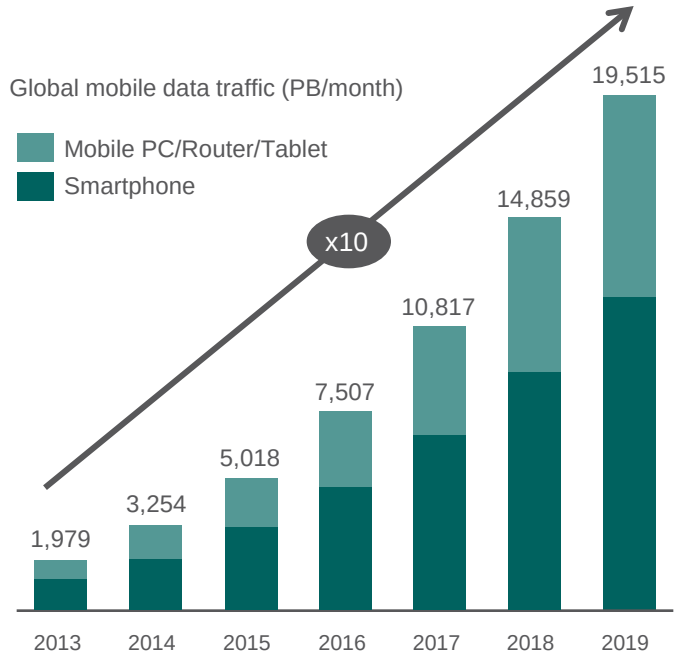
RBS 6402

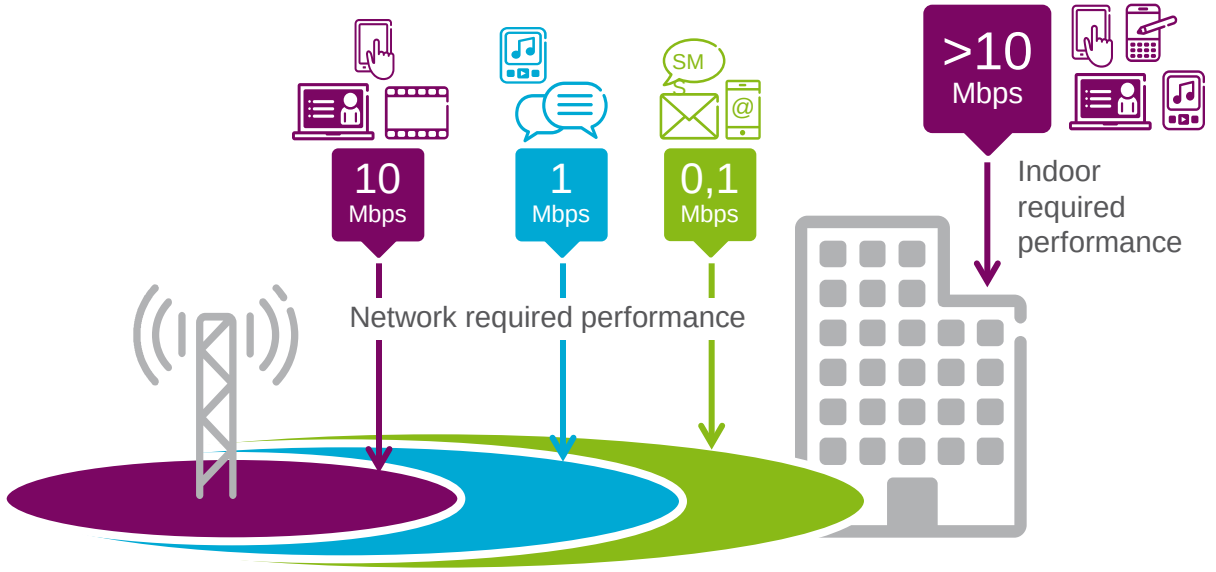
CONSTANTLY GROWING DEMAND

Cope with the constant data traffic growth



Source: Ericsson Mobility Report, June 2014

Provide app coverage everywhere



The challenge is to provide performance, reliable connectivity and mobility across radio technologies, frequencies and places

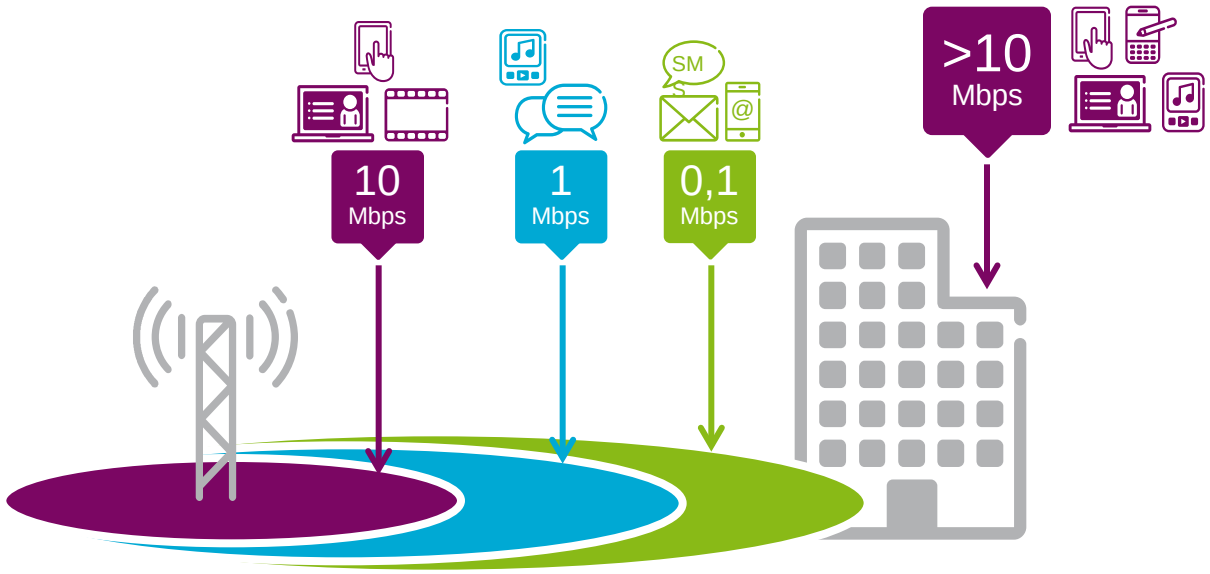
OPERATOR CHALLENGES

Indoor App Coverage
Indoor systems must deliver seamless app coverage, peak rates and services

Technologies and Spectrum
Migration of 3-4 Standards and 5-10 Bands

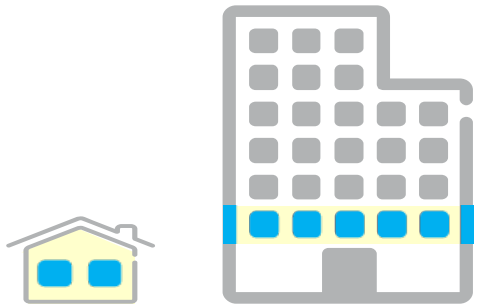
Multitude of Devices
3G, 4G and Wi-Fi

Cost Efficient Deployment
Size, few boxes, Backhaul, installation & integration

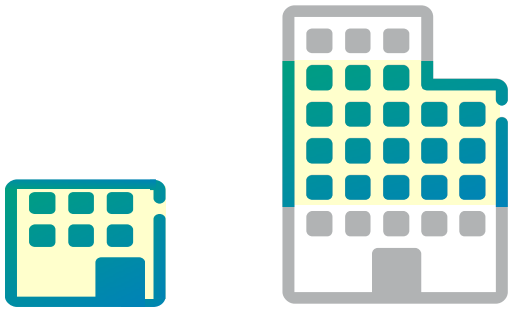


Approx. 10 Million commercial buildings up to 5000 m² (50 000 sqft)

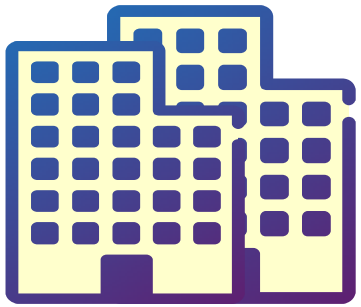
ERICSSON INDOOR PORTFOLIO



< 5K m²



5K – 50K m²



> 50K m²

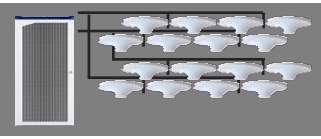
Pico RBS *Small deployments, Internet grade backhaul*

Radio Dot

Superior performance and feature support in large deployments

Micro DAS

Large coverage, special antenna configurations



Macro DAS

RBS 6402 INDOOR PICO CELL

Biggest performance boost in a tablet-sized footprint optimal for smaller buildings

FIRST PICO CELL WITH 300 MBPS CARRIER AGGREGATION

3 STANDARDS

LTE
WCDMA
WI-FI

10 FREQUENCY BANDS

RBS 6402 SUMMARY

- Biggest performance boost with up to 300 Mbps in a tablet-sized footprint optimal for smaller buildings
- First with 3 technologies, 10 frequency bands
- Flexible and easy to deploy with Power over Ethernet

RBS6402

Performance

- 300 Mbps LTE Carrier aggregation
- Up to 2 LTE Carriers 5,10 or 20 MHz Dual band
- Up to 4x250 mW output power
- 21 Mbps HSPA (HW prep 42 Mbps)

Flexibility

- Up to 10 bands in one unit
- Remote selection of Band
- 3 Standards, LTE, WCDMA and Wi-Fi simultaneous operation

Easy to deploy

- Small All-in-One solution
- Data & Power over Ethernet and SON features.
- Network-live in 10 min.

RBS 6402 DETAILED DATA

Flexibility

- 10 Frequency Bands (3GPP+WiFi) supported in one unit
- 2 Bands 3GPP (LTE/WCDMA)+ 2 bands Wi-Fi simultaneous operation
- 3 Technologies: LTE , WCDMA and Wi-Fi simultaneous operation
- RF Power 3GPP: 2x250 mW per band (total 4x250 mW, B7 Europe:4x125 mW)
- Capacity up to 128 users (LTE)

LTE

- Carrier aggregation up to 300/50 Mbps DL/UL
- 1 or 2 bands 2x2 MIMO

WCDMA

- 21/5.76 Mbps UL/DL, HW prep Multi carrier 42 Mbps
- RNC connected, full mobility

Wi-Fi

- 2.4 GHz: 802.11 a/b/g/n, 3x3 MIMO, 200 mW per branch
- 5 GHz: 802.11 a/b/g/n/ac, 3x3 MIMO, 200 mW per branch

Easy to install

- Compact: 2.8 liters (280x167x62mm)
- SON auto integration, network live in 10 minutes

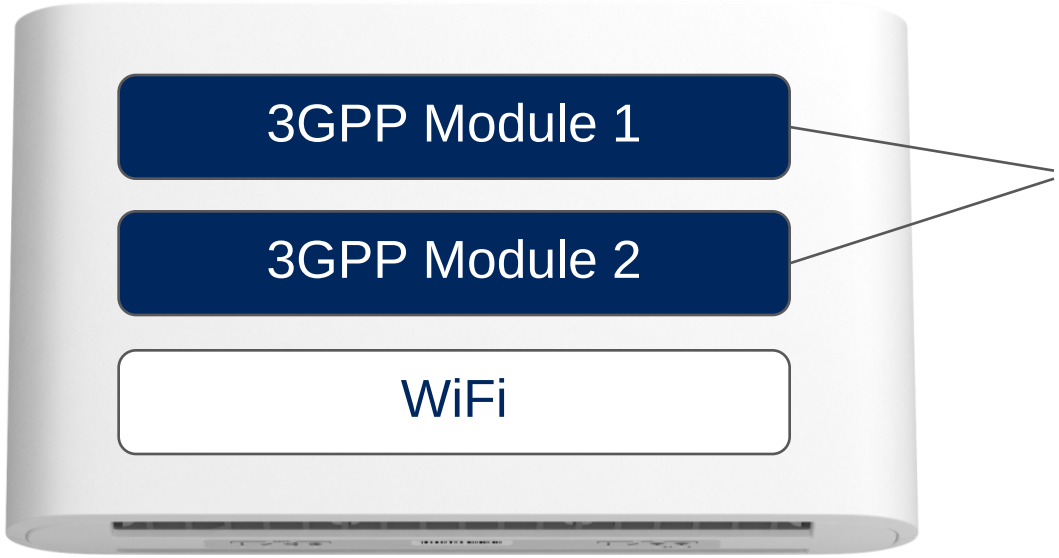
Backhaul & Security

- 1 Gbps Electrical Ethernet , Optical as an option
- IPSec for untrusted networks
- Signed SW and secure O&M access for untrusted locations

RBS 6402
DESIGNED FOR DEPLOYMENT

- Backhaul & Security
  - 1 Gbps electrical Ethernet , Optical as an option
  - IPSec for untrusted networks
  - Signed SW and secure O&M access for untrusted locations
- Antenna
  - Embedded Omni-directional antennas
  - External antennas as option
- Easy to install
  - Compact: 2.8 liters
  - Wall or Ceiling mounting
- Power Supply:
  - Power over Ethernet cable PoE+/uPoE
  - 48V DC
  - 115/230V AC with external adapter

MULTIBAND CONCEPT

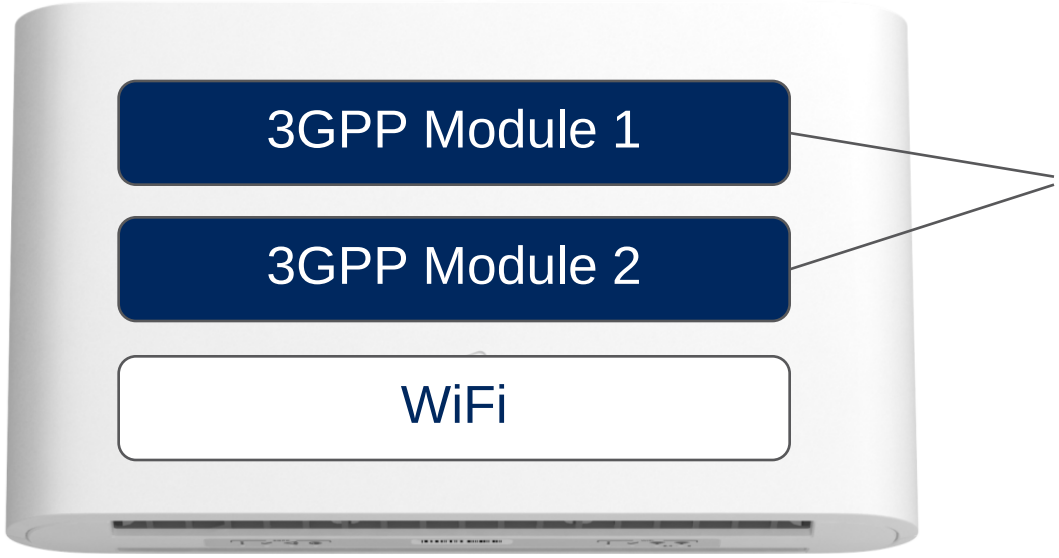


2 RF modules for 3GPP
Each module: 2-4 Bands

One band per module
selectable by SW out of 2-4 bands

A few products per market supports all band combinations

MULTIBAND CONCEPT



A few products per market supports all band combinations

2 RF modules for 3GPP
Each module: 2-4 Bands

One band per module
selectable by SW out of 2-4 bands

Planned Modules, Tentative

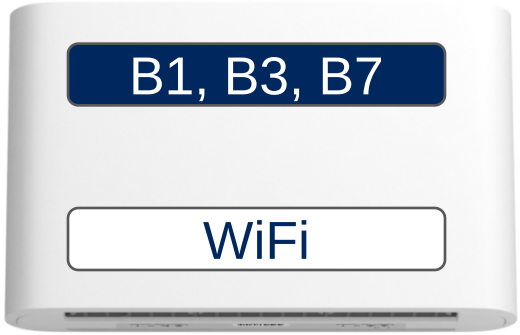
B2, B4, B7,B25	High band Americas
B1, B3,B7	High band World/Europe
B5, B12, B13,B17	Low band Americas
B8,B20,B5	Low band World/Europe

6402 CONFIGURATION EXAMPLES

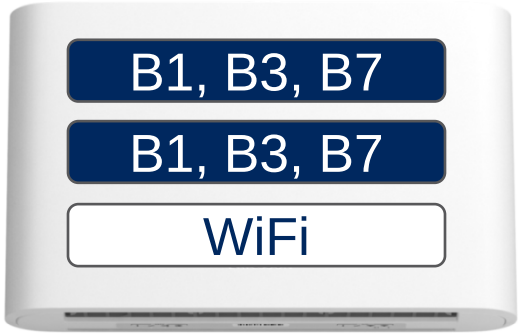
HIGH BAND

2100 Markets

Single band: 2600 MHz



Single Multi Band 3GPP: 1800, 2100, 2600 MHz
Any band can be selected remotely
WI-Fi: 2.4 GHz + 5 GHz

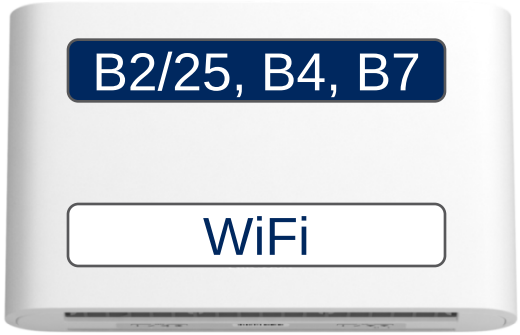


Dual Band 3GPP: 1800, 2100, 2600 MHz
Any combination of 2 bands can be selected remotely
WI-Fi: 2.4 GHz + 5 GHz

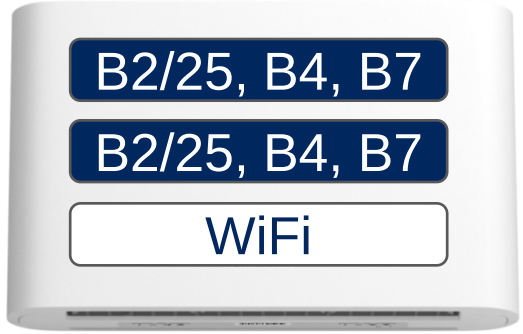
6402 CONFIGURATION EXAMPLES

1900 Markets

Single band: 1900 MHz

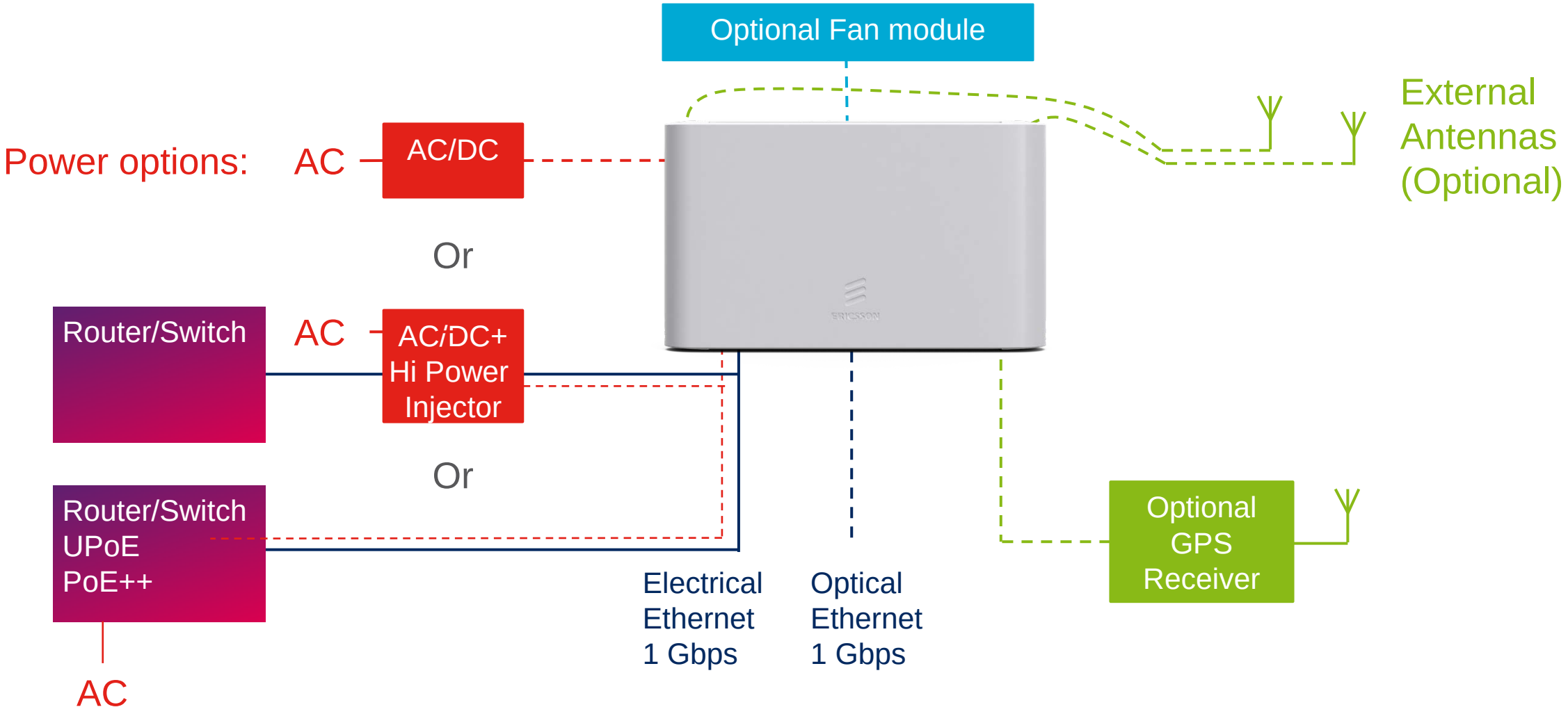


Single Multi Band 3GPP: 1900, 1700/2100, 2600 MHz
Any band can be selected remotely
WI-Fi: 2.4 GHz + 5 GHz



Dual Band : 1900, 1700/2100 or 2600 MHz + 5GHz LAA
Carrier aggregation FDD+SDL LAA 5GHz
WI-Fi: 2.4 GHz + 5 GHz

INTERFACES & SITE EQUIPMENT



6402 LAA PROPOSED CONFIGURATION

2100 Markets

Licensed LTE band remote selection

Unlicensed 5 GHz, LAA LTE operation 40 MHz IBW

Optional WiFi 2.4 GHz

1 Gbps Ethernet, power

RBS 6402 MINIMUM SW LEVELS

	RBS 6402 Pico RBS SW	RAN SW Level LTE RBS (Macro)	RAN SW Level RNC
LTE Single Band Single Carrier	L15B	L14B	-
LTE Dual Band/Carrier	L16A	L14B	-
WCDMA Single band	W15B	-	W14B
LTE+WCDMA Simultaneous Operation	16B	L15B	Tbd
WiFi	L16A/W15B	-	-

1) “Treat as” support in earlier OSS releases can be requested

USE CASE EXAMPLES

USE CASE
OPERATOR SHOP EUROPE-1

Challenges:

- Poor coverage in Telco Shop
- Expansion of Macro network too expensive or take too long time
- High performance HD Voice

Solution:

- Deploy pRBS in 200+ Shops
- Use existing Backhaul (VDSL/Fiber)
- Same frequency/RNC as Macro
- Next step: LTE on 6402

USE CASE
OPERATOR SHOP EUROPE-2

Challenges:

- Poor coverage in Telco Shop
- Expansion of Macro network too expensive or take too long time
- Good end user experience

Solution:

- Deploy pRBS in 15 nodes deployed in shops and customer offices
- Using operator own L3 Backhaul N/W
- Next step: LTE on 6402

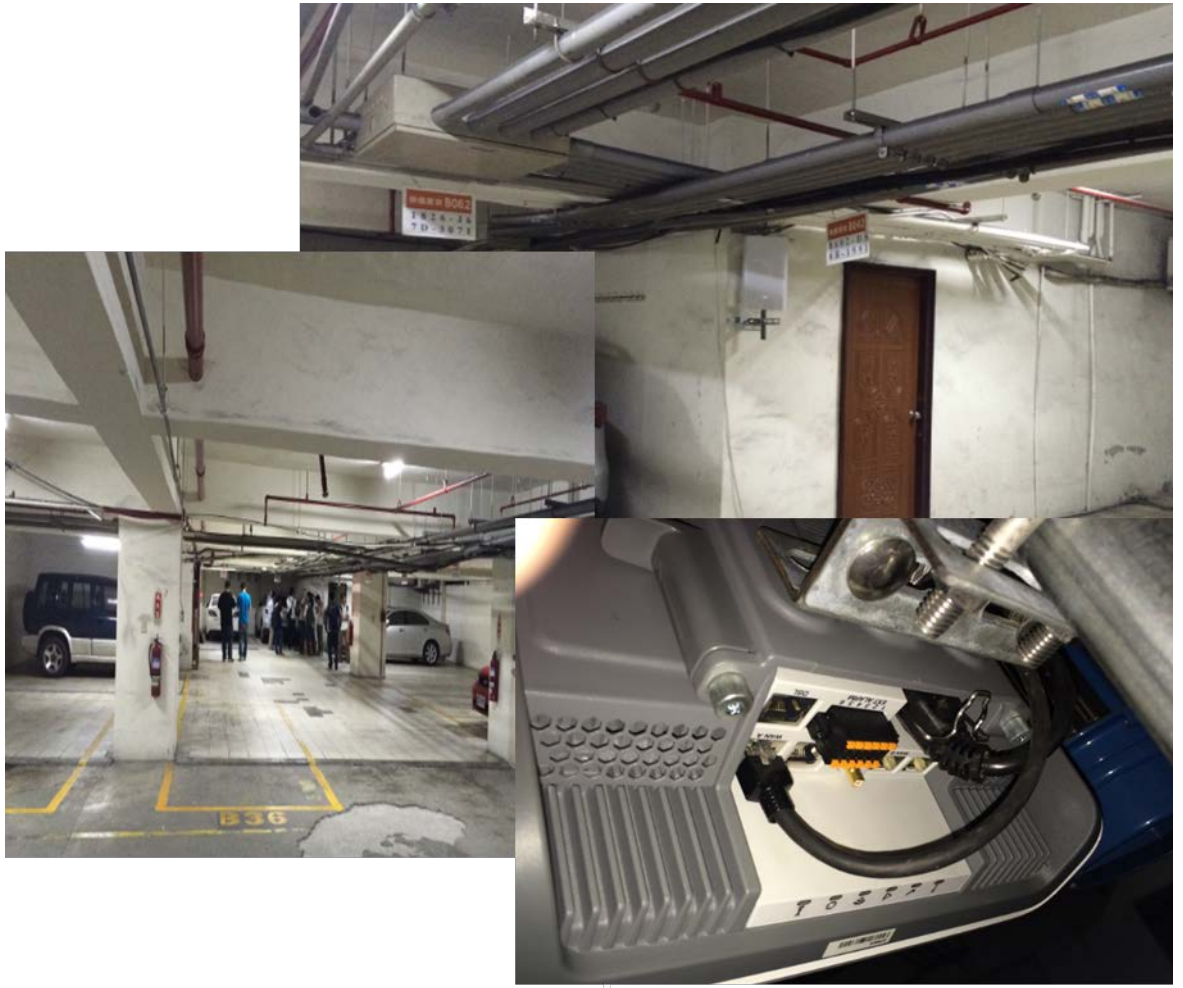
USE CASE
PARKING LOT

Challenges:

- Poor coverage in parking lot
- Expansion of Macro network too expensive or take too long time
- Power/space issue
- High performance HD Voice

Solution:

- Deploy pRBS x 1
- Use existing Backhaul (Fiber)
- Same frequency/RNC as Macro



USE CASE
QUICK SOLUTION LOCATIONS

Challenges:

› Prestigious location and multiple places

- Sudden customer demand for quick solution
- Not enough time for Macro design and expansion

Solution:

- Deploy Pico as quick solution at multiple locations
- High customer & End user satisfaction that builds a trusted relationships

CAFÉ / SHOP

Challenges

- Poor indoor coverage
- Many users

Opportunities

- Targeted offering
- Fast and easy solution for poor coverage and poor capacity with Pico
- Can be complemented to any similar use case, i.e operator own showroom, small shop etc.

TRAIN STATION/MALL

Challenges

- Many users
- Poor indoor coverage
- Mobility

Opportunities

- Indoor site acquisition
- Backhaul realization
- Clear benefit visible with Pico deployment

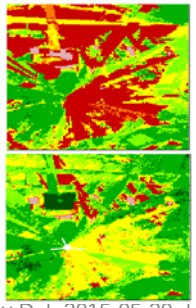
OFFICE

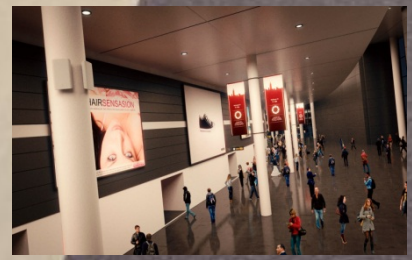
Challenges

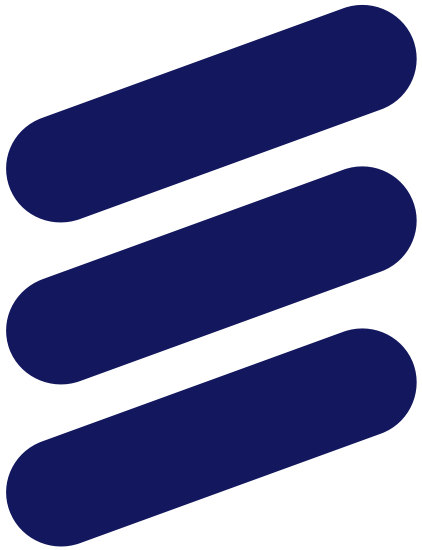
- Requires excellent speech and smartphone quality
- Indoor coverage (bottom floors)
- Macro interference (top floors)

Opportunities

- Targeted enterprise offering
- Relief for poor coverage and advantage of Macro offload







ERICSSON