



Mobile & Wireless Roundup #75 (see original on [LinkedIn!](#))

By Zahid Ghadialy

Welcome to the 75th edition of this newsletter. I was hoping that after the New Year break things would ramp up gradually but instead my week was unbelievably busy with discussions and a quick trip to [Glasgow](#), Scotland. On top of that I have been catching up with announcements and Tweets from the CES (Consumer Electronics Show) 2024.

If I have to pick some real quick announcements, they would be the [10 seconds toothbrush](#), [Samsung's transparent Micro LED](#), a [Chinese flying car](#) developed by XPENG AEROHT, Kohler's [advanced toilet](#) and [HP's folding laptop/tablet](#). There are a lot more, some highlighted below.

Following on from the [6G in 2024](#) webinar that I was a part of, I had a discussion on 6G with someone who has been in our industry a lot longer than I have and has far more experience than I do. One of the points that came up was should we call IMT-2030 6G or can we call it something like an Advanced version of 5G-Advanced.

If there will be no change to the fundamental radio layer access technology, just some incremental changes on top of what we have and some more software updates for core and other features, why do we need to give it a new name/number? There were similar discussions when 5G was conceived, especially one that said "5G is the last generation of mobile technology" because all changes after this would be incremental.

While I agree with these statements, I always point out that the terms 3G, 4G, 5G and 6G are marketing terms that 3GPP adopted from 5G onwards. As it happens in our industry, marketing always wins over technology. Whether you like it or not, 6G is coming and we will hear a lot more about it this year.

For those of you who don't know me, I am a technologist with over 24 years' experience in mobile wireless technology, currently working as an independent advisor, analyst, consultant and a trainer.

This newsletter is a summary of my posts and others news that caught my attention since the last newsletter.



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6G

- Free 6G Training: Ofcom's Report on 'Reflective Surfaces in Wireless Networks' ([link](#))
- 6G World: 6G In 2024 – 'What to Look For & Why' featuring yours truly ([link](#))
- TMN: What does a 6G research programme look like? ([link](#))

5G

- Rimedo Labs - 3GPP Rel-19: Maturing 5G-Advanced ([link](#))

- Energy Efficiency as Service Criteria
- Enhancements of Network energy savings for NR
- Low-power wake-up signal and receiver for NR (LP-WUS/WUR)
- AI/ML Model Transfer Phase 2
- Artificial Intelligence (AI)/Machine Learning (ML) for NR air interface
- Ambient power-enabled Internet of Things
- Satellite access Phase 3
- Non-Terrestrial Networks (NTN) for NR Phase 3
- Non-Terrestrial Networks (NTN) for Internet of Things (IoT) Phase 3
- Localized Mobile Metaverse Services
- Supporting UE Mobility for XR Services
- XR (eXtended Reality) for NR Phase 3
- Integrated Sensing and Communication
- Uncrewed Aerial System Phase 3
- Indirect Network Sharing
- Upper layer traffic steering and switching over dual 3GPP access
- Edge Computing Considering the Operational Needs of Service Hosting Environment
- FRMCS Phase 5
- Roaming Value-Added Services
- Edge Computing for Industrial Scenarios
- PS Data Off for IMS Data Channel Service
- Multi-path relay
- UE-to-UE multi-hop relay
- Interworking of Non-3GPP Digital Terrestrial Broadcast Networks with 5GS Multicast Broadcast Services
- MPS for Messaging services



- Minimization of Service Interruption During Core Network Failure Phase 2
- Measurement Data Collection
- Local traffic routing for multi-access UE
- Non-Public Network (NPN) security considerations
- Sharing of administrative configuration between interconnected MC service systems
- 5GMSG Service phase 3
- Railways-specific Enhancements to Mission Critical Services
- Enhanced Mission Critical Architecture
- SEAL DD (Data Delivery) Phase 2
- Architecture for enabling Edge Applications Phase 3
- 5G Security Assurance Specification (SCAS) for the Unified Data Repository (UDR)
- 5G Security Assurance Specification (SCAS) for the Short Message Service Function (SMSF)
- Addition of 256-bit security Algorithms
- Data management phase 2
- 5G performance measurements and KPIs phase 4
- 5G Advanced NRM features phase 3
- Subscriber and Equipment Trace and QoE collection management
- NR MIMO Phase 5
- Evolution of NR duplex operation: Sub-band full duplex (SBFD)
- NR mobility enhancements Phase 4
- Data collection for SON (Self-Organising Networks)/MDT (Minimization of Drive Tests) in NR standalone and MR-DC (Multi-Radio Dual Connectivity) Phase 4
- Lawful Interception Rel-19

4G/LTE

- Developing Telecoms: BSNL prioritises 4G rollout in 2024 as 5G pushed back to next year ([link](#))

Open & Disaggregated Networks (including Open RAN, vRAN, etc.)

- SDxCentral: Open RAN slowed to a crawl in 2023 ([link](#))
- Jinsung (Alex) Choi on LinkedIn: RIC xApps/rApps Conflict Resolution in O-RAN - Harnessing System 2 Thinking ([link](#))

- DISH Wireless Awarded \$50 Million NTIA Grant for 5G Open RAN Integration and Deployment Center ([link](#))
- Jinsung (Alex) Choi on LinkedIn: Making O-RAN Edge AI Inferencing Service Economically Feasible ([link](#))
- Jinsung (Alex) Choi on LinkedIn: Speed of Thought - Unlocking the Potential of Instantaneous AI ([link](#))
- Jinsung (Alex) Choi on LinkedIn: O-RAN CoPilot - Enabling Words-to-Workflow for Enterprises ([link](#))
- Jinsung (Alex) Choi on LinkedIn: Natural Language, Picture and Code as New Communication APIs between the Agents in O-RAN Intelligent Controller xApps, rApps ([link](#))

🕒 Private Networks

- Private Networks Technology Blog: eBook on Integrating & Operating 5G Use Cases and Managing Multiple Network Technologies ([link](#))

- RCR Wireless - Verizon on enterprise 5G in 2024: 'Everyone is interested' ([link](#))
- Dean Bublely on LinkedIn: "I've seen a lot of analyst attempts to size the market for private & enterprise cellular recently. Some look at contracts, some estimate numbers of sites, others forecast revenues or CAPEX..." ([link](#))

🕒 Telecoms Infrastructure, Small Cells, Antennas & others

- NTT Docomo: Start of Demonstration Experiment for Base Station Power Rescue System Using Electric Vehicles ([link](#))
- James Crawshaw on LinkedIn: "As society increasingly relies on mobile communications, regulators may oblige operators to deploy battery storage at cell sites in case of grid outages. UK telecom regulator Ofcom recently launched a consultation..." ([link](#))
- Peter Claydon on LinkedIn: "An interesting article from Iain Morris: "Ericsson and Intel are at odds on chip vision"..." ([link](#))
- Paul Rhodes on LinkedIn - Thursday School : Put Coverage where users are ([link](#))



**Microwave
Backhaul**

**Large Multi-
Band Antennas**

**Radio and
Baseband Units
Strapped to
Lamppost**

**Smart
poles**

🕒 IoT / M2M / Smart Homes

- RCR Wireless: Glasgow reveals plan to be “Europe’s largest IoT innovation hub” ([link](#))
- RCR Wireless: Airtel to power 20 million smart meters for Adani Energy ([link](#))
- RCR Wireless: Iridium invites IoT community to pitch requirements for its satellite NB-IoT network ([link](#)) – [here](#) is the Iridium PR, “Iridium Unveils Project Stardust; Developing the Only Truly Global, Standards-Based IoT and Direct-to-Device Service”

🕒 Virtualization, Cloud & Edge

- Geoff Hollingworth on LinkedIn - AI's Demand: Shifting Cloud Strategies! ([link](#))

🕒 Security & Privacy

- Ben Ward on LinkedIn: *"Imagine someone has overtightened your nuts and now you face a safety recall. Nozomi Networks Labs have just described DR1LLCRYPT, a viable ransomware attack on a Bosch Rexroth DC Tool. This is the type of nutrunner you might see on an automotive production line assembling safety-critical fastenings..."* ([link](#))
- Ars Technica: A “ridiculously weak” password causes disaster for Spain’s No. 2 mobile carrier ([link](#))
- ICYMI - ETSI releases three Reports on Securing Artificial Intelligence for a secure, transparent and explicable AI system ([link](#))
- Tom's Hardware: Your washing machine could be sending 3.7 GB of data a day ([link](#))

🕒 Connected And Autonomous Vehicles (CAVs)

- CNBC: China’s Xiaomi unveils its first EV as it looks to compete with Porsche, Tesla ([link](#))
- Slightly old but still quite good, "V2X Support in 3GPP Specifications: From 4G to 5G and Beyond" ([link](#))
- Intel Drives ‘AI Everywhere’ into Automotive Market at CES ([link](#))

🕒 Smartphones, Devices, Wearables & Gadgets

- Here are 10 reveals you don't want to miss from CES 2024 event (Twitter [thread](#))
- NVIDIA Reveals Gaming, Creating, Generative AI, Robotics Innovations at CES ([link](#))

🕒 AI, ML & Automation

- Entangled Vibrations - AI Takes Center Stage at CES 2024: A Glimpse into the Future ([link](#))
- Samsung’s ‘AI for All’ Vision Unveiled at CES 2024 ([link](#))
- Jinsung (Alex) Choi on LinkedIn: LLM Grounding for O-RAN Automation ([link](#))
- Jinsung (Alex) Choi on LinkedIn: AI Meets O-RAN - Transforming Network Analytics with the Power of Large Language Models ([link](#))
- Jinsung (Alex) Choi on LinkedIn: AI Meets O-RAN (Part 2) - A Synergy of Language Models and Network Intelligence ([link](#))

🕒 Wi-Fi

- Total Telecom: WSense and ASN eye the creation of ‘underwater Wi-Fi’ network ([link](#))

🕒 Metaverse & Extended Reality (XR)

- The Guardian: Google lays off hundreds in hardware, augmented reality and Assistant divisions ([link](#))

- CES 2024: Siemens delivers innovations in immersive engineering and artificial intelligence to enable the industrial metaverse ([link](#)) – video of keynote is [here](#).

🕒 Sustainability

- Rudolf van der Berg on LinkedIn: "*Utter nonsense is what I call almost everything published on the energy and water consumption of ICT, AI, networks, streaming etc. Almost, because Dag Lundén, Pernilla Bergmark, Jens Malmodin and Nina Lövehagen are one of the few exceptions...*" ([link](#))
- The Guardian: Blinded, sexually assaulted, silenced: the war over lithium, Argentina's 'white gold' ([link](#))
- IEEE Comsoc Technology Blog - CES 2024 major themes: sustainability and "right to repair" user devices ([link](#))
- TelecomTV: BT gets streetwise for the EV era ([link](#))

🕒 Other News and Technology Stuff

- The 3G4G Blog: Technological Complexification and The Return of Magic ([link](#))
- Inside Towers: Expect the Unexpected in 2024 ([link](#))

🕒 **Picture of the week:** This picture was shared by Lance Ulanoff on Twitter [here](#). This looks to me like another attempt for [unvoiced speech communications](#) where you don't want anyone to hear what you say, in addition to XR. I wonder if anyone can wear something like this for more than an hour. Anyway, all these are from [Shiftall Inc.](#) and the [FlipVR](#) (hand controllers) are due to start shipping from April.



Happy to hear your thoughts. Feel free let me know what worked, what didn't, how I can make this better, etc. Get in touch over LinkedIn!

PDF version of this and previous newsletters are available [here](#).