Linked in Additive Manufacturing for Complete Traceability

ZENITHTECNICA

Company Background

Zenith Tecnica Ltd is a global manufacturer of Titanium components using Electron Beam Melting Additive Manufacturing technology. Founded in 2014, and based in Auckland New Zealand, the company now employs fifteen mechanical engineers and scientists that operate 3 GE Additive / ARCAM EBM machines.

Zenith products are sold into the aerospace, medical and industrial sectors worldwide, and the company holds ISO9001:2015, ISO13485:2016 and AS9100:RevD certifications as well as customer specific certification in the aerospace and medical fields.

Zenith Tecnica

Before DNA

“In 2016, one of our main aerospace customers persuaded us to introduce an ERP system for the manufacturing of their parts. It provided essential functionality to process jobs, but the system had not been developed with metal additive manufacturing in mind.

“The powder traceability was cumbersome and functionalities were limited,” explains Bruno Le Razer, Zenith’s quality manager. “It didn’t cope with multiple parts in one build and multiple common operations. Build management was impossible and there were many repetitive tasks for the production of individual parts.”

Working with Valuechain

“It was a quite collaborative process. Our deep knowledge of metal additive manufacturing (either laser melting or electron beam melting) enabled us to help Valuechain develop a world class unique ERP system

specifically designed for additive manufacturing. A list of requirements was provided for the main module (from quote to delivery including build management) and also for a new powder traceability module."

Key Benefits of DNA^{am}

"One of the biggest benefits of Valuchain's DNA^{am} to AM and EBM in particular is mass-customisation. Zenith takes orders from its largest customers where on a single purchase order there are quantities of over 100 different geometries to produce. No project is the same. This means the projects are front-heavy with a lot of data entry and programming to get the jobs underway. DNA^{am} allows us to enter all of the data right from the RFQ stages and we never have to enter anything twice. All of the generated paperwork is templated by us so we have full control over the outputs and are able to make changes on the fly if necessary."

From inception, jobs have a clear process that follows through the workshop and any subcontracting operations. A user has a touchscreen tablet to begin the operation, view process instructions, and sign off when complete.

"Zenith and customer procedures and specifications are linked to every step so users are only a few touches away from reading a procedure, specification, or work instruction. We're able to see at a glance everything that is in the workshop, what stage it is up to, who did what, and how long it took. This is absolutely vital in ensuring quality procedures are followed for aerospace production and ensuring we have accurate KPIs to follow quality standards."

DNA^{am} captures workshop data as well as all of the subcontracting and laboratory testing data so that at the end of the process the certificate of compliance is generated automatically and no time is wasted preparing masses of paperwork

Favourite Feature of DNA^{am}

"Two major challenges of implementing AM parts in aviation are traceability of the powder and achieving repeatability in the process to standardise it. The trace tool allows us visualise every build in which a batch of powder has been used by clicking on it. This intuitive tool provides complete traceability which can be used to scale-up AM production, not only in aerospace but in all types of industries."