

XCOM RAN (Radio Access Network)

Enabling demanding private wireless applications with less spectrum

Globalstar 



The 5G Force Multiplier

XCOM RAN is a multipoint radio system that delivers capacity, flexibility, and coverage that no other system can match. Ideal for private wireless networks, it delivers **>4x capacity gains** and superior performance versus baseline 5G NR systems in both downlink and uplink transmissions. Reliability is dramatically enhanced by eliminating challenges such as radio interference, multiple RU clusters, disconnected RUs, and handover losses.

XCOM RAN easily and economically enables your system to scale, making it simple to set up a network – with simplified frequency planning – and expand to handle more traffic that comes with additional space requirements and structural changes.

Why traditional systems can't keep up with *growing wireless demands*

The typical technologies for private wireless networks are Wi-Fi, distributed antenna systems (DAS), and LTE or 5G small cells. All come with challenges.

- Spectrum is increasingly expensive and limited
- As cells are loaded with users and traffic, performance is suffering
- 5G small cells offer limited capacity gains over 4G
- Densification gains are being limited by handover boundaries and related interference
- Massive-MIMO can't provide consistent coverage and performance

Wi-Fi and DAS enable you to expand coverage by adding antennas. But that does nothing to increase total capacity. In fact, the more antennas you add, the more traffic the network tries to carry and the worse its performance becomes.

LTE/5G small cells enable you to expand coverage by adding more cells. These also add capacity – at first. But those gains are cut short by increased interference and handover losses at cell boundaries. Capacity growth stops and network performance declines. Network set-up also requires detailed frequency planning to manage interference and deal with metal structures – which must be repeated with each change to the facility.

In fast-changing markets, facilities and operations must be able to handle growth and new requirements to keep a competitive edge. Wi-Fi, DAS and LTE/5G networks running on proprietary platforms struggle to adapt at a cost companies can justify.

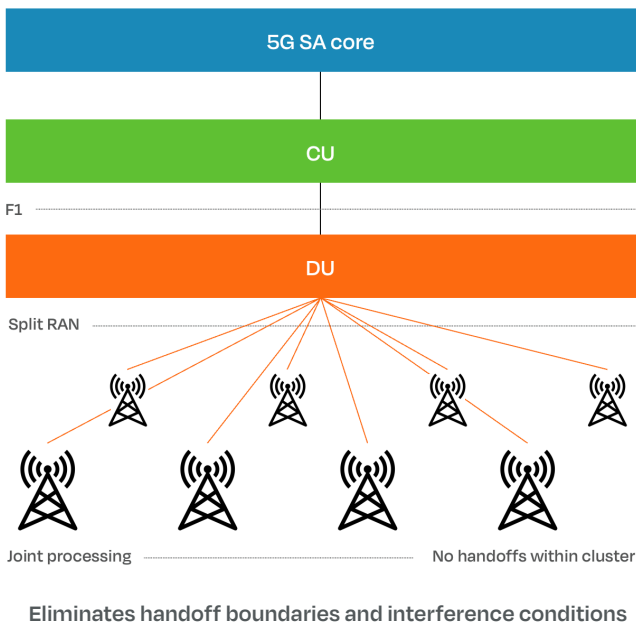


The XCOM RAN Advantage:

Increased Capacity, Coverage, Reliability, Flexibility

Put traditional network challenges behind you. Instead of antennas or cell sites, XCOM RAN 3GPP ORAN-based wireless Radio Access Network delivers unprecedented 5G capacity, flexibility and coverage. Radio Units process signals at the edge and connect with the XCOM RAN platform, eliminating handoff boundaries and interference conditions and providing more capacity in concentrated areas as needed without loss of performance – all while enabling your system to easily and economically scale.

XCOM RAN



Increases capacity over baseline 5G NR systems by >4X

- Instead of antennas or cell sites, XCOM RAN uses Radio Units that process signals at the edge. Every Radio Unit you add increases both coverage and capacity.

The entire cluster acts as one Super Cell, converting compute to capacity

- Radio Units collaborate with each other so they can be located for best coverage without the need for detailed frequency planning.
- Eliminates handoff boundaries.
- Zero interference
- Provides significant performance gains for both downlink (DL) and uplink (UL) transmissions

Scales easily and economically as capacity needs increase

- And because our Open RAN platform runs on generic compute, you no longer need to “rip and replace” just to make your network keep up with changing needs.



Enabling demanding 5G applications with less spectrum

Where can XCOM RAN make the biggest difference?

- Warehouse automation / dense industrial 4.0
- Retail, fulfillment and distribution centers
- Enterprise, mining, campus networks, extended reality (XR), energy platforms, stadiums and more.

Mobile robots are adding new flexibility and efficiency to factories, warehouses, and distribution centers – but they only work if they can maintain connection wherever they go. VR and AR are transforming industry, healthcare, and other operations – but there’s no way to predict where users may need them. In today’s fast changing markets, facilities and operations are in constant flux, and Wi-Fi and small-cell networks struggle to adapt at an affordable cost. That’s where XCOM RAN excels.

What's the *bottom line*?

For each of these applications – and hundreds more – XCOM RAN delivers value that existing private network technologies simply can't.

- Increases capacity over baseline 5G NR systems by >4X.
- Reliable consistent service.
- Freedom from interference and handovers.
- Flexibility to adapt quickly and inexpensively to new needs.
- Highly scalable.

Feature Set

RADIO UNITS

- Single cell operation with central processing of signals from multiple antennas
- Up to 100 MHz bandwidth
- 5G systems support TDD bands below 7GHz

CU AND DU - CENTRALIZED UNIT AND DISTRIBUTED UNIT

- XCOM software running in Open RAN on generic compute

Technical Specs

- 3GPP SPEC
- Rel-16

FREQUENCY BANDS

- CBRS (n48), C (n77, n78), S(n53)

CARRIER BANDWIDTH

- 10,40,100 MHz Native support

DUPLEXING MODE/DEPLOYMENT

- TDD/SA

TDD UL-DL CONFIG

- 7DSUU, 5DS4U

NO. OF AGGREGATED CARRIERS

- 1

PRIMARY VERTICAL APPLICATIONS

- eMBB, AR/VR, Real-time video, and Bot automation (UL centric)

NO. RUS PER DU

- 8

O-RAN SPLIT

- eCPRI Split 7.2x

NO. OF RRC CONNECTED UES

- 200

TOTAL NO. RRC CONNECTED + IDLE UES

- 1024

TOTAL NO. TX/RX CHAINS

- 32T32R over 8 RRUs

XCOM RAN NO. MIMO LAYERS

- SU-MIMO: DL=4, UL=2
- MU-MIMO: DL=16, UL=12

HIGHEST MODULATION

- 256QAM

PEAK SPECTRAL EFFICIENCY

- MU-MIMO (Mbps): DL=88 bps/Hz, UL=46bps/Hz

