



Mobile & Wireless Roundup #73 (see original on [LinkedIn!](#))

By Zahid Ghadialy

Welcome to the 73rd edition of this newsletter. Many of our friends, colleagues and others in the industry have switched-off for the last week or two of the year when they connect back with their friends and family over the festive season. Years back I used to dread this holiday season because it meant that the shops and the transport would be closed/restricted.

As the diversity in the western world has increased, so has the availability of services and goods over this and other festive seasons. Take for example, a health emergency does not wait for festive season. In past many health professionals were forced to provide emergency cover over the festive season grudgingly, now many are working by choice rather than compulsion.

The 3G4G team will also be working and available during the Christmas break as well as new year. We will enjoy our time off during the two Eid breaks next year.

At present I am working on a few whitepapers, some videos that will end up on our YouTube channel as well as a new video on [TechKnowledge Technology Stories](#) series. For those who know about my adventures with my house extension project, I am hoping to finish building furniture for my office and finally moving in there.

For anyone not getting enough of 6G, I am participating in a webinar on 6G with '6G World' in early January. Details [here](#).

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.



New White Paper

Private 5G for Enterprises Becoming Real

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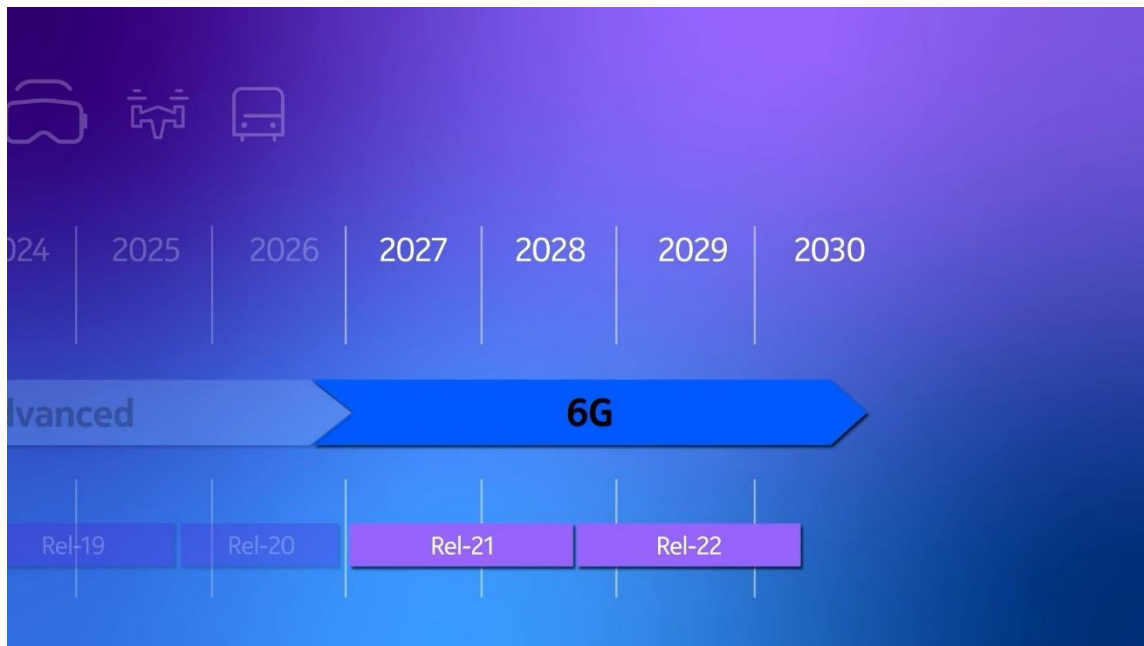
This newsletter is kindly sponsored by Firecell - the Private 5G experts

6G

- Free 6G Training: O-RAN ALLIANCE's nGRG Address the Use Cases, AI/ML and Security Aspects of 6G Mobile Networks ([link](#))
- RCR Wireless: What might 6G be used for? Scenarios from ITU ([link](#))
- Martin Hevezi on LinkedIn: "I find this a little comical. Standards for 6G are in the works and while I personally feel that's very premature, technology always marches forward..." ([link](#)) – a good discussion in comments.

5G

- From 5G-Advanced to 6G: Bridge to the future - short video on 3GPP Release 19 by Matthew Baker, Nokia ([link](#))



- Manoharan Ramalingam on LinkedIn: Fundamental Physical Layer Principles Underlying Uplink Power Control (PC) and Outer Loop Link Adaptation (OLLA) ([link](#))
- 6G World: Integrated Sensing & Communications – Coming to 5G? ([link](#))

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

- Jinsung (Alex) Choi on LinkedIn: Navigating the Lifecycle of O-RAN's near-RT RIC xApps ([link](#))
- Linux Foundation: ONF Merges Market Leading Portfolio of Open Source Networking Projects into the Linux Foundation ([link](#))

- Jinsung (Alex) Choi on LinkedIn: Intelligent Load Balancing and Resource Allocation in O-RAN ([link](#))
- Ericsson: How the O-RAN Alliance R1 interface empowers a global RAN automation community ([link](#))
- Jinsung (Alex) Choi on LinkedIn: Game Theory in O-RAN RIC ([link](#))
- Jinsung (Alex) Choi on LinkedIn: O-RAN Digital Twin - Reinforcement Learning (RL) Model (Policy) Test and Validation ([link](#))

🕒 Spectrum

- MWL: WRC-23 clears additional spectrum for operators ([link](#)) – the original GSMA press release is [here](#).
- Jinsung (Alex) Choi on LinkedIn: AI-enabled Dynamic Spectrum Sharing in O-RAN ([link](#))
- Carlos Cordeiro on LinkedIn: "The International Telecommunication Union's WRC 2023 concluded today. Probably the hottest topic of the Conference was the decision around the upper portion of the 6 GHz band under agenda item 1.2..." ([link](#)) – good discussion as well

🕒 Private Networks

- Private Networks Technology Blog: MPNs for critical infrastructure in Belgium ([link](#))

MPNs for critical infrastructure in Belgium

Robin Leblon, CTO, Citymesh at Uptime 2023, Jun. 2023

Brussels airport
Use cases

Together with Brussels Airport Company we defined 130 use cases for a Mobile Private Network at the airport.

5 mission critical
90 business critical
35 commercial

7 #UPTIME23

#3G4G5G
#PrivateNetworks

- Telia Norway: Posten's private 5G network ensures timely communication ([link](#))
- The 5G Enterprise Revolution Webinar video & slides from GSMA Future Networks ([link](#))

🕒 Telecoms Infrastructure, Small Cells, Antennas & others

- Play, Poland: How does Play set up base stations? ([video](#) – in Polish, no subtitles to translate but good video)
- Paul Rhodes on LinkedIn - Thursday School : Open vRAN ([link](#))

🕒 IoT / M2M / Smart Homes

- RCR Wireless: Sigfox compatibility extends to "whole LoRa / LoRaWAN chipset portfolio" ([link](#))

🕒 Security & Privacy

- SK Telecom and Thales Collaborate on Post-Quantum Cryptography to Enhance Users' Protection on 5G Network ([link](#))

🕒 Connected And Autonomous Vehicles (CAVs)

- 5G connected vehicle and roadside infrastructure for advanced driving maneuvers in a cross-border scenario from Portugal ([link](#))

🕒 Smartphones, Devices, Wearables & Gadgets

- MWL: Samsung extends self-repair to new markets, foldables ([link](#))

🕒 AI, ML & Automation

- Jinsung (Alex) Choi on LinkedIn: AI Revolution in Communication Protocol Standards for Future Mobile Industry - From Deterministic Protocols to Dynamic Intelligent Protocols ([link](#))

ORAN ALLIANCE

Towards Joint Learning of Optimal MAC Signaling and Wireless Channel Access

Alvaro Valcarce, Senior Member, IEEE, and Jakob Hoydis, Senior Member, IEEE

Abstract—Communication protocols are the languages used by network nodes. Before a user equipment (UE) exchanges data with a base station (BS), it must first negotiate the conditions and parameters for that transmission. This negotiation is supported by signaling messages at all layers of the protocol stack. Each year, the telecoms industry defines and standardizes these messages, which are designed by humans during lengthy technical (and often political) debates. Following this standardization effort, the development phase begins, wherein the industry interprets and implements the resulting standards. But is this massive development undertaking the only way to implement a given protocol? We address the question of whether radios can learn a pre-given target protocol as an intermediate

Machine learning can offer continuous wireless enhancements

AI-native air interface design can enable continual system improvements in between major 3GPP releases through self-learning

CURRENT 3GPP RELEASE PROCESS

Release X → Approximately 1.5-year cycle → Release X+1

No standardized improvement during nominal Work/study item phase towards subsequent release

Qualcomm

MAC Protocol

Channel Access Policy | Signaling Vocabulary | Policy

Fig. 1. MAC protocol constituent parts. This paper trains UEs to jointly learn the policies highlighted as dashed blocks.

signaling (i.e., the structure of the protocol data

GUIDING PRINCIPLES

1. 6G mobile network standards must be globally harmonised.
2. 6G must not inherently trigger a hardware refresh of 5G RAN infrastructure. The decision to refresh 5G RAN hardware for operational reasons such as end-of-life, energy consumption or new capabilities must be an operator-driven choice, independent of supporting 6G.
3. 6G introduction must allow certain scenarios to be realised through software-based feature upgrades of existing network elements to meet 6G requirements.
4. 6G must support a wide range of use cases, including enhanced mobile broadband, ultra-reliable low latency communications, and non-terrestrial networks.

6G Position Statement

An Operator View

v1.0

www.ngmn.org

- Justin Paul on Medium - AI Thoughts: The Hitchhikers Guide to AI ([link](#))

🕒 Satellites, HAPS, Drones, UAVs & Space

- Rogers and Lynk Complete Historic Satellite-to-Mobile Phone Call in Canada ([link](#))
- Commsupdate: MTN Group collaborating with four satellite operators to expand Africa's internet connectivity ([link](#))
- SoftBank Corp. Successfully Tests Coverage Area Optimization Technology that Realizes Communication Capacity Maximization for HAPS ([link](#))
- Plum Consulting: Logistical challenges of avoiding collisions between satellites and sleighs ([link](#)) 🤖

🕒 Metaverse & Extended Reality (XR)

- Telefónica and ONCE join forces to create immersive experiences accessible ([link](#))

- DOCOMO Announces World's First Technology that Utilizes Human-Augmentation Platform for Sharing Taste Perceptions Between People ([link](#))

🕒 Sustainability

- Wired: What Happens When Facebook Heats Your Home ([link](#))

🕒 Other News and Technology Stuff

- What are No Mobile Coverage Zones called? ([link](#))
- Ookla: The State of Worldwide Connectivity in 2023 ([link](#))
- Access Partnership - Telecoms and Government Regulators: Top 10 Focus Areas for 2024 ([link](#))

🕒 **Picture of the week:** Some pictures of the first [federally funded mobile radio mast](#) built in Bavaria, the largest German state by land area, comprising roughly a fifth of the total land area of Germany. Bruno Jacobfeuerborn, CEO of Deutsche Funkturm shared them on his LinkedIn post [here](#).



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](#).