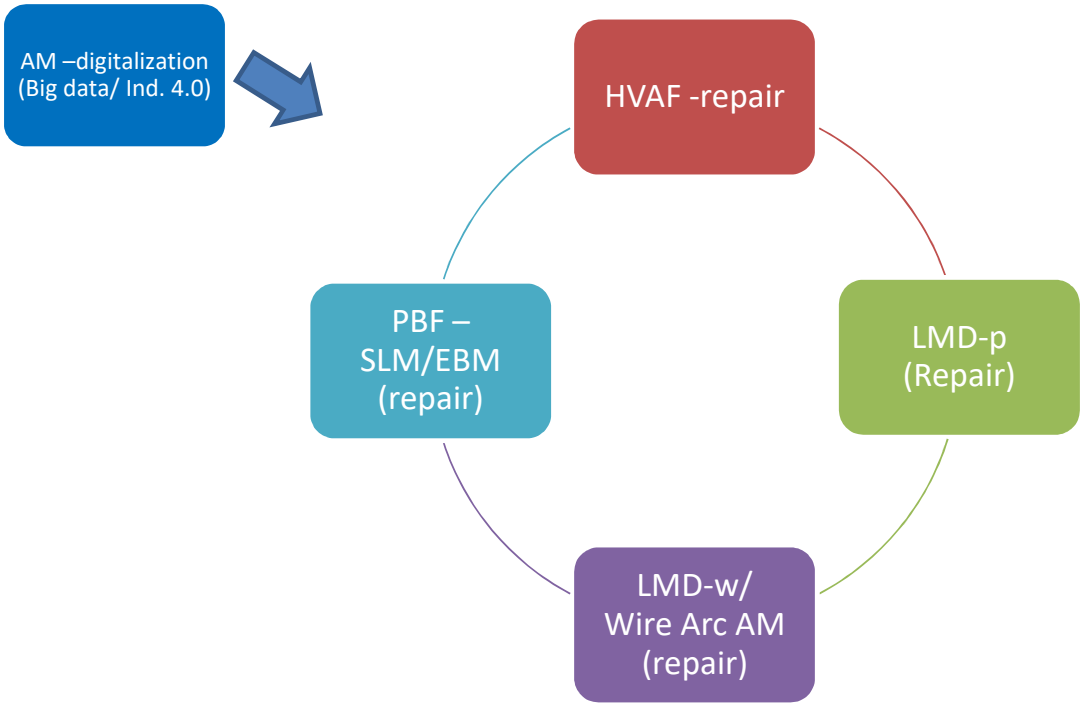
Rep-lab - 2018-2020



Research Partners

- GKN
- Chalmers IMS (MMT)
- University West
- Swerea IVF – sub-contractor
- Participating SME:s

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Replab Scope

- Develop new knowledge in re-manufacturing/repair using additive technologies
- Building a regional research resource at the Production Technology Center in re-manufacturing using additive technologies -> participation in international research programs by both universities and SMEs.
- Five sub-areas/demonstrators will be conducted, in close collaboration with regional industry and national research environments.
- Common experiences will be spread through public seminars and detailed plans for continued regional and national cooperation.

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SpaceLab 2018-2021

- Increase knowledge in Western Sweden about AM and possible space applications, its challenges and opportunities
- Increase the exchange between space technology and other industrial activities in the region for increased competitiveness and growth
- Increase the participation of West Swedish SME companies in national and European space programs.
- Catalyze the transfer of knowledge between academia, larger companies (GKN) and SMEs
- To increase the benefits of Western Sweden's space initiatives through increased competitiveness of the region's companies.

tillväxt verket
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Europeiska regionala utvecklingsfonden
swerea IVF
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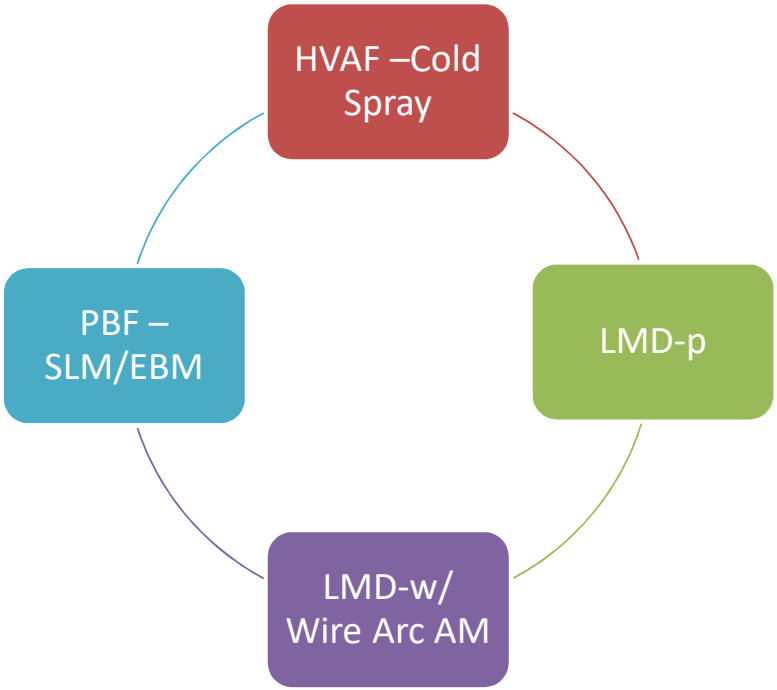
Identified WP in SpaceLab



- **Research Partners**
- GKN
- University West
- Swerea IVF – sub-contractor
- Participating SME:s

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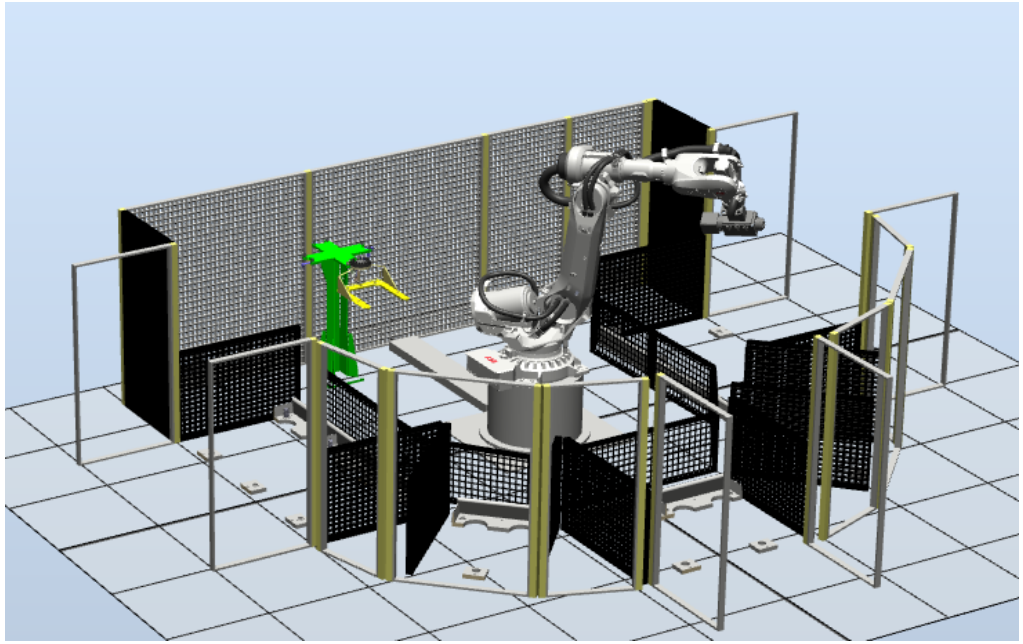
Miljo:Fia

- Duration between January 2017 – January 2020
- Budget 15.8 Mkr

- Partners
  - Innovatum
  - Swerea/IVF
  - GKN
  - Brogrens
  - AH Automation
  - Tooltec



Work package setup

WP 1 – Infrastructure for flexibility

- Simplified reuse and set-up of process modules
- Standardized geometrical, electrical and logical interfaces
- Cost efficient to automate low volume production
- Integrated safety for collaboration
- Common "fieldbus" based on OPC-UA

WP 2 – Working environment

- Avoid hazardous situations
- Avoid bad ergonomic postures and heavy liftings
- New and innovative robots for collaboration
- Automation to match different physical and social needs

WP 3 - Equal opportunities

- An including efficient and secure working environment
- Automatically individualized information
- Situational based information
- User friendly handling of complex automation equipment

WP 4 – Methods for flexibility

- Reuse of knowledge and automation equipment intelligence
- Easy configuration rather than programming of equipment
- Autonomous multi-agent based system
- Learning systems