

### Editorial from Witekio leaders



Samir Bounab, General Manager

#### ***Our market is directly impacted by megatrends***

The tech industry is a strange place to be right now, with the mix of market trends versus the tough operational challenges impacting many companies' ability to deliver on their roadmaps and product launches. I've had many conversations with various industry decision-makers about the challenges their organizations are facing. They agree that they revolve around supply shortages, the war for talent, the green wave, and data/cybersecurity concerns.

The tech industry had many warnings from various sources that this would happen, and now we are living it in every sector in the tech industry: sales, R&D, the supply chain, HR and operations.

The impact of these challenges can be seen across many R&D companies existing roadmaps and planned product launches due to attempts to adapt their program plan to these trends. We share in this letter our experience that will help the decision-makers in your organization adapt quickly to these challenges and trends.

**Witekio can help your organization with any challenges you may be facing, get in touch to speak to one of our industry experts.**

### What is happening in the embedded & IoT software world?

- **U.S. Securities and Exchange Commission (SEC) now considers cyber vulnerabilities to be an existential business risk.** Pearson, a London-based publishing and education giant, has agreed to pay \$1 million to settle charges for misleading investors following a 2018 breach and theft of millions of student records.
- **Amazon.com Inc. faces the biggest ever European Union privacy fine** after its lead privacy watchdog hit it with a 746 million-euro (\$888 million) penalty for violating the bloc's tough data protection rules.
- **Edge AI matures from a trend to actual applications:** speech recognition, image recognition, and autonomous vehicles are the 3 main applications that are driving real business in our market.
- **Despite having 26.9 million developers worldwide, two-thirds (61%) of HR pros reported that finding qualified developers would present their biggest recruitment challenge** of 2021, according to research from CodinGame.
- Microsoft is backing a non-profit, The Green Software Foundation, as part of an **industry-wide effort to clean up code so that it's not wasting electricity on laptops, desktops or in the cloud.**
- A variety of analysts agree that the **most problematic shortages will ease in the third or fourth quarter of 2021**, though it could take much of 2022 for the resulting chips to work their way through the supply chain to products.

# Emerging legislation on IoT security

84% of tech decision makers are interested in the development of an industry-led set of guidelines to build a collaborative approach to IoT security. Some are emerging in Europe with ETSI EN 303 645 as "the basic standard for IoT security" and USA also has its equivalent NIST 8259A. Here's a quick overview and differences between both schemas.

Requirement	ETSI EN 303 645	NIST 8259A
Authentication/Password	X	X
Configuration		X
Crypto	X	X
Hardening	X	X
Logging		X
Privacy	X	X
Secure Storage	X	X
Update	X	X

## 3 SIMPLE STEPS TO MANAGE YOUR SECURITY by Marc Balme, our VP Engineering

### 1- Run a Cybersecurity analysis

Security is a long running activity which you should start from a sound basis. You must identify your organization's most valuable assets, and how secure they need to be.

It is also critical to ensure your organization has the correct level of maturity to overcome any challenges.

To help you with this analysis, you can use our security check-list here:

> <https://witekio.com/embedded-software-services/iot-device-security/>



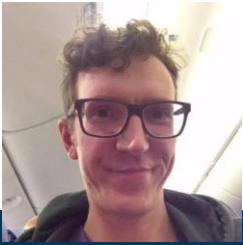
### 2- Develop with a Security by design approach

Security must be managed and challenged throughout the entire project lifecycle. We recommend the savvy use of proven frameworks and standards to drive you through the different steps.

Security by design is truly a collective effort that requires a fully committed team. This requires the correct training, continuous coaching, and a shared vision of the team to see the best results.

### 3- Perform penetration testing and Security validation

From light testing to intensive testing - stress test your product as a hacker would. We highly recommend the use of external experts to ensure you have unbiased reporting and validation.



## Chip shortage or end of life: how to manage a forced migration?

There comes a time in many embedded or IoT projects where it is necessary or useful to migrate from one OS to another. Whether a long-time OS is moving closer to its planned end-of-support point, your strategy dictates a migration to a new HW design to help power new functionality, or where a shortage in supply forces you to move to a new hardware design, a migration is as complex to manage as it is important to execute smoothly.

An Embedded Software migration project is never a simple and straightforward activity and requires having a **holistic approach from the hardware through to the upper application layers**, to ensure the architecture and choices of technologies are made with a complete system view and even a good understanding of the market and technology trends. Such migration might represent significant investments in the redesign, and therefore should be well thought through to avoid facing the same issues again a few years later.

The silicon shortage that is currently impacting supply-chains around the globe is beginning to cause a shift in perspective with regards to migration: no longer to be considered a periodic activity to be conducted every few years, migration strategy could be considered as a viable means of outmanoeuvring competitors: companies who are able to maintain product functionality using a variety of components, building product using whichever components are most readily available will have a clear market advantage over less nimble competition.

Managing the software aspects of such a flexible migration strategy is both interesting and challenging; best-practice really helps in this regard, where maximising flexibility, re-use and good architecture now have even greater benefits!

### Dive Deeper

Why We're in the Midst of a Global Semiconductor Shortage: <https://hbr.org/2021/02/why-were-in-the-midst-of-a-global-semiconductor-shortage>

<https://hbr.org/2021/09/the-sec-is-serious-about-cybersecurity-is-your-company>

[https://www.forbes.com/sites/forbestechcouncil/2021/09/09/rising-stars-of-the-tech-world-why-developers-are-job-market-royalty/?&&&hss\\_channel=tw-3291010518&sh=22a09d8e8718](https://www.forbes.com/sites/forbestechcouncil/2021/09/09/rising-stars-of-the-tech-world-why-developers-are-job-market-royalty/?&&&hss_channel=tw-3291010518&sh=22a09d8e8718)

<https://www.zdnet.com/article/green-software-development-microsoft-linux-foundation-want-to-make-coding-carbon-free/>