



Me3DI

Teollisuuden 3D-tulostus

Metal 3D Innovations (Me3DI)

Forming industrial knowhow cluster of metallic 3D printing in South Karelia

Project manager Anna Unt

1.12.2020



Kestävää kasvua ja työtä -ohjelma

Vipuvoimaa
EU:lta
2014–2020



Euroopan unioni
Euroopan aluekehitysrahasto

Me3DI-project



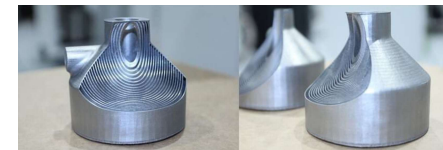
- Metal 3D Innovations (Me3DI) project aimed to form an industrial knowhow cluster of metal 3D printing in South Karelia
- Objective: provide and promote regional knowhow in industrial metal printing and design, based on R&D resources of LUT University
- Using R&D and educational resources of LUT University
- Funded by European Regional Development Fund
- Duration: 1.9.2018 to 31.12.2020
- <https://www.linkedin.com/groups/13642229/>



Me3DI main themes

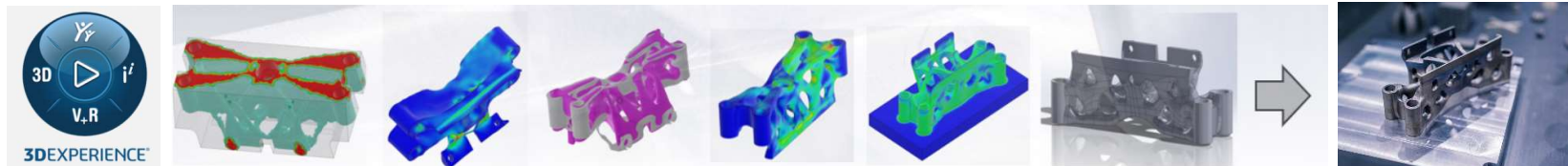


1. Identifying needs of companies for industrial training in 3D printing & providing trainings to match these needs
2. Making case studies for companies
3. Optimizing structures and analyzing printability of parts with software tools
4. Functional testing of parts and testing of mechanical properties
5. Providing guidelines for part design and material selection with consideration of manufacturability

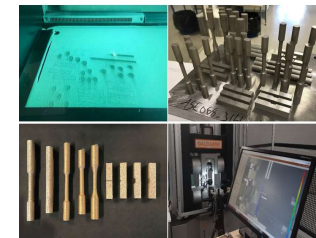


Me3DI highlights

- Needs and interests of companies charted
- Learning materials developed & trainings held
- EOS M 290 industrial metal 3D printer and 3DExperience software platform acquired during project duration



- Mechanical properties of 3D printed parts were researched
- Companies involved have tried 3DP with their own parts
- Me3DI was chosen to REGIOSTARS 2020 competition finals





Verkostoitumisella voimaa 3D-tulostukseen (VERKOTA)

**Strength to industrial 3D printing via networking and
research**

Postdoctoral researcher Anna Unt

1.12.2020



Kestävää kasvua ja työtä -ohjelma

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EU:lta
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What is the VERKOTA project about?

VERKOTA is a follow-up project of Metal 3D Innovations (Me3DI) project.

VERKOTA is a networking project, aiming to further promote diversification and modernizing of region's industry with new technology by:

- Expanding R&D and sharing of expertise on industrial 3D printing (3DP) of metals between project partners
- Increasing know-how of the regional companies about metal 3D printing and its supply chains.

Funded by European Regional Development Fund (ERDF) through regional council of South Karelia

Duration: 1.1.2021 - 31.3.2023



Kestävää kasvua ja työtä -ohjelma

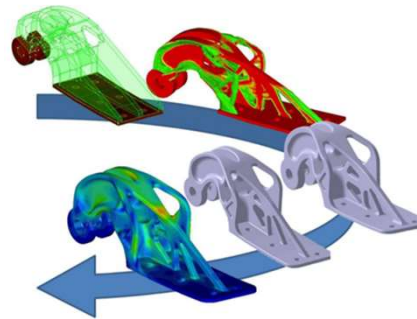
Vipuvoimaa
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2014–2020



What is the VERKOTA project about?



- Target groups: SMEs and their staff (engineers, designers), system-, material and process providers and educational and R&D institutions in South Karelia and Southwest Finland regions.
- Metal printing expertise of LUT and Turku Universities is used to identify and solve the existing metal 3D printing needs of the regional companies.



Kestävää kasvua ja työtä -ohjelma

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VERKOTA themes



VERKOTA is centred around the needs of companies in South Karelia and Turku regions. Following themes are addressed:

- Mechanical properties of 3D printed parts, especially fatigue strength
- 3D printable materials and physical properties of printed parts
- Optimized product design, ie the so-called DfAM design
- Post-treatments of 3D printed parts, especially heat treatments
- Powder Bed Fusion is the most interesting 3D printing technology
- Mass production and circular economy of 3D printed parts
- Technical and economic aspects of 3D printing metal parts
- Education and training in field of 3D printing



VERKOTA project implementers



VERKOTA is coordinated by LUT University, University of Turku is a partial implementer.



Research groups of
Steel Structures
Professor Timo Björk
&

Laser Materials Processing and Additive Manufacturing
Professor Heidi Piili

Laboratory of Welded Metal Structures
Department of Mechanical Engineering
LUT School of Energy Systems



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More information on both projects:

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1.9.2018 - 31.12.2020



1.1.2021 - 31.3.2023



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