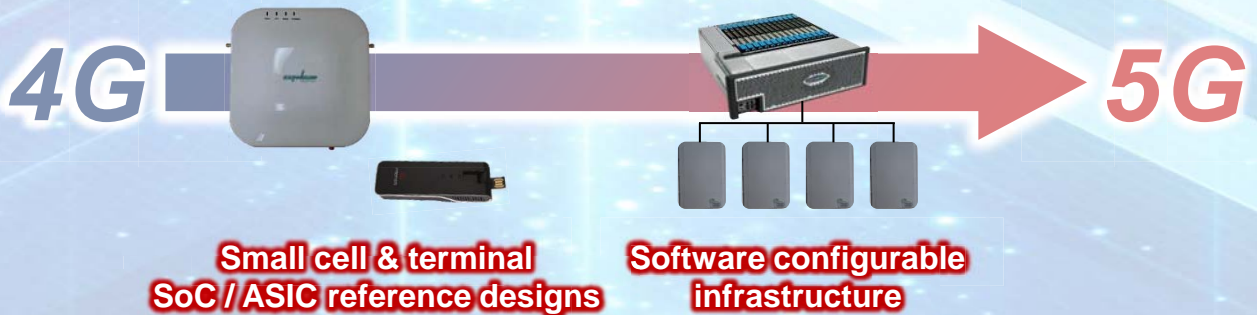


Baseband Innovations Towards 5G

Technology highlights:

- 5G research to contribute/impact the standardization
- Pre-commercial platform
- Interim outcomes (e.g. patents, demos and reference designs) enrich our partners' competences

Platform Evolution



R&D Areas and Impacts

4G+ & 5G Solutions

Large Scale Antenna

- Beamforming, interference mitigation
- Channel estimation & feedback

Dynamic Spectrum Access

- LAA, LSA

Multi-RAT Cooperation

- LWA, LTE/NR interworking

Network Densification

- Mobility & interference management

Device Direct Communications

- D2D, V2X

Advanced Use Cases



Mobile Broadband

Internet of Things Smart Living



Intelligent
Manufacturing



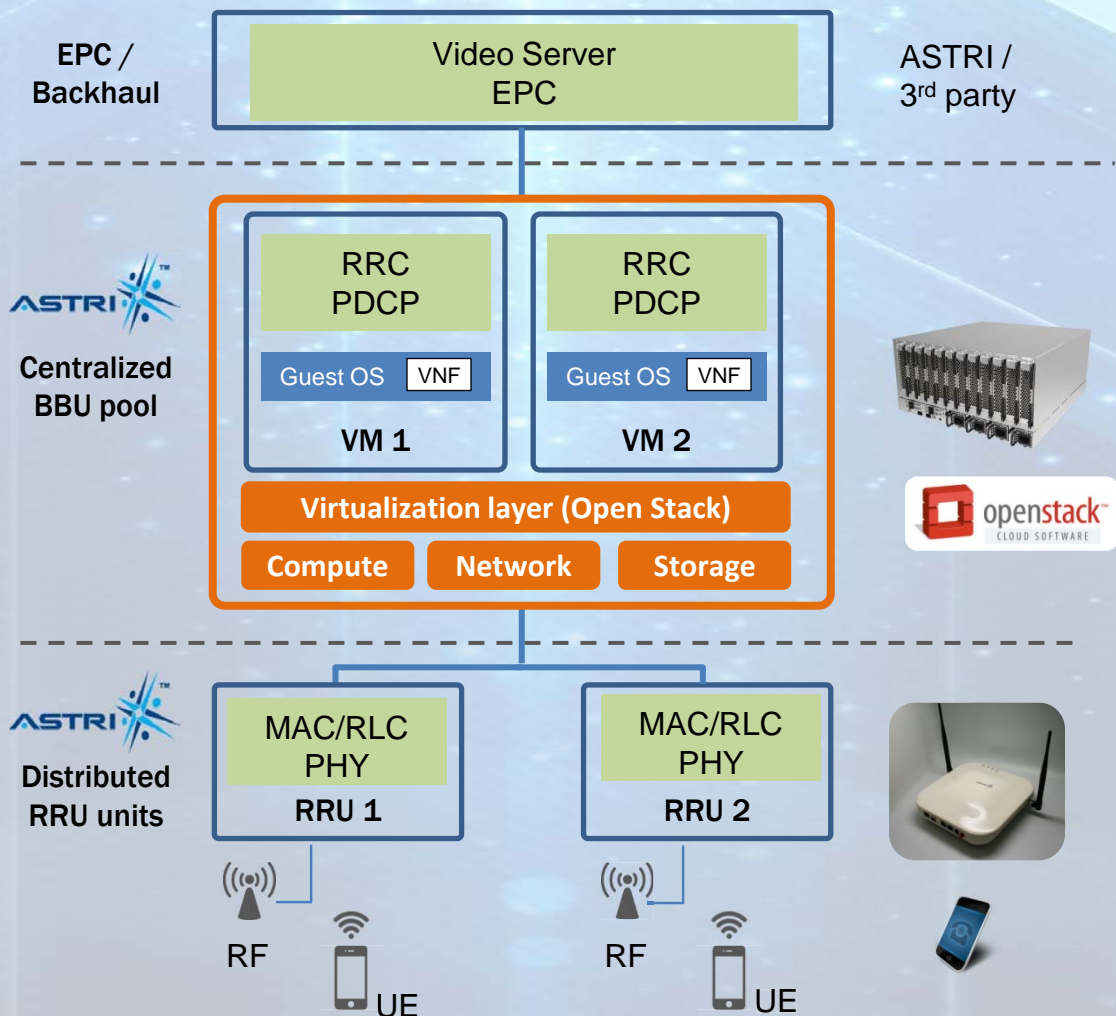
Traffic
management



C-RAN with Partitioned PS

Technology highlights:

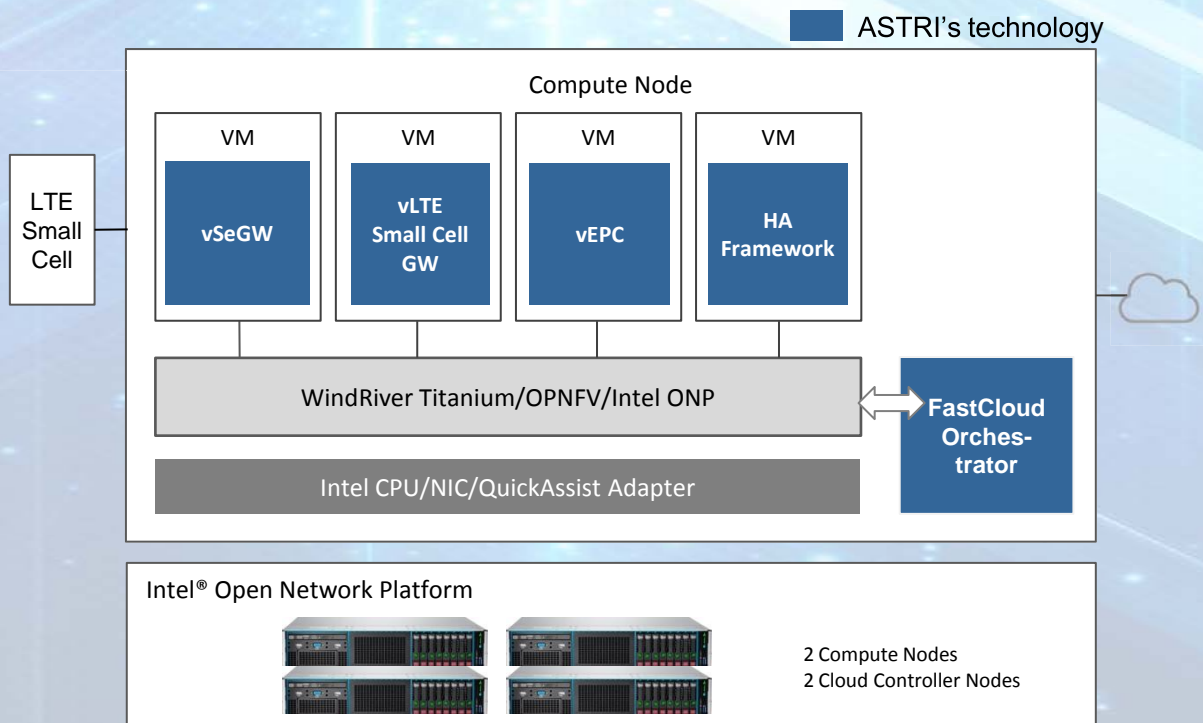
- Centralized BBU pool on x86 based server unit
- Distributed RRU units for flexible deployment
- Virtualized LTE eNB cells powered by OpenStack software platform
- Live migration capabilities for power saving
- High availability support to ensure continuous service during system failure
- Flexibility with MEC integration
- Cross cells, cross carrier cooperative handling to improve wireless gain
- Enabled with location reporting features for indoor applications
- Support up to 96 cells with 64 active UEs per cell
- FDD/ TDD support



SDN/NFV

Technology highlights:

- Virtual Network Functions (VNFs) on Intel ONP/OPNFV Platform: vEPC, vSecurity Gateway, vLTE SmallCellGateway, and vWiFiAC
- Superior performance in NFV platforms
- ASTRI **FastCloud** Orchestrator to deploy VNFs with agility
- High Availability (HA) for carrier-grade solution



Wind River Titanium
Cloud Gold Member

Mobile Edge Computing (MEC)

Technology highlights:

- Optimize mobile traffic at mobile edge: latency (e.g. interactive, IoT applications), quality of experience (CDN)...
- Optimized throughput and latency for MEC applications
- Flexible to deploy in different LTE network segments

