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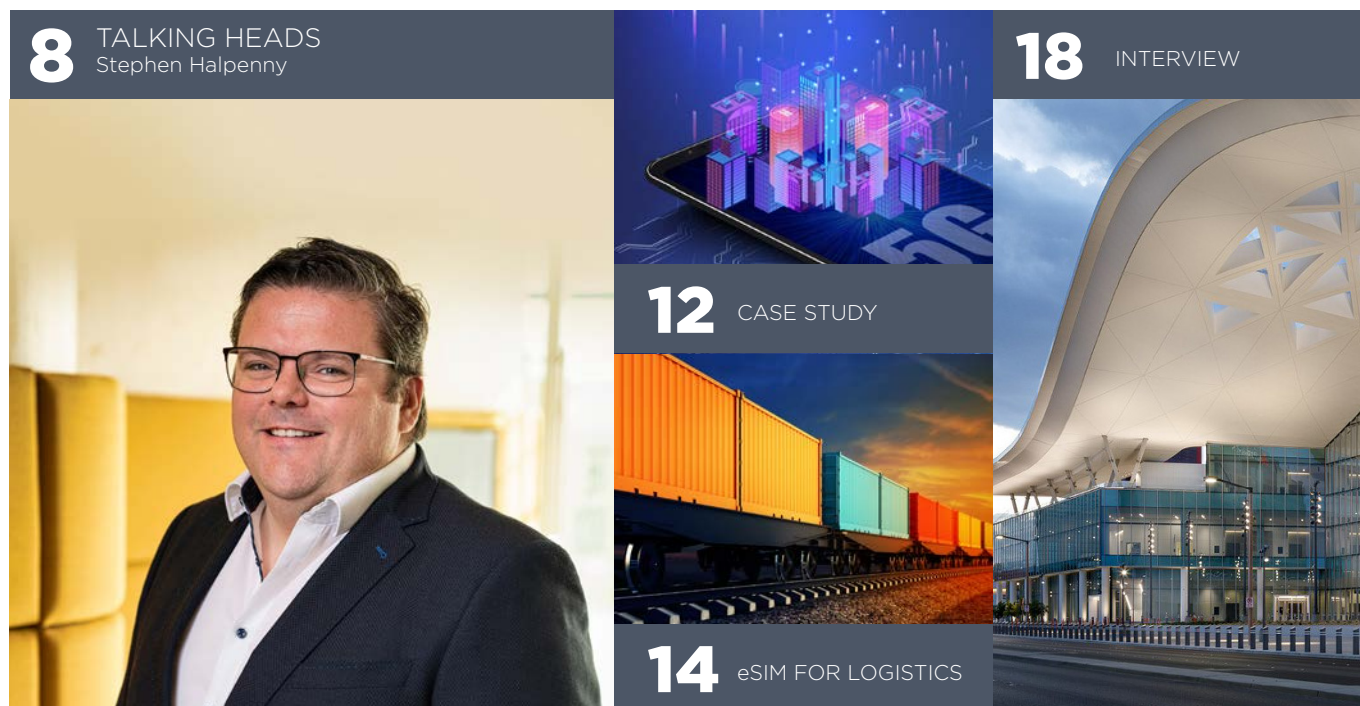
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# ***A for effort turns into A for attainment***

IoT hasn't yet achieved mass-scale success with many deployments stalling and pilots failing to scale. This phase is ending as IoT organisations have learnt how to put the right strategies in place and new technologies have smoothed out the bumps in the road



**George Malim,**  
managing editor

MWC Las Vegas 2023 provides a great platform to showcase the latest cellular connectivity innovations that are making it simpler to scale up IoT deployments, develop IoT devices and ensure optimised connectivity is continuously available. This year, attendees will inevitably see and hear a lot about SIM innovations as embedded and integrated SIMs (eSIM and iSIM) move from being theoretical propositions in IoT to technologies that underpin flexible, scalable and optimised connectivity.

However, the SIM innovations aren't the only hot topics affecting cellular IoT. It's now well understood that cellular connectivity provides a secure means for IoT devices to connect and the security capabilities of the latest cellular technology will be discussed with future directions and capabilities

uncovered. Admittedly, much of this relates to the secure functionalities of eSIM and iSIM, so maybe there really is no escape from the SIM subject.

Away from the technical developments, MWC Las Vegas will highlight the progress IoT is making as it gets over growing pains that have stunted its ability to scale. IoT's no longer a moody teenager, staring out of the window, picking its spots. It's grown up during its first year at university and worked out how to be more mature and how it fits in with other technologies and other business models.

IoT is far from adult, though. It's still in its sophomore year with plenty to learn. While in previous years we've seen IoT deployments that deserve an A grade for effort, this year we're expecting to see more frequent A grades for attainment. Some of these top-graded projects will be detailed at the show, for others we'll have to see what the next few months bring.

Enjoy MWC Las Vegas 2023 and this CEO Guide to the event!

George Malim

MANAGING EDITOR  
George Malim  
Tel: +44 (0)7930 301 841  
g.malim@wkm-global.com

DIGITAL SERVICES DIRECTOR  
Nathalie Millar  
Tel: +44 (0) 1732 808690  
n.millar@wkm-global.com

SALES CONSULTANT  
Cherisse Jameson  
Tel: +44 (0) 1732 807410  
c.jameson@wkm-global.com

DESIGN  
Jason Appleby  
Ark Design  
Tel: +44 (0) 1787 881623

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## EDITORIAL ADVISORS



**Robin Duke-Woolley,**  
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programme  
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director, IoT,  
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on Digital and  
IoT innovation



**John Canali, Omdia**

IoT deployments play an important role in many enterprises' digital transformation strategies, yielding benefits such as productivity gains, costs savings, and achieving environmental sustainability goals. As a result, enterprises continue to increase their spending on IoT solutions and are expanding deployments, according to the **Omdia** Internet of Things (IoT) enterprise survey. The results showed that enterprises are deploying, or are in the process of rolling out, IoT solutions and that 95% of respondents expect to see measurable benefits from IoT within two years of deployment.

### **5G and eSIM are musts for IoT enterprises, finds Omdia research**

"While some tech giants have scaled back their IoT efforts, enterprises are embracing IoT and seeing remarkable results," said John Canali, the IoT principal analyst at Omdia and author of the report. "In fact, enterprises are very forward looking in incorporating new technologies like 5G, fixed wireless access (FWA), and embedded and integrated subscriber identity module (eSIM/iSIM) technology."

Omdia's survey results reveal that while LTE 4G remains a connectivity bearer, more than 70% of enterprises are planning to use 5G connectivity. Meanwhile, eSIM/iSIM technology has or will be adopted by nearly 90% of enterprises over the next two years. This technology will enable enterprises to better manage costs and allow them to renegotiate future connectivity tariffs.

"Our survey suggests that there are a multitude of opportunities ranging from hardware, software, connectivity services," added Andrew Brown, the IoT practice lead at Omdia. "However, security remains at the forefront of enterprise concerns and vendors must be able to not only offer secure products and services but also be able to effectively integrate into broader solutions. Vendors that fail to deliver secure solutions will find themselves locked out of this growing market." ■

### **eSIM aggregators reshape traditional roaming, propelling travel SIM market to US\$10bn by 2028**

New research from **Kaleido Intelligence**, a roaming and connectivity market intelligence and consulting firm, has found that travel eSIM providers, including eSIM aggregators, mobile network operators and mobile virtual network operators, will see retail spending on such services soar 500% over the next five years. Kaleido's new Travel eSIM Outlook 2023: Market Adoption and Roaming Impact research forecasts that the global travel eSIM market will be worth close to US\$10 billion in 2028, accounting for more than 80% of total travel SIM spend by then.

The research found that this will drive retail spend on travel connectivity services, including roaming packages and travel SIMs, to be worth over \$30bn by 2028. The research also found that the combined migration towards 'eSIM-first' smartphones and the ability to offer a more seamless journey to travel SIM purchasing is likely to help accelerate travel SIM adoption and

erode the existing physical travel SIM market.

"High roaming costs, growing traveller awareness of eSIM, and the future ratification of GSMA eSIM specifications for smartphones in China will further drive this adoption surge for alternative eSIM solutions," said Nitin Bhas, the founder and chief of strategy and insights at Kaleido Intelligence. "Nevertheless, the market landscape presents mobile operators with the opportunity to reshape their traditional roaming strategies, attract new customers through similar travel eSIM services and to drive usage amongst existing customers with compelling roaming deals." ■



**Nitin Bhas, Kaleido Intelligence**

## **News in Brief**

### **Ooredoo and Synergy test NB-IoT with eSIM**

**Ooredoo** and **Synergy Technology Solutions** have tested narrowband-IoT (NB-IoT) devices with embedded SIMs (eSIM). With Ooredoo's collaboration and technical support, Synergy has demonstrated the potential of IoT solutions and the benefits of connectivity for various industries. The testing of real-time connectivity of data loggers and IoT devices in Ooredoo's NB-IoT network opens up new possibilities for industries such as energy, water, transportation, manufacturing, and more. These industries can optimise operations, make accurate decisions, and maximise efficiency through remote monitoring and analytics.

Ooredoo's advanced network infrastructure and IoT engineering team have provided a platform for implementing technologies in the Omani market. Synergy Technology Solutions, with their skill in industrial analytics, machine learning solutions, IoT and cybersecurity, has partnered with device manufacturer, **Kallipr**, to offer data gathering solutions to industry in Oman. ■

### **ABB invests in edge-to-cloud partnership with Pratexo**

**ABB** is investing in a partnership with **Pratexo**, an edge-to-cloud acceleration platform company. The partnership involves a minority investment in Pratexo through ABB's venture capital unit, ABB Technology Ventures (ATV). Financial details of the investment were not disclosed.

Pratexo's technology platform supports IoT and artificial intelligence initiatives which demand compute power at the edge. The company's technology enables the set up of systems that can process huge amounts of data generated by IoT sensors and run advanced analytics in real time close to the location of the device, rather than in the cloud. ■





## News in Brief

### VIAVI adds RedCap device emulation to boost 5G IoT

**VIAVI Solutions** has introduced reduced capability (RedCap) device emulation for 5G network testing, enabling performance validation for IoT and private networks based on a new class of lower-cost devices including wearables, industrial wireless sensors and video surveillance. This solution is based on the TM500 network test platform, used by the majority of network equipment manufacturers for base station performance testing.

With early validation efforts focused on conformance and network emulation, VIAVI has filled a gap with the availability of RedCap device emulation. Based on the widely accepted user equipment (UE) emulation capabilities of the TM500, RedCap device emulation enables equipment manufacturers to create realistic scenarios of thousands of such devices carrying traffic. With the upgraded TM500, RedCap device testing can be integrated into the existing test environment. The platform provides the capability to simulate RedCap-like traffic patterns, generate RedCap-specific signaling, and evaluate the network's performance for RedCap use cases. ■

### Telkomsel expands its range of IoT offerings with Amdocs, MAVOCO

**Amdocs**, a provider of software and services to communications and media companies, has announced deployment at **Telkomsel**, a service provider in Indonesia, of a next-generation IoT connectivity management platform. This will enable Telkomsel to expand its range of IoT offerings for both consumer and enterprise customers.

Under the project, Amdocs provided system integration services to implement **MAVOCO's** IoT connectivity management platform, empowering Telkomsel with business agility and enhanced operational efficiency to introduce innovative offerings with faster time to market. This will allow the service provider to better accommodate the specific needs of enterprise customers. MAVOCO is offering an IoT connectivity management platform for cellular networks. ■

### UScellular and Ericsson to offer customised private wireless network

**UScellular** and **Ericsson** have teamed up to provide private wireless network solutions for industry segments. This includes an initial focus on industry 4.0 manufacturing, logistics, distribution and warehouse use cases; expanding into hospitals, industrial Internet of Things (IIoT), ports, utilities, and airports. This offering incorporates Ericsson's private 5G network portfolio with UScellular's connectivity services and provides one point of contact for all system installations and life cycle management.

"UScellular is growing its private network capabilities and solutions for our enterprise customers," said Kim Kerr, the senior vice president of enterprise sales and operations for UScellular. "Ericsson's private 5G solution and UScellular's strong coverage in markets that have established manufacturing, distribution centres and warehousing, and providing the experience of operating LTE and 5G networks, offer a great combination and value proposition."

This announcement builds on a relationship established earlier this year between the two companies utilising Ericsson's private 5G network installed at the **University of Wisconsin-Milwaukee's (UWM) Connected Systems Institute (CSI)** manufacturing

research facility to bring security and mobility between indoor and outdoor settings while integrating with business operations, devices and applications.

"Together with UScellular, we are focused on providing commercially ready solutions designed for today's dynamic enterprise environments and engineered for the demands of complex and industrial operating environments," added David Green, the vice president and key account manager for the UScellular account for Ericsson North America. "We are seeing strong momentum for private networks driven by use cases that greatly benefit from 5G connectivity. Partnering UScellular's strong coverage in markets with Ericsson's turn-key solutions will unlock new opportunities for customers across industries who recognise the value of private networks." ■



**Kim Kerr, UScellular**

### emnify announces cloud-based IoT connectivity in Brazil

**emnify**, a cloud IoT connectivity provider, has partnered with **Claro** Brasil to introduce cloud-based IoT connectivity. This expansion strengthens emnify's global IoT network mission, simplifying connectivity and fostering growth opportunities for IoT businesses worldwide.

This most recent expansion of the SuperNetwork signifies an achievement in emnify's commitment to unlocking challenging markets while maintaining consistent capabilities against a highly fragmented coverage and regulatory landscape. As an **AWS** Advanced Technology Partner, emnify will enable a complete, native, AWS IoT cloud stack, including connectivity, in Brazil. Now, local customers can benefit from a native integration of SuperNetwork connectivity into the global IoT application stack of AWS.

"We are proud to be the first cloud-native IoT connectivity provider to add Brazil to the growing list of countries



**Frank Stoecker, emnify**

where we currently offer coverage, delivering on the promise of the SuperNetwork," says Frank Stoecker, the CEO of emnify. "Wherever you deploy IoT devices, the SuperNetwork provides a consistent and complete set of superior capabilities including connectivity management, cross-network insights, device and data security and a complete set of application programming interfaces (APIs), creating new levels of scalability and reducing operational friction." ■



## Eseye helps Precision Animal Solutions improve cattle disease identification by 27%

Global IoT connectivity provider **Eseye** has partnered with **Precision Animal Solutions** on an animal behaviour monitoring solution to improve farming and agriculture. The partnership combines Eseye's global IoT connectivity solutions with Precision Animal Solutions remote early disease identification (REDI) system. This system is used to monitor animal behaviour and detect sickness symptoms. The collected data is then transformed into actionable information using artificial intelligence (AI) and machine learning (ML), improving animal welfare management and treatment.

Farmers equipped with this new solution will gain real-time access to critical information, empowering them to make informed decisions and optimise operations while minimising resource consumption. Deploying these insights at scale increases cattle yield while improving animal welfare, expanding the beef and milk supply chain while lowering costs.

Many cattle die each year from bovine respiratory disease (BRD), which causes an estimated US\$1 billion economic losses in the US beef industry. Cattle owners monitor each animal's health which is costly and time-consuming when done manually. Additionally, the complexity of diagnosing a medical problem in an individual calf within herds of up to 500 at a time often leads to slow diagnosis and treatment,

causing hardship for animals and economic loss for cattle operations.

Brad White, veterinarian, professor at **Kansas State University**, and partner in Precision Animal Solutions said: "What we found through some of our research is if you actually monitor cattle behaviour daily and hourly what you find is early in the illness part, they actually spend a lot more time at the herd; they spend a lot more time trying to hide in the group early in the disease process."

Eseye was able to work with Precision Animal and deliver the technology to take this from concept to reality and perform a successful field trial. Utilising IoT hardware skills, Eseye worked with Precision Animal to design and develop an industry-standard, animal-safe, reusable bovine tracker which enable REDI to continuously monitor cattle feeding and drinking frequency, social behaviour and activity patterns. The solution combines edge processing capabilities to facilitate the receipt, storage and subsequent transmission of the tracker's data to the cloud. Coupled with Eseye's managed connectivity services, the custom solution enables remote monitoring, access and over-the-air (OTA) configuration of connected equipment, without physically mobilising staff and resources to sites. ■

## Siren Marine becomes standard IoT solution on select 2024 boat models

Siren Marine's IoT device, the Siren 3 Pro, is now standard equipment on select 2024 model year boats from Grady-White, Regulator Marine, SunCatcher by G3 and Skeeter. Siren 3 Pro is a third-generation remote boat monitoring and telematics platform that is improving the future of connected boat technology.

2024 boat models that will feature Siren Marine 3 Pro include:

- Grady-White – 33-feet and up
- Regulator – 31 feet and up
- SunCatcher by G3 Elite Pontoons with Diamond package and DEC (digital electronic control) engines
- Skeeter bay boats with DEC engines

"This is a huge milestone for us as our major boat builders begin to embrace Connected Boat technology and the value it brings to their customers," says Andrew Cullen, director of connectivity at the **Yamaha US Marine** Business Unit. "Just like customers are accustomed to connected homes and thermostats, soon they will be expecting boats to be connected with all the benefits of remote connectivity, security and monitoring."

The Siren 3 Pro operates over a global 4G/5G LTE cellular network with the option to add SirenSat, an offshore antenna for customers that leave cellular coverage. Options for sensors include wired and wireless as well as connection to the NMEA 2000 network.

With a Siren Marine Subscription, customers have full access to the Siren 3 Pro from the Siren Marine mobile app. The app, available on both the **Google** Play and **Apple** App Store, gives customers access to the Siren Marine dashboard, which provides real-time information regarding the location of their boat and the status of the monitored systems. ■



**Grady-White boats connect via Siren Marine**

## News in Brief

### BharatRohan partners with Smart Village Movement to modernise ginger farming

**BharatRohan Airborne Innovations**, a provider of agri-tech drone services, has announced a partnership with the **Smart Village Movement**. This collaboration is set to modernise ginger farming in Meghalaya, India, by reducing crop losses and improving income and livelihoods. The project will use advanced drone-based hyperspectral imaging and data-driven insights, ensuring affordability for smallholder farmers.

The partnership aims to empower farmers with precision agriculture techniques using unmanned aerial vehicles (UAVs) equipped with hyperspectral, multispectral and thermal sensors, capable of detecting minute changes in crop health. This real-time data enables farmers to make timely interventions to improve crop yield and quality. Moreover, the initiative promotes sustainable, residue-free ginger production, which will incentivise farmers with premium prices by creating better linkages for the export markets, enhancing income opportunities and economic growth for the local farming communities. ■

### WaterMeter, WND Mexico and UnaBiz partner for one million Sigfox meters

**WaterMeter**, in collaboration with **WND Mexico** and **UnaBiz**, has announced the signing of a memorandum of understanding (MoU) to modernise water management in Mexico. This alliance aims to deploy one million water meters with **Sigfox** OG Technology throughout Mexico over the next ten years, offering solutions for accurate and sustainable measurement of water, gas and electricity for the benefit of communities and the environment.

As the operator of the OG Network in Mexico, WND Mexico is committed to providing coverage crucial to the deployment of water metering solutions powered by Sigfox OG technology across the country. This alliance reinforces WND Mexico's dedication to supporting IoT solutions. ■



# How eSIM and iSIM make IoT success Mission: Possible

As enterprises and device makers of all types race to embrace embedded SIMs (eSIM) as a mainstream technology, George Malim, the managing editor of IoT Now, speaks to Stephen Halpenny, the chief operating officer of Kigen, about how IoT has called into the pitstop to accelerate OEM success with eSIM. The diversity of players now entering IoT is broader than ever and will continue become more diverse in the coming age of artificial intelligence (AI) touching all aspects of business and society. What's needed now, says Halpenny, are flexible approaches for product design, manufacturing and in-field operations. These will be the key to IoT value and unlock the constraints imposed by previous rigid approaches

**George Malim:** This time last year, research showed that 50% of IoT trials or pilots were not turning into successful IoT roll-outs. However, this year the eSIM/iSIM market is poised to surpass the 500 million units mark – what is changing?

**Stephen Halpenny:** Indeed, for a few years, we have seen multiple research studies point to the difficulty experienced by companies to scale beyond the pilot stage from **McKinsey**, **Cisco**, **Microsoft** IoT Signals Research, and **Beecham Research** – even resulting in the term ‘Pilot Purgatory’. The past few years have been tough for the manufacturing industry with chipset and parts shortages and unforeseen disruptions in the supply chain after the pandemic. As a forerunner in eSIM enablement, it has certainly galvanised our commitment at **Kigen**, and that of our ecosystem,

to support and empower OEMs and their customers to solve key challenges that hamper scale. Many of these studies point to the fact that cellular IoT has been too complex. And the good news is, that the situation is changing.

Credit must be given to OEMs that have embraced eSIM and iSIM, that we see this higher adoption despite the turbulence of the last few years. And what's interesting is that at Kigen, we see many OEMs who are first-time cellular IoT adopters turning to low power wide area networks (LPWAN). There are two main areas of difference now: Technology-wise, these IoT pilots are looking at higher energy efficiency, lower costs and a much broader set of applications. Commercially, these companies start from the business outcome and their manufacturing processes; and then look ►

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**Stephen Halpenny**  
Kigen

for the technology that enables their goals. They expect the technology enablers - security, connectivity and others - to fit their manufacturing, certification and data goals. We - companies like Kigen and operators - must deliver on these new customer expectations.

**GM: What should the industry do to support this growth for OEMs who are venturing into IoT with eSIM?**

**SH:** We need to pay more rigour and attention to streamlining IoT manufacturing. That's been Kigen's raison d'être. We need another way to think and behave inventively that sits alongside innovation.

I have had the pleasure of being in continued conversations with customers for over a decade of Kigen's eSIM journey, and I can see that there is focus and significant attention to getting security and scale right now. This has been a contributing factor to industry efforts such as the **GSMA** IoT eSIM Remote SIM Provisioning (RSP) standards, SGP.31/32, IoT SAFE, and **Global Platform's** recently announced CoAP support for NB-IoT. I'm proud that Kigen has played our part in driving all of these standards to support better IoT success. OEM demand is also changing the operator mindset, and the businesses best prepared are already looking at eSIM as a key part of their enterprise strategy. ►





***Most IoT OEMs have identified the migration to eSIM as a strategic objective to support customers and the latest standard presents the possibility to achieve their goals of reducing SKUs while supporting all MNOs***

So, here are some key pain points:

**Simplifying eSIM transfers.** Take, for example, Kigen's collaboration with **AT&T Business**: We identified one of the key pain points for OEMs: how to simplify the implementation and management of digital inventories of eSIMs and iSIMs. Pre-integrating eSIM and simplifying (e)SIM transfers allows device OEMs to plan higher-volume production, better stock-keeping unit (SKU) management, and reliability in the field. The added dividend back to AT&T Business, which has surpassed 100 million IoT-connected devices is that it is able to better address the needs of customers who need to deploy globally in addition to all the benefits of security and power efficiency.

**Multi-country deployments.** Certain markets are also difficult for OEMs to deploy in: For example, Brazil and Turkey. Through our partnerships, Kigen can serve in-country eSIMs for such markets. Further, there are cost considerations in switching international mobile subscriber identifiers (IMSI) or profiles, with or without the use of RSP. We are willing to be a trusted partner in this evaluation with our ecosystem of connectivity providers. We're committed to interoperability: backed by all top-tier US operators and the leading MVNOs to serve up to 200 countries.

**Choices in embedded universal integrated circuit card (eUICC) or roaming.** In other cases, OEMs must choose between multi-IMSI roaming solutions vs. direct MNO connectivity utilising eUICCs. In this case, there is a choice of options that depend on the use case to be more cost-effective. Kigen has enabled customers with either strategy or in some cases, also supported the transition between the two.

**Subscription provisioning in the factory.** OEMs must successfully meet their production and yield goals – this requires anticipating which connectivity profiles are needed for end markets, often at a shorter timeframe on the factory line. We have multiple strategies for late-stage subscription management that meet high-volume manufacturing environments in various industry segments through Kigen in-factory provisioning. The key to executing these priorities is supporting operators and MVNOs while understanding the

OEM challenges better and driving flexibility in all aspects.

**GM: How do you see the eSIM delay being addressed and what new approaches are needed?**

**SH:** I think it's being addressed now, and it reminds me of a quote from Alan Turing "Even if we can only see a short distance ahead, we can see plenty there that needs to be done." eSIM has had some initial challenges, but as I mentioned the confidence in operators – certainly the fast movers and those that are prioritising their enterprise strategies is strong. Operators have used our eSIM and IoT SAFE to differentiate around value-added services. The convergence of Web3 technologies, such as blockchain, with **KORE Wireless** in smart grid applications and **Vodafone DAB** for service acceleration for example, with **ZARIOT** and **The At sign company**. As others get on the fast track to gain access to IoT eSIMs, demand for differentiation gears up another notch.

Sustainability, efficiency and affordability are all other drivers of how eSIM momentum and differentiation is being targeted. Across the board for fixed wireless access, payment terminals and customer premise equipment (CPE), we are seeing here a strong push towards IoT-tuned solutions for power efficiency. With this focus, we enable profile downloads in a way that even the most constrained eSIM chipsets from **Samsung**, **Infineon**, **STMicroelectronics** and **TongXing Microcontrollers** (TMC), some of which are typically 1.5x lower memory than others, can be served with multiple profiles.

Lastly, the big disruption that is ahead of us is AI. Among the hype and hysteria around it, there are some novel approaches to support how end-to-end data security can help businesses out-think future risks and opportunities. For anyone developing for the age of AI, a secure enclave is a must, and that makes eSIM and iSIM technology a given for cellular and beyond.

**GM: What about the eSIM for IoT ecosystem - are new partnerships needed to accelerate eSIM adoption? ►**



**SH:** Absolutely! eSIM's adoption has strong momentum with **Total Connectivity Alliance (TCA)**, reporting eSIM IoT/M2M profile downloads grew 148% in 2022. eSIM brings the OEMs more open choice – device OEMs now need to source their eUICCs for IoT just like **Apple** or **Samsung** do for smartphones. This can be an untested area or a complex one. Often, use cases may demand high quality and high availability of LPWANs or different connectivity providers for different markets. This is where ecosystem partnerships can accelerate time-to-market.

Customers can come to Kigen and tap into expertise and ecosystem choice to find the best way to operationalise their eUICCs. Some of our new partnerships are shaped when OEMs want to fast-track their preferred supplier to take advantage of the world's leading IoT modules and chipsets. Driven by customer demand for high-quality networks, we have announced partnerships with **Sierra Wireless** Premium Connectivity for eSIM, added **Quectel** Connectivity, **SORACOM** and **OV** for iSIM, and coverage across all top-tier US operators.

Certain verticals are also catalysing new partnerships. For example, in logistics or smart metering, a company may need to monitor remote cargo across oceans or far-afield water or gas assets, where cellular connectivity alone may not suffice. Kigen can support these with hybrid non-terrestrial network (NTN) capability with **Skylo**'s network.

**GM: How do you see the role of device OEMs and telecoms providers in encouraging eSIM uptake?**

**SH:** Most IoT OEMs have identified the migration to eSIM as a strategic objective to support customers and the latest standard presents the possibility to achieve their goals of reducing SKUs while supporting all MNOs. OEMs have been instrumental in helping us ask 'what-ifs' and 'how' we can improve efficiency and reduce cost – so understanding their business processes and goals is helping shape how we can operationalise eSIM for mass volume production. It's helping us champion simplicity, flexibility and choice in how they manufacture, deploy and serve customers in the long run.



To take advantage of the ramp-up of eSIM/iSIM, which is estimated to be over six billion units in the next five years, telecoms operators can look to support OEM's eSIM projects today and pay greater attention to how we can simplify and bring more flexibility in form factors, deliver fit-for-purpose connectivity testing and provisioning in the factory and serve the transition brought by eSIM GSMA standards SGP.31/.32. Lastly, the data and AI growth call for chip-to-cloud security with IoT SAFE and how operators play here will impact their 5G monetisation. How we accelerate monetisation is on everyone's minds at MWC Las Vegas, and we'll be there to help.

**GM: Would the ecosystem coming together help eSIM adoption to close the loop on IoT scalability, enabling pilots to become hyperscale, massive IoT success stories?**

**SH:** Absolutely, that is our vision for the growth of our cellular industry. If we put our efforts towards it, I'm certain that it is Mission: Possible! ■





# Accelerate to the next billion connections with eSIM

Fixed wireless access (FWA) represents the biggest opportunity after mobile broadband in 5G monetisation. High-speed and reliable internet connectivity is essential for commercial and industrial markets, especially with broader diversity in consumer data consumption and with the growth of applications such as signage, pay-per-use facilities, and more in the urban environment. Customer premise equipment (CPE) devices deliver 5G networking to where it is needed by enabling broadband connectivity

**eSIM technology can support simpler onboarding of mass devices and better enrolment on networks providing premise equipment owners a better customer experience**

As one of the largest 5G use cases, **Kigen's** ecosystem is using innovative solutions to deliver energy-efficient and affordable customer premise equipment. The benefits go beyond FWA by extending 5G opportunities for businesses by improving the performance of point of sale (POS) terminals, smart metering and logistics. The key to the adoption of 5G lies where the work of leading original equipment manufacturers (OEMs), like **MeiG**, a world-class provider of IoT terminals and wireless data solutions for 4G and 5G communications, begins.

Customers include device makers who are targeting ever-miniaturised and affordable CPE form factors within the available indoor, outdoor, portable and battery-operated devices. This calls for an IoT-tuned combination of eSIM chipsets and a secure SIM OS that supports multiple profiles and applets on-chip.

A standards-compliant approach is essential to serve the widest range of customers, including those that trust manufacturers with their first smart product solutions.

The most pressing challenge is to deliver a better customer experience: simpler onboarding and provisioning of devices for store or IT managers, simpler management of profiles in the field or within fleet, and the ability to introduce features that can empower data service acceleration.

## Role of eSIMs

CPE devices operate as managed IoT assets, and a certified secure OS embedded subscriber identity module (eSIM) is a must-have to ensure secure connectivity. In addition, the growth of machine learning or edge intelligence running on devices may necessitate greater security. This is where

eSIM technology can support simpler onboarding of mass devices and better enrolment on networks providing premise equipment owners a better customer experience.

## The solution

Kigen and its ecosystem partners have been developing CPE solutions on a range of power-efficient chipsets to deliver simple, global, secure, and commercial GSMA-certified consumer eSIM solutions for OEMs to address the demand for CPE products in the US\$100-300 range.

## Building blocks of success

Kigen's consumer embedded universal integrated circuit card (eUICC) OS is the world's smallest code size GSMA-compliant software stake for eSIMs addressing consumer eSIM requirements. Manufacturers can use Kigen eUICC OS to take advantage of remote SIM provisioning (RSP) functionality through a selection of eSIM chipsets from multiple vendors.

Kigen consumer eUICC OS is able to support multiple operator profiles on memory/footprint-optimised eSIM chipsets that typically use 1.5x less memory compared with eSIMs widely deployed in smartphones.

## Technical features

- Secure Kigen Consumer eUICC OS compliant to specifications from GSMA, 3GPP, ETSI, Trusted Connectivity Alliance and Java Card.
- Multiple eSIM sizes\* MFF2:5x6, 3x3, 2x2; WLCSP:1.8x1.5, 1.27x1.25 (\*sizes in mm) available to suit design requirements
- Supports EAP-SIM and EAP-AKA Authentication Protocols ►

## SPONSORED CASE STUDY



- Supports IP authentication using SIP, MIP and high packet rate data
- GSMA-certified SAS-UP and SAS-SM suppliers
- Partner chipsets achieving security level CC EAL6+
- Successfully deployed in end-products addressing point of sale, smart metering and logistics by lead OEM customers

### Results: Greater security, greater opportunity

These joint solutions allow OEMs to offer an improved experience to IT, retail and store chain management segments and can be extended to point of sale, remote monitoring and tracking applications.

- **Easy installation:** Simple field setup workflow to onboard new devices with profile download via an accompanying app. CPE management: Better IT or admin experience through digital profile downloads for activation or switching profiles.

- **Driving innovation:** OEMs can focus on value-added services through streamlined fleet management.
- **Fleet management:** Joint solution supports scalable in-store or moving fleet operations and management.
- **CPE:** Gateway to secure data. Higher volumes of 5G FWA in large high-growth countries have the potential to drive economies of scale for the overall 5G FWA ecosystem, spurred by the positive impact affordable CPE can bring.

Looking forward, a focus on data is key. FWA data traffic represented 21% of global mobile network data traffic by the end of 2022 and is projected to grow more than five times to reach almost 130 exabytes (EB) in 2028.

FWA profitability is affected by CPE choices determining premises and network costs as well as revenue drivers. Time-to-market and lifetime data costs are both revenue drivers that allow OEMs to be well-positioned to serve over one billion connections that currently lack fast and reliable connectivity, bridging the digital divide and empowering consumers and businesses. ■

***FWA data traffic is projected to grow more than five times to reach almost 130 exabytes (EB) in 2028***

### Why Kigen

By partnering with Kigen, you'll work with a global leader championing how IoT manufacturing can be streamlined. We work with the world's best network operators and connectivity providers so manufacturers can benefit from coverage in up to 200 countries around the globe. Our secure eSIM OS and Remote SIM Provisioning is the trusted choice of the world's leading power-efficient chipsets and modules. Plus, we have been ranked as a leading provider of eSIM enablement overall for three years in a row.

To learn more about how our eUICC solution and remote SIM Provisioning platform can simplify and enhance your CPE products, visit [kigen.com/cpe](https://kigen.com/cpe) and send in your sales inquiry. Meet the Kigen team at your next event: [kigen.com/mwc-las-vegas-2023/](https://kigen.com/mwc-las-vegas-2023/)

[www.kigen.com](https://www.kigen.com)



# Achieve a 360° view of your assets with eSIM and iSIM

The transport and logistics industry is witnessing growth in IoT solutions as more devices are connected and linked to the cloud. Digitalisation through smart sensors enables organisations to track assets, optimise traffic routes and increase efficiency in logistical operations on a global scale.

Cellular IoT devices provide real-time visibility across the supply chain, allowing for constant product status monitoring and proactive decision-making, improving supply chain operations. The data generated from connected devices holds immense potential that is only now starting to be recognised



***The secure data exchange of interconnected devices is evolving rapidly with connected tracking sensors ensuring high visibility of supply chain operations globally***

## IoT security as standard

Embedded SIM (eSIM) and integrated SIM (iSIM) are perfectly suited to tracking applications that require tamper-proof security to be enabled globally with cellular connectivity. Growing at 18% CAGR, eSIM is becoming the technology of choice for device OEMs serving the logistics, asset tracking and condition-based monitoring market. eSIM or eUICCs allow OEMs to embed or integrate (iUICC) functionality for remote SIM provisioning (RSP), streamlining manufacture and bringing a choice in connectivity throughout the life of the device. Further, the hardware-backed eSIM security can be used as a root of trust to authenticate data is trustworthy – a must for the 360-degree view of your supply chain.

## Smart and secure connectivity

IoT devices for tracking assets are installed on vehicles or goods such as containers that can securely transmit vital data through eSIM or iSIM to a web-based software platform. By strategically placing discrete trackers within crates, containers and pallets, goods can be efficiently tracked cost-effectively. ►

## SPONSORED ARTICLE





The secure data exchange of interconnected devices is evolving rapidly with connected tracking sensors ensuring high visibility of supply chain operations globally. eSIM can store multiple network operator profiles that are remotely provisioned, switch carriers, and receive firmware updates.

## The challenge

Our customers include device makers who need to support the growing demand for compact, cost-effective and battery-powered tracking solutions – namely, these take many forms: tags, labels, dongles or attached devices that can track condition-based monitoring of entire pallets or containers. Further, these are subject to an ever-increasing variance in temperatures, water, humidity, extreme climate events, and an increasing threat of counterfeit data that can offset forecasting or supply chain integrity.

**Optimised visibility:** Past tracking solutions are prone to counterfeiting, leading to supply chain dark spots, and excess or wasted inventory for end-users served by logistics. Tamper-proof security and trace accountability are essential for high-value assets that require hyper-connected data for logistics visibility.

**Vendor choice:** In a cost-sensitive market serving many types of asset value, it's important to operate with a choice of connectivity providers along with the ability to make use of the best connectivity for the end destination and throughout the service lifespan.

**Finite battery life:** Any security updates or management operations need to be remotely carried out without running down the battery charge, which would run the risk of vulnerable trackers or gaps in visibility. Solutions need to address battery constrained timelines.

**Tracing from factory to pharmacy:** For example, pharmaceutical manufacturers are required to securely record the logistics journey from factory to pharmacy according to regulations such as the DSCSA (Drug Supply Chain Security Act) in the US, effective from January 1, 2023. Similarly, EU/FMD (Falsified Medicine Directive) for full interoperable track and trace accountability. Temperature and humidity metrics and any threshold deviation that could alter the drug's efficacy must be recorded. All of this is done to ensure consumers are given effective dosages and, ultimately, better healthcare.

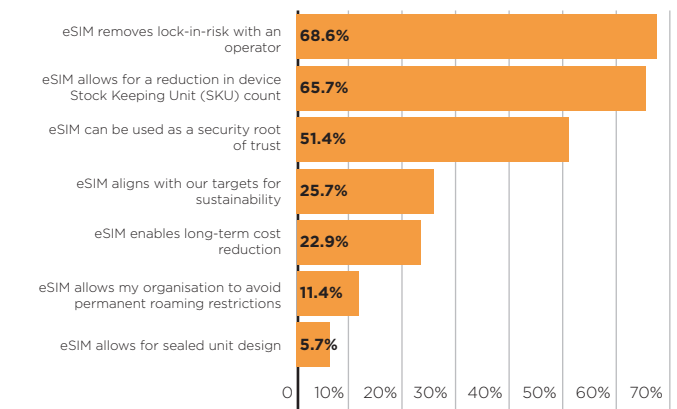
**Across the seas:** Once a pallet leaves the factory, it may have a bulky tracking device via cellular; however, that does not include a way to actively monitor each individually sealed package without spending impractical money. Major gaps and periods of no communication remain, especially over the oceans out of reach of terrestrial networks.

## Why eSIM?

eSIM enables a rich set of IoT capabilities and is fast becoming the form factor of choice for module makers looking to install a root of trust in asset-tracking devices with robust, scalable chip-to-cloud security. Its compact size and ability to operate in low-power devices can be deployed in large quantities worldwide.

The transport and logistics industry has been a keen advocate of eSIM; 45% of transport and logistics respondents with a current cellular IoT deployment reported they use eSIM as quoted in the Enterprise Cellular IoT Survey 2023 from **Kaleido Intelligence**. The main reason for adopting eSIM is to avoid operator lock-in, with 69% of users reporting this as the reason for their usage. A reduction in stock-keeping unit (SKU) count is close behind at 66%.

**Figure 1: Factors for choosing eSIM (eUICC) from the Enterprise Cellular IoT Survey 2023, Kaleido Intelligence.**



## The solution

Kigen, with its ecosystem of module and chipset partners and connectivity providers, has been serving the logistics industry with connected labels and tags based on iSIM technology for five years with partners such as **SONY** and **Vodafone**. This has led to a vibrant set of choice in hardware and connectivity options from turnkey solutions to security eSIM and iSIM OS on leading IoT modules and chipsets, such as **Murata Technologies**, **Quectel Wireless Solutions**, **Sierra Wireless** and more.

## Building blocks of success

Kigen's consumer eUICC OS is the world's smallest code-size GSMA-compliant software stack for eSIM technology, available in various sizes and packaging options. Further, iSIM technology inherently can achieve a far more compact device footprint – up to 98% smaller than eSIM. We offer flexible approaches for the management of subscriptions with due care to maximise battery life in the field. Kigen has supported multiple customers from the ground zero to choose the best-fit connectivity partner for their target markets.

As a forerunner in LPWAN support, our connectivity ecosystem is backed by all major operators and leading IoT MVNOs across all key regions offering terrestrial coverage in up to 200 countries.

With our partnership with **Skylo**, a non-terrestrial network (NTN) operator, logistics OEMs can benefit from a smooth transition between cellular and satellite connectivity. The combination is attractive for deployments that require continuous coverage such as real-time asset tracking, where constant cellular connectivity is necessary. ■

## Why Kigen

By partnering with Kigen, you'll work with a global leader championing how IoT manufacturing can be streamlined. Utilise our experience, expertise and ecosystem for your success in delivering digitalisation for logistics.

To learn more about how our eSIM and iSIM secure OS and remote SIM Provisioning secure server capabilities, visit [kigen.com/cpe](https://kigen.com/cpe) and meet a sales representative at our next event: [kigen.com/mwc-las-vegas-2023/](https://kigen.com/mwc-las-vegas-2023/)



## Standards drive OEMs to accelerate digital SIM adoption

eSIM and iSIM offer many advantages over traditional pluggable SIMs in IoT OEM deployments. Theft of physical SIM cards is eradicated, manual processes are removed and iSIM and eSIM are more environmentally friendly and simpler to manage than plastic SIMs. So why haven't we seen greater adoption, asks George Malim?

***“The new GSMA standard SGP.31/.32 for IoT is definitely a big game changer”***

First there was a lack of tools to manage embedded and integrated SIMs, then there was concern over the costs of setting up SIM infrastructure. These factors have caused significant bumps in the road to adoption, which is now underway. The remote SIM provisioning (RSP) function provides the possibility to adjust the subscription during the lifetime of the device, which may be necessary if the device changes location. This is advantageous for IoT OEM deployments as it reduces operational complexity and enables seamless connectivity management for a wide array of devices in the field.

“New SIM technologies, particularly eSIM and iSIM, are revolutionising the way IoT devices connect,” confirms Philipp Schulte, the chief executive of **G+D Mobile Security**. “By connecting the devices via cellular networks, the devices can be managed completely digitally and via a central portal. Effort-intensive processes like connecting to WLAN and BLE can be completely eliminated. Devices can be produced identically for a global market and managed via a single stock-keeping unit (SKU).”

“By eliminating the need for physical SIM card swaps, they significantly reduce the complexities of mass IoT device connectivity,” adds Schulte. “The hardware of the device can thus also be made simpler and more cost-efficient. This not only translates to cost savings for OEMs but also paves the way for a new era of flexibility and simplicity. With RSP, devices can be deployed faster, and connectivity issues can be resolved remotely, enhancing the overall user experience.”

### Optimise local profiles

However, uptake has been slow. “eSIM for IoT adoption has definitely been below expectation, mainly because the cost and time for mobile operators to ensure integration between eSIM platforms has been prohibitive,” says Luc Vidal, the head of IoT/M2M at **BICS**. “For each integration, MNOs typically have had to invest about €100,000 and around 3-4 months of work, which is a massive barrier. A big value proposition of eSIM is the flexibility afforded by being able to push over-the-air (OTA) and optimise local operational profiles.” ▶



"The new GSMA standard SGP.31/.32 for IoT is definitely a big game changer," he adds. "It means no more integration is required between the eSIM platform of mobile operators; the IoT device directly reaches the eSIM platform, just like in the eSIM model for consumer devices like smartphones."

## Greater OEM adoption

With the technologies in place, the path is clear for widespread uptake. "eSIMs are a key driver of growth for IoT as they simplify the provisioning and management of IoT devices, especially in large-scale deployments," explains Shahar Yaacobi, the head of Strategy and Growth for IoT and Digital Brands at **Amdocs**. "iSIMs take it a step further by integrating the SIM functionality into the device's hardware, offering advantages in terms of security, adaptability and compact design. Moreover, iSIM will increase the penetration of the technology, since no new hardware will be needed, reducing the cost of moving to digital SIM and allowing more OEMs to adopt it and stay competitive."

"Both technologies enable changes and upgrades to be made remotely and digitally, rather than SIM cards needing to be physically swapped out," adds Yaacobi. "As an example, imagine a car leasing company, which is now able to remotely switch profiles on thousands of connected cars, without bringing them all back to home base to do it manually."

The near-universal applicability of SIMs underlines their significance in IoT for Schulte. "Globalisation, digitalisation and cybersecurity are important keywords for all IoT device manufacturers and their users," he says. "The SIM is standardised worldwide and unsurpassed in all these areas. The SIM is the cornerstone of secure and reliable cellular connectivity, which is the preferred option for IoT due to its wide coverage, reliability, security, scalability, global reach and options for low-power devices, making it suitable for a wide range of IoT applications."

For Yaacobi, the SIM is vital for IoT deployments and connectivity, especially as the rollout of 5G continues. "The combination of eSIM and 5G allows service providers to add millions of new connected IoT devices onto their networks, choosing cellular connectivity as default, instead of all other short-range, low-power alternatives," he explains. "It also has benefits for things such as device battery life, which can extend to up to a decade on a 5G-enabled IoT device."

Maturing standards also help to bolster the wide applicability of SIMs alongside cellular connectivity. "One of the great advantages of using cellular connectivity is that it

already is globally standardised," Schulte confirms. "This includes the connectivity itself, the main eSIM standards such as SGP.02, SGP.22 and SGP.32, and also connectivity management via central portals. Standardised approaches ensure interoperability, security, and a consistent user experience across devices and networks. Such standardisation also maximises the benefits of each technology, fosters innovation, drives adoption rates, and ensures a cohesive ecosystem for IoT deployments."

This process of standardisation is not at an end, so Vidal is keen to see continued commitment from across the IoT and cellular industries. "We need more momentum and commitment to standards from everyone on the playing field," he urges. "That means that every player in the value chain, including device makers, eSIM vendors, mobile operators and others must ensure that what they deploy is interoperable - that's the key to achieving this true flexibility to optimise operational profiles."

"Mobile operators will also have to adapt their eSIM infrastructure to support new standards, taking advantage of things like eSIM IoT Managers (eIM)," he adds. "The new eSIM standard for IoT - SGP.31/.32 - is already a huge positive change for industries with devices that need to embed the capability to talk to SM-DP+, the platform that stores digital eSIM profiles and makes your device's SIM card work properly and get the right updates."

Yaacobi also applauds the arrival of SGP.32. "One big step forward was the announcement of the GSMA SGP.32 eSIM standard for IoT/M2M, which finally comes to solve issues like simplified provisioning, allowing operators to remotely provision eSIM profiles to devices over-the-air. Other advantages include support for multiple profiles which allows IoT devices to switch between different carriers or network operators as needed and enhanced security with features such as device authentication and encryption to protect IoT devices from cyberattacks."

"The industry needs to ensure that new digital versions of the SIM are upgraded and improved versions of traditional cards," he says. "The plastic version is device-agnostic, agnostic to customer type and the touchpoint used. eSIMs and iSIMs, on the other hand, are highly dependent on the device type, OEM brand, customer type and touchpoint. There is a lot to be done in all domains, however, by fully digitising with eSIM technology rather than physical SIM cards, mobile operators can unlock a new level of user experience for a lower cost and at greater convenience for all." ■



**Luc Vidal**  
BICS



**Shahar Yaacobi**  
Amdocs

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***"The industry needs to ensure that new digital versions of the SIM are upgraded and improved versions of traditional cards"***





# MWC Las Vegas doubles down on the strip

GSMA's MWC Las Vegas returns for a second time from 26-28 September 26-28. Antony Savvas takes a look at the varied exhibition and conference programme the event offers

**Event themes running through the show and conference major on 5G acceleration, enterprise mobility, the age of AI and digital everything**

Last year, **GSMA's** main US event moved from its previous venue in Los Angeles, California. Like last time, MWC Las Vegas will be hosted at the Las Vegas Convention Center, West Hall in Nevada, USA. The event is being held in partnership with **CTIA**, the US mobile trade association. The organising pair previously announced the host city's contract had been extended until 2024 too.

"North America is a dynamic market for mobile and digital technologies, and a global leader in 5G adoption," says GSMA. By 2025, it says, 5G will account for almost two-thirds of total mobile connections across North America, which is equivalent to nearly 280 million connections.

"As technology like artificial intelligence (AI) and extended reality (XR) continue to evolve, North America is at the forefront of driving innovation across the industry," it adds.

Last year, the event attracted 8,200 attendees, doubling the number of participants from the previous event in Los Angeles. Attendees came from nearly 100 countries, and there were over 300 exhibiting companies, and over 300 conference and partner speakers. The organisers are hoping this year's event will be even bigger.

**Amdocs, AT&T Business, Amazon Web Services, Cisco, IBM, Nokia, NTT DATA, Qualcomm, T-Mobile for Business, Verizon Business**, and many other major industry ecosystem players, will be on hand this year to showcase cutting-edge products and innovations with a focus on enterprise transformation, says GSMA.

## Event themes

Event themes running through the show and conference major on 5G acceleration, enterprise mobility, the age of AI, and digital everything. The programme includes the returning 5G IoT Summit, the Private 5G Networks Summit, the Post Quantum Telco Industry Summit, and the Open Gateway DevCon, among others.

**GSMA Intelligence** will host its Satellite Summit and Sustainability Summit on The HUB Innovation Stage, and the Industry City programme will be a focal point on sports and entertainment, supply chain/logistics, fintech and other streams.

The HUB is a startup and innovation zone, developed in partnership with StartUp Vegas. Last year, it featured 32 exhibiting startups and saw 40 speakers as part of its programme. ►



## MWC Las Vegas 2022 by numbers

- **8,200** people attended in person
- Close to **2,300** online viewers followed the keynote sessions
- Representation from nearly **100** countries
- More than **60%** of attendees were senior level
- Over **300** exhibiting companies
- Over **300** conference and partner programme speakers
- Nearly **40%** of conference speakers were female

### IoT

Shane Rooney, senior technical director at GSMA, says: "The key focus of MWC Las Vegas will be how, as an industry, we can accelerate 5G in the enterprise, and IoT will play a major role in ensuring this success. LTE-M and narrowband IoT (NB-IoT) networks are a key part of 5G connectivity's evolution, with more and more of them rolling out across enterprises and supply chain infrastructures."

He says the industry is already starting to see large scale projects adopting this technology, such as smart metering in Europe, as customers look for reliable and trusted long-term solutions. "We see these networks gaining growth, with adoption globally reaching 280 networks, and making over 600 million connections by the end of this year," he adds. "Cellular IoT has ready-made solutions that can automate customers' operational processes, which will help reduce costs but also ensure business continuity during critical times like pandemics."

As previously mentioned, the 5G IoT Summit will return to MWC Las Vegas, with a focus on energy and the environment. "Energy and the environment are the biggest issues affecting everyone on the planet right now," says Rooney. "We need to maximise the use of connectivity, data and infrastructure to reduce energy demands and help protect the environment."

5G IoT (which comprises massive IoT deployments, LTE-M, NB-IoT and adjacent technologies) is well placed to help integrate energy and environment solutions and can be supported by other technical solutions in cloud infrastructure, big data and artificial intelligence (AI). Such areas, alongside how IoT can support smart meters, pollution monitors, agriculture solutions, water management, logistics, transport and smart cities, will be a key focus at the event.

### eSIMs and iSIMs

eSIMs will also be an important subject of discussion at the show, with the dedicated eSIM Summit at the event sponsored by **Idemia, KORE, VALID** and **TEAL**.

Yolanda Sanz, the eSIM Working Group director at GSMA, says: "The eSIM Summit will focus on how the technology can help boost connected industries and IoT devices. We're already seeing that eSIMs can reduce the cost of the integration for global IoT devices and create new opportunities for value added services."

In future, says Sanz, eSIMs will be the key for massive IoT deployments, allowing operators to provision and update devices remotely throughout their lifecycle.

**Kigen** will be at the event with its partners across the IoT module, chipset and connectivity market, including AT&T Business, **Aeris, floLIVE, KORE, Murata** and **Quectel**. "We want to support IoT success through energy-efficient devices and flexible approaches with eSIM," says the firm. "We are addressing key IoT barriers that stand in the way of scale, which is why leading players in smart metering and logistics rely on Kigen as a trusted advisor."

Kigen and others will also be promoting iSIM deployment and connectivity technology at MWC Las Vegas. **Soracom** recently announced an expanded ecosystem partnership to support the commercial deployment of next-generation integrated SIMs (iSIMs) for Soracom customers worldwide.

The iSIM form factor is much smaller than the typical eSIM footprint. It also offers simplified circuitry, improved processing capacity, greater energy savings, higher security, lower cost and simplified commercial distribution. The iSIM standard combines functions into a single ►



**Ken Tamagawa**  
**Soracom**

***"iSIM represents the future of SIM technology, and this widened collaboration puts our customers at the leading edge of IoT development"***





**Shane Rooney**  
GSMA

***“Energy and the environment are the biggest issues affecting everyone on the planet right now”***

system-on-chip (SoC) device, and offers a hardware-secured area within the chip for optimal data integrity.

Last year, Soracom announced the completion of a joint iSIM proof of concept in collaboration with **Sony Semiconductor Israel** and Kigen. This collaboration has now been expanded to include new iSIM-compatible modules from Quectel and Murata.

“iSIM represents the future of SIM technology, and this widened collaboration puts our customers at the leading edge of IoT development,” said Ken Tamagawa, the chief executive of Soracom.

“iSIM technology is a game changer for anyone who wants to secure data originating from connected devices, whether it’s for delivering unique customer experiences or for AI solutions,” adds Vincent Korstanje, the chief executive of Kigen. “The commercial availability of iSIM on Soracom’s network is the result of extensive collaborative testing of the Kigen iSIM OS, using market-leading modules and chipsets.”

### Security

International legislation will no doubt have an affect on security awareness at the event. Iain Davidson, the senior product marketing manager at Wireless Logic, says: “I expect recent legislation has made security a top priority for vendors as the number of threats increases, with potential revenue and reputational consequences for organisations and their customers, if they fall victim to attacks.”

Davidson says the UK Product Security and Telecommunications Infrastructure Act and The European Cyber Resilience Act will have forced providers to review their offerings and adopt a secure-by-design methodology, to maintain customer security or safety.

Las Vegas will stage the MWC Las Vegas Security Summit. It will discuss the significant security threats that have impacted the mobile telecoms landscape in the last year. It will also explore how the mobile ecosystem can build

stronger security resilience, covering key security topics within infiltration, access exploitation and availability compromise.

The Summit will be broken down into two parts and will provide perspectives from operators and vendors in the following areas:

- Highlight the latest emerging landscape threats
- Show how security is adding value to the industry and not seen as just a cost, and empowering both end users and enterprises to make better security decisions
- Discussion and assessment of the security threats from the last year and predications for the year ahead

### Part 1 of the Security Summit - Can security be nutritious?

Security certifications have been around for decades but how should non-technical audiences interpret/digest 400-plus validation reports? Over the last few years there has been a lot of research and debate on what a cybersecurity label would look like.

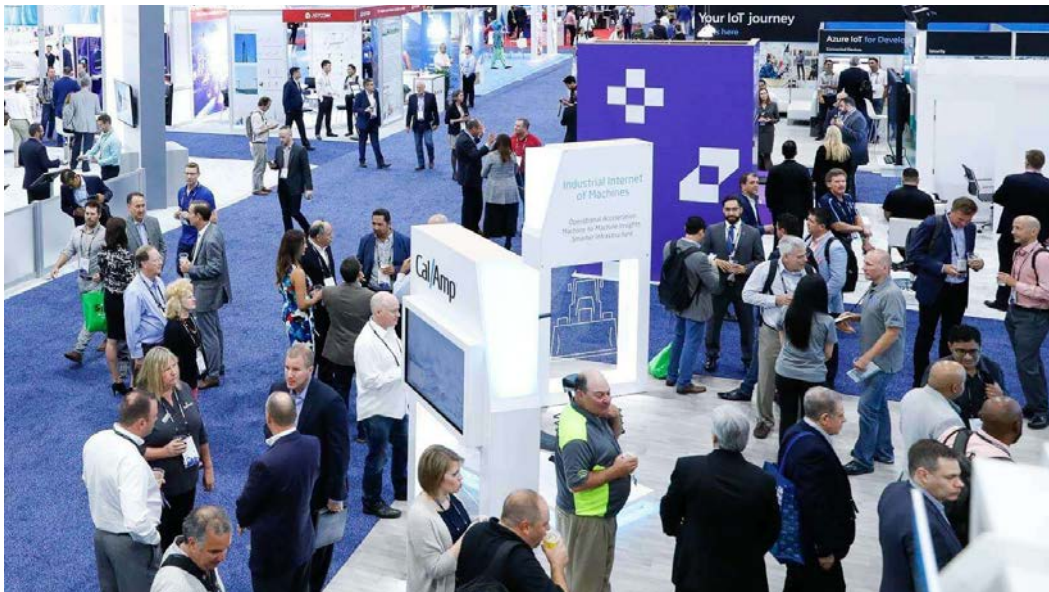
This discussion will cover some of these hotly debated topics such as who should be issuing the label, what should the label look like, where should the label reside, and most importantly, what criteria should the label actually include, and does that criteria apply to different device categories.

### Part 2 - Securing private 5G networks in the enterprise

A global survey of 215 CIOs, conducted by NTT and The Economist last year, found that more than half of the executives surveyed planned to deploy a private 5G network within 24 months.

This part of the conference will address head-on the unique and complex network security challenges for companies, large and small, as they deploy private 5G networks across their enterprises. The global roster of experts will offer practical examples, share the latest research, and debate best practices in securing private 5G networks in the enterprise. ►





The debate will include:

- Case study: building the business case for a private 5G network
- What is the current threat level for enterprises deploying a private 5G network, and what can change?
- How and where your mobile operator can help

### AI and sustainability

Artificial intelligence and sustainability are being talked about in the same vein at one MWC Las Vegas debate. Russ Ernst, chief technical officer at **Blanco**, says: “There’s no question that AI has been the source of huge excitement, and a driver for increased innovation, over recent months. It will be one of the big topics at this year’s MWC Las Vegas, not just around how it will affect the everyday lives of consumers, but also the intrinsic value it will provide to other technologies and the knock-on effect this has across the entire mobile ecosystem, from device processors to retailers.”

Ernst will be participating in a panel discussion titled “Can AI accelerate the drive to a carbon neutral future?”. “We’ll explore how AI is becoming a key technology to support innovation, this time specifically for reducing carbon emissions. For the sustainability of the mobile world, AI is already having a big impact by unlocking significant improvements in efficiency for device processing,” says Ernst.

He says AI and process automation allows for dramatic decreases in average diagnostics duration, with mobile processors experiencing as much as a 35% immediate increase in units processed per hour. “This means a 40% decrease in cost per unit, and devices can be more quickly readied for refurbishment, recycling and resale.”

As a result, mobile device processors can help to promote the benefits of the circular economy, while the refurbished market as a whole becomes more attractive as device processors achieve greater retention of residual device value. AI is going to be critical in enabling the acceleration towards the circular economy, maintains Ernst.

### Satellite

The Satellite Summit at the event will be used to explore the “transformative impact” of satellite networks, driven by the inclusion of satellite connectivity in **Apple’s** iPhone 14 device.

With expanding coverage from low earth orbit (LEO) operators like **Starlink** and **OneWeb**, and the formalisation of non-terrestrial networks in 3GPP standards, telco-satellite partnerships are gaining momentum, promising increased coverage and revenues.

This summit will delve into the top strategic priorities and the emerging potential of satellite networks in revolutionising global connectivity. “We’ll explore their ability to drive substantial revenue impact across consumer and B2B/IoT segments, while reshaping the competitive dynamics within the satellite industry,” say the summit organisers.

The topics to be explored are:

- Strategic priorities for satellite integration in mobile networks (4G and 5G)
- Technological advances at the chipset and device level
- Viable business models in telco-satellite partnerships
- And the impact of satellite connectivity on internet access, customer adoption, and revenue growth

Visitors are certainly being offered a packed and varied programme at this year’s MWC Las Vegas. ■



**Russ Ernst**  
**Blanco**

***“There’s no question that AI has been the source of huge excitement, and a driver for increased innovation, over recent months”***

**MWC Las Vegas, Las Vegas Convention Center, West Hall,  
26-28 September 2023.**



[www.mwclasvegas.com](http://www.mwclasvegas.com)



# 10 ways MWC Las Vegas will supercharge your business's potential

Taking place on 26-28 September 2023, MWC Las Vegas, in partnership with CTIA, is the event that hosts the ultimate convergence of cutting-edge mobile technology and enterprise innovation. This year, the Velocity event theme explores how vital areas such as 5G Acceleration, Digital Everything, the Age of AI and Enterprise Mobility can shape a brighter future through digital transformation

## Have you got your pass yet?

Enter discount code **FVP6DBSTY2** for a FREE Discovery Exhibition Pass (worth \$299) or **LVDISCOUNT** 50% discount on a Leaders Conference Pass.

If not, find out why you should register now:

**1. An enterprise oasis in the desert:** MWC Las Vegas is where enterprise technology companies come to show off their latest advancements and innovations. This is your golden ticket to explore the latest solutions that will propel your business forward.

**2. Partner with industry giants:** with major US operators like AT&T Business, T-Mobile Business, and Verizon Business exhibiting, MWC Las Vegas offers unparalleled opportunities to engage with the industry's heavyweights. This is your chance to create partnerships that can take your business to new heights. ►

## I'm looking forward to...

*"Connecting with friends and colleagues across companies in the US and around the world and learning about the future of mobility technology from experts."*

**Katy Milner**, partner, Hogan Lovells LLP

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#### I'm looking forward to:

*"Joining the exceptional speakers from MWC stages that have come before and meeting partners and customers."*

**Kaela Loffler**, vice president of Global Marketing, Accedian

**3. Networking nirvana:** from a Welcome Party on day one to a VIP networking area, via meeting rooms for hire, casual coffee spots and fine-dining restaurants, MWC Las Vegas spares no effort in fostering business connections. Plus, there's a dedicated networking lounge within the exhibition hall, ensuring you're always in the heart of the action.

**4. Powerhouse exhibitors:** with 350+ exhibitors, ranging from giants of the connectivity industry to leaders from related verticals, MWC Las Vegas is a treasure trove of transformative technology solutions. Discover new products, services, and strategies that can give your business the competitive edge it deserves.

**5. Industry titans on stage:** catch thought-provoking keynotes delivered by tech's most influential minds. Our session themes on 5G

Acceleration, Age of AI, Digital Everything and Enterprise Mobility will guide your business decisions for years to come.

**6. Exclusive enterprise workshops:** sharpen your business acumen with tailored partner programmes focused on enterprise growth, digital transformation, and customer experience. Elevate your business strategy with insights from experts who have been there and done it all.

**7. Industry City - pioneering the connected future:** an exclusive conference program that delves into sports and entertainment, fintech, manufacturing, and smart mobility. Discover how connected technologies are shattering boundaries in these adjacent industries, forging a united path towards a digital future. Opportunities for growth and innovation are huge so make sure you're in the know. ►





### I'm looking forward to:

"The opportunity to present new ideas, engage with thought leaders and be at the forefront of the rapidly changing technology landscape."

**Zara Jillings**, Global Enterprise Sales and Strategic Partnerships, Soul Machines

**8. Start-up collaborations:** with Las Vegas recently ranked as the best city for start-ups in North America, our The HUB Startup and Innovation Zone is a hive of innovation where businesses of all sizes can collaborate, invest, and learn from the disruptors who are shaking up the market.

**9. Your guide to the business landscape:** the impact of shifting policy and governmental priorities cannot be underestimated. Get ahead of your competitors and fully understand the landscape you're operating in with our partner, CTIA's informative keynotes and discussions featuring policymakers and administration leaders.

**10. Return on investment:** your ticket is an investment in your business's future. At MWC Las Vegas you can book in a year's worth of meetings in just three days. The insights gained, partnerships formed, and knowledge acquired will yield returns far beyond the initial cost. ►

## Speakers



**Meredith Attwell-Baker**  
President & CEO  
CTIA



**Mike Finley**  
CEO  
Bonigo Wireless



**Adolfo Hernandez**  
VP Global Telco  
Business  
AWS



**Azita Arvani**  
North America CEO  
Rakuten Symphony



**Kyle Malady**  
Executive Vice  
President & CEO  
Verizon Business  
Group



**Nick Holmstén**  
Co-Founder  
TSX Entertainment



### **I'm looking forward to:**

"Gathering actionable insights into the future of connectivity."

**Winston Ma**, executive vice chairman, Virtual-Q

### **So – are you ready to elevate your business?**

Secure your spot at MWC Las Vegas now and unlock a world of enterprise opportunities that will shape the trajectory of your business for years to come.

As a valued reader, enjoy an exclusive offer: use code FVP6DBSTY2 to get a FREE Discovery Exhibition Pass (worth \$299) or code **LVDISCOUNT** 50% discount on a Leaders Conference Pass. ■

### **Register for your pass now**

**Plus – by booking through our official hotel partners – you'll get amazing deals for any budget on room rates for the show.**

### **About MWC Las Vegas**

America's largest and most influential connectivity event is back in Las Vegas – bigger, better and more ambitious. MWC Las Vegas, organised in partnership with CTIA, is where US policymakers and key wireless industry stakeholders discuss the trends and developments in policy and innovation, to help industry and society thrive.

It's also where the entire digital ecosystem meets face-to-face in one of the world's biggest markets – to build relationships, gain insights and get business done.

This year, the Velocity event theme explores how vital areas such as 5G Acceleration, Digital Everything, the Age of AI and Enterprise Mobility can shape a brighter future through digital transformation. Showcase your business, supercharge your networking and enjoy an event experience that has it all. Get ready to unleash tomorrow's technology – today.



## Our pick of IoT industry's upcoming events

### SEPTEMBER

AI Hardware & Edge AI Summit

<https://www.iot-now.com/event/ai-hardware-edge-ai-summit/>



Chief Data & Analytics Officer – Government

<https://www.iot-now.com/event/chief-data-analytics-officer-government/>

SIDO Lyon

<https://www.iot-now.com/event/sido-lyon-2/>

The Things Conference 2023 Amsterdam

<https://www.iot-now.com/event/the-things-conference-2023-amsterdam/>

Quantum Business Europe 2023

<https://www.iot-now.com/event/quantum-business-europe-2023/>

IoT Tech Expo Europe

<https://www.iot-now.com/event/iot-tech-expo-europe-2/>



AI & Big Data Expo Europe

<https://www.iot-now.com/event/ai-big-data-expo-europe/>

Cyber Security & Cloud Europe

<https://www.iot-now.com/event/cyber-security-cloud-europe/>

MWC Las Vegas 2023

<https://www.iot-now.com/event/mwc-las-vegas-2023/>

### OCTOBER



Supply Chain Europe 2023  
<https://www.iot-now.com/event/supply-chain-europe-2023/>

Network X 2023

<https://www.iot-now.com/event/network-x-2023/>

### NOVEMBER

Enlite Europe 2023

<https://www.iot-now.com/event/enlite-europe-2023/>



Smart Cities Connect

<https://www.iot-now.com/event/smart-cities-connect/>

IoT Tech Expo Global

<https://www.iot-now.com/event/iot-tech-expo-global-2/>

Digital Transformation Week Global

<https://www.iot-now.com/event/digital-transformation-week-global-2/>

Cyber Security & Cloud Global

<https://www.iot-now.com/event/cyber-security-cloud-global/>

### DECEMBER



GIANT's Mental Health Tech Show

<https://www.iot-now.com/event/giants-mental-health-tech-show/>

GIANT's Women's Health Tech Show

<https://www.iot-now.com/event/giants-womens-health-tech-show/>

GIANT's Future Hospital Show

<https://www.iot-now.com/event/giants-future-hospital-show/>

GIANT's UK National ICS Congress

<https://www.iot-now.com/event/giants-uk-national-ics-congress/>

Chief Data & Analytics Officer – APEX West

<https://www.iot-now.com/event/chief-data-analytics-officer-apex-west/>

SIDO Paris

<https://www.iot-now.com/event/sido-paris-2/>



# LoRaWAN® Briefing for System Integrators and Solution Providers



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