5G READINESS
MAKE WAY FOR TRANSFORMATION

____THINK.____
TRANSFORM.

5G – THE MOST SIGNIFICANT TECHNOLOGY DISRUPTION THAT ANY GENERATION HAS SEEN BEFORE WILL DEMAND SIGNIFICANT CHANGES TO THE PRESENT TELCO OPERATIONS

5G presents a generational shift in network technology that can drive transformational benefits of revenue acceleration by powering Internet of Things (IoT) / M2M devices. But the question is: are existing infrastructure and network operations designed to support 5G technology. Telcos operating their current 4G/LTE networks have already started to load test their readiness. There are active investments and initiatives to quickly remove bottlenecks from existing legacy networks and transition to an all-IP network.

Tata Communications Transformation Services (TCTS) enables Communications Service Providers (CSPs) by easing network complexity and facilitates versatility & scalability by virtualising network as a groundwork for 5G. We design a network topology that advances the rollout of new services with minimum network changes in reduced time, supports heterogeneous device ecosystem and leverages converged fiber & wireless. We assist CSPs in 5G readiness by migrating to an all-IP network, implementing HetNets & Cloud Radio Access Networks (CRAN), upscaling & redesigning the transport network fiber, assisting in virtualisation of networks using SDN & NFV, including network slicing and OSS Orchestration.

THINK FUTURE- THINK. TRANSFORM. Get ahead of the competition. Get 5G Ready with TCTS.
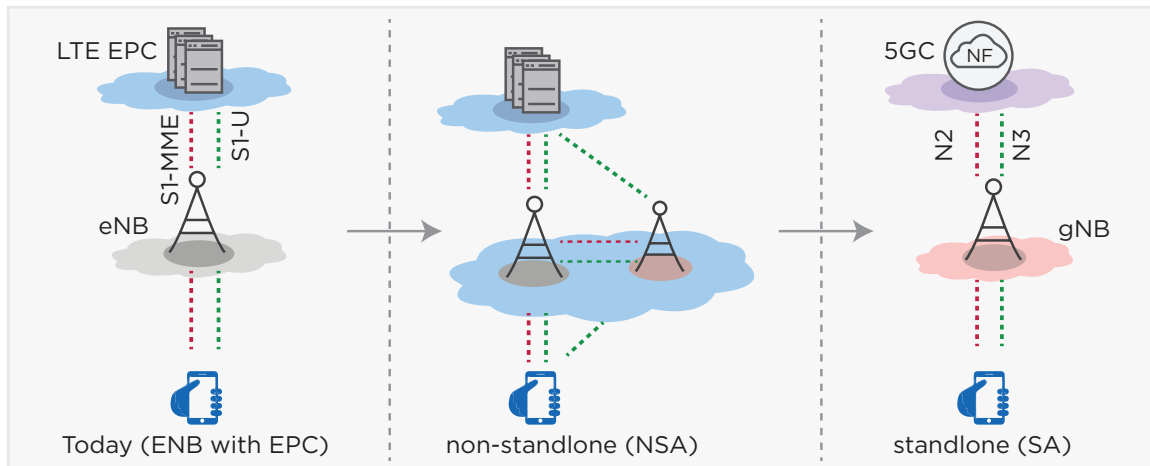
GETTING READY FOR 5G

SETTING UP THE FOUNDATION
Migration from legacy and existing networks to an all-IP network / FTTx

RADIO ACCESS NETWORK (RAN)
Setting up of macro-dominant network (heterogeneous) Cloud RAN (CRAN) and RAN

CORE NETWORK VIRTUALISATION
Virtualising network using SDN, NFV, network slicing and virtual testing using Lab as a Service (LaaS)

OSS ORCHESTRATION
OSS design, implementation and rollout, audit and transformation consultancy, automation

BUSINESS AS USUAL & PROCESS REALIGNMENT
Managing virtualised and legacy networks, and process realignment using TNOM3 framework

5G DEPLOYMENT CONSIDERATIONS

The next generation RAN supports New Radio (NR) Radio Access Technology (RAT), Evolved E-UTRA RAT or both, with an interface with the next generation core network. NR is a new radio access technology and E-UTRA is evolution or E-UTA to supports the next generation system. The next generation RAN support following deployment options
- Non-Standalone (NSA)
- Standalone deployment

Deployment option such as 3x, 7x and 4 would be considered depending upon the service provider scenarios, existing infrastructure, preferences and business aspects,

TCTS WIRELESS SERVICES AROUND 5G

TCTS has a plethora of wireless services around 5G, which enables the CSPs' ecosystems to be upgraded from 4G to 5G. There are multiple options available for 5G migration, starting from NSA to SA. TCTS supports in creating a create centralised infrastructure that facilitates the virtualisation of RAN, which allows radio resources to be isolated into logical slices.

5G networks are designed to cater to a wide range of services where TCTS provides consulting services to enable eMBB, URLLC & mMTC, These services, which differ largely in characteristics, provide new opportunities for the CSPs. The performance requirements of these services in terms of data rates, latency, mobility, security, availability, reliability, QoS, capacity, coverage, and many other parameters, all of which will vary from one service to another, are the focused areas where TCTS could support CSPs.

TCTS is supporting CSP's in planing fronthaul, mid-haul & backhaul to enable the ecosystem around transport.

5G Network Deployment	IoT	Network Planning & Design
• 5G Deployment consultancy • Network slicing • Vendor evaluation • Rollout and project management • Build quality assurance	• NB-Iot/LTE-M planning and deployment • mMTC services management	• Massive/FD MIMO • Transport network planning • mmWave propagation network design and simulation • HetNet/small cell design
Virtualisation & Automation	**MEC**	**Managed Services**
• NFV and SDN deployment • Virtualisation of BBU functions • Orchestration strategy management	• Aggregation layers strategies • Service management such as AR, IVA, video streaming analysis and connected vehicles	• Network optimisation • Capacity management • NOC operations • Performance and SLAs management • Inventory management

About TCTS

Tata Communications Transformation Services Limited (TCTS), a 100% subsidiary of Tata Communications Ltd, provides leading business transformation, managed network operations, network outsourcing and consultancy services to telecom companies around the world. TCTS delivers operational efficiency, cost transformation and revenue acceleration solutions for all the stages of the carrier process lifecycle, including but not limited to network engineering and design, implementation and operations.