



Dedicated to innovation in aerospace

METAL ADDITIVE MANUFACTURING PROGRAM FOR CERTIFICATION OF CRITICAL COMPONENTS

INVITATION TO JOIN THE CERTIFICATION PROGRAM

After the first successful metal Additive Manufacturing program the Netherlands Aerospace Centre now offers a follow-up program to support participants in their ambition to introduce certified metal AM parts.

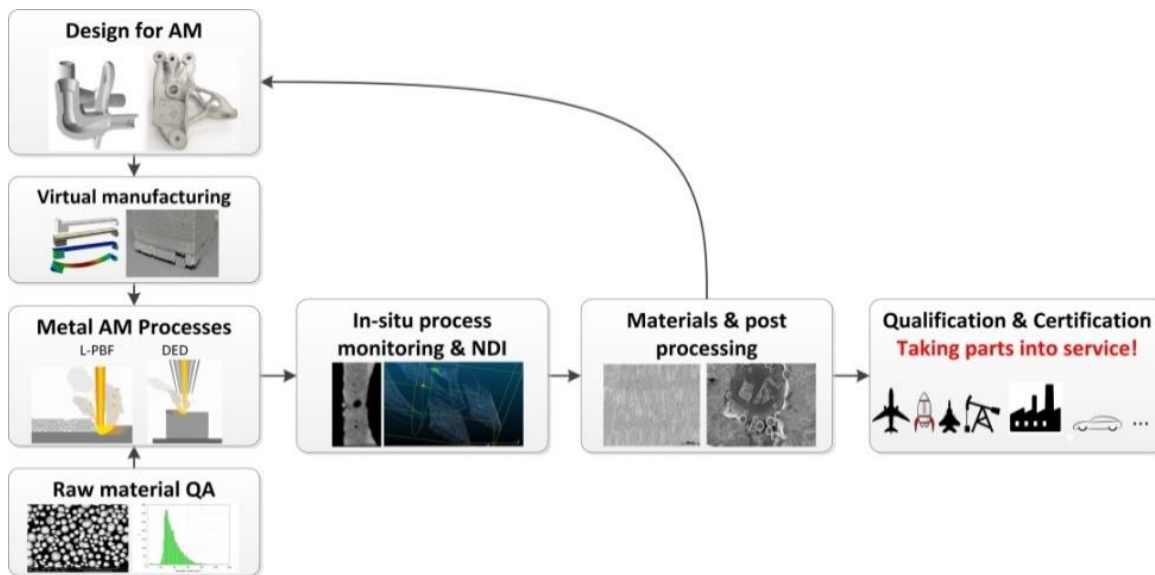
Marknesse, November 14 - A new four years Additive Manufacturing (AM) technology program has started at the Metal Additive Manufacturing Technology Centre (MAMTeC) at NLR - Royal Netherlands Aerospace Centre in Marknesse (NL). Royal NLR will work with a consortium of partners on certification of critical metal AM components. The new program is a follow-up of the successful first metal AM program which ran from 2015 to 2018 and was focussed on the laser powder bed fusion method (L-PBF). For the new program, the MAMTeC will be extended with a BeAM Modulo 400 machine dedicated to manufacture and repair parts according to the Directed Energy Deposition (DED) process.

The new program focuses on the certification of critical AM components for instance for aerospace, oil & gas, high-tech/high-spec industry, defence, and automotive applications. Especially these markets will have a great benefit from reduced weight, increased performance and higher efficiency that metal-AM can offer. To fulfil the stringent certification requirements, a qualified and stable manufacturing process is required. Therefore, research into the application of in-situ process monitoring systems will be an important part of the program.

Another important part of the work during the program will be related to the metal AM process simulation (virtual manufacturing) for both L-PBF and DED in order to gain insight into the temperature profile during processing. As a result, the residual stresses in the AM product can be predicted and an optimal AM production approach can be designed. Main target of the simulation is to establish a “first time right” manufacturing procedure.

Various materials will be investigated and test programs will be executed to define the material properties of high performance materials such as Titanium and Nickel based Superalloys.

Participants of the new Public Private Partnership project are Oerlikon, Shell, Patria (Finland), BeAM (France), The Dutch Ministry of Defence, Thales, Aeronamic, KIMS (Korea) and Mokveld Valves. Participation is still open for other parties. Parties interested in this four years project are invited to contact the NLR program manager (t: +31 88 511 4204, e: jan.halm@nlr.nl).



The research topics of the new AM Technology program.

More information about Additive Manufacturing:

Find additional information at the website of NLR: <https://www.nlr.org/capabilities/additive-manufacturing/>, and watch the video of BeAM Machines: <https://youtu.be/oL7bMhPTtDI>.

About NLR – Royal Netherlands Aerospace Centre

NLR is a leading international research centre for aerospace. Its mission is to make air transport safer, more efficient, more effective and more sustainable. NLR's activities span the full spectrum of Research, Development, Testing & Evaluation (RDT & E), and bridges the gap between research and practical applications working for both government and industry at home and abroad. For more information, please visit the website www.nlr.org.

Notes to editor

For questions please contact Kees de Waal, press officer NLR - Royal Netherlands Aerospace Centre:

Phone: +31 6 2334 7785

E-mail: kees.de.waal@nlr.nl

Additional pictures can be downloaded from the NLR website (https://www.nlr.nl/presskit/additive_manufacturing_pictures.zip).

Please mention the following when using one of the photos: 'credits: BeAM').