

What is open RAN and where are we at in 2021?

As industry projections suggest that proprietary vRAN provided by traditional vendors will continue to dominate the industry in the near term, this article highlights the key open RAN developments in 2020 and gives an overview of the current state of the industry on deploying open RAN.

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Open RAN enthusiasm hit an inflection point in 2020…

"Open RAN" – a catchall term for various technologies that involve disaggregation of hardware and software radio access network (RAN) components – can be characterised by three key pillars: centralisation (C-RAN), virtualisation (vRAN), and disaggregation (open-RAN).[1]

In a year that saw the ramp-up of 5G commercial rollouts and mandates to rip and replace 5G equipment from certain vendors, open RAN has gained a lot of momentum in the telecoms industry. Operators – incumbents and challengers alike – have shown interest in starting field trials, pilots, and even commercial deployments of open RAN. Vodafone has committed to deploying open RAN in at least 2,600 rural locations in the UK by 2027, and announced that it would open a number of R&D labs across Europe. Meanwhile, Japanese new-entrant Rakuten Mobile ratified its alignment to the O-RAN Alliance, having deployed the world's first cloud-native 5G network with a multi-vendor approach.[2] As much as a third of the overall spend on RAN components and services by 2026 – around US$11 billion – is estimated by Appledore to be investment in open RAN.

Figure 1: Three pillars of open RAN

	C-RAN "Centralisation"	vRAN "Virtualisation"	Open-RAN "Disaggregation"
Baseband hardware	Proprietary BBU Centralised	**COTS-based BBU** May be centralised	
Baseband software	Proprietary software	**Virtualised functions** Proprietary software	
Radio hardware	Proprietary RRU		**COTS-based RRU**
Fronthaul (BBU-RRU) interface	Proprietary interface		**Open interface**
Interoperability	Baseband HW/SW and radios must come from the same vendor	Baseband SW and radios must come from the same vendor	**Baseband HW/SW and radios can come from multiple vendors**

Source: STL Partners

[1] For a detailed breakdown of these from STL Partners, see Why do open RAN? C-RAN, vRAN & open-RAN.
[2] While Rakuten's network was not built on O-RAN standards, the operator has said that their open, virtualised architecture would enable it to easily transition from RAN to O-RAN through a software upgrade.

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...but most deployments are far from the open RAN vision

The hype behind open RAN has largely circled around the promise of the third pillar – "disaggregation" or "open-RAN" – this is the ultimate ambition for operators, but open-RAN deployments are still nascent, meaning that its full benefits may not be realised until 6G. For many operators, vRAN will serve as a stepping stone in the near term. Analyst predictions even signal that single-vendor vRAN solutions will prevail: 80% of the projected US$11b budget for open RAN is expected to go to traditional incumbent vendors who will offer pre-integrated, proprietary vRAN solutions that contain some internal open interfaces.

How should operators deploy open RAN?

To find out more about Open RAN and different deployment roadmaps for telcos, check out STL Partner's Open RAN: What should telcos do? report.

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