AGC Inc.

AGC

1 Roles

■ Solution provider to improve/eliminate of 5G coverage hall by newly developing O2I2I solutions through building windows.

■ Thin, small-footprint, advanced-design proprietary antenna supplier, which is applicable for existing structure such as city poles and building constructions and FA robots.

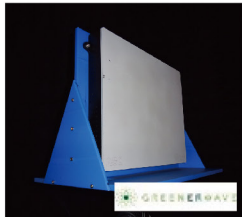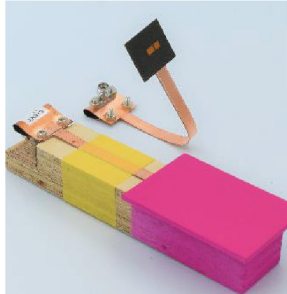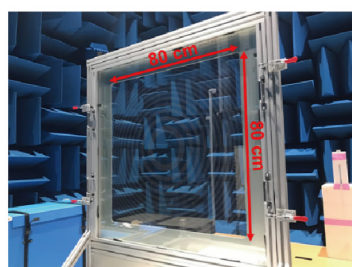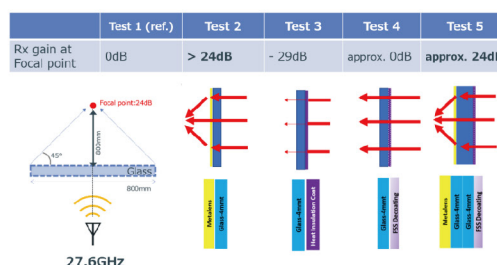| Outdoor ➡ Outdoor	Outdoor ➡ Indoor	Indoor ➡ Indoor	User Equipment
On-pole antenna	FSS technology	Reconfigurable Intelligent Surface	Flush-Surface Antenna

Distributed FPC antenna

Metasurface Lens Film for window

Wall-hanging Massive MIMO antenna

2 Efforts on 5G up to now

■ Joint news release with NTT DOCOMO in January 2021
■ Joint PoC with NTT DOCOMO in June 2021 for MWC Barcelona 2021
■ Joint news release with NTT DOCOMO
https://www.nttdocomo.co.jp/info/news_release/2021/01/26_00.html

Static metasurface lens

	Test 1 (ref.)	Test 2	Test 3	Test 4	Test 5
Rx gain at Focal point	0dB	> 24dB	- 29dB	approx. 0dB	approx. 24dB

27.6GHz

■ Over 5 decades as leading glass manufacturer in Thailand, such as clear / tinted float glass, mirror, heat reflective/ low-E/ tempered and more.
■ Experience Building Installation: TARAPATTANA (MAKRO), K-BANK@IMPACT, HOMEPRO PROCHACHUEN, CETUS BEACHFRONT, and more.

Business Name   AGC Flat Glass (Thailand) Plc.
Address   200 Moo 1 Suksawas Rd. Pak Khlong Bang Pla Kod, Phra Sanut Chedi, Samut Prakan 10290
Services   Approx. 800 excluding subcontractor
Employees   Flat glass manufacturer for building, processor, industrial
Website   https://www.agc-flatglass.co.th/en/home
Contact (from Companies based in Thailand)   Ms. Pandara Klaisuwan
Business Development
AGC Flat Glass (Thailand) PLC.
Email : pandara.klaisuwan@agc.com
Tal : (mobile) : +6683-226-9898

Advanced Wireless Network Co., Ltd. (AIS)

1 5GEC Roles and Responsibilities

■AIS wants to partake and contribute to Network and infrastructure provider

Features ▷ We offer a wide range of services, from application work for certification to testing at local test sites to acting as local representatives.

Network Provider
"Under the AIS brand, we offer 5G, 4G, 3G and 2G mobile phone services and AIS Postpaid.

ICT Provider
Digital services extend from mobile phones and high-speed Internet services to focus on value-added digital services, and aim to generate new revenue sources over the medium to long term by anticipating changes in customer behavior and technology.

2-1 Business Profile in Thailand (experience / local maintenance service, etc.)

AIS remains committed to its vision of being "To become the most-admired Digital Life Service Provider in Thailand" through the following missions:-

Advanced Info Service Public Company Limited or AIS, the No. 1 Digital Life Service Provider with the most service frequency, totaling 1420 MHz and the most users of more than 43.2 million numbers (as of June 2021) has become the first to provide entire 77 provinces with 5G through three business lines: mobile phones, high-speed home internet under the AIS Fiber brand, and digital services in five areas; video, cloud, digital payments, Internet of Things (IoT) and partnership services.

Deliver superior products and services to enrich people's daily lives and to improve enterprise capabilities and efficiency	Enhance customer intimacy through the best customer experience.
Drive intrapreneurship and employees' professionalism, and promote a positive, lively and agile work culture.	Build win-win growth to all stakeholders.

2-2 Introduction of solutions and services related to 5G

■Role: 5G Solution and service provider

▶ 5G Private Network
Private networks offer key benefits of security and reliability. It can provides dedicated resources to meet the specific optimization and security needs of a local facility such as a manufacturing plant.

▶ Multi-access EDGE Computing (MEC)
MEC enables cloud computing capabilities at the edge of the mobile network which reduces the physical distance of communications. It is highly suitable for applications requiring low latency, real-time analytics and high-volume data transfers.

▶ Network Slicing
Network Slicing offers the biggest innovation opportunity in 5G era. It enables a predefined, differing level of services for different enterprise verticals, enabling them to customize their own operations.

▶ Fixed Wireless Access (FWA)
FWA is a solution for excess eMBB capacity and provides greater convenience in setting up high performance and secure enterprise broadband without a regular fiber network.

EXEO ASIA CO., LTD.
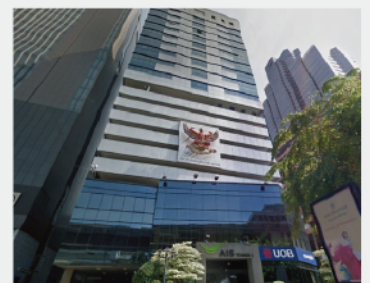
1 Roles
■ Role: 5G Solution and service provider

Design / construction

We provide comprehensive services of physical construction as well as software configuration necessary for networks.

Maintenance / operation

For the telecom operators and Japanese affiliated companies, we conduct design, installation and maintenance of infrastructure including server, router, switch and optical transmitter necessary for network configuration.

Business areas

1 **Network solutions** We provide not only network design and configuration but also Japanese products such as LAN/optical cables of the Japanese quality for offices, factories, shopping malls, hotels, condominiums, etc.

2 **Server solutions** We provide a one-stop service optimal for the customer environment from proposal, configuration to maintenance including Windows OS upgrade, replacement of AD/DNS/file servers, migration from on premise to cloud, etc.

3 **Product solutions** fileWe, in cooperation with multiple vendors, provide flexible proposal, configuration and maintenance to meet the requests from customers in addition to a variety of products such as PABX, CCTV, Wi-Fi and IoT solutions in accordance with customers' usage.

4 **Customer support** We set up a maintenance support team dedicated to a customer, and the professional operators provide flexible and high quality on-site maintenance in broad areas.

2-1 Efforts on 5G up to now

Cooperation

In order to build fiber networks for connecting general companies and the social infrastructure such as mobile phone base stations, we lay optical fibers in cooperation with partners.

Experience

Kyowa Exeo, having won the gold medals in five world contests, contributes to IoT with the experiences acquired since its foundation and the world grade implementation technology.

2-2 Efforts on Smart Factory up to now

▶ Approach to digital transformation (DX)

We provide solutions that implement business process transformation to handle ever-changing value chain, optimization, improvement of productivity, and learning by analysis based on the latest data with customers' perspective.

▶ Multi-access Edge Computing

MEC enables the cloud computing function at edges of mobile networks to shorten the physical distance of communication. This is best suited for applications which require low latency, real time analysis and transfer of a large amount of data.

■ EXEO ASIA provides a wide range of solutions related to communication and electric equipment in Thailand and surrounding countries, aiming to enhance business development in Southeast Asia.

Business Name EXEO ASIA CO., LTD.

Address 246 Times Square Building 16-04, Sukhumvit Rd., Klongtoey, Bangkok 10110 Thailand

Employees (as of Sep. 2021) Japanese: 3, Thai: 19

FUJITSU LIMITED

FUJITSU

1 Roles

■ Features of Fujitsu Local 5G Products

Private wireless network

- Same communication system as public 5G service of mobile carrier with "large coverage area" "Stable communication quality" and "Ensuring confidentiality of communications"
- Unique services can be provided to users by building and operating its own wireless network by factories, hospitals, business, local governments, and so on.

Available in SA(Stand Alone)systems

- Stand-alone supporting 4.7 GHz band Local 5G system. (Japan)
- Unlike the conventional NSA (Non-Standalone) model, LTE equipment is not required and 5G equipment can be built independently, whichmake cost reductionof equipment and easy operation and installation.

O-RAN-compliant base station system

- Provide Local 5G systems(5GC~CU/DU)
- O-RAN compliance allows connection to various RU.

#### Delivery of software available with Virtualization.

- 5GC, EMS in the cloud for serversDeployment or maintenance of server is not required to install 5GC, EMC in the cloud.(Japan only)

2 Efforts on 5G up to now

■ Fujitsu Launches Private 5G Network to Realize 'Smart Factory' at its Oyama Plant.

We announced commencement of operations of a private 5G network at its Oyama plant in Tochigi Prefecture, Japan. The network consists of a 4.7 GHz band SA and a 28 GHz extended frequency band NSA, and will allow Fujitsu to play an important role in delivering digital transformation (DX) for plant operations, including field automation and remote support.

Overview of Activities at Oyama Plant Utilizing Private 5G

設計	製造	検査	出荷
①作業のトレーニング・遠隔支援	②リアルタイムな作業確認		③運搬作業の自動化
低遅延描画	高精細映像のAI解析		映像分析・低遅延制御
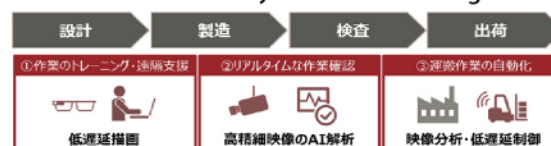
We will apply its private 5G technologies to a variety of operations at the Oyama Plant and conduct verification, with the aim of providing services to the manufacturing industry by the end of fiscal 2021.

3 Experience of smart factory offering

■ Efforts on smart factory up to now
■ Commercial cases of smart factory Implementation

Smart Factory: Ecosystem Experience

Ecosystem Experience Pillar provide solution offerings

- To increase transparency of factory operations.
- To build scalable infrastructure that enable ecosystem integration and connectivity.
- To move ecosystem enabling application to the cloud.

Conventional Factory System

Cost Optimization

Data Factory Platform
- Incident Management Platform
- Azure IoT Hub

Edge Intelligence
- IoT Devices and gateway
- Data Security

Predictive Monitoring and Diagnostics
- Machine Doctor (asset health monitoring, anomalies detection AI using sound/vibration)

Scalable Smart Factory

Security
Cloud
Platform

Loxley Public Company Limited

1 Roles

■ **Sales & Marketing**
■ **Service**

Features ▶ **Loxley System Integrator Company Limited, a subsidiary of Loxley Group, is a major telecom System Integrator in Thailand.**

Sales & Marketing	Service
We provide engineering services in Telecommunications Industry with high performance personnel. We provide services to state enterprises as well as public and private sectors including system design, installation, testing and maintenance of major telecom networks throughout the country. We have expertise in Fiber Optic, Backbone and Access Transmission Networks on Land and Submarine Cable Systems, Wireless and Mobile Network, Satellite System and Outside Plant Network.	As a 5GEC partner we can provide end to end System Integration Services, Nationwide Installation Services, On-site Engineering Support and Maintenance Services.

2 Introduction of solutions and services related to 5G

■ **Sales & Marketing**
■ **Service Support**

▶ **Sales & Marketing**

Cooperate with other 5GEC partners to approach prospect customers.

▶ **5G Operation Support**

Network slicing provides the greatest innovation opportunity in the 5G era. This enables a variety of pre-defined levels of service for companies in different industries and allows them to customize their own operations.

▶ **5G Installation Services**

We can do Nationwide Service Installation including tower installation, site preparation, antenna and equipment installation and testing.

▶ **5G Optimization Services**

We can do Optimization Services to provide the better network based on the agreed KPI.

3 5G related efforts up to now

■ **5G PoC cases**
■ **Commercial cases of 5G Implementation**

▶ **5G related efforts up to now**

We work closely with 5G suppliers for future 5G opportunities in Thailand to present 5G network solutions and applications to prospects.

▶ **5G PoC Cases**

We have experienced in the past for POC activities for many customers i.e POC case for Royal Thai Police (RTP) Trunk Mobile 4G, POC case for PEA Digital Radio Network, POC case for PEA Automatic Meter reading. (AMR)

We can do and support for 5G POC activities in part of installation and testing to prospect customers by cooperating with the main 5GEC Solutions Partners.

Mobile Innovation

Mobile Innovation
Joint Venture of LOXLEY & NTT DOCOMO, INC.

1 Roles

■ Sales & Marketing
■ Services

Sales & Marketing

Real-vehicle tracking and management system, car-mount mobile DVR. In addition, in the 5G & IoT service category, we offer remote work support solution and IoT services for manufacturers (consulting, implementation, test, training and other after-sales services) throughout Thailand and in the countries in Southeast Asia.

Services

We offer services for over 100 enterprises including Japanese-affiliated companies and Thai companies in the areas of vehicle transport, component manufacturing, agriculture, construction, travel, food, cold chain, insurance and consumer products.

2 Solutions / Services

■ Solutions
■ Services / Support

Networked digital tachograph

The digital tachograph function accurately records the vehicle operation status to provide high end services such as location information and better fuel-efficiency. Drivers can reduce the risk of accidents owing to customized alerts including thousands of voice messages, door sensor, temperature sensor and fuel sensor. The detailed driving report data helps improve driving behaviors.

GPS tracking

In addition to the networked digital tachograph as a high-end solution, we offer the GPS tracking solution incorporating the customizable report function as well as a wide range of applications such as logistics, vehicle management and driver tracking.

Mobile Applications

We provide a variety of mobile applications compatible with the way of working which is shifting to fit the post-corona and new normal era, for example, SMS by simultaneous transmission useful for internal communication in case of an emergency, smartphone application for remotely managing the activities of employees, and cloud application for memo sharing.

Remote work and human development support solutions

We provide solutions enabling enterprises to smoothly support work and training activities even in remote areas by leveraging smart glasses, 360-degree camera, and VR glasses.
These solutions help those who have difficulty in travelling or dispatching engineers and experts from Japan to Thailand.

Businesses name	Mobile Innovation
Address	128 / 224,227,228, F21, Payatai Plaza Building Phayathai Road, Kwaeng Thung-Phayathai, Khet Rajthevee Bangkok 10400, Thailand

Customers by industry
- Vehicle transport : Toyota Transport, MCW, ANI, NYK, TTMT
- Consumer products : Durbell
- Cement and agriculture :Weeranan、
- Food & cold chain :Yakult, Betagen, Siam Samut Warin
- Insurance :MSIG
- Car lease :TC Car Soulutions, Mitsui Sumitomo Leasing, ORIX Car Leasing

employees 59

Services (including local maintenance service) Digital tachograph terminal, GPS device, mobile DVR, option sensor for vehicle, remote work support solution and manufacturer specific IoT solutions.

Customer service, onsite training and troubleshooting.

NEC Corporation

NEC
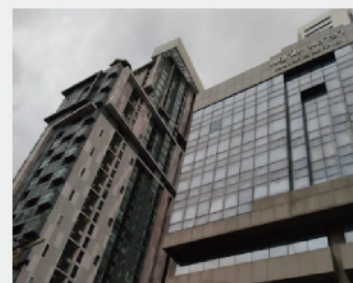
1 Roles

■5G product offering

Characteristics ▶ We provide flexible and secure network (O-RAN compliance / Cloud 5G Core) by leveraging a wide range of capabilities from wireless and wired technologies to core and access networks in addition to network configuration experiences for various customers including carriers, enterprises and government offices. (https://jpn.nec.com/tcs/5GC/index.html)

Here, we present not only NEC's approach to private 5G but also core network as one of the key technologies for 5G.

2 5G solutions and services

■NEC Private 5G Lab

Customers and partners can bring their equipment in the Lab to test use cases.

E2E 5G communication environment compliant with international standards	Evaluation environment utilizing edge	Possible to compare with any other wireless systems than 5G

■5GC (5th Generation Core network)

5G network can be built flexibly according to service requirements. 5GC operates independently of platforms thanks to the software architecture optimized for cloud.
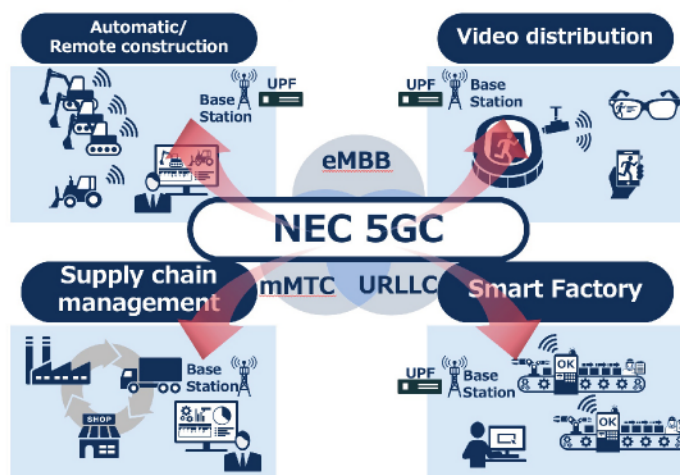
3 Efforts on Smart Factory

■Private 5G to accelerate industry DX

We have created values and driven verification by industrial DX leveraging private 5G in the market areas of manufacturing, construction, distribution, traffic and utility.

Cases specific to Smart Factory

Manufacturing : Joint experiment to build a hybrid environment of carrier 5G and private 5G

Manufacturing : Development / validation of remote manufacturing work and automation solutions by building an SA type private 5G environment in a manufacturing site.

NEC factory : Approach to reduce the burden of workers, save manpower and improve productivity by use case verification of remote operations of robots and remote work support.

Manufacturing

Construction

Distribution

Traffic

Public

■ Under the concept of "C&C", i.e. integration of computer and communication, we have contributed to developments of enterprise IT and telecommunication infrastructure in Thailand for over 56 years.

Businesses name	NEC Corporation (Thailand) Ltd.
Address	3 Rajanakarn Building, South Sathorn Road, Yannawa, Sathorn, Bangkok 10120 Thailand
Employees	250+ (December, 2020)

■Carrier / public safety solutions
　・Communication carrier solution
　・Public safety
■IT platform solutions
　・Display solution
　・Retail solution
　・Enterprise infrastructure solution
■Manufacturing / automotive solutions
　・ERP solution
　・Automotive core solution

■Network solutions
　・Computer Telephony Integration (CTI) solution
　・Enterprise network solution, PBX solution
■NEC Care Service Center
　・Customer support desk
　・After-sales service, help desk

NEC Networks & System Integration Corporation

1 Roles

■ Operation & Maintenance   ■ System Integration

Main roles and responsibilities NESIC is expected for 5GEC

Operation & Maintenance

- Primary reception by telephone
- On site engineering support
- Equipment Management(inventory information)
- Periodic/Preventive Maintenance
- RMA(Return Merchandise Authorization)

System Integration

- Survey
- Adjustment interference
- Stationary intensity measurement
- Base station design
- Equipment procurement and delivery
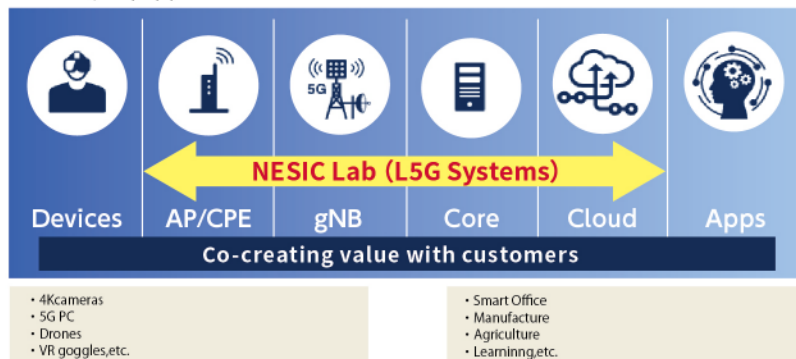- Construction (design, construction, incidental)

2 Efforts on 5G Solutions in NESIC

■ Established 5G Laboratory at Shin-Kawasaki Technical-Base in 2020.
■ Demonstrating work-style reform at office environments by implementation of local 5G on Nihombashi Innovation-Base

NESIC 5G Lab
- E2E Demonstration/evaluation/training by multi-vendors.
- A fully equipped environment for innovations.

NESIC Lab (L5G Systems)

| Devices | AP/CPE | gNB | Core | Cloud | Apps |

Co-creating value with customers

- 4Kcameras
- 5G PC
- Drones
- VR goggles,etc.

- Smart Office
- Manufacture
- Agriculture
- Learninng,etc.

Nihombashi Office Project
- Developing a model case of 5G utilization for smart office and building.
- Collaboration Mitsui Fudosan & NESIC

Smart Office at Office Floors
- Integrated network in wiring free installation
- Virtual office (VR/MR)
- PC-less, direct connection to VDI with smart devices

Smart Building at Entrance
- Facility monitoring (BA integrations)
- Environmental monitoring
- Disaster/crime prevention
- Patrol robots

3 Proposal of Solution for Smart Factory

■ SmoothSpace2 enables seamless communication between the manufacturing site and the back office.
■ By connecting a 360 deg. camera to Loop Harmony and sharing the perspective of workers, promotes Kaizen activities and the creation of innovation.

Case Scenario

Integrating SmoothSpace2 and Loop Harmony on 5G infrastructure, with capability of high-speed and large-capacity communication.

A fixed camera installed in the factory is always connected to the office, where the management department works.

https://symphonict.nesic.co.jp/SmoothSpace2/

A fixed camera installed in the factory is always connected to the office, where the management department works.

Office

Many defectives have occurred in XX.

Let's look at the machine A.

Factory

A wearable camera conveys details without blocking hands.

(Intracom

SmoothSpace 2

Staff can detect the situation at the site in real time.
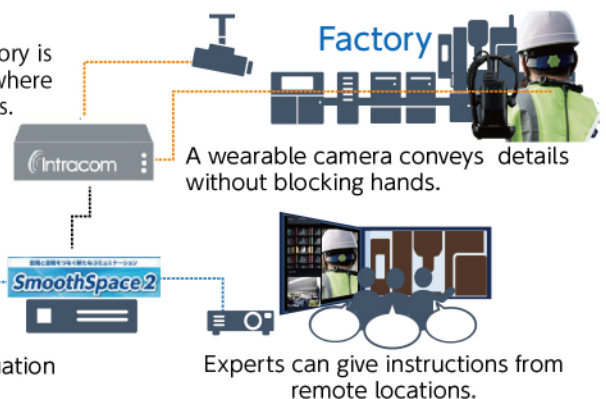
Experts can give instructions from remote locations.

NESIC

NTT Communications Corporation

1 Roles

■ **Customer acquisition and sales activities in Thailand**

NTT Communications acts as a sales company to acquire customers in Thailand and countries in the other regions as a member of 5GEC Consortium and as One NTT.

2 Efforts on 5G up to now

■ We have persistently conducted PoC for private 5G and organized the digital infrastructure to accumulate and analyze the collected data. And we are capable of end-to-end configuration and operation from fixed networks to cloud.

PoC for 5G ❶

Full scale verification of private 5G in manufacturing site
~ Agree on collaborative PoC for private 5G with Bridgestone ~

Collaborative study of private 5G utilization areas for DX in manufacturing settings such as wireless sensors in the future and skill analysis of highly-skilled experts using HD cameras by conducting communication quality experiment and large-capacity data transmission experiment in the expansive factory premises of Bridgestone.
https://www.ntt.com/about-us/press-releases/news/article/2020/0326.html

PoC for 5 ❷

Promotion of PoC for enhancement of security work utilizing private 5G
~ Enhancement of remote patrol/monitor using drone robot with 4K video, and guard model based on behavior detection AI ~

Implementation of 'PoC for solutions', which is an experiment to build models for solving regional issues utilizing private 5G, etc., and 'Technical PoC', which is technical study regarding private 5G radio propagation, etc. in a closed area with many shielding objects.
https://www.ntt.com/about-us/press-releases/news/article/2020/1120.html
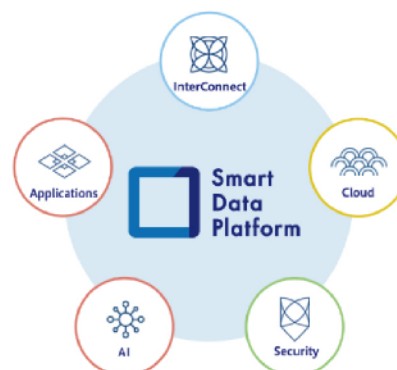
Smart Data Platform (SDPF) to support and drive DX implementation for customers

Smart Data Platform seamlessly integrates the scattered data of a company on a single platform. This is the next generation platform to change the data generated from daily activities into an engine for corporate growth by organizing the data in a more accessible manner. This platform as a surefire choice for DX leads companies toward success and contributes to industrial and social developments.
https://www.ntt.com/business/sdpf.html

3 Efforts on Smart Factory up to Now

We aim to achieve 'Smart World' by driving digital transformation (DX) and solving social issues. For 'Smart Factory' which is one of the solutions, NTT Com utilizes 'Smart Data Platform' where every function necessary for data utilization is available as a one-stop service and develops a manufacturing specific collaborative digital platform and DX solutions from FY2020. By doing so, we support DX for Japanese manufacturing in its transition period and contribute to "creation of new things and services".
https://www.ntt.com/business/dx/smart/factory.html
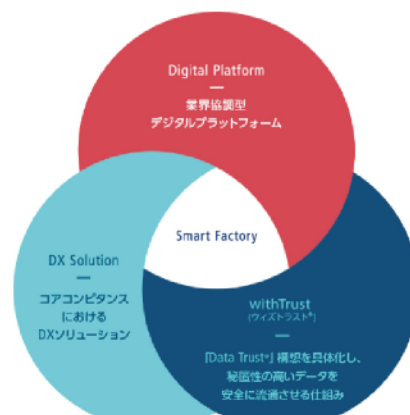
■ **Experience of Smart Factory provision**

Digital Twin/Analytics

AI based failure prediction for storage batteries
Success in development of detection technology.
https://www.ntt.com/about-us/press-releases/news/article/2020/1225.html

Digital Twin/Analytics/chemical plant DX

Development of AI which imitates operator's operations in chemical plants with extremely high accuracy.
https://www.ntt.com/about-us/press-releases/news/article/2020/1216.html

Assembly processing DX

Fujitsu, FANUC and NTT Com established a new company 'DUCNET' which provides cloud services to realize DX in manufacturing.
https://www.ntt.com/about-us/press-releases/news/article/2020/1007.html

Digital Twin/Analytics/chemical plant DX

Prototype platform for inter-connecting with the core technology 'IDS connector' of 'GAIA-X' in Europe
Success in international distribution of production line data assuming calculation of CO_2 emissions
https://www.ntt.com/about-us/press-releases/news/article/2021/0408.html

NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.

NTT DaTa
NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.

1 Role

■ NTT DATA iomc supports social demonstrations of 5G-related industry-academia-government collaborations, as well as R&D strategies and new service planning in the private sector.

Economic, social, and technological trends	NTT DATA iomc Survey research and business consulting services

Convergence of cyberspace and physical space

As the concept of IoT, in which every object is connected to a network, is becoming widely accepted, a society in which cyberspace and physical space merge is becoming a reality.

The emergence of 5G and other next-generation communications

In recent years, we have entered a turbulent period where the emergence of 5G and other next-generation communications is causing a paradigm shift from social infrastructure to personal services.

Survey and research services for government agencies

Support to central ministries and agencies for institutional and science and technology policies

Business Consulting Services for Private Companies

Service Target Industries
Targeting all aspects of social infrastructure and industry, including automobiles (CASE*), factories, road transportation, civil engineering and construction, healthcare, space and aviation

Service Description
Social verification of industry-academia-government collaboration, support for R&D strategies and planning of new services in private companies

＊Acronym for Business Consulting Services for Private Companies (automated driving), Shared & Services (sharing and services), and Electric (electrification)

2 Solutions and services related to 5G

■ Research and business consulting solutions related to 5G by NTT DATA Institute of Management Consulting

Provide research and business consulting services for each business process related to 5G utilization

Market environment analysis phase	Idea generation phase (Ideation)	Trial phase	Full-scale deployment phase
· Analysis of the market environment surrounding your company or organization as 5G and IoT-related technologies advance	· Analyze the strengths and weaknesses of the value chain for service realization and consider countermeasures · Redefining the target customer image and specifying the usage scenarios for existing and new services	· Hypothesis setting, execution support, and verification for PoC implementation · Support for participation in and implementation of social demonstrations by national and local governments	· Support for the formulation of business plans for full-scale development · Define the use cases for the provided services and organize the architecture for realization

Results to date

Client	Project name
Central government ministries	Research on trends related to 5G services and use cases, etc. Research and study on data platforms in the automotive field
National Research and Development Agency	Research and study on research and development using wireless characteristics and big data
Private company	Research on trends, etc. in the fields of IoT, 5G, and smart cities, and support for business planning Support for the formulation of R&D strategies to promote IoT-related businesses Support for 5G-related new business development

3 Other

■ Research and business consulting solutions related to 5G by NTT DATA Institute of Management Consulting
Provide research and business consulting services for each business process related to 5G utilization

https://www.nttdata-strategy.com/english/

| Market environment analysis phase	Idea generation phase (Ideation)	Trial phase	Full-scale deployment phase
· Analysis of the market environment surrounding your company or organization as 5G and IoT-related technologies advance	· Analyze the strengths and weaknesses of the value chain for service realization and consider countermeasures · Redefining the target customer image and specifying the usage scenarios for existing and new services	· Hypothesis setting, execution support, and verification for PoC implementation · Support for participation in and implementation of social demonstrations by national and local governments	· Support for the formulation of business plans for full-scale development · Define the use cases for the provided services and organize the architecture for realization

■ Provide support for business strategy, digital innovation, IT strategy planning, etc., in collaboration with the consulting division (300 consulting staff) in each consulting area at the Tokyo headquarters

|	
Business name	ASEAN Business Sector
Location	6th floor, Column Tower 199 Ratchadapisek Road Klongtoey, Bangkok 10110 Thailand
Number of employees	5 people (Tokyo Head Office: Consulting staff: 320)
Services provided (in collaboration with Tokyo headquarters)	· Corporate Management and Business Strategy · Digital Innovation · IT Strategy and CIO Support · Financial Services Transformation · Regional Management · Social Solutions · Environment and Energy · Healthcare, Medical Care, and Nursing Care · Advanced Technology 　～Brain Science, Robotics, Deep Data, AI

NTT (Thailand) Limited

NTT
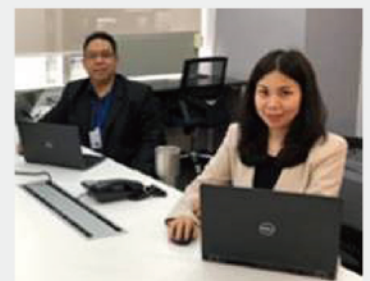
1 Role

1 SI-er provide end to end system integration services and Intelligence Infrastructure Provider
2 Sales (Client pursue team)

Feature ▶ We are a leading global provider of information and communications technology (ICT) solutions in the NTT Group, a top 100 ranked corporation in the Fortune Global 500. We provide consultancy, architecture, security and cloud services to optimize the ICT environments of enterprises.
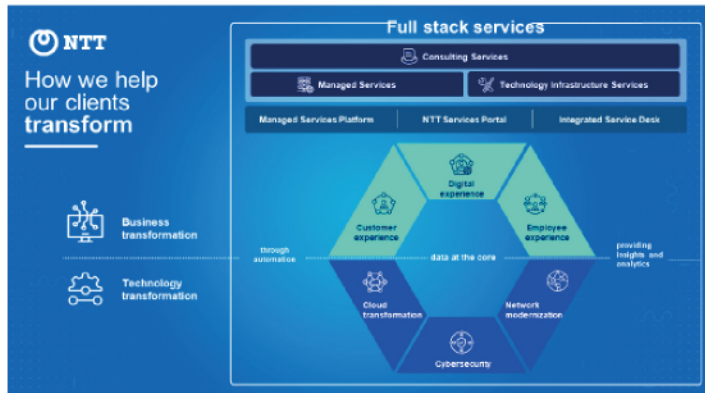
■ **Technology Services provide end to end system integration services and Modernized Infrastructure Provider.**

☐ We help you transform your technology to enable you to transform your business.
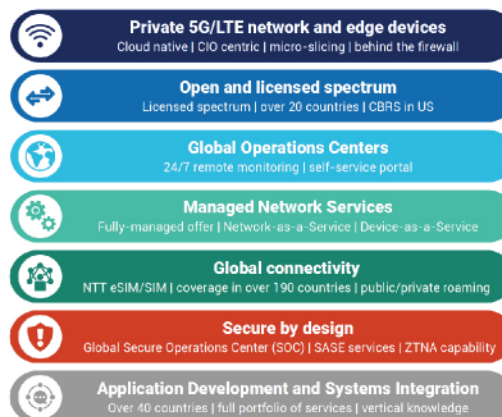☐ We deliver your business outcomes through our services.

■ **Sales (Client pursue team) and GTM**

☐ Customer Contact
☐ Customer Approach
☐ Customer Promotion
☐ Demand Generation
☐ Lead Marketing Activities

2 Introduction of solutions and services related to 5G

NTT Private 5G accelerates your digital transformation and enables smart manufacturing.
Private 5G optimizes factory floor communications and improves the security of IT and OT environments. In addition, our solution provides the in-house visibility and control you need to implement monitoring and predictive maintenance, improve safety and drive innovation, including advances such as autonomous vehicles for supply chain automation.

Private 5G/LTE network and edge devices
Cloud native | CIO centric | micro-slicing | behind the firewall

Open and licensed spectrum
Licensed spectrum | over 20 countries | CBRS in US

Global Operations Centers
24/7 remote monitoring | self-service portal

Managed Network Services
Fully-managed offer | Network-as-a-Service | Device-as-a-Service

Global connectivity
NTT eSIM/SIM | coverage in over 190 countries | public/private roaming

Secure by design
Global Secure Operations Center (SOC) | SASE services | ZTNA capability

Application Development and Systems Integration
Over 40 countries | full portfolio of services | vertical knowledge

Private 5G

An **end-to-end private 5G** solution for speed, control, security and coverage

3 Experience of smart factory offering
NTT - Smart Manufacturing

Hands-free Solutions for Automotive
Scale Your Automobile Workforce in Every Dimension Across the Entire Value Chain
Global Automakers and Tier 1 Suppliers trust RealWear to enhance their workforce and stay competitive, driving customer and workforce engagement and satisfaction by deploying RealWear Connected Worker Platform for Automotive (RCWPA). RealWear offers several turnkey solutions, including for electric vehicles and aftermarket services, for all of your ROI needs.
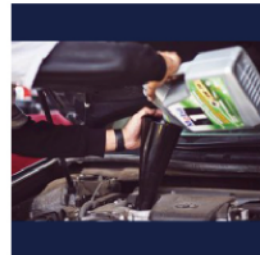

Realware - Use case for Automotive❶
Training

Problem：Geographically dispersed Field technicians need support from Product Quality Engineers(PQEs) to stay current with the latest maintenance and repair procedures.
Solution：Technicians improve efficiency and accuracy by using the voice-activated HMT with remote mentor solutions to: connect hands free with PQEs, capture images and videos, playback training videos, refer to manuals, and more.

Realware - Use case for Automotive❷
Dealer Services

Problem：Car repairs are at times complex, requiring additional support from experts. Technicians must engage customers throughout the process in order to maintain a high standard of service.
Solution：Through remote collaboration, service technicians can receive specialized knowledge from an expert and bring the customer into the process with shared digital video or live video conferencing.

■ A Global Technology Services Company with more than 60 years experienced of ICT solutions and international communications business.

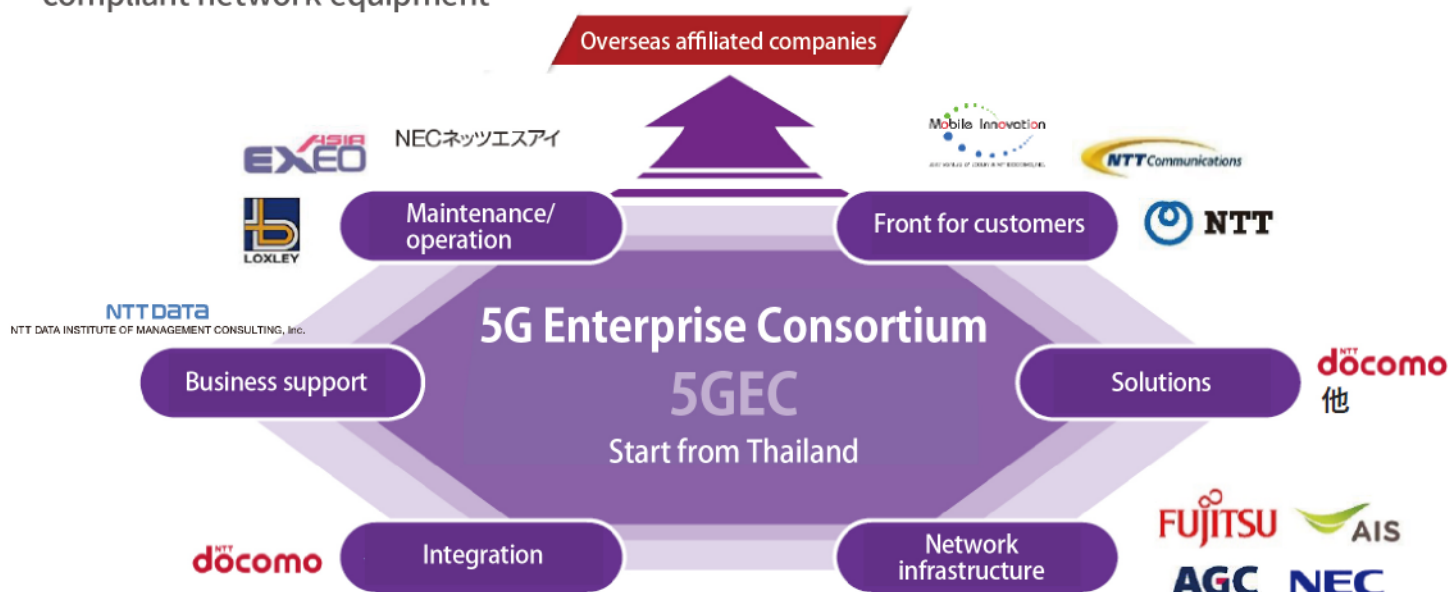|	
Business Name	NTT (Thailand) Limited
Location	17th Floor, Column Tower, 199 Ratchadapisek Road, Khwaeng Klongtoey, Khet Klongtoey, Bangkok, Thailand, 10110
Sales	60 people
Employees	1,000(TH+ CLM)
Services	Consulting Services, Managed Services, Security, Cloud Communications, Cloud Infrastructure, Global Data Centers, Global Networks and Support Services
URL	https://hello.global.ntt/

NTT DOCOMO, INC.

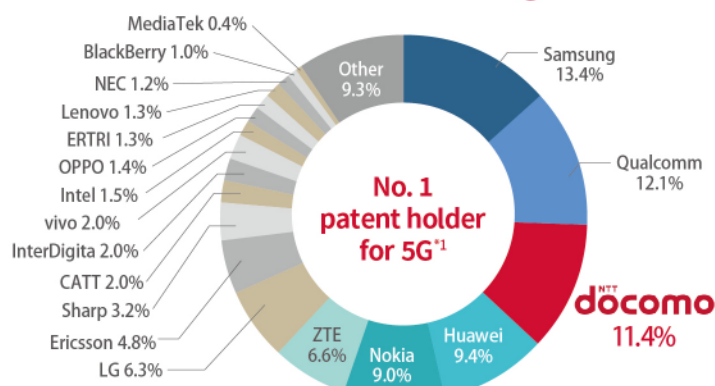**NTT docomo**

1 Roles

■ **Plan and promote the 5G Enterprise solution Consortium project.**
DOCOMO leads the consortium comprised of 12 companies, and aims to deploy 5G network technology and 5G solutions overseas while making much of the strengths of each company. DOCOMO grasps the needs of overseas affiliated companies and offers optimal solutions packed with 5G network.

■ **Selection / provision of 5G solutions, design of radio access network, integration of ORAN compliant network equipment**

Overseas affiliated companies

EXEO ASIA
NECネッツエスアイ
Mobile Innovation
NTT Communications
LOXLEY

Maintenance/ operation | **Front for customers**

◎ NTT

NTT DATA
NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.

Business support

5G Enterprise Consortium
5GEC
Start from Thailand

Solutions

docomo 他

docomo **Integration** | **Network infrastructure**

FUJITSU AIS
AGC NEC

2 NTT DOCOMO's strength

- MediaTek 0.4%
- BlackBerry 1.0%
- NEC 1.2%
- Lenovo 1.3%
- ERTRI 1.3%
- OPPO 1.4%
- Intel 1.5%
- vivo 2.0%
- InterDigita 2.0%
- CATT 2.0%
- Sharp 3.2%
- Ericsson 4.8%
- LG 6.3%
- ZTE 6.6%
- Nokia 9.0%
- Huawei 9.4%
- docomo 11.4%
- Other 9.3%
- Samsung 13.4%
- Qualcomm 12.1%

No. 1 patent holder for 5G[1]

*1Cyber Creative Institute Co., 'Evaluation and analysis by Cyber Creative Institute about the development trends of major technologies and services for 5G standard essential patents.'
https://www.cybersoken.com/blog/topics/2021/04/02/2889/

Realization of 5G Open RAN, first in the world[2]

Equipment, Accelerator, Software, Edge Computing, O&M, docomo, OSS/BSS, AI/Data Analysis, Server, Infrastructure

Global telecom operators

5G Open RAN ecosystem

*2According to NTT DOCOMO's research, as of January 31, 2021, NTT DOCOMO is the first operator to provide 5G commercial service by interconnecting base stations supplied by different vendors.

3 Efforts on 5G up to now

DOCOMO Open Partner Program	»5G Master★	DOCOMO 5G DX Square

Business matching stage to link the partners' leading edge 5G solutions with the needs for business strategies and solutions.
Program launched in February 2018, and expanded to over 4,000 partners at present

5GMasters stay close to customers and clearly explain the values enabled by 5G.
Forming a scrum with customers and partners, 5G Masters drive consultative 5G implementation to solve customers' issues.

As a place to experience/experiment solutions utilizing 5G and advanced technologies, 5G DX Squares are being deployed nationwide to drive DX and innovations through co-creation with the companies that support industries in each region.
Target is to have 50 sites ready by the end of FY2021