Authentise’s 3Dix Platform helps companies move their additive manufacturing operations from lab to production scale. 3Dix modules enable many of the standard tasks in an additive manufacturing workflow to be automated and integrated. This case study describes how a large corporate customer is preparing their IT infrastructure for the new demands of scaled additive manufacturing (AM).

Client
US Industrial Machinery company with ~$50bn revenue.

Need
The client has developed 30+ scalable applications of AM in their manufacturing process. Based on this success, management is eager to deploy the technology at the core of the company. The AM lab is now challenging the IT department to develop robust infrastructure to:

- Control and track who accesses AM related files, where and how they can be printed to protect the intellectual property and the integrity of parts.
- Seamlessly analyse, heal and generate tool paths for parts to reduce time spent preparing parts for print.
- Serialise parts and monitor production to ensure traceable quality.

3Dix Solution
Given the client’s ambition to deploy 3Dix at the core of its IT architecture, 3Dix is being deployed on premise and delivered only as API without interfaces. Authentise is working with the client to create custom modules and support integration for existing tools and IT systems.

Control AM Access and Printing
An arising concern for the corporation was the integrity and intellectual property of its prints. 3Dix addresses this by providing secure, access controlled storage and secure delivery into the device.

The solution ensures that all build files are associated, version controlled and can be shared as a whole or discreetly, down to a single parameter granularity. This enhances collaboration while maintaining security. In addition, the Secure Delivery module ensures that the protection carries on to the machine, restricting the manufacture to devices, locations, printers, persons or quantity specified.
Seamless Processing of Parts
A lot of time is wasted by highly skilled engineers executing repetitive tasks. 3Dix automates these tasks in sequence for all incoming files.

The automated and integrated processing of files saves operator time that would otherwise be spent manually analysing, healing or rendering the files. The system protects the integrity of the storage by identifying similar files and associating them to prevent unnecessary repetition of work. In some cases, it can eliminate operator time and produce more reliable prints, by automating tool path preparation. The easy availability of renders and file analysis makes work more precise and organised.

Serialise and Monitor Production
Traceability and quality assurance are key concerns, especially as the client outsources and eventually distributes production. 3Dix’s monitoring tools with automated serialisation helps address this.

Automated serialisation saves time and ties all production data such as location in print bed, printer feedback, design edits, to the physical device, allowing for a perfect digital record. Automating data collection of those steps, for example through the Data Learning module, creates a more complete data set in less time. The computer vision based in-process monitoring contributes to this and also enables material and machine saving by detecting failed prints early.