

IN REVIEW

Huawei Global Mobile Broadband Forum



INTRODUCTION: HUAWEI EXPLAINS AI FOR NETWORKS AND NETWORKS FOR AI AT MBBF 2024

The rise of artificial intelligence (AI) and the growing variety of AI-based services and applications will compel operators to build robust networks with higher capacity — a goal achievable through 5G-Advanced (5G-A) technology. For this reason, mobile operators worldwide need to prepare their networks for the Mobile AI era, according to Ken Hu, Huawei's rotating chairman, who spoke during the opening keynote session at Huawei's Global Mobile Broadband Forum 2024 (MBBF 2024), recently held in Istanbul, Türkiye.

Industry leaders from across the world gathered for Huawei's MBBF, with speakers sharing insights under the themes 'Embrace New

Opportunities in the Mobile AI Era" and "Continuously Realize the Business Value of 5G-Advanced."

This report aims to highlight the vision of Huawei, as well as additional participating operators and analysts regarding 5G-A networks, and how this technology will enable a plethora of services and applications through the implementation of AI.

Moreover, the report also explores how AI will allow operators to improve the efficiency and performance of their network infrastructure.



5G-ADVANCED TO ENABLE OPERATORS TO TAKE ADVANTAGE OF THE MOBILE AI ERA

In his opening keynote, Hu highlighted that the year 2024 marks a major milestone for the mobile industry, as the 3GPP officially froze the Release-18 standard in June, paving the way for the 5G-A era.

Release-18 is the first set of standards developed for 5G-A by 3GPP. 5G-A will be specified by 3GPP Releases 18, 19 and 20, after which 3GPP's work will focus on 6G, which will hit the market after 2030.

Huawei's rotating chairman noted that more than 60 operators and industry partners have already announced plans for commercial 5G-A deployment. From Huawei's perspective, 5G-A networks will equip operators to handle the enormous data demands of AI-based applications and services.

"2024 has also been a huge year for AI. Not only is it advancing fast — it's more useful than ever, both for consumers and businesses. More and more companies are using AI," Hu said.

He went on to say that "AI will be used by everyone, anytime and everywhere in the future," adding that mobile networks and devices will play a key role to make that happen. "This will bring a lot of new opportunities for the mobile industry. We'll see more connections and data flows, new services and new business models," he said.

However, for the telecom industry to take advantage of the AI opportunity, operators need to make their networks stronger as different AI-based applications will have different demands in terms of connectivity, cautioned Hu.

"If we want to make AI available anytime, anywhere — and make it a viable business model — we need to upgrade network capabilities. Whether it's for AI agents on your smartphone, autonomous vehicles, mobile robots or real-time machine learning in factories, we're going to see a lot more connections and more challenging demands for uplink and latency," said Hu.

According to Huawei's rotating chairman, networks should be prepared for the Mobile AI era, but he also stressed that AI could be used by operators to improve network performance. "Of course, to provide the right service level for different AI scenarios, our networks will become more complex. And O&M [Operations and Maintenance] will be a challenge. So in addition to preparing our networks to support AI, we can use AI to support our networks. Technology like AI foundation models for telecoms can help improve and guarantee network experience, while making O&M more efficient," Hu added.

However, Hu emphasized that stronger networks are not enough for operators to seize the growing opportunities in the AI field. "We need greater synergy with devices and applications too. So we need to build up the ecosystem," he said.

5G-A is set to empower mobile operators with data-driven, intelligent network solutions. This will allow them to better customize connectivity to meet the needs of specific services and use cases, such as autonomous vehicles, industrial automation, the metaverse and extended reality (XR) applications. For consumers, 5G-A will deliver significant uplink enhancements, increase capacity and decrease latency.

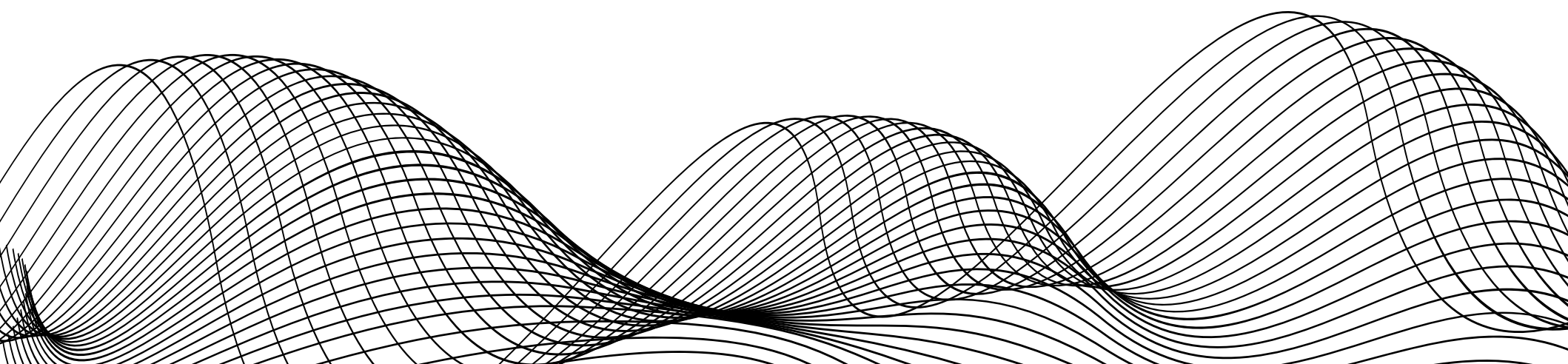
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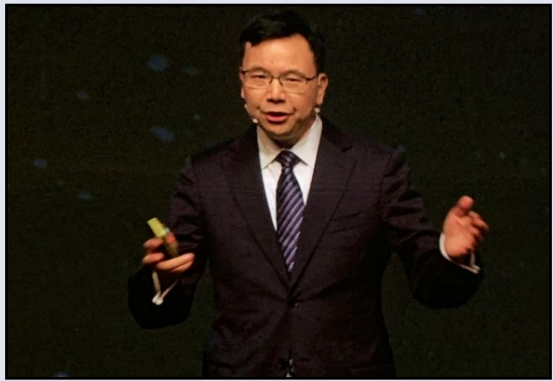
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MOBILE AI TO CREATE HUGE OPPORTUNITIES FOR THE MOBILE INDUSTRY

The deployment of 5G-A networks by mobile operators will be the key to unleashing the full potential of mobile AI, Yang Chaobin, Huawei's board member and president of ICT Products and Solutions, said during a keynote session at MBBF 2024.

"The upcoming mobile AI era will create huge opportunities for the mobile industry and profoundly shape the decade to come. Evolving 5G-A technology will be the key to unleashing the potential of mobile AI. Huawei looks forward to collaborating with all industry partners to evolve 5G-A and solidify the foundation of the mobile AI era," the executive said.



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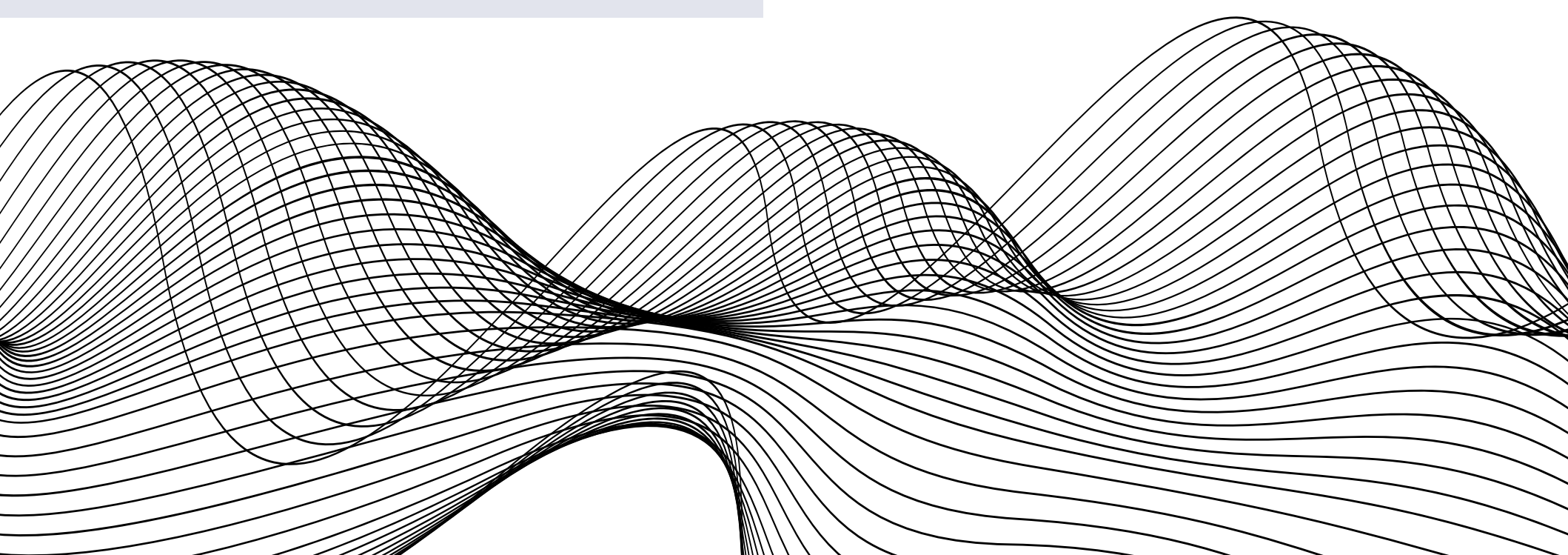
According to Yang, two trends have emerged thanks to the rapidly evolving 5G-A technology and AI technologies that will reshape industry. He noted that the first trend is "Mobile going AI," where mobile internet services are being transformed by new service and business models. The second trend is "AI going Mobile," where significant business opportunities are being unlocked by new mobile services like smart vehicles and robots. These developments, he claimed, are creating new momentum and opportunities for both society and the mobile industry.

In Huawei's vision, these trends will influence the ICT industry in three specific ways. First, AI agents for individuals will reshape mobile internet services such that everyone has a personal smart assistant, which means AI agent networks will need to support real-time services. Second, smart driving will transform mobility by turning vehicles into flexible and smart spaces, which means smart vehicle networks will need to deliver high uplink speeds. Third, generalized embodied intelligence will make its way into different scenarios to unlock new productivity and a 10-billion-unit AI-robot market, which means future robotics networks will need comprehensively higher capabilities.

Yang emphasized that 5G-A networks can support the diversified connections, experiences and services that are needed to address these new requirements coming from AI agents,

The executive also noted that 5G-A technology can address diversified experience requirements by providing high-bandwidth networks. As users increasingly require diversified experiences, sub-100 GHz bands can be integrated on demand to flexibly deliver the network capabilities needed for superior multi-factor experiences. "0 Bit 0 Watt" technology can also be used to enable superior energy efficiency, he said.

Also, he highlighted that 5G-A technology can be used to optimize device TCO (Total Cost of Ownership) as it enables a single network to integrate all-scenario IoT connections. RedCap and passive IoT technologies are lowering the cost of IoT and 5G-A is needed to maximize the number of connections that can be simultaneously supported, he said. Upgraded network capabilities are also needed to empower devices and bring IoT connections everywhere, Yang added.





NETWORKS FOR AI AND AI FOR NETWORKS

In another keynote session, Li Peng, Huawei's SVP and president of ICT sales and service, provided insight on how the mobile industry could maximize new growth opportunities in the mobile AI era.

"We will see new forms of interaction with devices, new intelligent services and structural changes in traffic models. This will bring huge new opportunities for the mobile industry," he said.

The Huawei executive detailed how operators can make the most of these new opportunities and drive new growth by reshaping services, network infrastructure, O&M and business models. He shared how a number of carriers around the world have already verified AI service capabilities on live 5G-A networks across a wide range of scenarios for individuals, homes, travel and business.

"We should prepare our networks to support AI. That means boosting network capabilities, especially uplink, latency and capacity. Second, we can use AI to support our networks. With more complex networks, we can use AI to help automate O&M, optimize network efficiency, and guarantee a solid user experience," the executive said.

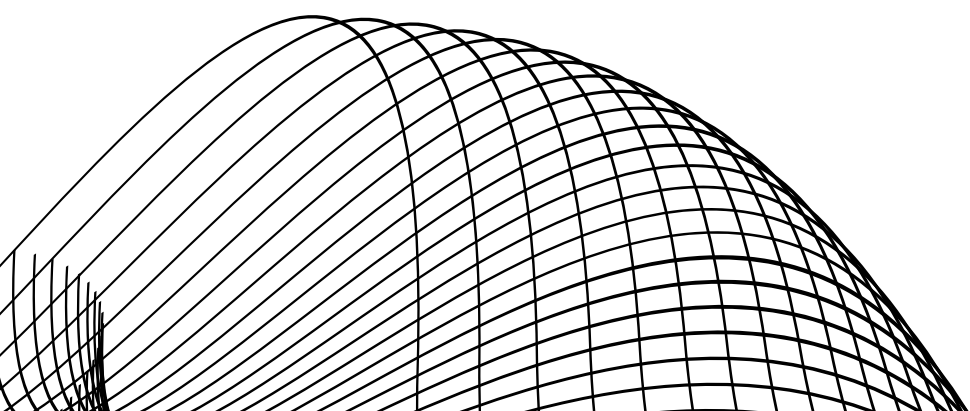
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SVP and President of ICT Sales and Service, Huawei

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HUAWEI'S NEW 5.5G SOLUTIONS UNVEILED DURING MBBF

During MBBF 2024, Cao Ming, vice president of Huawei and President of Huawei's Wireless Solution announced a new set of 5.5G solutions, aimed at boosting the requirements of the Mobile AI era.

"Mobile AI is changing our lives. The arising new connections and services pose increasingly higher requirements for networks. Huawei's 5G-A10 solutions build multidimensional ultimate network capabilities through the full-series Advanced Radio, enable full-domain site digitalization through Ambient Site and achieve L4 network autonomy through the Agent-based digital engineer[ing] team. These solutions will help operators meet the ever-diversifying demand for services in the Mobile AI era," Cao said.

The executive noted that the new 5.5G solutions will deepen the convergence of 5G-A and AI through the 'Networks for AI' and 'AI for Networks' concepts. 'Networks for AI' will enable networks to possess the capabilities required to address differentiated service requirements and improve both network performance and user experiences. 'AI for Networks' will equip networks with L4 autonomy through digital sites and RAN agents.

Huawei's new 5.5G solutions include:

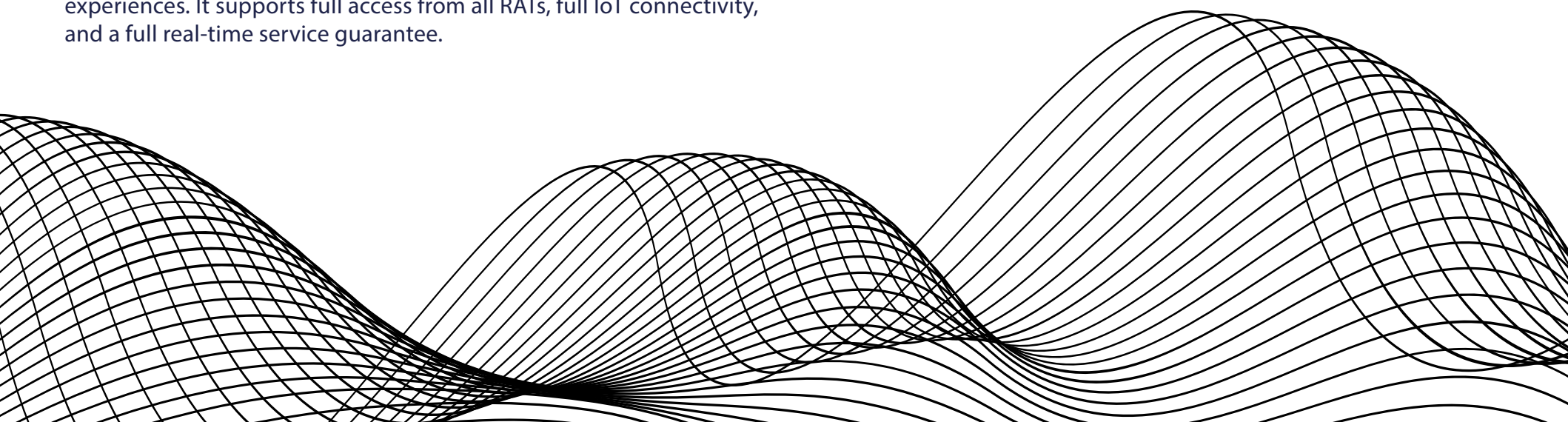
-Sub-1 GHz Massive MIMO builds a ubiquitous foundation layer for Mobile AI. Sub-1 GHz Massive MIMO provides an innovative solution to many technical challenges to meet the general deployment requirements of site engineering, bringing Massive MIMO to low bands. While providing extensive coverage, low-band Massive MIMO improves downlink, uplink, and low-latency experiences. It supports full access from all RATs, full IoT connectivity, and a full real-time service guarantee.

-Unique sub-6 GHz all-band integration in one box enables simplified single-antenna Massive MIMO deployment. Blade AAU X uses a single antenna to support Massive MIMO deployment across all sub-6 GHz bands. Unlike other Massive MIMO modules, this product can be deployed on a single pole and requires 50% less site space and 70% lower OPEX, according to Huawei. It supports GHz-level bandwidth with one pole, maximizing spectral efficiency.

-The industry's first unique U6GHz AAU ensures continuous 10 Gbps. The U6GHz AAU integrates more than 1,500 antenna elements and uses leading MU-MIMO algorithms. With the collaboration of such advanced hardware and software, it supports a capacity of up to 100 Gbps and speeds of up to 10 Gbps. It enables coverage to be aligned with the C-band to ensure uninterrupted Gbps experiences indoors.

-LampSite introduces Passive IoT (P-IoT) for the first time to upgrade digital intelligence indoors. LampSite X supports both indoor 10 Gbps and P-IoT access. It can be deployed in half the time and allows asset stocktaking to be done daily instead of monthly, compared with other solutions.

-Agent-based digital engineers team enables higher-level network autonomy. Based on the intelligent RAN Agent, the Agent-based digital engineers team has been incubated. This team includes four digital experts that perform unattended maintenance, real-time network optimization, 24/7 energy saving, and accurate service provisioning evaluation



TELECOM INDUSTRY EXPECTS 5G-A MOMENTUM BY 2026

The initial deployments of 5G-A networks began this year. However, operators are expected to accelerate these deployments over the next two years. According to a GSMA report, 2026 is set to see large-scale deployment of 5G-A worldwide.

The GSMA highlighted that 5G-A technology will enable a step-change in network capacity and flexibility, giving operators much more scope to tailor 5G connectivity to the needs of an individual enterprise or a single application. The GSMA report also noted that 5G-A will also use new spectrum and extremely large antenna arrays to provide fixed wireless access (FWA) connectivity capable of bringing 10 Gbps throughput to homes and businesses, while it will also coordinate AI in the network, the device and the cloud/edge to optimize the available connectivity for demanding applications, such as image recognition and conversations with automated personal assistants.

According to the mobile industry association, the initial deployments of 5G-A are likely to focus on addressing the specific needs of different enterprises and industries, with broader nationwide rollouts later in the decade, adding that operators in developed markets, notably East Asia, North America and parts of the Middle East, are likely to be the first to harness 5G-A technologies.

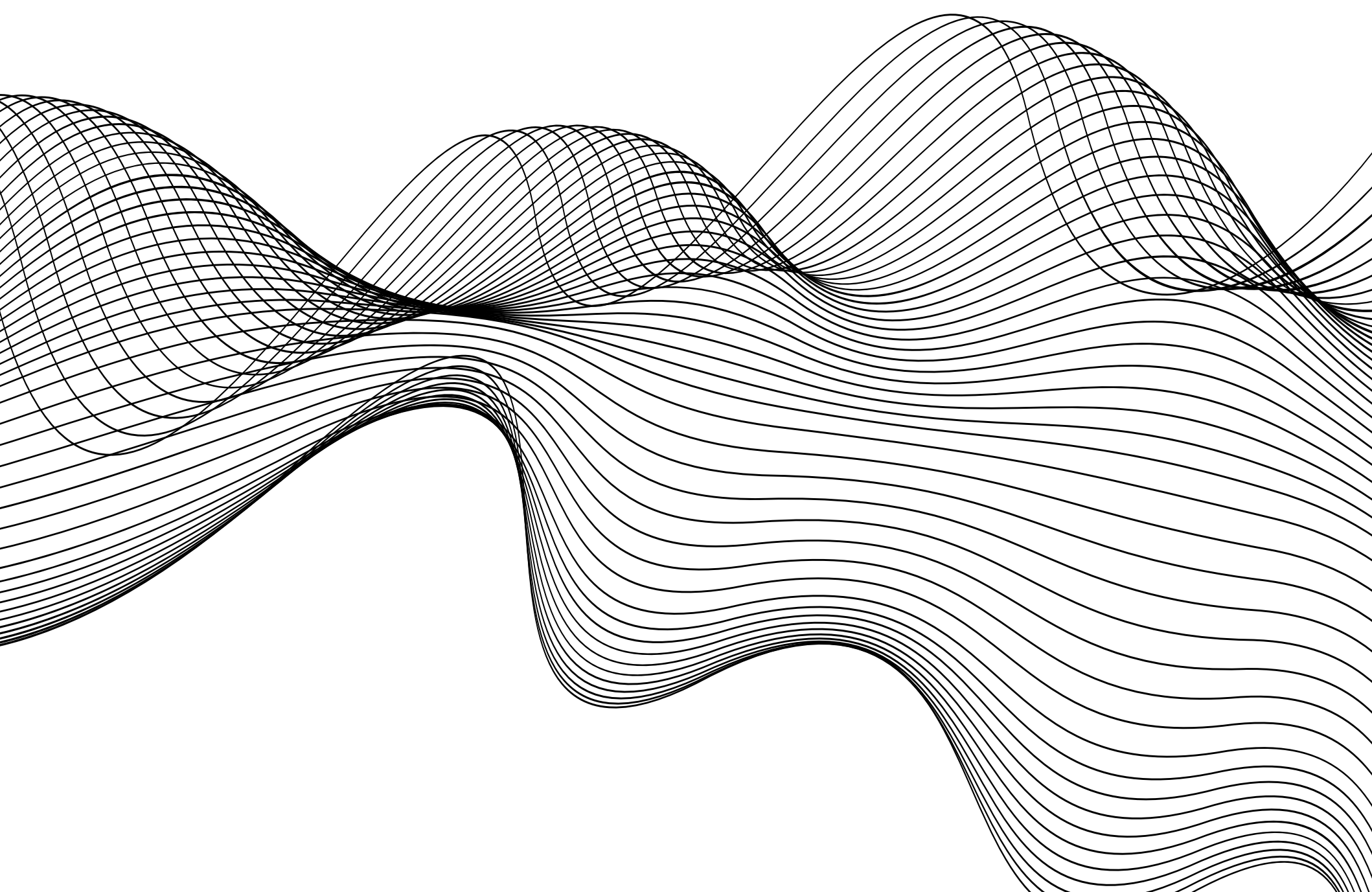
"5G-A will help mobile operators monetize their previous investments in 5G. In particular, it will give operators the ability to tailor 5G connectivity to deliver specific services, opening up new business and strategic partnerships and enabling operators to

remain competitive in an increasingly complex environment. While today's 5G is centered on enabling the basics of connectivity — wide-area coverage, capacity, solution reliability — 5G-A is designed to enable mobile operators to provide data-driven, intelligent network solutions," the GSMA report stated.

The GSMA also highlighted that one of the key stepping stones to 5G-A is the deployment of 5G standalone networks. Operators that deploy 5G standalone first are likely to lead the progression to 5G-A, according to the GSMA.

The widespread rollout of 5G standalone networks in 2024 and 2025 is likely to be followed by a major wave of 5G-A deployments in 2026, the GSMA report stated. More than half the respondents in a GSMA Intelligence survey said they plan to deploy 5G-A one year after commercial equipment becomes available.

"By 2026, 5G-A will be the state-of-the-art in wireless connectivity, paving the way for the deployment of 6G in the 2030s. As with previous generations, it is expected that the rollout of 6G will be gradual, so 5G-A will play an important role in bridging from 5G to 6G," the report stated. "Many of the 5G-A technology components and innovations will be viewed as precursors to 6G building blocks. Artificial intelligence is likely to play a particularly important role in the fully data-driven architecture of 6G and the intelligent network platform of the future. While some mobile operators may jump directly to 6G, the foundations for the majority will be through 5G-A," it added.



5.5G Leads Mobile AI Era

15th Global MBB Forum

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Building a Fully Connected, Intelligent World

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TRANSFORMING MOBILE NETWORKS FOR THE AI ERA

At the Mobile AI Foundation Network Summit, held during Huawei's MBBF 2024, industry leaders gathered to discuss the evolution of mobile networks to meet the complex demands of AI-powered applications. These applications span diverse service domains, including the Internet of People (IoP), AI Internet of Vehicles (IoV), and Internet of Things (IoT). In his keynote, Dang Wenshuan, Huawei's Chief Strategy Architect, introduced a "six A's" framework—a set of capabilities essential for enterprises aiming to harness AI effectively.

Huawei is urging mobile network operators to adopt the "6A Intelligent Mobile Network Operator" model, which prioritizes upgrading to 5.5G networks to accommodate AI-driven applications' requirements, particularly in enhancing latency, spectral efficiency, and coverage.

Dang outlined the "six A's" that AI-driven enterprises need to embed AI deeply into their operations. These features encompass four primary outcomes:

-Adaptive User Experience: AI-driven services dynamically adjust to meet users' needs in real time.

-Auto-Evolving Products: AI enables continuous improvement of products, such as autonomous vehicles, by learning from user data.

-Autonomous Operations: AI systems use goal-based planning for self-management, enhancing efficiency.

-Augmented Workforce: AI tools increase productivity by aiding specific tasks across roles.

-Two additional enablers support these outcomes: All-Connected Resources, which digitally link all assets and processes, and AI-Native Infrastructure, which provides the technical foundation for AI integration.

Huawei's "6A Mobile Network Operator" model is designed to equip networks to support AI-driven services, from connected devices to high-performance AI-generated content. This strategy addresses the "double 20" requirements —20 Mbps uplink and 20 ms latency —

necessary for seamless AI interactions, from autonomous driving to immersive experiences.

During the summit, Carlos Lopez Calvo, senior RAN manager at Spanish operator Telefónica, emphasized the importance of open APIs and real-time network functionality for building a responsive infrastructure. He highlighted that the right network foundation enables AI-driven applications, from autonomous vehicles to immersive 3D environments, with a focus on real-time responsiveness and adaptability.

Barbara Pareglio, senior technical director at GSMA, emphasized the transformative potential of AI in the telecommunications sector. She highlighted key trends from recent surveys, noting that "81% of mobile operators are already testing generative AI," and underscoring the importance of sustainability, as "70% of them still see the importance of the sustainability aspect." Pareglio pointed out the critical balance required to manage energy consumption in AI and network operations, stressing that while AI contributes to operational efficiency, it can also lead to increased energy demands, especially in data centers.

Pareglio also emphasized AI's growing role in enhancing customer experiences, reducing fraud, and improving network security.

The integration of Frequency Division Duplexing (FDD) with 5.5G is crucial for applications requiring high uplink capacity and low latency, such as virtual reality and autonomous vehicles. Fang Xiang, Huawei's VP of the wireless network product line, emphasized that FDD's robust uplink capabilities are vital for real-time AI interactions. By combining FDD with TDD (Time Division Duplexing), Huawei aims to optimize spectrum use, meeting the "double 20" criteria essential for a broad range of AI-driven services.

The Mobile AI Foundation Network Summit conveyed a clear message: the future of mobile AI demands a transformation in network architecture, standards, and flexibility. By integrating AI across devices, applications, and network foundations, operators are positioning themselves to deliver adaptive, high-quality experiences that cater to evolving user needs.

5G-A TO 'PROTECT' OPERATORS' 5G INVESTMENTS

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Where AI has been deployed, there are reports of improvements in network planning and rollout, as well as some very early evidence of better network power management.

Shaun Collins,
Executive Chairman, CCS Insight

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Earlier this year, Huawei launched what it claimed to be the world's first commercial 5G-A network platform based on 3GPP Release 18. The launch of the so-called Apollo version took place during the 2024 Huawei User Group Meeting (HUGM) in Istanbul, Turkey. According to Huawei, the Apollo version facilitates the all-band evolution to 5G and scales up the commercial use of 5G-A.

Huawei highlighted that the Apollo version “introduces intelligence” to multi-band coordination, beam management, and energy savings. The multi-band coordination leverages intelligent carrier frequency selection and aggregation to unlock the potential of multi-band networks, increasing uplink and downlink speeds by up to 30% across diverse service scenarios, the company added.

According to Huawei, all spectrum bands are shifting to 5G, with 5G-A using converged TDD and FDD networking. “All operators are poised to evolve to ‘5.5G,’ but from different paths. Based on the core

sub-6 GHz bands, operators will build ‘5.5G’ networks for ubiquitous 5 Gbps. Meanwhile, based on mmWave and upper 6 GHz (U6G) bands, operators will deliver 10 Gbps at hotspots for 5.5G,” said Huawei.

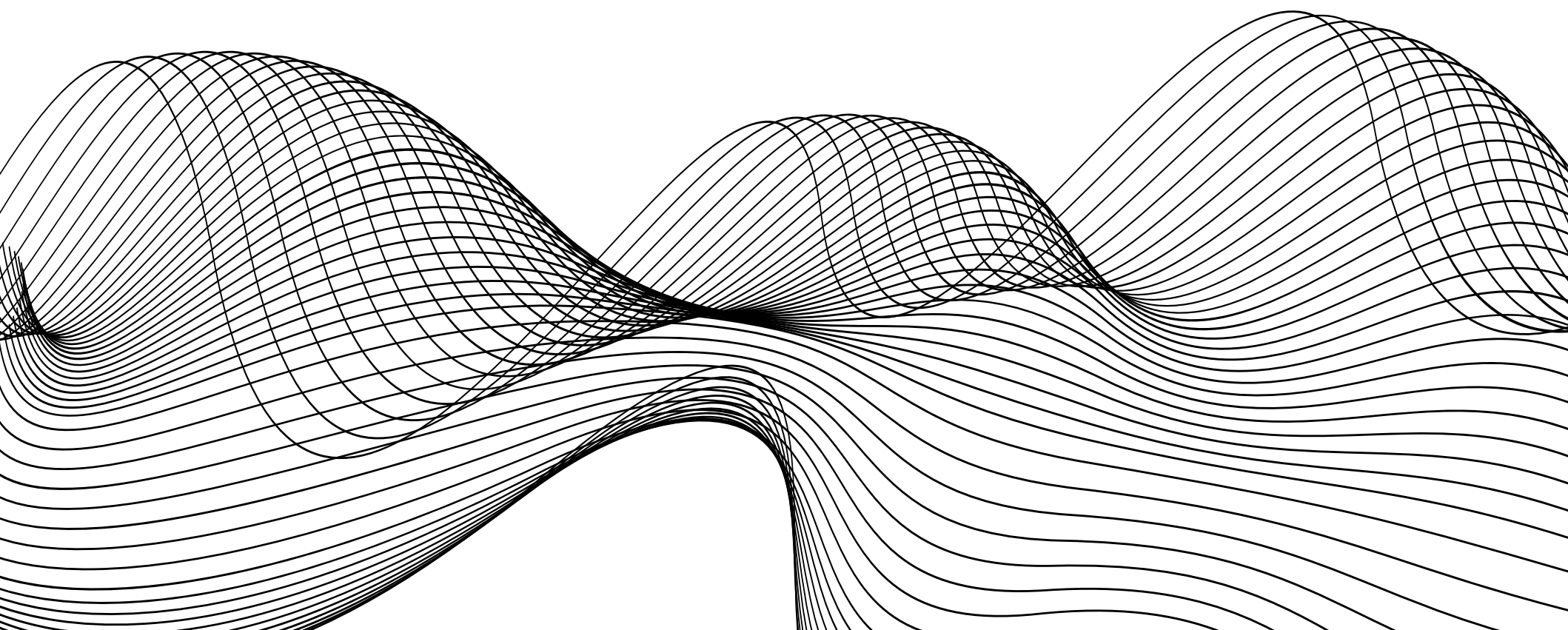
Huawei also stated that previous investments made by operators in deploying 5G network infrastructure will be ‘protected’ with the launch of 5G-A networks. Cao Ming noted that 5G-A networks will not require significant investments in new network architecture and will be launched using 5G standalone networks. He also emphasized that Huawei is working with its partners to ensure that future 5.5G applications, devices, and services will remain fully compatible with current 5G networks.

Additionally, Huawei called on the industry to work together to develop 5.5G ecosystem, including chips, applications, and devices, aiming to establish a full ecosystem for this upcoming technology.

Jon Arnold, principal at J Arnold & Associates, an independent technology research and analysis firm based in Canada, highlighted the benefits for operators upgrading to 5G-A. In an interview with RCR Wireless News, Arnold described 5G-A as a bridge between 5G and 6G that can help carriers adapt to today's changing market conditions.

He noted that many carriers are still in the process of migrating from 4G to 5G. However, he emphasized that by the time they complete this transition, 5G may no longer be sufficient to support the new services currently in demand. “With 6G still many years away, 5G-A provides sufficient capabilities to support the rapid emergence of AI-driven applications. Rather than simply supporting the current range of services offered by telcos, 5G-A delivers transformative capabilities for new services and revenue streams that go beyond what 4G can support and are substantially better than what 5G can offer,” Arnold explained.

The analyst also pointed out that 5G-A positions carriers to maximize opportunities at the intersection of two major trends: the rise of high-capability mobile networks and the ascendancy of AI in creating new forms of value for businesses and consumers.



Commenting on the importance of 5G-A networks for capturing opportunities in the mobile AI era, Arnold predicted that mobile AI will be a leading tech trend in 2025. However, he argued that for mobile carriers to fully capitalize on this trend, they must adopt 5G-A. "There are many reasons why, and one is the fundamental ability to deliver the higher throughput needed for AI-based services. While 5G can deliver a 1 Gbps download speed, 5.5G can reach 10 Gbps. This ten-fold jump is critical for today's data-rich services.

"For consumers, immersive experiences become much more compelling—such as for mobile gaming, XR applications, and metaverse adoption—all of which offer new revenue opportunities for carriers," Arnold added.

Meanwhile, Shaun Collins, executive chairman of CCS Insight, who participated in Huawei's MBBF 2024, told RCR Wireless News that 5G-A transforms the industry's ability to support AI-driven services by making existing 5G networks even more responsive and agile. He added that this technology enables operators to offer greater throughput and capacity, as well as lower latency, to their customers. "Combined with AI, this increase in features and agility should lead to networks that are more efficient, greener, and optimized as they are deployed," said Collins.

Commenting on the specific challenges that telecom operators face in meeting the data and latency demands of AI-based applications, Collins outlined four main challenges from his perspective:

-Agile and Responsive Networks: The need to deliver more agile and responsive networks to handle the enormous data demands from consumers and businesses by ensuring real-time optimization of the network for changing demands.

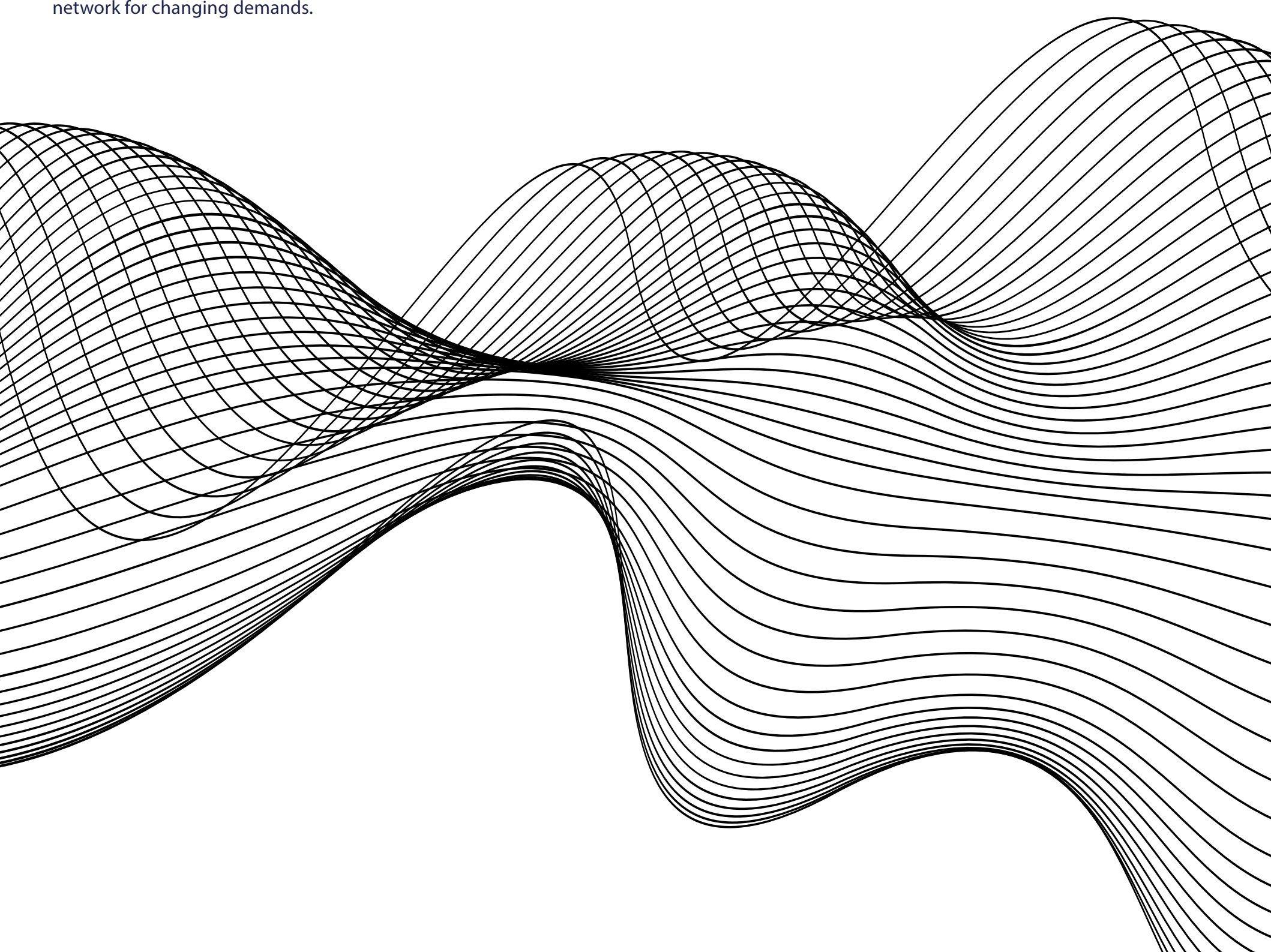
-Improved Customer Service: The requirement to enhance customer service responsiveness in both OSS (Operations Support Systems) and BSS (Business Support Systems), ensuring faster and more efficient problem resolution than in the past.

-Energy Efficiency: Achieving greater energy efficiency as AI automatically manages the network.

-Support for AI Experiences: Meeting the growing demand for a network capable of delivering both on-device and cloud-based AI experiences for smartphone and tablet users — commonly referred to as edge computing.

Collins also highlighted the rapid deployment of AI in North America and Asia but emphasized that the Middle East is the most aggressive region for deployment. Operators in Saudi Arabia and the United Arab Emirates are swiftly rolling out both 5G-A and AI. "In Europe, the story is more mixed, with stagnating capex muting the rollout of both AI and 5G-A. Where AI has been deployed, there are reports of improvements in network planning and rollout, as well as some very early evidence of better network power management, though concrete results are still scarce.

"There have also been innovations in customer service, particularly through the use of generative AI for voice and chatbots, which have been surprisingly accurate and effective in addressing customer needs. While it's still early days, we expect AI to deliver massive benefits to the industry as it rolls out more aggressively in 2025," said Collins.



MOBILE OPERATORS BEGIN TO GRADUALLY DEPLOY 5G-A NETWORKS

Emirati-based telco du is one of the operators paving the way for future AI-based offerings through the deployment of 5G-A networks. During Huawei's Global MBBF 2024, Hasan Alshemeili, du's head of infrastructure technology planning, stated that the telco is currently deploying 5G-A technology in Dubai as part of its national rollout program.

The executive noted that du has already installed 'hundreds' of 5G-A base stations, with plans to deploy 'thousands' nationwide. Du's 5G-A strategy includes rolling out this technology in major cities across the United Arab Emirates (UAE) next year and achieving nationwide coverage by 2026.

The Arab telco had previously signed a Memorandum of Understanding (MoU) with Huawei to enhance 5G-A technology in the UAE. The project, dubbed "5G-A Country," aims to accelerate the digital transformation of the nation.

Turkish operator Turkcell also participated in Huawei's MBBF 2024, where it revealed plans to enter the 5G era in 2026 with the launch of 5G-A in Türkiye. The Turkish Ministry of Transport and Infrastructure is currently awaiting appropriate market conditions for the transition to 5G technology, Turkcell CEO Ali Taha Koç told RCR Wireless News in an interview on the sidelines of the event.

Koç stated that the switch to 5G is scheduled for 2026, with licensing expected to occur in 2025. "As Turkcell, we continue our investments to provide the highest quality internet service to our subscribers, and 5G technology is a very high priority among our investments. Thanks to the 5G launch schedule, we have the opportunity to start with 5G-Advanced. With 5G-Advanced, we will provide the best mobile broadband service to our subscribers while also advancing the digitalization of the country," Koç added.

The executive emphasized that Turkcell's investments and preparations for the 5G transition remain uninterrupted. "When this technology becomes operational in 2026, both individual users and businesses will experience increased productivity and profitability," he noted. Koç also highlighted Turkcell's ongoing collaboration with Huawei on next-generation network technologies, including 5.5G, artificial intelligence, and cloud solutions.

During another keynote speech, GSMA CTO Alex Sinclair remarked that with 3GPP Release-18 unveiled earlier this year, 5G-A is gaining traction as operators seek new revenue streams and enhanced customer engagement. Sinclair identified three areas where 5G-A pushes technological boundaries: improving the performance of existing platforms, enhancing management and efficiency, and supporting specific use cases such as edge computing.

"5G-A will allow us to create entirely new business models and support use cases across the entire economy. Operators are keen to deploy 5G-A — over 50% of mobile operators plan to roll out some form of 5G-A within a year ... However, the deployment of 5G-A will depend on monetizing these use cases," Sinclair said.

Addressing spectrum needs, the GSMA CTO stated that achieving the full potential of 5G and 5G-A requires additional spectrum. "On average, countries will need a total of 2 GHz of mid-band spectrum per market," Sinclair explained. "If we can get this right, we will set the stage for the transition to Industry 4.0 and enable our digital economies to truly take off."

Meanwhile, Zain Group's Access Director, Nassir Jama, discussed how the company's intelligent network capabilities have simplified its infrastructure, reduced latency, and enabled real-time functionalities. "We're not just building a network; we're creating an intelligence ecosystem. Our AI resources help us manage energy efficiency and analyze performance data," Jama said.

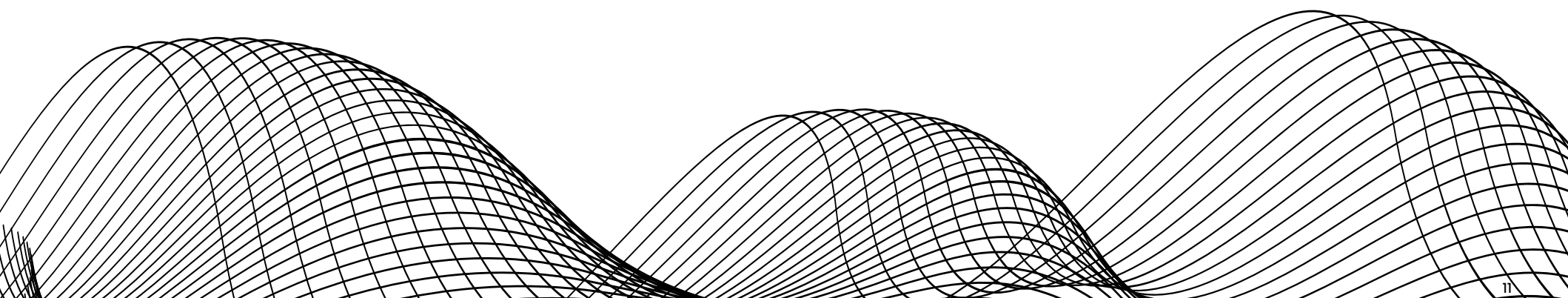
Marco Zangani, chief network officer at Vodafone Italia, echoed the importance of AI in driving next-generation networks. Zangani noted that Vodafone Italia currently uses AI to predict traffic and switch off certain sites. "We implemented this because it had an immediate impact on reducing costs by optimizing operations. We are making significant progress toward zero-touch operations," Zangani added.

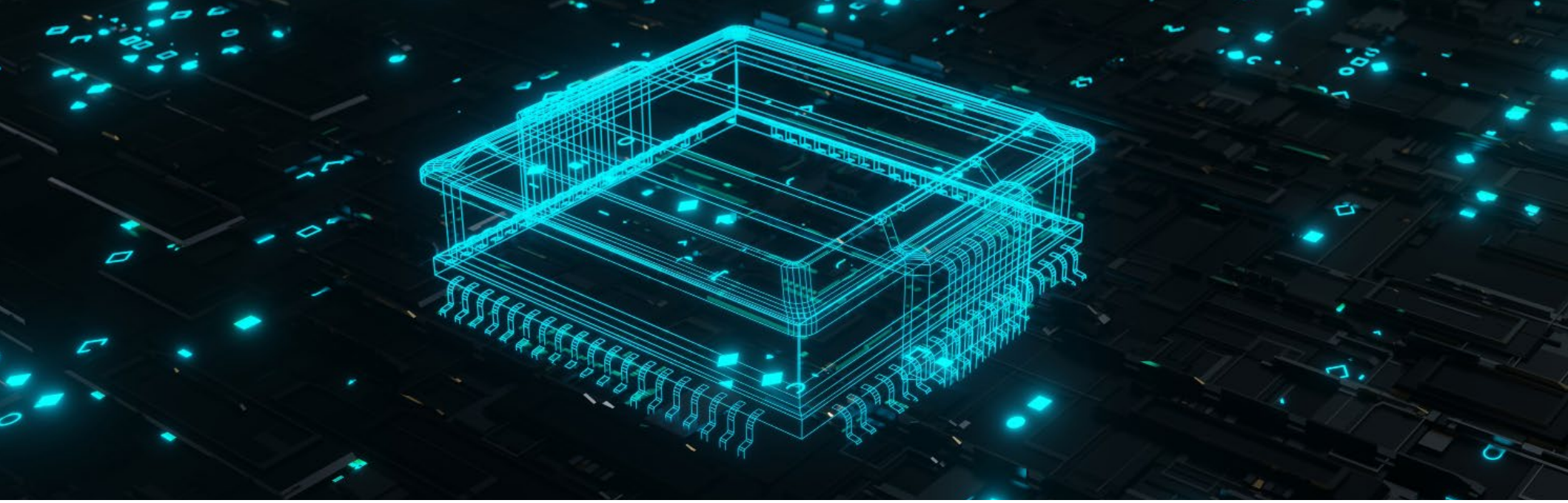
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With 5G-Advanced, we will provide the best mobile broadband service to our subscribers while also advancing the digitalization of the country.

Ali Taha Koç,
CEO, Turkcell

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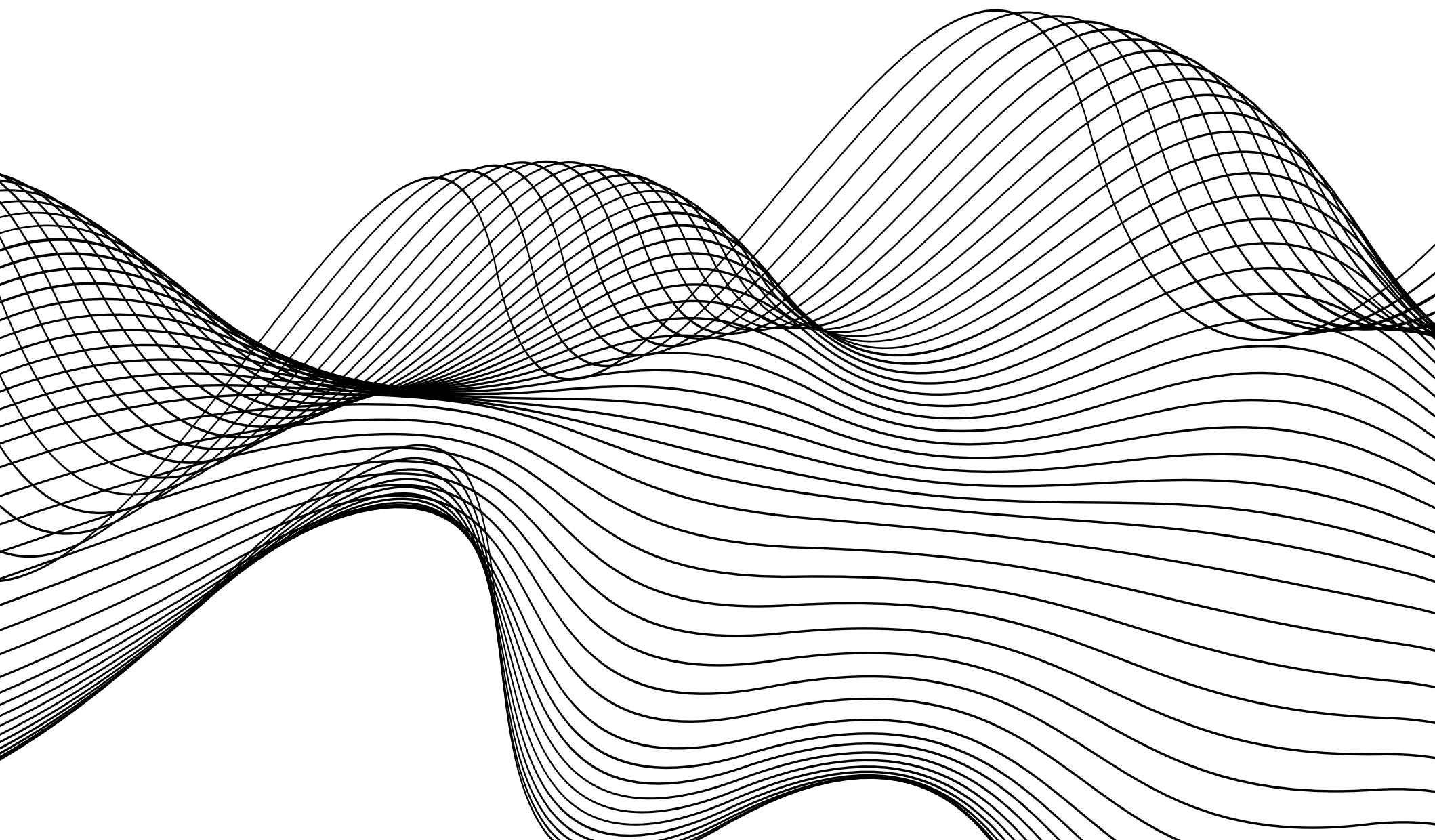
'INTELLIGENT RAN, UBIQUITOUS AI' PROJECT LAUNCHED AT MBBF 2024

At Huawei's Global MBB Forum 2024, GTI, a major international collaboration platform with 146 operator members and 262 industry partners, launched a global recruitment initiative for its "Intelligent RAN, Ubiquitous AI Project," part of its 5G-AxAI Development Program.

GTI's Intelligent RAN, Ubiquitous AI Project serves two major purposes. First, it will combine 5G-A networks and AI to enable intelligent O&M, network optimization, energy saving, and experience monetization, thereby helping global operators improve their network productivity. Also, the project will expedite the development of the mobile AI industry by integrating AI into various

industries, upgrading network capacity to better support AI services, and promoting the innovation of industry pilot benchmarks and high-value use cases.

The 5G-AxAI Development Program has already gained support from over 20 operators and partners globally, who have contributed to setting up open labs and fostering collaborative innovation in 5G-A and AI integration. The four open labs provide basic environments, equipment facilities, industry application scenarios, and other resources for AI in RAN and RAN for AI integration.



THE 5.5G PARK AT MBBF – WHERE AI MEETS 5.5G

The MBBF 2024 spotlighted a transformative phase in mobile communications, showcasing the integration of 5.5G technology with AI to redefine connectivity, automation and smart solutions. The 5.5G Park at MBBF served as a demonstration ground for cutting-edge innovations, offering a comprehensive preview of how these technologies are set to impact various sectors.

Below is an in-depth look at the key solutions and products announced during the event:

-Advanced user experience with 5.5G & AI integration

One of the main highlights at the 5.5G Park was the deployment of 10 Gbps downlink and Gbps uplink capabilities, designed to significantly enhance the user experience in high-density environments such as concerts, exhibitions, sports events and public transportation. Leveraging AI-driven technologies, the network introduced features like “real-time accurate experience awareness” and “on-demand dynamic experience assurance.” These capabilities allow operators to dynamically adjust bandwidth and ensure seamless service quality, even in crowded scenarios. This shift is a step toward multi-dimensional experience monetization, where operators can offer tailored services based on individual user needs, moving away from traditional traffic-based models, according to Huawei.

-AI-enhanced autonomous driving and robotics

Autonomous driving received a significant boost with the introduction of 5.5G+AI technologies, enabling autonomous vehicles to navigate complex urban environments with improved safety and efficiency. At the 5.5G Park, autonomous vehicles showcased their ability to intelligently assess road conditions, choose optimal routes, and avoid obstacles using AI-enhanced data analysis. In emergency situations, the control center can seamlessly take over, showcasing the reliable low-latency capabilities of 5.5G.

The park also featured intelligent robots, including “intelligent quadruped robots” equipped with advanced sensors and AI-driven guidance systems. These robots, resembling robotic dogs, can perform tasks in industrial applications, such as emergency rescue. The integration of 5.5G’s Gbps uplink allows these robots to handle vast amounts of data for real-time decision-making, while the millisecond-level low latency enables smooth coordination between mobile devices, cloud systems and edge computing for optimal performance.

-Intelligent IoT solutions

The concept of “Intelligent Connections of Everything” was a central theme, with 5.5G’s capabilities demonstrated through smart IoT applications. One notable showcase involved a special basketball game, where every player’s movements and the basketball’s trajectory were tracked and analyzed in real-time using 5.5G-enabled IoT devices. This data was streamed to the cloud for big data analysis, enabling enhanced coaching and performance feedback, making AI-driven skill development a reality.

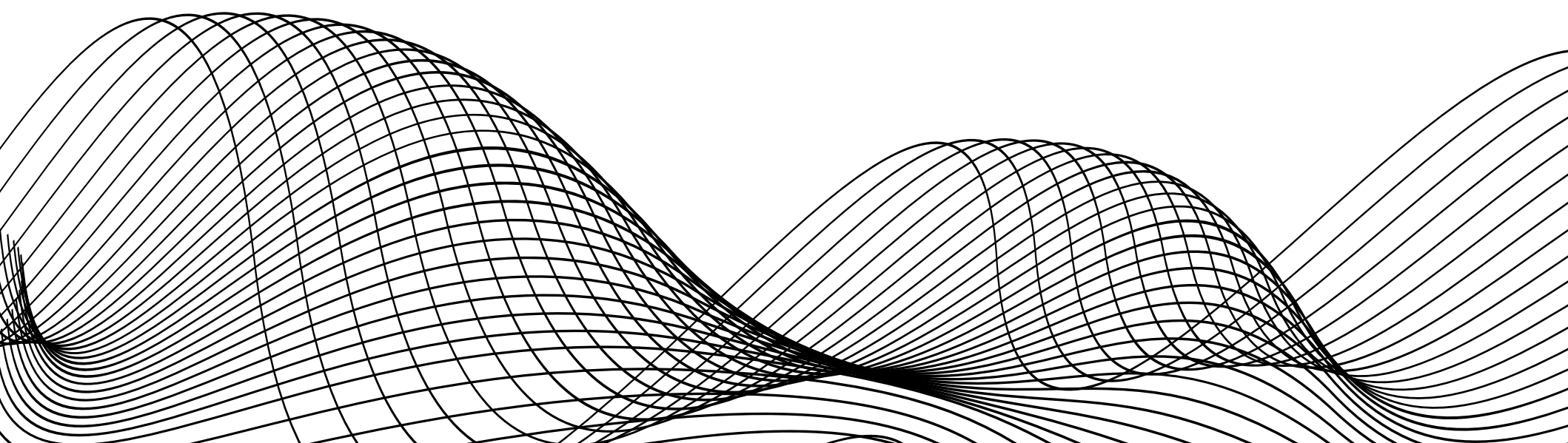
Beyond entertainment, the 5.5G Park presented enhanced IoT solutions for industrial and commercial settings, such as intelligent vehicles of the Internet (IoV), smart campuses, manufacturing, warehousing, logistics and energy sectors. Enhanced RedCap (eRedCap) and Passive-IoT connections, leveraging 5.5G, offer cost-effective connectivity solutions that can support a projected 100-billion-device market. These systems aim to enhance operational efficiency, with AI assisting in predictive maintenance, automated decision-making and workflow optimization. The use of digital twin technologies — virtual models of physical systems — was another highlight, with AI and 5.5G supporting improved simulation, analysis, and planning across diverse industries.

-The “Double-A” network concept for enhanced AI integration

Central to 5.5G’s promise is the “Double-A” Network — a dual strategy where the network both supports AI applications and benefits from AI-driven optimization. Huawei and industry partners at MBBF 2024 emphasized their commitment to this vision, focusing on five core capabilities of 5.5G networks: broadband, multi-band, multi-antenna, intelligence and energy efficiency.

The deployment of innovative products like C-band MetaBlade AAU, mid-band FDD massive MIMO, and the indoor LampSite X showcases the potential of 5.5G to deliver Gbps-level speeds both indoors and outdoors while minimizing energy consumption. Special emphasis was placed on energy-saving features, with single-module power consumption in sleep mode dropping below 10 W, a nod to the industry’s focus on greener ICT solutions.

The event underscored the industry-wide consensus that “All Bands to 5.5G” is an inevitable trend. This transition ensures that 5.5G becomes the unified standard for mobile networks, offering consistent and high-quality connectivity across diverse frequencies. By employing a combination of high, mid and low bands, 5.5G aims to deliver uninterrupted Gbps experiences across different environments, from urban centers to rural areas, supporting a variety of applications from streaming video to industrial automation.



| CONCLUSION

Huawei MBBF 2024 highlighted the transformative potential of 5.5G technology, marking a significant step towards the mobile AI era. As showcased during the event, 5.5G networks are not merely an evolution of current 5G infrastructure but a foundational leap that enables the seamless integration of AI into everyday mobile experiences. With faster speeds, lower latency, and greater capacity,

5.5G is poised to power AI-driven applications that will redefine how we communicate, work and live. This transition signals a new chapter in mobile technology, where innovation will drive social and economic change on a global scale, making the promise of a smarter, more connected world a reality.

