

Newsletter #3

We're on our Way!

The project has reached its first milestone! Most of the design work is now finished and the project is moving towards the crucial step of an integrated design. But as expected in most innovative research projects, this affects the approach planned to achieve the objectives. The partners are now reviewing a new approach to resolve the challenges that must be overcome in the next two phases, focussing on system development and validation.

Roadmap

The roadmap towards an integrated design comprises of three work packages; Design (WP1), Development (WP2) and Validation (WP3). The first work package, Design, identified the requirements, methods, physical tools and algorithms for an integrated design. The second and third work packages successively deal with the development and validation of the integrated post processing production line.

The state of the art research on clamping and polishing (WP1) has provided a good insight into both post processing and 3D metal printing. Together with the requirement studies (WP3), the first contour, consequences and challenges for an integrated design are set. The prototype for a fast and affordable post processing solution is expected in 2019.

3D&FPP Animation

At the 3rd Steering Committee Meeting (September 2017) an introductory movie was launched to explain the 3D&FPP project in 2.5 minutes. The aim of the movie was to capture and explain the challenges of 3D metal printing, followed by explaining the goals and objectives of the 3D&FPP project. The movie can be viewed [here](#).

RapidPro 2018

The 3D&FPP project consortium will be participating at the RapidPro 2018 conference and trade fair. We will be looking forward to sharing information about the project, its objectives and preliminary results through our presentation during the conference and our exhibition stand at the fair. Please stop by to learn more about innovative design rules, workflow and the system integrations we are working on.

Partner news

Quality Control for Metal Printing TNO has been working for several years on thermal modelling of 3D metal printing to fully understand the process, with the aim to get builds right first time. This was realised for 'selective laser melting' process in a Public Private Cooperation Project Materials (Metals) for AM, and a 'direct energy deposition' process in the H2020 Borealis project.

One of the main activities of the projects was thermal modelling of the parts during the build process. Changes in melt pool temperature can affect the properties of the final part, and therefore



need to be minimised. Models were used to fully understand these temperature variations, and where possible, compensate for the changes. These models were then validated, and the results were presented on the SimAM conference in Munich on 11–13 October 2017.

Value Engineering Hittech has shared their view on the application of smart machining approach as part of value engineering in an article recently published in Bits and Chips, No. 9. Read the full article [here](#).

‘AM-Minded’ Engineering

According to **3T RPD**, to fully benefit from additive manufacturing, engineers need to be ‘AM-minded’ from design to finished component. Simply transposing designs from extractive manufacturing to additive manufacturing is not effective. You can read the full article and watch the associated video [here](#).

Upcoming events

- RapidPro 2018, March 7th & 8th, 2018. The 3D&FPP will be present and lecturing at the trade fair and conference.
- 4th Steering Committee, March 2018, TNO AM Eindhoven (NL)

