SOLUTION BRIEF

Digimat for Additive Manufacturing

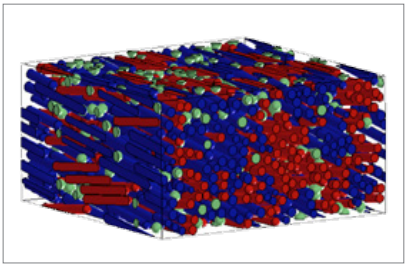
Material, process and structural simulation platform for 3D printing of plastics & composites

Overview

Additive manufacturing of plastics and composites is evolving from rapid prototyping industrial production. However, there are still many pains that hinder its full development, such as the limited portfolio of advanced materials, lack of fidelity of the manufacturing process, and uncertain mechanical properties of final part. This leads to an overall high manufacturing cost.

To support this transition, Digimat offers a holistic simulation platform for additive manufacturing that delivers a unique combination of material engineering, process simulation, and structural analysis solutions. With technology built upon e-Xstream's recognized experience with reinforced polymer multiscale modeling, Digimat for Additive Manufacturing enables to print it right the first time and use the full potential of additive manufacturing.

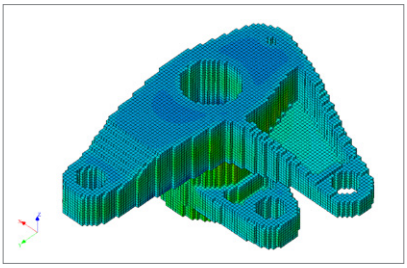
Print right for the first time!



Material

Digimat helps providers of material solutions and end material users to develop, exchange, and use a larger portfolio of plas¬tics and composites materials, specifically for additive manufacturing.

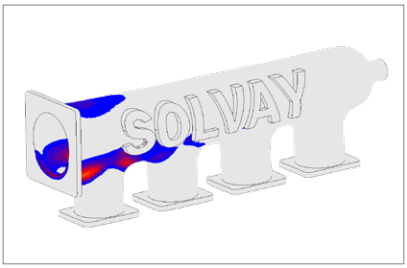
Digimat products: Digimat-MF, FE, and MX



Process

Digimat simulates the printing process and helps printer manufacturers and end users to identify manufacturing issues. It also optimizes printing parameters for productivity and final part performance. For instance by minimizing part warpage and residual stresses as a function of the material and process parameters.

Digimat product: Digimat-AM



Part

Digimat enables the prediction of the as-manufactured part performance. Therefore, allowing precise understanding of final part mechanical properties and helping with optimization of performance for lightweighting.

Digimat products: Digimat-RP, CAE, and MAP

For Who?

Printer Manufacturer

- Support your customers in addition to physical printing
- Provide your customers with a wider portfolio of materials
- Support your customers for application development

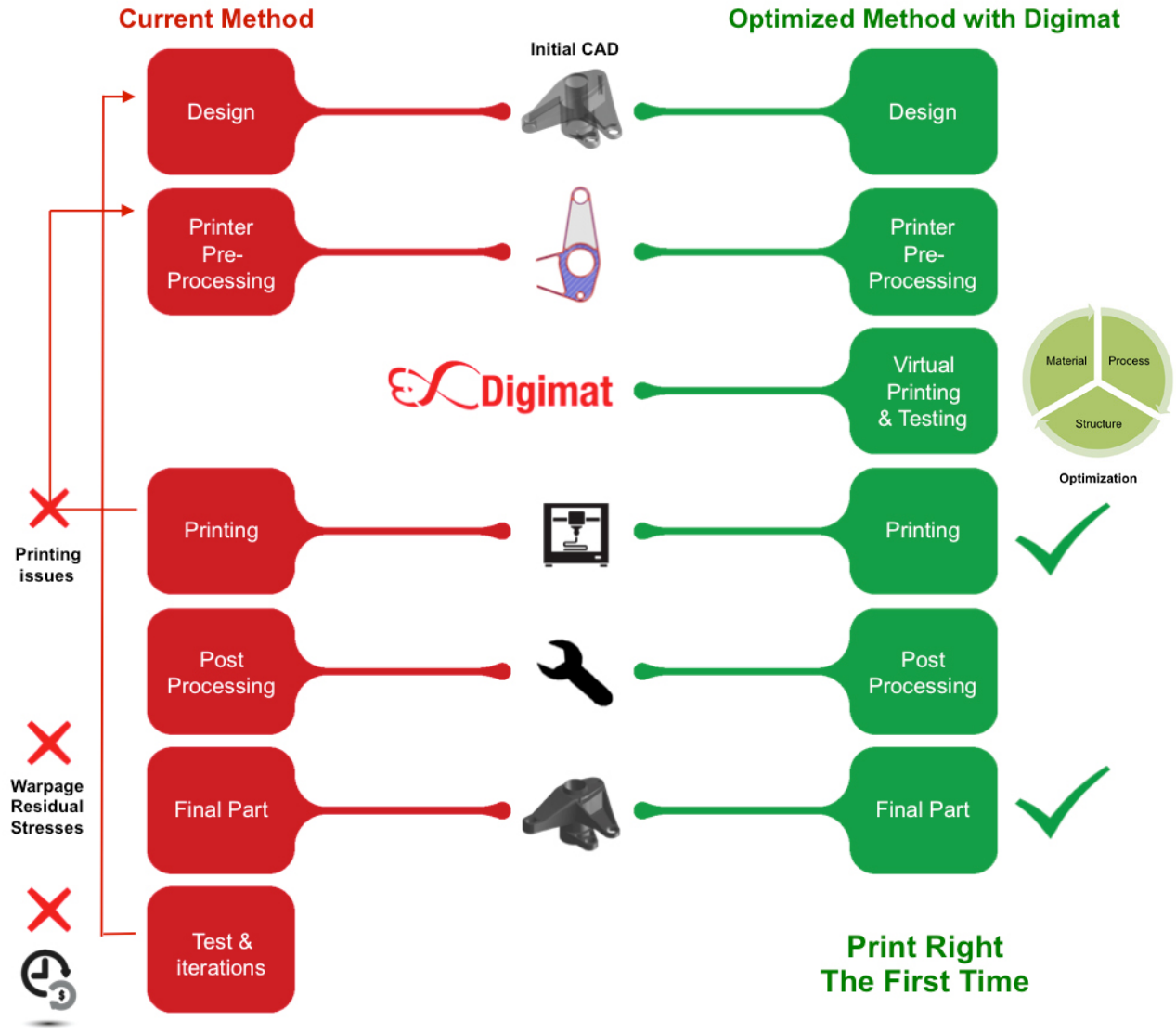
Material Suppliers

- Improve understanding of your materials
- Expand your material portfolio
- Support printer providers and end users to optimally use your material

End-users

- Save time and money by avoiding complex trial and error
- Gain confidence in your manufacturing process and part design
- Optimize your part performance for lightweighting

Trial & Error Methodology vs. Simulation with Digimat



Optimization is achieved by:

- Improving understanding of your materials
- Reducing costs associated to trials and errors
- Minimising part warpage and residual stresses
- Replacing time consuming testing

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