

AN INTERVIEW WITH



Future Digital Awards Gold Winner:  
Private Cellular Network Innovation



## Mover & Shaker Interview with Kigen, Gold Winner for Private Cellular Network Innovation



*Juniper Research interviewed Jean-Louis Carrara, Head of Sales at Kigen, in November 2025*

Jean-Louis manages sales for Kigen, a global leader in eSIM and iSIM security solutions, which enable manufacturers to adopt and scale cellular IoT with ease.

Jean-Louis was previously VP Europe for SK C&C CorFire, a mobile commerce solutions provider to Vodafone, DTAG, and Shell, and held senior roles in North America at Gemalto (now Thales), helping Tier 1 US mobile network operators (MNOs) leverage SIM cards and associated remote management services, including secure payment services.

### What unique challenges in IoT does Kigen's private cellular network solution address?

Kigen's private cellular solution is built for configurability, so utilities can design for maximum flexibility and reliability, pairing their own network expansion with seamless access to the best public connectivity wherever it's needed.

The utility and energy sectors have some of the most demanding requirements for communications networks of any industry vertical. Utilities and energy operators steward national infrastructure, where every decision must balance safety, continuity, and cost. Their estates blend decades-proven assets with new deployments, often across purpose-built systems not designed for today's data demand. Workforce transitions, parts availability, and evolving regulatory expectations add complexity - not shortcomings, but realities of running critical services. Modernisation, therefore, is about augmenting what works: introducing real-time telemetry, deterministic control, and automation without disrupting operations. That's why many teams turn to a trusted partner such as Kigen - to align connectivity with safety cases and risk profiles, and to enable staged migrations at the pace of the operation.

Kigen addresses this with a private cellular architecture that puts the utility in control of connectivity and identity from day one. Kigen is part of the Anterix Active Ecosystem, helping US utilities accelerate 900 MHz broadband deployment. For first-time cellular deployments and for fleets moving from SIM to eSIM, our eSIMs span Machine-to-Machine (M2M), consumer, and the latest IoT eSIM remote SIM provisioning (RSP) models across all SIM and eSIM form factors - so utilities can standardise on a single identity fabric as they scale. Our Kigen eSIM OS is tuned for IoT efficiency for long asset lifecycles, and can be configured with advanced capabilities, including support for multiple profiles: for example, a primary profile on the utility's own private network with secondary profiles for public networks or regional partners. This reduces truck rolls, protecting asset visibility, and accelerating restoration during natural disasters or public network outages.

Regulatory reality also matters. In heavily regulated environments, public MNOs may not offer service-level agreements aligned to operational risk, and penalties for service failure can be severe. By keeping ownership and governance of cellular identities with the utility, Kigen helps operators meet stringent reliability and security expectations while avoiding multi-month contract chains and stock-keeping unit (SKU) proliferation.

The outcome is continuous operations with fewer manual interventions, faster service restoration, and a clear, future-proof path from legacy systems to SIM- and eSIM-based smart metering and edge automation - without ceding control of critical connectivity.

### What are the key benefits for enterprises or manufacturers considering a shift to private cellular networks powered by Kigen's technologies?

*"Private cellular belongs wherever uptime and security are non-negotiable - and where you want direct control over how devices connect, fail over, and evolve."*



When considering a shift to private cellular networks, a key ingredient is spectrum. Different bands introduce trade-offs across coverage, capacity, device availability, and cost. Utility-grade private Long Term Evolution (LTE)/5G in 900 MHz (eg Anterix in the US) and 450/410 MHz bands offer deep penetration and wide cells for AMI 2.0 and grid automation - now with a growing device ecosystem compared with legacy 2G/3G eras. Kigen can support a wide range of available modules and chipsets for both sub-1GHz band and mid-band network deployments, including for mobility, campus, and site-specific connectivity.

From customer feedback and Juniper Research's recognition, we learn that these are the reasons Kigen uniquely stands out for enterprises and device makers:

- Enterprise-grade cybersecurity & standards leadership: We operate GSMA-accredited sites covering both Security Accreditation Scheme, Universal Profile (SAS-UP) (UICC/eUICC data generation) and Security Accreditation Scheme, Subscription Management (SAS-SM), and we bring deep hands-on expertise with the new IoT eSIM (SGP.32) architecture - including Kigen eIM for simplified, scalable RSP. This gives enterprises a future-proofed path for secure profile generation, provisioning, and multi-profile routing.
- Configurable eSIM OS for enterprise/private needs: Engaging multiple MNOs while embedding your own security controls is hard. Kigen's SIM/eSIM/iSIM OS is tuned for constrained IoT and is highly configurable: customers can add applets and policies they need, run multiple profiles (eg their private network plus public fallbacks), and retain lifecycle governance of identities across mixed footprints.
- Ecosystem & device readiness: With semiconductor roots (spun out of Arm) and deep module partnerships, we help clients land on proven hardware and band support, even in specialist sub-1GHz (900/450/410 MHz) deployments - so roll-outs aren't gated by device availability.
- Miniaturised, rugged form factors - ETSI-compliant and utility-ready: We supply SIMs in all standard form factors, and eSIMs in solderable, ETSI-compliant packages for space-constrained, long-life designs - including Miniaturised Form Factor 2 (MFF2) (5x6mm) and the new ultra-compact MFF4 (~2x2mm); delivering major board space savings while maintaining security or reliability. Kigen also is a pioneer in iSIM; a previous honouree of the IoT Innovation of the Year award. Available

eSIM options support extended industrial temperature classes and other environmental properties; aligning with the stringent conditions typical of gas and water deployments. Kigen SIMs and eSIMs are also natively integrated by leading smart-meter vendors and industrial edge routers used in mixed public/private deployments.

With Kigen, enterprises provide private coverage where it counts, extend to the best public networks where it's efficient, and do both with secure, updatable digital identities. The result is higher service continuity, fewer truck rolls, faster restoration, and a standards-based path from legacy SIMs to eSIM-driven automation - delivered at the customer's pace, with a trusted partner who stays with them through the journey.

### Can you share a real-world example where Kigen's private cellular solution significantly improved operational efficiency for a customer?

Through private LTE network and Kigen's secure eSIM technology, LCRA, the Lower Colorado River Authority, one of Texas' largest public utilities, is delivering critical water and power services to 68 counties in Texas and across 70,000 square miles. LCRA utilises an extensive system for its operations, and shares this with governmental and public safety entities, electric utilities, schools, and other public safety organisations. LCRA's telecoms network can be used for 'middle-mile and backhaul broadband access,' - elements it argues can unlock vital public services, particularly in rural parts of the region.

The impact is real and tangible - modernisation that brings reliability, efficiency, and flexibility where it's needed most.

### What innovations or emerging trends do you believe will impact the industry?

Three forces are set to reshape connected devices over the next 24 months: flexible IoT eSIM connectivity at scale, factory-time provisioning, and secure-by-design regulation, underpinned by a stronger sustainability lens.



- Programmable connectivity becomes a business model: The GSMA's IoT eSIM RSP standard (SGP.32) is best viewed as a toolset, not a single feature. It enables original equipment manufacturers (OEMs) and enterprises to treat the eSIM as a secure digital identity that can be bound to the correct network at the right moment. When identity meets flexible network design, you unlock new models - regional SKUs collapse into one global design from the point of manufacture, and connectivity can be bundled, upgraded, or revenue-shared over the lifecycle - as long as connectivity is available out of the box.
- In-factory profile provisioning (IFPP) moves eSIM decisions upstream: This is enabled by delaying the connectivity selection and injection in the device to the latest stage of the manufacturing. A pivotal shift is delivering operator profiles securely during production. In combination, the GSMA SGP.32 IoT eSIM RSP architecture and the new IFPP SGP.41/42 allow users to bind devices to private/public profiles at manufacture, then rotate, attest, or restore in the field - without truck rolls. We've already integrated secure profile delivery into the lines of notable Fortune 100 manufacturers, so we are constantly seeing innovation accelerate as these get put to rigorous test. The result: shorter lead times, simpler logistics, and fewer surprises in deployment.
- Security regulation will reward early movers: Upcoming regulations impose explicit, ongoing cybersecurity duties on device manufacturers, including secure-by-design development, vulnerability management, rapid incident reporting, clear documentation, conformity assessment, and multi-year update support. OEMs that adopt eSIM and IFPP aligned with SGP.32/SGP.41-42 can operationalise those obligations faster - because identity, attestation, and updateability are built into the connectivity substrate rather than bolted on later.
- Sustainability shifts from 'new' to 'renew.' So far, IoT eSIM headline wins have centred on new product designs. The next wave is making existing fleets more sustainable; migrating legacy SIM/eSIM deployments into an updateable eSIM world, securely decommissioning and reprovisioning devices for second-life use, and reducing dead inventory through profile portability instead of manual swaps. Designing for updateability turns connectivity into a circular asset; cutting waste while keeping devices secure and useful for longer.