



PRIVATE NETWORKS & NEUTRAL HOST

Five questions about private networks and neutral host

The shared band at 3.5 GHz was sold as the home of the private network, and mobile and cable operators paid 86% of the money. Fewer than one radio in twenty is indoors, the one vendor that counts its customers has put the unit up for sale, and the FCC has had the rules open for two years without deciding. Read the five parts to find out:

1. how CBRS is shared, who holds it and how much of it is used
2. who sells, runs and buys private networks and what they run on
3. what coverage inside a building costs and who pays for it
4. which decisions about the shared band are open and who is asking for what
5. how an enterprise should choose between Wi-Fi 7, private 5G, a neutral host and a carrier programme

About this ebook

This ebook collects the five parts of *Private Networks & Neutral Host*, published by Blue Prysm at www.blueprysm.com/analysis/.

The website carries the current edition. Where a figure here differs from the website, the website is the later version.

EDITION

First edition, October 2026

DATA AS OF

PART 1 FCC licence file of 4 Oct 2026 · rules, notices, filings and releases read 7 Oct 2026

PART 2 SEC filings to 16 Sep 2026 · GSA data to 22 Sep 2026 · pages and filings read 7 Oct 2026

PART 3 SEC filings to 1 May 2026 · trade press to 11 Jun 2026 · standards and pages read 7 Oct 2026

PART 4 GN Docket 17-258 listing and FCC documents read 7 Oct 2026

PART 5 parts 1 to 4 as read 7 Oct 2026 · Dell'Oro to 10 Sep 2026 · Apple pages read 7 Oct 2026

Method version 1.0

PUBLISHED BY

Blue Prysm LLC, Florida, United States · www.blueprysm.com · hello@blueprysm.com

© 2026 Blue Prysm. Free to use and adapt; attribution with a link to www.blueprysm.com is asked for, not required. Quotations from third-party documents remain the property of their authors and are cited where they appear.

Nothing in this ebook is legal, financial or investment advice.

Errors can be reported at www.blueprysm.com/contact/.

Contents

PART 01

How CBRS is shared

5

Who holds the shared band, on what terms, and how much of it is used?

Auction 105 sold **20,625** county licences for **\$4.59B** gross, and five companies, Verizon, EchoStar, Charter, Comcast and Cox, paid 86.0% of it. The twenty utilities, energy producers, education bodies and Deere that also won paid 4.0%. Of the 20,185 licences still active, **17,460** expire and must show service on **12 March 2031**. On NTIA's last count there were 400,403 radios in the band, and **4.4%** of them were indoors.

PART 02

Who builds private networks

16

Who sells, runs and buys private cellular networks, and what do they run on?

Nokia counted **over 1,000** private wireless customers at the end of 2025, up from over 560 in 2022, and seven months later classified its Enterprise Campus Edge unit as discontinued operations. AWS and Microsoft retired their private 5G services in 2025. The only contract values anyone has filed belong to the utilities: Anterix holds **12** agreements with 11 of them, worth **\$413.1M**, for 900 MHz broadband. No national carrier discloses a private-network count or a revenue line.

PART 03

Who pays for coverage nobody owns

27

What does coverage inside a building cost, who pays for it now, and who decides whether it carries the public?

At 3.625 GHz the median building entry loss is **15.8 dB** for a traditional building and **30.9 dB** for a thermally efficient one, and at 700 MHz the efficient building is worse still, at 31.6 dB. Crown Castle sold its small cells and fibre for **\$8.5B** on 1 May 2026 after about \$6.5B of write-downs. The owner now pays, and on CBRS only AT&T fully supports a third-party neutral host, as reported.

PART 04

The rules that decide the shared band

37

Which decisions about the shared band are open, who is asking for what, and what would change for its users?

The FCC's CBRS notice of **16 August 2024** has produced no order. Verizon asks for a 62 dBm class, **15 dB** above today's ceiling, which is the same 15 dB that separates a traditional building from a thermally efficient one at CBRS frequencies. AT&T's plan to move users to 3.1 to 3.3 GHz runs into a statute that withholds auction authority from that band while leaving 3.55 to 3.7 GHz unprotected. At 6 GHz the FCC widened unlicensed use in January 2026.

PART 05

What an enterprise should decide

Wi-Fi 7, private 5G, a neutral host or a carrier programme: which, for what, and on what evidence?

Classify the building first: a thermally efficient one is 15 dB or more harder to enter, and nothing outside it can be relied on. For devices you own, use **Wi-Fi 7** unless you can name a mobility, vehicle or own-channel need it does not meet. Put only that need on private 5G, with a payback that ends before the CBRS rules can change. For phones you do not

own, the carriers decide: a **CBRS neutral host** if AT&T's customers suffice, a **licensed carrier programme** you pay for if Verizon's or T-Mobile's matter.

Work with Blue Prysm

How CBRs is shared

Who holds the shared band, on what terms, and how much of it is used?

The band at 3.55 to 3.7 GHz is 150 MHz wide and three tiers of user share it, with a database rather than a licence deciding which radio may transmit at any given moment. When the county licences were sold in 2020, mobile and cable operators paid 86% of the money. Most of those licences expire, and must show service, on a single day in March 2031. Although the band is described as the home of the private network, fewer than one radio in twenty is indoors.

BLUE PRYSM · ANALYSIS



IN BRIEF

- Five companies paid for the band. Verizon, EchoStar (bidding as Wetterhorn Wireless), Charter, Comcast and Cox put up **86.0%** of the \$4,585.7 million bid in Auction 105 in 2020 (FCC DA 20-1009). The eleven utilities, four oil and gas producers, four education bodies and Deere that also won paid 4.0% between them.
- Of the 20,185 Priority Access Licences active on 4 October 2026, **17,460**, or 86.5%, expire on **12 March 2031**. Each must show substantial service by that day, and the only evidence the FCC accepts is radios registered with a database. A licence that cannot show it lapses without any further action by the Commission.
- Six databases run the band. Federated Wireless is the largest on every published figure, with a share put at anywhere from 45% to 83%. Google's database closes on 10 June 2027.
- On NTIA's count of 1 July 2024 there were 400,403 radios in the band, and **17,795** of them, or 4.4%, were indoors. A holder of an unbuilt county licence has until March 2031 to build, lease or sell it.

A database decides which radio may transmit

Part 96 of the FCC’s rules splits 3550 to 3700 MHz among three tiers of user. What makes the band unusual is that no radio may transmit until a Spectrum Access System, a database run by a private company the FCC has certified, has given it a channel and a power level (Exhibit 1).

Federal users come first: every other radio “must not cause harmful interference to and must accept interference from” them (§ 96.15). Below the federal tier come the Priority Access Licences, which the FCC sells at auction. Each one is a single 10 MHz channel in the lower 100 MHz of the band, in a single county. Below those again is General Authorized Access, which anyone with certified equipment may use without a licence. A GAA radio may take any channel the database finds idle, including a PAL channel its holder has not built, and in return it gets no protection from the other GAA radios around it.

The top 50 MHz is kept for GAA, and no county may carry more than seven PALs, so GAA is never left with less than 80 MHz. The Commission said as much in 2015 and again in 2018. Both licensed tiers share one set of power limits. A Category A radio may transmit 30 dBm per 10 MHz, which is a watt; a Category B radio 47 dBm, which is about 50 W; and an end-user device 23 dBm. When a federal signal is detected, the database has 300 seconds to move or silence every radio nearby (§ 96.15(a)(4)).

EXHIBIT 1

Three tiers share the band, and each lower tier accepts interference from the one above

TIER	WHO	WHERE IN THE BAND	PROTECTION
Incumbent	Federal users, satellite earth stations, grandfathered licensees	Protection areas set with NTIA	From both other tiers
Priority Access (PAL)	Auction winners: 10 MHz, one county, ten years	3550 to 3650 MHz; up to 7 per county, 4 per holder	From GAA, inside its protection area
General Authorized Access (GAA)	Anyone with certified equipment	3550 to 3700 MHz; top 50 MHz GAA only	None from other GAA users

Power limits are maximum EIRP per 10 MHz: Category A 30 dBm (1 W), Category B 47 dBm (about 50 W), end-user devices 23 dBm. On 1 July 2024 only 1.4% of Category A radios were outdoors (NTIA).

Source: 47 CFR §§ 96.11, 96.13, 96.15, 96.25, 96.31, 96.35 and 96.41, eCFR current at 1 October 2026; FCC 15-47 (21 April 2015) and FCC 18-149 (24 October 2018); NTIA Report 25-575 (November 2024) (Filed).

One of the six databases is far larger than the rest

The FCC certifies the companies that run a Spectrum Access System for five years at a time. Eight have been certified since the band opened; in March 2026 the Wireless Bureau wrote that “six of the SASs still operate today” (DA 26-280). One of the six is leaving. Google, among the first four certified, stopped taking customers on 10 June 2026 and closes its database on 10 June 2027 (Exhibit 2).

EXHIBIT 2

Eight databases were certified, six operate, and Federated Wireless is the largest on every published share

ADMINISTRATOR	CERTIFIED	POSITION AT 7 OCT 2026
Federated Wireless	27 Jan 2020 (DA 20-110)	Renewed to 27 Jan 2030. Said it served over 75% of the band in September 2025; Fierce put it at about 83% and 397,034 devices in June 2026; its chief executive told SDxCentral about 45% of more than 400,000
Google	27 Jan 2020	Renewed to 27 Jan 2030; no new customers from 10 Jun 2026; closes 10 Jun 2027
Sony	27 Jan 2020	Renewed to 27 Jan 2030; named by Google as a migration option
CommScope, now ANDREW (Amphenol)	27 Jan 2020	Renewed to 27 Jan 2030; SAS service discontinued from 31 May 2022, as reported; keeps a joint sensor network with Google
Key Bridge Wireless	9 Mar 2021	Renewed to 9 Mar 2031 (DA 26-280); also runs a sensor network
RED Technologies	22 Sep 2023 (DA 23-893)	Operating; five-year term
Nokia	15 Dec 2025 (DA 25-1057)	Operating; five-year term
Amdocs	2020	Did not renew, as reported in April 2025

Certifications and renewals are FCC notices. Shares, exits and the Google dates are company statements as published or reported.

Source: DA 20-110, DA 23-893, DA 25-131, DA 25-1057 and DA 26-280 (Filed); Google Cloud deprecation notice; Federated Wireless release, 30 September 2025; Fierce Network, 1 April 2022 and 10 June 2026; SDxCentral, 11 June 2026; Light Reading, 25 April 2025 (Reported; Compiled).

Three points follow from the table.

- **Share.** Federated's share of the band is large and unmeasured. The company said over 75% in September 2025, Fierce put it at about 83% in June 2026, and its chief executive told SDxCentral about 45%. No figure from outside the databases narrows that range.
- **Migration.** Every customer Google has must move, to Federated or to one of the other four operating databases, before 10 June 2027.
- **Certification.** The FCC renewed CommScope's certificate after the company had stopped selling the service. A certificate shows that a company may run a database; it says nothing about whether it does.

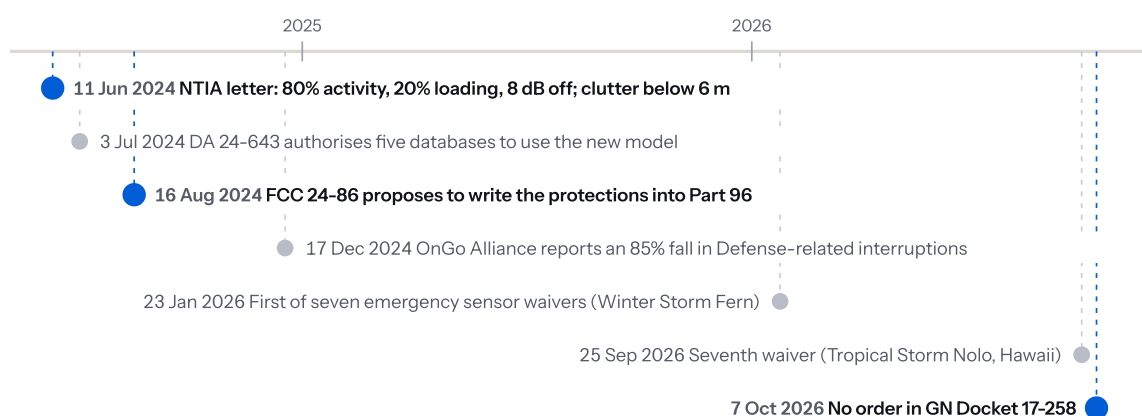
No rule has followed the 2024 letter that loosened federal protection

Federal protection is calculated, and the inputs to the calculation decide how many radios around a protected site must be turned down. On 11 June 2024 NTIA wrote to the FCC and changed two of them. The databases may now assume that a radio transmits 80% of the time at 20% loading, which takes 8 dB off the power used in the interference calculation, and they may count the loss from clutter for any radio mounted at or below 6 metres. The FCC authorised five databases, Federated, Google, Key Bridge, RED and Sony, to use the new model on 3 July 2024 (DA 24-643). NTIA estimated that the databases could serve about 72 million more people, some 240 million in all, “without periodic service adjustments”.

The industry reported a large effect within six months. In December 2024 the OnGo Alliance said that interruptions caused by Defense activity had fallen by 85%, and that an indoor radio below 6 metres was now exempt from pre-emption across 97% of the country. The sensor networks still have to work. Between 23 January and 25 September 2026 the Bureau granted Federated seven emergency waivers of its sensor rules, one each time a storm approached (Exhibit 3). The first was for Winter Storm Fern on the East Coast and the seventh for Tropical Storm Nolo in Hawaii.

EXHIBIT 3

The protections most users of the band now rely on rest on a letter and two notices, and the rule that would fix them has not been adopted



Source: NTIA letter to the FCC, 11 June 2024; DA 24-553 and DA 24-643; FCC 24-86 (adopted 5 August, released 16 August 2024); DA 26-73 to DA 26-1031 (Filed); OnGo Alliance release, 17 December 2024 (Reported); ECFS listing of GN Docket 17-258 read 7 October 2026. Note: all seven waivers were granted to Federated Wireless.

The changes that cut interruptions for most users of the band rest on a letter from NTIA and two Bureau notices. The rulemaking that would write them into Part 96, [FCC 24-86](#) of August 2024, has produced no order in more than two years. We would expect a user to want that settled before investing; [part 4](#) sets out what else the same notice holds open.

Mobile and cable operators paid 86% of what the county licences cost

The FCC sold the Priority Access Licences in Auction 105, which ran from 23 July to 25 August 2020. The closing notice of 2 September lists every bidder with what it won and what it paid.

Of 271 qualified bidders, 228 won something. Between them they took 20,625 of the 22,631 licences on offer, which is 91.1%, for **\$4,585,663,345** in gross bids and \$4,543,232,339 after bidding credits. The licences were seven in each of 3,233 county areas. Per unit of spectrum and population the price was low. A PAL cost \$0.198 per MHz-POP per licence, against \$0.852 for the C-band and \$0.662 for 3.45 GHz, less than a quarter of the C-band price ([direct-to-device part 4](#)). The [spectrum cost tool](#) breaks it down county by county.

\$4.59B GROSS BIDS, AUCTION 105	20,625 LICENCES SOLD OF 22,631	228 WINNERS OF 271 QUALIFIED
41.3% PAID BY VERIZON		

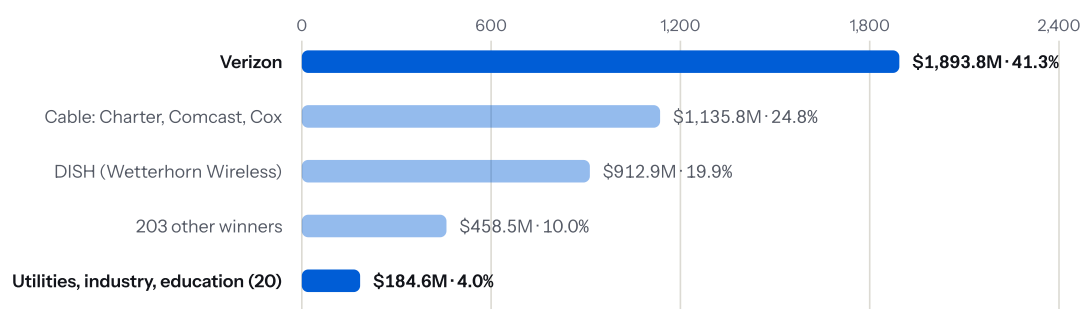
FILED

FCC DA 20-1009, 2 Sep 2020, and Attachment A; FCC Auction 105 page

Five companies paid 86.0% of the gross between them, and they bought for different reasons (Exhibit 4). Verizon took 557 licences in 157 counties at about \$3.4 million each, adding capacity where its traffic already is. DISH, bidding as Wetterhorn Wireless, took 5,492 licences in 3,128 counties at about \$166,000 each to buy a national footprint cheaply. The three cable companies, Charter, Comcast and Cox, paid \$1.14 billion between them, 24.8% of the total. Charter’s 10-K says it will run its 210 licences alongside GAA spectrum on small cells, for a data-only mobile network of its own.

EXHIBIT 4

Verizon, DISH and three cable companies paid 86.0% of Auction 105, and the twenty enterprise winners paid 4.0%



Source: FCC DA 20-1009 Attachment A, 2 September 2020, all 271 bidder rows parsed; groups and shares calculated by Blue Prysm (Calculated). Note: gross bids in millions of dollars; total \$4,585.7 million from 228 winners. Charter is identified from its FY2025 10-K, Wetterhorn and Comcast from their FCC licence records.

THE TWENTY ENTERPRISE WINNERS

Twenty of the winners were enterprises buying for their own use. Between them they won 563 licences for \$184.6 million, which is 4.0% of the gross.

Eleven utilities. Southern California Edison was the largest, paying \$119.0 million for 20 licences in 15 counties, 2.6% of the whole auction on its own. Alabama Power, by contrast, bought 271 licences for \$18.9 million. The rest are SDG&E, Hawaiian Electric, NorthWestern, Tampa Electric, Muscatine Power and Water and four electric cooperatives.

Four oil and gas producers. Oxy, Pioneer Natural Resources, Chevron and EOG.

One manufacturer. Deere & Company, with five licences.

Four education bodies. The Virginia Tech and University of Virginia foundations, Texas A&M and a Michigan school service agency.

All but Alabama Power and NorthWestern bought 31 county licences or fewer, and they bought where they operate. AT&T qualified to bid and won nothing; T-Mobile won eight licences.

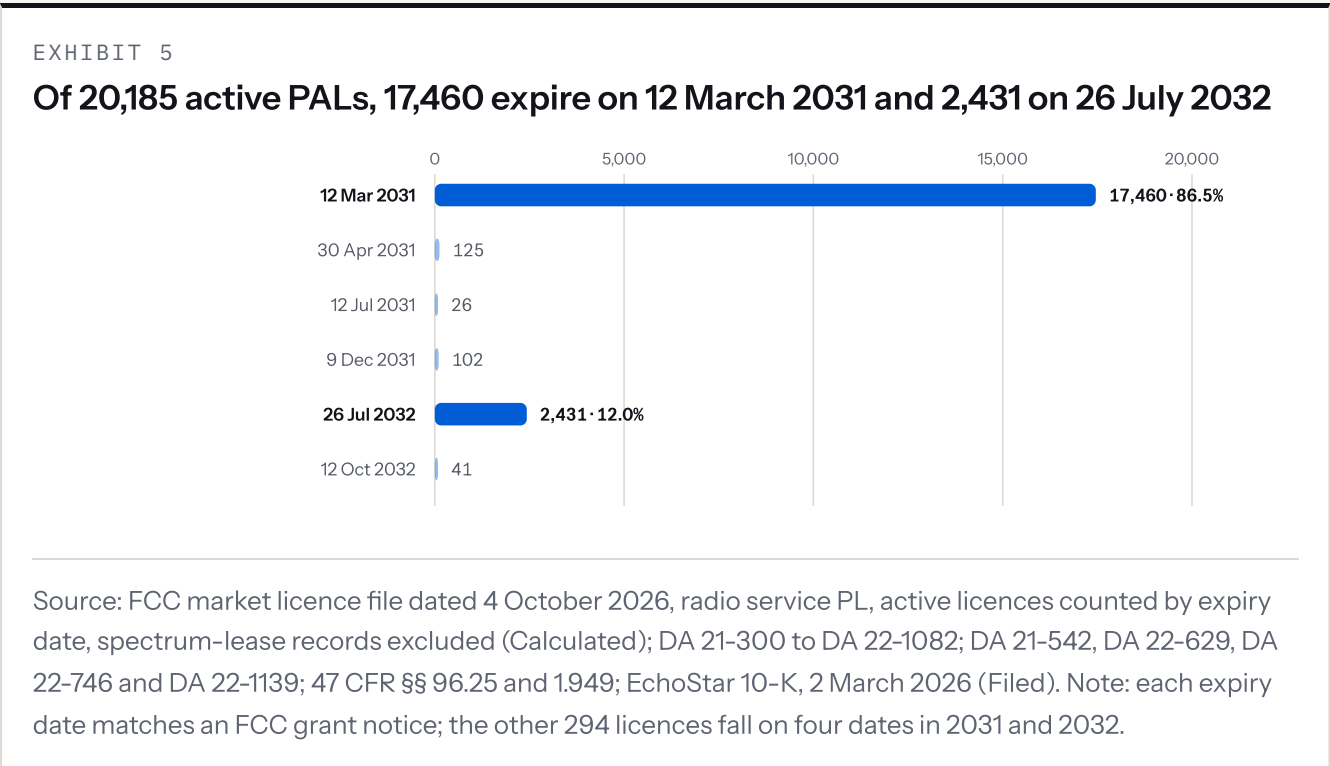
Mobile and cable operators decided the PAL market. Verizon, DISH, Charter, Comcast and Cox paid 86.0% of the gross. The twenty utilities, energy producers, education bodies and Deere, the buyers the band is usually said to be for, paid 4.0%.

Most of the band’s licences come up for renewal on one day in March 2031

A PAL runs for ten years, and at the end of the term its holder must show substantial service or lose it. Because nearly all of the licences were issued on the same day, nearly all of them reach that test together.

The Wireless Bureau issued 17,450 licences on 12 March 2021 (DA 21-300) and 2,725 more in five notices running to October 2022, a total of 20,175. That leaves 450 of the 20,625 sold that were never issued. Some belong to bidders who missed payment deadlines and had their applications dismissed, among them the 122 won by LocalLoop and the 42 won by Hilliary Acquisition. Others Cable One gave up to stay within the cap of four licences per county.

The FCC’s licence file of 4 October 2026 holds 20,185 active PALs. Of those, **17,460**, or 86.5%, expire on **12 March 2031**: 17,448 of the licences issued that day in 2021 and 12 issued since on the same term (Exhibit 5). A second, smaller cohort of 2,431, issued on 26 July 2022, runs to 26 July 2032. The largest holder carries the date in its accounts. EchoStar’s FY2025 10-K records its PALs at \$912.2 million with a final build-out date of “March 12, 2031”.



Three rules meet on that day.

- **Renewal.** Under § 1.949 a holder may apply no sooner than 90 days before expiry, so the window opens on 12 December 2030. It must show that the licence has been used to serve the public or to carry the holder's own communications.
- **Build-out.** Under § 96.25(b)(4) a holder must provide substantial service by the end of the term or forfeit the licence "without further Commission action". No decision is needed; the licence lapses on its own.
- **Evidence.** The safe harbour for a mobile service is coverage of half the county's population, and the only evidence the FCC will look at is radios registered with a database. A licence with no registered radios has nothing to show.

The file shows 304 distinct active holders. EchoStar's Wetterhorn has 5,491 licences, 27.2% of the total. SAL Spectrum holds 1,424, AMG Technology Investment Group 1,068, and Uniti Services the 1,014 that Windstream won. Comcast has 830, NE Colorado Cellular 558 and Verizon 557. AT&T holds none and T-Mobile two.

Of the 20,185 PALs still active, 17,460 (86.5%) expire on 12 March 2031. Their build-out showing falls on the same day, and the FCC accepts only radios registered with a Spectrum Access System as evidence. A licence bought in 2020 and left unbuilt has a little over four years to be built, leased or sold.

Most of the radios are outdoors and on the open tier

The only count of the band's radios with a stated definition is NTIA's, built from the databases' own records and ending on 1 July 2024 (Exhibit 6).

EXHIBIT 6

On NTIA's last count, 95.5% of CBRS radios were the higher-power class and 4.4% were indoors

RADIOS (CBSDS)	1 APR 2021	1 JAN 2023	1 JUL 2024	SHARE, JUL 2024
All active	129,782	287,033	400,403	100%
Category B, the higher-power class	128,668	276,488	382,360	95.5%
Indoor	906	10,084	17,795	4.4%
GAA grants only	129,782	230,504	285,721	71.4%
With a PAL grant	0	56,529	114,682	28.6%
5G NR	0	17,065	47,628	11.9%
Neither LTE nor 5G NR	81,585	150,179	211,215	52.8%
In rural census blocks	103,768	206,108	270,418	67.5%

“With a PAL grant” adds NTIA’s PAL-only and mixed counts; 82.2% of radios with a PAL grant also held a GAA grant. On 1 July 2024, 82.7% of American counties used at least one CBRS channel and 41% used all fifteen.

Source: NTIA Report 25-575, An Analysis of Aggregate CBRS SAS Data from April 2021 to July 2024, November 2024 (Filed); shares calculated by Blue Prism (Calculated).

The last column of the table shows what the band is mainly used for. Nineteen radios in twenty are the higher-power class. Two in three are in rural census blocks, seven in ten hold only GAA grants, and more than half run an air interface that is neither LTE nor 5G NR. That profile is outdoor fixed wireless, with carrier capacity layered on top. CTIA, the carriers’ association, read the report the same way in December 2024.

Growth has slowed. The databases added 95,692 radios in 2022, 78,058 in 2023 and 35,312 in the first half of 2024, a pace a little below 2023 and well below 2022. Later totals of 422,000 to 450,000, published by advocates in 2026, use definitions of their own and cannot be set beside NTIA’s.

Indoor radios were 17,795 of 400,403 on the last neutral count, or 4.4%. The in-building enterprise use the band is so often described by is its smallest part; [part 2](#) and [part 3](#) take it up. One caution applies to every figure in this section: a radio count measures devices and says nothing about networks, users or traffic.

Terms used

- **SAS, Spectrum Access System.** A database run by an FCC-certified company that registers every radio in the band and grants it a channel and a power level.
- **ESC, Environmental Sensing Capability.** A network of sensors that detects federal radar and tells the SAS to move or silence radios nearby.
- **DPA, Dynamic Protection Area.** A pre-defined area offshore or around a federal site, activated when federal radar is present. Radios nearby may be moved, turned down or switched off.
- **CBSD, Citizens Broadband Radio Service Device.** A base station or fixed customer radio registered with a SAS, in a low-power Category A or a higher-power Category B. Phones are not CBSDs.
- **PAL Protection Area.** The area around a PAL holder's registered radios, bounded by a -96 dBm/10 MHz contour by default, inside which GAA users must not interfere with it.

Implications

ENTERPRISE OR BUILDING OWNER

Ask which database your integrator chose: a GAA network's right to transmit comes from that database alone, and Google's closes on 10 June 2027. If you hold PALs, treat 12 March 2031 as both your renewal date and your build-out deadline, and remember that the FCC accepts only database-registered radios as evidence of service.

CARRIER STRATEGIST

Plan for county licences to change hands before March 2031. Five companies paid 86.0% of the PAL money, and 86.5% of the licences come due on one day. Holders who have not built by then must build, lease or sell, and the window for doing any of the three is now a little over four years.

INVESTOR

Treat a CBSD count as a count of radios, most of them outdoor fixed wireless, and never as a count of private networks or of traffic. Watch the database layer, where the largest company's published share runs anywhere from 45% to 83% and Google's customers must move by June 2027, and watch 12 March 2031, the date EchoStar's \$912.2 million of PALs is held against.

Method and limits

HOW THIS WAS BUILT

Tiers, power limits, licence term and renewal standard are taken from Part 96 and § 1.949 as current on 1 October 2026. The auction figures come from all 271 rows of the closing notice and its Attachment A, parsed and grouped by winner; the parse reproduces the notice's totals. Wetterhorn's licence records give a DISH contact, and EchoStar's 10-K records \$912.2 million of these licences; Charter's 10-K names its 210 licences, and Comcast is identified by the holder name and contact its 830 licences now carry. The enterprise group is the 20 winners that are utilities, oil and gas producers, a manufacturer or education bodies. Shares are of gross bids.

Licence counts and expiry dates come from the FCC's market licence file dated 4 October 2026, radio service PL, active licences only. The 213 spectrum-lease records the file holds under the same service code are excluded. Counted by grant date, the licences reproduce the FCC's six grant notices. Radio counts come from NTIA Report 25-575, the only count with a stated definition.

WHAT IT DOES NOT SHOW

The FCC's notices name the bidders behind some, not all, of the 450 licences sold but never issued. Three of the larger winners, AMG Technology Investment Group, SAL Spectrum and SEAD, are not identified. The published database shares come from the company and the trade press and run from 45% to 83%, too wide a spread to call a measurement. NTIA's count ends on 1 July 2024; the later totals come from advocates and use other definitions. A radio count measures devices; it does not measure networks, users or traffic.

Data as of: FCC licence file of 4 Oct 2026 · rules, notices, filings and releases read 7 Oct 2026 · Method version 1.0.

Sources. The rules: 47 CFR Part 96 and § 1.949 as current on 1 Oct 2026, with the orders FCC 15-47 and FCC 18-149. The auction: closing notice DA 20-1009 and its Attachment A, the auction page, the grant notices DA 21-300 and, the last of five more, DA 22-1082, and the default and aggregation orders DA 21-542, DA 22-629, DA 22-746 and DA 22-1139. The licences: the FCC's market licence file dated 4 Oct 2026 and EchoStar's FY2025 10-K. The databases: DA 20-110, DA 23-893, DA 25-131, DA 25-1057, DA 26-280; Google's deprecation notice; Federated Wireless's release of 30 Sep 2025; SDxCentral on Google's exit (11 Jun 2026); Fierce Network on Google's exit (10 Jun 2026) and CommScope's (1 Apr 2022); Light Reading on Amdocs (25 Apr 2025). Federal protection: NTIA's letter of 11 Jun 2024, DA 24-553, DA 24-643, the 2026 emergency waivers from DA 26-73 to DA 26-1031, the OnGo Alliance release of 17 Dec 2024. Usage: NTIA Report 25-575 (November 2024). Retrieved 7 Oct 2026.

Who builds private networks

Who sells, runs and buys private cellular networks, and what do they run on?

Nokia is the one vendor that files a count of its private wireless customers, and the count has risen every year, from over 560 in 2022 to over 1,000 in 2025. In July 2026 Nokia put the unit that sells campus networks up for sale. Both cloud companies withdrew their private 5G services in 2025. The only private wireless money in the United States with a filed contract value behind it is utilities buying licensed channels at 900 MHz.

BLUE PRYSM · ANALYSIS



IN BRIEF

- Nokia counted **over 1,000** private wireless customers at the end of 2025, up from over 560 at the end of 2022 (Forms 20-F). On 23 July 2026 it classified Enterprise Campus Edge, the unit that sells campus networks, as discontinued operations and called a sale “highly probable”.
- Ericsson’s Enterprise segment fell 15% to SEK 21.1 billion in 2025, and the company says private 5G sales were lower. Dell’Oro put private wireless RAN growth at 16% for the year, about 2.5 times slower than in 2024, and has cut its campus outlook.
- AWS listed AWS Private 5G as past its end of support on 20 May 2025, and Microsoft retired Azure Private 5G Core on 30 September. The only contract values on file are Anterix’s: **\$413.1 million** across 12 agreements with 11 utilities for 900 MHz broadband.
- The enterprises whose reasons are on the record chose spectrum by the job in hand. The open tier serves a site that needs no licence, 900 MHz or PALs give a utility a channel of its own, and carrier spectrum is for where the public has to be served. Whatever the choice, write a supplier exit into the campus contract.

Nokia is selling its campus unit while the customer count still rises

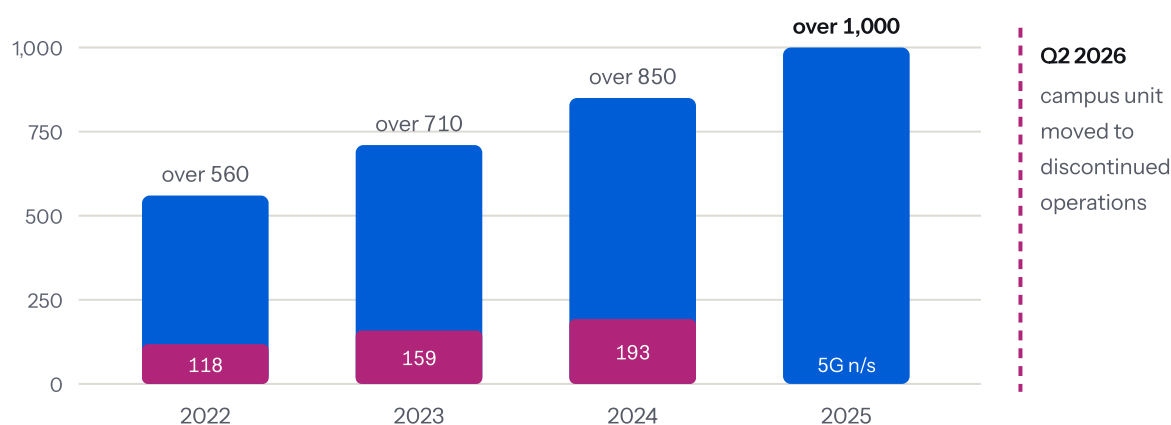
Nokia files a count of its private wireless customers each year and Ericsson does not, so Nokia's is the only run of comparable figures from a vendor. It has risen in each of the four years it has been filed (Exhibit 1).

The 20-F for 2022 recorded "more than 560 private wireless customers, 118 with 5G". A year later the figure was more than 710, with 159 on 5G and 150 new campus customers added during the year. For 2024 it was more than 850, with 193 on 5G, and for 2025 "over 1 000 private wireless customers", this time with no 5G figure. That works out at about 150 new customers a year, with 5G a steady fifth of the total. The reports name four American deals: Dow's chemical complex at Freeport, Texas, built with Kyndryl; Xcel Energy's grid modernisation; Southern California Edison; and the City of Brownsville, Texas, with NTT Data.

EXHIBIT 1

Nokia's private wireless customer count rose by about 150 a year to over 1,000, and the campus unit was then classified as discontinued

■ Private wireless customers ■ of which 5G



Customers at year end, as filed: "more than" each figure. 5G n/s: the 2025 report does not state the 5G count.

Source: Nokia Forms 20-F for 2022 to 2025 (filed 2 March 2023 to 5 March 2026) and the Q2 2026 report on Form 6-K, 23 July 2026 (Filed). Note: Nokia reports each count as "more than" the figure shown; the 2025 report gives no 5G count.

Nokia then decided to sell. From 1 January 2026 it moved Enterprise Campus Edge into a group it calls "Portfolio Businesses", units "not seen as core to the future of the company's strategy". Its second-quarter report of 23 July 2026 went further and classified the unit as discontinued operations, alongside the fixed wireless CPE business it had agreed to sell to Inseego. Nokia "deems it highly probable it will reach an agreement to sell Enterprise Campus Edge business". Nokia means to keep the wide-area work. Its chief executive, Justin Hotard, told investors in November 2025 that Nokia would "continue to serve mission-critical enterprise, which are things like utilities and rail", as Fierce Network reported. By 7 October 2026 no buyer had been named. The count was still rising when the decision to sell was taken; in our view the count and the economics had parted company some time before.

Ericsson’s private 5G sales fell in 2025

Ericsson files no customer count, but its segment figures say enough. The 2025 annual report puts the Enterprise segment at 9% of group sales, down 15% to SEK 21.1 billion. Within it, sales in Enterprise Wireless Solutions “declined slightly, mainly due to lower sales in private 5G solutions”. A year earlier they had grown 17% on “good demand for private 5G and neutral host solutions”. The same report took a SEK 77 million impairment on an intangible asset in that business “due to a change in strategy”. The chief executive’s letter nonetheless described the private 5G market as “starting to industrialize” and pointed to Airbus in Hamburg.

Dell’Oro, which measures the market from outside, sees the same slowdown. It put private wireless RAN growth at 16% in 2025, nearly 2.5 times slower than the year before, and sized the whole market at 3 to 5% of RAN revenue. Nokia and Ericsson between them hold about 80% of it outside China. The analyst has revised its campus outlook down and its wide-area outlook up, which is the same split Nokia drew when it chose what to keep (Exhibit 2).

EXHIBIT 2		
The vendors’ filings show rising customer counts and falling appetite for the campus business		
FILING	WHAT IT SAYS	PERIOD
Nokia 20-F 2022 to 2025	More than 560, 710, 850, then over 1,000 private wireless customers; 118, 159, 193 on 5G	Year ends 2022 to 2025
Nokia 20-F 2025	Enterprise Campus Edge moved to “Portfolio Businesses” from 1 Jan 2026	Filed 5 Mar 2026
Nokia Q2 2026 (6-K)	Campus unit classified as discontinued operations ; sale “highly probable”	23 Jul 2026
Ericsson 2024 annual report	Enterprise Wireless Solutions sales up 17% on private 5G and neutral host	FY2024
Ericsson 2025 annual report	Enterprise sales down 15% to SEK 21.1bn; private 5G sales lower; SEK 77M impairment	FY2025
Dell’Oro’s figures of 15 April 2026 are an analyst’s estimates (Reported): private wireless RAN up 16% in 2025, 3 to 5% of total RAN, China 40 to 50% of it.		
Source: Nokia Forms 20-F (2 March 2023, 29 February 2024, 13 March 2025, 5 March 2026) and Form 6-K (23 July 2026); Ericsson Form 20-F exhibit 15.1 (11 March 2025 and 12 March 2026) (Filed); Fierce Network, 20 November 2025; Dell’Oro, 15 April 2026 (Reported).		

The pattern is the same at both vendors: the customer counts rose and the appetite fell. Nokia expects to sell its campus unit with the count still rising and is keeping utilities and rail. Ericsson's private 5G sales fell in 2025. The analyst has cut the campus outlook and raised the wide-area one. In our view a buyer should read that as the vendors saying where they think the money is.

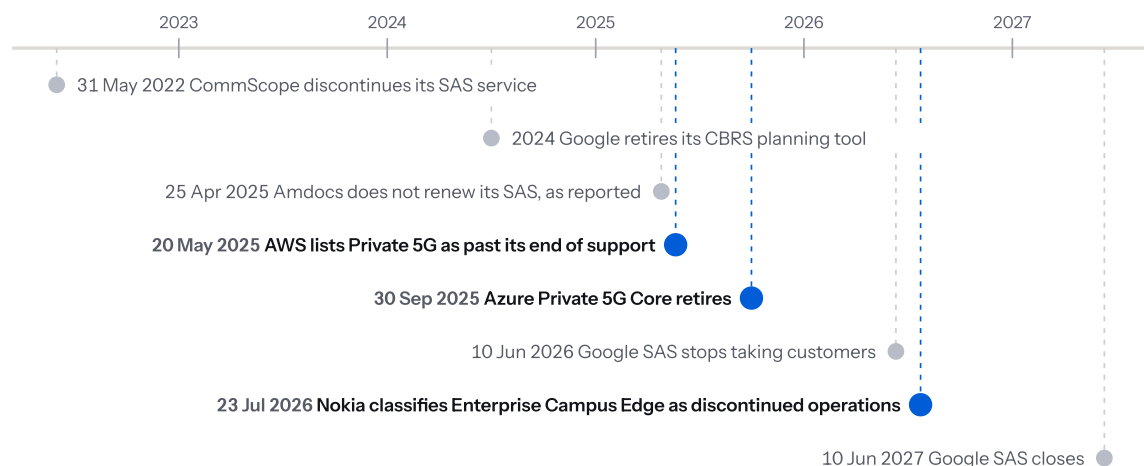
Both cloud companies have withdrawn their private 5G services

In 2022 a cloud provider's core looked like the easy way into private 5G, and by the end of 2025 both providers had left. AWS listed AWS Private 5G among services that had "reached their end of support date, and can no longer be accessed" on 20 May 2025. Microsoft set Azure Private 5G Core to retire on 30 September 2025 and pointed its customers to partner products, Nokia's and Ericsson's among them. Google retired its CBRS planning tool in 2024, as reported, and its spectrum database closes in June 2027 ([part 1](#)). An American start-up has broadened its line too. Celona, which reports more than \$135 million in funding, now sells Wi-Fi access points and Starlink integration beside its 4G and 5G radios, under the slogan "Agentic. Converged. Wireless."

There have been seven withdrawals since 2022 (Exhibit 3). What is left on the supply side is the two large European vendors, one of which expects to sell its campus unit; the integrators that resell them; the carriers; and start-ups that now sell Wi-Fi as well. An enterprise that bought a network in 2022 on a cloud provider's core has since watched its suppliers leave.

EXHIBIT 3

Three databases, two cloud services, a planning tool and a vendor's campus unit have been withdrawn from CBRS and private wireless supply since 2022



Source: Fierce Network, 1 April 2022 and 10 June 2026; Light Reading, 25 April 2025; AWS service changes notice, 20 May 2025; Microsoft Learn retirement notice; Google Cloud deprecation notice (Reported); Nokia Form 6-K, 23 July 2026 (Filed). Note: Google's planning tool is dated to the year only.

Utilities hold the only contract values on file

Utility broadband is the one corner of private wireless where contract values are filed. It runs on spectrum the utilities lease or buy, and the figures are in the seller's accounts.

Anterix holds the largest share of the 900 MHz band, 896 to 901 and 935 to 940 MHz, and sells or leases broadband licences in it to utilities. The broadband segment widened this year: on 18 February 2026 the FCC adopted an order widening the broadband segment from 3x3 to 5x5 MHz, as Anterix's 10-K records. Its 12 agreements with 11 utilities add up to \$413.1 million (Exhibit 4). Leases account for \$192.4 million of that and sales for \$220.7 million, and the mix has shifted: every agreement since 2024 has been a sale.

EXHIBIT 4

Anterix has contracted \$413.1 million with eleven utilities for 900 MHz broadband, and every agreement since 2024 is a sale

UTILITY	SIGNED	KIND	TOTAL CONSIDERATION
Ameren	Dec 2020	Lease, 30 years	\$47.7M
Evergy	Sep 2021	Lease, 20 years	\$30.2M
Xcel Energy	Oct 2022	Lease, 20 years	\$80.0M
Tampa Electric	Nov 2023	Lease, 20 years	\$34.5M
SDG&E	Feb 2021	Sale	\$50.0M
LCRA	Apr 2023; Jan 2025	Sale, two agreements	\$43.5M
Oncor	Jun 2024	Sale	\$102.5M
CPS Energy	Jan 2026	Sale	\$13.0M
Texas-New Mexico Power	Mar 2026	Sale	\$3.2M
NorthWestern Energy	Mar 2026	Sale	\$7.7M
Benton PUD	Apr 2026	Sale	\$0.8M
12 agreements, 11 utilities			\$413.1M

Leases total \$192.4M and sales \$220.7M, with Benton PUD. Contracted proceeds still to be received were \$33.1M at 30 June 2026. Spectrum revenue recognised in FY2026 was \$6.5M; sales are booked as gains, \$34.8M in FY2026.

Source: Anterix 10-K for the year to 31 March 2026 (25 June 2026), lease and sale tables; release of 11 August 2026 for Benton PUD and proceeds outstanding (Filed); total calculated by Blue Prism (Calculated).

ANTERIX: FROM LEASING TO SELLING

Anterix's own 10-K records that it "transitioned from a model focused predominantly on long-term spectrum leasing to a broader operating model".

The strategic review it began in February 2025 "after receiving inbound interest" had produced no announced outcome by 7 October 2026. In September 2026 the board authorised a \$250 million buyback running to 2029.

The same utilities buy elsewhere. SDG&E, Tampa Electric and NorthWestern each won PALs in 2020, and each has an Anterix agreement. Southern California Edison paid \$119.0 million for 20 PALs and appears in Nokia's 20-F as a private wireless customer. Xcel leases 900 MHz from Anterix, and Nokia's 20-F names the private LTE it supplied for Xcel's grid programme.

The private wireless money on file in the United States is utilities buying licensed channels: \$413.1 million contracted with one spectrum holder across 11 utilities, on top of the PALs the same kind of buyer took at auction. No carrier or vendor discloses private-network revenue to set beside it.

Carriers sell private networks and do not count them

All three national carriers sell private networks, and none of them says how many. Verizon’s 10-K says it uses both PALs and GAA in the band and lists private networks among its network technologies, with no customer count and no revenue. AT&T’s and T-Mobile’s 10-Ks have neither. The product pages are more forthcoming than the filings. Verizon’s names Nucor, Associated British Ports and a 500,000 square foot warehouse near Dallas where GSM Outdoors reports a 66% productivity gain. AT&T’s still describes its offer as “a non-public wireless LTE (5G coming soon) network”. Charter, which paid \$464.3 million for 210 PALs, intends to use them for a data-only mobile network of its own on small cells.

The global count comes from GSA, the vendors’ association. By the end of the second quarter of 2026 it had identified 2,031 organisations in 88 countries deploying private mobile networks under contracts worth more than €100,000. Customer references have grown 37% a year since 2019, and 5G is more than half of the deployments announced since 2022. The latest quarter carries two caveats: one vendor did not contribute and another made a partial submission. GSA says the two would have been 20 to 30% of the quarter’s expected references, so the most recent figure is low by about that much.

2,031	387	119
ORGANISATIONS WORLDWIDE, 2Q 2026	IN MANUFACTURING	IN POWER UTILITIES
37%		
YEARLY GROWTH IN REFERENCES SINCE 2019		

REPORTED

GSA, Private Mobile Networks, September 2026, and key data page (data to 22 Sep 2026)

The named American networks run on three kinds of spectrum

Eleven American networks are named in a filing, in the FCC record or in the trade press (Exhibit 5). Three spectrum choices run through them, and in each case the reason is on the record.

EXHIBIT 5

The named networks run on GAA, on a utility’s own channel or on a carrier’s licensed spectrum

NETWORK	SPECTRUM	BUILT WITH	RECORD
Dow, Freeport, Texas	Not stated	Nokia, Kyndryl	Nokia 20-F 2023
Xcel Energy grid	Leased 900 MHz	Nokia private LTE	Nokia 20-F; Anterix 10-K
Southern California Edison	Holds 20 PALs; band in use not stated	Nokia	Nokia 20-F 2024; DA 20-1009
City of Brownsville, Texas	CBRS; seeks a 60 dBm waiver	Nokia, NTT Data	Nokia 20-F 2024; FCC record
APM Terminals, Los Angeles and Port Elizabeth	CBRS GAA	Not stated	FCC filing, Dec 2024
Syracuse University	CBRS; full deployment on hold	Not stated	FCC filing, Jul 2026
John Deere factories, Illinois and Iowa	CBRS	Not stated	Coalition report, reported
Meta offices	CBRS neutral host, three carriers	Not stated	Light Reading, 2023
Stanford Health Care	CBRS neutral host	Celona, AT&T certified	RCR Wireless, 2025
Cummins Jamestown Engine Plant, Lakewood, New York	Verizon C-band and mmWave	Verizon as anchor tenant, with Ericsson	Light Reading, 2024
City of Las Vegas	CBRS	Celona, NTT	FCC 24-86, citing the vendor

“Not stated” means the source does not name it. The Brownsville waiver and the Syracuse letter are in [part 4](#).

Source: Nokia 20-F 2023 and 2024; Anterix 10-K FY2026; DA 20-1009; ECFS GN 17-258 filings of APM Terminals (5 December 2024), Syracuse University (14 July 2026) and the CBRS coalition (15 July 2026); FCC 24-86 (Filed); Light Reading, 25 April 2023 and 9 May 2024; RCR Wireless, 2 April 2025 (Reported; Compiled).

- **The open tier.** An enterprise that wants a network without a licence uses GAA. APM Terminals explained why to the FCC: GAA let it “avoid sinking resources into spectrum acquisition costs or competing at auction for a license area that was not well suited to our needs”.

- **A channel of their own.** Utilities buy PALs, or buy or lease 900 MHz, because they want a channel nobody else may use.
-
- **Carrier spectrum.** Where the job is coverage for the public, the network runs on a carrier's licensed spectrum, or on CBRS with the carriers' consent. Who pays for that is the subject of [part 3](#).
-

Terms used

- **Private wireless.** Nokia's term, and the industry's, for an LTE or 5G network run for one organisation's own devices and applications rather than for the public.
-
- **Campus and wide-area.** A campus network covers one site, such as a factory, a port or a university. A wide-area network covers a territory, such as a utility's service area or a railway.
-
- **Discontinued operations.** An accounting classification for a business a company has decided to sell or close. Its results are reported separately from continuing operations.
-
- **Spectrum lease and sale.** Under a lease the licence stays with the holder and the user pays over a term. Under a sale the licence transfers to the user.
-

Implications

ENTERPRISE OR BUILDING OWNER

Choose the supplier as carefully as the radio. Nokia expects to sell the unit that sells campus networks, and both cloud routes have closed. Ask who will support the core and the radios in 2030, and write into the contract what happens if the business is sold.

CARRIER STRATEGIST

Decide whether the campus market is yours to take, because by default it is passing to integrators and carriers. None of the three national carriers files a count or a revenue line for it. The money that is on file is in utilities' wide-area networks, where your counterparties would be Anterix and the PAL holders.

INVESTOR

Read the disclosed metrics as customer counts on three different definitions, none of which is revenue. The one filed contract value is Anterix's \$413.1 million, and it reaches the income statement slowly: \$6.5 million of spectrum revenue in FY2026, with sales booked as gains rather than revenue. Its strategic review, begun in February 2025, has produced no announced outcome.

Method and limits

HOW THIS WAS BUILT

Customer counts, segment results and the discontinued-operations decision are taken from Nokia's and Ericsson's annual reports on Form 20-F and from Nokia's quarterly report on Form 6-K, and quoted as filed. The utility agreements are the tables in Anterix's 10-K for the year to 31 March 2026, with the Benton PUD sale added from its August 2026 release; the total is the sum of the stated consideration (our calculation). Carrier disclosure is read from each FY2025 10-K. Market figures from GSA and Dell'Oro are reported as the firms published them. Named deployments are those a filing or the FCC record names, with trade-press cases marked as reported.

WHAT IT DOES NOT SHOW

No vendor or carrier discloses private-network revenue, so outside Anterix's contracts the money in this market is not on the record at all. Nokia's count says "more than" and does not separate campus from wide-area customers. GSA counts organisations with contracts above €100,000, and its latest quarter is missing one vendor's submission. The three counts cannot be compared with one another. The American share of GSA's count is in a members' annex and is not reproduced here. Anterix's consideration is contracted rather than received, and its revenue recognition differs from the cash. No buyer for Nokia's campus unit had been announced by 7 October 2026.

Data as of: SEC filings to 16 Sep 2026 · GSA data to 22 Sep 2026 · pages and filings read 7 Oct 2026 · Method version 1.0.

Sources. Nokia Forms 20-F for 2022, 2023, 2024 and 2025, and its Q2 2026 report (6-K, 23 Jul 2026); Ericsson's annual reports for 2024 and 2025 (20-F exhibit 15.1); the Anterix 10-K for FY2026, its release of 11 Aug 2026 and 8-K of 16 Sep 2026; the 10-Ks of Verizon and Charter; AWS's service changes of 20 May 2025 and Microsoft's Azure Private 5G Core notice; Google's deprecation notice; GSA, September 2026; Dell'Oro, 15 Apr 2026; Fierce Network on Nokia's plan (20 Nov 2025), Google's exit (10 Jun 2026) and CommScope's (1 Apr 2022); Light Reading on Amdocs (25 Apr 2025); Celona; the Verizon and AT&T product pages; FCC filings by APM Terminals (5 Dec 2024), Syracuse University (14 Jul 2026) and the CBRS coalition (15 Jul 2026); FCC 24-86; Light Reading on Meta and Cummins; RCR Wireless on Stanford Health Care. Retrieved 7 Oct 2026.

Who pays for coverage nobody owns

What does coverage inside a building cost, who pays for it now, and who decides whether it carries the public?

A building put up to modern thermal standards costs a mobile signal 15 dB or more beyond a traditional one, at every band, and dropping to low band does not recover it. The companies that used to own the coverage between carrier and building sold up or shrank in 2025 and 2026. The building owner now pays for the system, and each carrier separately decides whether its customers may use it.

BLUE PRYSM · ANALYSIS

15.8 dB · 30.9 dB at 3.6 GHz

IN BRIEF

- At 3.625 GHz, the middle of CBRS, the median building entry loss is **15.8 dB** for a traditional building and **30.9 dB** for a thermally efficient one (Rec. ITU-R P.2109-2, our calculation). Low band does not help: at 700 MHz the efficient building loses 31.6 dB.
- For a 200,000 square foot building, the prices sellers publish run from \$300,000 for a digital active DAS to **\$2 million** for a multi-carrier active system, a spread of two to nearly seven times for the same building.
- Crown Castle sold its small cells and fibre for **\$8.5 billion** on 1 May 2026, after writing down about \$6.5 billion. American Tower's DAS site count in the United States fell by five in 2025, and ExteNet told its banks in June 2026 that it might run out of cash within ten days.
- On CBRS, AT&T certifies third-party neutral hosts, T-Mobile asked vendors in 2025 to put licensed spectrum first, and Verizon decides building by building, all as reported. Before pricing a system, count which carriers the occupants use.

The building's construction sets the loss at every band

Recommendation ITU-R P.2109-2 is the ITU's model of how much signal a building takes out of a link. It sorts buildings into two populations, which differ by 15 dB or more at every mobile frequency (Exhibit 1).

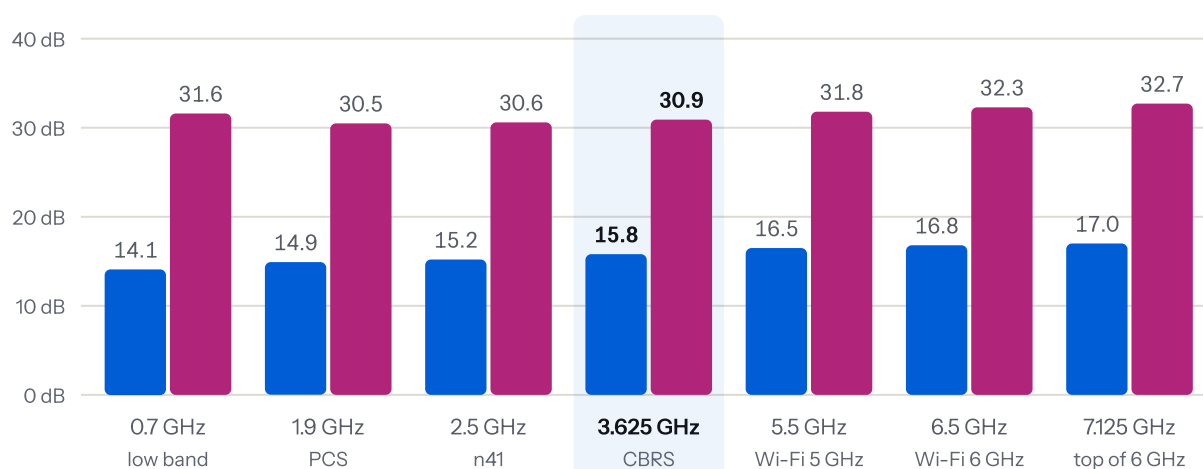
One population is “traditional” buildings. The other is buildings where “modern, thermally-efficient building methods are used (metallised glass, foil-backed panels)”. At 3.625 GHz, the middle of CBRS, the model's median loss at horizontal incidence is 15.8 dB for a traditional building and 30.9 dB for a thermally efficient one. Those are medians; a tenth of indoor locations lose more than 28.8 dB and 49.4 dB respectively. The [6G series](#) found the same two populations from 3.5 to 7.125 GHz, so the effect is not peculiar to the CBRS band.

Low band does not help. At 700 MHz the model gives 31.6 dB for a thermally efficient building, worse than at CBRS frequencies, and 14.1 dB for a traditional one, a saving of under 2 dB. The gap between the two classes is widest there, at 17.5 dB.

EXHIBIT 1

A thermally efficient building costs 15 dB or more at every band from 700 MHz to 7.125 GHz

■ Traditional building ■ Thermally efficient building



Median loss, 0° elevation. The gap between the two classes is 15.2 dB at 3.625 GHz and 17.5 dB at 0.7 GHz.

Source: Rec. ITU-R P.2109-2 (08/2023), equations and Table 1 coefficients, at horizontal incidence; medians calculated by Blue Prysm (Calculated). Note: P.2109 is a statistical model for sharing studies and measures no particular building. The class gap is 15.2 dB at 3.625 GHz and 17.5 dB at 0.7 GHz.

Fifteen decibels is a factor of about 32 in power, and a carrier cannot buy it back with a different licence. The only way to serve the building is to bring the signal inside, with a system in the building or a small cell close enough to it. Regulators have begun to write walls into their rules: the FCC's January 2026 proposal on 6 GHz would let the databases that set standard-power Wi-Fi limits count up to 6 dB of building entry loss. How much traffic is at stake is less settled than the usual “80% indoors” suggests. When Ericsson measured

one operator's 4G network in 2021, indoor users accounted for about 64% of the traffic on outdoor cells in an urban district and 37% in a dense high-rise area, a large and variable share.

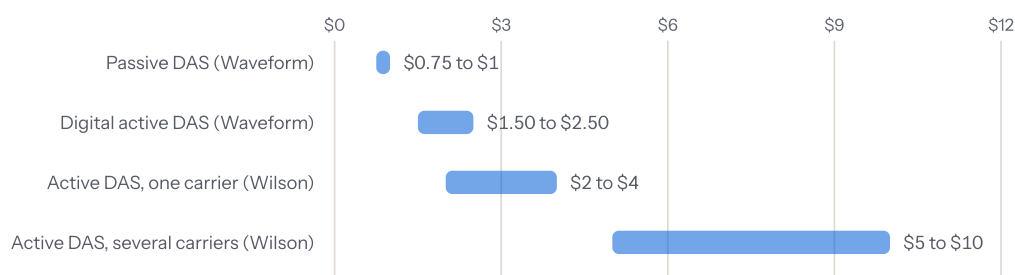
The gap between the two classes of building is 15 dB or more at every band from 700 MHz to 7 GHz, and low band does not close it. Whether a building can be served from outside is settled by its glazing and its insulation, and no spectrum purchase changes either.

Published costs for the same building differ by up to nearly seven times

The only published figures for what an in-building system costs come from the companies that sell them, and for the same building they differ by a factor of two to nearly seven (Exhibit 2).

EXHIBIT 2

Sellers' published prices for in-building systems run from \$0.75 to \$10 a square foot



Source: Waveform cost page (undated, read 2026); Wilson Connectivity, 28 November 2023 (Reported).

Note: for a 200,000 square foot building, Waveform's digital active range gives \$300,000 to \$500,000 and Wilson's multi-carrier range \$1 million to \$2 million (Calculated). Nextivity says installation "can be far more expensive than the hardware itself".

Two of the savings claimed against DAS come without a price attached. Celona, via RCR Wireless in April 2025, said its neutral host was "nearly half the cost" of DAS. Meta, via Light Reading in April 2023, said its CBRS office network was "75% faster" to deploy and did not say what it cost. The spread in the published figures has a cause. Wilson's own price more than doubles between an active system for one carrier and one for several, because each additional carrier is another signal source to supply and another approval to win, which is where cost meets permission.

The owners of infrastructure between carrier and building have sold up or shrunk

For a time a third party paid for coverage nobody owns: a company that built small cells and in-building systems and rented them to carriers. Those companies spent 2025 and 2026 leaving the business or shrinking in it (Exhibit 3).

Crown Castle agreed in March 2025 to sell its small cells to an EQT fund and its fibre business to Zayo, each for an enterprise value of \$4.25 billion. The sale closed on 1 May 2026, and the small cells now trade under the name Arium Networks. American Tower is still in the business and shrinking slowly in it. Its count of DAS sites in the United States fell from 434 to 429 between FY2024 and FY2025, and its 10-K mentions neither neutral host nor CBRS. ExteNet Systems, a private small-cell owner, wrote to its banks on 15 June 2026, as Fierce Network reported, and said it expected it “will not have sufficient funds to continue to operate” as early as 25 June. The one company raising money is Boldyn Networks, 86% owned by CPP Investments, which raised \$1.2 billion of debt for the United States in February 2025 and reports about 110 private network implementations.

EXHIBIT 3			
Crown Castle sold, American Tower’s DAS count fell, ExteNet warned of running out of cash and Boldyn raised debt			
COMPANY	WHAT HAPPENED	WHEN	RECORD
Crown Castle	Sold small cells (to EQT, now Arium Networks) and fibre (to Zayo) for \$8.5B ; \$4,958M impairment in 2024, \$1,575M loss on disposal in 2025	Closed 1 May 2026	Filed: 8-K, 10-K
American Tower	United States DAS sites down from 434 to 429 ; 862 DAS networks worldwide; DAS revenue not broken out; no mention of neutral host or CBRS	FY2024 to FY2025	Filed: 10-K
ExteNet Systems	Seeking a buyer for its outdoor business; told its banks it expected it “will not have sufficient funds to continue to operate” as early as 25 June 2026	Letter of 15 Jun 2026	Reported: Fierce Network
Boldyn Networks	Owned 86% by CPP Investments; \$1.2B of United States debt financing; about 110 private network implementations; no active acquisition strategy, its chief executive said	Feb to Apr 2025	Reported: RCR Wireless; Converge Digest
ExteNet’s outcome after June 2026 is not on the record. Fierce reported its difficulty as carriers wanting one small cell to carry several bands, which leaves fewer tenants per pole.			
Source: Crown Castle 8-K, 17 March 2025 and 1 May 2026, Exhibit 99.1, and 10-K, 23 February 2026; American Tower 10-K, 25 February 2025 and 24 February 2026 (Filed); Fierce Network, 24 June 2026; RCR Wireless, 16 April 2025; Converge Digest, 3 February 2025 (Reported; Compiled).			

THE CROWN CASTLE SALE

The sale closed on 1 May 2026 for “\$8.5 billion, or approximately \$8.4 billion net of preliminary adjustments”, as the [Form 8-K](#) records.

The price follows two write-downs. In 2024 Crown wrote down \$4,958 million of goodwill in its Fiber segment, which held both businesses, and in 2025 it booked a \$1,575 million loss on disposal. The two together come to about \$6.5 billion.

The 10-K describes what was sold as about 105,000 small-cell nodes, on air or under contract, and about 90,000 route miles of fibre. The small cells went for roughly \$40,500 of enterprise value per node (our calculation).

Its chief executive now describes Crown as “the only U.S. focused, large publicly traded pure-play tower company”.

The independent layer between carrier and building has thinned. Crown Castle sold about 105,000 small-cell nodes after about \$6.5 billion of write-downs, American Tower’s DAS count in the United States fell by five, and a specialist warned it could run out of cash. Whatever money is left for in-building coverage is the building owner’s.

The owner pays for a system the carrier must approve

Carriers once paid for in-building systems; in most buildings they now approve them instead.

The shift was visible as early as 2017, when the analyst Iain Gillott wrote that “very few DAS projects are funded exclusively by the mobile operators”. By now it is written into the carriers’ own programmes. The 5G Americas white paper *Neutral Host Opportunities for 5G and Beyond* (July 2024) sets them out; Blue Prism’s founder, Colin Bowdery, co-led the working group that wrote it while he was at Ericsson. The paper names three enterprise-funded programmes: AT&T Direct, T-Mobile’s Build Your Own Coverage and Verizon’s Coverage Extension Radio Access Network. They “empower enterprises to finance their own NHN deployments and re-utilize licensed spectrum”. The operative word is finance. Medium and low-capacity venues, the paper goes on, “will have to either partially subsidize the system cost or completely fund it themselves”.

The paper also records why the neutral host has stalled. Sharing the whole radio network, carriers’ spectrum included, “has yet to gain widespread approval among MNOs due to perceived security and control limitations”. That approval is the question for a CBRS neutral host, which broadcasts several carriers’ network identities so that their customers’ phones will attach to it and works only for the carriers that have certified it. The three national carriers have taken three different positions, as reported (Exhibit 4).

EXHIBIT 4

On CBRS neutral host, AT&T certifies, T-Mobile prefers licensed spectrum and Verizon decides case by case, as reported

DATE	WHAT HAPPENED	SOURCE
Apr 2023	Meta's CBRS office network serves AT&T, Verizon and T-Mobile customers	Light Reading
Sep 2023	InfiniG launches a CBRS neutral host with AT&T and T-Mobile	RCR Wireless
May 2024	Verizon's "neutral host" offer puts Verizon as anchor tenant on its own C-band and mmWave, first at a 2 million sq ft Cummins plant	Light Reading
Apr 2025	AT&T certifies Celona's CBRS neutral host for up to five operators; Verizon approval pending	RCR Wireless
Aug 2025	T-Mobile asks vendors to "prioritize licensed mid-band FDD/TDD spectrum over CBRS"	RCR Wireless
Oct 2025	AT&T "the CBRS outlier"; Verizon "has never (publicly) supported MOCN deployments in CBRS spectrum"	RCR Wireless
Jun 2026	A vendor's summary: AT&T green, T-Mobile yellow, Verizon red	HALO Networks

T-Mobile's existing CBRS venues reportedly keep support where they meet performance targets. No carrier has published its certification policy.

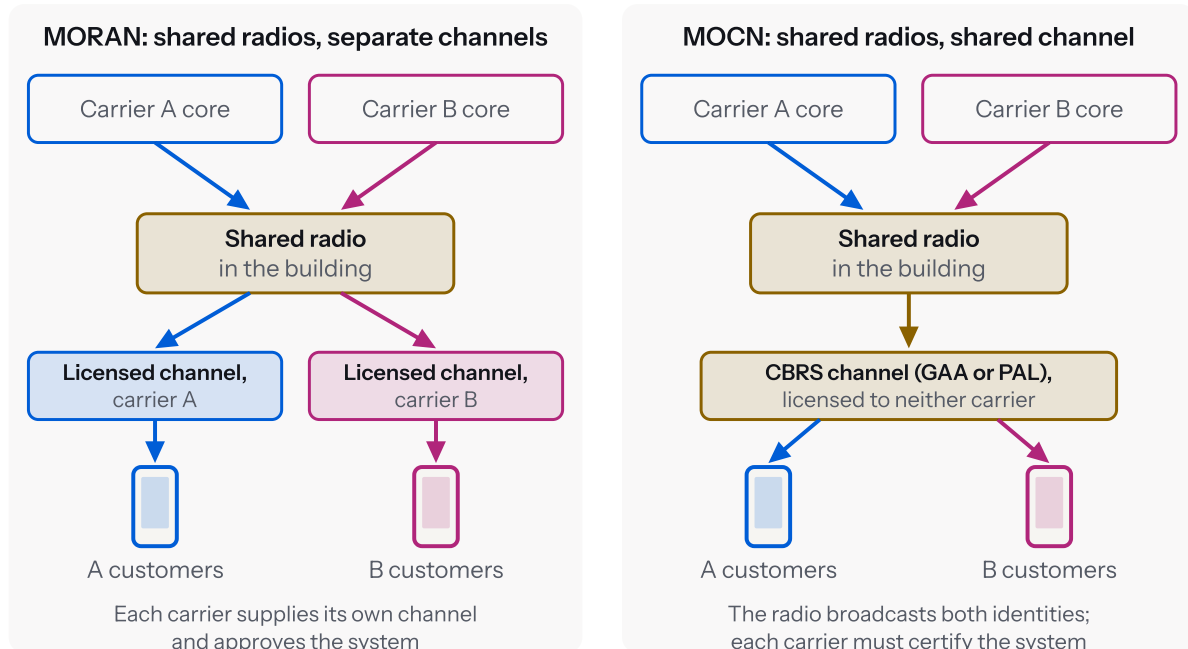
Source: Light Reading, 25 April 2023 and 9 May 2024; RCR Wireless, 22 September 2023, 2 April 2025, 26 August 2025 and 10 October 2025; HALO Networks, 11 June 2026 (Reported).

The standard allows every form of sharing

There are two ways to share a radio network, and the difference is whose spectrum the shared radio uses (Exhibit 5).

EXHIBIT 5

A CBRS neutral host is MOCN: shared radios on a shared channel, carrying several carriers' identities



Source: 3GPP TS 23.501 V19.9.0 (September 2026) (Filed); RCR Wireless on MOCN and MORAN, 10 October 2025; 5G Americas, July 2024 (Reported). Note: in MORAN each carrier supplies its own licensed channel and approves the system. In MOCN the shared channel is not the carriers' own, so each carrier must certify the system before its customers' phones will use it.

TS 23.501, in its Release 19 version of September 2026, lets one radio network be shared by “any combination of PLMNs, PNI-NPNs (with CAG) and SNPNs”: carriers, private networks built on a carrier and stand-alone private networks, in any mix. Three releases added the pieces a neutral host needs.

- **Release 17.** A credentials holder, so that a carrier's credentials admit its subscribers to somebody else's private network.
- **Release 18.** A hosting network for localised services.
- **Release 19.** Indirect network sharing, in which a hosting operator runs the core that each participating carrier connects through.

Every neutral-host model under discussion has a standard form already. What is missing is the carriers' permission, and the base from which a CBRS neutral host would have to grow is small: indoor radios were 4.4% of the band on NTIA's last count ([part 1](#)).

A thermally efficient building costs 15 dB or more, and no carrier pays by default to close that gap. The infrastructure owners have retreated, the building owner pays, and the carrier keeps the veto. On CBRS one national carrier says yes, one prefers its own licensed spectrum, and one decides building by building. [Part 5](#) turns this into a rule.

Terms used

- **Building entry loss.** The signal lost between a point just outside a building and a point inside it, in decibels. Every 10 dB is a factor of ten in power.
- **DAS, distributed antenna system.** Antennas spread through a building and fed from one or more carriers' signal sources. Passive systems carry radio signals over coaxial cable, active ones over fibre or Ethernet.
- **Neutral host.** A system in a building or venue that serves several carriers' customers and is owned by someone other than those carriers.
- **MORAN and MOCN.** Two ways to share a radio network. MORAN shares the radios while each carrier keeps its own spectrum; MOCN shares the radios and the spectrum, which is what a CBRS neutral host does.
- **SNPN and PNI-NPN.** 3GPP's two kinds of private network: stand-alone, run without a carrier's core, or public-network-integrated, built on a carrier's network.

Implications

ENTERPRISE OR BUILDING OWNER

Classify the building before you price anything. In a thermally efficient one no outdoor signal can be relied on at any band, because the median loss is 30.9 dB at CBRS frequencies and 31.6 dB at 700 MHz. Then count which carriers your occupants use, because that count decides between a CBRS neutral host, which AT&T alone fully supports, and a licensed carrier programme that you pay for.

CARRIER STRATEGIST

Publish your certification policy for third-party systems, because whether you intended it or not, it is now your in-building coverage policy. The cost has moved to the building and the decision has stayed with you. On CBRS the three national carriers hold three different positions, and none of them is written down anywhere public.

INVESTOR

Model the enterprise as the paying customer for in-building coverage and the carrier as the gatekeeper. The infrastructure owners in between have had two poor years. Crown Castle wrote down about \$6.5 billion before selling its small cells and fibre, American Tower's DAS count is all but flat, and ExteNet warned it could run out of cash.

Method and limits

HOW THIS WAS BUILT

Building entry loss is calculated from the equations and Table 1 coefficients of Rec. ITU-R P.2109-2 at horizontal incidence, for the median and the 90% level, at the centre of each band named. The figures reproduce the 6G series' values for 3.5 to 7.125 GHz to 0.1 dB. The infrastructure owners are read from their own 8-K and 10-K filings; ExteNet and Boldyn are private companies and are reported from the trade press. Cost figures are the vendors' own published ranges, and the per-building figures apply them to a 200,000 square foot building (our calculation). Carrier positions on neutral host are as reported, with the date of each report.

WHAT IT DOES NOT SHOW

P.2109 is a statistical model built for sharing studies, and it measures no particular building. The ITU says a building's class should not be assumed from its age or its type. No independent survey of in-building system costs and no carrier's own certification policy is on the record, so the costs here are what sellers publish and the policies are what reporters were told. The value per small-cell node is indicative only, since the node count includes nodes under contract. What became of ExteNet after June 2026 is not on the record.

Data as of: SEC filings to 1 May 2026 · trade press to 11 Jun 2026 · standards and pages read 7 Oct 2026 · Method version 1.0.

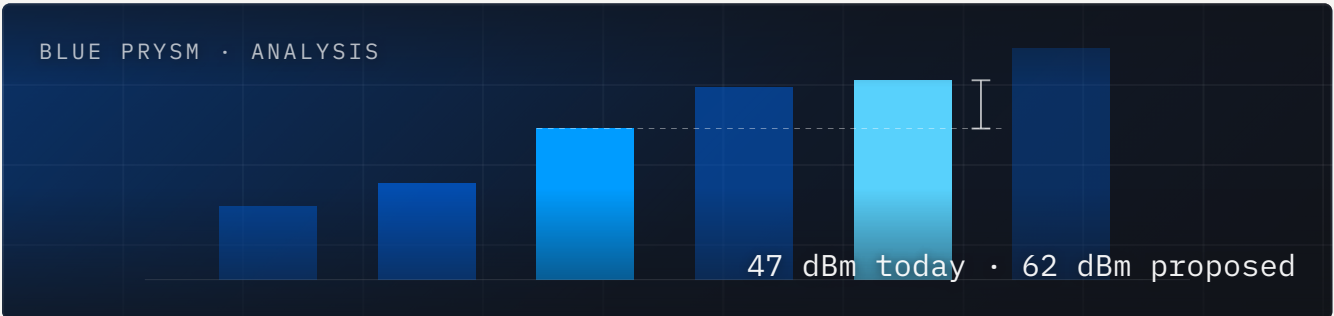
Sources. Rec. ITU-R P.2109-2 (08/2023); Ericsson Mobility Report, Planning in-building coverage for 5G (June 2021); the FCC's 6 GHz fact sheet of 8 Jan 2026. Crown Castle Forms 8-K of 17 Mar 2025 and 1 May 2026 with its release, and its 10-K for FY2025; American Tower's 10-Ks for FY2024 and FY2025; Fierce Network on ExteNet (24 Jun 2026) and Iain Gillott on in-building funding (15 Mar 2017); RCR Wireless on Boldyn (with Converge Digest on its financing), InfiniG, AT&T and Celona, T-Mobile and MOCN and MORAN; Light Reading on Meta and Verizon; HALO Networks (11 Jun 2026); cost pages from Waveform, Wilson Connectivity and Nextivity; 5G Americas, Neutral Host Opportunities for 5G and Beyond (July 2024); 3GPP TS 23.501 V19.9.0; NTIA Report 25-575. Retrieved 7 Oct 2026.

The rules that decide the shared band

Which decisions about the shared band are open, who is asking for what, and what would change for its users?

In August 2024 the FCC opened the CBRS rules to change, and in the two years since it has decided nothing. The carriers, meanwhile, have asked either for 15 dB more power or for the band itself. A statute passed in 2025 closed off the band AT&T had proposed as a new home for CBRS users, while leaving CBRS in the auction pipeline. Over the same period the FCC widened the other shared band, 6 GHz, once again.

BLUE PRYSM · ANALYSIS



A bar chart with a dark blue background and a grid. It features two bars: a shorter one on the left and a taller one on the right. A horizontal dashed line is drawn across the chart at the level of the taller bar. The text '47 dBm today · 62 dBm proposed' is positioned below the bars, with the first bar aligned with '47 dBm today' and the second bar aligned with '62 dBm proposed'. The text is in a light blue color.

47 dBm today · 62 dBm proposed

IN BRIEF

- FCC 24-86, released on **16 August 2024**, opened the CBRS rules to change. On 7 October 2026, more than two years on, GN Docket 17-258 held letters from every side and no order.
- Verizon asks for a Category C radio at **62 dBm** per 10 MHz, which is 15 dB above today's 47 dBm ceiling and about 32 times the power. AT&T asks to move CBRS users to 3.1 to 3.3 GHz and auction 3.55 to 3.7 GHz at full power. T-Mobile wants usage data before anything else.
- P.L. 119-21, signed on 4 July 2025, withholds auction authority from 3.1 to 3.45 GHz, which is AT&T's proposed destination, and leaves 3.55 to 3.7 GHz inside the 800 MHz pipeline. The FCC's first order under it, on 22 July 2026, raised phone power next door to CBRS to 2 W.
- At 6 GHz every FCC decision since April 2020 has widened unlicensed use, the latest being FCC 26-1 of 29 January 2026. Price two more years of undecided rules into any CBRS plan.

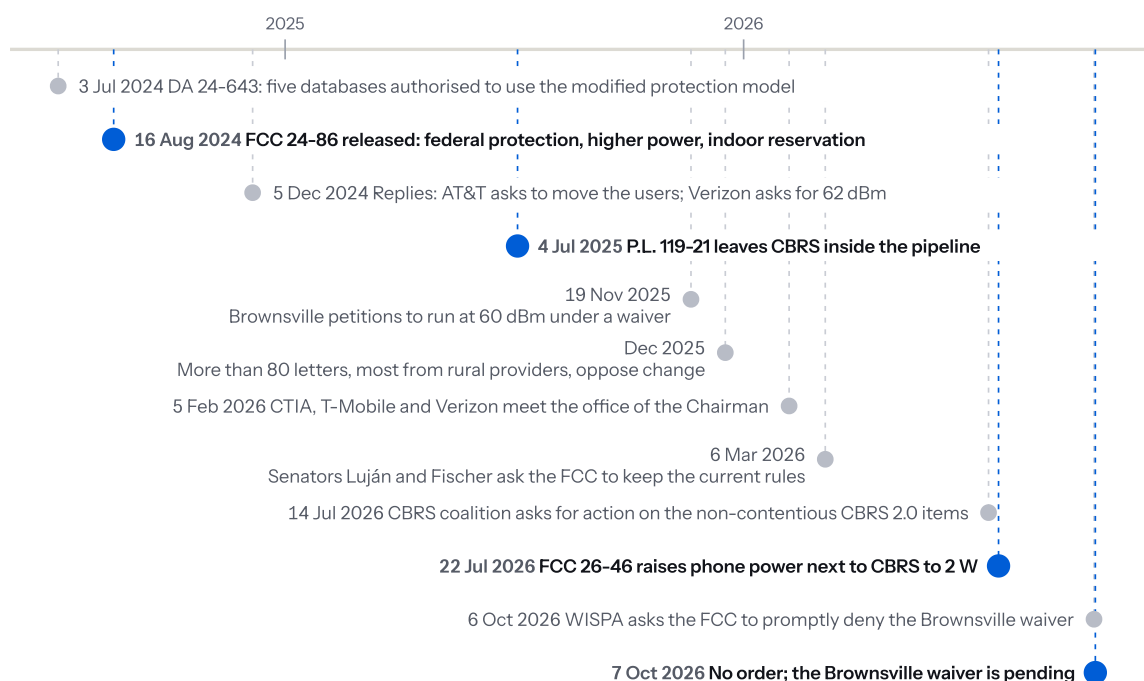
The notice of August 2024 has produced no order in more than two years

FCC 24-86, adopted on 5 August 2024 and released on the 16th, opened the CBRS rules to change. The replies came in that December, and since then the docket has filled with letters and produced no order (Exhibit 1).

Most of the notice is housekeeping. It proposes to write into Part 96 the federal protections that [part 1](#) describes as resting on notices: the Dynamic Protection Areas, the portal through which the Defense Department switches them on, and permanent protection around eleven ground radar sites. It also covers emission limits, database outages and synchronisation. The argument lives in two paragraphs. Paragraph 53 asks “whether to add one or more classes of higher power CBSDs”. Paragraph 78 asks whether some GAA spectrum should be set aside for private, low-power indoor networks, an idea the Commission turned down in 2015. The notice’s own baseline for the band was more than 370,000 radios and more than 750 certified end-user devices.

EXHIBIT 1

More than two years after the notice, GN Docket 17-258 holds letters from every side and no order



Source: FCC 24-86, DA 24-643, DA 24-1009, DA 24-1103, DA 25-963; ECFS listing of GN Docket 17-258 to 7 October 2026 and the filings named; P.L. 119-21; FCC 26-46 (Filed); Light Reading on the December 2025 letters (Reported). Note: since the notice, the FCC’s own documents in the docket are the order extending the comment dates (DA 24-1009, 27 September 2024) and two annual reminders to satellite earth stations (DA 24-1103, 25 October 2024, and DA 25-963, 20 November 2025).

The carriers want more power or the band itself

The carriers’ positions are on file, and they differ (Exhibit 2). AT&T’s reply asked the FCC to relocate CBRS users to 3.1 to 3.3 GHz “through an innovative incentive auction”, which would clear “150 MHz for full power, exclusively-licensed deployments”: a request for the band itself. Verizon asked for less: a new Category C radio at 62 dBm per 10 MHz, and phones at 26 dBm. T-Mobile asked for usage data first and warned that changes to power and emissions “may well require relicensing the band”. By February 2026 two of the three, with their trade association, had a wider proposal. CTIA, with T-Mobile and Verizon, told the Chairman’s office that the band lies between the 3.45 GHz band and the C-band. “The Commission has a real opportunity to build a 700+ megahertz contiguous superhighway in the best part of mid-band”, they said.

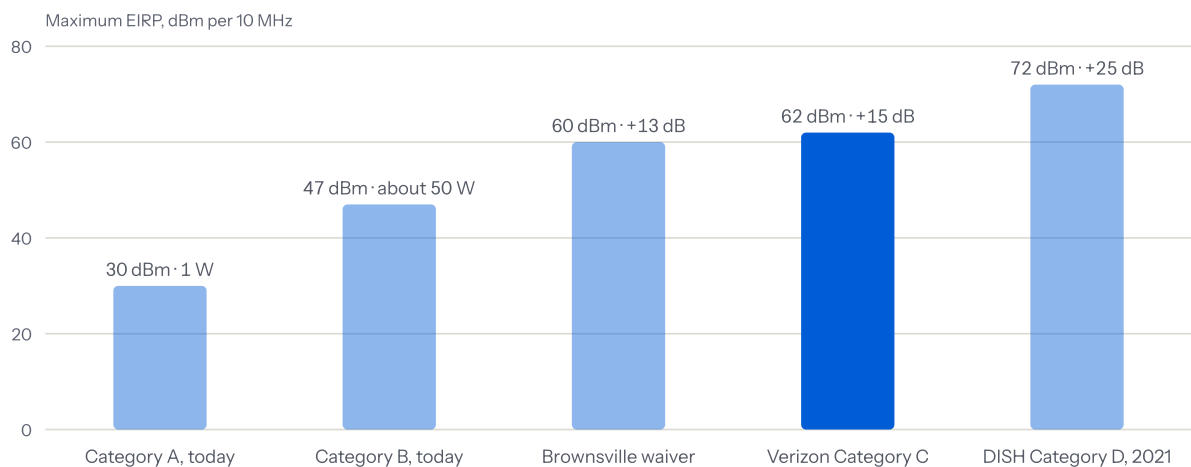
EXHIBIT 2		
The national carriers ask for relocation, power or data; the band’s users ask the FCC to codify the 2024 changes and hold power where it is		
PARTY	POSITION	FILED
AT&T	Move CBRS users to 3.1 to 3.3 GHz; auction 3.55 to 3.7 GHz at full power	5 Dec 2024
Verizon	New Category C at 62 dBm /10 MHz; phones at 26 dBm; no GAA set-asides	5 Dec 2024
T-Mobile	Usage data first; changes may require relicensing	5 Dec 2024
CTIA, T-Mobile, Verizon	A “700+ megahertz contiguous superhighway” through the band	9 Feb 2026
Rural carriers (CCA)	Higher power where feasible; warns of churn if the band is reorganised	10 Apr 2026
CBRS coalition, with John Deere	Act on the “non-contentious” CBRS 2.0 changes; its attached OnGo paper opposes higher outdoor power	15 Jul 2026
Syracuse University	Against higher power; full deployment on hold until the rules settle	14 Jul 2026
APM Terminals	Codify the 2024 changes, which “greatly improved our experience”	5 Dec 2024
Senators Luján and Fischer	Keep current rules and power levels	6 Mar 2026
Each position is quoted or summarised from the party’s own filing in GN Docket 17-258, except the senators’, whose position is their letter to the FCC.		
Source: ECFS, GN Docket 17-258: replies of 5 December 2024; ex partes of 9 February, 10 April and 15 July 2026; letter of 14 July 2026 (Filed); letter of Senators Luján and Fischer to the FCC, 6 March 2026.		

Verizon's proposed class is one building class of loss

Today's ceilings are 30 dBm per 10 MHz for a Category A radio, which is a watt, and 47 dBm for a Category B radio, which is about 50 W. Verizon's 62 dBm is 15 dB above Category B, and since every 10 dB is a factor of ten in power, that comes to about 32 times. The 72 dBm Category D that DISH proposed in 2021 would be 25 dB above, about 316 times. Brownsville's waiver request, at 60 dBm, is 13 dB above, about 20 times (Exhibit 3).

EXHIBIT 3

Verizon's 62 dBm class is 15 dB above today's ceiling, the same gap as between a traditional and a thermally efficient building



Source: 47 CFR § 96.41(b); Verizon reply, 5 December 2024; WISPA ex parte, 6 October 2026 (Filed); DISH's 2021 proposal as reported by Fierce Network, 13 April 2021 (Reported); ratios calculated by Blue Prism (Calculated). Note: the scale is logarithmic, so equal steps are equal multiples of power. Above Category B, 13 dB is about 20 times the power, 15 dB about 32 times and 25 dB about 316 times.

The figure of 62 dBm has a physical meaning, which [part 3](#) supplies. Fifteen decibels is the gap between a traditional building and a thermally efficient one at 3.625 GHz, so the proposed class would hand a radio outside the building back roughly one building class of loss. The carriers' case rests on that, and it is coherent. The users' case is that the same 15 dB lands on everyone sharing the channel. Valo Analytica studied the question for the advocacy group Spectrum for the Future, with the database operator Key Bridge as technical partner, and found that converting fewer than 2% of CBRS base stations to high power would cause a massive loss of throughput, as Fierce Network reported. Syracuse University put it to the FCC as a "tragedy of the commons". The Chairman's office has a question of its own: his adviser, Arpan Sura, said in February 2026 that he wanted to examine whether the more than 400,000 radios in the band are a good indicator of use, as reported.

Verizon's proposed class is one building class of loss: 15 dB above today's ceiling, the same 15 dB that separates the two kinds of building. Higher power is in substance a proposal to serve buildings from outside. The indoor and low-power networks that share the channel say they would pay for it in interference, and a shared channel leaves little room for any other outcome.

The statute left CBRS inside the auction pipeline

P.L. 119-21, signed on 4 July 2025, gave the FCC its auction authority back and set a pipeline of 800 MHz to be found between 1.3 and 10.5 GHz. The [6G series](#) sets out its deadlines; what matters here is which bands it protects.

Only two ranges are written out of the pipeline, 3.1 to 3.45 GHz and 7.4 to 8.4 GHz, each “for purposes of auction, reallocation, modification, or withdrawal”. Two consequences follow for the shared bands (Exhibit 4). First, AT&T's proposed home for CBRS users, 3.1 to 3.3 GHz, is now a band the statute bars from that kind of change. Second, 3.55 to 3.7 GHz is inside the covered band and nothing excludes it; the same applies to 5.925 to 7.125 GHz.

The FCC's own obligation is to auction 300 MHz, and the statute names no band for it beyond 100 MHz of upper C-band. Its first order, [FCC 26-46](#) of 22 July 2026, takes 160 MHz there, which leaves at least 140 MHz still to find by 30 September 2034. NTIA's first 200 MHz of federal spectrum is due on 4 July 2027. Neither the statute nor anything on the record says whether the shared 3.55 to 3.65 GHz counts as “allocated for Federal use” for that purpose.

EXHIBIT 4

The statute shields 3.1 to 3.45 GHz, the band AT&T proposed for CBRS users, and leaves CBRS and 6 GHz inside the pipeline

☒ Yes ☐ No

	Excluded by the statute	Inside the pipeline	Latest FCC action
3.1 to 3.45 GHz	☒	☐	None
3.55 to 3.7 GHz, CBRS	☐	☒	Notice open; no order
3.7 to 4.2 GHz, C-band	☐	☒	160 MHz to auction
5.925 to 7.125 GHz, 6 GHz	☐	☒	Use widened, Jan 2026

Source: P.L. 119-21, section 40002, 139 Stat. 128; FCC 26-46, 22 July 2026, paragraph 73; FCC 26-1, 29 January 2026 (Filed). Note: the covered band is 1.3 to 10.5 GHz, and 7.4 to 8.4 GHz is the other exclusion. The statute requires at least 100 MHz of 3.98 to 4.2 GHz to be auctioned by July 2027; the FCC chose 3.98 to 4.14 GHz. No FCC or NTIA proposal to auction any part of CBRS or 6 GHz was found on the record.

The same order touches CBRS directly. It raised the power limit for phones across 3.7 to 4.14 GHz, the band immediately above CBRS, from 1 W to 2 W. The Commission chose 2 W “out of an abundance of caution”, against the 4 W that AT&T, Verizon, CTIA and Qualcomm had asked for. The CBRS users had asked for the change to wait for coexistence studies, and the order replied that they “have not outlined detailed concerns with, or presented any specific analysis of, the potential impacts on CBRS operations”. For anyone arguing the power case in the main docket, that sentence is the lesson.

The statute closed the route AT&T proposed for moving CBRS users and left the band itself unprotected. The FCC’s first order under it raised power at the band’s upper edge over its users’ objections. Nothing on the record has started a relocation. A user faces rules that have stayed undecided for more than two years and could be decided at any meeting.

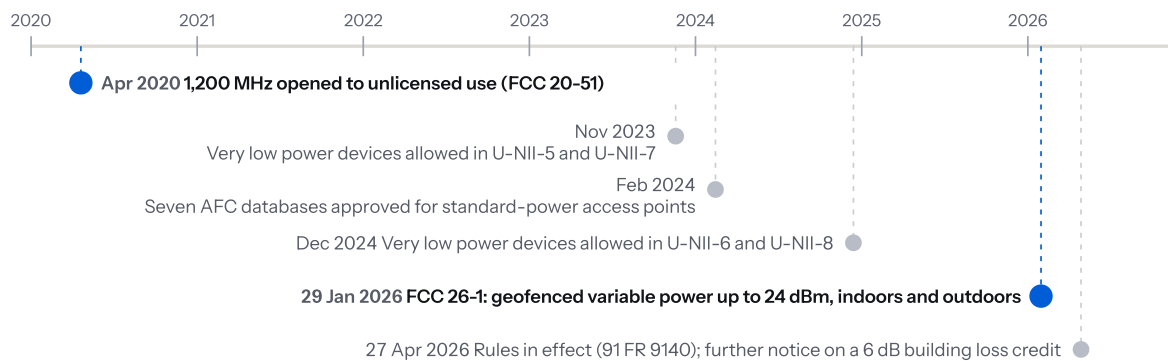
The other shared band moved the other way

The contrast with 6 GHz is sharp. That band, 1,200 MHz from 5.925 to 7.125 GHz, was opened to unlicensed use in April 2020, and every FCC action since has widened that use (Exhibit 5). Very low power devices were allowed anywhere in two of its sub-bands in November 2023 and in the other two in December 2024. Seven automated frequency coordination systems, the databases that set the power of standard-power access points, were approved in February 2024, and the FCC says it has received no interference

complaints about them. On 29 January 2026, in FCC 26-1, the Commission created geofenced variable power devices in two sub-bands at up to 24 dBm EIRP, indoors and outdoors, with Commissioners Carr, Gomez and Trusty all approving. The rules took effect on 27 April 2026 (91 FR 9140). The order's further notice proposes letting the databases count up to 6 dB of building entry loss.

EXHIBIT 5

Every 6 GHz decision since April 2020 has widened unlicensed use



Source: FCC 20-51 (April 2020); FCC fact sheet DOC-417577A1 (8 January 2026); FCC news release of 29 January 2026; Federal Register 2026-03744, 91 FR 9140 (Filed). Note: the FCC says it has received no interference complaints about the AFC systems.

For an enterprise the comparison is direct. One shared band has an open rulemaking, proposals on file to raise its power or move its users, and a statute that leaves it unprotected. The other has the same statutory exposure and six years of decisions, all in one direction. In 2026 the 6 GHz rules are the more settled of the two by some distance.

Renewal and the other obligations inside buildings

The notice proposes no change to PAL renewal, so the test that [part 1](#) dates to 12 March 2031 stands as it is: substantial service, shown from radios registered with a database. Two other rules bear on a building owner, and neither is about CBRS.

- **Signal boosters.** Under § 90.219 a building owner may run a booster on public-safety or private land mobile frequencies only with “the express consent of the licensee(s)”. A wideband (Class B) installation has to be registered in the FCC’s signal booster database. Only a distributed antenna system inside a building may carry commercial and public-safety bands together.
- **FirstNet.** FirstNet now brings its own band indoors at public-safety sites. Its FY2025 report records 5,546 units supplied to agencies to extend Band 14 coverage inside, “providing up to approximately 85 million square feet of indoor coverage”. The task order behind them requires AT&T to extend that coverage to public-safety facilities.

Terms used

- **Notice of proposed rulemaking.** The FCC's formal proposal to change its rules. It binds nobody until a report and order adopts it.
- **Ex parte.** A filing that records a meeting or letter with FCC staff about an open proceeding, in the filer's own words.
- **Category C and D.** Proposed CBRS radio classes above today's Category B ceiling of 47 dBm per 10 MHz: 62 dBm and 72 dBm.
- **Covered band.** The statute's name for 1.3 to 10.5 GHz less its two excluded ranges, from which the pipeline's spectrum must come.
- **AFC, automated frequency coordination.** A database that sets the power a standard-power 6 GHz access point may use at its location, to protect fixed microwave links.

Implications

ENTERPRISE OR BUILDING OWNER

Price two more years of undecided rules into any CBRS plan, as Syracuse University has had to. An indoor network on low-power radios gained from the 2024 changes, and it is exactly the kind of network higher power would hurt. If you run one, file in GN Docket 17-258 and file with analysis, because the FCC's July 2026 order faulted the CBRS users for presenting none.

CARRIER STRATEGIST

Argue the power case with indoor coverage data rather than radio counts. The statute removed the destination in AT&T's relocation plan, so the live choices are power and pipeline. The Chairman's office is already asking whether the band is used, and the 62 dBm case is in substance a building-penetration case, so make it one.

INVESTOR

Hold PAL values under a notice that could change power before 2031, because nothing has been decided. Watch 4 July 2027, when NTIA must identify its first 200 MHz of federal spectrum: that list would show whether 3.55 to 3.65 GHz is in play.

Method and limits

HOW THIS WAS BUILT

The state of the proceeding is read from the FCC's own documents and from the electronic docket listing of GN 17-258, sorted by date and read to 7 October 2026. Where the text says there is no order, none appears in that listing or among the FCC's documents. Each party's position is quoted from its own filing. The statute is read from the enrolled text of section 40002. Power ratios are 10 to the power of the decibel difference divided by ten. A position whose document was not opened is marked as reported.

WHAT IT DOES NOT SHOW

An ex parte letter summarises a meeting in the filer's words, and the FCC is bound by none of them. The positions of the Department of Defense and of the ten senators who reportedly wrote in September 2025 are known only from the trade press. Which bands NTIA will identify under the statute is not public. The fire codes that require in-building public-safety radio coverage are adopted locally; their text was not checked and their requirements are not described here.

Data as of: GN Docket 17-258 listing and FCC documents read 7 Oct 2026 · Method version 1.0.

Sources. The notice FCC 24-86 (GN Docket 17-258) and DA 24-1009, DA 24-1103 and DA 25-963; the ECFS docket listing to 7 Oct 2026 and the filings of AT&T, Verizon, T-Mobile, CTIA, OnGo Alliance and APM Terminals (5 Dec 2024), CTIA (9 Feb 2026), CCA (10 Apr 2026), Syracuse University (14 Jul 2026), the CBRS coalition (15 Jul 2026) and WISPA (6 Oct 2026); the Luján and Fischer letter (6 Mar 2026); P.L. 119-21, section 40002; FCC 26-46; the FCC's 6 GHz news release of 29 Jan 2026, fact sheet and Federal Register text; 47 CFR § 96.41 and § 90.219; the FirstNet Authority's FY2025 report; Broadband Breakfast on the Chairman's office (6 May 2026); Fierce Network on the power study (8 May 2026) and Critical Communications Review on the same study (16 Apr 2026) and on earlier proposals (13 Apr 2021); Light Reading on the December 2025 letters. Retrieved 7 Oct 2026.

What an enterprise should decide

Wi-Fi 7, private 5G, a neutral host or a carrier programme: which, for what, and on what evidence?

Wi-Fi 7, private 5G, a CBRS neutral host and a licensed carrier programme compete for the same budget, and most of the confusion about them comes from asking the questions in the wrong order. Four questions, asked in sequence, sort them: what the building is made of, whose devices need service, whether Wi-Fi 7 meets the need, and which carriers have to work. The unsettled CBRS rules then set how long anything on the shared band has to pay back.

BLUE PRYSM · ANALYSIS



IN BRIEF

- Classify the building first. A thermally efficient building loses **30.9 dB** at the median at CBRS frequencies against 15.8 dB for a traditional one, so inside it no outdoor signal can be relied on.
- For devices the enterprise owns, Wi-Fi 7 is the default. It was over half the WLAN market in the second quarter of 2026, a quarter in which vendors sold more than 10 million access points, a record (Dell'Oro). Private wireless RAN, by comparison, was 3 to 5% of RAN revenue in 2025.
- For phones the enterprise does not own, the carriers decide. A private SIM on an iPhone is data-only. AT&T certifies CBRS neutral hosts, T-Mobile prefers licensed spectrum and Verizon decides case by case, as reported.
- Anything on CBRS carries the open rules in [part 4](#). The notice of August 2024 has no order, NTIA names its first federal bands by 4 July 2027, and most PALs expire on 12 March 2031. Size the payback to end before the rules can change, or buy radios that can move.

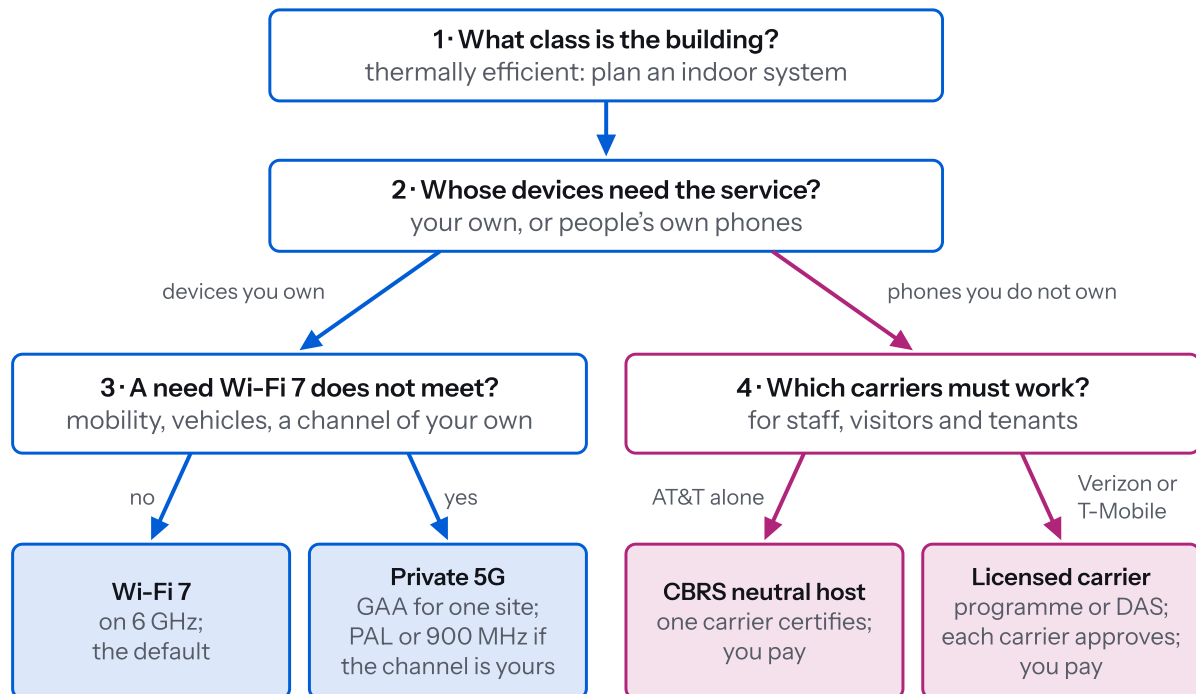
The rule asks four questions in order

Each question takes options off the table before the next one is asked, which is why the rule works only in this order (Exhibit 1).

- 1. Classify the building.** [Part 3](#) showed that a building's construction sets the loss at every band. At 3.625 GHz the median is 15.8 dB for a traditional building and 30.9 dB for a thermally efficient one with metallised glass and foil-backed panels. In the second kind, plan an indoor system for any cellular service. A higher-power class that would hand back roughly one building class from outside is so far only a proposal ([part 4](#)).
- 2. Ask whose devices need the service.** The enterprise's own laptops, scanners, sensors and cameras can use any network it builds. Phones that belong to staff, visitors or tenants can use only a network their carrier admits them to. This question decides whether the carriers have a say.
- 3. For devices you own, ask whether Wi-Fi 7 meets the need.** If it does, Wi-Fi 7 is the answer. If you can name a need it does not meet, such as mobility, vehicles or a channel of your own, that need goes on private 5G, and the rest stays on Wi-Fi.
- 4. For phones you do not own, ask which carriers must work.** If AT&T's customers suffice, a CBRS neutral host serves them. If Verizon's or T-Mobile's customers matter, the route is a licensed carrier programme or a multi-carrier system, and the owner pays for it.

EXHIBIT 1

Four questions in order lead to Wi-Fi 7, private 5G, a CBRS neutral host or a licensed carrier programme



Then, for anything on CBRS: end the payback before the rules can change,
or buy radios that can move. The notice of 16 Aug 2024 is still open; NTIA's
first list is due 4 Jul 2027; most PALs renew on 12 Mar 2031. Write a supplier
exit into the contract: one vendor expects to sell its campus unit.

Source: parts 1 to 4 of this series: Rec. ITU-R P.2109-2 for building class; Apple platform documentation for private SIMs; carrier positions as reported to June 2026; FCC 24-86, P.L. 119-21 and the FCC licence file for the dates (Judgement). Note: the rules check applies to anything on CBRS.

The rule runs as follows. Classify the building first. For devices you own, use Wi-Fi 7 unless you can name a need it does not meet. Put only that need on private 5G, with a payback that ends before the shared band's rules can change. For phones you do not own, buy coverage from the carriers whose customers you need: a CBRS neutral host where AT&T alone suffices, a licensed carrier programme where Verizon or T-Mobile matter.

Wi-Fi 7 is the default for devices the enterprise owns

Private 5G and Wi-Fi 7 both work for an enterprise’s own laptops, scanners, sensors and cameras, so the case for private 5G has to rest on something Wi-Fi 7 cannot do.

Wi-Fi 7 has a finished standard and most of its market (Exhibit 2). IEEE 802.11be-2024 was approved on 26 September 2024 and published on 22 July 2025. The Wi-Fi Alliance’s certification includes 320 MHz channels, “only in the 6 GHz band”, and multi-link operation. By the second quarter of 2026, Dell’Oro reported in September, Wi-Fi 7 was over half the WLAN market, and vendors sold more than 10 million access points in the quarter, a record. Private wireless RAN, by the same firm’s count, was 3 to 5% of all RAN revenue in 2025, growing 16% and slowing, with its campus outlook cut. The rules behind Wi-Fi 7 have moved in one direction since 2020, towards more use ([part 4](#)).

EXHIBIT 2

Wi-Fi 7 has a finished standard and over half its market; private 5G is 3 to 5% of RAN revenue and slowing

MEASURE	WI - FI 7	PRIVATE 5G
Standard	IEEE 802.11be-2024, approved 26 Sep 2024, published 22 Jul 2025	3GPP Releases 17 to 19 (TS 23.501), Release 19 version Sep 2026
Market, latest	Over half of the WLAN market in 2Q 2026; more than 10 million access points sold in the quarter, a record	3 to 5% of RAN revenue in 2025; growth 16%, about 2.5 times slower than 2024; campus outlook cut
Spectrum	6 GHz unlicensed, with 2.4 and 5 GHz; use widened Jan 2026	CBRS for 75% of American private 5G networks, as reported; PALs or 900 MHz for utilities
Rules exposure to 2031	Low	CBRS notice open since Aug 2024; PALs renew 12 Mar 2031

Dell’Oro does not say whether its Wi-Fi 7 share is by units or by revenue.

Source: IEEE 802.11be-2024 record; Wi-Fi Alliance; 3GPP TS 23.501 V19.9.0 (Filed); Dell’Oro, 10 September 2026 and 15 April 2026; CBRS coalition report filed 15 July 2026, citing Analysys Mason, March 2026 (Reported).

Private 5G earns its place where the enterprise can name the need, and the needs on the record are specific ones. APM Terminals runs CBRS across Pier 400 in Los Angeles, which is 507 acres, for cameras, theft monitoring and sensors on equipment. John Deere’s factories use it to run autonomous vehicles and robots, as reported. Utilities buy a channel nobody else may use, at 900 MHz or in PALs ([part 2](#)). Most of them share one exposure. An advocates’ report filed in July 2026, citing Analysys Mason, says 75% of American private 5G networks rely on CBRS, so for three in four of them the rules exposure in part 4 is the network’s own exposure.

Two checks follow. First, size the payback to end before the rules can change, or buy radios and a core that can move to licensed spectrum if they do. NTIA’s first list is due on 4 July 2027 and most PALs renew on 12

March 2031. Second, write a supplier exit into the contract, because one of the two main vendors expects to sell its campus unit and both cloud services have already closed.

Phones the enterprise does not own belong to the carriers

A private network can reach a phone but cannot give it its carrier's service, and Apple's own documentation shows where the line falls.

Band support is no longer the obstacle. Every iPhone since the iPhone 11 of 2019 lists LTE band 48, and every one since the iPhone 13 of 2021 lists 5G band n48. FCC equipment grants for Samsung's Galaxy S21 and S25 include CBRS operation. The obstacle now is how a private network behaves once it is inside the phone.

WHAT A PRIVATE NETWORK CAN DO FOR AN IPHONE

Apple supports private, data-only networks from iOS 17, and up to five private network profiles from iOS 18.

A SIM that uses the private-network country code 999 "can't roam onto public cellular networks", so voice and texts need a second SIM from a public carrier. Moving in or out of a geofence "takes a few minutes for the SIM switch to occur".

That suits a managed fleet of phones running a company's own applications. It does nothing for a visitor, a patient or a tenant.

For those phones the carriers decide, and [part 3](#) sets out how each has decided so far. A CBRS neutral host broadcasts several carriers' identities on shared radios. AT&T certifies it, as reported. T-Mobile asked vendors in August 2025 to put licensed spectrum ahead of CBRS. Verizon let its customers onto Meta's CBRS office network in 2023, has not certified Celona's system, and decides case by case. Where Verizon's or T-Mobile's customers matter, the route runs through their licensed spectrum (Exhibit 3).

That route has a name at each carrier. The 5G Americas paper *Neutral Host Opportunities for 5G and Beyond* (July 2024) lists the enterprise-funded programmes: AT&T Direct, T-Mobile's Build Your Own Coverage and Verizon's Coverage Extension Radio Access Network. Blue Prysm's founder, Colin Bowdery, co-led the working group that wrote it while he was at Ericsson. The alternative is a multi-carrier system with each carrier's own signal source. Either way the enterprise pays; the paper says medium and low-capacity venues "will have to either partially subsidize the system cost or completely fund it themselves". For scale, Wilson Connectivity publishes \$5 to \$10 a square foot for a multi-carrier active system.

EXHIBIT 3

The four options differ in who pays, whether phones get public coverage and how exposed they are to the open CBRS rules

OPTION	SPECTRUM	WHO PAYS	PUBLIC COVERAGE FOR PHONES	RULES EXPOSURE TO 2031
Wi-Fi 7	6 GHz unlicensed, with 2.4 and 5 GHz	Enterprise	None	Low: 6 GHz use widened in Jan 2026
Private 5G on CBRS GAA, PAL or 900 MHz	Shared, or licensed by county or by utility	Enterprise, plus any licence	None: private SIMs are data-only	CBRS notice open since Aug 2024; PALs renew 12 Mar 2031
CBRS neutral host	CBRS, carrying carriers' identities	Enterprise	Only for carriers that certify it: AT&T, as reported	As CBRS
Licensed carrier programme or multi-carrier DAS	Each carrier's licensed spectrum	Enterprise; carriers at the largest venues	Each participating carrier, building by building	Low

“Who pays” follows the programmes and costs in part 3. “Rules exposure” is Blue Prysm’s reading of the dockets and statute in part 4.

Source: parts 1 to 4 of this series; Apple platform deployment guide; 5G Americas, July 2024, p.14; RCR Wireless, 2 April and 26 August 2025 (Judgement).

The enterprises on the record each fit one branch of the rule

Six enterprises have said why they chose what they chose, in a filing or to a reporter, and each lands on one branch of the rule (Exhibit 4).

EXHIBIT 4

Six enterprises with reasons on the record each fall on one branch of the rule

ENTERPRISE	NEED, AS FILED OR REPORTED	CHOSE	BRANCH
APM Terminals	Cameras, theft monitoring and equipment sensors across a 507-acre terminal, without buying a licence	CBRS GAA	Own devices; a site-wide need Wi-Fi does not meet
John Deere factories	Video analytics, autonomous vehicles and robots, as reported	CBRS	Own devices; vehicles and robots
Stanford Health Care	“reliable public cellular connectivity” in its buildings, plus a private network for medical technology	CBRS neutral host, AT&T certified	Phones it does not own, and its own devices
Cummins, Jamestown plant	Coverage in a 2 million square foot engine plant	Verizon as anchor tenant on its own spectrum	Phones it does not own; Verizon matters
Meta offices	Coverage faster and cheaper than DAS	CBRS neutral host for three carriers, 2023	Phones it does not own; before T-Mobile’s 2025 change
Syracuse University	Indoor signal in “thick-walled masonry buildings”	CBRS, with full deployment on hold	Building class first; then the rules check

Needs are in each organisation’s own words where quoted. APM Terminals and Syracuse filed with the FCC; Deere, Stanford, Cummins and Meta are as reported. No enterprise has stated on the record why it chose Wi-Fi over private 5G.

Source: ECFS, GN Docket 17-258: APM Terminals, 5 December 2024; Syracuse University, 14 July 2026; CBRS coalition report, 15 July 2026, for Deere (Filed); RCR Wireless, 2 April 2025; Light Reading, 25 April 2023 and 9 May 2024 (Reported); branch assigned by Blue Prism (Judgement).

SYRACUSE UNIVERSITY’S LETTER

Syracuse built CBRS for needs that, in its words, “traditional Wi-Fi and macro-cellular networks cannot fully meet”, in “thick-walled masonry buildings” that defeat any signal from outside.

On 14 July 2026 it told the FCC: “The ongoing discussions about proposed rule changes have introduced uncertainty, making long-term planning exceptionally difficult”. It needs “greater clarity and stability to confidently resume our full deployment schedule”.

Its network answers the building question and the device question. It now waits on the rules check, the one question no enterprise controls.

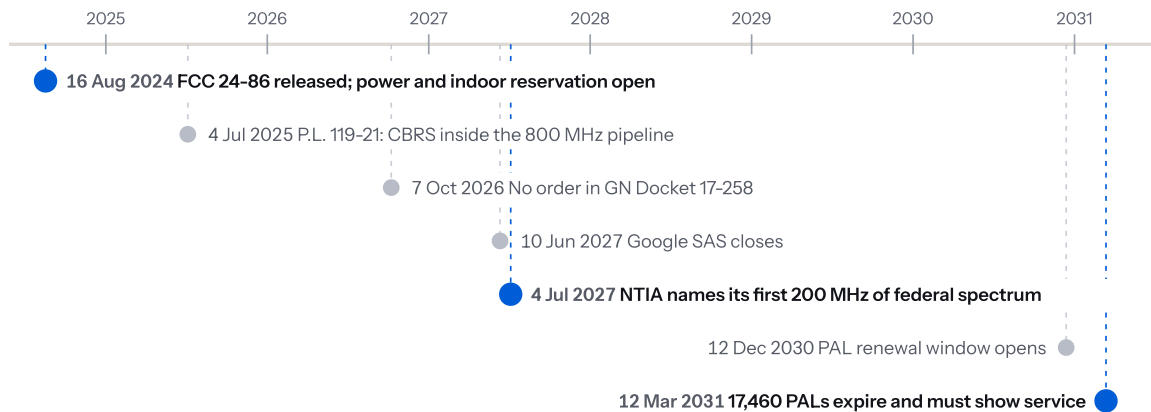
Syracuse is the reason the rules check belongs in the rule. The other five fit their branches without qualification: two are own-device networks with a named need, two are neutral hosts for phones the owner does not own, and one is an anchor-tenant deal on licensed spectrum where Verizon’s customers mattered.

The rules check sets the payback horizon

Every network on the shared band is bound by the dates that [part 1](#) and [part 4](#) set out (Exhibit 5). The FCC's notice of 16 August 2024 could change the power limits at any meeting and has produced no order. NTIA must identify its first 200 MHz of federal spectrum by 4 July 2027, and whether 3.55 to 3.65 GHz counts is undecided. Google's database closes on 10 June 2027. The renewal window for most PALs opens on 12 December 2030, and 17,460 of them expire, and must show service, on 12 March 2031. A payback that runs past any of those dates is a bet on how the date turns out.

EXHIBIT 5

A CBRS network's payback runs against three dates: the open notice, NTIA's list in July 2027 and PAL expiry in March 2031



Source: FCC 24-86; P.L. 119-21, section 40002; Google Cloud deprecation notice; 47 CFR §§ 1.949 and 96.25; FCC market licence file, 4 October 2026 (Filed; Calculated). Note: the notice could be decided at any FCC meeting; the other dates are fixed by statute, rule or company notice.

Terms used

- **Wi-Fi 7.** The Wi-Fi Alliance's name for IEEE 802.11be. Its widest channels, 320 MHz, are available only in the 6 GHz band.
- **Private SIM.** A SIM or eSIM profile issued for one private network. On an iPhone it is data-only, and one using the private-network country code 999 cannot roam onto public networks.
- **Enterprise-funded carrier programme.** A carrier's arrangement under which the building owner pays for a system that uses that carrier's licensed spectrum, such as AT&T Direct or T-Mobile's Build Your Own Coverage.

- **Thermally efficient building.** P.2109's class for buildings with metallised glass and foil-backed panels, 15 dB or more harder to enter than a traditional one.
-

Implications

ENTERPRISE OR BUILDING OWNER

Answer the four questions in order, and write the answers down before you meet a vendor. Most buildings will end at Wi-Fi 7 for their own devices and a carrier conversation for everyone else's phones. Private 5G belongs where you can name the need, and on CBRS it needs a payback that ends before 2031 or radios that can move. The [partnership decision record](#) is built for the carrier or neutral-host contract.

CARRIER STRATEGIST

Publish the terms of your enterprise-funded programme, because publishing is cheaper than negotiating building by building. The fourth question sends enterprises to you, and your certification policy decides which way they go. A building that needs Verizon's or T-Mobile's customers served has one route, licensed and paid for by the owner.

INVESTOR

Expect enterprise money to go to Wi-Fi 7 by default, to carrier programmes for public coverage, to utilities' licensed spectrum for wide areas, and to campus private 5G only where a need is named. The published figures so far match that: a Wi-Fi 7 record quarter, private wireless at 3 to 5% of RAN, and a vendor selling its campus unit.

Method and limits

HOW THIS WAS BUILT

The rule is built from dependencies the earlier parts establish, in the order in which each one removes options. The building's class comes from the P.2109 model in part 3. Whose devices need service comes from Apple's documentation of what a private network can and cannot do for a phone. Whether Wi-Fi 7 meets the need comes from the standard, the market record and the needs enterprises have stated to the FCC. Which carriers must work comes from the carrier positions in part 3. The rules check applies the dates in parts 1 and 4. The enterprise cases are those with reasons on the record, in a filing or in the trade press.

WHAT IT DOES NOT SHOW

No independent study compares the cost of Wi-Fi 7 and private 5G at the same site, so the rule sorts by capability, control and rules exposure rather than by price. The cost figures that exist are vendors' own and appear in part 3. No enterprise on the record has stated why it chose Wi-Fi over private 5G. Carrier positions are as reported and can change without notice. The rule does not cover the public-safety radio coverage that local fire codes can require; their text was not checked. It is a way of ordering a decision, not advice for any particular building.

Data as of: parts 1 to 4 as read 7 Oct 2026 · Dell'Oro to 10 Sep 2026 · Apple pages read 7 Oct 2026 · Method version 1.0.

Sources. Parts 1, 2, 3 and 4 of this series and their sources; the IEEE record for 802.11be-2024; the Wi-Fi Alliance's Wi-Fi CERTIFIED 7 page; Dell'Oro on Wi-Fi 7 (10 Sep 2026) and private wireless (15 Apr 2026); Apple's private 5G and LTE support, its technical specifications for the iPhone 11, iPhone 13 and iPhone 17; FCC equipment grants for the Galaxy S21 and S25, read through a mirror; FCC filings by APM Terminals, Syracuse University and the CBRS coalition; RCR Wireless on Stanford Health Care and T-Mobile; HALO Networks on carrier positions (11 Jun 2026); Light Reading on Meta and Cummins; 5G Americas, Neutral Host Opportunities for 5G and Beyond (July 2024). Retrieved 7 Oct 2026.



WORK WITH BLUE PRYSM

Start with a diagnosis

Blue Prysm is a boutique consultancy working where telecommunications, AI and business strategy meet. We take the work from diagnosis and ideation, through business model design and market testing, to a first commercial offering.

Tell us what you are trying to decide. We reply in writing within two working days, with how we would approach it, what it would take and what it would cost.

PRACTICE

Telecommunications strategy

Spectrum positions, satellite and direct-to-device plans, 6G roadmaps, private networks and the economics of each, priced from filings and auction records.

PRACTICE

AI that pays its way

An AI programme designed around a portfolio of tests, each with its cost to prove, its guardrail and its kill gate written down before it starts.

PRACTICE

Business strategy

Diagnosing a revenue plateau, finding and testing the growth opportunities, and designing the plan to enter them.

How an engagement runs

The first step is a one-day teardown. Each step stands on its own, has a fixed fee agreed before it starts, and you decide whether the next one is worth doing.

STEP 1

One-day teardown

A 90-minute working session on the decision in front of you, a written answer in two working days, and the model behind it, yours to keep.

STEP 2

Two-week assessment

Two working sessions, a 12 to 18 page memo with the working shown so your team can check every number, and a one-page board summary.

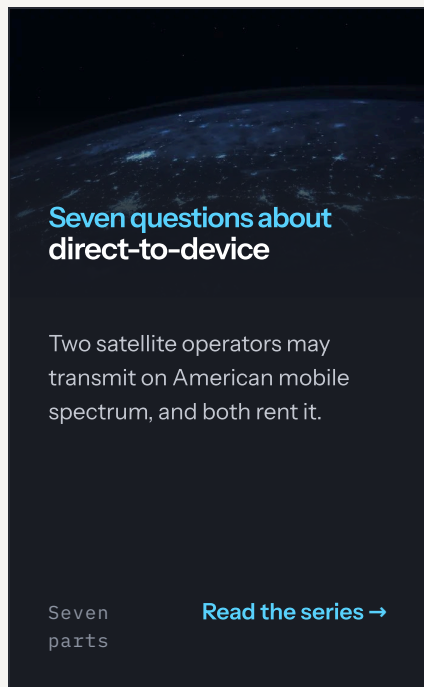
STEP 3

Project

Scoped to the engagement, with weekly checkpoints, until a first offering is in the market with your team running it. Every model and source is yours at the close.

The other series

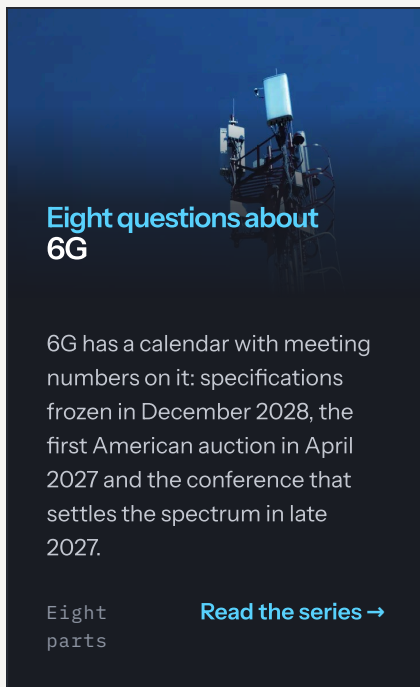
Each series takes one subject and answers five to eight questions about it from the primary record. All are free to read on the site or to download as ebooks.



Seven questions about direct-to-device

Two satellite operators may transmit on American mobile spectrum, and both rent it.

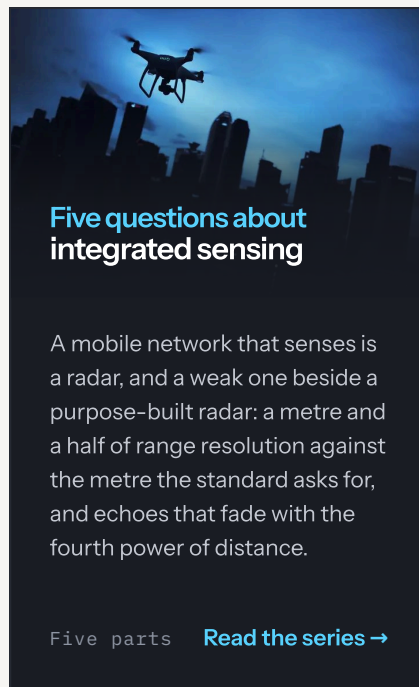
Seven parts [Read the series →](#)



Eight questions about 6G

6G has a calendar with meeting numbers on it: specifications frozen in December 2028, the first American auction in April 2027 and the conference that settles the spectrum in late 2027.

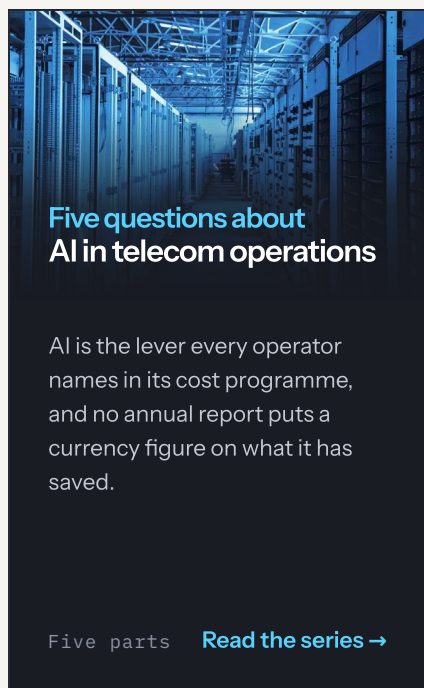
Eight parts [Read the series →](#)



Five questions about integrated sensing

A mobile network that senses is a radar, and a weak one beside a purpose-built radar: a metre and a half of range resolution against the metre the standard asks for, and echoes that fade with the fourth power of distance.

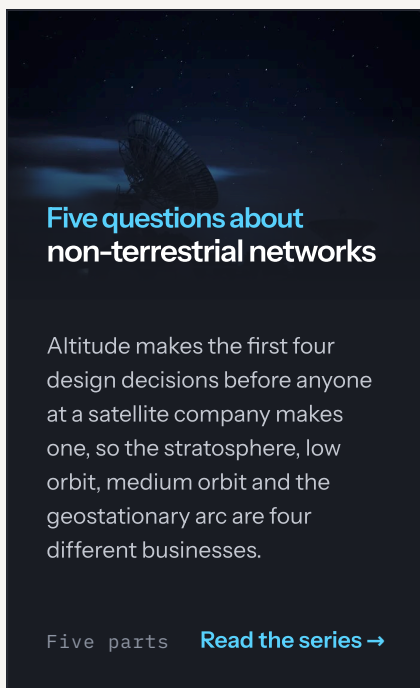
Five parts [Read the series →](#)



Five questions about AI in telecom operations

AI is the lever every operator names in its cost programme, and no annual report puts a currency figure on what it has saved.

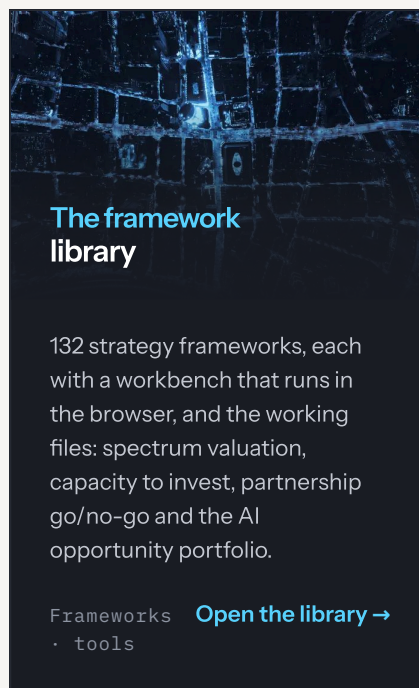
Five parts [Read the series →](#)



Five questions about non-terrestrial networks

Altitude makes the first four design decisions before anyone at a satellite company makes one, so the stratosphere, low orbit, medium orbit and the geostationary arc are four different businesses.

Five parts [Read the series →](#)



The framework library

132 strategy frameworks, each with a workbench that runs in the browser, and the working files: spectrum valuation, capacity to invest, partnership go/no-go and the AI opportunity portfolio.

Frameworks · tools [Open the library →](#)

www.blueprism.com/analysis/ and www.blueprism.com/tools/. © 2026 Blue Prism. Free to use and adapt; attribution with a link to www.blueprism.com is asked for, not required.