

AVNET[®] EMBEDDED

**Fast-Track Your Embedded Solutions
Software Development**

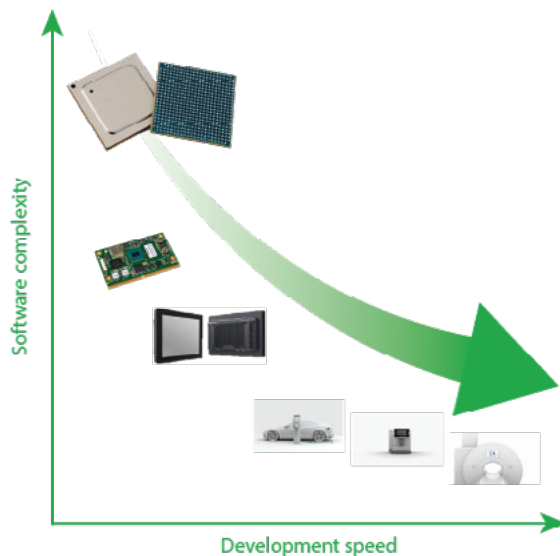


How Avnet Embedded's Software Technology Lab Can Get You To Market Faster

With the launch of the Software Technology Lab at Stutensee, Germany, Avnet Embedded has not only strengthened our position as a market leader in embedded computing hardware, but can now also support customers with comprehensive software development expertise when they buy our hardware.

When developing new and innovative embedded technology, we know that getting to market as fast as possible is key to gaining competitive advantage, and maximizing return on investment.

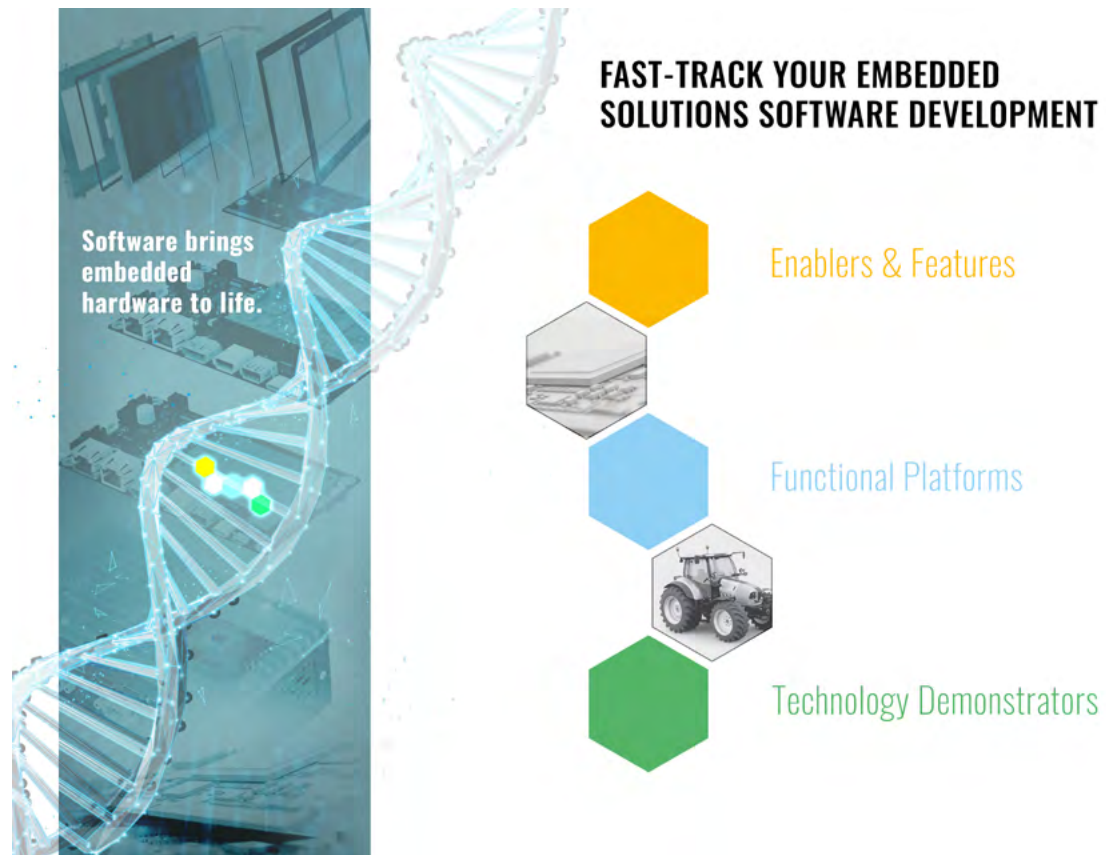
Avnet Embedded and the Software Technology Lab offers you market-leading software innovation from Silicon to User Interface and from single applications to complex and holistic full-stack solutions .



How Can the Software Technology Lab Help?

The dedicated team at Software Technology Lab have years of experience in helping customers create innovative embedded products which take advantage of the latest software technologies and combine them with embedded hardware to build reliable, robust solutions that last.

Combining these new software competencies with powerful hardware allows us to create innovative and fully-featured functional platforms that release the creativity of product designers globally. Software is a key element of hardware design and helps bind together the hardware features of any embedded product. Both make up the 'DNA' and expertise Avnet Embedded can offer.



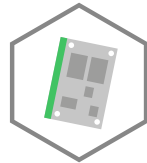
3 Routes To Speed Up Your Product Development

There are 3 key ways that elements built by our Software Lab can accelerate your embedded product development and help you get to market faster. These are software enablers and features, functional platforms and software demonstrators, and any of these are available to build into your embedded products.

Enablers & Features



Innovative and simplified software applications and board support packages for rapid product development.



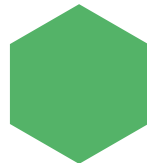
Functional Platforms



Ready to use embedded solutions combining software and AvE hardware. Fast go-to-market scenario.



Software Demonstrators

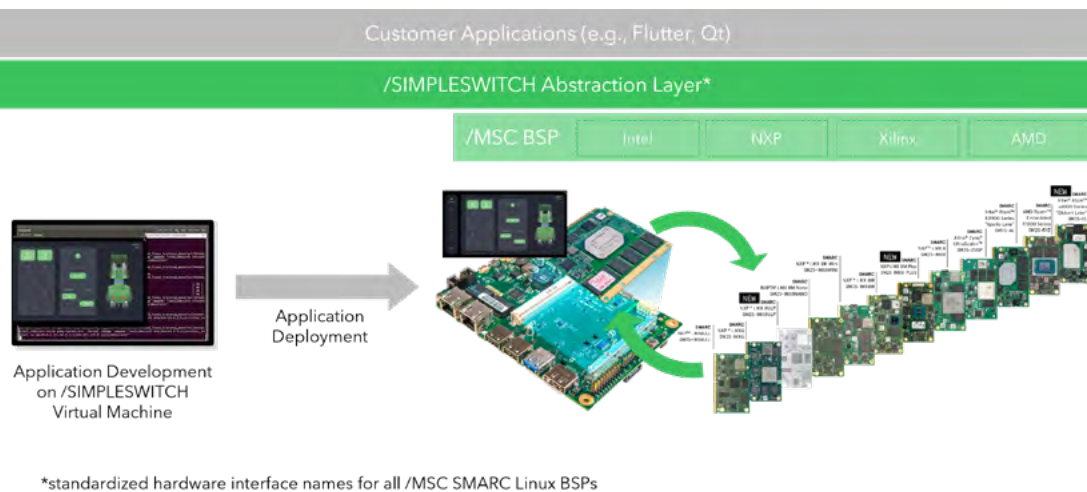


Let's innovate embedded computing and discover our demonstrators to imagine the future possibilities that can be realized with AvE products.

3 Routes To Speed Up Your Product Development

1. Enablers and Features – These are innovative and simplified software applications and board support packages which can be quickly integrated and add additional value to the customer in a timely manner.

Easy hardware scalability through /MSC software standards



Enablers and Features Example: Simple Switch

'Simple Switch' is a board support package feature developed by Avnet Embedded in house.

It allows to react quickly and efficiently to new market demands by easily moving software applications between Avnet Embedded SMARC® 2.1.1 modules (e.g., within i.MX 8M family or between ARM® and x86), without changing a single line of source code.

/SimpleSwitch combines the SMARC® connector, containers, and hardware abstraction layers to simultaneously maintain full functionality and hardware interface compatibility, while switching between different SMARC® modules to adjust e.g., computing performance.

While waiting for the SMARC® module delivery, the development of the HMI can be started immediately in the /SimpleSwitch virtual machine. With the integration of UI frameworks like Qt or Flutter for application prototyping and development, /SimpleSwitch allows for an easy design and fast plug-and-play deployment of modern UI applications.

We work with partners such as NXP and ARM to build solutions for IoT systems which use this type of technology.

3 Routes To Speed Up Your Product Development

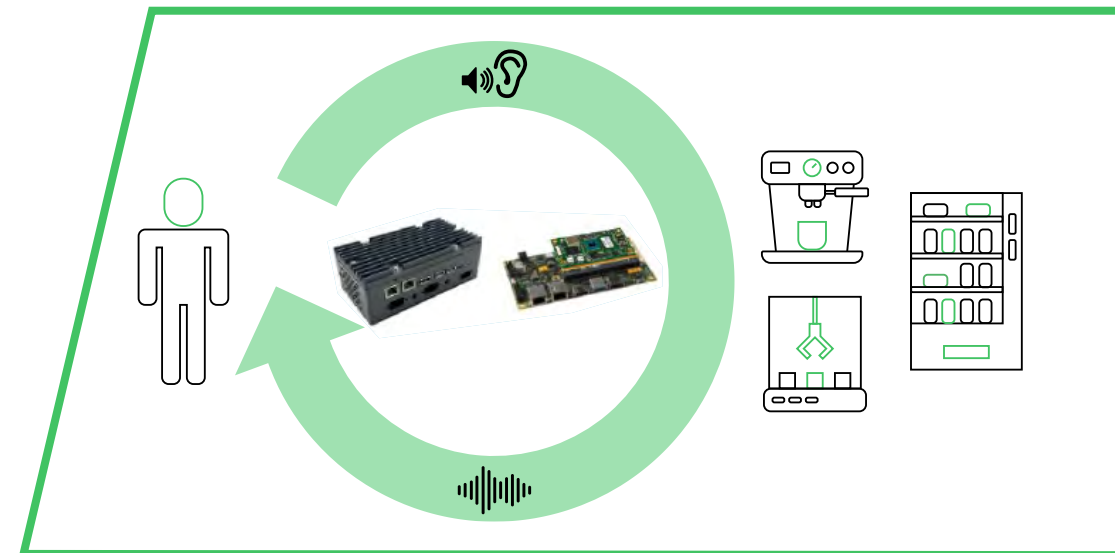
2. Functional Platforms – These are a great way of seeing exactly how new software technology can work together with Avnet Embedded hardware. As exciting possibilities emerge in software development, edge and cloud computing, functional platforms work as a great test case, and can give you confidence in the new technology.

Functional Platforms Example: SimpleVoice

SimpleVoice is a fantastic example of how a functional platform developed by the Software Technology Lab can work. Our team created a full solution using a gateway board, mechanics and software with natural language processing. SimpleVoice uses artificial intelligence to create a range of powerful new applications for existing embedded technology.

The SimpleVoice gateway has already been tested in a number of industrial environments. In these cases, the machine operator can simply address the machine with 'Hello, Crane...' and provide spoken instructions for the tasks to be performed. The gateway converts the natural language into actions of the machine and provides vocal feedback in turn.

SimpleVoice can be retro-fitted to existing manufacturing or industrial equipment, without incurring the much larger cost of replacement. This is especially useful when large scale machinery can be adapted for increased efficiency by adding new features and delivering innovation to the factory floor.



3 Routes To Speed Up Your Product Development

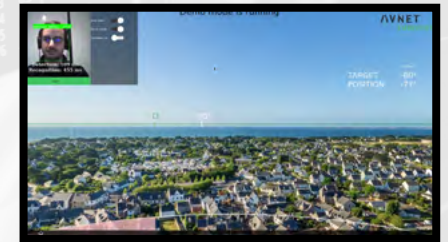
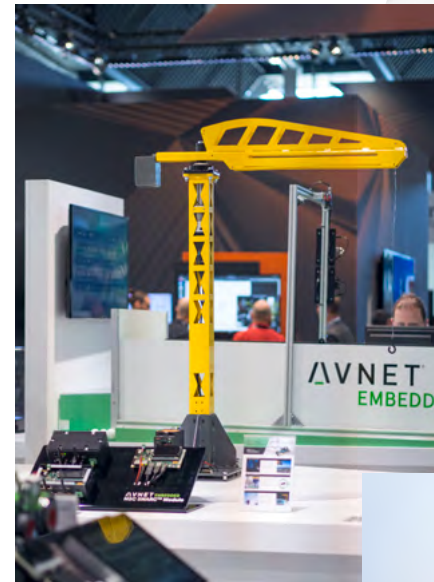
3. Software Demonstrators – Although less developed than functional platforms which can be used directly, software demonstrators perform a similar role. They are especially useful in the earlier stages of product development and innovation.

Software Demonstrators can be used as prototypes, to demonstrate how we can transfer and integrate new and trending technologies, together with innovative Avnet Embedded hardware into new embedded solutions.

Using new technology which can include, Machine Learning, Deep Learning, Computer Vision and Natural Language Processing, we have developed some exciting new applications for a range of different use cases. Our first Technology Demonstrator,

'Smart Crane' combines our latest AI competence in Computer Vision and Natural Language Processing on the industrial use case of a crane and offers intelligent industrial user identification and machine control by voice.

'Smart Tractor' is a great software demonstrator and clearly shows the ease of use of the newly developed software features. It utilises existing Avnet Embedded hardware like Ep5 Base board with the latest AvE NXP and Intel Smarc 2.1 Modules and upgrading them by integrating the additional / SimpleSwitch Software Layer in the BSP. The result is an innovative UI touch application that allows to control a connected tractor via GPIO and the exchange of COM Modules without compromises in the UI application nor the functionality/connectivity via GPIOs.



Expertise In Software Development

The Software Technology Lab is there to help you make the most of exciting new software capabilities and work out the best way to leverage them in new and existing embedded solutions when you're buying your hardware solution through Avnet Embedded.

Software is a key element of any embedded technology. It is the intelligence that drives the system, manages, and displays the data. As well as designing and manufacturing perfect hardware solutions, Avnet Embedded offers an unmatched capability when it comes to software expertise that extends beyond the Software Technology Lab. We were Microsoft's first industrial OEM (Original Equipment Manufacturer) partner, and we are still their biggest OEM partner and authorised IoT distributor globally.

We are a Microsoft Cloud Service Provider (CSP) and we have our own Microsoft IoT and Azure offerings, available exclusively through Avnet. Our software team link up with other areas of our business so for your software project you'll have experts to help with every step.

Avnet Embedded specializes in combining compute, display and software technology into embedded technology for a wide range of industries. From industrial farming equipment to household kitchen appliances, we design, manufacture, and deliver solutions to OEMs so they can focus their resources on their own innovation.

Whether you need support at the software development stage, or on your whole solution from screen to cloud, Avnet Embedded can help you get to market faster, better, and stronger.

We can also advise on all aspects of the software you require as part of your embedded solution, including assisting you with the correct advice on release, licensing, security, and longevity.



FASTER

We reduce your development time and get your product to market faster than the competition.

Our rapid development platforms like SimplePlus and SimpleFlex can help you develop compute and display solutions in less than half the time it would normally take.



BETTER

We make sure you're taking advantage of the latest technological advances, making your product better.

Close relationships with chip and display manufacturers, and software companies, ensure you're ahead of the curve on exciting new possibilities. A broad network of off-the-shelf hardware partners means you'll always get the right solution for your scale and budget requirements.



STRONGER

Our expertise reduces your costs and risks, and our global supply chain improves your efficiency, making your business model stronger.

We have over 100 years of experience in building technology for our customers, and Avnet has one of the world's best distribution networks.



Want to Find Out How to Get Your Embedded Solutions to Market Faster?

Whether you're looking for a complete solution, elements of your build or just help bringing your design innovation to life, the Software Development Lab at Avnet Embedded can fill in the blanks in your skillset and supply chain and get your embedded solutions deployed faster, better and stronger.

Let's talk!

Contact our team on avnetembedded@avnet.com to find out more and discuss how we can help make your innovation ideas a reality.