*Guest Editorial by Szymon Slupik, CTO, Silvair*

Every couple of days I'm asked about the future of wireless standards. How is the landscape going to look like a couple of years from now? Companies are placing their bets. The conventional wisdom has been the number of wireless standards would never be reduced. I strongly disagree with this view.

Actually within a few years we may be down to just four. While there are always niche applications requiring some specific radio features, the majority of applications will converge around these radio families:

1. **LTE / 5G for anything outdoor. Mobile telephony, mobile wide area data (high speed and low speed).**
2. **WiFi for generic purpose indoor Internet access for high power devices (such as phones or personal computers).**
3. **WiGig for ultra high bandwidth applications such as wireless displays and wireless storage (this may include digital cameras if the industry gets together and defines application profiles, which it should have done 15 years ago).**
4. **Bluetooth for anything that is defined as low power (including portable audio, hearing aids, accessories and the galaxy of small or even smaller devices collectively know as the IoT, which will fill the buildings).**

Now I'm not saying that **LoRa** and **Sigfox** will cease to exist. Nor will **802.15.4, Z-Wave, ANT, UWB** and a bunch of others. But they will have a hard time growing or even maintaining their market share and will be pushed to serve niche applications.
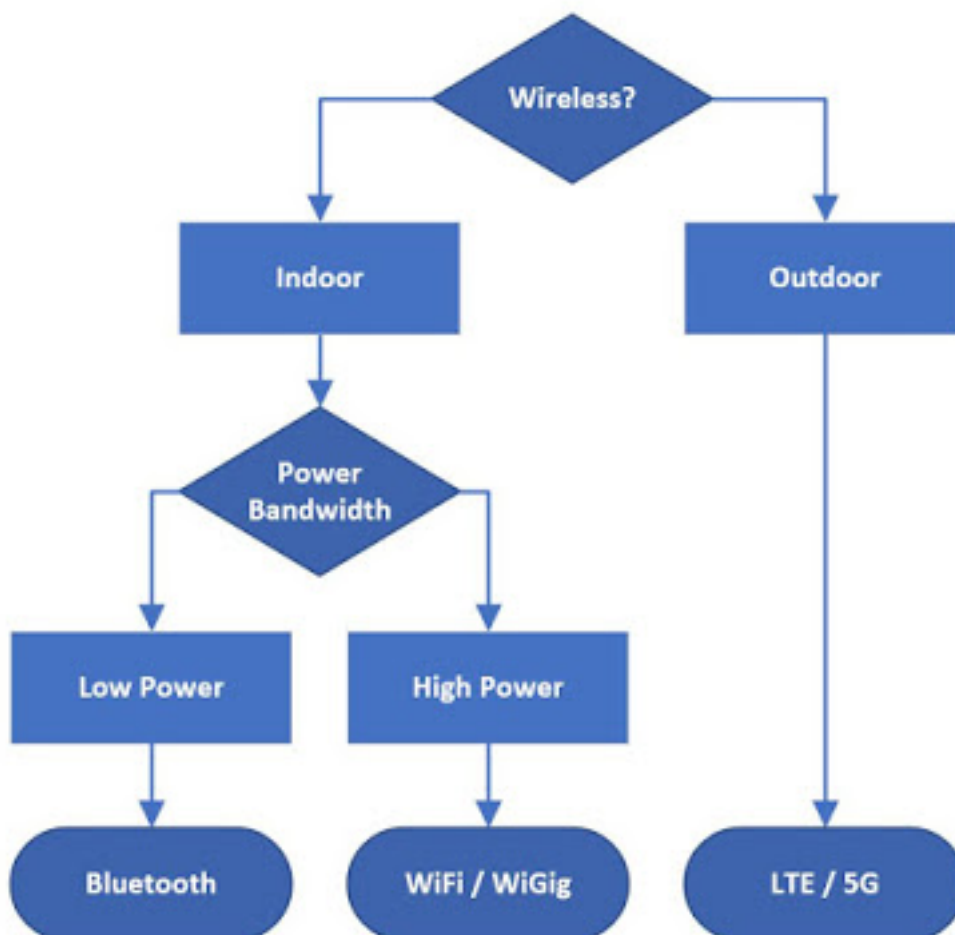
The reason is simple. Every wireless device at some point benefits from being able to connect to a mobile phone. For commissioning, diagnostics, proximity interaction... plenty of reasons. And there is only so much space on the phone motherboard that vendors are fighting for every tiny piece of it removing (considered valuable) components like 3.5mm headphone jacks. Also there is very little, if anything. not covered by the four.

A phone already has LTE and WiFi and Bluetooth. It will have WiGig in future, because WiFi is too slow for the upcoming mainstream use cases like virtual reality displays. This combo of four radios can today do everything any other radio can do. There is absolutely no reason to add anything else. Especially after Bluetooth has matched (and surpassed) the mesh networking skills of ANT and 802.15.4. And there is no way to convince Apple or Samsung or Qualcomm or Intel to stick anything else into their devices and chipsets either.

If there is anything missing, companies will rather get together and spin an improved variant of one of the four than propose something else. This was exactly the case with Bluetooth mesh: we could either pray to, say, Samsung, to build a 15.4 chip into a phone or define a mesh standard that works on any Bluetooth chip that is out there already. Solving a couple of other fundamental mesh-related problems on the way.

*Szymon Slupik is CTO at **Silvair**, developers of an end-to-end smart lighting platform for commissioning and managing large-scale connected lighting systems in commercial spaces. He also serves as Chair of the Mesh Working Group at Bluetooth SIG, where his Working Group was recently awarded* **2017 Working Group of the Year** *.*

*Slupik was also awarded **2017 Committee Chair of the Year** and **2017 Outstanding Technical Contributor of the Year***
. In giving the award for Outstanding Technical Contributor, the Bluetooth SIG noted in its announcement, "Szymon has been the leading contributor and author of the mesh model specification, delivering extremely deep and well thought architecture that has been fundamental to the success of mesh. He has been a co-author of the ground-breaking concept of Mesh Device Properties. On other fronts Szymon has contributed to upcoming significant performance improvements of Bluetooth mesh networking via enhancement proposals to the Bluetooth Core Specification. Szymon has also authored the Beacons for Channel indication and beacon management FRDs. Finally, Szymon led the effort to create the Mesh Professional Lighting Subgroup and has been the co-author and contributor to the IEC 62386 (DALI) Model FRD."

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