AVNET® EMBEDDED

Software Innovation for Product Design

Microsoft   Windows

CONTENTS

Working with Avnet Embedded gets you to market faster, better and stronger across the whole product lifecycle.

In this guide, we will be sharing more about our software products and services, and helping you understand how we can support you throughout your innovation journey – from product design and development to software support.
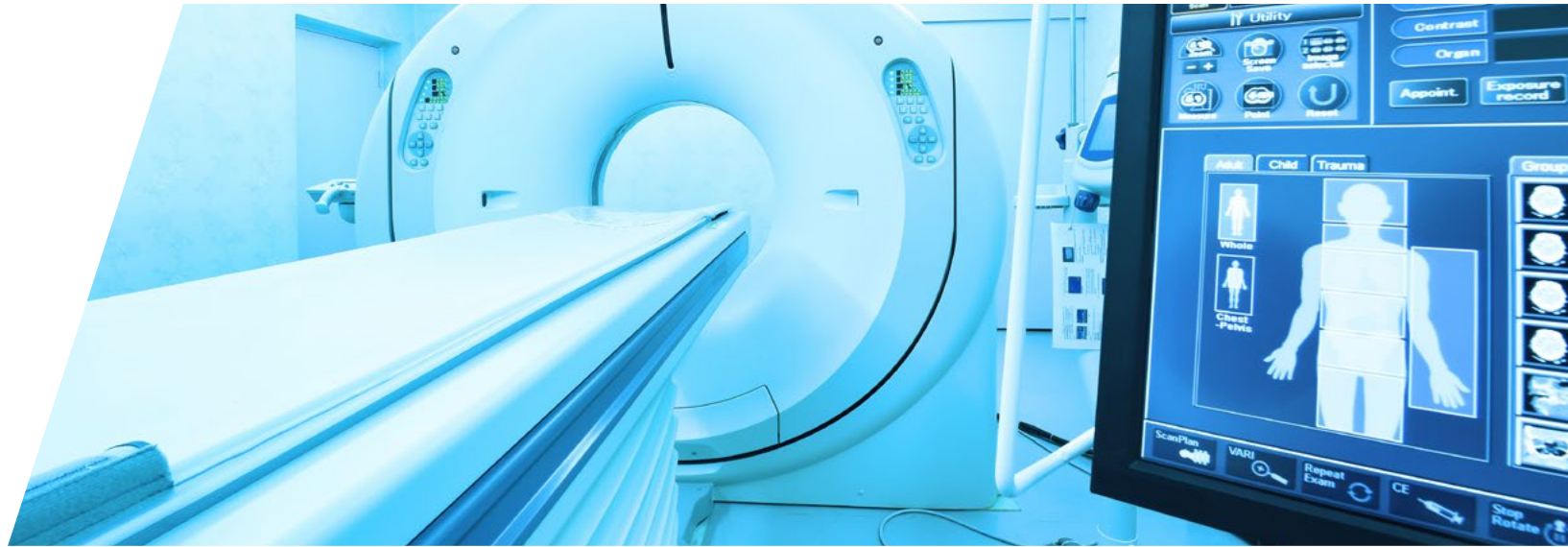
For over 100 years now, Avnet has helped thousands of customers to innovate, to design the perfect embedded solution for their product and get to market faster. By bringing our expertise to work alongside your team we can help you deliver market leading products every time.

An Introduction to Software at Avnet Embedded

As well as designing and manufacturing perfect hardware solutions, Avnet Embedded offers an unmatched capability when it comes to software.
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.

This experience means we can provide our customers with access to cutting edge technology and vast knowledge, built up over many years. From ideation through to finished product, our strong combination of both hardware, software and distribution allows Avnet Embedded to support a whole range of OEM customers. We can provide in-depth solutions and support with license procurement across Microsoft's entire embedded product family and technologies.

Why Avnet for Embedded Software?

Our software team includes Microsoft software specialists and architects, who can advise on the optimal setup from a data/sensor level, through to IoT gateways, from OEM devices, to on-premise server solutions all the way to the Cloud. To support cloud technologies Avnet has built a unique 'IoTConnect' Platform-as-a-Service solution on top of Microsoft Azure, which is recommended by Microsoft.

- We can help you translate your product ideas into safe, secure and scalable solutions and get you to market faster.
- Our expertise and experience mean we can support and advise you throughout the product development lifecycle on the most efficient and cost-effective solutions, saving you both time and money and shortening the development process.
- By handling all elements of hardware, software, licensing and logistics, you can focus on innovation and your core businesses, knowing everything else is taken care of by our team of experts.
- Experts in operating systems, we can help with IoT, cloud, hybrid cloud, security and virtualisation options.
- We offer a full range of complementary services such as software development, advice, loading and distribution.
- Our support on image verification helps you reduce your software footprint, increase security and control update instances.
- We provide dedicated training and support services when you need them. For example, our image workshop training shows you how to create a best practice image in 3-4 days. We also offer IoT workshops, and IoT and digitisation training.
- Our teams are local and responsive, but we still have a global reach to support you wherever you are.

Windows 10

Windows 11

How We Work With You

Discovery, Innovation, Production

DISCOVERY

We work with you to understand your challenge

Our customer managers work with you all levels of your business to understand business objectives and common challenges in technology. They focus on your product roadmap, costs and logistics, as well as your aspirations for functionality and features.

INNOVATION

Our product innovation team and solution design teams build the perfect solution to your challenge.

Our product innovation teams build and source the perfect ready-made products from our partners or our own off-the-shelf technology, while our solution design teams design full custom solutions from scratch.

PRODUCTION

We produce your solution at scale and ship to your factories - or direct to your customers.

Our technologycampuses are equipped to handle pro-duction challenges for you, while Avnet's global logistics infrastructure handles the shipping.

When you're innovating in your market, you're looking to minimise risk, manage costs and maximise your return on investment. This means building new products efficiently, effectively and robustly, so that they can continue to perform seamlessly with the longest lifespan possible.

Our team takes the time to understand your vision, your business objectives, and any potential roadblocks. Whether your product is still at the creation phase, is a brand-new solution or a replacement of legacy technology, we can help. Our team will work with you to:
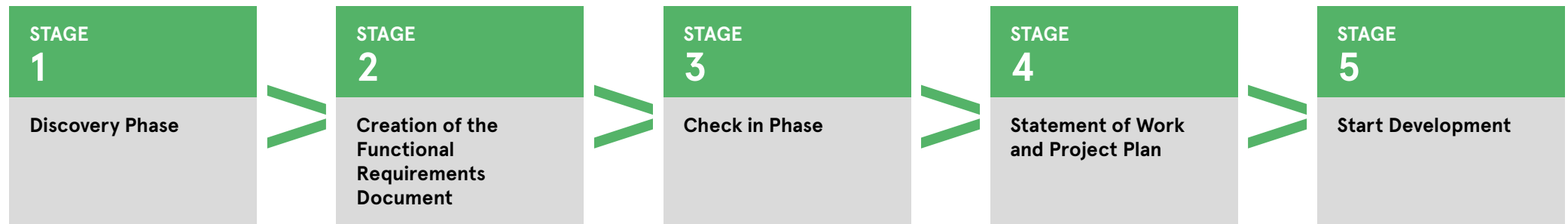
- Clarify the business drivers behind your embedded or Internet of Things (IoT) project and understand exactly what you require.
- Advise you on the quickest, most efficient and most cost-effective route to implement a scalable, secure and fit for purpose, future-proofed IoT solution.
- Support you with licencing questions and ensure you get the benefits by choosing the correct version of Microsoft for your needs – whether this is Windows 11, 10 oR an extended support option on an older embedded version of Windows. We can also help with the rest of your software questions, or with integration of your own software into the product.

The 5 Stage IoT Solution Framework

Our 5 Stage IoT Solution Framework contains re-usable IP and building blocks that helps you get your products into production and into the market, more quickly saving cost, time, and giving you a competitive advantage.

It gives you the peace of mind to ensure that all aspects of your project are catered for, that there is a robust process, designed to get you to success as quickly as possible, and that all aspects are properly considered.

As well as being thorough, our 5 Stage process is built to be fast and flexible. We work using Agile methodology where your project is mapped out and worked on in 2-week Sprints. This means that we can work collaboratively at every milestone step and respond to your input at all times along the journey. Whatever the case, you can be sure the process is designed to be as efficient and effective as possible.

STAGE **1**	STAGE **2**	STAGE **3**	STAGE **4**	STAGE **5**
Discovery Phase	Creation of the Functional Requirements Document	Check in Phase	Statement of Work and Project Plan	Start Development

Microsoft Licencing – What Do You Need To Know?

In order to be able to use an Embedded licence from Microsoft, you need to be approved by Microsoft as an Embedded OEM Manufacturer. With Avnet as your distributor, we can facilitate the Customer Licence Agreement (CLA) process for you. There is no cost associated with this and Avnet can usually process this in a matter of days.

3 Step CLA Process

1 Fill out the contact form on our website HERE

2 Give us your company name and address, and the full name of the person who has responsibility in your company for the CLA agreement with Microsoft.

3 We will handle the rest!

What happens once you have your CLA?

Once approved by Microsoft, your company will be issued with an Embedded CLA number, which will allow you to purchase Embedded licences via Avnet.

Your company can then buy embedded licenses individually and Avnet can also preinstall these as part of a Server, Workstation or laptop project as part of this proposal or new engagements going forward.

Compared to normal licenses, Embedded licenses have different part numbers. We can ensure you have access to instantly download and access the latest Microsoft releases via the OPK Portal for Embedded Customers. This ensures that your technical team can test and build master OS images at no cost. Licences only need to be purchased when the products go into production.

In most cases customers provide Avnet with a Server image, which is subsequently installed on the hardware. Avnet can also handle the image creation, which is subsequently signed off and approved by you as the OEM Manufacture and product owner.

If you want to apply for an OEM CLA, you can do this on our website, here.

■■ Windows 10   ■■ Windows 11

Modern Windows – Windows 10 IoT

Windows 10 Enterprise and Windows 10 IoT Enterprise offer a host of new features that help with security and the management of multiple devices. The ability to extend intelligent computing to devices on the edge of networks via the cloud has helped to connect and protect networks and devices as never before.

With intelligent security built in, Windows 10 protects, detects and automatically responds to malware and hacking threats, while safeguarding user identities, devices and business information. These built-in security solutions provide end to end security lifecycle management for endpoints as well, allowing protection of even complex multi-platform environments.

Including anti-ransomware, Windows Defender System Guard, Defender Antivirus and other features such as Windows Hello for Business and Information Protection, as an OEM you can be sure your systems and devices are secure and protected.

With Windows 10 there is no longer a difference between desktop and embedded licence versions – lockdown features are available as an optional windows component that can be enabled.

Modern Windows – Windows 11

In the fall of 2021, Microsoft launched Windows 11. Now, with over a billion global users, and after seeing the changes the world has undergone in the Covid-19 pandemic, Microsoft say that windows has been 'redesigned for productivity, creating and ease'.

The Windows 11 launch means changes for many manufacturers in how embedded products need to be developed. Firstly, hardware requirements have changed quite significantly, with Windows 11 running on 64-bit processors. The requirement for drive storage has also increased from 16GB for Windows 10 to 64GB for Windows 11. You can see more about hardware requirements [here](#).

The main driver for these changes is security, with a push towards a more modern BIOS (Basic Input/Output System) that supports features such as Secure Boot and TPM 2.0 (Trusted Platform Module). When combined with some of the virtualization technologies that Microsoft uses in Windows, there is a distinct security benefit. Microsoft says that the combination of Windows Hello, Device Encryption, virtualization-based security, hypervisor-protected code integrity (HVCI) and Secure Boot 'has been shown to reduce malware by 60 percent'.

Windows 10 and 11 support a wide range of devices and choosing form factors, components and richer user experiences means making decisions early in the design process. Docking, Tablet mode, Windows Hello and Modern Standby can all be useful features to consider when innovating. For more ideas, speak to our team and also visit Microsoft [here](#) or ideas to incorporate into your product design.
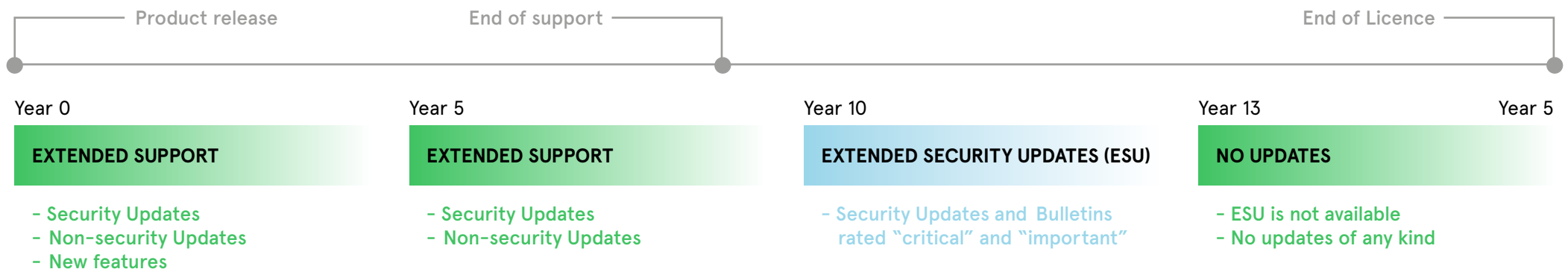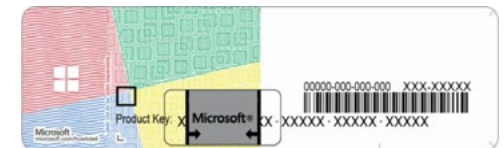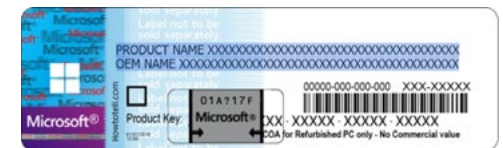
Windows Embedded Licence Dates

Microsoft says that new versions of Windows 11 will be released once per year. Customers should always install the latest version before the current version reaches end of servicing to remain supported by Microsoft.

Even though one of the advantages of Embedded software is longer licence dates and availability; it's important to keep your software current and up to date.

On our website and through our teams, we can update you about when products go into the End of support (when Microsoft stop providing fixes, updates and technical support) or End of licence stage when the product will no longer be available.

A list of licence dates can be found here on our website here.

We are also able to offer Extended Support options which allows you to keep using your Microsoft products for extra time. This service provides critical patching and security updates, extending the life of your embedded products in the field.

Product release	End of support		End of Licence
Year 0	Year 5	Year 10	Year 13 ... Year 5
EXTENDED SUPPORT	**EXTENDED SUPPORT**	**EXTENDED SECURITY UPDATES (ESU)**	**NO UPDATES**
– Security Updates – Non-security Updates – New features	– Security Updates – Non-security Updates	– Security Updates and Bulletins rated "critical" and "important"	– ESU is not available – No updates of any kind

Our Software Team

Our software team in EMEA provides a mix of specialists and generalists in each region. They are backed up in house by a team of specialists that can be called in to help on your project as necessary – software development experts, software design engineers, licencing specialists and partners from our extended network which includes Softweb and Witekio.

Softweb Solutions Inc. is an Avnet company with offices in Chicago, Dallas and Ahmedabad. The team there deliver best-of-breed AI software for IoT applications, along with providing data services and digital transformation to enterprises. With over a decade of experience working with organisations from startups to Fortune 100 companies; the Softweb team has the proficiency to offer strategy, design, engineering solutions, and R&D services.

Witekio is an embedded software design house and, while it has always had close partnerships with hardware vendors, the skillset and expertise of the firm demands that it remain a 'software first' enterprise. However, the close relationship with Avnet and the wider ecosystem of the Avnet Group means that Witekio's clients have access to an unparalleled ecosystem for IoT product development. Indeed, just as Witekio is the expert for embedded and IoT software, Avnet also has expert branches focused on hardware design, distribution, and production but also on cloud and business intelligence.

When we talk to you about your software project or product, we can call in experts from our software and hardware teams and ensure all elements of your project fit perfectly.

How Avnet Embedded Can Help You Solve Your Software Puzzle

Avnet Embedded brings together its compute, display and software technology to become the perfect partner for the design, manufacture and management of embedded solutions, all over the world. User experience is critical when designing new product offerings but identifying the right embedded and display technologies to power your next innovation can be complex, time consuming and expensive.

Our experience means the development and build of your embedded products and networks can be supported and fulfilled, whatever your needs. Our experienced teams and partners can fill in the blanks in your skillset and supply chain and get your projects deployed faster, better and stronger.

Our partnership with other Avnet businesses means we can also provide comprehensive hardware support as well as interconnect, passive and electro-mechanical components, bringing the whole solution together. This helps to improve your user experience and provide limitless design possibilities. Importantly, we will cut your time-to- market and reduce your risk by leveraging proven designs.

Want To Know More?

Our team has years of experience in all aspects of embedded hardware, software, integration, product design, development and deployment and we can put all this experience to use on your project.

If you want to know more about how Avnet Embedded can help you get your products to market faster, then **let's talk!**

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.

Find out more about the work we do in many different vertical markets HERE.

Let's talk!

Contact our team on avnetembedded@avnet.com

to find out more and discuss how we can help you innovate and win.