

Mobile & Wireless Roundup #79 (see original on [LinkedIn!](#))

By Zahid Ghadialy

Welcome to the 79th edition of this newsletter. Today is '[International Day of Women and Girls in Science](#)'. This week I got a chance to attend a [CW seminar](#) on 'Artificially Intelligent Cities'. Even though this was one of the smaller events, I really enjoyed the whole session and discussions.

The first presentation was itself quite punchy where the speaker explained the difference between Artificial Intelligence (AI) and Machine Learning (ML) which put all the speakers on backfoot as they were all talking about AI but meant ML. The quote that has stayed with me for long time is, "If it is written in Python, it's probably machine learning. If it is written in PowerPoint, it's probably AI"

One of the talks that really impressed me was from a speaker from Nokia. Daniele Quercia talked about how maps can route people according to the things they like. For example, some people wouldn't mind another five minutes being added on to their routes if it will take them through a more scenic route or a route with some fantastic smells, etc. His old lecture on TED talks about some of these things [here](#).

We generally hear a lot of scary stories about AI taking over jobs and getting people out of work. These scare stories are nothing new. Once upon a time creating websites required lots of specialised knowledge and complicated coding. Once low-code/no-code modules came, people predicted that all website designers will be out of job soon. Instead what has happened is that designing websites have become cheaper and faster and their number has grown exponentially. Instead of technology and money being the bottleneck, content has become the bottleneck. Thanks to ChatGPT this problem has also been solved now 😊. I say that once AI becomes easy and available, we will see it being used for all kinds of innovative and informative applications.

For those of you who don't know me, I am a technologist with over 25 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.

MEET US AT

 <div style="background-color: orange; color: white; padding: 5px; margin: 5px 0;">26 - 29 FEB</div> <p>Hall No. 5 Booth No. B41-26</p>	 <div style="background-color: orange; color: white; padding: 5px; margin: 5px 0;">19 - 21 MAR</div> <p>Hall No. 7</p>	 <div style="background-color: orange; color: white; padding: 5px; margin: 5px 0;">25 - 28 MAR</div> <p>Hall No. 5</p>	 <div style="background-color: orange; color: white; padding: 5px; margin: 5px 0;">22 - 26 APRIL</div> <p>Hall No. 14 Booth No. H06</p>
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This newsletter is kindly sponsored by Firecell - the Private 5G experts

6G

- Free 6G Training: Radio Localization and Sensing - the Path from 5G to 6G ([link](#))
- Alok Tripathi on LinkedIn: SK Telecom Develops Key Technology for Low-latency Future Core Network ([link](#))
- China Daily: China Mobile launches the world's first 6G test satellite ([link](#))


5G

- The Korea Times: Stage X to launch 28GHz nationwide network service in 2025 in Korea ([link](#))
- BT Group, Ericsson, and Qualcomm Technologies, Inc. network slicing trial promises new consumer and enterprise capabilities in 5G SA era, including enhanced mobile gaming ([link](#))
- Ericsson, Elisa and Qualcomm hit high speeds for uplink-heavy apps in live 5G Standalone network ([link](#))
- ITU Facts and Figures 2023: Almost 40 per cent of the world's population now covered by 5G ([link](#))
- Tefficient on Twitter: "...which means that @ElisaOyj joins e.g. 3 Austria and the Spanish operators when assigning the "5G+" designation to stand-alone. It's still more popular to use it for 3.5 GHz-based 5G. Also "5G Ultra" means different things to different operators." ([Tweet](#) with photo) – result of a poll on what 5G+ means [here](#).


tefficient

...så nu hittar Marketing på något nytt

5G på 3.5 GHz




5G+
swisscom
Telia Sverige



5G+
ROGERS
ROGERS




5G+
Bell




5G+
AT&T +mmWave
Verizon +mmWave


5G standalone




5G+
Österrike




5G+
Spanien



5G+
Spanien



FULL 5G
Kuwait
Singapore



5G
ULTRA
UK

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

- Jinsung (Alex) Choi on LinkedIn: ToolBox in the O-RAN AI Foundry ([link](#))
- Fierce Wireless: Verizon gives some love to open RAN, marks 130K O-RAN capable radios ([link](#))
- Jinsung (Alex) Choi on LinkedIn: The Fusion of AI, Silicon, and Open RAN Technologies in Wireless Communication ([link](#))
- Ericsson Joins the OpenAirInterface Software Alliance ([link](#))
- Jinsung (Alex) Choi on LinkedIn: AI for Open RAN (O-RAN) Stack ([link](#))
- Paul Rhodes on LinkedIn - Friday Thoughts: Swap or Dilute? ([link](#))

📡 Spectrum

- RCR Wireless: Jio urges Indian government to allocate 6 GHz band for 5G ([link](#))

🏠 Private Networks

- Private Networks Technology Blog: Private 5G at San Sebastian Airport, Spain ([link](#))
- RCR Wireless - Kagan: What if private wireless was better understood by enterprise? ([link](#))

📡 Telecoms Infrastructure, Small Cells, Antennas & others

- The 3G4G Blog: Resilient Timing for Critical National Infrastructure ([link](#))

Mobile Network (TDD) Synchronisation Requirement

- "The cell phase synchronization accuracy measured at BS antenna connectors shall be better than $3 \mu s$ "
- It is normally implemented as a **time requirement** to a **central clock**.
- ITU-T requirements specify this as within $1.5 \mu s$ of a common time reference (G.8271).

Time alignment $\leq 1.5 \mu s$ Central clock Time alignment $\leq 1.5 \mu s$

Phase alignment $\leq 3 \mu s$

* 3GPP TS 38.133, section 7.4.2 3

Typical Mobile Network Deployment Model

5G Core Network Cell-Site Router 5G gNodeB

Existing 5G Existing LTE LTE-TDD 5G-TDD

Secondary Primary

$\geq 1.5 \mu s$ $\geq 1.5 \mu s$

4

Precise Time in Data Centers

- Exponential growth in Transactions Per Second (TPS) require more accurate time stamping
- Thousands of TPS — Network Time Protocol (NTP)
- Millions of TPS — Precision Time Protocol (PTP)
- Time stamping consistency critical across not only servers in a datacenter, also distributed datacenters in a network

200 km fiber

3

Three Elements of Precise Time for Data Centers

1. Secure Time Traceability
Address spoofing and jamming
2. Resiliency and Backup
Address GNSS outages
3. Time Distribution
Throughout the data center

Time Traceability: Server-DBS Time Resiliency: Network Clock Backup Time Distribution: Precision Time Protocol

4

#3G4G5G

5G 3G4G

- Railway Supply: Development of 5G technology on railway infrastructure ([link](#))
- Paul Rhodes on LinkedIn - Thursday School : More Sharing, More Caring ([link](#))

🔒 Security & Privacy

- Getting Started with iOS Penetration Testing — Part 1: The Setup ([link](#))
- CNN: Finance worker pays out \$25 million after video call with deepfake 'chief financial officer' ([link](#))

🕒 Smartphones, Devices, Wearables & Gadgets

- Independent, UK: Apple Vision Pro torn to pieces, and experts find ‘achilles heel’ of new headset ([link](#))
- iFixit on YouTube: Vision Pro Teardown Part 2 - Is the Apple Vision Pro Really 4K? ([video](#))
- Luke Kehoe on LinkedIn: "Apple's Vision Pro is a grandiose demonstration of the continuing importance of Wi-Fi and cellular co-existence in telecoms as a new crop of services emerge that range from static indoor VR/MR use cases to mobility-oriented AR/MR outdoor ones..." ([link](#))
- Worldwide Tablet Shipments Hit Their Lowest Level Since 2011 in 2023, According to IDC ([link](#))

🕒 AI, ML & Automation

- Jinsung (Alex) Choi on LinkedIn - Smart Radio Tech Odyssey: From Cognitive and Software-Defined Radios to 6G's AI-Native Future ([link](#))
- Counterpoint Research: Rapid Transition To L4 Automation Key To Successful 5G Network Monetization ([link](#))
- IEEE Spectrum: Efforts are now underway to standardize development of responsible AI ([link](#))
- Jinsung (Alex) Choi on LinkedIn: AI-Centered O-RAN Network Automation Framework ([link](#))
- James Crawshaw on LinkedIn: "This is a very nice visualization of how a large language model works by software engineer Brendan Bycroft. The nano-gpt model has 85,000 parameters and the walkthrough explains tokenization, embedding, the transformer, self-attention, and all the recursive loops going on in the model..." ([link](#))
- Jinsung (Alex) Choi on LinkedIn - Spreading Intelligence Across Your Network: Deploying AI Chips ([link](#))
- Rakuten Symphony Blog: ‘Intent-aware, programmable, sustainable’: OSS President Rahul Atri’s vision for AI in telco ([link](#)) – a short interview of him on Fierce Wireless [here](#).
- Jinsung (Alex) Choi on LinkedIn: AI for Chip Design ([link](#))

🕒 Connected And Autonomous Vehicles (CAVs)

- A Communication Concept Using 5G for the Automated Driving Monorail Vehicle MONOCAB ([link](#))
- Gia Vang on Twitter: "An autonomous Waymo vehicle is intentionally set on fire in Chinatown, according to SF Fire. Firefighters said they got reports around 10 people were involved..." ([Tweet](#) with video)

🕒 Satellites, HAPS, Drones, UAVs & Space

- MWL: NTN providers form satellite industry association Mobile Satellite Services Association (MSSA) ([link](#))
- New Book - 5G Non-Terrestrial Networks: Technologies, Standards, and System Design ([link](#))

🕒 Wi-Fi

- All About Circuits: Wi-Fi Certified 7 Is Here. A Wave of Qualified Products Follow Suit ([link](#))
- WBA - Wi-Fi 7: Low Latency, High Reliability, and Extremely High Throughput ([link](#))

🕒 **Metaverse & Extended Reality (XR)**

- BIS Papers, No 144: The economic implications of services in the metaverse ([link](#))

🕒 **Sustainability**

- Operator Watch Blog: 6 Mobile Operators in the Global 100 Ranking of the World's Most Sustainable Companies ([link](#))
- Orange Business launches Circular Mobility offer in France to reduce carbon footprint of mobile fleets, with AFNOR-certified calculation method ([link](#))
- USA Today: They hoped solar panels would secure the future of their farm. Then their neighbors found out ([link](#))

🕒 **Other News and Technology Stuff**

- A Quick Introduction to 3GPP ([link](#))
- Telecoms Outlook 2024: Stepping into the future by ING Bank N.V ([link](#))
- TIME: A Texas Town's Misery Underscores the Impact of Bitcoin Mines Across the U.S. ([link](#))
- Reuters Insight: China bets on open-source chips as US export controls mount ([link](#))

🕒 **Picture of the week:** A snowed-in mast shared by Vodafone Germany on LinkedIn [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](#).