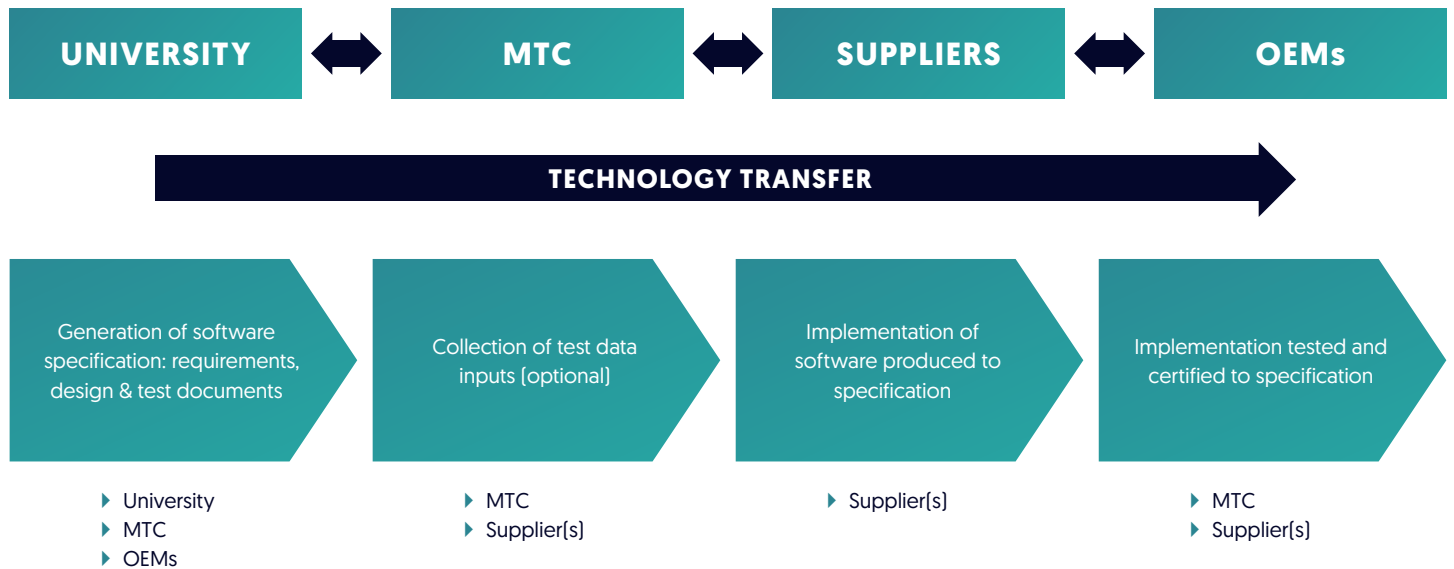


THE MTC ALGORITHM DEVELOPMENT SUPPORT SERVICE

A NEW EFFECTIVE PROCESS TO TRANSITION TECHNOLOGY FROM ACADEMIA TO INDUSTRY

MTC'S ADSS PROCESS FLOW



EASING THE TRANSITION OF ACADEMIC PUBLIC-DOMAIN ALGORITHMS INTO INDUSTRY

The MTC has created the Algorithm Deployment Support Service [ADSS] to demonstrate a successful multi-supplier technology transfer route for algorithms developed within academia. ADSS supports supply-chain implementation and enhances end-user confidence.

THE CHALLENGE

Within many industries, such as aerospace, it is important that long-term support is available for NDT services and equipment. This makes it challenging to introduce novel technology with a sole supplier, often delaying technology adoption until it is available from multiple suppliers.

This presents a barrier to suppliers looking to bring technology from universities into industry as, without exclusivity for new software or capabilities, it can be difficult to ensure the costs of development and integration are recovered.

Therefore, a low cost integration route that allows multiple suppliers to rapidly transition new technology into their products is highly desirable.

A COLLABORATIVE APPROACH

To address this challenge, the MTC created the Algorithm Deployment Support Service [ADSS], which facilitates the transition of academically-developed algorithms into industry via software design documents that can be licenced to multiple suppliers.

A pilot of the ADSS programme with the University of Bristol finished in 2021 for a package of algorithms to carry out 3D ultrasonic analysis of composite materials.

A series of software design documents were created and then licenced to multiple NDT supply-chain partners and end users, to allow them to create their own software packages, using the same underlying framework.

THE OUTCOME

- ▶ For the pilot scheme, a complete set of software-engineering documents, split into different functional stages, has been produced and provided to multiple equipment manufacturers and supply-chain partners under license.
- ▶ The document set includes both software development stages and testing methods with associated test files to ensure functionality is correctly implemented during development. A testing example from the ADSS documentation is shown in the below image.
- ▶ In addition, the MTC offers an independent testing service to end-users and supply-chain companies to verify a particular implementation of the algorithms against reference datasets to increase end-user confidence.

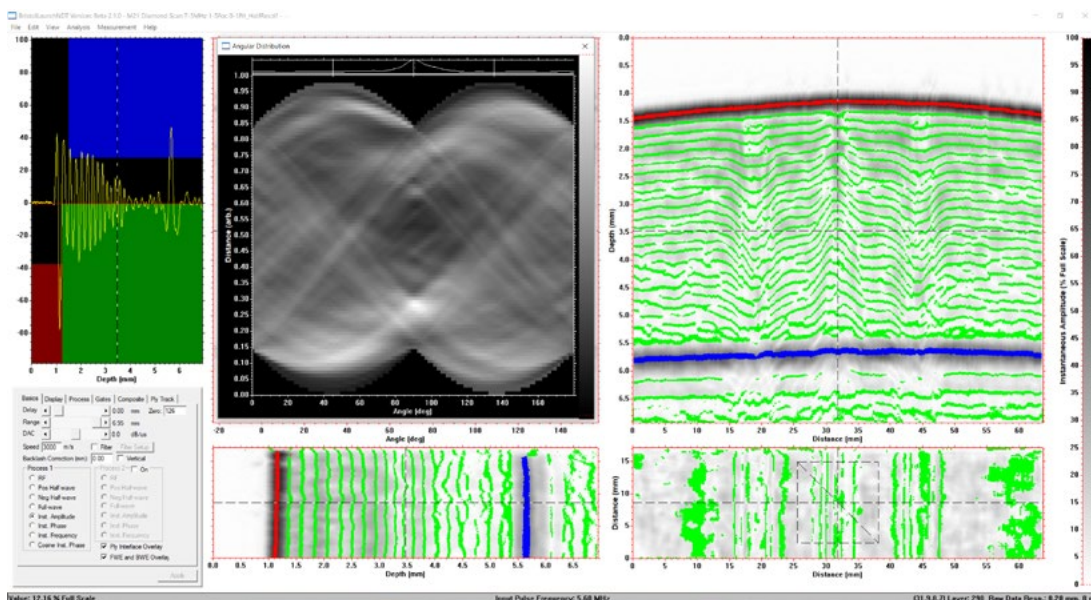
BENEFITS TO THE CLIENT

- ▶ ADSS allows multiple suppliers to add the algorithms to their own unique software platforms, based on the same core software-engineering documentation, significantly reducing development costs and time.
- ▶ ADSS supports testing throughout development as well as a validation service for finalised software platforms to ensure correct implementation and consistency between suppliers.
- ▶ The 3D Ultrasonics for Composite Inspection ADSS software-engineering documentation set is now available under license from the MTC.
- ▶ The pilot programme has demonstrated an optimised route for transitioning algorithms from academia into industry.



I am really excited by this new ADSS technology-transitioning route. It overcomes a long-standing barrier to adoption of innovative algorithms by industries that require multiple suppliers in order to reduce the risks in making the leap. It minimises the cost of implementation for the supply chain, compensates for the lack of exclusivity by allowing customisation and maximises the impact for the inventors. A genuine win-win.

Robert Smith, Director of the UK Research Centre in NDE



Example of analysis of composite ultrasonic data as detailed within the ADSS software engineering documentation.

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