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PRESS RELEASE

DSM AND E-XSTREAM ENGINEERING PARTNER TO OFFER PREDICTIVE SIMULATION TOOLS FOR DURABILITY OF SFRP LIGHTWEIGHT COMPONENTS TO CUSTOMERS

- *Collaboration aims to ensure the development of reinforced plastic parts' durability prediction by setting up an easier and faster way to accurately model plastic compound materials.*

- *Customers also set to benefit from the 2 newly added grades from DSM for high cycle fatigue analysis, which are Akulon S223-HG0 and ForTii Ace MX53T.*

Prague, Czech Republic; October 8, 2018- Royal DSM, a global science-based company and global supplier of high-performance engineering thermoplastic solutions, today announced at the Digimat Users' Meeting 2018 their collaboration with e-Xstream Engineering, a world leader in multi-scale modeling of composite materials and structures, to improve and facilitate durability prediction of lightweight reinforced plastic components, starting with the addition of 2 DSM grades in the Digimat-MX database.

Modelling and predicting the durability of reinforced plastic components is highly complex and challenging. This is why DSM & e-Xstream engineering, part of MSC Software a subsidiary of Hexagon Manufacturing Intelligence, have decided to join forces and combine their efforts to enable use of a new methodology and workflow within the Digimat platform. The combination of DSM's high-performance thermoplastic solution and modelling approach of fatigue failure mechanisms, and e-Xstream's accurate and convenient numerical tools, will give users the opportunity to access an improved fatigue modeling methodology within Digimat. The approach has been developed and validated on DSM grades to empower durability prediction of reinforced plastic components.

« Assessing the lifetime of reinforced plastic component by simulation is challenging, but we do believe thanks to this cooperation with DSM to be able to reduce design lead time with reliable workflow and results. DSM material users will benefit from a material database combined with a validated methodology and a dedicated fatigue post-processing tool within Digimat. » said Guillaume Boisot, Business Development Manager at e-Xstream engineering.

Within this partnership, DSM has decided to add two grades in Digimat-MX:

- The **Akulon S223-HG0**, a 50% Glass Reinforced and Heat Stabilized PA66 material that is used by its customers in applications ranging from automotive, electronics & electrical, to furniture and packaging. In molded parts, the material offers an excellent balance of easy design and processing with outstanding mechanical properties over a wide temperature range and in diverse conditions.

- The **ForTii Ace MX53T**, a 50% Glass Reinforced and breakthrough high temperature PPA for demanding applications in electronics, lighting, automotive, white goods, industrial and aerospace industries. This grade has an extreme chemical resistance, suitable for applications that need high mechanics at elevated temperatures.

"*The automotive industry is looking for light weighting opportunities for various reasons, like; function integration, NVH optimization, cost optimization and light weighting to reduce CO_2 emissions, build in safety and infotainment systems or increase driving range for battery driven vehicles. Another trend is that designers and engineers are facing shorter design cycles, meaning that computer-based designs, predictability of part performance and 3D prototyping are key for metal replacement programs.*" said Tim Vorage, DSM Global Market Development Manager ForTii® PA4T. *"The close cooperation with e-Xstream is addressing these key needs from the market and allows us to bring predictability of part performance directly to our industry partners with innovative engineering plastics such as ForTii® Ace MX53T (PA4T GF50)."*

The Akulon S223-HG0 and ForTii Ace MX53T which are used in injection modeling will be available for high cycle fatigue analysis. Customers will be free to handle the main DSM's grades to obtain the structural design and characteristics they want.

Digimat Users' Meeting Attendees can learn more about DSM collaboration with e-Xstream engineering by visiting DSM booth (booth N°3), where experts will be available to explain the benefits to users in more details.

About DSM

Royal DSM is a purpose-led global science-based company in Nutrition, Health and Sustainable Living. DSM is driving economic prosperity, environmental progress and social advances to create sustainable value for all stakeholders. DSM delivers innovative business solutions for human nutrition, animal nutrition, personal care and aroma, medical devices, green products and applications, and new mobility and connectivity. DSM and its associated companies deliver annual net sales of about €10 billion with approximately 23.000 employees. The company is listed on Euronext Amsterdam.

About e-Xstream Engineering

Founded in 2003, e-Xstream engineering is a software and engineering services company 100% focused on the multi-scale modeling of composite materials and structures. The company helps customers, material suppliers, and material users across many industries reduce the cost and time needed to engineer innovative materials and products using Digimat, the nonlinear multi-scale material and structure-modeling platform. Since September 2012, e-Xstream engineering is a wholly owned subsidiary of MSC Software.

About MSC Software

MSC Software is one of the ten original software companies and a global leader in helping product manufacturers to advance their engineering methods with simulation software and services. As a trusted partner, MSC Software helps companies improve quality, save time, and reduce costs associated with design and test of manufactured products. Academic institutions, researchers, and students employ MSC's technology to expand individual knowledge as well as expand the horizon of simulation. MSC Software employs 1,400 professionals in 20 countries. MSC Software was acquired by Hexagon AB in 2017. For additional information about MSC Software's products and services, please visit: www.mscsoftware.com