



SMALL CELL FORUM

Solving the HetNet puzzle

Small Cell Networks for Enterprise Deployment

New Requirements and Considerations

Satish Jamadagni

Chair TSDSI

Head of Global Standards - Reliance Jio

Renewed Interest in Small Cells

KEY POINTS TO NOTE

During LTE and 3G days there was a lot of interest in Small Cells which was driven by Indoor Calling experience

WiFi Calling won that round and the interest in Small Cells faded

So, what's changed NOW for Small Cells



"New Vertical industry requirements"

Learnings from 5G

- India has embarked on a rapid 5G deployment, one of the fastest in the world, the cost of which is expected to cross ~50 billion USD, one of the highest in the world.
- Key issues that stand out as learnings from the 5G deployment include issues related to coverage, no new service enablement options, among others.
- The initial expectation was that much of the revenue growth from 5G would come from private/enterprise/industrial 5G deployments This is yet to be realized.

Learnings from 5G

- 5G deployments for enterprises / IIOT / Private deployment is yet to be realized for various reasons such as spectrum availability, the demands on data localization which translates to “My Data in My Premises”, availability of devices that can be well integrated within industrial scenarios, network management complexity etc.
- “My Data in My Premises” has been a predominant ask for private 5G deployments and from enterprises who are not comfortable with data moving into an operator network (or anywhere outside their premises)
 - 5G Slicing does not address this issue

Diversity in Vertical Industry Requirements

6G is expected to bring new opportunities in capacity, coverage and in enabling new services, “Small Cells” and related ecosystem will be critical in enabling capacity and coverage but most importantly for enabling new services.

6G will have to address new deployment scenarios primarily aimed at indoor deployment (Campus, IIOT, Enterprise etc) and not just the conventional deployments such as Rural, Urban Macro, Sub Urban Macro etc.

Diversity in Vertical Industry Requirements

Each scenario such as Enterprise, Campus and deployments for IIOT (Industrial shop floors) comes with its set of requirements.

Enterprise solutions will have to support “My Data in my premises” solutions either through local data breakout or other such solutions. Enterprises may also demand “Neutral Host” solutions.

Campus deployments will have to be supported by local broadcast (UE initiated or otherwise) and enormous focus on “ease of deployment and maintenance”.

Diversity in Vertical Industry Requirements

Each scenario such as Enterprise, Campus and deployments for IIOT (Industrial shop floors) comes with its set of requirements.

Enterprise solutions will have to support “My Data in my premises” solutions either through local data breakout or other such solutions. Enterprises may also demand “Neutral Host” solutions.

Campus deployments will have to be supported by local broadcast (UE initiated or otherwise) and enormous focus on “ease of deployment and maintenance”.

Diversity in Vertical Industry Requirements

Some deployments for use cases such as Agritech will need Coreless RAN support among other such requirements.

Access nodes deployed for IIoT (Industrial IoT) would require support of “Machine Emergency” and support for different device /sensor types, Indoor positioning and possibly ISAC (Integrated communication and Sensing). It’s also easy to argue that ISAC (Integrated Communication and Sensing) can find better use cases with Small Cells in Industrial deployments than in Wide Area Networks.

Diversity in Vertical Industry Requirements

IIoT Requirement: Ability to communicate different Machine-Emergency Messages with pre-defined communication characteristics (such as priorities, target recipients, latency etc)

Examples of different Machine-Emergency Messages: Machine Functionality alarms (ex. Temperature, pressure etc), Unsafe Machine Operations by humans; Sensing structural integrity in Roller-Coaster-Ride/Cranes etc.

HRLLC (Hyper Reliable and Low-Latency Communication) needs small cells

Conclusion

In 6G (even in 5G) Small Cells (along with the necessary support system such as a security Gateway etc) **are an absolute necessity** and its not just about indoor voice anymore

Its all about letting operators move to B2B deployment scenarios from the current B2C business

Thank You

Satish Jamadagni
Satish.jamadagni@ril.com