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**New Renishaw technology achieves up to 50% reduction in additive manufacturing build times**

Renishaw’s new TEMPUS™ technology enables users of RenAM 500 series metal additive manufacturing (AM) systems to reduce build times by up to 50 percent. The technology uses advanced scanning algorithms that sequence the layer data to maximize productivity while maintaining part quality. The optimization suits some part geometries more than others, but all geometries can see some productivity benefits. Parts with thin, vertical features, for example, are likely to experience proportionally higher productivity savings. This new technology will be on display at IMTS 2024 in Chicago at the Renishaw Additive Manufacturing Booth (#433239).

TEMPUS technology is standard with the new RenAM 500 Ultra system, as well as advanced process monitoring software. The combination of significantly reduced build times and detailed build insights means that the RenAM 500 Ultra delivers cost-effective, reliable additive manufacturing for metal component production. Existing RenAM 500 series customers can access TEMPUS technology as a paid-for upgrade, to make the most of their machine investment.

**TEMPUS technology: jumping forward in AM productivity**

While traditional powder bed systems require the powder recoater to fully distribute powder before the layer can be consolidated, with TEMPUS technology, the lasers can fire at the same time as the recoater is moving. The patented technology employs seamless communication between advanced software and hardware components to synchronise the system lasers with the powder recoater, removing up to nine seconds of build time from every layer. With builds frequently containing thousands of layers, this can reduce total build times by tens of hours. Yet crucially, there is no reduction in part quality.

The technology uses advanced scanning algorithms that sequence the layer data in a way that maximises productivity while maintaining part quality. The optimisation suits some part geometries more than others, but all geometries can see some productivity benefits. Those parts with thin, vertical features, for example, are likely to experience proportionally higher productivity savings.

Existing RenAM 500 series customers can access TEMPUS technology as a paid-for upgrade, helping them to make the most of their machine investment.

For uses in consumer electronics and computing, Renishaw has entered into an exclusive partnership agreement with metal component expert [Alloyed](https://alloyed.com/), which has been using TEMPUS technology since 2021.

“Reducing cost per part is critical to the wider adoption of AM technology,” explained Louise Callanan, Director of Additive Manufacturing at Renishaw. “The dominant contributing factor to part cost for most components today is the time spent building the part on the machine itself. Reducing the amount of machine time per part therefore results in more cost-effective production.

“That’s why we’re excited to bring TEMPUS technology and the new RenAM 500 Ultra system to the market,” added Callanan. “We believe the time and cost savings that both TEMPUS technology and the RenAM 500 Ultra system bring will open AM up to mass production applications where the technology would previously have been unviable. Meanwhile, these innovations will deliver crucial productivity gains for AM users who want full-scale production at the lowest cost per part.”

**Introducing Renishaw’s new RenAM 500 Ultra**

The RenAM 500 Ultra system includes all the existing benefits of the [RenAM 500 series](https://www.renishaw.com/en/renam-500-metal-additive-manufacturing-3d-printing-systems--37011?utm_source=StoneJunction&utm_medium=HN&utm_campaign=TEMPUS_Ultra&utm_id=REC758&utm_term=Formnext_launch&utm_content=earned), including industry-leading optical, chamber and gas-flow design, with the addition of newly-launched productivity-boosting TEMPUS technology and advanced process monitoring software. Furthermore, the RenAM 500 Ultra’s advanced process monitoring software delivers detailed insights into the build, equipping users with data and providing in-process visibility.

Using the RenAM 500 Ultra to create production-ready metal parts means AM users can remain agile when faced with changing demands, are unrestricted by complex part geometries, and can seamlessly scale capacity to suit business needs.

All of Renishaw’s RenAM 500 series systems, including the RenAM 500 Ultra, are available with one (500S) or four (500Q) high powered lasers, each able to access the whole powder bed simultaneously. This allows for efficient laser assignment and significantly higher build rates, improving productivity and lowering the cost per part. RenAM 500 Ultra models are equipped with automated powder and waste handling systems optimised for volume production. The RenAM 500 Ultra is available to order now.

For further information on Renishaw additive manufacturing, visit [www.renishaw.com/am](https://www.renishaw.com/en/renam-500-metal-additive-manufacturing-3d-printing-systems--37011?utm_source=StoneJunction&utm_medium=HN&utm_campaign=TEMPUS_Ultra&utm_id=REC758&utm_term=Formnext_launch&utm_content=earned)

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