5G

CAMPUS

The innovative new approach to private networking for industry verticals

What is 5G Campus?

5G Campus helps Telcos and enterprises to move development platforms out of the laboratory and into high-performance, multi-location private networks, by using the potential of 5G private networks. Now enterprises can build, test, refine and improve their use case prototypes in real-world operating conditions. Potential customers can experience the solutions in action, enabling a faster, lower-risk move from development to production, even when the most complex solutions are involved.

NTT DATA 5G Campus enables Telcos and their large enterprise partners to develop, prototype, demonstrate and take to market new industry vertical solutions faster, at lower risk and cost than ever before

5G Campus uses the speed, scalability and quality of 5G networks to create distributed development, test and prototyping environments for new industry use cases. By using 5G technology to create private networks for solution development, 5G Campus permits Telcos and their enterprise partners to create virtual industry showrooms for new solutions.

Distributed development, testing and prototyping

Enterprises are in a continuous race to take innovative new use cases to market faster than their competitors. In many, if not most cases, they need development platforms with networking capability, so that multi-user solutions, accessible across remote locations, can be prototyped and tested. That is not easy in a laboratory environment. That's where 5G Campus can make the difference.
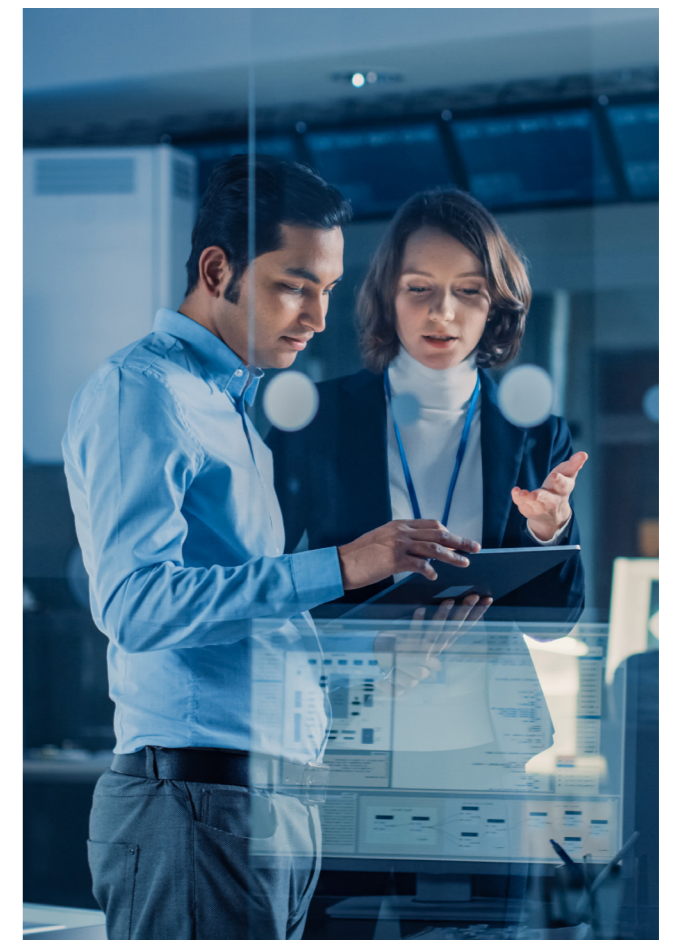
5G is changing the rules of this particular game

What's special about 5G Campus?

Industry 4.0 requires a new way of working right across the enterprise value chain: from initial collaborative design to agile DevOps, rapid prototyping and testing, then move to production. This whole interconnected process needs to move faster than ever, and depends on highly scalable, location and tecnology agnostic joint working.

Setting up design and test environments of this kind has always been a complex, time-consuming and costly task, but now the development of 5G is changing the rules of this particular game. By using 5G private networking, Telcos, in partnership with NTT DATA, can create private, secure development and test platforms that are geographically distributed and technologically disaggregated.

5G's ability to manage huge numbers of mobile and IoT devices make it possible to test and refine industry solutions that deal with massive data traffic, large networks of sensors or many thousands of individual users. This combines the security and control of an in-house development platform with the realism that can only come from operations in the field, in true operational conditions.

Delivering to exact customer requirements

NTT DATA 5G Campus provides secure private networks to enterprise customers, using the full capabilities of enhanced Mobile BroadBand, with pre-integrated pure cloud OSS, deployed on any hyperscale cloud platform. 5G Campus has 4 key design characteristics:

Disaggregation,
based on use of SDN/NFV architecture, with self-serve and self-configure capabilities for simplicity, ease of use and speed to market.

Open standards,
keeping the solution strictly technology agnostic, with no vendor lock-in. Enterprises can profit from the continuous development work across the entire open standards community, leading to faster development at lower cost and risk.

Automation,
key to rapid configuration and provisioning, fast introduction of new services and features, automated software updates, strong security policies and built-in ability to handle the exponential growth in connectivity that full 5G roll-out will bring.

Delivering key benefits now

5G Campus uses SDN and NFV technologies to provision hybrid platforms that provide secure, multi-location development and test platforms. Local private 5G networks can be used to run instances of the solution under development, with IP and SDN connectivity providing access to development laboratories, anywhere in the world. In this way, developers can use real operating conditions to test prototypes in action, while having multiple contributors collaborating on the process from their own locations.

Faster product and service development.
5G private networks can be created, flexed and interconnected as needed to create extended, location-agnostic virtual development platforms. This enables a more agile process of collaborative design, development and testing. The result will be more robust, better prepared solutions, built to a shorter, tighter schedule.

Accelerated time to market.
Faster development, prototyping and testing means the move to production will also happen more quickly than today. That will enable enterprises to take products and solutions to market faster than before, and develop new versions and variants faster, too. It also makes it easier to open up new marketplaces around the world, and at lower risk.

More flexible partnering.
In many verticals competitive advantage depends on the ability to access specialist skills very quickly, with low set up costs and at low risk. 5G Campus permits secure shared development platforms to be created, evolved and closed almost instantly, with virtually no risk and no upfront costs.

Building the service

5G Campus is a cloud native, disaggregated architecture, offering very low latency and the capacity to handle massive numbers of IoT or mobile devices in a small area.

These characteristics make it important for a whole range of industry solutions, from those requiring large-scale connectivity for sensors (Oil & Gas, Critical National Infrastructure, large-scale automated manufacturing plants…) to those connecting many thousands of individual users, right through to those requiring multiple data sources and applications (Smart City solutions, autonomous, connected vehicles…).

5G is increasingly seen as the key to enabling the next steps forward in these strategically vital industry solutions, and 5G Campus means solutions can be developed and tested in the field- even before widespread roll-out of national or regional 5G networks. 5F Campus permits a private, temporary network to be established virtually anywhere needed, and then included within a virtual development platform that can connect specialist teams from different partners, working at different locations.

5G Campus uses a centralized Mobile Control Plane and distributed Mobile User Planes in Edge devices. That is the key to rapid provisioning across almost any location that is accessible today and into the future. The Campus service today can be deployed across hybrid connectivity, delivering most of the scalability and cloud-like ease-of-use benefits right now.

Key Features

5G Campus includes:

Private 5G networks based on virtual 5G Core and Radio Access Network (RAN), to provide dedicated access for vertical B2B use. The network environment is shared and based on open technologies, leading to low costs and maximum benefit from the development investments of an entire industry.

For high usage demand, Edge Devices can be used on customer locations, or locally-sited hyperscale datacenters can be used instead to enable access for a very large number of user devices, without the need for local instances of key applications.

Clean Control User Plane Separated Core Packet Optimized (C3PO), which contains locally-required data, policy management, billing management and subscriber functionality, to ensure that business rules are kept to.

Open Mobility Management Entity (OpenMME), the key to ensuring mobile connectivity without drop in quality standards across the customer-specific network and more widely.

Next Generation Infrastructure Core- Run to Complete (NGIC-RTC), which manages data traffic across the dedicated network, monitors and intervenes as needed to meet Quality of Service (QoS) requirements, and identify any potential security issues.

Developing critical use cases

Smart city systems

NTT DATA is now trialing a first use of 5G Campus in a municipal setting by working with a Global Telco Operator to develop solutions for use in managing core systems, such as traffic management, waste pick up and disposal, policing and surveillance, and parking. The aim is to build a very high-capacity private network that enables data rich options, such as video from multiple drones, to be tested and monitored in action, before full implementation.

Connected Automotive

Many different teams across the world are working on how to make autonomous vehicles acceptable in the challenging conditions of city and motorway driving. In every case, issues remain in handling massive data flows from sensors on vehicles, in the wider environment, with interaction between on-board AI (on multiple vehicles) and traffic management systems (from lights to parking controls to emergency services to event alerts).

5G private networks are now being used to model different situations and scenarios to test, develop and improve the ways in which all the many connected systems interact, update each other, and test the quality of data received and shared. These virtual development platforms are the key to making a theoretical possibility become a practical reality.

Remote management and support

Manufacturing businesses in many industry sectors are moving towards central management of IoT-enabled automated machines, with fleets of assets handled by a single team. This is key to improved operational efficiency but requires both the ability to transfer and analyze vast amounts of data, and the need to ensure complete security for proprietary data.

5G Campus enables manufacturers and other industry players with similar issues (such as Critical National Infrastructure businesses) to create extremely low latency networks that are absolutely secure, but allow very fast and granular intervention from central locations. In this way it is possible to gain the benefits of centralized management, increased automation and more detailed auditable data, all without the need to create a single customer infrastructure from scratch.

Why Choose NTT DATA?

NTT DATA combines the capabilities and experience of a global telecommunication and mobile network provider, with an exceptional pedigree as IT service provider, specialist applications developer and industry subject matter expert. We bring together all the skills needed, therefore, to build and evolve the advanced networking solutions that enterprises of every size and in every market require.

We are proven innovators, with an annual R&D budget of around 3.5 billion USD, NTT DATA is a leading proponent and support of Open Standards, placing us in a leadership position for concepts built on collaborative working, co-creation and joint innovation. We are developing 5G based solutions to support our own operations as a global enterprise, so even the most advanced concepts we take to market are mature and proven to add value.

As a strong commercial player, with a decades long commitment to the telephony and mobility markets, we are a natural go to market partner for any telco determined to move up the value chain and become an essential service provider to ambitious enterprises, today and into the future.

We are **EXPERTS**

We are **INNOVATORS**

We are **LEADERS**

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Trusted Global Innovator