Nokia 4G-5G Network Slicing

Start building your e2e slicing business today.

Executive Summary
The promise of network slicing

One of the breakthrough techniques possible with 5G is network slicing. This allows Communications Services Providers (CSPs) to take advantage of new revenue opportunities by enabling them to separate lucrative and critical business traffic from general Internet traffic.

Network slices can be used to meet the highly specific needs of different customer segments. They offer a chance to provide more premium services to many customers from fields as diverse as industrial automation, transport, public safety and healthcare. New services can be brought online very quickly, offering business opportunities to new sectors to gain new revenues.

Although there are millions of 5G NSA (Non-Stand Alone) capable devices already in use, none yet support full 5G SA (Stand Alone) network slicing. There is also work still to be completed in standardizing 5G SA slicing technology, whilst a new core network and updates to the radio network are also needed. Building 5G coverage also takes time, with CSPs typically concentrating on hotspots and city centers first before rolling out the network to rural and suburban areas.

It will take time for the whole ecosystem to be ready and cost efficient enough for wide-scale deployment of 5G SA slicing. Yet, Long Term Evolution (LTE) networks are currently widely deployed and there are billions of LTE devices in use. The time is ripe for a solution that allows CSPs to use their existing 4G and 5G NSA networks for slicing right now, whilst continuing to evolve to 5G SA.

Nokia e2e network slicing – first for 4G and 5G New Radio (NR)

Nokia is the first to introduce a 4G/5G end-to-end slicing solution for both 4G and 5G NSA networks with a defined evolution path to 5G SA. The solution provides sliced and managed mobile broadband connectivity from device to radio, transport, core, all the way to applications in private and public networks and the cloud.

Slicing continuity between 4G and 5G networks enables maximum use of both LTE and NR network coverage and the slicing solution also supports all LTE & 5G devices and works in multivendor networks.

Through a simple software upgrade to Nokia products, CSPs can introduce and deploy network slicing in their existing LTE networks as well as 5G networks as they are rolled out.

Developed in partnership with leading CSP customers, the solution has been shown to work from 4G and 5G devices over sliced networks to private and public cloud-based applications.

Building an e2e slicing solution

The Nokia slicing solution is based on patent pending innovations on user & service aware RAN and e2e capabilities, in order to extend 4G/5G slices to private/public nets and cloud apps. User and service aware slices are supported in radio, transport, core products with control, management and assurance systems. This solution enables new e2e connectivity services based on logical connections, security, quality, traffic management and KPIs.
This slicing solution can be experienced live, now. Current use cases include Internet, IoT, enterprise and fixed wireless access applications powered by a unique Software Defined Network radio and transport slice controllers. Nokia’s cloud packet core slice orchestrator is helping CSPs with network deployment automation.

Nokia’s SD WAN SW solution enables CSPs to provide a managed 4G/5G network slice to private and public cloud services. What’s more it shows that the 4G/5G slicing solution can connect, for example, to Amazon Web Services Cloud. Nokia assurance systems are used to verify per slice KPIs.

Nokia 4G/5G slicing solution is based on 3GPP and IETF standards. It supports stepwise deployments and works in multivendor networks.

Benefits to CSPs

CSPs can start slicing business now, as the solution works with the billions of 4G devices already in use as well as millions of 5G devices.

It allows new opportunities in areas such as transport, IoT, public safety, fixed wireless access, entertainment events as well as private wireless networks for industrial automation and warehouse stock management.

Nokia’s solution ensures CSPs can build a single 4G/5G slicing solution for all use cases, using the same architecture and building blocks.

Slicing continuity to private and public networks enables CSPs to offer e2e managed connectivity services between devices and applications that are running in the Cloud. Applications can be hosted by CSPs or for example by public cloud service provider partners.

With Nokia 4G/5G slicing solution CSPs can start building new use cases based on their existing network assets, thus enabling them to create new revenue streams.
About Nokia

We create the technology to connect the world. We develop and deliver the industry’s only end-to-end portfolio of network equipment, software, services and licensing that is available globally. Our customers include communications service providers whose combined networks support 6.1 billion subscriptions, as well as enterprises in the private and public sector that use our network portfolio to increase productivity and enrich lives. Through our research teams, including the world-renowned Nokia Bell Labs, we are leading the world to adopt end-to-end 5G networks that are faster, more secure and capable of revolutionizing lives, economies and societies. Nokia adheres to the highest ethical business standards as we create technology with social purpose, quality and integrity.

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