# **DOW JONES**

FG Innovation Company Limited; Patent Issued for Base station, user equipment and related method (USPTO 11290946)
Docomo, JGC to develop digital platforms at large-scale plant construction sites9
DOCOMO Concludes a Business Alliance Contract with JGC Corporation to Develop Platforms for DX at Large-scale Plant Construction Sites
JGC Holdings Corporation - JGC and DOCOMO to Develop Digital Platform for Remotely Managing Construction of Large Plants Overseas
JTB, NTT Docomo and others to conduct a demonstration experiment on tourism DX in Dotombori, Osaka Prefecture
AGC to develop a glass antenna compatible with all 5G Sub 6 band frequencies in Japan
NTT DOCOMO signs with Oracle Cloud
Kobe City and NTT Docomo to enter into a business alliance agreement on social problem solving practical town development
NTT DOCOMO Selects Oracle Cloud to Boost Development Capabilities for One of the World's Largest Customer Information Management Systems
DOCOMO Launches Carbon-neutrality Website to Encourage Climate Action
NTT DOCOMO adopts Oracle Cloud Infrastructure to build new development environment for ALADIN20
NTT Docomo selects Oracle Cloud for customer information management system
Press Release: NTT DOCOMO Selects Oracle Cloud to Boost Development Capabilities for One of the World's Largest Customer Information Management Systems
NTT DOCOMO Selects Oracle Cloud to Boost Development Capabilities for One of the World's Largest Customer Information Management Systems
Docomo launches carbon-neutrality website Caboneu Community
NTT - NTT DOCOMO Ventures Invests in jinjer Co., Ltd. which Offers a Back-Office Cloud Service 28
JTower, NTT Docomo strike infrastructure sharing deal
Keysight, Docomo boost 5G Open RAN ecosystems
NTT Docomo Inc. Patent Issued for User device for setting packet data convergence protocol entity in dual connectivity (USPTO 11265967)
NTT demos orchestration based on ETSI's ZTM spec
NTT Docomo and NEC to conduct technical verification of 5G network equipment in hybrid cloud
NTT Docomo and Mito City to conclude an agreement on the promotion of digitalization
NTT Docomo to start handling 'Nikko iDeCo for docomo'
This executive is trying to move all of her meetings to the metaverse
Deutsche Telekom, Telefonica, Vodafone, and KPN are Leaders in ABI Research's Telco Operators Sustainability Index40
Deutsche Telekom, Telefónica, Vodafone, and KPN are Leaders in ABI Research's Telco Operators Sustainability Index
NTT DOCOMO; NTT DOCOMO to Present Open RAN Technologies at MWC Barcelona 2022 via On-site Demonstrations and Online Sessions

NTT Docomo, partners achieve ZSM-based orchestration of 5G network slicing	46
NTT Docomo, partners achieve ZSM-based orchestration of 5G network slicing	47
AGC develops glass antenna for all frequencies in the 5G Sub6 band in Japan	48
Beyond Now's digital business platform powers DOCOMO SME marketplace	49
NTT DoCoMo hires Beyond Now for SME biz	50
Beyond Now's Digital Business Platform Powers DOCOMO SME Marketplace	51
Beyond Now's Digital Business Platform Powers DOCOMO SME Marketplace	53
NTT Docomo, NEC, AWS piloting 5G core network on hybrid cloud	55
NTT DOCOMO and NEC are Onboarding 5G SA Core Using Energy-efficient and High-performance AWS Computing Services	
Keysight, Docomo to develop Open RAN ecosystem in Japan	58
DOCOMO launches VRAN verification facility to global mobile operators	59
Kanematsu Communications to acquire all shares of Kinki Telecom	60
NTT DOCOMO, AWS and NEC collaborate on evolution of networks	61
Keysight, NTT DOCOMO Collaborate to Accelerate Open RAN Ecosystem Maturity	62
Docomo, NEC test 5G SA core using AWS cloud computing services	64
NTT DOCOMO and NEC are Onboarding 5G SA Core Using Energy-efficient and High-performance AWS Computing Services	
NTT - NTT DOCOMO and NEC are Onboarding 5G SA Core Using Energy-efficient and High-performance Cloud Computing Services	
NTT DoCoMo Inc (Topics) NTT DOCOMO and NEC are Onboarding 5G SA Core Using Energy-efficient High-performance AWS Cloud Computing Services	
Japan - Mobile Phones - Five Forces	70
Qualcomm Unveils Fully-Integrated Open RAN Solution in Collaboration with Fujitsu for 5G mn Proliferation	
Keysight Technologies Inc Keysight, NTT DOCOMO Collaborate to Accelerate Open RAN Ecosystem Ma	aturity.
Press Release: Keysight, NTT DOCOMO Collaborate to Accelerate Open RAN Ecosystem Maturity	79
Keysight, NTT DOCOMO Collaborate to Accelerate Open RAN Ecosystem Maturity	81
DOCOMO Opens vRAN Verification Facility to Global Mobile Operators	83
Docomo unveils Open RAN initiatives at partners' stands at MWC	84
Docomo unveils Open RAN initiatives at partners' stands at MWC	85
Docomo opens vRAN verification lab to global mobile operators	86
Japan's Space RAN Venture – Combining Land, Air, and Space	87
<disclosure summary=""> Cyberlin's net profit for the fiscal year ending December 2022: Up 3.9%</disclosure>	89
Docomo Ventures invests in boost, a cloud development company that visualizes CO2 emissions	90
NTT Docomo Ventures to invest in JumpCloud	91
JTB to conduct a demonstration experiment of mobile experience using 5G, XR, and Al with Toyota Moto Docomo, etc	

NTT Docomo to conduct a demonstration experiment on content distribution using 5G, XR, and AI technology 93
Japanese mobile carrier NTT Docomo's data network disrupted, cause unknown94
NTT DOCOMO gets first-mover advantage on IPv6
Mitsubishi Estate to enter the '5G infrastructure sharing business' 96
Docomo to roll out IPv6 single-stack support from 1 February
DOCOMO to Roll Out IPv6 Single-stack Support Beginning Feb. 1
SoftBank to raise over \$250m to fund high-altitude mobile
NTT Docomo and Oshima National College of Technology to collaborate on multipurpose use of training ship 'Oshima Maru'
Olympus, NTT Docomo and others to conduct a demonstration experiment on high-definition video transmission using secure cloud
NTT Docomo and H2L to develop a platform to realize 'human expansion' in the 6G era102
Airbus, NTT, NTT Docomo, and SKY Perfect JSAT consider promoting research and development for early commercialization of HAPS103
Japan and Airbus to build HAPS for broadband104
Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform Stations (HAPS)
Airbus and partners to study HAPS-based connectivity services
Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform
Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform
Airbus moves forward with new agreement to test Zephyr as a space-based high-bandwidth connectivity platform 112
BRIEF-Airbus, NTT, DOCOMO And SKY Perfect JSAT Jointly Studying Connectivity Services From HAPS 113
Airbus, NTT, Docomo, Sky Perfect JSAT partner on HAPS-based connectivity services
NTT - Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform Stations (HAPS) - T
Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform Stations (HAPS)117
NTT DoCoMo Inc Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform Stations (HAPS)
NTT - Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform Stations (HAPS)- T
BTB to sell Docomo Pacific wireless services in Guam
KT Corporation, NTT DOCOMO and Fujitsu Cooperate towards Test Facility Construction and Successful Interoperability Testing for Open RAN in Korea
KT, NTT Docomo, Fujitsu partner on 5G Open RAN ecosystem testing in South Korea
KT Corporation, NTT DOCOMO and Fujitsu Cooperate towards Test Facility Construction and Successful

KT Corporation, NTT DOCOMO and Fujitsu Cooperate towards Test Facility Construction and Success Interoperability Testing for Open RAN in Korea	
NTT - KT Corporation, NTT DOCOMO and Fujitsu Cooperate towards Test Facility Construction and Success Interoperability Testing fo	
NEC contributes packet core to DOCOMO's 5G SA services launch	133
NEC contributes packet core to DOCOMO's 5G SA services launch	134
NEC contributes to Docomo's 5G standalone services launch with packet core	135
NEC Contributes to NTT DOCOMO's 5G Standalone (SA) Services Launch with Packet Core	136
Central Nippon Expressway and NTT Docomo to conclude a partnership agreement in the event of a disaster . 137	
Sequans' Monarch 2 GM02S Module Successfully Completes Interoperability Testing for Use in Japan by NDOCOMO and KDDI	
Sequans' Monarch 2 GM02S Module Successfully Completes Interoperability Testing for Use in Japan by NDOCOMO and KDDI	
Sequans' Monarch 2 GM02S Module Successfully Completes Interoperability Testing for Use in Japan by NDOCOMO and KDDI	
Japan to trial wide-area 5G Open RAN in 2022 - report	144
Nokia readies O-RAN fronthaul with NTT DOCOMO for multi-vendor 5G operation	145
NTT Docomo to start cooperation with Saison Automobile & Fire Insurance on safe driving support service 146	
NTT Group to collaborate with Sydney Institute of Technology to create a safe and smarts city	147



# FG Innovation Company Limited; Patent Issued for Base station, user equipment and related method (USPTO 11290946)

2,288 words 15 April 2022 Investment Weekly News INVWK 817 English

© Copyright 2022 Investment Weekly News via VerticalNews.com

2022 APR 23 (VerticalNews) -- By a News Reporter-Staff News Editor at **Investment** Weekly News -- A patent by the inventors Liu, Renmao (Shanghai, CN), Xiao, Fangying (Shanghai, CN), Yamada, Shohei (Sakai, JP), filed on November 2, 2017, was published online on March 29, 2022, according to news reporting originating from Alexandria, Virginia, by VerticalNews correspondents.

Patent number 11290946 is assigned to FG Innovation Company Limited (Hong Kong, Hong Kong).

The following quote was obtained by the news editors from the background information supplied by the inventors: "A new research project on 5G technical standards (see non-patent literature: RP-160671: New SID Proposal: Study on New Radio Access Technology) was proposed by NTT DOCOMO at the 3rd Generation Partnership Project (3GPP) RAN #71 plenary meeting held in March 2016, and was approved. The goal of the research project is to develop a New Radio (NR) access technology to meet all of the application scenarios, requirements, and deployment environments of 5G. NR mainly has three application scenarios: Enhanced Mobile Broadband Communications (Enhanced Mobile Broadband: eMBB), massive Machine Type Communication (mMTC), and Ultra Reliable and Low Latency Communications (URLLC). According to the planning of the research project, the standardization of NR is conducted in two stages: the first-stage standardization will be completed by the middle of 2018; the second-stage standardization will be completed by the end of 2019. The first-stage standard specifications need to be forward-compatible with the second-stage standard specifications, while the second-stage standard specifications need to be established on the basis of the first-stage standard specifications and to meet all requirements of 5G NR technical standards.

"For better energy conservation and emission reduction, the initial requirement of the project is to avoid repeated sending of unnecessary information by the network side. This requirement is based on the following consideration:

"In an existing LTE system, in order to ensure normal access of LTE user equipment (UE), a base station (which may be denoted as eNB or gNB) periodically broadcasts access stratum and non-access stratum information, which is collectively referred to as system information. In the present UTE system, the system information is divided into a Master Information Block (MIB) and multiple System Information Blocks (SIBs) for carrying different content; and up to 20 types of SIBs are defined by LTE so far. The MIB carries the necessary and most frequently transmitted parameters for acquiring basic information of a cell. SIB1 includes parameters for determining whether a cell is suitable for cell selection and time domain scheduling information of other SIBs, The MIB and the SIB1 are sent in a predefined time period. Other SIBs with the same scheduling period are arranged in the same System Information Message (referred to as an SI message) and are periodically sent in a corresponding system information window (SI-window) according to time domain scheduling information carried in the SIB1. Other than MIB and SIB1, not all SIBs need to be broadcast. According to the features supported by a current access network device and the features of the non-access stratum, the eNB selects a system information block relevant to the features for broadcast. For example, if the current access network supports enhanced access control, the eNB broadcasts SIB14, which carries relevant information of EAB; otherwise, broadcasting is not performed. If the current access network supports a multimedia broadcast multicast service (MBMS), the eNB broadcasts SIB13 and so on. These broadcast SIBs are reflected in the scheduling information carried by the SIB1; and unscheduled SIBs are not broadcast. Prior to initiating the access, the VP further needs to acquire other SIBs based on its own features in addition to the MIB and SIB1 that must be acquired; and then the access is initiated. For example, if the UE supports multiple RATS, SIB8 further needs to be read to acquire inter-RAT-related cell reselection information; otherwise, SIB8 does not need to be read. If the UE supports WLAN interoperation, SIB17 further needs to be acquired; otherwise, SIB17 does not need to be acquired.

"The method of periodic broadcasting of all system information supported by the eNB helps the UE to acquire the corresponding information at any time. However, this method does not consider the acquisition needs of

the UE (for example, only a small number of UEs need to acquire some of the system information); and all system information supported by the eNB is broadcast repeatedly on a specific downlink resource, resulting in low system resource utilization and large energy consumption. At the 3GPP RAN2#94 meeting, some manufacturers proposed to transmit system information by combining network autonomous broadcasting and UE request transmission. These manufacturers suggested to classify system information into two categories: one type of system information is sent by the eNB autonomously through periodic broadcasting (this type of system information is referred to as minimum system information or first system information in the present disclosure), where this type of system information may include parameters required for cell access and/or cell selection-related parameters and/or parameters necessary for acquiring other system information or system information required by most UE; and the other type of system information is system information not included in the first system information and is sent in certain cases (for example, when a UP request is received or when an update is required) (this type of system information is referred to as other system information or second system information or supplementary system information in the present disclosure), where the supplementary system information may be sent through broadcast, multicast, or unicast. When the UE needs some or all of the supplementary system information, how to acquire the supplementary system information is a problem that needs to be solved."

In addition to the background information obtained for this patent, VerticalNews journalists also obtained the inventors' summary information for this patent: "According to the present disclosure, a method capable of acquiring supplementary system information, corresponding user equipment (UE), and a corresponding base station are provided.

"According to a first aspect of the present disclosure, a method used in UE is provided, comprising: sending a system information request message to a base station to request required supplementary system information, and meanwhile starting a timer; and receiving the requested supplementary system information within a time window defined by the timer.

"In one embodiment, a value of the time window is set to a multiple of a system information change period.

"In one embodiment, a start position of the time window is set to a start subframe of a next system information change period subsequent to the sending of the system information request message.

"In one embodiment, a start position of the time window is set to a last subframe of the system information request message plus an offset, and a value of the offset is predefined or configured through radio resource control (RRC) signaling."

The claims supplied by the inventors are:

- "1. A method performed by user equipment (UE), comprising: determining whether the UE requires all or only a subset of supplementary system information; generating a system information request message while the UE is in a connected state, wherein the system information request message includes a first information element that indicates a list of requested system information blocks (SIBs), and wherein the list of requested SIBs is selected based on a determination of whether the UE requires all or only the subset of the supplementary system information; sending the system information request message to a base station on an uplink dedicated control channel (DCCH); starting a first timer upon sending the system information request message; and stopping the first timer upon receiving the requested system information blocks (SIBs) sent by the base station to the UE in the connected state in response to the system information request message.
- "2. The method of claim 1, wherein the first information element is denoted as otherSIBRequestList.
- "3. The method of claim 1, wherein the system information request message includes a second information element indicating that all supplementary system information is requested.
- "4. The method of claim 1, further comprising: receiving a system information request response message from the base station that contains the requested system information blocks (SIBs), wherein the system information request response message is received from the base station on a downlink dedicated control channel (DCCH).
- "5. The method of claim 1, further comprising: receiving a system information request response message from the base station that contains the requested system information blocks (SIBs), wherein the requested system information blocks (SIBs) are included in a second information element, and wherein the second information element is denoted as rrc-SImessage.
- "6. The method of claim 1, wherein the system information request message includes a second information element that indicates a list of requested system information group identifiers.
- "7. The method of claim 6, wherein the system information block group identifier is configured through radio resource control (RRC) signaling.

- "8. User equipment (UE), comprising: a processor configured to determine whether the UE requires all or only a subset of supplementary system information; a transmitter configured to send to a base station a system information request message while the UE is in a connected state, wherein the system information request message includes a first information element that indicates a list of requested system information blocks (SIBs), wherein the list of requested SIBs is selected based on a determination of whether the UE requires all or only the subset of the supplementary system information, wherein the transmitter is configured to send the system information request message to the base station on an uplink dedicated control channel (DCCH), and wherein the connected state is denoted as RRC\_CONNECTED; and a timer configured to start upon sending the system information request message to the base station and to stop upon receiving the requested system information blocks (SIBs) from the base station in response to the system information request message.
- "9. The UE according to claim 8, further comprising: a receiver configured to receive a system information request response message from the base station that contains the requested system information block (SIBs), and wherein the receiver is configured to receive the system information request response message from the base station on a downlink dedicated control channel (DCCH).
- "10. The UE according to claim 9, wherein the requested system information blocks (SIBs) received from the base station in the system information request response message are included in a second information element denoted as rrc-SImessage.
- "11. The UE according to claim 8, wherein the system information request message includes a second information element indicating that all supplementary system information is requested.
- "12. A method used in a base station, comprising: receiving a system information request message from user equipment (UE) in a connected state on an uplink dedicated control channel (DCCH), wherein the system information request message includes a first information element that indicates a list of requested system information blocks (SIBs), and wherein the list of requested SIBs is selected based on a determination of whether the UE requires all or only a subset of the supplementary system information; and sending the requested system information blocks (SIBs) to the UE in response to receiving the system information request message, wherein the requested system information blocks (SIBs) are contained in a system information request response message sent to the UE on a downlink dedicated control channel (DCCH).
- "13. The method of claim 12, wherein the first information element is denoted as otherSIBRequestList.
- "14. The method of claim 12, wherein the system information request message includes a second information element if the UE is requesting all of the supplementary system information.
- "15. A base station, comprising: a receiver configured to receive a system information request message from user equipment (UE) in a connected state on an uplink dedicated control channel (DCCH), wherein the system information request message includes a first information element that indicates a list of requested system information blocks (SIBs), and wherein the list of requested SIBs is selected based on a determination of whether the UE requires all or only a subset of the supplementary system information; and a transmitter configured to send the requested system information blocks (SIBs) to the UE in response to receiving the system information request message, wherein the transmitter is configured to send the requested system information blocks (SIBs) to the UE in a system information request response message on a downlink dedicated control channel (DCCH).
- "16. The base station of claim 15, wherein the first information element is denoted as otherSIBRequestList.
- "17. The base station of claim 15, wherein the system information request message includes a second information element if the UE is requesting all of the supplementary system information.
- "18. The base station of claim 17, wherein the second information element is denoted as allOtherSIRequest.
- "19. The method of claim 3, wherein the second information element is denoted as allOtherSIRequest.
- "20. The method of claim 14, wherein the second information element is denoted as allOtherSIRequest."

URL and more information on this patent, see: Liu, Renmao. Base station, user equipment and related method. U.S. Patent Number 11290946, filed November 2, 2017, and published online on March 29, 2022. Patent URL:

http://patft.uspto.gov/netacgi/nph-

Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=11290946.PN.&OS=PN/11290946RS=PN/11290946

Keywords for this news article include: Asia, Business, Networks, Hong Kong, Electronics, Mobile Broadband, FG Innovation Company Limited.

Our reports deliver fact-based news of research and discoveries from around the world. Copyright 2022, NewsRx LLC
Document INVWK00020220415ei4f000je



### Docomo, JGC to develop digital platforms at large-scale plant construction sites

312 words
15 April 2022
Telecompaper Asia
TELASI
English
Copyright 2022 Telecompaper. All Rights Reserved.

Japanese operator NTT Docomo has signed a partnership agreement with JGC. The two companies plan to jointly develop a digital platform to enable large plants being constructed overseas to be remotely managed from Japan.

Under the terms of the deal, Docomo and JGC will start the joint development of a **platform** designed to enable visualization and management of progress at overseas construction sites, while remaining in Japan, with the aim of starting its use at construction sites in Southeast Asia and the Middle East by end-2022.

The platform will combine JGC's expertise in on-site operations and project-management knowledge for plant construction and Docomo's technologies involving drones, AI, and security. It will also be powered by Visual Command Center, a patented visual construction management solution from US-based company Reconstruct.

Key functions of the Visual Command Center include the creation of a 3D point cloud model of a construction site from images taken with drones or 360-degree cameras; conversion of 2D images to 3D point cloud models; as well as integration of images and 3D point cloud models with BIM / CIM and drawing data; and creation of a 4D model by integrating the schedule data and visualize progress management including construction delays and punctuality.

Since August 2019, Docomo had been working with JGC to identify issues related to plant construction management and explore the creation of new businesses, such as demonstrating systems utilizing drones and IoT, with the aim of digitally transforming plant facility inspection and construction progress management. Through this agreement, Docomo and JGC plan to develop platforms for overseas plant construction sites and develop them with higher functionality, and work to create new businesses to contribute to the promotion of DX not only for the overseas plant construction industry but also for all industries.

Document TELASI0020220415ei4f00001



# DOCOMO Concludes a Business Alliance Contract with JGC Corporation to Develop Platforms for DX at Large-scale Plant Construction Sites

452 words 14 April 2022 19:39 JCN Newswire JAPCOR English

Copyright 2022 JCN Newswire, a division of Japan Corporate News Network K.K. All rights reserved.

- Aiming for 4D digitalization of overseas plant construction sites, to start use in Southeast Asia and the Middle East by the end of 2022 -

TOKYO, Apr 14, 2022 - (JCN Newswire) - NTT DOCOMO, INC. announced today that it has entered into a business alliance agreement with JGC Corporation on April 14, 2022 to jointly develop a digital **platform** that would enable large plants being constructed overseas to be remotely managed from Japan.

Under the agreement, the two companies will begin joint development of a platform that will enable accurate and speedy visualization and management of progress at overseas construction sites while remaining in Japan, with the aim of starting its use at construction sites in Southeast Asia and the Middle East by the end of 2022.

The platform will combine JGC's expertise in on-site operations and project-management knowledge for plant construction and DOCOMO's technologies involving drones, AI, and security. It will also be powered by Visual Command Center TM, a patented visual construction management solution from US-based company Reconstruct.

Key functions of the Visual Command Center include.

- Create a 3D point cloud model of a construction site from images taken with drones or 360-degree cameras
- Convert 2D images to 3D point cloud models
- Integrate images and 3D point cloud models with BIM / CIM and drawing data
- Create a 4D model by integrating the schedule data and visualize progress management including construction delays and punctuality.

Since August 2019, DOCOMO had been working with JGC to identify issues related to plant construction management and explore the creation of new businesses, such as demonstrating systems utilizing drones and IoT, with the aim of digitally transforming plant facility inspection and construction progress management. Through this agreement, DOCOMO and JGC will develop platforms for overseas plant construction sites and develop them with higher functionality, and work to create new businesses to contribute to the promotion of DX not only for the overseas plant construction industry but also for all industries.

### About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations. <a href="https://www.docomo.ne.jp/english/">www.docomo.ne.jp/english/</a>.

Source: NTT DOCOMO

Document JAPCOR0020220414ei4e000gp



# JGC Holdings Corporation - JGC and DOCOMO to Develop Digital Platform for Remotely Managing Construction of Large Plants Overseas

JGC Holdings Corporation published this content on 14 Apr 2022 and is solely responsible for the information contained herein. Distributed by PUBT, unedited and unaltered, on 14 Apr 2022 06:01:06 UTC.

423 words

14 April 2022

Public Companies News and Documents via PUBT

**LCDVP** 

English

Copyright 2022. As included in the Information

\* Click here to view this document in its original format

JGC and DOCOMO to Develop Digital Platform for Remotely Managing Construction of Large Plants Overseas

Apr. 14, 2022

- 4D digitization platform will be deployed in Southeast Asia and Middle East -

TOKYO, JAPAN-- JGC Holdings Corporation announced today that JGC Corporation and NTT DOCOMO, INC., have agreed to form a business alliance aimed at developing a digital platform that would enable large plants being constructed overseas to be remotely managed from Japan on April 14, 2022. The platform will enable fast, accurate visualization and remote management of construction using drones, video, Al and other digital technologies. The platform initially will be tested and introduced at construction sites in Southeast Asia and the Middle East by the end of 2022.

The platform will combine JGC's expertise in on-site operations and project-management knowledge for plant construction and DOCOMO technologies involving drones, AI, security and network construction. It will also be powered by Reconstruct's Visual Command CenterTM, a patented visual construction management solution from US-based Reconstruct®.

Key functions of the Visual Command CenterTM include.

- -Create a 3D point cloud model from a construction site taken with a drone or 360 cameras
- -Measure accurately in 2D and 3D
- -Integrate and superimpose images and 3D point cloud models with BIM / CIM and drawing data
- -Create a 4D model by integrating the schedule data , and visualize progress management including construction delays and punctuality.

JGC and DOCOMO began to jointly study the feasibility of remotely managing plant construction and the creation of related businesses in August 2019. Efforts so far have included demonstrating a system combining drones and IoT that can be used to digitally inspect plant equipment or manage construction progress. Through their new business alliance, JGC and DOCOMO now plan to deploy a working platform connecting construction sites overseas and management offices in Japan. Going forward, they expect to refine the platform's functionality as well as develop businesses that will contribute to the ongoing digital transformation of plant-construction operations.

# \* Original Link

### Disclaimer

JGC Holdings Corporation published this content on 14 April 2022 and is solely responsible for the information contained therein. Distributed by <u>Public</u>, unedited and unaltered, on 14 April 2022 06:03:35 UTC.

Document LCDVP00020220414ei4e005bv



# JTB, NTT Docomo and others to conduct a demonstration experiment on tourism DX in Dotombori, Osaka Prefecture

319 words 12 April 2022 Nikkei Business Trends NIKBST English Copyright 2022. Nikkei Inc.

JTB (Shinagawa-ku, Tokyo), NTT Docomo (Chiyoda-ku, Tokyo), and Dotombori Night Culture Creation Council will conduct a demonstration experiment on tourism DX "Dotombori XR Park" in Dotombori, Osaka Prefecture from March 18 to April 10, 2022. In anticipation of the Osaka-Kansai Expo in 2025, it aims to improve the value of visitors in the Dotombori area and promote the circulation of shopping streets. It will propose new ways to enjoy Dotombori to tourists and locals. The demonstration experiment will provide a sightseeing experience using smartphones. By installing AR digital **content devices** in Dotombori Shopping Street and Tonbori Riverwalk, the two companies will develop an entertainment experience that combines real and virtual experiences that only visitors can experience, as well as information dissemination that allows customers to enjoy eating, drinking and shopping with confidence in With Corona.

It will also develop "Virtual Dotombori", which allows visitors to enjoy Dotombori's tours and games in a virtual space, and work on disseminating information on the new attractions of the city. "Dotombori AR Photo Museum" where you can see photos of the 1970 Osaka Expo and images of Osaka and Kansai Expo in 2025 when using a smartphone for cityscapes and landscapes, and "Dotombori River AR" where you can enjoy fishing games on Dotombori River "Fishing", "Dotombori Sensing AR" to understand the congestion status of the participating stores can be experienced.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020220413ei4c000jh



### AGC to develop a glass antenna compatible with all 5G Sub 6 band frequencies in Japan

303 words 7 April 2022 Nikkei Business Trends NIKBST English Copyright 2022. Nikkei Inc.

AGC had developed the glass antenna "WAVEATTOCH" compatible with all domestic 5G Sub 6 band frequencies with the cooperation of the technologies of NTT Docomo (Chiyoda-ku, Tokyo) and JTOWER (Minato, Tokyo) (announced on March 11, 2022). By attaching WAVEATTOCH to the window (inside the room) of the building, it is possible to make the outdoor service area without spoiling the cityscape and the appearance of the building. The developed product can cover all frequencies of 5G Sub6 band allocated to 4 domestic mobile carriers with one unit, and can be used for "Infrastructure sharing" jointly used by multiple mobile carriers. In the future, it aims to sell to domestic telecommunications carriers and infrastructure sharing companies. The company plans to start commercial experiments with JTOWER in the fall of 2022 and commercial production in November. 5G uses a higher frequency than 4G, and the communication area that can be covered by one base station is narrowed.

Therefore, in order to expand the 5G communication area, it is necessary to further increase the number of base stations. However, it has been pointed out that securing a physical place for installing a new base station and constraints on the landscape are issues, and that infrastructure sharing that is jointly used by multiple mobile carriers is important.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020220408ei47000b5



### NTT DOCOMO signs with Oracle Cloud

540 words 5 April 2022 Optical Networks Daily OBSERV English

© 2022 Electronics International Disclaimer: Whilst every effort has been taken to ensure the accuracy of the information contained in this report, neither Electronics International nor its agents or sources can be held responsible for any inaccuracy.

NTT DOCOMO has adopted Oracle Cloud Infrastructure (OCI) to build its new development environment for ALADIN (ALI Around DoCoMo INformation Systems), one of the largest customer information management systems in the world.

ALADIN supports DOCOMO's more than 83 million subscriber base, handling all customer-related operations, such as membership and transactional data, credit checks, contract data and assignment of telephone numbers. DOCOMO's customer information is rapidly expanding alongside the mobile operator's 'd POINT CLUB' reward points program, growing numbers of traditional cell phone subscribers, and new customer touchpoints, such as chatbots and smart **devices**. To meet this business expansion and enable faster delivery of better services, DOCOMO is modernizing the ALADIN development environment by moving it to the **cloud**. As part of this, DOCOMO built a new development environment on OCI to serve approximately 300 developers.

As part of the cloud migration, DOCOMO has also moved its on-premises Oracle Database environment to Oracle Database Cloud Service on OCI.

Tadaaki Yoshida, Information Systems Department, NTT DOCOMO, INC., said, "Our goal is to ensure that ALADIN, a mission critical system which serves as NTT DOCOMO's customer hub, operates in a reliable manner and delivers an excellent customer experience. The new environment on OCI supports development, coding, and integration testing. Its roll out has quickly proven how we can optimize our costs and improve developer productivity and efficiency through containerization and automation. The Oracle Cloud Free Tier also has allowed us to build the new environment quickly and at a lower cost. We plan to move the entire development environment to the cloud as we prepare for the future migration of our commercial environment and are looking forward to the evolution of the services and technologies provided on OCI."

Toshimitsu Misawa, member of the board, corporate executive officer and president of Oracle Corporation Japan, said, "Companies across the world are continuing to modernize their business processes to meet changing market and regulatory conditions and customer demands. Key to their success is the wealth of customer information that sits at their very heart, like in the case of DOCOMO's ALADIN. Having a development environment that enables the information to be leveraged quickly, securely and reliably, and that supports faster software development is a source of competitive advantage. Oracle recently launched Oracle Cloud for Telcos which enables telcos to build new applications or modernize existing workloads on OCI. OCI is gaining a strong reputation for enabling business evolution by providing the extensive developer-friendly services needed to help organizations build, deploy and manage the next generation of applications, and leverage game-changing technologies like artificial intelligence and machine learning."

https://www.oracle.com/news/announcement/ntt-docomo-selects-oracle-cloud-boosts-development-capabilities-2022-04-04/

# Oracle Cloud Infrastructure continues to build

Wednesday, March 23, 2022 Oracle, Oracle Cloud

Oracle Cloud Infrastructure (OCI) is expanding with 11 new compute, networking, and storage services and capabilities that enable customers to run their workloads faster and more securely at lower costs. "OCI continues to break the rules in the cloud, helping customers run their workloads faster, more securely, and more economically," said Clay Magouyrk, executive vice president, Oracle Cloud Infrastructure. "Customers can build cloud native...

# **READ MORE**

Document OBSERV0020220406ei4500005

Page 14 of 148 © 2022 Factiva, Inc. All rights reserved.



# Kobe City and NTT Docomo to enter into a business alliance agreement on social problem solving practical town development

320 words 5 April 2022 Nikkei Business Trends NIKBST English Copyright 2022. Nikkei Inc.

On March 11, 2022, Kobe City and NTT Docomo (Chiyoda-ku, Tokyo) signed a business alliance agreement on "Reiwa's social problem solving practical community development utilizing advanced technologies for the post-corona society." The agreement period is from March 11, 2022 to March 31, 2025. So far, the two parties have signed an agreement on ICT utilization for two terms and six years from April 2016 for the purpose of solving social issues in the region and improving the convenience of citizens, and have developed various businesses. It was This agreement aims to further develop and create new businesses based on the achievements so far. The three target areas are the urban area, waterfront area, and mountainous area. It aims to create new businesses that utilize advanced technologies in seven fields, including transportation, nursing care, disaster prevention, tourism, environment, education, and medical care.

Specifically, "Examination and promotion of tourism business model in collaboration with universities", "Advancement of disaster prevention simulation in collaboration with research institutes" and "Creation of entertainment business utilizing 5G" will be implemented as priority projects. With Kobe City, which has the goal of "Global contribution city nurtured by the sea and mountains" as the field, it aims to develop a community-based solution for social issues using advanced technologies and realize a sustainable society (SDGs) where young people can shine and play an active role.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020220406ei450002y



# NTT DOCOMO Selects Oracle<mark>Cloud</mark> to Boost Development Capabilities for One of the World's Largest Customer Information Management Systems

836 words
5 April 2022
ENP Newswire
ENPNEW
English
© 2022, Electronic News Publishing. All Rights Reserved.

Release date - 04042022

Japanese mobile operator taps Oracle Cloud Infrastructure to improve service quality and enable faster delivery through automation of operation management utilizing Oracle Container Engines for Kubernetes.

NTT DOCOMO, INC. (DOCOMO), the largest mobile operator in Japan, has adopted Oracle Cloud Infrastructure (OCI) to build its new development environment for ALADIN (ALI Around DoCoMo INformation Systems), one of the largest customer information management systems in the world. Using OCI, the system's 300 developers can now build modern applications in a faster and more cost-efficient manner, while DOCOMO benefits from highly available and secure compute resources, as the company expands to broader telecommunications, internet and smart life services. In addition, DOCOMO has moved its on-premises Oracle Database for database training to Oracle Database Cloud Service on OCI.

ALADIN supports DOCOMO's more than 83 million subscriber base, handling all customer-related operations, such as membership and transactional data, credit checks, contract data and assignment of telephone numbers. DOCOMO's customer information is rapidly expanding alongside the mobile operator's 'd POINT CLUB' reward points program, growing numbers of traditional cell phone subscribers, and new customer touchpoints, such as chatbots and smart devices. To meet this business expansion and enable faster delivery of better services, DOCOMO is modernizing the ALADIN development environment by moving it to the cloud. As part of this, DOCOMO built a new development environment on OCI to serve approximately 300 developers.

Tadaaki Yoshida, Information Systems Department, NTT DOCOMO, INC., said, 'Our goal is to ensure that ALADIN, a mission critical system which serves as NTT DOCOMO's customer hub, operates in a reliable manner and delivers an excellent customer experience. The new environment on OCI supports development, coding, and integration testing. Its roll out has quickly proven how we can optimize our costs and improve developer productivity and efficiency through containerization and automation. The Oracle Cloud Free Tier also has allowed us to build the new environment quickly and at a lower cost. We plan to move the entire development environment to the cloud as we prepare for the future migration of our commercial environment and are looking forward to the evolution of the services and technologies provided on OCI.'

Each developer now has a dedicated environment and the ability to flexibly change resources during peak and slow periods of development, eliminating the need to manually provision and shut down environments and providing the resources needed on demand. In addition to improving the productivity and efficiency of the developer team, DOCOMO also used Oracle Container Engine for Kubernetes (OKE) for containerization, and plans to leverage Continuous Integration and Continuous Delivery and Deployment (CI/CD) tools to further automate operational management.

As part of the cloud migration, DOCOMO has also moved its on-premises Oracle Database environment to Oracle Database Cloud Service on OCI. This environment is used by database administrators from dedicated devices to verify and train database recovery procedures and conduct training, including the reproduction of failure conditions in an environment similar to the commercial environment. With the move to Oracle Database Cloud Service, DOCOMO can enjoy Oracle's pay-as-you-go service and provide database administrators with the flexibility and scalability to meet seasonal needs. This has allowed DOCOMO to reduce costs by 95% by minimizing the manual workload required for managing and operating the environment.

Toshimitsu Misawa, member of the board, corporate executive officer and president of Oracle Corporation Japan, said, 'Companies across the world are continuing to modernize their business processes to meet changing market and regulatory conditions and customer demands. Key to their success is the wealth of customer information that sits at their very heart, like in the case of DOCOMO's ALADIN. Having a development environment that enables the information to be leveraged quickly, securely and reliably, and that

supports faster software development is a source of competitive advantage. Oracle recently launched Oracle Cloud for Telcos which enables telcos to build new applications or modernize existing workloads on OCI. OCI is gaining a strong reputation for enabling business evolution by providing the extensive developer-friendly services needed to help organizations build, deploy and manage the next generation of applications, and leverage game-changing technologies like artificial intelligence and machine learning.'

DOCOMO aims to migrate the final operation testing environment, which is currently in an on-premises location, to the cloud, including Oracle Cloud, to further improve testing efficiency and application quality with flexible development and testing environments in the near future.

Additional Resources

Learn more about Oracle Cloud Infrastructure

NTT DOCOMO

Contact Info

Kazumi Ishiyama

Oracle Corporation Japan PR

pr-room\_jp@oracle.com

+81.3.6834.3238

**About Oracle** 

Oracle offers integrated suites of applications plus secure, autonomous infrastructure in the Oracle Cloud. For more information about Oracle (NYSE: ORCL), please visit us at <a href="https://www.oracle.com">www.oracle.com</a>.

[Editorial queries for this story should be sent to newswire@enpublishing.co.uk]

Document ENPNEW0020220405ei4500045



## **DOCOMO Launches Carbon-neutrality Website to Encourage Climate Action**

304 words 5 April 2022 10:08 JCN Newswire JAPCOR English

Copyright 2022 JCN Newswire, a division of Japan Corporate News Network K.K. All rights reserved.

TOKYO, Apr 5, 2022 - (JCN Newswire) - NTT DOCOMO, INC. announced today that it has launched the Caboneu Community website (<a href="https://caboneu.jp/">https://caboneu.jp/</a>) where the general public, opinion leaders, companies and nonprofit organizations can share information on implementing eco-friendly actions in everyday life for increased carbon neutrality. The initiative is an extension of the Caboneu ecosystem DOCOMO launched last September as part of its commitment to reduce greenhouse gas emissions from its business activities effectively to zero by 2030.

The website includes articles about how people are leading eco-friendly lifestyles, information on related events and initiatives, and a members' page that can be personalized to the preferences of each registered user.

In a related initiative, DOCOMO will set up a Caboneu booth at one of Japan's largest environmental events, Earth Day Tokyo 2022, in central Tokyo's Yoyogi Park on April 16-17 (Sat. & Sun.). The booth will promote the Caboneu Community and provide hands-on experiences for participants to learn about the global environment.

Going forward, DOCOMO will continue pursuing sustainable corporate development, aiming to help create a more secure, convenient and prosperous world for all generations.

# About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations. https://www.docomo.ne.jp/english/.

Source: NTT DOCOMO

Document JAPCOR0020220405ei4500001



# NTT DOCOMO adopts Oracle Cloud Infrastructure to build new development environment for ALADIN

721 words
4 April 2022
01:00
MarketLine News and Comment
DTMNTR
English
© 2022, MarketLine, All rights reserved

NTT DOCOMO announced that it has adopted Oracle Cloud Infrastructure (OCI) to build its new development environment for ALADIN (ALI Around DoCoMo INformation Systems), one of the largest customer information management systems in the world.

Using OCI, the system's 300 developers can now build modern applications in a faster and more cost-efficient manner, while DOCOMO benefits from highly available and secure compute resources, as the company expands to broader telecommunications, internet, and smart life services. In addition, DOCOMO has moved its on-premises Oracle Database for database training to Oracle Database Cloud Service on OCI.

ALADIN supports DOCOMO's more than 83 million subscriber base, handling all customer-related operations, such as membership and transactional data, credit checks, contract data, and assignment of telephone numbers. DOCOMO's customer information is rapidly expanding alongside the mobile operator's 'd POINT CLUB' reward points program, growing numbers of traditional cellphone subscribers, and new customer touchpoints, such as chatbots and smart devices. To meet this business expansionand enable faster deliveryof better services, DOCOMO is modernizing the ALADIN development environment by moving it to the cloud. As part of this, DOCOMO built a new development environment on OCI to serve approximately 300 developers.

Tadaaki Yoshida, Information Systems Department, NTT DOCOMO, INC., said, "Our goal is to ensure that ALADIN, a mission critical system which serves as NTT DOCOMO's customer hub, operates in a reliable manner and delivers an excellent customer experience. The new environment on OCI supports development, coding, and integration testing. Its roll out has quickly proven how we can optimize our costs and improve developer productivity and efficiency through containerization and automation. TheOracle Cloud Free Tieralso has allowed us to build the new environment quickly and at a lower cost. We plan to move the entire development environment to the cloud as we prepare for the future migration of our commercial environment and are looking forward to the evolution of the services and technologies provided on OCI."

Each developer now has a dedicated environment and the ability to flexibly change resources during peak and slow periods of development, eliminating the need to manually provision and shut down environments and providing the resources needed on demand. In addition to improving the productivity and efficiency of the developer team, DOCOMO also used Oracle Container Engine for Kubernetes (OKE) for containerization, and plans to leverage Continuous Integration and Continuous Delivery and Deployment (CI/CD) tools to further automate operational management.

As part of the cloud migration, DOCOMO has also moved its on-premises Oracle Database environment to Oracle Database Cloud Service on OCI. This environment is used by database administrators from dedicated devices to verify and train database recovery procedures and conduct training, including the reproduction of failure conditions in an environment similar to the commercial environment. With the move to Oracle Database Cloud Service, DOCOMO can enjoy Oracle's pay-as-you-go service and provide database administrators with the flexibility and scalability to meet seasonal needs. This has allowed DOCOMO to reduce costs by 95% by minimizing the manual workload required for managing and operating the environment.

Toshimitsu Misawa, member of the board, corporate executive officer and president of Oracle Corporation Japan, said, "Companies across the world are continuing to modernize their business processes to meet changing market and regulatory conditions and customer demands. Key to their success is the wealth of customer information that sits at their very heart, like in the case of DOCOMO's ALADIN. Having a development environment that enables the information to be leveraged quickly, securely, and reliably, and that supports faster software development is a source of competitive advantage. Oracle recently launchedOracle Cloud for Telcoswhich enables telcos to build new applications or modernize existing workloads on OCI. OCI is gaining a strong reputation for enabling business evolution by providing the extensive developer-friendly services needed to help organizations build, deploy and manage the next

generation of applications, and leverage game-changing technologies like artificial intelligence and machine learning."

DOCOMO aims to migrate the final operation testing environment, which is currently in an on-premises location, to the cloud, including Oracle Cloud, to further improve testing efficiency and application quality with flexible development and testing environments in the near future.

40B9E68B-39A6-4637-8D87-CDD8FA3ECF20

Document DTMNTR0020220405ei440002g



### NTT Docomo selects Oracle Cloud for customer information management system

272 words
4 April 2022
Telecompaper Asia
TELASI
English
Copyright 2022 Telecompaper. All Rights Reserved.

NTT Docomo has adopted Oracle**cloud Infrastructure** (OCI) to build its new development environment for the Aladin (ALI Around Docomo Information Systems) customer information management system. NTT Docomo said it will in this way be benefit from available and secure compute resources, as it expands to broader telecommunications, internet, and smart life services. The company also moved its on-premises Oracle Database for database training to the Oracle Database **Cloud** Service on OCI.

Aladin supports Docomo's more than 83 million subscriber base, handling all customer-related operations, such as membership and transactional data, credit checks, contract data, and assignment of telephone numbers. Docomo's customer information is rapidly expanding alongside the mobile operator's 'd Point Club' reward points programme, growing numbers of traditional cellphone subscribers, and new customer touchpoints, such as chatbots and smart devices. To meet this business expansion and enable faster delivery of better services, Docomo is modernising the Aladin development environment by moving it to the cloud. As part of this, Docomo built a new development environment on OCI to serve approximately 300 developers.

Docomo also used Oracle Container Engine for Kubernetes (OKE) for containerisation, and plans to leverage Continuous Integration and Continuous Delivery and Deployment (CI/CD) tools to further automate operational management. As part of the cloud migration, Docomo moved its on-premises Oracle Database environment to Oracle Database Cloud Service on OCI. This environment is used by database administrators from dedicated devices to verify and train database recovery procedures and conduct training, including the reproduction of failure conditions in an environment similar to the commercial environment.

Document TELASI0020220404ei44000dx



Press Release: NTT DOCOMO Selects Oracle Cloud to Boost Development Capabilities for One of the World's Largest Customer Information Management Systems

937 words
4 April 2022
13:00
Dow Jones Institutional News
DJDN
English
Copyright © 2022, Dow Jones & Company, Inc.

NTT DOCOMO Selects Oracle Cloud to Boost Development Capabilities for One of the World's Largest Customer Information Management Systems

PR Newswire

TOKYO, April 4, 2022

Japanese mobile operator taps Oracle Cloud Infrastructure to improve service quality and enable faster delivery through automation of operation management utilizing Oracle Container Engines for Kubernetes

TOKYO, April 4, 2022 /PRNewswire/ -- NTT DOCOMO, INC. (DOCOMO), the largest mobile operator in Japan, has adopted Oracle Cloud Infrastructure (OCI) to build its new development environment for ALADIN (ALI Around DoCoMo INformation Systems), one of the largest customer information management systems in the world. Using OCI, the system's 300 developers can now build modern applications in a faster and more cost-efficient manner, while DOCOMO benefits from highly available and secure compute resources, as the company expands to broader telecommunications, internet, and smart life services. In addition, DOCOMO has moved its on-premises Oracle Database for database training to Oracle Database Cloud Service on OCI.

ALADIN supports DOCOMO's more than 83 million subscriber base, handling all customer-related operations, such as membership and transactional data, credit checks, contract data, and assignment of telephone numbers. DOCOMO's customer information is rapidly expanding alongside the mobile operator's 'd POINT CLUB' reward points program, growing numbers of traditional cellphone subscribers, and new customer touchpoints, such as chatbots and smart devices. To meet this business expansion and enable faster delivery of better services, DOCOMO is modernizing the ALADIN development environment by moving it to the cloud. As part of this, DOCOMO built a new development environment on OCI to serve approximately 300 developers.

Tadaaki Yoshida, Information Systems Department, NTT DOCOMO, INC., said, "Our goal is to ensure that ALADIN, a mission critical system which serves as NTT DOCOMO's customer hub, operates in a reliable manner and delivers an excellent customer experience. The new environment on OCI supports development, coding, and integration testing. Its roll out has quickly proven how we can optimize our costs and improve developer productivity and efficiency through containerization and automation. The Oracle Cloud Free Tier also has allowed us to build the new environment quickly and at a lower cost. We plan to move the entire development environment to the cloud as we prepare for the future migration of our commercial environment and are looking forward to the evolution of the services and technologies provided on OCI."

Each developer now has a dedicated environment and the ability to flexibly change resources during peak and slow periods of development, eliminating the need to manually provision and shut down environments and providing the resources needed on demand. In addition to improving the productivity and efficiency of the developer team, DOCOMO also used Oracle Container Engine for Kubernetes (OKE) for containerization, and plans to leverage Continuous Integration and Continuous Delivery and Deployment (CI/CD) tools to further automate operational management.

As part of the cloud migration, DOCOMO has also moved its on-premises Oracle Database environment to Oracle Database Cloud Service on OCI. This environment is used by database administrators from dedicated devices to verify and train database recovery procedures and conduct training, including the reproduction of failure conditions in an environment similar to the commercial environment. With the move to Oracle Database Cloud Service, DOCOMO can enjoy Oracle's pay-as-you-go service and provide database administrators with the flexibility and scalability to meet seasonal needs. This has allowed DOCOMO to reduce costs by 95% by minimizing the manual workload required for managing and operating the environment.

Toshimitsu Misawa, member of the board, corporate executive officer and president of Oracle Corporation Japan, said, "Companies across the world are continuing to modernize their business processes to meet changing market and regulatory conditions and customer demands. Key to their success is the wealth of customer information that sits at their very heart, like in the case of DOCOMO's ALADIN. Having a development environment that enables the information to be leveraged quickly, securely, and reliably, and that supports faster software development is a source of competitive advantage. Oracle recently launched Oracle Cloud for Telcos which enables telcos to build new applications or modernize existing workloads on OCI. OCI is gaining a strong reputation for enabling business evolution by providing the extensive developer-friendly services needed to help organizations build, deploy and manage the next generation of applications, and leverage game-changing technologies like artificial intelligence and machine learning."

DOCOMO aims to migrate the final operation testing environment, which is currently in an on-premises location, to the cloud, including Oracle Cloud, to further improve testing efficiency and application quality with flexible development and testing environments in the near future.

### Additional Resources

-- Learn more about
Oracle Cloud Infrastructure
-- NTT DOCOMO

### **About Oracle**

Oracle offers integrated suites of applications plus secure, autonomous infrastructure in the Oracle Cloud. For more information about Oracle (NYSE: ORCL), please visit us at <a href="https://www.oracle.com">www.oracle.com</a>.

#### **Trademarks**

Oracle, Java, and MySQL are registered trademarks of Oracle Corporation.

View original content to download

multimedia:

https://www.prnewswire.com/news-releases/ntt-docomo-selects-oracle-cloud-to-boost-development-capabilities-for-one-of-the-worlds-largest-customer-information-management-systems-301515919.html

# **SOURCE Oracle**

/CONTACT: Kazumi Ishiyama, Oracle Corporation Japan PR, pr-room\_jp@oracle.com, +81.3.6834.3238

4 Apr 2022 08:01 ET \*NTT DOCOMO Selects Oracle Cloud to Boost Development Capabilities for One of the World's Largest Customer Info Management Systems

(MORE TO FOLLOW) Dow Jones Newswires

April 04, 2022 08:01 ET (12:01 GMT)

Document DJDN000020220404ei44001In



# NTT DOCOMO Selects Oracle<mark>Cloud</mark> to Boost Development Capabilities for One of the World's Largest Customer Information Management Systems

869 words 4 April 2022 13:00 PR Newswire PRN English

Copyright © 2022 PR Newswire Association LLC. All Rights Reserved.

Japanese mobile operator taps Oracle Cloud Infrastructure to improve service quality and enable faster delivery through automation of operation management utilizing Oracle Container Engines for Kubernetes

TOKYO, April 4, 2022 /PRNewswire/ -- NTT DOCOMO, INC. (DOCOMO), the largest mobile operator in Japan, has adopted Oracle Cloud Infrastructure (OCI) to build its new development environment for ALADIN (ALI Around DoCoMo INformation Systems), one of the largest customer information management systems in the world. Using OCI, the system's 300 developers can now build modern applications in a faster and more cost-efficient manner, while DOCOMO benefits from highly available and secure compute resources, as the company expands to broader telecommunications, internet, and smart life services. In addition, DOCOMO has moved its on-premises Oracle Database for database training to Oracle Database Cloud Service on OCI.

ALADIN supports DOCOMO's more than 83 million subscriber base, handling all customer-related operations, such as membership and transactional data, credit checks, contract data, and assignment of telephone numbers. DOCOMO's customer information is rapidly expanding alongside the mobile operator's 'd POINT CLUB' reward points program, growing numbers of traditional cellphone subscribers, and new customer touchpoints, such as chatbots and smart devices. To meet this business expansion and enable faster delivery of better services, DOCOMO is modernizing the ALADIN development environment by moving it to the cloud. As part of this, DOCOMO built a new development environment on OCI to serve approximately 300 developers.

Tadaaki Yoshida, Information Systems Department, NTT DOCOMO, INC., said, "Our goal is to ensure that ALADIN, a mission critical system which serves as NTT DOCOMO's customer hub, operates in a reliable manner and delivers an excellent customer experience. The new environment on OCI supports development, coding, and integration testing. Its roll out has quickly proven how we can optimize our costs and improve developer productivity and efficiency through containerization and automation. The Oracle Cloud Free Tier also has allowed us to build the new environment quickly and at a lower cost. We plan to move the entire development environment to the cloud as we prepare for the future migration of our commercial environment and are looking forward to the evolution of the services and technologies provided on OCI."

Each developer now has a dedicated environment and the ability to flexibly change resources during peak and slow periods of development, eliminating the need to manually provision and shut down environments and providing the resources needed on demand. In addition to improving the productivity and efficiency of the developer team, DOCOMO also used Oracle Container Engine for Kubernetes (OKE) for containerization, and plans to leverage Continuous Integration and Continuous Delivery and Deployment (CI/CD) tools to further automate operational management.

As part of the cloud migration, DOCOMO has also moved its on-premises Oracle Database environment to Oracle Database Cloud Service on OCI. This environment is used by database administrators from dedicated devices to verify and train database recovery procedures and conduct training, including the reproduction of failure conditions in an environment similar to the commercial environment. With the move to Oracle Database Cloud Service, DOCOMO can enjoy Oracle's pay-as-you-go service and provide database administrators with the flexibility and scalability to meet seasonal needs. This has allowed DOCOMO to reduce costs by 95% by minimizing the manual workload required for managing and operating the environment.

Toshimitsu Misawa, member of the board, corporate executive officer and president of Oracle Corporation Japan, said, "Companies across the world are continuing to modernize their business processes to meet changing market and regulatory conditions and customer demands. Key to their success is the wealth of customer information that sits at their very heart, like in the case of DOCOMO's ALADIN. Having a development environment that enables the information to be leveraged quickly, securely, and reliably, and

that supports faster software development is a source of competitive advantage. Oracle recently launched Oracle Cloud for Telcos which enables telcos to build new applications or modernize existing workloads on OCI. OCI is gaining a strong reputation for enabling business evolution by providing the extensive developer-friendly services needed to help organizations build, deploy and manage the next generation of applications, and leverage game-changing technologies like artificial intelligence and machine learning."

DOCOMO aims to migrate the final operation testing environment, which is currently in an on-premises location, to the cloud, including Oracle Cloud, to further improve testing efficiency and application quality with flexible development and testing environments in the near future.

#### Additional Resources

```
-- Learn more about
Oracle Cloud Infrastructure
-- NTT DOCOMO
```

# **About Oracle**

Oracle offers integrated suites of applications plus secure, autonomous infrastructure in the Oracle Cloud. For more information about Oracle (NYSE: ORCL), please visit us at <a href="https://www.oracle.com">www.oracle.com</a>.

#### **Trademarks**

Oracle, Java, and MySQL are registered trademarks of Oracle Corporation.

View original content to download multimedia:

https://www.prnewswire.com/news-releases/ntt-docomo-selects-oracle-cloud-to-boost-development-capabilities-for-one-of-the-worlds-largest-customer-information-management-systems-301515919.html

## **SOURCE Oracle**

/CONTACT: Kazumi Ishiyama, Oracle Corporation Japan PR, pr-room\_jp@oracle.com, +81.3.6834.3238 (END)

Document PRN0000020220404ei4400073



## Docomo launches carbon-neutrality website Caboneu Community

159 words
4 April 2022
Telecompaper Asia
TELASI
English
Copyright 2022 Telecompaper. All Rights Reserved.

NTT Docomo has launched the Caboneu Community website, where the general public, opinion leaders, companies and nonprofit organizations can share information on implementing eco-friendly actions in everyday life for increased carbon neutrality. The initiative is an extension of the Caboneu **ecosystem** Docomo launched in September 2021, as part of its commitment to reduce greenhouse gas emissions from its business activities effectively to zero by 2030.

The website includes articles about how people are leading eco-friendly lifestyles, information on related events and initiatives, and a members' page that can be personalized to the preferences of each registered user.

In a related initiative, Docomo will set up a Caboneu booth at one of Japan's largest environmental events, Earth Day Tokyo 2022, in central Tokyo's Yoyogi Park on 16-17 April. The booth will promote the Caboneu Community and provide hands-on experiences for participants to learn about the global environment.

Document TELASI0020220404ei440005l



### NTT - NTT DOCOMO Ventures Invests in jinjer Co., Ltd. which Offers a Back-Office Cloud Service

NTT - Nippon Telegraph & Telephone Corporation published this content on 29 Mar 2022 and is solely responsible for the information contained herein. Distributed by PUBT, unedited and unaltered, on 29 Mar 2022 05:22:02 UTC.

578 words
29 March 2022
Public Companies News and Documents via PUBT LCDVP
English
Copyright 2022. As included in the Information

\* Click here to view this document in its original format

NTT DOCOMO Ventures Invests in jinjer Co., Ltd. which Offers a Back-Office Cloud Service

2022.3.29

Investment

NTT DOCOMO Ventures, Inc.

NTT DOCOMO Ventures, Inc. (headquartered in Minato-ku, Tokyo, Japan; President and CEO Yuko Sasahara; hereinafter "NDV"), has invested, through its fund, in jinjer Co., Ltd. (headquartered in Shinjuku-ku, Tokyo, Japan; CEO Ken Kato; hereinafter "iinjer"), which offers a back-office cloud service, "jinjer."

Recently, there has been an increasing demand from companies and organizations for revising and improving business processes mainly in back-office operations, reflecting such factors as the introduction of remote work in the wake of the COVID-19 pandemic and the promotion of paperless work in connection with work-style reforms. This increase in demand is expected to accelerate further, in part because of various law revisions such as the revision of the Act concerning Preservation of Electronic Books and the introduction of the invoice system.

The jinjer's cloud services, "jinjer," provides a wide range of support for improving the efficiency of overall back-office operations, including personnel and labor management, attendance management, salary calculation, workflow management, expense reimbursement, handling of electronic contracts, and web conferencing. By integrating data relating to back-office operations under the "jinjer" services, companies can manage, in a single database system, all operations that occur from when an employee is hired until he/she retires (registration of employee information, registration of divisions/departments, attendance management, salary calculation, year-end adjustment, personnel information update, etc.). Furthermore, even when an update occurs due to a personnel change, etc., there is no need to update each service; with one change in the personnel information database, the update is reflected in all services. Therefore, companies can drastically reduce the burden of updates and changes.

The term "digital transformation" is now used commonly, but there is still sufficient room for improving the efficiency of and advancing Japanese companies' business processes. The jinjer has a corporate culture to provide, on a customer-first basis, deep and close support in finding solutions to these challenges faced by companies, and also has strong development capabilities that enable to respond to changes swiftly; therefore, NDV has determined that jinjer is highly valuable. In addition, NDV feels strong empathy for jinjer's business concept and its philosophy concerning computer systems, which both center on people-the strongest element for corporate growth. For these reasons, NDV has decided to invest in Jinjer.

By supporting cooperation between the NTT Group and jinjer, NDV will advance its effort to create new values.

■ About Jinjer

Company Name: jinjer Co., Ltd.

Address: Shinjuku Sanei Building, 1-22-2 Nishishinjuku, Shinjuku-ku, Tokyo, Japan

Representative : Ken Kato

Description of Business: Development and provision of systems relating to back-office operations Page 28 of 148 © 2022 Factiva, Inc. All rights reserved.

URL: https://jinjer.co.jp/

- \*All company names and product names are trademarks and/or registered trademarks of their respective owners.
- \* Original Link

# Disclaimer

NTT - Nippon Telegraph & Telephone Corporation published this content on 29 March 2022 and is solely responsible for the information contained therein. Distributed by <a href="Public">Public</a>, unedited and unaltered, on 29 March 2022 05:23:11 UTC.

Document LCDVP00020220329ei3t00566



# JTower, NTT Docomo strike infrastructure sharing deal

137 words
25 March 2022
Telecompaper Asia
TELASI
English
Copyright 2022 Telecompaper. All Rights Reserved.

JTower and Japanese operator NTT Docomo have decided to enter into the master transaction agreement with the aim of promoting **infrastructure** sharing of Docomo's existing towers. The contract is expected to enable the companies to make a transaction in which 6,002 telecommunications towers owned by Docomo be transferred to JTower for JPY 106.2 billion, while Docomo will lease these towers from JTower.

## Future plans

JTower and NTT Docomo plan to make the transfer of the towers where conditions have been met and JTower will strengthen its efforts to attract new tenants, such as telecommunications companies, including mobile network operators. Through these efforts, both companies report plans to increase efficiency of capital investments and operating expenses for the tenants of these towers and promote the early deployment of 5G networks.

Document TELASI0020220325ei3p000dx



#### 5G

# Keysight, Docomo boost 5G Open RAN ecosystems

Staff Writer
341 words
24 March 2022
Frontier Enterprise
FRONSE
English
Copyright 2022. Jicara Media Pte Ltd

Keysight Technologies is working with NTT Docomo to support the development and deployment of multi-vendor 5G networks built on open standard interfaces, driving the growing maturity of open radio access network (RAN) ecosystems.

Keysight's open radio access network architect (KORA) has enabled Docomo to establish a 5G Open RAN **Ecosystem** testbed with a virtual RAN (vRAN) verification environment. The test lab offers companies the opportunity to address a diverse range of test, verification, interoperability and optimisation needs.

KORA brings together a comprehensive family of scalable and software-driven solutions, enabling users to effectively address the entire workflow, from early design and development to product validation and deployment.

"Keysight established a strong working relationship with NTT Docomo in 2015, when the industry was in the early stages of creating the initial foundational blocks of the next generation of mobile communications," said Kalyan Sundhar, VP and general manager for Keysight's 5G edge to core industry group.

"Establishing a thriving 5G Open RAN Ecosystem is critical to the success of the O-RAN standard, which makes it possible to deploy a multi-vendor infrastructure in support of operator roll-out plans across different use case requirements," said Sundhar.

Both companies are active contributors to the O-RAN Alliance, which was founded in 2018 and supports more than three hundred companies around the world.

Keysight drives the development of major technical and test specifications for open interfaces, cloud, transport, security and end-to-end test and integration, and co-chairs a committee that drives O-RAN specification priorities.

"NTT Docomo is committed to delivering open and virtualised RAN to global operators through the 5G Open RAN Ecosystem," said Sadayuki Abeta, general manager of Radio Access Network Development Department at NTT Docomo.

The collaboration includes the development of RAN Intelligent Controller (RIC) technology, which improves radio resource management in the RAN and simplifies the use of network function virtualization (NFV), multi-access edge computing (MEC), artificial intelligence (AI) and machine learning (ML) technologies.

Document FRONSE0020220331ei3o0002x

# NTT Docomo Inc. Patent Issued for User device for setting packet data convergence protocol entity in dual connectivity (USPTO 11265967)

1,216 words
23 March 2022
Telecommunications Weekly
TELWK
5806
English

© Copyright 2022 Telecommunications Weekly via VerticalNews.com

2022 MAR 23 (VerticalNews) -- By a News Reporter-Staff News Editor at Telecommunications Weekly -- From Alexandria, Virginia, VerticalNews journalists report that a patent by the inventors Hapsari, Wuri Andarmawanti (Tokyo, JP), Takahashi, Hideaki (Tokyo, JP), Uchino, Tooru (Tokyo, JP), filed on June 14, 2018, was published online on March 1, 2022.

The patent's assignee for patent number 11265967 is NTT Docomo Inc. (Tokyo, Japan).

News editors obtained the following quote from the background information supplied by the inventors: "BACKGROUND ART

"3rd Generation Partnership Project (3GPP) specifies Long Term Evolution (LTE), and with an aim of further speeding, specifies LTE-Advanced (hereinafter, it is assumed that the LTE includes the LTE-Advanced). Moreover, in the 3GPP, specifications of a successor system of the LTE called 5G New Radio (NR) and the like are being studied.

"Specifically, a split bearer is stipulated as a type of the bearer of dual connectivity (DC) using a radio base station (eNB) of an LTE system and a radio base station (gNB) of an NR system.

"As a split bearer, Split bearer via MCG that splits from a cell (radio base station) that belongs to a master cell group (MCG) and Split bearer via SCG that splits from a cell (radio base station) that belongs to a secondary cell group (SCG) are stipulated. Furthermore, an ordinary bearer that does not split (MCG bearer, SCG bearer), too, is stipulated.

"Moreover, to reduce the options to be installed on a user device (User Equipment, UE), integrating the Split bearer via MCG and the Split bearer via SCG and stipulating the same as a unified split bearer (Unified split bearer) is being studied. When integrating the split bearers in such manner, using the same PDCP entity as a packet data convergence protocol layer entity in the MCG bearer and the split bearer, in other words, using a single common PDCP entity in both. bearers has been further proposed (Non-Patent Document 1). Accordingly, re-setting of the PDCP entity at the time of switching from the MCG bearer to the split bearer becomes unnecessary.

"Moreover, using a PDCP entity for NR (hereinafter, "NR-PDCP") when the same PDCP entity is to be used for the split bearer and the MCG bearer has also been proposed (see Non-Patent Document 2)."

As a supplement to the background information on this patent, VerticalNews correspondents also obtained the inventors' summary information for this patent: "When a radio base station (eNB) of the LTE system configures as an MCG bearer a data radio bearer (DRB) used in data transmission of a user plane, based on capability information (UE Capability Information) transmitted from UE, the eNB can recognize whether the UE supports a setting in which the same PDCP entity (specifically, NR-PDCP) is used for the split bearer and the MCG bearer. Accordingly, the eNB can determine, based on the UE Capability Information, whether to apply the NR-PDCP in the MCG bearer, and can notify the UE of which PDCP entity (NR-PDCP or LTE-PDCP) is selected to be set.

"On the other hand, the radio base station (eNB) of the LTE system configures as the MCG bearer a signaling radio bearer (SRB) used in the data transmission of a control plane, the eNB sets the PDCP entity without notifying the UE (see 3GPP TS36.331 5.3.10.1 SRB addition/modification). Thus, the UE cannot recognize which PDCP entity is set when the SRB is configured as the MCG bearer.

"Particularly, when SRB 1 that is configured before the eNB acquires the UE Capability Information, because the eNB cannot recognize whether the UE can apply the NR-PDCP setting in the MCG bearer, it is difficult for the eNB to determine which PDCP entity is to be set.

"The present invention has been made in view of the above circumstances. One object of the present invention is to provide a radio communication system, a user device, a radio base station, and a radio communication method capable of setting an appropriate PDCP entity even when the same PDCP entity is Page 32 of 148 © 2022 Factiva, Inc. All rights reserved.

applied for a split bearer and an MCG bearer, particularly, even when a signaling radio bearer (SRB) is configured as the MCG bearer.

"A radio communication system according to one aspect of the present invention is a radio communication system (radio communication system 10) that includes a user device (UE 200) and a radio base station (eNB 100A). A split bearer (Unified split bearer) that goes from a core network (EPC 20) via the radio base station and splits toward other radio base station (gNB 100B), and an ordinary bearer (MCG bearer) that goes from the core network via the radio base station are configured. The user device includes a support indication transmitting unit (support indication transmitting unit 240) that transmits to the radio base station a support indication indicating that the user device supports a setting in which the same PDCP entity is used in the split bearer as an entity of a packet data convergence protocol layer and in the ordinary bearer. The radio base station includes a support indication receiving unit (support indication receiving unit 115) that receives the support indication; and a message transmitting unit (RRC controlling unit 120) that transmits to the user device, when the support indication receiving unit receives the support indication, a message of a radio resource control layer that indicates setting contents of the PDCP entity."

The claims supplied by the inventors are:

- "1. A terminal, comprising: a receiver that receives from a first radio base station of a first radio access technology a setting information relating to a signaling radio bearer; and a processor that sets, in a dual connectivity between the first radio base station and a second radio base station of a second radio access technology, based on the setting information, a Packet Data Convergence Protocol (PDCP) entity of the signaling radio bearer to a PDCP entity of the second radio access technology, wherein the PDCP entity of the second radio access technology is a New Ratio (NR) PDCP entity that is used for a split bearer that goes from a core network via the first radio base station and splits toward the second radio base station.
- "2. The terminal as claimed in claim 1, further comprising a transmitter that transmits to the first radio base station an indication indicating information relating to a PDCP entity for the first radio base station and the NR PDCP entity for the second radio base station."

For additional information on this patent, see: Hapsari, Wuri Andarmawanti. User device for setting packet data convergence protocol entity in dual connectivity. U.S. Patent Number 11265967, filed June 14, 2018, and published online on March 1, 2022. Patent URL: <a href="http://patft.uspto.gov/netacgi/nph-">http://patft.uspto.gov/netacgi/nph-</a>

Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=11265967.PN.&OS=PN/11265967RS=PN/11265967

Keywords for this news article include: Business, Electronics, NTT Docomo Inc, Data Transmission, Information Technology, Mobile Communications Companies.

Our reports deliver fact-based news of research and discoveries from around the world. Copyright 2022, NewsRx LLC

Document TELWK00020220323ei3n000b3



# NTT demos orchestration based on ETSI's ZTM spec

177 words 20 March 2022 Optical Networks Daily OBSERV English

© 2022 Electronics International Disclaimer: Whilst every effort has been taken to ensure the accuracy of the information contained in this report, neither Electronics International nor its agents or sources can be held responsible for any inaccuracy.

NTT DOCOMO, in collaboration with NTT Com, NTT Network Service Systems Laboratories (NS Labs) and NTT Network Innovation Center (NIC), has demonstrated end-to-end orchestration (E2EO) technology based on the Zero Touch Network and Service Management (ZSM) specification of ETSI, the European standardization organization.

E2EO technology automates 5G network slicing to enable multiple networks to operate on common infrastructure. In the recent demonstration, which is being conducted from November 2021 to March 2022, a 5G mobile network built on a testbed incorporating NTT Com, NS Labs and NIC technologies has been automatically sliced with E2EO technology into multiple networks suitable for each application.

Once fully established, interface specifications for transport-network, core-network and data-network control domains will enable the automatic creation and deletion of 5G network slices. This will also enable service quality to be monitored so that processing capacity can be expanded whenever degraded quality is detected in any slice.

https://www.docomo.ne.jp/english/info/media\_center/pr/2022/0311\_00.html

Document OBSERV0020220321ei3k00004



# NTT Docomo and NEC to conduct technical verification of 5G network equipment in hybrid cloud

196 words 18 March 2022 Nikkei Business Trends NIKBST English Copyright 2022. Nikkei Inc.

On March 1, 2022, NTT Docomo (Chiyoda-ku, Tokyo) and NEC will operate NEC's 5G core network software in a hybrid environment consisting of Amazon Web Services' low-power cloud service and NTT Docomo's virtualization platform Technical verification will start. The period is from March 2022 to March 2023. Verification of availability and operability when telecommunications carriers utilize hybrid cloud configurations, technical verification of flexible and highly expandable deployment form, and performance and power saving using AWS's latest technology "Graviton2" Will be implemented. The company will consider technologies for networks with high reliability and low environmental impact, which can flexibly customize functions according to customer requirements.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020220322ei3i000be



## NTT Docomo and Mito City to conclude an agreement on the promotion of digitalization

172 words 18 March 2022 Nikkei Business Trends NIKBST English Copyright 2022. Nikkei Inc.

On March 1, 2022, NTT Docomo (Chiyoda-ku, Tokyo) signed an agreement with Mito City on the promotion of digitalization. Through close collaboration and cooperation between the two parties, the two companies plan to enable citizens to use digital **devices** to lead a more comfortable life. The two companies will collaborate and cooperate in promoting the utilization of citizens' digital **devices** and promoting digitalization within the agency. NTT Docomo plans to hold smartphone courses at civic centers and other workshops on digital technology for city employees.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020220322ei3i000bg



## NTT Docomo to start handling 'Nikko iDeCo for docomo'

241 words 18 March 2022 Nikkei Business Trends NIKBST English Copyright 2022. Nikkei Inc.

NTT Docomo (Chiyoda-ku, Tokyo) will start handling "Nikko iDeCo for docomo" from February 25, 2022. The purpose is to support the long-term asset formation of a wide range of customers such as the younger generation and those who have no **investment** experience. "Nikko iDeCo for docomo" is a service that links the contract information of "Nikko iDeCo" provided by SMBC Nikko Securities with "D account", which is the membership base of NTT Docomo, and earns 1 d-point for every 5,000 yen of iDeCo's premium. In addition, it is also implementing a program that accumulates d points according to iDeCo's balance and contributions. Customers who do not have a NTT Docomo line can also use the service by linking the contract information of "Nikko iDeCo" with "D account." The service is part of an initiative based on a collaboration study between NTT Docomo, SMBC Nikko Securities, and Money Design (Minato, Tokyo) announced in July 2021.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020220322ei3i0002z

# Tech This executive is trying to move all of her meetings to the metaverse

Zara Stone
1,246 words
18 March 2022
Fast Company
FSTC
English
Copyright 2022 Mansueto Ventures LLC

In January, dressed in a crisp white shirt and slacks, with a tidy, consciously androgynous hairstyle, Christina Ku, a director at NTT Docomo Ventures, the Silicon Valley **investment** arm of the Japanese telecom conglomerate Docomo, gestured to the whiteboard behind her as she took her team through a breakdown of her investments and exits. Ku spoke confidently and authoritatively, unfazed when one colleague flickered out of existence, and two more arrived outfitted in Colonel Sanders-esque suits. All in a day's work when you're meeting in the **metaverse**, she says.

There's been massive investment in the metaverse, even before Facebook rebranded itself as Meta in October 2021. The global metaverse space was valued at \$38.85 billion in 2021 by market data platform Statista, which estimates that number will balloon 22% in 2022 and rise to \$678.8 billion by 2030. "Investors [are] pouring capital into the space," says Fred Schebesta, a futurist and cofounder of Hive Empire Capital, a blockchain investment fund. "We've never seen such a rapid explosion of growth." Ku, an investor in the space, has been trying to move all of her meetings—and some reluctant colleagues and entrepreneurs—to the metaverse, which she defines as a digital world interaction and immersion."

Ku's been fascinated with the potential of the metaverse for years. In many ways, it began with Pokémon, she says. Like millions, in 2016 Ku became obsessed with Niantic's Pokémon Go mobile game. She snagged a rare Koffing in Tokyo's Haneda airport, a couple of Psyducks in Austin, and hunted down a Mudkip during a crypto conference in Croatia.

Her San Francisco neighborhood was a hotbed for rare Pokémon, and "friends visited just so we could catch them," she recalls. This augmented reality experience across multiple physical spaces demonstrated a wider application for technology that had previously been relegated to the "hardcore gamer" sphere. The rollout of Virtual YouTuber concerts heightened her excitement. In March 2020, she watched, enthralled, as Kizuna AI streamed a concert in 5G, noticing how thousands of fans responded to the VTuber in real time. "The way that realities and communities merged was fascinating," Ku says.

Ku's investments in early to mid-stage startups reflect her excitement—her portfolio includes WaveXR, which develops VR music concerts for celebrities; Light Field Lab, which designs holographic hardware; and Arcturus Studios, which develops 3D video capture tools.

Her metaverse all hands-meeting in January was not without hiccups—some of her 15 or so colleagues who attended struggled with the user interface of their newly issued headsets, and with navigating around Meta's <a href="Horizon Workrooms">Horizon Workrooms</a>. But Ku still found it beneficial. "We are investing in the metaverse, so it makes sense that we would eat our own dog food," she says, admitting that Workrooms's avatar fashion was "limited" and that her headset grew uncomfortable during the three-hour session.

Even with these limitations, she says the metaverse is especially attractive in a business context. "Everybody was democratized," she says. The relative conformity of people's avatars made it easier to "focus on what they were saying, and how they interacted with you." In Ku's opinion, the unconscious biases so inherent in most interactions—age, sex, height, etc.—were noticeably absent.

She's been pushing business contacts to have meetings in the virtual world. A couple of months ago, Ku toured an NFT gallery with the founder of a stealth startup; both parties logged on via their VR headsets. "Walking" through the gallery together brought the concept to life, she says. "I wouldn't have been as excited if he'd just shown me a presentation." But despite her prodding, she's had relatively few metaverse meetings—even with metaverse-pitching startups. She says that mostly they send her video demos or Decentraland links.

Ku finds the widespread reluctance to meet in the metaverse frustrating. If startups were able to pivot their pitches to Zoom during COVID-19, why not the metaverse? It would streamline her whole process. "I can meet 10 CEOs in the same [amount of] time" it would take to meet one in the real world, she says.

In her metaverse evangelism, she's even tried loaning VR headsets to some of her VC friends at other firms, but most won't even unbox them. "They're uncomfortable because they don't understand it," Ku says.

But I'm game for a virtual meeting. In March, I boot up my PC, update my Oculus Rift drivers, and head over to Rec Room, a social VR game, to meet Ku for a follow-up interview. The bright primary colors of the Rec Room universe feel dizzying—we're here because I couldn't get VRChat or Spatial, two popular meetup spaces—to play nice with my setup.

For my avatar, I opt for shoulder-length brown hair instead of my regular blond, a tidy mustache, and a fitted red dress with a Peter Pan collar. Then I wander around the main lobby waiting for Ku to arrive, stumbling across a plushie furry-esque store, a laser tag arena, and a bunch of kid-size avatars that throw Frisbees at my head while humming a song from Encanto.

"Where are you?" I text Ku, and a message appears on my avatar's virtual watch, teleporting me to her "dorm room." The sudden locomotion makes me queasy. Ku's room is generic, auto-filled with a wastepaper basketball hoop, bunk bed, and avatar mirror. Ku's avatar, outfitted in an orange-and-white basketball jersey, with sweatbands on her wrists, looks around the space and laughs. "I don't see dorm rooms being a part of business interactions," she says. "But it is roomy." I see what she means. I'm just glad everything has stopped spinning.

We stand in front of her mirror as she walks me through the avatar design process. "One of the appeals of the metaverse is that you can have different identities, different personalities, different personas," she says, cycling through an array of skins: a sports fan, a world traveler, a van lifer. "They're all different versions of yourself. All of these personas could be me."

Of course, it's still early days for this whole space—and before we get better tech, a bunch of housekeeping needs to be worked out: compliance, 5G connectivity, and content moderation being the most pressing, she says. Then there are the innovations that level up the game; Ku has met startups developing touch and smell metaverse add-ons. "This adds to the multilayered sense of the metaverse," she says.

Even as more companies <u>head back to the office</u>, Ku says the global return to IRL interactions has no bearing on this trend, noting, "People have gotten a taste of what is possible." In many ways, the Great Resignation is proof of people's desire to keep—or keep elements of—this new normal. Ku says we're not at the metaverse inflection point yet but it's coming; she predicts buying a headset will become as commonplace as buying a laptop or phone. "People are changing the way they think about personal interactions," she says. "There will always be a place for in-person, but the metaverse can remove a lot of that. This is the future."

Click to view image.

Document FSTC000020220318ei3i0002x



Release date - 16032022

# Deutsche Telekom, Telefonica, Vodafone, and KPN are Leaders in ABI Research's Telco Operators Sustainability Index

926 words
17 March 2022
ENP Newswire
ENPNEW
English
© 2022, Electronic News Publishing. All Rights Reserved.

The Sustainability Index Telco Operators by global technology intelligence firm ABI Research provides an unbiased examination and ranking of ten leading telecommunications operators for sustainability.

The in-depth study assesses, compares, and ranks the operators across 30 different action items for their sustainability efforts in six categories: renewable energy, network upgrades, energy efficiency, waste disposal and circular economy, green buildings and vehicles, and reporting and governance. Ranking criteria are split between present-day implementation, including the global roll-out of renewable energy and technologies such as 5G and fiber, and forward-looking impact potential, evaluating the innovation and quality of platforms and programs the operators are using to reach climate targets. The companies evaluated and ranked include:

Market Leaders: Deutsche Telekom, Telefonica, Vodafone, KPN

Mainstream: AT&T, Verizon, Orange

Followers: SK Telecom, NTT DoCoMo, Singtel

Companies around the globe have created climate-related targets for reaching net zero carbon emissions, and telecommunications providers are leading the charge. 'These telco operators are at the intersection of communications and information technology, putting them in a unique position to offer connectivity and technological solutions that are not only lowering their own carbon emissions but also the emissions of their customers,' says Kim Johnson, Principal Analyst at ABI Research.

Each of the leaders in the index has transitioned to using more than 50 percent renewable energy for global purchased electricity and two have reached 100 percent. The use of renewable energy has reduced the leaders' total carbon emissions by 8.4 million metric tons of carbon dioxide (CO2e), which is equivalent to removing the CO2 emissions of 1.8 million passenger vehicles for one year, or 19.4 million barrels of oil consumed. Johnson advises, 'All operators need to focus on the largest source of carbon emissions, which is energy consumption of their networks. The most sustainable companies, though, have a comprehensive strategy, including the deployment of technologies such as 5G, Al, and automation, an in-depth waste recycling program, employee compensation tied to climate targets, and active engagement with suppliers and customers, upstream and downstream from the company's own operations.'

Deutsche Telekom finished first overall in the assessment, followed by Telefonica, Vodafone, and KPN. Deutsche Telekom has received numerous awards globally and regionally for its sustainability reporting. The company also emerged as a leader in European 5G and fiber, while its subsidiary, T-Mobile US, also a leader in 5G, announced in early 2022 that it had become the first U.S. provider to source 100 percent of its electricity from renewable energy sources, helping the global Deutsche Telekom Group reach 100 percent renewables worldwide. T-Mobile reported zero percent renewable energy use just a few years ago in 2017, and this transition to 100 percent occurred during a historic merger with Sprint.

Telefonica led the index in several areas, such as energy efficiency, waste recycled, eco-design, and green bonds, while Vodafone had strong performances in energy efficiency, waste recycled, overall sustainability reporting, and conversion of fleet vehicles to electric vehicles. KPN, an over achiever in sustainability, has been using green electricity since 2011 and has been carbon neutral since 2015. KPN was the smallest operator in the index and did not lead in network upgrades, 5G deployment, or scale of impact; however, the company is a global sustainability leader from every other perspective.

The mainstream selections, such as AT&T, Verizon, and Orange, were all very strong in 5G and fiber deployment, and these companies led the index, along with SK Telecom, for network upgrades. However, the mainstream companies lagged the leaders in global percent use of renewable energy for the networks. SK Telecom, NTT DoCoMo, and Singtel emerged as followers, primarily due to challenges in their regions for

sourcing renewable energy (the companies are still close to zero percent for renewable energy use, despite future pledges), and for less breadth and depth in overall sustainability tracking and reporting.

We acknowledged in the index that different regions face different geo-political, cost, and infrastructure barriers for sourcing renewable energy. For example, Korea is the fourth largest importer of coal, after China, India, and Japan. This makes early mover advances, such as SK Group in Korea joining the RE100 coalition and pledging 100 percent renewable energy use by 2050 and NTT DoCoMo pledging 100 percent renewable energy by 2030 even more critical to global climate efforts. The big picture in producing the Sustainability Index is to highlight the sustainability best practices across the telecommunications industry with the goal of further reducing carbon emissions for all,' concludes Johnson.

These findings are from ABI Research's Sustainability Index: Telco Operators report. This report is part of the company's Sustainable Technologies research service, which provides actionable research and data designed to help companies go from sustainability pledges to sustainability execution by identifying technologies, suppliers, and programs that accelerate sustainability efforts, such as reducing carbon emissions. Sustainability Index reports offer comprehensive analysis of implementation strategies and environmental impact, coupled with analysis of both market-driven and regulatory-driven shifts in sustainability, to offer unparalleled insight into a company's sustainability efforts and standing in comparison to its competitors.

### About ABI Research

ABI Research is a global technology intelligence firm delivering actionable research and strategic guidance to technology leaders, innovators, and decision makers around the world. Our research focuses on the transformative technologies that are dramatically reshaping industries, economies, and workforces today.

[Editorial queries for this story should be sent to newswire@enpublishing.co.uk]

Document ENPNEW0020220317ei3h0002x



# Deutsche Telekom, Telefónica, Vodafone, and KPN are Leaders in ABI Research's Telco Operators Sustainability Index

988 words
16 March 2022
M2 Presswire
MTPW
English
© 2022, M2 Communications, All rights reserved.

The **Sustainability** Index Telco Operators by global technology intelligence firm ABI Research provides an unbiased examination and ranking of ten leading telecommunications operators for **sustainability**. The in-depth study assesses, compares, and ranks the operators across 30 different action items for their **sustainability** efforts in six categories: renewable energy, network upgrades, energy efficiency, waste disposal and circular economy, green buildings and vehicles, and reporting and governance. Ranking criteria are split between present-day implementation, including the global roll-out of renewable energy and technologies such as 5G and fiber, and forward-looking impact potential, evaluating the innovation and quality of platforms and programs the operators are using to reach climate targets. The companies evaluated and ranked include:

Market Leaders: Deutsche Telekom, Telefónica, Vodafone, KPN

Mainstream: AT&T, Verizon, Orange

Followers: SK Telecom, NTT DoCoMo, Singtel

Companies around the globe have created climate-related targets for reaching net zero carbon emissions, and telecommunications providers are leading the charge. "These telco operators are at the intersection of communications and information technology, putting them in a unique position to offer connectivity and technological solutions that are not only lowering their own carbon emissions but also the emissions of their customers," says Kim Johnson, Principal Analyst at ABI Research.

Each of the leaders in the index has transitioned to using more than 50 percent renewable energy for global purchased electricity and two have reached 100 percent. The use of renewable energy has reduced the leaders' total carbon emissions by 8.4 million metric tons of carbon dioxide (CO2e), which is equivalent to removing the CO2 emissions of 1.8 million passenger vehicles for one year, or 19.4 million barrels of oil consumed. Johnson advises, "All operators need to focus on the largest source of carbon emissions, which is energy consumption of their networks. The most sustainable companies, though, have a comprehensive strategy, including the deployment of technologies such as 5G, Al, and automation, an in-depth waste recycling program, employee compensation tied to climate targets, and active engagement with suppliers and customers, upstream and downstream from the company's own operations."

Deutsche Telekom finished first overall in the assessment, followed by Telefónica, Vodafone, and KPN. Deutsche Telekom has received numerous awards globally and regionally for its sustainability reporting. The company also emerged as a leader in European 5G and fiber, while its subsidiary, T-Mobile US, also a leader in 5G, announced in early 2022 that it had become the first U.S. provider to source 100 percent of its electricity from renewable energy sources, helping the global Deutsche Telekom Group reach 100 percent renewables worldwide. T-Mobile reported zero percent renewable energy use just a few years ago in 2017, and this transition to 100 percent occurred during a historic merger with Sprint.

Telefónica led the index in several areas, such as energy efficiency, waste recycled, eco-design, and green bonds, while Vodafone had strong performances in energy efficiency, waste recycled, overall sustainability reporting, and conversion of fleet vehicles to electric vehicles. KPN, an over achiever in sustainability, has been using green electricity since 2011 and has been carbon neutral since 2015. KPN was the smallest operator in the index and did not lead in network upgrades, 5G deployment, or scale of impact; however, the company is a global sustainability leader from every other perspective.

The mainstream selections, such as AT&T, Verizon, and Orange, were all very strong in 5G and fiber deployment, and these companies led the index, along with SK Telecom, for network upgrades. However, the mainstream companies lagged the leaders in global percent use of renewable energy for the networks. SK Telecom, NTT DoCoMo, and Singtel emerged as followers, primarily due to challenges in their regions for sourcing renewable energy (the companies are still close to zero percent for renewable energy use, despite future pledges), and for less breadth and depth in overall sustainability tracking and reporting.

Page 42 of 148 © 2022 Factiva, Inc. All rights reserved.

"We acknowledged in the index that different regions face different geo-political, cost, and infrastructure barriers for sourcing renewable energy. For example, Korea is the fourth largest importer of coal, after China, India, and Japan. This makes early mover advances, such as SK Group in Korea joining the RE100 coalition and pledging 100 percent renewable energy use by 2050 and NTT DoCoMo pledging 100 percent renewable energy by 2030 even more critical to global climate efforts. The big picture in producing the Sustainability Index is to highlight the sustainability best practices across the telecommunications industry with the goal of further reducing carbon emissions for all," concludes Johnson.

These findings are from ABI Research's Sustainability Index: Telco Operators report. This report is part of the company's Sustainable Technologies research service, which provides actionable research and data designed to help companies go from sustainability pledges to sustainability execution by identifying technologies, suppliers, and programs that accelerate sustainability efforts, such as reducing carbon emissions. Sustainability Index reports offer comprehensive analysis of implementation strategies and environmental impact, coupled with analysis of both market-driven and regulatory-driven shifts in sustainability, to offer unparalleled insight into a company's sustainability efforts and standing in comparison to its competitors.

## ###

## About ABI Research

ABI Research is a global technology intelligence firm delivering actionable research and strategic guidance to technology leaders, innovators, and decision makers around the world. Our research focuses on the transformative technologies that are dramatically reshaping industries, economies, and workforces today.

For more information about ABI Research's services, contact us at +1.516.624.2500 in the Americas, +44.203.326.0140 in Europe, +65.6592.0290 in Asia-Pacific or visit www.abiresearch.com.

((M2 Communications disclaims all liability for information provided within M2 PressWIRE. Data supplied by named party/parties. Further information on M2 PressWIRE can be obtained at <a href="http://www.m2.com">http://www.m2.com</a> on the world wide web. Inquiries to info@m2.com)).

Document MTPW000020220316ei3g007hi



# NTT DOCOMO; NTT DOCOMO to Present Open RAN Technologies at MWC Barcelona 2022 via On-site Demonstrations and Online Sessions

682 words 14 March 2022 Journal of Engineering JOENG 17 English

© Copyright 2022 Journal of Engineering via VerticalNews.com

2022 MAR 14 (VerticalNews) -- By a News Reporter-Staff News Editor at Journal of Engineering -- NTT DOCOMO, INC. announced that during MWC Barcelona 2022 the company will introduce its Open RAN initiatives via presentations and demonstrations at partners' on-site stands as well as via online exhibitions from February 28 to March 3. As shown below, several senior spokespersons from DOCOMO will give live presentations regarding Open RAN. In addition, DOCOMO will jointly conduct O-RAN demonstrations with partners in the 5G Open RAN **Ecosystem** (OREC). Seizo Onoe, Chief Standardization Strategy Officer of NTT CORP. and Fellow of NTT DOCOMO, will make a presentation during OpenRAN: A Vision of 5G & the Future of 6G at MWC Stage A in Hall 5 on Monday, February 28 from 13:15-14:15 CET. Topics will include interoperability standards for Open RAN and solutions for facilitating 5G deployment and ensuring the future of 6G.

Also, DOCOMO's Naoki Tani, Executive Vice President & Chief Technology Officer, and Sadayuki Abeta Ph.D., Vice President & General Manager of the Radio Access Network Development Department, will make a presentation on The Reality of Open RAN, which will be organized by Fujitsu at Theatre 1, Hall 7 on Wednesday, March 2 from 09:30-11:00 CET. Together with other industry leaders, they will discuss learnings, challenges and the true value of Open RAN deployment as well as related security, integration, etc.

DOCOMO will additionally join OREC members Fujitsu, Wind River and NVIDIA at the Fujitsu stand (2G60, Hall 2) to demonstrate an Open vRAN with an O-RAN open fronthaul interface between O-RU and O-DU. Going forward, the partners are scheduled to launch an Open vRAN network offering multi-vendor connectivity.

DOCOMO will also join OREC members NEC, Dell, Red Hat and Xilinx at the NEC stand (2F10, Hall 2) to demonstrate a vRAN incorporating software compatible with O-RAN Reference Architecture. The vRAN will be implemented on the latest virtualization infrastructure and also a general-purpose server incorporating the latest microprocessors and hardware acceleration.

In addition to these on-site activities, DOCOMO will conduct a virtual exhibition during MWC Barcelona 2022, showcasing the company's evolving 5G and 6G technologies, global O-RAN business and services. Exhibits and presentations will be viewable on the DOCOMO website. NTT DOCOMO, a leading developer of Open RAN and one of the founders of the O-RAN Alliance, became the world's first mobile operator to launch a commercial 5G service with an Open RAN in March 2020. Also, the company partnered with globally recognized vendors to establish the 5G Open RAN Ecosystem (OREC) last February. Currently, DOCOMO and its 13 partners are conducting verifications to develop truly flexible Open RAN capable of interconnecting equipment of multiple vendors. The 13 OREC members are Dell Technologies Japan Inc., Fujitsu Limited, Hewlett Packard Japan, G.K., Intel K.K., Mavenir, NEC Corporation, NTT DATA Corporation, NVIDIA, Qualcomm Technologies, Inc., Red Hat, VMware K.K., Wind River and Xilinx, Inc. For additional information and interview opportunities, please contact: global\_pr@nttdocomo.com. About NTT DOCOMO NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations. https://www.nttdocomo.co.jp/english/. View source version on businesswire.com: https://www.businesswire.com/news/home/20220225005111/en/

Keywords for this news article include: Business, NTT DOCOMO, Technology, Cybersecurity, Mobile Communications Companies, NTT - Nippon Telegraph and Telephone Corporation.

Our reports deliver fact-based news of research and discoveries from around the world. Copyright 2022, NewsRx LLC

Document JOENG00020220314ei3e000nj



## NTT Docomo, partners achieve ZSM-based orchestration of 5G network slicing

202 words
14 March 2022
Telecompaper World
TELWOR
English
Copyright 2022 Telecompaper. All Rights Reserved.

NTT Docomo has collaborated with NTT Communications (NTT Com), NTT Network Service Systems Laboratories (NS Labs) and NTT Network Innovation Center (NIC) to successfully test orchestration (E2EO) technology based on the Zero Touch Network and Service Management (ZSM) specification of ETSI, the European standardisation organisation. The company said this is the first successful deployment of the technology by Japanese telecom operators. It is expected to clarify the degree of fulfillment of ZSM-specified management services and information models and thereby firm up technical requirements for commercial operation.

E2EO technology automates 5G network slicing to enable multiple networks to operate on common **infrastructure**. In the recent demonstration, conducted from November 2021 to March 2022, a 5G mobile network built on a testbed incorporating NTT Com, NS Labs and NIC technologies has been automatically sliced with E2EO technology into multiple networks suitable for each application.

Once fully established, interface specifications for transport network, core network and data network control domains will enable the automatic creation and deletion of 5G network slices. This will also enable service quality to be monitored so that processing capacity can be expanded whenever degraded quality is detected in any slice.

Document TELWOR0020220314ei3e000b5



## NTT Docomo, partners achieve ZSM-based orchestration of 5G network slicing

202 words
14 March 2022
Telecompaper Asia
TELASI
English
Copyright 2022 Telecompaper. All Rights Reserved.

NTT Docomo has collaborated with NTT Communications (NTT Com), NTT Network Service Systems Laboratories (NS Labs) and NTT Network Innovation Center (NIC) to successfully test orchestration (E2EO) technology based on the Zero Touch Network and Service Management (ZSM) specification of ETSI, the European standardisation organisation. The company said this is the first successful deployment of the technology by Japanese telecom operators. It is expected to clarify the degree of fulfillment of ZSM-specified management services and information models and thereby firm up technical requirements for commercial operation.

E2EO technology automates 5G network slicing to enable multiple networks to operate on common **infrastructure**. In the recent demonstration, conducted from November 2021 to March 2022, a 5G mobile network built on a testbed incorporating NTT Com, NS Labs and NIC technologies has been automatically sliced with E2EO technology into multiple networks suitable for each application.

Once fully established, interface specifications for transport network, core network and data network control domains will enable the automatic creation and deletion of 5G network slices. This will also enable service quality to be monitored so that processing capacity can be expanded whenever degraded quality is detected in any slice.

Document TELASI0020220314ei3e000e1

## AGC develops glass antenna for all frequencies in the 5G Sub6 band in Japan.

332 words
11 March 2022
Company Reports
CHPR
English
(c) 2022 Elsevier Engineering Information

AGC Inc, a world-leading manufacturer of glass, chemicals and high-tech materials, has announced that it has developed a WAVEATTOCH glass antenna that is compatible with all frequencies of the 5G Sub6 band allocated to the four Mobile Network Operators (MNOs) in Japan, with the technical cooperation of NTT DOCOMO INC and JTOWER Inc. This product can be used for "infrastructure-sharing", in which telecom infrastructures are shared among multiple MNOs, and contributes to reducing their capital investment. In addition, since the design does not interfere with the appearance of the building, it is expected to be introduced in locations where consideration for the cityscape is important. Commercial experiments are scheduled to begin this fall of 2022 with the cooperation of JTOWER, followed by commercial production planned to begin in Nov 2022.

The glass antenna WAVEATTOCH launched in 2020, is the world's first antenna that turns a window into a base station that can be attached to the window (on the interior side) of a building to establish a wireless service area on the exterior side without damaging the cityscape or the aesthetics of the building. The newly developed product covers all the frequencies in the 5G Sub6 band allocated to the four domestic MNOs with a single unit and is also more compact than AGC's current model. Going forward, AGC aims to sell its products widely to the Japanese MNOs and "infrastructure-sharing" companies. Under its AGC plus 2.0 management policy, the AGC Group is working to create products that add a "plus" by providing safety, security and comfort to society and new value and functions to customers. Going forward, AGC will continue its efforts to contribute to the expansion of 5G communication areas in cooperation with MNOs and local governments that are aiming to develop 5G networks. Original source: AGC Asahi Glass, website: <a href="http://www.agc.com">http://www.agc.com</a>. Copyright Asahi Glass Co Ltd 2022.

Document CHPR000020220317ei3b0001u



## Beyond Now's digital business platform powers DOCOMO SME marketplace

CT Bureau
Distributed by Contify.com
495 words
11 March 2022
Communications Today
ATCOMT
English
Copyright © 2022. ADI Media Pvt. Ltd.

Beyond Now, a fast-growing **ecosystem** orchestration and digital **platform** provider, announced that it's providing NTT DOCOMO, INC. (DOCOMO), Japan's leading mobile operator, with a partner orchestration hub for its newly launched SME marketplace. Beyond Now's Infonova Digital Business **Platform**'s unique **ecosystem** orchestration and monetization capabilities make it simple for DOCOMO's partners including, NewsPicks + d, Relo Club and Meet In to rapidly onboard and sell their solutions through the marketplace. This enables the CSP's SME customers to access a range of services such as remote sales, telecommunications, labor management, and subsidy support that will help them to improve their efficiency and productivity.

SME demand for digital transformation has grown exponentially in response to the pandemic, to support the shift to flexible working and deliver increased business efficiency. However, SMEs still face challenges like knowing which service to choose from the many options available, as well as overcoming budget limitations. Helping SMEs to navigate this complexity was the prime objective of DOCOMO, and with the support of Beyond Now, they can give SMEs customers access to a growing number of partners. Especially when 93% of SMEs state that it's important for CSPs to collaborate with an ecosystem of partners to build solutions that better fit their needs.

In 2019, NTT Group, Japan's largest fixed-line and mobile communications carrier, began working with Beyond Now through its systems subsidiary NTT Comware. By modernizing and simplifying NTT's business support system, Beyond Now aimed to improve customer service, operational efficiency, and generate new revenue. Two years later, both companies worked together to instill a new IT program that can be used not only by all of NTT Group's Japanese subsidiaries, but also external partners. As a result, DOCOMO is creating a "marketplace" where small and midsized companies can access the digital services they need at an affordable price.

Through the Infonova Digital Business Platform, DOCOMO is able to:

- \* Grow revenue and scale with an ecosystem of partners
- \* Empower its partners to self-onboard and manage the sale of their services in the marketplace
- \* Automate partners services, including ordering and fulfilment processes
- \* Support the monetization of partners solutions, covering any partnership model, any commercial model or any settlement agreement

"We are proud to continue cementing a strong relationship with a pioneering organization like NTT Group since 2019. It began as a shared vision for how NTT needed to transform to support new business models, 5G monetization, B2B2X models and the launch of digital marketplaces. Now, with digitalization and COVID-19 transforming the needs of SMEs, this vision has become a reality with NTT subsidiaries like DOCOMO configuring and monetizing their networks and services in ways that were not previously possible. We commend NTT for recognizing the importance of building partner ecosystems to create real customer value," said Angus Ward, CEO of Beyond Now.

Document ATCOMT0020220312ei3b0002u



### NTT DoCoMo hires Beyond Now for SME biz

Anne Morris
437 words
11 March 2022
Light Reading
LITEREAD
English
Copyright 2022. Light Reading, Inc.

Japan's NTT has been working with European consulting firm BearingPoint for some time to help it become a "platform" player that is then able to offer a buffet of digital services to business customers.

The relationship began in 2019, when NTT Comware, the systems integrator part of NTT, started to support a new **cloud**-based software **platform** called Infonova, provided by the "Beyond by BearingPoint" unit.

The Beyond unit has now gone solo after completing a management buyout from BearingPoint in November 2021.

In February this year, it relaunched itself under the Beyond Now brand with a new identity as an independent ecosystem orchestration and digital platform provider, although BearingPoint and Beyond Now said they will continue to work together on shared customers.

NTT's mobile unit, NTT DoCoMo, has now turned to Beyond Now to help it better serve its small and midsized enterprise (SME) customers. Indeed, the new DoCoMo deal looks to be Beyond Now's first major announcement since it cast itself adrift from its former parent.

In essence, Beyond Now is now also supplying the Infonova platform to support DoCoMo's newly launched SME marketplace. It had always been likely that NTT's other subsidiaries – of which there are many – would be able to jump on this platform with their own partners, sales channels and customers.

Want to know more about 5G? Check out our dedicated 5G content channel here on Light Reading.

The idea is that the mobile carrier's SME customers will be able to access a range of services such as remote sales, telecommunications, labor management and subsidy support.

Beyond Now commented that SMEs face challenges such as knowing which service to choose from the many options available, as well as overcoming budget limitations. DoCoMo wanted to help SMEs navigate this complexity and provide them with one-stop access to a growing number of partners.

Angus Ward, the CEO of Beyond Now said Beyond Now, when still part of BearingPoint, began its relationship with NTT as part of a "shared vision for how NTT needed to transform to support new business models, 5G monetization, B2B2X models and the launch of digital marketplaces."

"Now, with digitalization and COVID-19 transforming the needs of SMEs, this vision has become a reality with NTT subsidiaries like DoCoMo configuring and monetizing their networks and services in ways that were not previously possible," Ward said.

## Related posts:

- \* Japan's NTT Hires BearingPoint to Fix BSS Shortcomings
- \* DoCoMo opens up labs for open RAN verifications
- Anne Morris, contributing editor, special to Light Reading

annelmorris@gmail.com

Document LITEREAD20220311ei3b00001



## Beyond Now's Digital Business Platform Powers DOCOMO SME Marketplace

685 words
11 March 2022
02:40
Korea Newswire
KORNEW
English
Copyright 2022. Korea Newswire.

Beyond Now, a fast-growing **ecosystem** orchestration and digital **platform** provider, today announced that it's providing NTT DOCOMO, INC. (DOCOMO), Japan's leading mobile operator, with a partner orchestration hub for its newly launched SME marketplace. Beyond Now's Infonova Digital Business **Platform**'s unique **ecosystem** orchestration and monetization capabilities make it simple for DOCOMO's partners including, NewsPicks + d, Relo Club and Meet In to rapidly onboard and sell their solutions through the marketplace. This enables the CSP's SME customers to access a range of services such as remote sales, telecommunications, labor management, and subsidy support that will help them to improve their efficiency and productivity.

SME demand for digital transformation has grown exponentially in response to the pandemic, to support the shift to flexible working and deliver increased business efficiency. However, SMEs still face challenges like knowing which service to choose from the many options available, as well as overcoming budget limitations. Helping SMEs to navigate this complexity was the prime objective of DOCOMO, and with the support of Beyond Now, they can give SMEs customers access to a growing number of partners. Especially when 93% of SMEs state that it's important for CSPs to collaborate with an ecosystem of partners to build solutions that better fit their needs.

In 2019, NTT Group, Japan's largest fixed-line and mobile communications carrier, began working with Beyond Now through its systems subsidiary NTT Comware. By modernizing and simplifying NTT's business support system, Beyond Now aimed to improve customer service, operational efficiency, and generate new revenue. Two years later, both companies worked together to instill a new IT program that can be used not only by all of NTT Group's Japanese subsidiaries, but also external partners. As a result, DOCOMO is creating a "marketplace" where small and midsized companies can access the digital services they need at an affordable price.

Through the Infonova Digital Business Platform, DOCOMO is able to:

- · Grow revenue and scale with an ecosystem of partners
- · Empower its partners to self-onboard and manage the sale of their services in the marketplace
- · Automate partners services, including ordering and fulfilment processes
- · Support the monetization of partners solutions, covering any partnership model, any commercial model or any settlement agreement

"We are proud to continue cementing a strong relationship with a pioneering organization like NTT Group since 2019. It began as a shared vision for how NTT needed to transform to support new business models, 5G monetization, B2B2X models and the launch of digital marketplaces. Now, with digitalization and COVID-19 transforming the needs of SMEs, this vision has become a reality with NTT subsidiaries like DOCOMO configuring and monetizing their networks and services in ways that were not previously possible. We commend NTT for recognizing the importance of building partner ecosystems to create real customer value," said Angus Ward, CEO of Beyond Now.

# **About Beyond Now**

Beyond Now is a fast-growing ecosystem orchestration and digital platform provider, powering organizations to launch new services at speed and grow revenue by utilizing our digital platform, digital marketplace and SaaS BSS.

Our platforms are designed to help our customers experiment, monetize and orchestrate services while taking advantage of new technologies such as cloud, edge, IoT, AI, 5G and more. We enable them to

co-create solutions with a growing network of partners; bringing them closer to their customers, helping drive higher efficiency and automation, taking them further, faster, Beyond Now.

We serve customers across Asia-Pacific, Europe, Middle East, Africa and the Americas, spanning industries from telecommunications, media and entertainment, to tech and IT, financial, and automotive.

In November 2021, Beyond Now completed a management buyout (from BearingPoint), supported by a small group of professional investors, and now operates as an independent technology company. Beyond Now is the company name replacing Beyond by BearingPoint.

For more information, please visit: www.beyondnow.com

View source version on businesswire.com: https://www.businesswire.com/news/home/20220310005501/en/

Beyond NowStephanie RossPR & Communications Manager+44 20 7337 3106stephanie.ross@beyondnow.com

Document KORNEW0020220311ei3b000dx



## Beyond Now's Digital Business Platform Powers DOCOMO SME Marketplace

733 words 10 March 2022 10:19 Business Wire BWR English

(c) 2022 Business Wire. All Rights Reserved.

Beyond Now's Infonova Digital Business Platform will support DOCOMO's goal to onboard hundreds of partners into its marketplace for small and midsized enterprises

DUBLIN--(BUSINESS WIRE) -- March 10, 2022--

Beyond Now, a fast-growing ecosystem orchestration and digital platform provider, today announced that it's providing NTT DOCOMO, INC. (DOCOMO), Japan's leading mobile operator, with a partner orchestration hub for its newly launched SME marketplace. Beyond Now's Infonova Digital Business Platform's unique ecosystem orchestration and monetization capabilities make it simple for DOCOMO's partners including, NewsPicks + d, Relo Club and Meet In to rapidly onboard and sell their solutions through the marketplace. This enables the CSP's SME customers to access a range of services such as remote sales, telecommunications, labor management, and subsidy support that will help them to improve their efficiency and productivity.

SME demand for digital transformation has grown exponentially in response to the pandemic, to support the shift to flexible working and deliver increased business efficiency. However, SMEs still face challenges like knowing which service to choose from the many options available, as well as overcoming budget limitations. Helping SMEs to navigate this complexity was the prime objective of DOCOMO, and with the support of Beyond Now, they can give SMEs customers access to a growing number of partners. Especially when 93% of SMEs state that it's important for CSPs to collaborate with an ecosystem of partners to build solutions that better fit their needs.

In 2019, NTT Group, Japan's largest fixed-line and mobile communications carrier, began working with Beyond Now through its systems subsidiary NTT Comware. By modernizing and simplifying NTT's business support system, Beyond Now aimed to improve customer service, operational efficiency, and generate new revenue. Two years later, both companies worked together to instill a new IT program that can be used not only by all of NTT Group's Japanese subsidiaries, but also external partners. As a result, DOCOMO is creating a "marketplace" where small and midsized companies can access the digital services they need at an affordable price.

Through the Infonova Digital Business Platform, DOCOMO is able to:

- -- Grow revenue and scale with an ecosystem of partners
- -- Empower its partners to self-onboard and manage the sale of their services in the marketplace
- -- Automate partners services, including ordering and fulfilment processes
- -- Support the monetization of partners solutions, covering any partnership model, any commercial model or any settlement agreement

"We are proud to continue cementing a strong relationship with a pioneering organization like NTT Group since 2019. It began as a shared vision for how NTT needed to transform to support new business models, 5G monetization, B2B2X models and the launch of digital marketplaces. Now, with digitalization and COVID-19 transforming the needs of SMEs, this vision has become a reality with NTT subsidiaries like DOCOMO configuring and monetizing their networks and services in ways that were not previously possible. We commend NTT for recognizing the importance of building partner ecosystems to create real customer value," said Angus Ward, CEO of Beyond Now.

- ENDS --

## **About Beyond Now**

Beyond Now is a fast-growing ecosystem orchestration and digital platform provider, powering organizations to launch new services at speed and grow revenue by utilizing our digital platform, digital marketplace and SaaS BSS.

Our platforms are designed to help our customers experiment, monetize and orchestrate services while taking advantage of new technologies such as cloud, edge, IoT, AI, 5G and more. We enable them to co-create solutions with a growing network of partners; bringing them closer to their customers, helping drive higher efficiency and automation, taking them further, faster, Beyond Now.

We serve customers across Asia-Pacific, Europe, Middle East, Africa and the Americas, spanning industries from telecommunications, media and entertainment, to tech and IT, financial, and automotive.

In November 2021, Beyond Now completed a management buyout (from BearingPoint), supported by a small group of professional investors, and now operates as an independent technology company. Beyond Now is the company name replacing Beyond by BearingPoint.

For more information, please visit: www.beyondnow.com

View source version on businesswire.com: https://www.businesswire.com/news/home/20220310005501/en/

CONTACT: Press contact:

**Beyond Now** 

Stephanie Ross

PR & Communications Manager

Phone: +44 20 7337 3106

Email: stephanie.ross@beyondnow.com

SOURCE: Beyond Now

Copyright

Business Wire 2022

(END)

Document BWR0000020220310ei3a0003c



#### 5G

# NTT Docomo, NEC, AWS piloting 5G core network on hybrid cloud

Staff Writer
236 words
4 March 2022
Frontier Enterprise
FRONSE
English
Copyright 2022. Jicara Media Pte Ltd

Japanese mobile operator NTT Docomo and IT firm NEC have launched a proof-of-concept (PoC) testing to run the latter's 5G core network (5GC) service in a hybrid **cloud** environment.

The undertaking will use Amazon Web Services' (AWS) **cloud**. Through the PoC, Docomo, NEC, and AWS expect to prove the viability of **cloud**-native mobile networks leveraging a public **cloud** for network function virtualisation.

As the first step, 5GC network functions will run in the cloud on AWS infrastructure, and corresponding 5GC network functions will reside on Docomo's on-premises infrastructure to verify availability and operational feasibility.

The second step will deploy the 5GC network function on AWS outposts (on Amazon EC2 compute instances, which use Graviton2 processors) on Docomo's premises.

"We believe this collaboration will lead to the further evolution of networks and network virtualisation," says Naoki Tani, Executive Vice President, Chief Technology Officer, Executive General Manager of the R&D Innovation Division of Docomo. "The PoC will realise a hybrid cloud environment for telecom operators."

According to Atsuo Kawamura, Executive Vice President of NEC Corporation, the test is proof that NEC 5GC is operable under a multi-platform environment.

"AWS Graviton2 processors accelerate a carbon footprint reduction and meet high-performance requirements for 5G SA networks," added Adolfo Hernandez, Vice President and General Manager Telecom Industry Business Unit at AWS.

Document FRONSE0020220331ei340004f



# NTT DOCOMO and NEC are Onboarding 5G SA Core Using Energy-efficient and High-performance AWS Cloud Computing Services

1,138 words
2 March 2022
M2 Presswire
MTPW
English
© 2022, M2 Communications, All rights reserved.

TOKYO, JAPAN — NTT DOCOMO, INC. (DOCOMO) and NEC Corporation (NEC) have launched a proof-of-concept (PoC) testing to run NEC's 5G core network (5GC) service in a hybrid **cloud** environment that leverages the Amazon Web Services (AWS) **cloud** using end-to-end **cloud**-native network architecture. Through the PoC, DOCOMO, NEC, and AWS expect to prove the viability of **cloud**-native mobile networks leveraging a public **cloud** for network function virtualization (NFV).

The PoC will validate the energy efficiency and high performance that AWS Graviton2 processors can bring to NEC's 5GC in the AWS cloud to achieve an energy-performance advantage over comparable solutions. As the first step, 5GC network functions will run in the cloud on AWS infrastructure and corresponding 5GC network functions will reside on DOCOMO's on-premises infrastructure to verify availability and operational feasibility. The second step will deploy the 5GC network function on AWS Outposts (on Amazon EC2 compute instances powered by Graviton2 processors) on DOCOMO's premises. AWS Graviton2 processors deliver a major leap in performance and reduce the carbon footprint for energy efficiency.

"We are excited to conduct this proof-of-concept with NEC's advanced cloud-native 5GC and AWS's innovative cloud infrastructure technology. We believe this collaboration will lead to the further evolution of networks and network virtualization," says Naoki Tani, Executive Vice President, Chief Technology Officer, Executive General Manager of R&D Innovation Division of DOCOMO. "The PoC will realize a hybrid cloud environment for telecom operators, resulting in accelerating the telecom industry's evolution by delivering significant value to our customers."

"I am delighted to be able to contribute to the successful verification of 5GC running on a hybrid platform of AWS's public cloud and DOCOMO's private cloud," said Atsuo Kawamura, Executive Vice President of NEC Corporation. "This achievement is a proof of NEC 5GC being operable under a multi-platform environment. Together with DOCOMO and AWS, NEC is committed to introducing a highly available, highly reliable, sustainable and environmentally friendly next generation mobile infrastructure and to contributing to acceleration of digital transformations."

"We are thrilled to be part of DOCOMO's innovation project for their digital transformation journey with NEC's cloud-native 5G Core on AWS," says Adolfo Hernandez, Vice President and General Manager Telecom Industry Business Unit at AWS. "AWS Graviton2 processors accelerate a carbon footprint reduction and meet high-performance requirements for 5G SA networks."

## Appendix Abstract

The PoC, which will run from March 2022 to March 2023, will deploy 5GC network functions both in the AWS public cloud and DOCOMO's on-premises cloud infrastructure to verify availability and operational feasibility from the perspective of brown-field telecom operators. The PoC also will evaluate a prototype 5GC cloud-native architecture optimized for highly flexible and scalable public-cloud environments. Successful results are expected to be incorporated in DOCOMO's future 5GC initiatives and other network functions, paving the way for increasingly available 5G networks that could be deployed with exceptional flexibility.

Additionally, the 5GC network deployed in the AWS public-cloud environment and AWS Outposts will be used to demonstrate possible enterprise services of the future. Various industrial applications for machine learning, AI, IoT and extended reality (XR) have been deployed on AWS, reflecting the fact that industrial-application developers are now highly familiar with AWS. As such, the 5GC network deployed in the AWS public-cloud environment will enable easy collaboration with such applications. Further, these collaborations are expected to lead the creation of brand-new solutions and services like new ultra-low-latency services for IoT and XR. In view of 5GC's potential to enhance industrial functionality and AWS's proven track record with industrial and enterprise applications, orchestrating 5GC networks on AWS also will help enterprise customers accelerate their digital transformations.

5GC network functions also will be tested on Graviton2, AWS's energy-efficient processors, with an eye to providing customers with flexible, energy-efficient networks.

## Background

DOCOMO, a leader among telecom operators in NFV research and development, began conducting basic research in 2005 and subsequently developed the world's first NFV technology for multi-vendor 4G core networks, based on which the company launched a commercial service in 2016. Today, more than 70% of DOCOMO's core network has been shifted to NFV and its 5GC network is fully virtualized. As an NFV frontrunner, DOCOMO is actively driving the evolution of this network technology.

NEC commercialized a reliable, high-quality mobile core solution on AWS in 2019 and began offering its Stand Alone 5G mobile core (SA-type 5GC) solution for the AWS cloud in 2021. Items to Examine Items to Examine Item 1 Validation of availability and operability of hybrid cloud environment for telecom operators 2 Development and validation of flexibility and scalability of prototype 5GC optimized for public clouds 3 Validation of performance and power consumption of 5GC on Graviton2 Roles of Each Company Roles of Each Company DOCOMO Provide on-premises NFV infrastructure to run 5GC networks and lead the PoC by planning items to be verified from the perspective of telecom operators. NEC Provide 5GC software to run on Graviton2 and support 5GC provisioning and testing in the hybrid-cloud environment. AWS Provide Graviton2, a leading low-power public-cloud processor, and support 5GC provisioning in the AWS public-cloud environment. References

#### About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations. https://www.nttdocomo.co.jp/english/.

## **About NEC Corporation**

NEC Corporation has established itself as a leader in the integration of IT and network technologies while promoting the brand statement of "Orchestrating a brighter world." NEC enables businesses and communities to adapt to rapid changes taking place in both society and the market as it provides for the social values of safety, security, fairness and efficiency to promote a more sustainable world where everyone has the chance to reach their full potential. For more information, visit NEC at <a href="https://www.nec.com">https://www.nec.com</a>.

((M2 Communications disclaims all liability for information provided within M2 PressWIRE. Data supplied by named party/parties. Further information on M2 PressWIRE can be obtained at <a href="http://www.m2.com">http://www.m2.com</a> on the world wide web. Inquiries to info@m2.com)).

Document MTPW000020220302ei3200462



## Keysight, Docomo to develop Open RAN ecosystem in Japan

296 words
2 March 2022
Telecompaper Asia
TELASI
English
Copyright 2022 Telecompaper. All Rights Reserved.

Keysight Technologies has signed a memorandum of understanding with Japanese operator NTT Docomo to support the development and deployment of multi-vendor 5G networks built on open standard interfaces. Keysight reports that its open radio access network architect (KORA) has enabled NTT Docomo to establish a 5G Open RAN **Ecosystem** testbed with a virtual RAN (vRAN) verification environment.

The 5G Open RAN **Ecosystem** test lab is designed to offer companies the opportunity to address test, verification, interoperability and optimization needs. KORA brings together a family of software-driven services, enabling users to address the entire workflow, from early design and development to product validation and deployment.

Both companies are active contributors to the O-RAN Alliance, which was founded in 2018 and supports more than three hundred companies around the world. Keysight drives the development of major technical and test specifications for open interfaces, cloud, transport, security and end-to-end test and integration, and co-chairs a committee that drives O-RAN specification priorities.

KORA is designed to enable users to perform testing, from the edge of the RAN to the cloud, as well as from early pre-silicon development to system integration. Vendors of various components of the RAN across the ecosystem, hyperscalers, Open Test and Integration Centers (OTIC) and mobile operators are currently using the KORA platform.

The collaboration includes the development of RAN Intelligent Controller (RIC) technology, which is expected to improve radio resource management in the RAN and simplify the use of NFV, multi-access edge computing (MEC), artificial intelligence (AI) and machine learning (ML) technologies. Keysight's RICtest is designed to enable users to simulate thousands of O-RAN network elements for validation of near and non-real time RIC behavior.

Document TELASI0020220302ei320002t



## DOCOMO launches VRAN verification facility to global mobile operators

316 words
1 March 2022
00:00
MarketLine News and Comment
DTMNTR
English
© 2022, MarketLine, All rights reserved

NTT DOCOMO has started allowing overseas mobile operators to access its Shared Open Lab environment, located in DOCOMO's R&D Center in Yokosuka, Japan, to verify their virtualized radio access networks (vRAN), with immediate effect.

The lab is one of the initiatives of the5G Open RAN <a href="Ecosystem">Ecosystem</a>(OREC) project under which DOCOMO and 13 leading global vendors\*are working to develop truly flexible Open RAN capable of incorporating interoperable equipment of multiple vendors.

Since its establishment last October, the Shared Open Lab has deployed virtualized base stations made with equipment from multiple OREC partners. The verification environment is now open to remote access by global operators, eliminating their need to prepare in-house verification environments.

DOCOMO believes the lab will help operators to greatly reduce overall costs, including constructing in-house labs and/or traveling to vendors' labs, for the verification of base station functions and performance prior to commercial deployment.

DOCOMO, which has been a leader in the development of Open RAN for many years, became the world's first mobile operator to launch a commercial 5G service via Open RAN in March 2020. The company's 5G Open RAN currently includes more than 10,000 base stations and more than 10 million subscribers. Furthermore, within fiscal year 2022, DOCOMO expects to commercialize highly flexible and scalable vRANs for international mobile operators, including by leveraging the know-how and integrated strengths of its OREC partners.

DOCOMO looks forward to deepening its cooperation with an expanding range of stakeholders, including overseas mobile operators, via the Shared Open Lab. DOCOMO is committed to working with its OREC partners to develop further technologies and know-how for the increased adoption of Open RAN, vRAN and other open networks capable of responding flexibly and quickly to diversifying needs in the worldwide mobile communication market.

5316F816-446E-4C27-99A9-1BCBDE58A7A3 Document DTMNTR0020220303ei3100093



## Kanematsu Communications to acquire all shares of Kinki Telecom

200 words 1 March 2022 Nikkei Business Trends NIKBST English Copyright 2022. Nikkei Inc.

Kanematsu Communications (Shibuya, Tokyo), a wholly-owned subsidiary of Kanematsu, will acquire all shares of Kinki Telecom (Himeji, Hyogo Prefecture) on April 1, 2022. Kanematsu Communications is a nationwide distributor of mobile communication **devices** such as mobile phones as the first agent of communication carriers such as NTT Docomo, KDDI, and SoftBank. Kinki Telecom is developing a wide range of businesses as a sales agent for NTT Group companies based in the southwestern part of Hyogo Prefecture, as well as operating solar power plants in the prefecture. Through this share acquisition, Kanematsu Communications will expand and strengthen the sales network of mobile terminals, and also aim to expand the business for corporations by collaborating with Kinki Telecom.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020220302ei310008k



## NTT DOCOMO. AWS and NEC collaborate on evolution of networks

By Total Telecom Staff
260 words
1 March 2022
Total Telecom Plus
TOTEL
English
© 2022 All content copyright, Terrapinn Holdings Limited. All rights reserved.

PoC examines NEC 5G SA core in a hybrid cloud environment

A proof of concept (PoC) launched by NTT DOCOMO, NEC, and AWS is expected to prove the viability of cloud-native mobile networks leveraging a public cloud for network function virtualization (NFV). The PoC utilises NEC's 5G core network(5GC) service in a hybrid cloud environment that involves AWS cloud using end-to-end cloud-native network architecture. The trial shows that an energy and performance advantage can be delivered for NEC's 5GC when compared to other comparable solutions by utilising Amazon Web Services (AWS) Graviton2 processors in the AWS cloud. The AWS processors offer a considerable step up in performance and a reduced carbon footprint Naoki Tani, Executive Vice President, Chief Technology Officer, Executive General Manager of the R&D Innovation Division of DOCOMO said he believed the collaboration collaboration would drive evolution of networks and network virtualization, going on to say "The PoC will realize a hybrid cloud environment for telecom operators, resulting in accelerating the telecom industry's evolution by delivering significant value to our customers."

Adolfo Hernandez, Vice President and General Manager Telecom Industry Business Unit at AWS said they were "thrilled to be part of DOCOMO's innovation project" whilst Executive Vice President of NEC Corporation, Atsuo Kawamura said working with DOCOMO and AWS "NEC is committed to introducing a highly available, highly reliable, sustainable and environmentally friendly next generation mobile infrastructure and to contributing to acceleration of digital transformations."

512643

Document TOTEL00020220301ei310000c



## Keysight, NTT DOCOMO Collaborate to Accelerate Open RAN Ecosystem Maturity

708 words
1 March 2022
ENP Newswire
ENPNEW
English
© 2022, Electronic News Publishing. All Rights Reserved.

Release date - 28022022

Companies advance deployment of multi-vendor 5G networks built on open standard interfaces.

Keysight Technologies, Inc. (NYSE: KEYS), a leading technology company that delivers advanced design and validation solutions to help accelerate innovation to connect and secure the world, has signed a memorandum of understanding (MoU) with NTT DOCOMO, INC., Japan's largest telecommunications company, to support the development and deployment of multi-vendor 5G networks built on open standard interfaces, driving the growing maturity of open radio access network (RAN) ecosystems.

Keysight's open radio access network architect (KORA) has enabled NTT DOCOMO, a provider of innovative, convenient and secure mobile services, to establish a 5G Open RAN Ecosystem testbed with a virtual RAN (vRAN) verification environment. The 5G Open RAN Ecosystem test lab offers companies the opportunity to address a diverse range of test, verification, interoperability and optimization needs. KORA brings together a comprehensive family of scalable and software-driven solutions, enabling users to effectively address the entire workflow, from early design and development to product validation and deployment.

'Keysight established a strong working relationship with NTT DOCOMO in 2015, when the industry was in the early stages of creating the initial foundational blocks of the next generation of mobile communications,' said Kalyan Sundhar, vice president and general manager for Keysight's 5G edge to core industry group. 'Establishing a thriving 5G Open RAN Ecosystem is critical to the success of the O-RAN standard, which makes it possible to deploy a multi-vendor infrastructure in support of operator roll-out plans across different use case requirements.'

Both companies are active contributors to the O-RAN Alliance, which was founded in 2018 and supports more than three hundred companies around the world. Keysight drives the development of major technical and test specifications for open interfaces, cloud, transport, security and end-to-end test and integration, and co-chairs a committee that drives O-RAN specification priorities.

'NTT DOCOMO is committed to delivering open and virtualized RAN to global operators through the 5G Open RAN Ecosystem,' said Sadayuki Abeta, general manager of Radio Access Network Development Department at NTT DOCOMO. 'Keysight is a leading contributor to test and integration for 5G development, and we expect their test equipment and capabilities will help to accelerate open RAN to the next stage of commercialization.'

KORA enables users to perform end-to-end testing, from the edge of the RAN to the cloud, as well as from early pre-silicon development to system integration. Vendors of various components of the RAN across the ecosystem, hyperscalers, Open Test and Integration Centers (OTIC) and mobile operators use KORA to ensure desired levels of performance, quality of service, interoperability, security and compliance to the latest specifications.

The collaboration includes the development of RAN Intelligent Controller (RIC) technology, which improves radio resource management in the RAN and simplifies the use of network function virtualization (NFV), multi-access edge computing (MEC), artificial intelligence (AI) and machine learning (ML) technologies. Keysight's RICtest enables users to simulate thousands of O-RAN network elements for efficient validation of near and non-real time RIC behavior.

# About Keysight Technologies

Keysight delivers advanced design and validation solutions that help accelerate innovation to connect and secure the world. Keysight's dedication to speed and precision extends to software-driven insights and analytics that bring tomorrow's technology products to market faster across the development lifecycle, in design simulation, prototype validation, automated software testing, manufacturing analysis, and network

performance optimization and visibility in enterprise, service provider and cloud environments. Our customers span the worldwide communications and industrial ecosystems, aerospace and defense, automotive, energy, semiconductor and general electronics markets. Keysight generated revenues of \$4.9B in fiscal year 2021. For more information about Keysight Technologies (NYSE: KEYS), visit us at <a href="https://www.keysight.com">www.keysight.com</a>.

## ###

Additional information about Keysight Technologies is available in the newsroom at <a href="https://www.keysight.com/go/news">https://www.keysight.com/go/news</a> and on Facebook, LinkedIn, Twitter, and YouTube.

**Keysight Contact:** 

Geri Lynne LaCombe, Americas/Europe

+1 303 662-4748

geri\_lacombe@keysight.com

Fusako Dohi, Asia

+81 42 660-2162

fusako\_dohi@keysight.com

[Editorial queries for this story should be sent to newswire@enpublishing.co.uk]

Document ENPNEW0020220301ei310001y



# Docomo, NEC test 5G SA core using AWS cloud computing services

161 words
1 March 2022
Telecompaper Asia
TELASI
English
Copyright 2022 Telecompaper. All Rights Reserved.

Japanese operator NTT Docomo and NEC have launched a proof-of-concept (PoC) testing to run NEC's 5G core network service in a hybrid **cloud** environment that uses the Amazon Web Services (AWS) **cloud** and **cloud**-native network architecture. Through the PoC, Docomo, NEC, and AWS intend to prove the viability of **cloud**-native mobile networks leveraging a public **cloud** for network function virtualization (NFV).

The PoC is expected to validate the energy efficiency and performance that AWS Graviton2 processors can bring to NEC's 5GC in the AWS **cloud**. As the first step, 5GC network functions will run in the **cloud** on AWS **infrastructure** and corresponding 5GC network functions will reside on Docomo's on-premises **infrastructure** to verify availability and operational feasibility. The second step will deploy the 5GC network function on AWS Outposts (on Amazon EC2 compute instances powered by Graviton2 processors) on Docomo's premises.

Document TELASI0020220301ei310002u



# NTT DOCOMO and NEC are Onboarding 5G SA Core Using Energy-efficient and High-performance AWS Cloud Computing Services

618 words 1 March 2022 15:47 JCN Newswire JAPCOR English

Copyright 2022 JCN Newswire, a division of Japan Corporate News Network K.K. All rights reserved.

TOKYO, Mar 1, 2022 - (JCN Newswire) - NTT DOCOMO, INC. (DOCOMO) and NEC Corporation (NEC) have launched a proof-of-concept (PoC) testing to run NEC's 5G core network (5GC) service in a hybrid cloud environment that leverages the Amazon Web Services (AWS) cloud using end-to-end cloud-native network architecture. Through the PoC, DOCOMO, NEC, and AWS expect to prove the viability of cloud-native mobile networks leveraging a public cloud for network function virtualization (NFV).

The PoC will validate the energy efficiency and high performance that AWS Graviton2 processors can bring to NEC's 5GC in the AWS cloud to achieve an energy-performance advantage over comparable solutions. As the first step, 5GC network functions will run in the cloud on AWS infrastructure and corresponding 5GC network functions will reside on DOCOMO's on-premises infrastructure to verify availability and operational feasibility. The second step will deploy the 5GC network function on AWS Outposts (on Amazon EC2 compute instances powered by Graviton2 processors) on DOCOMO's premises. AWS Graviton2 processors deliver a major leap in performance and reduce the carbon footprint for energy efficiency.

"We are excited to conduct this proof-of-concept with NEC's advanced cloud-native 5GC and AWS's innovative cloud infrastructure technology. We believe this collaboration will lead to the further evolution of networks and network virtualization," says Naoki Tani, Executive Vice President, Chief Technology Officer, Executive General Manager of the R&D Innovation Division of DOCOMO. "The PoC will realize a hybrid cloud environment for telecom operators, resulting in accelerating the telecom industry's evolution by delivering significant value to our customers."

"I am delighted to be able to contribute to the successful verification of 5GC running on a hybrid platform of AWS's public cloud and DOCOMO's private cloud," said Atsuo Kawamura, Executive Vice President of NEC Corporation. "This achievement is proof of NEC 5GC being operable under a multi-platform environment. Together with DOCOMO and AWS, NEC is committed to introducing a highly available, highly reliable, sustainable and environmentally friendly next generation mobile infrastructure and to contributing to acceleration of digital transformations."

"We are thrilled to be part of DOCOMO's innovation project for their digital transformation journey with NEC's cloud-native 5G Core on AWS," says Adolfo Hernandez, Vice President and General Manager Telecom Industry Business Unit at AWS. "AWS Graviton2 processors accelerate a carbon footprint reduction and meet high-performance requirements for 5G SA networks."

## About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations. https://www.nttdocomo.co.jp/english/.

## **About NEC Corporation**

NEC Corporation has established itself as a leader in the integration of IT and network technologies while promoting the brand statement of "Orchestrating a brighter world." NEC enables businesses and communities to adapt to rapid changes taking place in both society and the market as it provides for the social values of safety, security, fairness and efficiency to promote a more sustainable world where everyone has the chance to reach their full potential. For more information, visit NEC at <a href="https://www.nec.com">https://www.nec.com</a>.

Source: NTT DOCOMONEC Corporation

Document JAPCOR0020220301ei31000b5



# NTT - NTT DOCOMO and NEC are Onboarding 5G SA Core Using Energy-efficient and High-performance AWS Cloud Computing Services

NTT - Nippon Telegraph & Telephone Corporation published this content on 01 Mar 2022 and is solely responsible for the information contained herein. Distributed by PUBT, unedited and unaltered, on 01 Mar 2022 06:26:56 UTC.

552 words

1 March 2022

Public Companies News and Documents via PUBT

**LCDVP** 

English

Copyright 2022. As included in the Information

\* Click here to view this document in its original format

NTT DOCOMO and NEC are Onboarding 5G SA Core Using Energy-efficient and High-performance AWS Cloud Computing Services

March 1, 2022

NTT DOCOMO and NEC are Onboarding 5G SA Core Using Energy-efficient and High-performance AWS Cloud Computing Services

TOKYO, JAPAN, March 1, 2022 --- NTT DOCOMO, INC. (DOCOMO) and NEC Corporation (NEC) have launched a proof-of-concept (PoC) testing to run NEC's 5G core network (5GC) service in a hybrid cloud environment that leverages the Amazon Web Services (AWS) cloud using end-to-end cloud-native network architecture. Through the PoC, DOCOMO, NEC, and AWS expect to prove the viability of cloud-native mobile networks leveraging a public cloud for network function virtualization (NFV).

The PoC will validate the energy efficiency and high performance that AWS Graviton2 processors can bring to NEC's 5GC in the AWS cloud to achieve an energy-performance advantage over comparable solutions. As the first step, 5GC network functions will run in the cloud on AWS infrastructure and corresponding 5GC network functions will reside on DOCOMO's on-premises infrastructure to verify availability and operational feasibility. The second step will deploy the 5GC network function on AWS Outposts (on Amazon EC2 compute instances powered by Graviton2 processors) on DOCOMO's premises. AWS Graviton2 processors deliver a major leap in performance and reduce the carbon footprint for energy efficiency.

"We are excited to conduct this proof-of-concept with NEC's advanced cloud-native 5GC and AWS's innovative cloud infrastructure technology. We believe this collaboration will lead to the further evolution of networks and network virtualization," says Naoki Tani, Executive Vice President, Chief Technology Officer, Executive General Manager of R&D Innovation Division of DOCOMO. "The PoC will realize a hybrid cloud environment for telecom operators, resulting in accelerating the telecom industry's evolution by delivering significant value to our customers."

"I am delighted to be able to contribute to the successful verification of 5GC running on a hybrid platform of AWS's public cloud and DOCOMO's private cloud," said Atsuo Kawamura, Executive Vice President of NEC Corporation. "This achievement is a proof of NEC 5GC being operable under a multi-platform environment. Together with DOCOMO and AWS, NEC is committed to introducing a highly available, highly reliable, sustainable and environmentally friendly next generation mobile infrastructure and to contributing to acceleration of digital transformations."

"We are thrilled to be part of DOCOMO's innovation project for their digital transformation journey with NEC's cloud-native 5G Core on AWS," says Adolfo Hernandez, Vice President and General Manager Telecom Industry Business Unit at AWS. "AWS Graviton2 processors accelerate a carbon footprint reduction and meet high-performance requirements for 5G SA networks."

# \* Original Link

## Disclaimer

NTT - Nippon Telegraph & Telephone Corporation published this content on 01 March 2022 and is solely responsible for the information contained therein. Distributed by <a href="Public">Public</a>, unedited and unaltered, on 01 March 2022 06:29:18 UTC.

Document LCDVP00020220301ei31006hf



# NTT DoCoMo Inc. - (Topics) NTT DOCOMO and NEC are Onboarding 5G SA Core Using Energy-efficient and High-performance AWS Cloud Computing Services

NTT DoCoMo Inc. published this content on 01 Mar 2022 and is solely responsible for the information contained herein. Distributed by PUBT, unedited and unaltered, on 01 Mar 2022 06:18:37 UTC. 547 words

1 March 2022

Private Companies News via PUBT

**PCNVB** 

English

Copyright 2022. As included in the Information

\* Click here to view this document in its original format

(Topics) NTT DOCOMO and NEC are Onboarding 5G SA Core Using Energy-efficient and High-performance AWS Cloud Computing Services

March 1, 2022

NTT DOCOMO and NEC are Onboarding 5G SA Core Using Energy-efficient and High-performance AWS Cloud Computing Services

TOKYO, JAPAN, March 1, 2022 --- NTT DOCOMO, INC. (DOCOMO) and NEC Corporation (NEC) have launched a proof-of-concept (PoC) testing to run NEC's 5G core network (5GC) service in a hybrid cloud environment that leverages the Amazon Web Services (AWS) cloud using end-to-end cloud-native network architecture. Through the PoC, DOCOMO, NEC, and AWS expect to prove the viability of cloud-native mobile networks leveraging a public cloud for network function virtualization (NFV).

The PoC will validate the energy efficiency and high performance that AWS Graviton2 processors can bring to NEC's 5GC in the AWS cloud to achieve an energy-performance advantage over comparable solutions. As the first step, 5GC network functions will run in the cloud on AWS infrastructure and corresponding 5GC network functions will reside on DOCOMO's on-premises infrastructure to verify availability and operational feasibility. The second step will deploy the 5GC network function on AWS Outposts (on Amazon EC2 compute instances powered by Graviton2 processors) on DOCOMO's premises. AWS Graviton2 processors deliver a major leap in performance and reduce the carbon footprint for energy efficiency.

"We are excited to conduct this proof-of-concept with NEC's advanced cloud-native 5GC and AWS's innovative cloud infrastructure technology. We believe this collaboration will lead to the further evolution of networks and network virtualization," says Naoki Tani, Executive Vice President, Chief Technology Officer, Executive General Manager of R&D Innovation Division of DOCOMO. "The PoC will realize a hybrid cloud environment for telecom operators, resulting in accelerating the telecom industry's evolution by delivering significant value to our customers."

"I am delighted to be able to contribute to the successful verification of 5GC running on a hybrid platform of AWS's public cloud and DOCOMO's private cloud," said Atsuo Kawamura, Executive Vice President of NEC Corporation. "This achievement is a proof of NEC 5GC being operable under a multi-platform environment. Together with DOCOMO and AWS, NEC is committed to introducing a highly available, highly reliable, sustainable and environmentally friendly next generation mobile infrastructure and to contributing to acceleration of digital transformations."

"We are thrilled to be part of DOCOMO's innovation project for their digital transformation journey with NEC's cloud-native 5G Core on AWS," says Adolfo Hernandez, Vice President and General Manager Telecom Industry Business Unit at AWS. "AWS Graviton2 processors accelerate a carbon footprint reduction and meet high-performance requirements for 5G SA networks."

## \* Original Link

## Disclaimer

NTT DoCoMo Inc. published this content on 01 March 2022 and is solely responsible for the information contained therein. Distributed by <u>Public</u>, unedited and unaltered, on 01 March 2022 06:20:24 UTC.

Document PCNVB00020220301ei3100335

Page 69 of 148 © 2022 Factiva, Inc. All rights reserved.



### Japan - Mobile Phones - Five Forces

3,131 words
28 February 2022
MarketLine Industry Profiles
DMRP
English
© 2022, MarketLine. All rights reserved

The mobile phones market will be analyzed taking mno's and mvno's as players. The key buyers will be taken as consumers and businesses, and mobile phone manufacturers, government organizations and mobile **infrastructure** businesses as the key suppliers.

There is a high degree of rivalry within the Indian mobile phones market. There are just a handful mobile network operators (MNO) that provide cellular and mobile broadband services across Japan, including large brand names such as NTT Docomo, KDDI Corporation, Rakuten, and SoftBank. These companies are highly competitive with each other, providing the same core wireless services, making it difficult to differentiate from each other. Market consolidation and the roll-out of 5G technology has intensified rivalry in recent years.

There is little threat from new entrants as a result of the high cost associated with cellular infrastructure and maintenance, as well as the limited availability and access to spectrum – radio frequencies allocated to the mobile industry and other sectors for communication over the airwaves.

Buyers, which include end-consumers, have limited choice when choosing their mobile network and weak financial power means their bargaining power is weak. Smartphones are becoming integrated parts of everyday life, particularly in developed markets. However, consumers are price sensitive and have a tendency to switch to the most affordable mobile packages.

Supplier power is strong. MNOs have limited options when securing suppliers of mobile devices and 5G infrastructure companies. However, changing consumer trends have meant players rely less on mobile handsets to drive sales, which has reduced expenditure on mobile phone suppliers.

Alternatives to mobile phones are limited. Fixed line services are the only reasonable substitute but lack mobility and many of the attractive features associated with mobile phones, such as high-quality cameras, access to social media, and entertainment applications.

This market consists of large mobile network operators (MNO) and mobile virtual network operators (MNVO) that sell post-paid and prepaid mobile subscriptions to the end user. These companies tend to serve millions of customers. In the Japanese market, there are four MNOs (NTT Docomo, KDDI Corporation, Rakuten, and SoftBank) that serve that majority of consumers. Market leading MNO NTT Docomo serves around 83 million mobile subscribers. The large number of potential customers weakens buyer power, as individual buyers have little influence on the performance of the business.

MNOs benefit from their wireless network infrastructure, which it sells to MVNOs, which lease mobile coverage and data bandwidth at wholesale prices and then resell mobile services to customers at wholesale prices. MVNOs wield little buyer power, as leasing infrastructure is the only way the companies can operate mobile services. High fixed costs and limited radio wave spectrum prevent MVNOs from backward integrating and creating their own mobile infrastructure. The presence of MVNOs in the market increases the buyer power wielded by the end consumer by increasing the number of available mobile brands, which encourages competition. However, many of these brands are owned by larger MNOs.

Buyers usually display little loyalty to mobile operators and often shop around for the best valued deal before committing to a new mobile contract. This increases buyer power and forces MNOs and MVNOs to compete and offer consumers better value mobile deals. Many mobile operators record churn rate, the rate at which customers stop doing business with a company over a given period.

Switching mobile provider is relatively easy and sometimes cost free, particularly for prepaid subscribers that pay for the services they use and are not locked into lengthy contracts. However, for post-paid customers, mobile service providers can often charge exit fees if a consumer chooses to upgrade or switch to an alternative provider before their mobile contract has ended. At present, Japanese mobile users wishing to switch mobile carrier are required to purchase a MNP reservation number issued by the current provider, this typically costs the user JPY3,000 (\$28.50). As a result, buyers only tend to switch when a cheaper deal is available.

Page 70 of 148 © 2022 Factiva, Inc. All rights reserved.

Market players generally provide the same wireless services, including calls, texts, access to data and data roaming. However, network operators often try to differentiate their products to appeal to end-users and increase their market share. Convergence plans have become increasingly popular, combining mobile services with broadband and TV services to create a more valuable product for customers. Demand for mobile data is growing rapidly and new technologies cause consumers to consume more data than ever before. This has caused players to create more data centric mobile packages, including unlimited data plans, often competing on price. The end-consumer is highly price sensitive and often searches for the cheapest deals. New phone models help encourage customers towards higher value mobile plans; however, generally, consumers search for plans with high data allowances at low costs. This price sensitivity increases the consumer's tendency to switch and increases buyer power, as operators often have to find ways to reduce costs, to create more competitive mobile packages.

While mobile phones are not essential for survival, they are considered an essential item by many people, particularly in developed markets where mobiles have become integrated parts of everyday life. According to the GSMA, the mobile subscription penetration rate reached 87% in 2020 in Japan, with smartphone penetration lower at approximately 68%, indicative of a growing demand for and dependency on mobile phone services.

Overall, buyer power is assessed as weak.

Mobile phone manufacturers are some of the most significant suppliers for mobile service providers. Large mobile companies, such as Apple, Samsung, and Huawei, sell products directly to consumers, but generate the majority of sales through indirect distribution channels, including third party mobile network carriers, wholesalers, retailers, and resellers. Mobile carriers usually purchase handsets upfront and receive an inflow of cash to cover the cost of the handset over the length of the contract. Alternatively, carriers can also sell handsets as a third party seller and then offer SIM contracts, which allows consumers the freedom of choice when choosing their mobile phone and contract.

In recent years, consumer habits have changed, causing the elongation of the handset upgrade cycle. Consumers are holding onto their phones in response to new smartphone releases becoming increasingly expensive, with less notable improvements. As a result, mobile carriers have experienced a decrease in wireless equipment expenses as sales are driven by data centric mobile plans instead of new mobile releases. This has weakened supplier power, with mobile carriers becoming less reliant on new handset models to drive sales.

Infrastructure costs are high and essential for mobile network operators to maintain operations. Building network infrastructure requires supplies of building materials, software development, and other advanced technologies used for communication services. The emergence of 5G technologies has increased supplier power as network operators compete to launch the most advanced 5G networks with the largest coverage. This is expected to be detrimental to future business growth over the forecast period as 5G technologies facilitate consumers' growing demand for data. 5G infrastructure, such as radio access units, are built by a limited number of companies. Finnish firm Nokia, Sweden's Ericsson, and Chinese mobile manufacturer Huawei are the main providers of 5G technology. In 2018, Japan decided to exclude Huawei Technologies and ZTE, two Chinese telecom equipment suppliers, from public procurement following growing concerns about security breaches that already prompted the US and some other countries to ban the two Chinese companies from supplying network infrastructure products. Because of the small number of available suppliers, the failure of any part of the supply chain, such as suppliers or distributors, may have an adverse effect on the business and financial condition of each market player.

Mobile network operators also rely on a supply of radio wave spectrum, a specific frequency allocated to the mobile industry and other sectors for communication over airwaves. Spectrum is a sovereign asset; therefore, the government or designated national regulated authority is responsible for its allocation. In Japan, the Ministry of Internal Affairs and Communications is the body that promotes and ensures the proper operation of all markets in the interest of consumers and corporations. This includes the regulation of the telecommunications market and the distribution of available spectrum for mobile network operators. While the government receives a significant amount of revenue from leasing spectrum to mobile operators, the cost is usually reasonably priced to prevent the inflation of mobile phone costs for the end-consumer. However, spectrum is a finite resource and access to radio frequency can help determine the market position of a mobile network operator, making it one of the most valuable supplies in the market. The Ministry of Internal Affairs and Communications in Japan held a 5G spectrum auction in April 2019, which awarded all four Japanese MNOs a share of the available spectrum.

Overall, supplier is assessed as strong.

Entry into the Japanese mobile phones market is limited by high fixed costs and the existence of strong brand names already competing within the market. There are just four MNOs operating in Japan: NTT Docomo, KDDI Corporation, Rakuten, and SoftBank. These companies operate large infrastructure networks that

provide nationwide mobile and mobile broadband coverage. To create a new mobile network infrastructure would involve significant capital expenditure, unaffordable for most companies.

Secondly, there is only a limited amount of spectrum allocated for mobile communications, including 5G. This means just a small number of mobile operators can purchase the airwaves needed to provide mobile services. Furthermore, spectrum is only likely to be allocated to companies that already have the infrastructure and technology in place to readily provide communication services.

The largest threat comes from large technology and communications companies who are considering entry into the mobile phones market. E-commerce, fintech, and media company Rakuten launched its Rakuten Mobile subsidiary in April 2020. The company acquired customers with its with aggressive launch pricing, including its Rakuten UN-LIMIT 2.0 plan, which offers unlimited data when customers use its own radio network, but a cap of 5GB when roaming in areas where Rakuten has not yet built out its own network and is relying for now on KDDI.

The most common method through which MNOs can infiltrate the market is through the acquisition of an existing incumbent. The largest threat of acquisition comes from large multinational MNOs or domestic or international telecommunication companies looking to expand into the mobile communications market.

Market entry is more achievable for MVNOs. These companies do not own mobile infrastructure and rely on cellular coverage purchased at wholesale prices from MNOs. The consumer's tendency to switch to affordable mobile phone services means new entrants can acquire customers with attractive and affordable mobile packages and strong customer services. Virtual networks traditionally offer contracts much cheaper than their parent networks and offer some good value SIM-only deals, which have grown in popularity because of handset fatigue. Successful MVNOs often use existing market assets such as media, telecom brands, customer databases, and other channel infrastructure.

In recent years, the Japanese government has attempted to create a more competitive mobile phones market to lower domestic mobile phone fees for end-consumers to help stimulate spending elsewhere and boost overall consumption. This has increased the threat from new entrants that will be able to attract customers with competitively priced mobile packages.

Japan is a mature and highly penetrated mobile market with a high smartphone penetration rate. Because of its saturated market environment, the country is unlikely to experience significant growth in new mobile subscribers, which makes it difficult for newcomers to attract customers. New entrants would have to find ways of competing with market leaders and eat into their market shares, which often results in incumbents retaliating to new competition.

Overall, the threat from new entrants is assessed as weak.

One possible substitute for mobile phones is fixed-line telephones. However, this threat is seen as minimal, as mobile phones offer the advantage of being able to use them over a much wider geographical area – wherever they pick up a signal. Not only this, but there has been an observed increase in households that have substituted fixed-line telephones with mobile phones. Moreover, many mobile phones now offer benefits that have enabled them to become substitutes for many other electrical appliances, including laptops, televisions, MP3 players, and cameras.

Whilst laptops also offer many of the features that mobile phones are marketed on, such as internet access, video calling through programs such as Skype, email, TV, GPS, music, entertainment, and portability, they are not a strong substitute, as they do not possess many of the benefits of a mobile phone, such as size, weight, and the seamless ability to call others. As smart phones have developed, they have gradually eaten into PC sales, with consumers showing a preference towards mobile devices.

Tablet computers could be seen as a substitute for smartphones, but large-screened smartphones (known as "phablets") negate this threat to a large extent. The fact that tablet sales have declined globally for the last several consecutive years supports this. This has led to many players operating in the tablets market, such as HTC and Dell, pulling out of that market, emphasizing the fact that the mobile phones market has successfully been able to counter the impact of this potential substitute.

Overall, the threat of substitutes is assessed as weak.

A small number of large mobile network operators competing within a commercial, sales driven market creates a highly competitive environment with a strong degree of rivalry. NTT Docomo, KDDI Corporation, Rakuten, and SoftBank are the primary MNOs competing in the Japanese mobile phones market and all of them compete intensely for a share of mobile subscribers and mobile service revenues. Leading players are continuously trying to improve customer experience, price, quality of service, scope of services, network coverage, sophistication of wireless technology, breadth of distribution, selection of devices, and branding and positioning to gain a competitive edge over rivals.

Page 72 of 148 © 2022 Factiva, Inc. All rights reserved.

Competition remains intense because of high rates of smartphone penetration in the wireless market. The mobile market is one of the most mature segments of the Japanese telecommunications industry. It is characterized by high penetration rates, leading to increased competition and leaving MNOs battling to retain existing and attract new customers. This competitive landscape is one of the most influential factors continuing to impact the mobile market. The Japanese mobile phone market is highly saturated; therefore, incumbents need to try to attract new customers by causing them to switch from rival operators. Innovation, new technology, designing new mobile packages, and adding value to postpaid subscriptions helps to reduce customer churn and attract new customers. This kind of direct competition for consumers creates fierce rivalry.

The Japanese government has induced a higher degree of competition in the mobile phones market by encouraging new mobile service providers to undercut Japan's MNOs NTT Docomo, KDDI Corporation, and SoftBank, which currently serve approximately 90% of the Japanese population. Competition among mobile telecommunications service providers has intensified due to the government's strengthening of pro-competition policies, the expanded uptake of low-cost smartphone services by sub-brands and MVNOs, new entrants from different industries entering the market, and other factors. Stronger market competition will weaken the existing rivalry between MNOs as they start to switch their attention to managing competition from smaller emerging mobile carriers.

The similarity of players and their products also encourages rivalry. Each of the market's leading players provide the same core wireless services: calls, texts, data, and data roaming. Companies can attempt to differentiate themselves from competition in terms price and value-added services. As a result of the similarity of players, consumer choice is usually dictated by price, which creates a highly competitive market, with the companies offering the lowest priced mobile packages expected to attract the highest number of subscribers. This can be offset somewhat by the quality of services provided, including mobile coverage, device selection, and the availability of data. Consumers may be willing to pay premium prices for services such as unlimited data plans. In recent years, the market has slowed in response to a surge in competition, including price competition between major operators, the re-emergence of unlimited plans, and active promotion by new MVNOs.

Previously, this market was heavily driven by handset launches. Today, while handset innovation continues, the cost of a new mobile device has increased substantially, leading to consumers keeping their handsets for longer. This has also had an impact on store footfall. An increase in demand for SIM-only contracts and large data bundles is driving market growth.

5G technology has intensified competition in recent years. The performance of the mobile phone market is becoming increasingly reliant on data consumption trends. Consumers are demanding more data and 5G is a necessary technology for mobile operators to provide fast, low latency cellular broadband that better facilitates consumer data consumption and digital services. Competition has become increasingly fierce as mobile operates race to deploy nationwide 5G coverage.

Overall, rivalry is assessed as strong.

# Market Definition

The Mobile Phones market includes mobile phone service revenues and average minutes of use (MOU). Market values are made up of total mobile revenues containing revenues from mobile service providers and other members of the mobile service value-chain for the provision of mobile telephony services, excluding revenues from the sale of devices. Market volumes are made up of two segments: prepaid and postpaid, which consist of prepaid average monthly MOU and postpaid average monthly MOU. Minutes of use are made up from the average of voice minutes used in mobile subscriptions, including both incoming and outgoing calls, but not including M2M/IoT voice services.

All market data and forecasts are represented in nominal terms (i.e. without adjustment for inflation) and all currency conversions used in the creation of this report have been calculated using constant 2021 annual average exchange rates.

Forecast figures in this report have taken into account the estimated impact that the COVID-19 pandemic will have on the market, though the length of the pandemic and restrictions imposed by governments around the world is not certain, therefore the impact on the market is difficult to predict.

For the purposes of this report, the global market consists of North America, South America, Europe, Asia-Pacific, Middle East, South Africa and Nigeria.

North America consists of Canada, Mexico, and the United States.

South America comprises Argentina, Brazil, Chile, Colombia, and Peru.

Europe comprises Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Russia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom.

Scandinavia comprises Denmark, Finland, Norway, and Sweden.

Asia-Pacific comprises Australia, China, Hong Kong, India, Indonesia, Kazakhstan, Japan, Malaysia, New Zealand, Pakistan, Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam.

Middle East comprises Egypt, Israel, Saudi Arabia, and United Arab Emirates.

Document DMRP000020220322ei3m000v5



# Qualcomm Unveils Fully-Integrated Open RAN Solution in Collaboration with Fujitsu for 5G mmWave Proliferation

845 words
28 February 2022
M2 Presswire
MTPW
English
© 2022, M2 Communications, All rights reserved.

\* Company to Develop Next-Generation mmWave Global Solution within NTT DOCOMO's 5G Open RAN **Ecosystem** (OREC) Initiative, Ushering in Global Open RAN Deployments February 28, 2022BARCELONA

# Highlights:

- Qualcomm Technologies collaborates with Fujitsu to commercialize next-generation 5G mmWave integrated DU and RU to drive the transition towards the modern network.
- The companies are developing solutions under NTT DOCOMO's 5G OREC initiative, with the objective to globally accelerate Open RAN deployments.

Building off years of collaboration, Qualcomm Technologies today announced plans to commercialize 5G open and virtualized integrated distributed unit (DU) and radio unit (RU) solutions with powerful 5G mmWave performance capabilities to drive the transition towards next generation 5G mobile infrastructure. Qualcomm Technologies is coming together with Fujitsu - within NTT DOCOMO, INC.'s 5G OREC initiative - to address the demands of modern networks, streamline deployments and lower the total cost of ownership by delivering high-performance, O-RAN-compliant, energy-efficient, virtualized, cloud-native 5G solutions.

The new solution intends to fast track commercialization and proliferate adoption of 5G open and virtualized infrastructure globally at scale. Combining a high-power 5G mmWave antenna module, integrated with DUs and RUs in one compact design, Fujitsu will support the deployment of these solutions to optimize the front haul capacity and operators to meet performance demands. This collaboration and new solution will activate a full-swing of powerful mmWave performance applications into global operators and provide operators new opportunities to create innovation within their networks.

Today, network operators strive to obtain solutions to support the deployment of cost-effective 5G network infrastructure, while continuing to address the complexities and demands of next-generation networks that are needed to enhance customer experiences. Qualcomm Technologies and Fujitsu are tackling these challenges by developing high-performance, O-RAN compliant and power-efficient solutions to redefine how mobile networks are designed and deployed and how next-generation services are delivered.

"We are pleased to work together with Fujitsu with respect to NTT DOCOMO's 5G OREC initiative, to collaborate on accelerating the innovation cycle to fast track the deployment of modern networks at scale," said Durga Malladi, senior vice president and general manager, 5G, mobile broadband and infrastructure, Qualcomm Technologies, Inc. "With Qualcomm Technologies global leadership in 5G, we're uniquely positioned to enable the industry and proliferate 5G open and virtualized solutions with powerful 5G mmWave performance capabilities, driving the transition towards the modern network with ability to support new and exciting user experiences around the world."

"This joint collaboration will encourage 5G mmWave enhancement through NTT DOCOMO's 5G OREC for global expansion," said Junko Sunaga, vice president, Qualcomm Japan GK and president, Qualcomm Japan. "In addition to a long historic relationship between Fujitsu and Qualcomm Technologies, we're together striving to succeed in next generation 5G Mobile Infrastructure to contribute to NTT DOCOMO's 5G OREC initiatives."

"Qualcomm Technologies is a leader in 5G mmWave technology innovation in the mobile industry along with Fujitsu. We anticipate that this joint collaboration will allow us to launch breakthrough technology for enabling full package mmWave DU and RU solutions to deliver success through NTT DOCOMO's 5G OREC initiative globally," said Masaki Taniguchi, senior vice president and head of the mobile system business unit, Fujitsu. "We are expanding mobile technological capabilities, consolidating Fujitsu's accumulated technologies and Qualcomm Technologies' Open RAN mmWave solutions to create the 5G mmWave foundation for the Open RAN Ecosystem with NTT DOCOMO."

"We are excited to have Qualcomm Technologies and Fujitsu collaborating to develop modern, cloud-native 5G RAN solutions," said Sadayuki Abeta, general manager, radio access network development department, NTT DOCOMO. "The development of 5G open and virtualized DU solutions will help drive our 5G OREC initiatives and streamline 5G RAN deployments, making it more flexible and interoperable for global industry leaders."

The collaboration aims for solutions becoming available for global deployment in 2024.

#### About Qualcomm

Qualcomm is the world's leading wireless technology innovator and the driving force behind the development, launch, and expansion of 5G. When we connected the phone to the internet, the mobile revolution was born. Today, our foundational technologies enable the mobile ecosystem and are found in every 3G, 4G and 5G smartphone. We bring the benefits of mobile to new industries, including automotive, the internet of things, and computing, and are leading the way to a world where everything and everyone can communicate and interact seamlessly.

Qualcomm Incorporated includes our licensing business, QTL, and the vast majority of our patent portfolio. Qualcomm Technologies, Inc., a subsidiary of Qualcomm Incorporated, operates, along with its subsidiaries, substantially all of our engineering, research and development functions, and substantially all of our products and services businesses, including our QCT semiconductor business. Qualcomm contacts: Pete Lancia Mauricio Lopez-Hodoyan

((M2 Communications disclaims all liability for information provided within M2 PressWIRE. Data supplied by named party/parties. Further information on M2 PressWIRE can be obtained at <a href="http://www.m2.com">http://www.m2.com</a> on the world wide web. Inquiries to info@m2.com)).

Document MTPW000020220301ei2s001ug



# Keysight Technologies Inc. - Keysight, NTT DOCOMO Collaborate to Accelerate Open RAN Ecosystem Maturity

Keysight Technologies Inc. published this content on 28 Feb 2022 and is solely responsible for the information contained herein. Distributed by PUBT, unedited and unaltered, on 28 Feb 2022 20:44:24 UTC. 798 words

28 February 2022

Public Companies News and Documents via PUBT

**LCDVP** 

English

Copyright 2022. As included in the Information

\* Click here to view this document in its original format

Keysight, NTT DOCOMO Collaborate to Accelerate Open RAN Ecosystem Maturity

### **News Releases**

Keysight, NTT DOCOMO Collaborate to Accelerate Open RAN Ecosystem Maturity

Companies advance deployment of multi-vendor 5G networks built on open standard interfaces

SANTA ROSA, Calif. February 28, 2022

Keysight's open radio access network architect (KORA) has enabled NTT DOCOMO, a provider of innovative, convenient and secure mobile services, to establish a 5G Open RAN Ecosystem testbed with a virtual RAN (vRAN) verification environment. The 5G Open RAN Ecosystem test lab offers companies the opportunity to address a diverse range of test, verification, interoperability and optimization needs. KORA brings together a comprehensive family of scalable and software-driven solutions, enabling users to effectively address the entire workflow, from early design and development to product validation and deployment.

"Keysight established a strong working relationship with NTT DOCOMO in 2015, when the industry was in the early stages of creating the initial foundational blocks of the next generation of mobile communications," said Kalyan Sundhar, vice president and general manager for Keysight's 5G edge to core industry group. "Establishing a thriving 5G Open RAN Ecosystem is critical to the success of the O-RAN standard, which makes it possible to deploy a multi-vendor infrastructure in support of operator roll-out plans across different use case requirements."

Both companies are active contributors to the O-RAN Alliance, which was founded in 2018 and supports more than three hundred companies around the world. Keysight drives the development of major technical and test specifications for open interfaces, cloud, transport, security and end-to-end test and integration, and co-chairs a committee that drives O-RAN specification priorities.

"NTT DOCOMO is committed to delivering open and virtualized RAN to global operators through the 5G Open RAN Ecosystem," said Sadayuki Abeta, general manager of Radio Access Network Development Department at NTT DOCOMO. "Keysight is a leading contributor to test and integration for 5G development, and we expect their test equipment and capabilities will help to accelerate open RAN to the next stage of commercialization."

KORA enables users to perform end-to-end testing, from the edge of the RAN to the cloud, as well as from early pre-silicon development to system integration. Vendors of various components of the RAN across the ecosystem, hyperscalers, Open Test and Integration Centers (OTIC) and mobile operators use KORA to ensure desired levels of performance, quality of service, interoperability, security and compliance to the latest specifications.

The collaboration includes the development of RAN Intelligent Controller (RIC) technology, which improves radio resource management in the RAN and simplifies the use of network function virtualization (NFV), multi-access edge computing (MEC), artificial intelligence (AI) and machine learning (ML) technologies. Keysight's RICtest enables users to simulate thousands of O-RAN network elements for efficient validation of near and non-real time RIC behavior.

# About Keysight Technologies

Keysight delivers advanced design and validation solutions that help accelerate innovation to connect and secure the world. Keysight's dedication to speed and precision extends to software-driven insights and analytics that bring tomorrow's technology products to market faster across the development lifecycle, in design simulation, prototype validation, automated software testing, manufacturing analysis, and network performance optimization and visibility in enterprise, service provider and cloud environments. Our customers span the worldwide communications and industrial ecosystems, aerospace and defense, automotive, energy, semiconductor and general electronics markets. Keysight generated revenues of \$4.9B in fiscal year 2021. For more information about Keysight Technologies (NYSE: KEYS), visit us at www.keysight.com.

### ###

Additional information about Keysight Technologies is available in the newsroom at <a href="https://www.keysight.com/go/news">https://www.keysight.com/go/news</a> and on <a href="https://www.keysight.com/go/news">Facebook, LinkedIn, Twitter</a>, and <a href="https://www.keysight.com/go/news">YouTube</a>.

**Keysight Contact:** 

Geri Lynne LaCombe, Americas/Europe

+1 303 662-4748

geri lacombe@keysight.com

Fusako Dohi, Asia

+81 42 660-2162

fusako dohi@keysight.com

\* Original Link

Disclaimer

Keysight Technologies Inc. published this content on 28 February 2022 and is solely responsible for the information contained therein. Distributed by <u>Public</u>, unedited and unaltered, on 28 February 2022 20:49:47 LTC.

Document LCDVP00020220228ei2s00lwz



Press Release: Keysight, NTT DOCOMO Collaborate to Accelerate Open RAN Ecosystem Maturity

776 words
28 February 2022
16:00
Dow Jones Institutional News
DJDN
English
Copyright © 2022, Dow Jones & Company, Inc.

Keysight, NTT DOCOMO Collaborate to Accelerate Open RAN Ecosystem Maturity

Companies advance deployment of multi-vendor 5G networks built on open standard interfaces

SANTA ROSA, Calif. -- (BUSINESS WIRE) -- February 28, 2022--

Keysight Technologies, Inc. (NYSE: KEYS), a leading technology company that delivers advanced design and validation solutions to help accelerate innovation to connect and secure the world, has signed a memorandum of understanding (MoU) with NTT DOCOMO, INC., Japan's largest telecommunications company, to support the development and deployment of multi-vendor 5G networks built on open standard interfaces, driving the growing maturity of open radio access network (RAN) ecosystems.

Keysight's open radio access network architect (KORA) has enabled NTT DOCOMO, a provider of innovative, convenient and secure mobile services, to establish a 5G Open RAN Ecosystem testbed with a virtual RAN (vRAN) verification environment. The 5G Open RAN Ecosystem test lab offers companies the opportunity to address a diverse range of test, verification, interoperability and optimization needs. KORA brings together a comprehensive family of scalable and software-driven solutions, enabling users to effectively address the entire workflow, from early design and development to product validation and deployment.

"Keysight established a strong working relationship with NTT DOCOMO in 2015, when the industry was in the early stages of creating the initial foundational blocks of the next generation of mobile communications," said Kalyan Sundhar, vice president and general manager for Keysight's 5G edge to core industry group. "Establishing a thriving 5G Open RAN Ecosystem is critical to the success of the O-RAN standard, which makes it possible to deploy a multi-vendor infrastructure in support of operator roll-out plans across different use case requirements."

Both companies are active contributors to the O-RAN Alliance, which was founded in 2018 and supports more than three hundred companies around the world. Keysight drives the development of major technical and test specifications for open interfaces, cloud, transport, security and end-to-end test and integration, and co-chairs a committee that drives O-RAN specification priorities.

"NTT DOCOMO is committed to delivering open and virtualized RAN to global operators through the 5G Open RAN Ecosystem," said Sadayuki Abeta, general manager of Radio Access Network Development Department at NTT DOCOMO. "Keysight is a leading contributor to test and integration for 5G development, and we expect their test equipment and capabilities will help to accelerate open RAN to the next stage of commercialization."

KORA enables users to perform end-to-end testing, from the edge of the RAN to the cloud, as well as from early pre-silicon development to system integration. Vendors of various components of the RAN across the ecosystem, hyperscalers, Open Test and Integration Centers (OTIC) and mobile operators use KORA to ensure desired levels of performance, quality of service, interoperability, security and compliance to the latest specifications.

The collaboration includes the development of RAN Intelligent Controller (RIC) technology, which improves radio resource management in the RAN and simplifies the use of network function virtualization (NFV), multi-access edge computing (MEC), artificial intelligence (AI) and machine learning (ML) technologies. Keysight's RICtest enables users to simulate thousands of O-RAN network elements for efficient validation of near and non-real time RIC behavior.

About Keysight Technologies

Keysight delivers advanced design and validation solutions that help accelerate innovation to connect and secure the world. Keysight's dedication to speed and precision extends to software-driven insights and analytics that bring tomorrow's technology products to market faster across the development lifecycle, in design simulation, prototype validation, automated software testing, manufacturing analysis, and network performance optimization and visibility in enterprise, service provider and cloud environments. Our customers span the worldwide communications and industrial ecosystems, aerospace and defense, automotive, energy, semiconductor and general electronics markets. Keysight generated revenues of \$4.9B in fiscal year 2021. For more information about Keysight Technologies (NYSE: KEYS), visit us at <a href="https://www.keysight.com">www.keysight.com</a>.

Additional information about Keysight Technologies is available in the newsroom at <a href="https://www.keysight.com/go/news">https://www.keysight.com/go/news</a> and on Facebook, LinkedIn, Twitter and YouTube.

View source version on businesswire.com: https://www.businesswire.com/news/home/20220228005731/en/

CONTACT: Geri Lynne LaCombe, Americas/Europe

+1 303 662 4748

geri\_lacombe@keysight.com

Fusako Dohi, Asia

+81 42 660-2162

fusako\_dohi@keysight.com

28 Feb 2022 11:00 ET \*Keysight, NTT DOCOMO Collaborate to Accelerate Open RAN Ecosystem Maturity

28 Feb 2022 11:01 ET \*Keysight Technologies, Advance Deployment of Multi-Vendor 5G Networks Built on Open Standard Interfaces >KEYS

(MORE TO FOLLOW) Dow Jones Newswires

February 28, 2022 11:01 ET (16:01 GMT)

Document DJDN000020220228ei2s002t9



## Keysight, NTT DOCOMO Collaborate to Accelerate Open RAN Ecosystem Maturity

721 words
28 February 2022
16:00
Business Wire
BWR
English

(c) 2022 Business Wire. All Rights Reserved.

Companies advance deployment of multi-vendor 5G networks built on open standard interfaces

SANTA ROSA, Calif. -- (BUSINESS WIRE) -- February 28, 2022--

Keysight Technologies, Inc. (NYSE: KEYS), a leading technology company that delivers advanced design and validation solutions to help accelerate innovation to connect and secure the world, has signed a memorandum of understanding (MoU) with NTT DOCOMO, INC., Japan's largest telecommunications company, to support the development and deployment of multi-vendor 5G networks built on open standard interfaces, driving the growing maturity of open radio access network (RAN) ecosystems.

Keysight's open radio access network architect (KORA) has enabled NTT DOCOMO, a provider of innovative, convenient and secure mobile services, to establish a 5G Open RAN Ecosystem testbed with a virtual RAN (vRAN) verification environment. The 5G Open RAN Ecosystem test lab offers companies the opportunity to address a diverse range of test, verification, interoperability and optimization needs. KORA brings together a comprehensive family of scalable and software-driven solutions, enabling users to effectively address the entire workflow, from early design and development to product validation and deployment.

"Keysight established a strong working relationship with NTT DOCOMO in 2015, when the industry was in the early stages of creating the initial foundational blocks of the next generation of mobile communications," said Kalyan Sundhar, vice president and general manager for Keysight's 5G edge to core industry group. "Establishing a thriving 5G Open RAN Ecosystem is critical to the success of the O-RAN standard, which makes it possible to deploy a multi-vendor infrastructure in support of operator roll-out plans across different use case requirements."

Both companies are active contributors to the O-RAN Alliance, which was founded in 2018 and supports more than three hundred companies around the world. Keysight drives the development of major technical and test specifications for open interfaces, cloud, transport, security and end-to-end test and integration, and co-chairs a committee that drives O-RAN specification priorities.

"NTT DOCOMO is committed to delivering open and virtualized RAN to global operators through the 5G Open RAN Ecosystem," said Sadayuki Abeta, general manager of Radio Access Network Development Department at NTT DOCOMO. "Keysight is a leading contributor to test and integration for 5G development, and we expect their test equipment and capabilities will help to accelerate open RAN to the next stage of commercialization."

KORA enables users to perform end-to-end testing, from the edge of the RAN to the cloud, as well as from early pre-silicon development to system integration. Vendors of various components of the RAN across the ecosystem, hyperscalers, Open Test and Integration Centers (OTIC) and mobile operators use KORA to ensure desired levels of performance, quality of service, interoperability, security and compliance to the latest specifications.

The collaboration includes the development of RAN Intelligent Controller (RIC) technology, which improves radio resource management in the RAN and simplifies the use of network function virtualization (NFV), multi-access edge computing (MEC), artificial intelligence (AI) and machine learning (ML) technologies. Keysight's RICtest enables users to simulate thousands of O-RAN network elements for efficient validation of near and non-real time RIC behavior.

# About Keysight Technologies

Keysight delivers advanced design and validation solutions that help accelerate innovation to connect and secure the world. Keysight's dedication to speed and precision extends to software-driven insights and analytics that bring tomorrow's technology products to market faster across the development lifecycle, in

Page 81 of 148 © 2022 Factiva, Inc. All rights reserved.

design simulation, prototype validation, automated software testing, manufacturing analysis, and network performance optimization and visibility in enterprise, service provider and cloud environments. Our customers span the worldwide communications and industrial ecosystems, aerospace and defense, automotive, energy, semiconductor and general electronics markets. Keysight generated revenues of \$4.9B in fiscal year 2021. For more information about Keysight Technologies (NYSE: KEYS), visit us at <a href="https://www.keysight.com">www.keysight.com</a>.

Additional information about Keysight Technologies is available in the newsroom at <a href="https://www.keysight.com/go/news">https://www.keysight.com/go/news</a> and on Facebook, LinkedIn, Twitter and YouTube.

View source version on businesswire.com: https://www.businesswire.com/news/home/20220228005731/en/

```
CONTACT: Geri Lynne LaCombe, Americas/Europe
+1 303 662 4748
geri_lacombe@keysight.com
Fusako Dohi, Asia
+81 42 660-2162
fusako_dohi@keysight.com
```

SOURCE: Keysight Technologies, Inc. Copyright Business Wire 2022

(END)

Document BWR0000020220228ei2s000bk



## **DOCOMO Opens vRAN Verification Facility to Global Mobile Operators**

478 words 28 February 2022 18:01 JCN Newswire JAPCOR English

Copyright 2022 JCN Newswire, a division of Japan Corporate News Network K.K. All rights reserved.

- Remotely accessible lab will help operators lower 5G base station deployment costs -

TOKYO, Feb 28, 2022 - (JCN Newswire) - NTT DOCOMO, INC. announced today that it has begun allowing overseas mobile operators to access its Shared Open Lab environment, located in DOCOMO's R&D Center in Yokosuka, Japan, to verify their virtualized radio access networks (vRAN), effective immediately. The lab is one of the initiatives of the New window5G Open RAN **Ecosystem** (OREC) project under which DOCOMO and 13 leading global vendors\* are working to develop truly flexible Open RAN capable of incorporating interoperable equipment of multiple vendors.

Since its establishment last October, the Shared Open Lab has deployed virtualized base stations made with equipment from multiple OREC partners. The verification environment is now open to remote access by global operators, eliminating their need to prepare in-house verification environments.

DOCOMO believes the lab will help operators to greatly reduce overall costs, including constructing in-house labs and/or traveling to vendors' labs, for the verification of base station functions and performance prior to commercial deployment.

DOCOMO, which has been a leader in the development of Open RAN for many years, became the world's first mobile operator to launch a commercial 5G service via Open RAN in March 2020. The company's 5G Open RAN currently includes more than 10,000 base stations and more than 10 million subscribers. Furthermore, within fiscal year 2022, DOCOMO expects to commercialize highly flexible and scalable vRANs for international mobile operatorsa, including by leveraging the know-how and integrated strengths of its OREC partners.

DOCOMO looks forward to deepening its cooperation with an expanding range of stakeholders, including overseas mobile operators, via the Shared Open Lab. DOCOMO is committed to working with its OREC partners to develop further technologies and know-how for the increased adoption of Open RAN, vRAN and other open networks capable of responding flexibly and quickly to diversifying needs in the worldwide mobile communication market.

\*The 13 members are AMD, Inc., Dell Technologies Japan Inc., Fujitsu Limited, Hewlett Packard Japan, G.K., Intel K.K., Mavenir, NEC Corporation, NTT DATA Corporation, NVIDIA, Qualcomm Technologies, Inc., Red Hat, VMware K.K. and Wind River

# About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations. <a href="https://www.nttdocomo.co.jp/english/">https://www.nttdocomo.co.jp/english/</a>.

Source: NTT DOCOMO

Document JAPCOR0020220228ei2s000dx



## Docomo unveils Open RAN initiatives at partners' stands at MWC

420 words
28 February 2022
Telecompaper World
TELWOR
English
Copyright 2022 Telecompaper. All Rights Reserved.

Japanese operator NTT Docomo has announced that, during MWC Barcelona 2022, the company will introduce its Open RAN initiatives via presentations and demonstrations at partners' on-site stands as well as via online exhibitions from 28 February to 3 March. Several senior spokespersons from Docomo will give live presentations regarding Open RAN. In addition, Docomo will jointly conduct O-RAN demonstrations with partners in the 5G Open RAN Ecosystem (OREC).

Seizo Onoe, chief standardization strategy officer of NTT and fellow of NTT Docomo, will make a presentation during OpenRAN: A Vision of 5G & the Future of 6G at MWC on 27 February. Topics will include interoperability standards for Open RAN and services that support 5G deployment and future 6G services.

Docomo's Naoki Tani, executive vice-president and CTO, and Sadayuki Abeta vice-president and general manager of the Radio Access Network Development Department, will make a presentation on The Reality of Open RAN, which will be organized by Fujitsu on 2 March. Together with other industry leaders, they will discuss learnings, challenges and the true value of Open RAN deployment as well as related security, integration etc.

Docomo will additionally join OREC members Fujitsu, Wind River and Nvidia at the Fujitsu stand to demonstrate an Open vRAN with an O-RAN open fronthaul interface between O-RU and O-DU. Going forward, the partners plan to launch an Open vRAN network offering multi-vendor connectivity.

Docomo will also join OREC members NEC, Dell, Red Hat and Xilinx at the NEC stand to demonstrate a vRAN incorporating software compatible with O-RAN Reference Architecture. The vRAN will be implemented on the latest virtualization infrastructure and also a general-purpose server incorporating the latest microprocessors and hardware acceleration.

In addition to these on-site activities, Docomo will conduct a virtual exhibition during MWC Barcelona 2022, showcasing the company's evolving 5G and 6G technologies, global O-RAN business and services. Exhibits and presentations will be viewable on the Docomo website.

NTT Docomo launched a commercial 5G service with an Open RAN in March 2020. Also, the company partnered with globally recognized vendors to establish the 5G Open RAN Ecosystem (OREC) in February 2021. Currently, Docomo and its 13 partners are conducting verifications to develop flexible Open RAN capable of interconnecting equipment of multiple vendors. The 13 OREC members are Dell Technologies Japan, Fujitsu, Hewlett Packard Japan, Intel, Mavenir, NEC, NTT Data, Nvidia, Qualcomm Technologies, Red Hat, VMware, Wind River and Xilinx.

Document TELWOR0020220228ei2s0002v



## Docomo unveils Open RAN initiatives at partners' stands at MWC

420 words
28 February 2022
Telecompaper Asia
TELASI
English
Copyright 2022 Telecompaper. All Rights Reserved.

Japanese operator NTT Docomo has announced that, during MWC Barcelona 2022, the company will introduce its Open RAN initiatives via presentations and demonstrations at partners' on-site stands as well as via online exhibitions from 28 February to 3 March. Several senior spokespersons from Docomo will give live presentations regarding Open RAN. In addition, Docomo will jointly conduct O-RAN demonstrations with partners in the 5G Open RAN Ecosystem (OREC).

Seizo Onoe, chief standardization strategy officer of NTT and fellow of NTT Docomo, will make a presentation during OpenRAN: A Vision of 5G & the Future of 6G at MWC on 27 February. Topics will include interoperability standards for Open RAN and services that support 5G deployment and future 6G services.

Docomo's Naoki Tani, executive vice-president and CTO, and Sadayuki Abeta vice-president and general manager of the Radio Access Network Development Department, will make a presentation on The Reality of Open RAN, which will be organized by Fujitsu on 2 March. Together with other industry leaders, they will discuss learnings, challenges and the true value of Open RAN deployment as well as related security, integration etc.

Docomo will additionally join OREC members Fujitsu, Wind River and Nvidia at the Fujitsu stand to demonstrate an Open vRAN with an O-RAN open fronthaul interface between O-RU and O-DU. Going forward, the partners plan to launch an Open vRAN network offering multi-vendor connectivity.

Docomo will also join OREC members NEC, Dell, Red Hat and Xilinx at the NEC stand to demonstrate a vRAN incorporating software compatible with O-RAN Reference Architecture. The vRAN will be implemented on the latest virtualization infrastructure and also a general-purpose server incorporating the latest microprocessors and hardware acceleration.

In addition to these on-site activities, Docomo will conduct a virtual exhibition during MWC Barcelona 2022, showcasing the company's evolving 5G and 6G technologies, global O-RAN business and services. Exhibits and presentations will be viewable on the Docomo website.

NTT Docomo launched a commercial 5G service with an Open RAN in March 2020. Also, the company partnered with globally recognized vendors to establish the 5G Open RAN Ecosystem (OREC) in February 2021. Currently, Docomo and its 13 partners are conducting verifications to develop flexible Open RAN capable of interconnecting equipment of multiple vendors. The 13 OREC members are Dell Technologies Japan, Fujitsu, Hewlett Packard Japan, Intel, Mavenir, NEC, NTT Data, Nvidia, Qualcomm Technologies, Red Hat, VMware, Wind River and Xilinx.

Document TELASI0020220228ei2s000b6



## Docomo opens vRAN verification lab to global mobile operators

225 words
28 February 2022
Telecompaper Asia
TELASI
English
Copyright 2022 Telecompaper. All Rights Reserved.

Japanese operator NTT Docomo has started allowing overseas mobile operators to access its Shared Open Lab environment, located in Docomo's R&D Center in Yokosuka, Japan, to verify their virtualized radio access networks (vRAN). The lab is one of the initiatives of the 5G Open RAN **Ecosystem** (OREC) project under which Docomo and 13 global vendors are working to develop Open RAN capable of incorporating interoperable equipment of multiple vendors.

These 13 members are AMD, Dell Technologies Japan, Fujitsu, Hewlett Packard Japan, Intel, Mavenir, NEC, NTT Data, Nvidia, Qualcomm Technologies, Red Hat, VMware and Wind River.

Docomo also reports that, since its establishment in October 2021, the Shared Open Lab has deployed virtualized base stations made with equipment from multiple OREC partners. The verification environment is now open to remote access by global operators, eliminating their need to prepare in-house verification environments.

Docomo believes the lab will help operators reduce overall costs, including constructing in-house labs and/or traveling to vendors' labs, for the verification of base station functions and performance prior to commercial deployment.

Docomo's 5G Open RAN currently includes around 10,000 base stations and 10 million subscribers. Within fiscal year 2022, Docomo expects to commercialize scalable vRANs for international mobile operators, also with the help of its OREC partners.

Document TELASI0020220228ei2s0008e



# Japan's Space RAN Venture - Combining Land, Air, and Space

558 words
16 February 2022
Voice and Data
CMVOID
English
Copyright © 2022. CyberMedia.

NTT, along with its mobile unit NTT DOCOMO, has joined forces with Airbus and <u>satcom</u> operator SKY Perfect JSAT, to work on Space RAN.

Under the same, the consortium will look to explore the potential of high-altitude **platform** stations (HAPS), as a part of a "future space-based wireless **connectivity ecosystem**". The **ecosystem** will converge the **connectivity** capacities of geostationary satellites, LEO satellites, HAPS vehicles - drones, balloons - and terrestrial networks.

Space RAN - The Latest in Radio Technology

In this current setup, NTT and DOCOMO will provide the terrestrial networks, satellites will come from SKY Perfect JSAT, and the HAPS element will come from Airbus. Incidentally, Airbus has developed a solar-powered UAS called Zephyr. Zephyr will fly in the stratosphere, 20 kilometers above the earth's surface, and form the HAPS element of the Space RAN.

For now, the companies are exploring their options. The parties involved will "test HAPS connectivity, identify practical applications, develop required technologies, and ultimately launch space-based wireless broadband services". This convergence, hopefully, will deliver connectivity across the planet, and even above it. Given it's called Space RAN, one would hope so, too.

The partners have said that they will test base station backhaul, how different spectrum bands perform, and the technology required for linking HAPS with satellites and ground base stations. Along with this, the partners will build a cooperative system that will tie NTN technology, satellites, and HAPS together.

Incidentally, the tests seem to be going smoothly; NTT DOCOMO and Airbus have successfully tested the Zephyr platform. The tests showed that HAPS-based services operate well enough on the 2 GHz spectrum.

Is HAPS Still Good Enough?

While the Space RAN alliance over here has discovered some use for HAPS vehicles, it has a rather blemished past. Earlier, Facebook and Google have tried and failed at using HAPS devices for connectivity purposes.

Facebook tried with its development project called Aquila. However, that one died a quiet death in 2018.

Google, though, struggled the longest with it. Google's parent company, Alphabet, sank a lot of money, time, and manpower in Loon, a fleet of helium balloons floating in the stratosphere. However, even Google stopped struggling with it in January 2021; by then, SoftBank had also sunk \$125 million in the project.

Their experience, though, might not go to waste after all.

5G, 6G, and Beyond, with Space RAN

Interestingly, SoftBank also took about 200 HAPS patents from Loon in September last year.

The Japanese company had noted, "with these patents, SoftBank and its subsidiary, HAPSMobile Inc., will collectively own approximately 500 HAPS-related patents, including patents pending, further establishing their position as intellectual property (IP) leaders in the HAPS industry. The patents are related to network technologies, services, operations and aircraft for HAPS".

The Space RAN alliance have their eyes on the future, that much is clear. NTT has called these developments an important part of 5G, and a part of 6G as well. With SoftBank's HAPS stake, it looks like the alliance might do well with it on board as well. Also, another Japanese telco, KDDI, is a member of the HAPS alliance, along with Airbus, NTT DOCOMO, and SoftBank. Therefore, Japan's Space RAN venture seems like it might actually work.

Page 87 of 148 © 2022 Factiva, Inc. All rights reserved.

_				
വ	liok	horo	to view	imaga
u	IIUN.	HEIE	LO VIEW	IIIIaue

Document CMVOID0020220217ei2g00002



## <Disclosure Summary> Cyberlin's net profit for the fiscal year ending December 2022: Up 3.9%

321 words 14 February 2022 Nikkei Financial Summary NIKFIN English Copyright 2022. Nikkei Inc.

On February 14, Cyberlinks announced its consolidated financial results for the fiscal year ended December 2021. Net profit was 645 million yen (up 0.2% from the previous year). Net profit for the fiscal year ending December 2022 is expected to be 670 million yen (up 3.9% from a year earlier).

Cyberlinks develops an IT **cloud** business that provides **cloud** services for distribution and government agencies, as well as a mobile network business that operates a docomo Shop that handles NTT Docomo smartphones and mobile phones. Steady revenue, which is regarded as an important management indicator, increased by 257.019 million yen due to the expansion of service provision to 6.681331 billion yen, showing steady progress. Sales increased, operating profit increased, pretax profit increased, and net income attributable to parent company shareholders increased slightly, achieving record high profit for the second consecutive term.

Sales, operating profit and pretax profit for the fiscal year ended December 2021 were 13.241 billion yen, 945 million yen and 958 million yen (up 3.6%, up 2.3% and up 0.7% from the previous year), respectively.

Sales, operating profit and pretax profit for the fiscal year ending December 2022 are expected to be 13.267 billion yen (up 0.2%, y/y), 1.043 billion yen (up 10.4%, y/y), and 1.046 billion yen (up 9.2%, y/y), respectively.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKFIN0020220214ei2e005sk



# Docomo Ventures invests in boost, a cloud development company that visualizes CO2 emissions

241 words 10 February 2022 Nikkei Business Trends NIKBST English Copyright 2022. Nikkei Inc.

NTT Docomo Ventures (Minato, Tokyo) had invested in boost technologies (Chiyoda-ku, Tokyo), which develops and operates "ENERGY X GREEN", a **cloud** that visualizes CO2 emissions, through its fund (announced on February 2, 2022). "ENERGY X GREEN" is a company that visualizes CO2 emissions in corporate activities, formulates and manages a carbon-free roadmap, purchases non-fossil certificates and carbon offsets through the procurement of CO2-free power sources, and creates reports on international initiatives. In addition, it will comprehensively support the efforts of companies aiming for carbon neutrality, from planning to execution and management. By entering data such as the amount of electricity used for each office and store, companies will be able to automatically calculate CO2 emissions and formulate decarbonization plans for each group of offices, stores, and subsidiaries.

NTT Group is also working to provide new services that contribute to carbon neutrality, and will accelerate the efforts in collaboration with boost.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020220214ei2a0008e



## NTT Docomo Ventures to invest in JumpCloud

251 words 7 February 2022 Nikkei Business Trends NIKBST English Copyright 2022. Nikkei Inc.

NTT Docomo Ventures (Minato, Tokyo) had invested in JumpCloud (announced on October 20, 2021). The **investment** amount is not disclosed. JumpCloud provides SaaS with the security functions required for remote work centered on a **cloud**-based directory **platform** that centrally manages ID authentication and **devices**. It is a **cloud** service that can be used from anywhere with an Internet environment, and various security settings can be realized with simple operations even without specialized IT knowledge. Since it is possible to combine multi-factor authentication functions such as biometric authentication and one-time password, it is possible to set according to the security level required by the company. As of September 2021, JumpCloud's services have been used by more than 3,000 companies in 140 countries around the world. In September 2021, NTT Group announced a policy that employees can choose their own working place based on remote work.

Since the services and directions provided by JumpCloud are highly compatible with the initiatives of NTT Group, the investment this time has been decided.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020220208ei270008y



JTB to conduct a demonstration experiment of mobile experience using 5G, XR, and Al with Toyota Motor, NTT Docomo, etc

208 words 3 February 2022 Nikkei Business Trends NIKBST English Copyright 2022. Nikkei Inc.

JTB (Shinagawa-ku, Tokyo) will collaborate with Toyota Motor, Toyota Boshoku, and NTT Docomo (Chiyoda-ku, Tokyo) from February 10 to February 16, 2022 to utilize 5G, XR, and Al to provide entertainment content and online services in the vehicle interior They will conduct a demonstration experiment of "New mobility experience", which can enjoy the tour. It is the Expo 2005 Aichi Commemorative Park (Nagakute, Aichi Prefecture), which connects the tourist guide of Tomonoura (Fukuyama, Hiroshima Prefecture) and the vehicle interior space concept "SQUAL" of Aichi Prefecture, and provides an online tour in real time. In the demonstration experiment, the ride attraction bus "MOOX on FC Bus" allows multiple people to move while experiencing the same interactive contents.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020220204ei2300011



# NTT Docomo to conduct a demonstration experiment on content distribution using 5G, XR, and Al technology

295 words 3 February 2022 Nikkei Business Trends NIKBST English Copyright 2022. Nikkei Inc.

NTT Docomo (Chiyoda-ku, Tokyo) will conduct a demonstration experiment to enjoy entertainment contents and online tours using 5G, XR, and AI technologies with the aim of implementing a new mobile experience in the car. It will start from February 10, 2022 at the Aichi Expo Memorial Park (Nagakute, Aichi Prefecture) and from February 25, 2022 at the Waterfront Fukutoshin Area (Tokyo, Odaiba). At Aichi Expo '70 Commemorative Park, contents will be distributed in two cabin spaces "MOOX on FC Bus" and "SQUAL." "MOOX" will provide contents linked with images, 3D audio systems, lighting, and acoustic vibration sheets in accordance with vehicle location information, occupant gestures, and car window scenery. "SQUAL" will be connected to Tomonoura in Fukuyama, Hiroshima Prefecture, and an online tour will be conducted using a three-panel display installed in the car.

In addition, in the waterfront subcenter area, the contents using XR technology will be superimposed on the background visible from the transparent display installed in the self-driving vehicle "e-Palette", and 3D sound and seat vibration will be combined and provided. The demonstration experiment will be conducted in collaboration with partner companies. Based on the evaluations of the experienced users, the effectiveness and feasibility of the content will be verified.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020220204ei2300012



# Japanese mobile carrier NTT Docomo's data network disrupted, cause unknown

豊取律譁-閨樒、セ 68 words 1 February 2022 01:53 The Mainichi AIWMDM English

© 2022 THE MAINICHI NEWSPAPERS. All rights reserved.

TOKYO -- Customers of Japanese mobile phone giant NTT Docomo Inc. are having trouble accessing the internet on their **devices**, the company announced on Feb. 1.

The disruption began at 8 a.m., and is ongoing. The firm stated that it is working on finding the cause and restoring full service.

(Mainichi)

Document AIWMDM0020220201ei2100001

## NTT DOCOMO gets first-mover advantage on IPv6

Melanie Mingas 305 words 31 January 2022 Capacity Magazine CAPMAG English © 2022 Euromoney Trading Limited

DOCOMO is currently providing IPv4/IPv6 dual-stack support by assigning both IPv4 and IPv6 addresses to its **devices**. Its shift to IPv6 single-stack saw DOCOMO use address conversion methods to ensure interoperability with IPv4.

From 1 February - Tuesday - single-stack functionality will be applied to DOCOMO models operating on its mobile network in Japan. The company's existing communication network will not be impacted, and it said users will not be inconvenienced with settings updates.

Support will be extended to 31 IPv6 models initially, and in principle, for all DOCOMO devices released in FY22, beginning this April.

DOCOMO said a "key factor" in its decision is that IPv4 addresses are now in short supply worldwide due to the take up in IoT and 5G.

DOCOMO might be the first in Japan, but over in China, the Central Cyberspace Affairs Commission and Cyberspace Administration set out its plan for massive IPv6 adoption in July. It called for China to have 700 million active IPv6 users by 2023 and 200 million IoT devices using the protocol as, by the end of that year, new networks won't be able to use IPv4.

By the end of 2025, China wants its IPv6 network "scale, user scale, and traffic scale" to "rank first in the world".

As these announcements were being made, over in Japan DOCOMO was starting its trials, which ran until December.

Its test environment was designed to allow global developers to confirm the interoperability of their applications and content on DOCOMO devices designated for conversion to single-stack support.

Going forward, DOCOMO said it is committed to playing a leading role in the expanding adoption of IPv6 addresses, as well as the further development of 5G and IoT, "by meeting increasing demands for innovative communications equipment".

Document CAPMAG0020220221ei1v00003



## Mitsubishi Estate to enter the '5G infrastructure sharing business'

267 words 31 January 2022 Nikkei Business Trends NIKBST English Copyright 2022. Nikkei Inc.

Mitsubishi Estate will enter into "5G Infrastructure Sharing Business", which will build 5G infrastructure and provide it to multiple mobile operators (announced on January 26, 2022). By utilizing the know-how for area management and building operation management, the company will invest 30 billion yen in 5 years and promote infrastructure construction of more than 1000 sites while collaborating with local governments and real estate owners nationwide. It will start the construction of the first site at the Marunouchi Building (Chiyoda-ku, Tokyo), and provide infrastructure to four mobile carriers NTT Docomo (Chiyoda-ku, Tokyo), KDDI, SoftBank, and Rakuten Mobile (Setagaya-ku, Tokyo) from around April 2022. To start. In the future, the company plans to build infrastructure in multiple buildings in the Marunouchi area of Tokyo and turn the entire area into 5G.

In major cities nationwide, the company is planning to develop infrastructure in each area through consortiums with local companies, and is proceeding with discussions with telecommunications carriers. It will also promote the acquisition and construction of steel towers that can cover a wide area for development in the suburbs and depopulated areas.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020220201ei1v0000j



# Docomo to roll out IPv6 single-stack support from 1 February

151 words
31 January 2022
Telecompaper Asia
TELASI
English
Copyright 2022 Telecompaper. All Rights Reserved.

Japanese operator NTT Docomo has announced plans to start rolling out IPv6 single-stack support for selected Docomo devices from 1 February. Docomo is currently providing IPv4/IPv6 dual-stack support by assigning both IPv4 and IPv6 addresses to its devices. The shift to IPv6 single-stack support was realized by using address conversion methods, which ensures interoperability with IPv4.

Between July and December 2021, Docomo operated a test environment to allow global developers to confirm the interoperability of their applications and **content** on Docomo **devices** designated for conversion to single-stack support.

Docomo says single-stack support will be provided for 31 IPv6 models initially and in principle for all Docomo devices/handsets to be released in fiscal 2022 beginning this April. Single-stack functionality will be applied to Docomo models operating on the Docomo mobile network in Japan.

Document TELASI0020220131ei1v0008f



## DOCOMO to Roll Out IPv6 Single-stack Support Beginning Feb. 1

386 words 31 January 2022 15:06 JCN Newswire JAPCOR English

Copyright 2022 JCN Newswire, a division of Japan Corporate News Network K.K. All rights reserved.

TOKYO, Jan 31, 2022 - (JCN Newswire) - NTT DOCOMO, INC. announced today that it will begin rolling out IPv6 single-stack support for selected DOCOMO **devices** from February 1, thereby taking the lead in deploying IPv6 ahead of other telecom carriers in Japan, which are expected to continue operating with IPv4 addresses for the time being.

Due to the growing number of IoT devices as well as the widening adoption of 5G, IPv4 addresses are now in short supply worldwide, a key factor behind DOCOMO's decision to begin deploying virtually limitless IPv6 addresses.

DOCOMO is currently providing IPv4/IPv6 dual-stack support by assigning both IPv4 and IPv6 addresses to its devices. The shift to IPv6 single-stack support was realized by using address conversion methods, which ensures interoperability with IPv4.

Between July and December 2021, DOCOMO operated a test environment to allow global developers to confirm the interoperability of their applications and content on DOCOMO devices designated for conversion to single-stack support.

Single-stack support will be provided for 31 IPv6 models initially and in principle for all DOCOMO devices/handsets to be released in fiscal 2022 beginning this April. Single-stack functionality will be applied to DOCOMO models operating on the DOCOMO mobile network in Japan. The company's existing communication network will not be impacted nor will users be required to change settings or submit applications.

Going forward, DOCOMO is committed to playing a leading role in the expanding adoption of IPv6 addresses in communications infrastructure as well as contributing to the further development of 5G and IoT by meeting increasing demands for innovative communications equipment.

# About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations. https://www.nttdocomo.co.jp/english/.

Source: NTT DOCOMO

Document JAPCOR0020220131ei1v0002t

## SoftBank to raise over \$250m to fund high-altitude mobile

Alan Burkitt-Gray
405 words
21 January 2022
Capacity Magazine
CAPMAG
English
© 2022 Euromoney Trading Limited

The company will use the money for business research and development into high-altitude platform stations (HAPS) and other HAPS-related costs.

Today's announcement comes just days after four other companies, three of them Japanese, said they were studying the feasibility of collaborating on HAPS-based **connectivity** services as part of a future space-based wireless **connectivity ecosystem**.

The four, which signed a memorandum of understanding (MoU) earlier this week, are sister companies NTT and NTT DoCoMo, plus Japanese satellite company Sky Perfect JSat, as well as French aerospace company Airbus.

The fund-raising marks a significant increase in HAPS work by SoftBank, which has been working on the technology for a number of years with experiments in New Mexico. The company also last year acquired more than 200 HAPS patents from a sister company of Google, after parent company Alphabet decided to close its Loon project (pictured).

SoftBank said earlier today that it will raise the \$263 million in two funds, each of 15 billion yen. One is an unsecured sustainability bond with a seven-year term; the other has a 10-year term.

The company said the purpose was "realizing a society where everyone is connected" and said proceeds will be used for SoftBank's "business that aims to provide wide-area and stable telecommunication networks from the stratosphere".

It added that the HAPS bond was recognised as a sustainable development goals (SDG) bond in Japan. "Proceeds from SDG Bonds are used for businesses that solve environmental and social issues," the company said.

The MoU from NTT, DoCoMo, Sky Perfect JSat and Airbus said the four "will attempt to identify the early deployment requirements of a HAPS-based network". The collaboration will investigate the use of the Airbus Zephyr, a solar-powered, stratospheric unmanned aerial system, working with the wireless communication networks of the other three companies.

The four said that "HAPS networks are deemed to be a relatively easy solution for air and sea connectivity and an effective platform for deploying disaster countermeasures and many industrial applications".

But they also suggested this would be a route space-based wireless broadband services, for 5G and eventually 6G.

They said non-terrestrial network (NTN) technologies would use geostationary-orbit (GEO) satellites and low Earth-orbit (LEO) satellites, and introduced the term "space RAN" for a space-based radio access network.

Document CAPMAG0020220207ei1l0000y



# NTT Docomo and Oshima National College of Technology to collaborate on multipurpose use of training ship 'Oshima Maru'

203 words
21 January 2022
Nikkei Business Trends
NIKBST
English
Copyright 2022. Nikkei Inc.

On July 19, 2021, the Chinese branch (Hiroshima) of NTT Docomo (Chiyoda-ku, Tokyo) and Oshima National College of Technology (Suoooshima-cho, Yamaguchi Prefecture) will conclude a **partnership** agreement on the multi-purpose use of the training ship "Oshima Maru." By mutually utilizing the technologies, know-how, and services of both parties, the two companies will promote the multipurpose use of "Oshima Maru" owned by National Institute of Technology, Oshima College and provide new value. As a specific initiative, in the event of an emergency such as a natural disaster, it is assumed to transport materials and open temporary base stations on ships to secure communication means in areas isolated by the disaster.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020220124ei1I0000w



Olympus, NTT Docomo and others to conduct a demonstration experiment on high-definition video transmission using secure cloud

246 words 20 January 2022 Nikkei Business Trends NIKBST English Copyright 2022. Nikkei Inc.

Kobe University, Kagawa University, Kochi Red Cross Hospital, Olympus, and NTT Docomo (Chiyoda-ku, Tokyo) will conduct a demonstration experiment on high-definition video transmission using secure **cloud** on February 23, 2022. The demonstration will continuously consider the demonstration of real-time transmission of gastrointestinal endoscopy images in March 2021. In addition to the previous endoscopic image, This time, in addition to allowing multiple people to simultaneously view the combined video of the doctor's hands performing the procedure via "NTT Docomo Open Innovation **Cloud**", annotation (drawing lines and figures on the image) to the endoscopic video will be performed in real time.

The demonstration is based on medical support using annotations to confirm the disease status in real time from a remote location, advancement of the conference by sharing the disease status among multiple facilities in real time, and medical education through accurate video sharing using annotations The purpose is to enable the sophistication of

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020220121ei1k00034



## NTT Docomo and H2L to develop a platform to realize 'human expansion' in the 6G era

298 words
20 January 2022
Nikkei Business Trends
NIKBST
English
Copyright 2022. Nikkei Inc.

NTT Docomo (Chiyoda-ku, Tokyo) realized the "human expansion" to expand human senses in the 6G era network with the technical cooperation of H2L (Minato, Tokyo), FCNT (Yamato, Kanagawa Prefecture), and Fujitsu It has developed a **platform** for this (announced on January 17, 2022). In 6G, since the communication speed of the network exceeds the reaction speed of nerves, it is thought that the human sense can be expanded by the network. NTT Docomo has developed a **platform** that enables sharing of other people's actions in order to realize "Making the body ubiquitous" and "Skill Sharing" among the five functions of "Human Expansion." When transmitting motion data acquired by a device that grasps motion to humans and robots in real time through a drive device that reproduces motion, it is possible to share natural motions without difficulty between people and robots with different sizes and skeletons It will be possible to reproduce detailed movements based on the movements.

Since the devices can be connected via a network, they can expand the human body in various places. It is also possible to reproduce past human behavior using the accumulated data. NTT Docomo will work to improve the added value of the platform and commercialize it by providing a development kit.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020220121ei1k00006



# Airbus, NTT, NTT Docomo, and SKY Perfect JSAT consider promoting research and development for early commercialization of HAPS

341 words 20 January 2022 Nikkei Business Trends NIKBST English Copyright 2022. Nikkei Inc.

On January 14, 2022, Europe's Airbus, NTT, NTT Docomo, and SKY Perfect JSAT will consider establishing a cooperative system for research and development for the early commercialization of high-altitude platforms flying in the stratosphere and implementation of demonstration experiments Has signed a memorandum of understanding to promote Through the collaboration between Airbus' HAPS "Zephyr" and NTT, NTT Docomo, and SKY Perfect JSAT's communication network, The two companies will promote collaboration between the four companies to discover HAPS connectivity and utility in communication systems using HAPS, and develop technologies and use cases. It also aims to promote the access service "Space RAN" business using non-terrestrial network (NTN) technologies such as geosynchronous satellites, low-orbit satellites, and HAPS.

In the future, The four companies will conduct research and development on technology focusing on communication from the stratosphere by HAPS, To promote standardization and institutionalization for HAPS aircraft development and HAPS operation. It will also examine the business model for the commercialization of Network Service by HAPS. As the main targets of research and development, Study on the possibility of applying HAPS to connections with terrestrial mobile stations and base station backhaul, evaluation of communication performance in various frequency bands in communication systems using HAPS, communication between HAPS and satellites, and ground base stations Technical examination for collaboration. The company will promote space RAN business. In addition, the two companies plan to build a cooperation system with a view to demonstration experiments on network construction using NTN technologies such as satellite and HAPS.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020220121ei1k00005

## Japan and Airbus to build HAPS for broadband

271 words
20 January 2022
Inside Satellite TV
INSATV
English
© 2022, M2 Communications. All rights reserved.

A couple of Japanese giant businesses are linking with Airbus to collaborate on future 'High Altitude Platform Stations' (HAPS) as part of a future space-based wireless broadband and connectivity system.

Nippon Telegraph (NTT) and its NTT Docomo division as well as satellite operator Sky Perfect JSAT Corp., have signed a Memorandum of Understanding with Airbus for further development of the Airbus Zephyr concept.

The Airbus Zephyr system is a fixed wing, solar-powered, stratospheric unmanned aerial system (UAS), and the wireless communication networks of NTT, DOCOMO and SKY Perfect JSAT in order to test HAPS connectivity, identify practical applications, develop required technologies and ultimately launch space-based wireless broadband services.

Their statement says: "In the global push to further advance 5G and eventually introduce 6G, initiatives are under way to expand coverage worldwide, including in the oceans and in the air, as well as remote and hard to reach areas. Such initiatives will include HAPS, which fly in the stratosphere about 20 km. above the Earth, and non-terrestrial network (NTN) technologies using GEO and LEO satellites."

With the signing of the MOU, the four companies will discuss and identify possible future developments necessary to unlock future HAPS-based connectivity services, lobby for standardization and institutionalization of HAPS operations, and explore business models for commercializing HAPS services.

As separately announced on November 15, 2021, DOCOMO and Airbus successfully conducted a propagation test between the ground and a "Zephyr S" HAPS aircraft in the stratosphere, demonstrating the possibility of providing stable communication with such a configuration.

((Distributed via M2 Communications - http://www.m2.com))

Document INSATV0020220120ei1k00003



# Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform Stations (HAPS)

986 words
19 January 2022
ENP Newswire
ENPNEW
English
© 2022, Electronic News Publishing. All Rights Reserved.

Release date - 18012022

Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform Stations (HAPS).

Targeting future global wireless-connectivity services combining satellites and HAPS

## Airbus Flag

Airbus, Nippon Telegraph and Telephone Corporation (NTT), NTT DOCOMO, INC. (DOCOMO) and SKY Perfect JSAT Corporation (SKY Perfect JSAT) jointly announced that they have begun studying the feasibility of collaborating on future high-altitude platform stations (HAPS)-based connectivity services as part of a future space-based wireless connectivity ecosystem.

Launched with a memorandum of understanding (MOU), the study aims to identify the early deployment requirements of a HAPS-based network. The collaboration will investigate the use of the Airbus Zephyr, the leading fixed wing, solar-powered, stratospheric unmanned aerial system (UAS), and the wireless communication networks of NTT, DOCOMO and SKY Perfect JSAT in order to test HAPS connectivity, identify practical applications, develop required technologies and ultimately launch space-based wireless broadband services.

In the global push to further advance 5G and eventually introduce 6G, initiatives are under way to expand coverage worldwide, including in the oceans and in the air, as well as remote and hard to reach areas. Such initiatives will include HAPS, which fly in the stratosphere about 20 km above the earth, and non-terrestrial network (NTN) technologies using geostationary-orbit (GEO) satellites and low Earth-orbit (LEO) satellites. HAPS networks are deemed to be a relatively easy solution for air and sea connectivity and an effective platform for deploying disaster countermeasures plus have many industrial applications. The provision of space-based radio access network services using NTN technologies, collectively called Space RAN (radio access network), is expected to support worldwide mobile communications with ultra-wide coverage and improved disaster resistance as well enhanced 5G and 6G. In addition, HAPS platforms can also interconnect to the nearest terrestrial network gateway and extend the reach of existing mobile services directly to end-user devices, providing service options including rural, emergency and maritime connectivity.

With the signing of the MOU, the four companies will discuss and identify possible future developments necessary to unlock future HAPS-based connectivity services, lobby for standardization and institutionalization of HAPS operations, and explore business models for commercializing HAPS services.

Specific themes will include the applicability of HAPS for mobile connectivity on the ground and base station backhaul,1 the performance of various frequency bands in HAPS systems, the technological considerations for linking HAPS with satellites and ground base stations, and the establishment of a cooperative system to test a network combining NTN technology, satellites and HAPS.

As separately announced on November 15, 2021, DOCOMO and Airbus successfully conducted a propagation test between the ground and a 'Zephyr S' HAPS aircraft in the stratosphere, demonstrating the possibility of providing stable communication with such a configuration.

1 Base station backhaul refers to a fixed line that supports high-speed, high-capacity information transmission between a large number of wireless base stations in a mobile communications network and the core network.

## **About Airbus**

Airbus pioneers sustainable aerospace for a safe and united world. The Company constantly innovates to provide efficient and technologically-advanced solutions in aerospace, defence, and connected services. In

commercial aircraft, Airbus offers modern and fuel-efficient airliners and associated services. Airbus is also a European leader in defence and security and one of the world's leading space businesses. In helicopters, Airbus provides the most efficient civil and military rotorcraft solutions and services worldwide.

### About NTT

NTT believes in resolving social issues through our business operations by applying technology for good. We help clients accelerate growth and innovate for current and new business models. Our services include digital business consulting, technology and managed services for cybersecurity, applications, workplace, cloud, data center and networks all supported by our deep industry expertise and innovation. As a top 5 global technology and business solutions provider, our diverse teams operate in 80+ countries and regions and deliver services to over 190 of them. We serve over 80% of Fortune Global 100 companies and thousands of other clients and communities around the world. For more information on NTT, visit www.global.ntt/

## About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 82 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ('+d' partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations.

https://www.nttdocomo.co.jp/english/

About SKY Perfect JSAT

SKY Perfect JSAT Corporation is a leader in the converging fields of broadcasting and communications. It is Asia's largest satellite operator with a fleet of 16 satellites, and Japan's only provider of both multi-channel pay-TV broadcasting and satellite communications services. SKY Perfect JSAT delivers wide range of entertainment through 'SKY PerfectV!', the most extensive broadcasting platform in Japan with a total of 3 million subscribers. In addition, SKY Perfect JSAT's satellite communications services, which cover Asia, Russia, Middle East, Oceania, North America and Indian Ocean to Pacific Ocean regions, play a vital role in supporting communications infrastructures for mobile backhaul, government, aviation, maritime, oil & gas and disaster recovery. For more information, visit our corporate website (https://www.skyperfectjsat.space/en/) and Space Business website (https://www.skyperfectjsat.space/isat/en/).

@AirbusSpace @Docomo @NTTPR #HAPS #Zephyr #connectivity

Your contact

Pablo Correa

External Communications - Airbus Defence

Phone: +34 6 89 66 96 02

pablo.correa@airbus.com

[Editorial queries for this story should be sent to newswire@enpublishing.co.uk]

Document ENPNEW0020220119ei1j0000e



Cyber + Space
Airbus and partners to study HAPS-based connectivity services

370 words 18 January 2022 Australian Defence Magazine NBAXDM English Copyright 2022. Yaffa Media

Airbus, Nippon Telegraph and Telephone Corporation (NTT), DOCOMO, and SKY Perfect JSAT have jointly announced that they have begun studying the feasibility of collaborating on future high-altitude platform stations (HAPS)-based connectivity services as part of a future space-based wireless connectivity ecosystem.

Launched with a memorandum of understanding (MOU), the study aims to identify the early deployment requirements of a HAPS-based network.

"The collaboration will investigate the use of the Airbus Zephyr, the leading fixed wing, solar-powered, stratospheric unmanned aerial system (UAS), and the wireless communication networks of NTT, DOCOMO and SKY Perfect JSAT in order to test HAPS connectivity, identify practical applications, develop required technologies and ultimately launch space-based wireless broadband services," Airbus said in a statement.

In the global push to further advance 5G and eventually introduce 6G, initiatives are under way to expand coverage worldwide, including in the oceans and in the air, as well as remote and hard to reach areas. Such initiatives will include HAPS, which fly in the stratosphere about 20 kilometres above the earth, and non-terrestrial network (NTN) technologies using geostationary-orbit (GEO) satellites and low Earth-orbit (LEO) satellites. According to Airbus, HAPS networks are deemed to be a relatively easy solution for air and sea connectivity and an effective platform for deploying disaster countermeasures plus have many industrial applications.

With the signing of the MOU, the four companies will discuss and identify possible future developments necessary to unlock future HAPS-based connectivity services, lobby for standardisation and institutionalisation of HAPS operations, and explore business models for commercialising HAPS services.

Specific themes will include the applicability of HAPS for mobile connectivity on the ground and base station backhaul, the performance of various frequency bands in HAPS systems, the technological considerations for linking HAPS with satellites and ground base stations, and the establishment of a cooperative system to test a network combining NTN technology, satellites and HAPS.

As separately announced on November 15, 2021, DOCOMO and Airbus successfully conducted a propagation test between the ground and a "Zephyr S" HAPS aircraft in the stratosphere, demonstrating the possibility of providing stable communication with such a configuration.

Document NBAXDM0020220118ei1i0000j



Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform Stations (HAPS); Targeting future global wireless-connectivity services combining satellites and HAPS

1,009 words 18 January 2022 ENP Newswire ENPNEW English © 2022, Electronic News Publishing. All Rights Reserved.

Release date - 17012022

TOKYO, JAPAN - Airbus, Nippon Telegraph and Telephone Corporation (NTT), NTT DOCOMO, INC. (DOCOMO) and SKY Perfect JSAT Corporation (SKY Perfect JSAT) jointly announced that they have begun studying the feasibility of collaborating on future high-altitude platform stations (HAPS)-based connectivity services as part of a future space-based wireless connectivity ecosystem.

Launched with a memorandum of understanding (MOU), the study aims to identify the early deployment requirements of a HAPS-based network. The collaboration will investigate the use of the Airbus Zephyr, the leading fixed wing, solar-powered, stratospheric unmanned aerial system (UAS), and the wireless communication networks of NTT, DOCOMO and SKY Perfect JSAT in order to test HAPS connectivity, identify practical applications, develop required technologies and ultimately launch space-based wireless broadband services.

In the global push to further advance 5G and eventually introduce 6G, initiatives are under way to expand coverage worldwide, including in the oceans and in the air, as well as remote and hard to reach areas. Such initiatives will include HAPS, which fly in the stratosphere about 20 km above the earth, and non-terrestrial network (NTN) technologies using geostationary-orbit (GEO) satellites and low Earth-orbit (LEO) satellites. HAPS networks are deemed to be a relatively easy solution for air and sea connectivity and an effective platform for deploying disaster countermeasures plus have many industrial applications. The provision of space-based radio access network services using NTN technologies, collectively called Space RAN (radio access network), is expected to support worldwide mobile communications with ultra-wide coverage and improved disaster resistance as well enhanced 5G and 6G. In addition, HAPS platforms can also interconnect to the nearest terrestrial network gateway and extend the reach of existing mobile services directly to end-user devices, providing service options including rural, emergency and maritime connectivity.

With the signing of the MOU, the four companies will discuss and identify possible future developments necessary to unlock future HAPS-based connectivity services, lobby for standardization and institutionalization of HAPS operations, and explore business models for commercializing HAPS services.

Specific themes will include the applicability of HAPS for mobile connectivity on the ground and base station backhaul,1 the performance of various frequency bands in HAPS systems, the technological considerations for linking HAPS with satellites and ground base stations, and the establishment of a cooperative system to test a network combining NTN technology, satellites and HAPS.

As separately announced on November 15, 2021, DOCOMO and Airbus successfully conducted a propagation test between the ground and a 'Zephyr S' HAPS aircraft in the stratosphere, demonstrating the possibility of providing stable communication with such a configuration.

1 Base station backhaul refers to a fixed line that supports high-speed, high-capacity information transmission between a large number of wireless base stations in a mobile communications network and the core network.

## **About Airbus**

Airbus pioneers sustainable aerospace for a safe and united world. The Company constantly innovates to provide efficient and technologically-advanced solutions in aerospace, defence, and connected services. In commercial aircraft, Airbus offers modern and fuel-efficient airliners and associated services. Airbus is also a European leader in defence and security and one of the world's leading space businesses. In helicopters, Airbus provides the most efficient civil and military rotorcraft solutions and services worldwide.

## **About NTT**

NTT believes in resolving social issues through our business operations by applying technology for good. We help clients accelerate growth and innovate for current and new business models. Our services include digital business consulting, technology and managed services for cybersecurity, applications, workplace, cloud, data center and networks all supported by our deep industry expertise and innovation. As a top 5 global technology and business solutions provider, our diverse teams operate in 80+ countries and regions and deliver services to over 190 of them. We serve over 80% of Fortune Global 100 companies and thousands of other clients and communities around the world. For more information on NTT, visit www.global.ntt/

#### About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 82 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ('+d' partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations.

https://www.nttdocomo.co.jp/english/

About SKY Perfect JSAT

SKY Perfect JSAT Corporation is a leader in the converging fields of broadcasting and communications. It is Asia's largest satellite operator with a fleet of 16 satellites, and Japan's only provider of both multi-channel pay-TV broadcasting and satellite communications services. SKY Perfect JSAT delivers wide range of entertainment through 'SKY PerfecTV!', the most extensive broadcasting platform in Japan with a total of 3 million subscribers. In addition, SKY Perfect JSAT's satellite communications services, which cover Asia, Russia, Middle East, Oceania, North America and Indian Ocean to Pacific Ocean regions, play a vital role in supporting communications infrastructures for mobile backhaul, government, aviation, maritime, oil & gas and disaster recovery. For more information, visit our corporate website (https://www.skyperfectjsat.space/en/) and Space Business website (https://www.skyperfectjsat.space/jsat/en/).

@AirbusSpace @Docomo @NTTPR #HAPS #Zephyr #connectivity

Your contact

Pablo Correa

External Communications - Airbus Defence

Phone: +34 6 89 66 96 02

pablo.correa@airbus.com

NTT DOCOMO

Mr. Takuya Ori or Mr. Akira Takayama

Phone: +81 (0) 3 5156 1366

NTT PR Office

PR Office

SKY Perfect JSAT

Corporate Communications and Investor Relations Division

Phone: +81-3-5571-7600

pr@sptvjsat.com

[Editorial gueries for this story should be sent to newswire@enpublishing.co.uk]

Document ENPNEW0020220118ei1i000at



Release date - 17012022

Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform Stations (HAPS); Targeting future global wireless-connectivity services combining satellites and HAPS

1,009 words
18 January 2022
ENP Newswire
ENPNEW
English
© 2022, Electronic News Publishing. All Rights Reserved.

TOKYO, JAPAN- Airbus, Nippon Telegraph and Telephone Corporation (NTT), NTT DOCOMO, INC. (DOCOMO) and SKY Perfect JSAT Corporation (SKY Perfect JSAT) jointly announced that they have begun studying the feasibility of collaborating on future high-altitude **platform** stations (HAPS)-based **connectivity** services as part of a future space-based wireless **connectivity ecosystem**.

Launched with a memorandum of understanding (MOU), the study aims to identify the early deployment requirements of a HAPS-based network. The collaboration will investigate the use of the Airbus Zephyr, the leading fixed wing, solar-powered, stratospheric unmanned aerial system (UAS), and the wireless communication networks of NTT, DOCOMO and SKY Perfect JSAT in order to test HAPS connectivity, identify practical applications, develop required technologies and ultimately launch space-based wireless broadband services.

In the global push to further advance 5G and eventually introduce 6G, initiatives are under way to expand coverage worldwide, including in the oceans and in the air, as well as remote and hard to reach areas. Such initiatives will include HAPS, which fly in the stratosphere about 20 km above the earth, and non-terrestrial network (NTN) technologies using geostationary-orbit (GEO) satellites and low Earth-orbit (LEO) satellites. HAPS networks are deemed to be a relatively easy solution for air and sea connectivity and an effective platform for deploying disaster countermeasures plus have many industrial applications. The provision of space-based radio access network services using NTN technologies, collectively called Space RAN (radio access network), is expected to support worldwide mobile communications with ultra-wide coverage and improved disaster resistance as well enhanced 5G and 6G. In addition, HAPS platforms can also interconnect to the nearest terrestrial network gateway and extend the reach of existing mobile services directly to end-user devices, providing service options including rural, emergency and maritime connectivity.

With the signing of the MOU, the four companies will discuss and identify possible future developments necessary to unlock future HAPS-based connectivity services, lobby for standardization and institutionalization of HAPS operations, and explore business models for commercializing HAPS services.

Specific themes will include the applicability of HAPS for mobile connectivity on the ground and base station backhaul,1 the performance of various frequency bands in HAPS systems, the technological considerations for linking HAPS with satellites and ground base stations, and the establishment of a cooperative system to test a network combining NTN technology, satellites and HAPS.

As separately announced on November 15, 2021, DOCOMO and Airbus successfully conducted a propagation test between the ground and a 'Zephyr S' HAPS aircraft in the stratosphere, demonstrating the possibility of providing stable communication with such a configuration.

1 Base station backhaul refers to a fixed line that supports high-speed, high-capacity information transmission between a large number of wireless base stations in a mobile communications network and the core network.

#### **About Airbus**

Airbus pioneers sustainable aerospace for a safe and united world. The Company constantly innovates to provide efficient and technologically-advanced solutions in aerospace, defence, and connected services. In commercial aircraft, Airbus offers modern and fuel-efficient airliners and associated services. Airbus is also a European leader in defence and security and one of the world's leading space businesses. In helicopters, Airbus provides the most efficient civil and military rotorcraft solutions and services worldwide.

#### **About NTT**

NTT believes in resolving social issues through our business operations by applying technology for good. We help clients accelerate growth and innovate for current and new business models. Our services include digital business consulting, technology and managed services for cybersecurity, applications, workplace, cloud, data center and networks all supported by our deep industry expertise and innovation. As a top 5 global technology and business solutions provider, our diverse teams operate in 80+ countries and regions and deliver services to over 190 of them. We serve over 80% of Fortune Global 100 companies and thousands of other clients and communities around the world. For more information on NTT, visit www.global.ntt/

#### About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 82 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ('+d' partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations.

https://www.nttdocomo.co.jp/english/

About SKY Perfect JSAT

SKY Perfect JSAT Corporation is a leader in the converging fields of broadcasting and communications. It is Asia's largest satellite operator with a fleet of 16 satellites, and Japan's only provider of both multi-channel pay-TV broadcasting and satellite communications services. SKY Perfect JSAT delivers wide range of entertainment through 'SKY PerfecTV!', the most extensive broadcasting platform in Japan with a total of 3 million subscribers. In addition, SKY Perfect JSAT's satellite communications services, which cover Asia, Russia, Middle East, Oceania, North America and Indian Ocean to Pacific Ocean regions, play a vital role in supporting communications infrastructures for mobile backhaul, government, aviation, maritime, oil & gas and disaster recovery. For more information, visit our corporate website (https://www.skyperfectjsat.space/en/) and Space Business website (https://www.skyperfectjsat.space/jsat/en/).

@AirbusSpace @Docomo @NTTPR #HAPS #Zephyr #connectivity

Your contact

Pablo Correa

External Communications - Airbus Defence

Phone: +34 6 89 66 96 02

pablo.correa@airbus.com

NTT DOCOMO

Mr. Takuya Ori or Mr. Akira Takayama

Phone: +81 (0) 3 5156 1366

NTT PR Office

PR Office

SKY Perfect JSAT

Corporate Communications and Investor Relations Division

Phone: +81-3-5571-7600

pr@sptvjsat.com

[Editorial gueries for this story should be sent to newswire@enpublishing.co.uk]

Document ENPNEW0020220118ei1i0008i



# Airbus moves forward with new agreement to test Zephyr as a space-based high-bandwidth connectivity platform

AeroIn 476 words 17 January 2022 Aviacionline AVONLEN English

© Copyright - 2000 - 2022 - Aviacionline.com

Airbus and Nippon Telegraph and Telephone Corporation, NTT DOCOMO, INC. and SKY Perfect JSAT Corporation announced today, January 17, that they initiated a study of the feasibility of collaborating on future high-altitude **platform** station (HAPS)-based **connectivity** services as part of a future space-based wireless **connectivity ecosystem**.

The study, launched with a memorandum of understanding, seeks to determine the initial deployment requirements for a HAPS-based network. The collaboration will investigate the use of the Airbus Zephyr, the leading solar-powered fixed-wing unmanned aerial system (UAS), and the wireless communication networks of NTT, DOCOMO, and SKY Perfect JSAT to test HAPS connectivity, identify practical applications, develop the necessary technologies and ultimately launch space-based wireless broadband services.

In the overall effort to further advance 5G and eventually introduce 6G, initiatives are underway to expand coverage around the world, including over oceans and air, as well as in remote and hard-to-reach areas. Such initiatives will include HAPS, which flies in the stratosphere about 20 km above the Earth, and non-terrestrial network (NTN) technologies using geostationary orbit (GEO) and low-Earth orbit (LEO) satellites.

HAPS networks are considered a relatively easy solution for air and maritime connectivity and an effective platform for deploying disaster countermeasures and have many industrial applications. The delivery of space-based radio access network services using NTN technologies, collectively referred to as Space RAN (radio access network), is expected to support global mobile communications with ultra-wide coverage and enhanced disaster resilience, as well as the enhancement of 5G and 6G.

Furthermore, HAPS platforms can also interconnect with the nearest terrestrial network gateway and extend the reach of existing mobile services directly to end-user devices, offering service options including rural, emergency, and maritime connectivity.

With the signing of the MOU, the four companies will discuss and identify potential future developments needed to unlock HAPS-based connectivity services, push for standardization and institutionalization of HAPS operations, and explore business models for commercializing HAPS services.

Specific topics will include:

- the applicability of HAPS for mobile ground connectivity and base station backhaul;
- the performance of various frequency bands in HAPS systems;
- technological considerations for connecting HAPS to satellites and ground base stations; and
- the establishment of a cooperative system to test a network combining NTN technology, satellites, and HAPS.

# Click to access link.

As announced previously separately on November 15, 2021, DOCOMO and Airbus successfully conducted a propagation test between ground and a «Zephyr S» HAPS aircraft in the stratosphere, demonstrating the possibility of providing stable communication with such a configuration.

The Zephyr has a wingspan of 25 meters and weighs less than 75 kg. According to Airbus, a single aircraft provides coverage equivalent to that of about 250 cell phone antennas.

Document AVONLEN020220117ei1h0002t



# BRIEF-Airbus, NTT, DOCOMO And SKY Perfect JSAT Jointly Studying Connectivity Services From HAPS

68 words
17 January 2022
08:50
Reuters News
LBA
English
Copyright 2022 Thomson Reuters. All Rights Reserved.

FROM HIGH-ALTITUDE **PLATFORM** STATIONS (HAPS)

Jan 17 (Reuters) - Airbus SE:

\* AIRBUS, NTT, DOCOMO AND SKY PERFECT JSAT JOINTLY STUDYING CONNECTIVITY SERVICES

\* LAUNCHED WITH A MEMORANDUM OF UNDERSTANDING (MOU), STUDY AIMS TO IDENTIFY EARLY DEPLOYMENT REQUIREMENTS OF A HAPS-BASED NETWORK Source text for Eikon: Further company coverage: (Gdansk Newsroom)

Released: 2022-1-17T09:50:27.000Z Document LBA0000020220117ei1h012t9



#### Airbus, NTT, Docomo, Sky Perfect JSAT partner on HAPS-based connectivity services

245 words
17 January 2022
Telecompaper World
TELWOR
English
Copyright 2022 Telecompaper. All Rights Reserved.

Airbus, Nippon Telegraph and Telephone Corporation (NTT), NTT Docomo, and Sky Perfect JSAT plan to cooperate on future high-altitude **platform** stations (HAPS)-based **connectivity** services as part of a future space-based wireless **connectivity ecosystem**. Launched with a memorandum of understanding, the study seeks to identify the early deployment requirements of a HAPS-based network.

The collaboration will investigate the use of the Airbus Zephyr solar-powered, stratospheric unmanned aerial system (UAS), and the wireless communication networks of NTT, Docomo and Sky Perfect JSAT to test HAPS **connectivity**, identify practical applications, develop required technologies and launch space-based wireless broadband services.

#### Partnership details

With the signing of the MOU, the four companies plan to discuss and identify possible future developments necessary to unlock future HAPS-based connectivity services, lobby for standardization and institutionalization of HAPS operations, and explore business models for commercializing HAPS services.

Specific themes will include the applicability of HAPS for mobile connectivity on the ground and base station backhaul, the performance of various frequency bands in HAPS systems, the technological considerations for linking HAPS with satellites and ground base stations, and the establishment of a cooperative system to test a network combining NTN technology, satellites and HAPS.

As separately announced in November 2021, <u>Docomo and Airbus conducted a propagation test</u> between the ground and a "Zephyr S" HAPS aircraft in the stratosphere, demonstrating the possibility of providing stable communication with such a configuration.

Document TELWOR0020220117ei1h00001



NTT - Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform Stations (HAPS) - Targeting future global wireless-connectivity services combining satellites and HAPS -

NTT - Nippon Telegraph & Telephone Corporation published this content on 17 Jan 2022 and is solely responsible for the information contained herein. Distributed by PUBT, unedited and unaltered, on 17 Jan 2022 01:43:15 UTC.

917 words

17 January 2022

Public Companies News and Documents via PUBT

**LCDVP** 

English

Copyright 2022. As included in the Information

\* Click here to view this document in its original format

Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform Stations (HAPS) - Targeting future global wireless-connectivity services combining satellites and HAPS -

January 17, 2022

TOKYO, JAPAN, January 17, 2022 --- Airbus, Nippon Telegraph and Telephone Corporation (NTT), NTT DOCOMO, INC. (DOCOMO) and SKY Perfect JSAT Corporation (SKY Perfect JSAT) jointly announced that they have begun studying the feasibility of collaborating on future high-altitude platform stations (HAPS)-based connectivity services as part of a future space-based wireless connectivity ecosystem.

Launched with a memorandum of understanding (MOU), the study will attempt to identify the early deployment requirements of a HAPS-based network. The collaboration will investigate the use of the Airbus Zephyr, the leading solar-powered, stratospheric unmanned aerial system (UAS), and the wireless communication networks of NTT, DOCOMO and SKY Perfect JSAT in order to test HAPS connectivity, identify practical applications, develop required technologies and ultimately launch space-based wireless broadband services.

In the global push to further advance 5G and eventually introduce 6G, initiatives are under way to expand coverage worldwide, including in the oceans and in the air. Such initiatives will include HAPS, which fly in the stratosphere about 20 km above the earth, and non-terrestrial network (NTN) technologies using geostationary-orbit (GEO) satellites and low Earth-orbit (LEO) satellites. HAPS networks are deemed to be a relatively easy solution for air and sea connectivity and an effective platform for deploying disaster countermeasures and many industrial applications. The provision of space-based radio access network services using NTN technologies, collectively called Space RAN (radio access network), is expected to support worldwide mobile communications with ultra-wide coverage and improved disaster resistance as well enhanced 5G and 6G. In addition, HAPS platforms can also interconnect to the nearest terrestrial network gateway and extend the reach of existing mobile services directly to end-user devices, providing service options including as rural, emergency and maritime connectivity.

With the signing of the MOU, the four companies will discuss and identify possible future developments necessary to unlock future HAPS-based connectivity services, lobby for standardization and institutionalization of HAPS operations, and explore business models for commercializing HAPS services.

Specific themes will include the applicability of HAPS for mobile connectivity on the ground and base station backhaul, 1 the performance of various frequency bands in HAPS systems, the technological considerations for linking HAPS with satellites and ground base stations, and the establishment of a cooperative system to test a network combining NTN technology, satellites and HAPS.

As separately announced on November 15, 2021, DOCOMO and Airbus have successfully conducted a propagation test between the ground and a "Zephyr S" HAPS aircraft in the stratosphere, demonstrating the possibility of providing stable communication with such a configuration.

\* Base station backhaul refers to a fixed line that supports high-speed, high-capacity information transmission between a large number of wireless base stations in a mobile communications network and the core network.

### **About Airbus**

Airbus pioneers sustainable aerospace for a safe and united world. The Company constantly innovates to provide efficient and technologically-advanced solutions in aerospace, defence, and connected services. In commercial aircraft, Airbus offers modern and fuel-efficient airliners and associated services. Airbus is also a European leader in defence and security and one of the world's leading space businesses. In helicopters, Airbus provides the most efficient civil and military rotorcraft solutions and services worldwide.

#### About NTT

#### About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations. <a href="https://www.nttdocomo.co.jp/english/">https://www.nttdocomo.co.jp/english/</a>.

#### About SKY Perfect JSAT

SKY Perfect JSAT Corporation is a leader in the converging fields of broadcasting and communications. It is Asia's largest satellite operator with a fleet of 16 satellites, and Japan's only provider of both multi-channel pay-TV broadcasting and satellite communications services. SKY Perfect JSAT delivers wide range of entertainment through "SKY PerfecTV!", the most extensive broadcasting platform in Japan with a total of 3 million subscribers. In addition, SKY Perfect JSAT's satellite communications services, which cover Asia, Russia, Middle East, Oceania, North America and Indian Ocean to Pacific Ocean regions, play a vital role in supporting communications infrastructures for mobile backhaul, government, aviation, maritime, oil & gas and disaster recovery. For more information, visit our corporate website (https://www.skyperfectjsat.space/en/) and Space Business website (https://www.skyperfectjsat.space/isat/en/).

#### \* Original Link

#### Disclaimer

NTT - Nippon Telegraph & Telephone Corporation published this content on 17 January 2022 and is solely responsible for the information contained therein. Distributed by <a href="Public">Public</a>, unedited and unaltered, on 17 January 2022 01:45:13 UTC.

Document LCDVP00020220117ei1h000ul



# Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform Stations (HAPS)

919 words 17 January 2022 10:30 JCN Newswire JAPCOR English

Copyright 2022 JCN Newswire, a division of Japan Corporate News Network K.K. All rights reserved.

- Targeting future global wireless-connectivity services combining satellites and HAPS -

TOKYO, Jan 17, 2022 - (JCN Newswire) - Airbus, Nippon Telegraph and Telephone Corporation (NTT), NTT DOCOMO, INC. (DOCOMO) and SKY Perfect JSAT Corporation (SKY Perfect JSAT) jointly announced that they have begun studying the feasibility of collaborating on future high-altitude **platform** stations (HAPS)-based **connectivity** services as part of a future space-based wireless **connectivity ecosystem**.

Launched with a memorandum of understanding (MOU), the study will attempt to identify the early deployment requirements of a HAPS-based network. The collaboration will investigate the use of the Airbus Zephyr, the leading solar-powered, stratospheric unmanned aerial system (UAS), and the wireless communication networks of NTT, DOCOMO and SKY Perfect JSAT in order to test HAPS connectivity, identify practical applications, develop required technologies and ultimately launch space-based wireless broadband services.

In the global push to further advance 5G and eventually introduce 6G, initiatives are under way to expand coverage worldwide, including in the oceans and in the air. Such initiatives will include HAPS, which fly in the stratosphere about 20 km above the earth, and non-terrestrial network (NTN) technologies using geostationary-orbit (GEO) satellites and low Earth-orbit (LEO) satellites. HAPS networks are deemed to be a relatively easy solution for air and sea connectivity and an effective platform for deploying disaster countermeasures and many industrial applications. The provision of space-based radio access network services using NTN technologies, collectively called Space RAN (radio access network), is expected to support worldwide mobile communications with ultra-wide coverage and improved disaster resistance as well enhanced 5G and 6G. In addition, HAPS platforms can also interconnect to the nearest terrestrial network gateway and extend the reach of existing mobile services directly to end-user devices, providing service options including as rural, emergency and maritime connectivity.

With the signing of the MOU, the four companies will discuss and identify possible future developments necessary to unlock future HAPS-based connectivity services, lobby for standardization and institutionalization of HAPS operations, and explore business models for commercializing HAPS services.

Specific themes will include the applicability of HAPS for mobile connectivity on the ground and base station backhaul,1 the performance of various frequency bands in HAPS systems, the technological considerations for linking HAPS with satellites and ground base stations, and the establishment of a cooperative system to test a network combining NTN technology, satellites and HAPS.

As separately announced on November 15, 2021, DOCOMO and Airbus have successfully conducted a propagation test between the ground and a "Zephyr S" HAPS aircraft in the stratosphere, demonstrating the possibility of providing stable communication with such a configuration.

Base station backhaul refers to a fixed line that supports high-speed, high-capacity information transmission between a large number of wireless base stations in a mobile communications network and the core network.

#### **About Airbus**

Airbus pioneers sustainable aerospace for a safe and united world. The Company constantly innovates to provide efficient and technologically-advanced solutions in aerospace, defence, and connected services. In commercial aircraft, Airbus offers modern and fuel-efficient airliners and associated services. Airbus is also a European leader in defence and security and one of the world's leading space businesses. In helicopters, Airbus provides the most efficient civil and military rotorcraft solutions and services worldwide.

# About NTT

NTT believes in resolving social issues through our business operations by applying technology for good. We help clients accelerate growth and innovate for current and new business models. Our services include digital business consulting, technology and managed services for cybersecurity, applications, workplace, cloud, data center and networks all supported by our deep industry expertise and innovation. As a top 5 global technology and business solutions provider, our diverse teams operate in 80+ countries and regions and deliver services to over 190 of them. We serve over 80% of Fortune Global 100 companies and thousands of other clients and communities around the world. For more information on NTT, visit www.global.ntt/.

#### About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations. https://www.nttdocomo.co.jp/english/.

#### About SKY Perfect JSAT

SKY Perfect JSAT Corporation is a leader in the converging fields of broadcasting and communications. It is Asia's largest satellite operator with a fleet of 16 satellites, and Japan's only provider of both multi-channel pay-TV broadcasting and satellite communications services. SKY Perfect JSAT delivers wide range of entertainment through "SKY PerfecTV!", the most extensive broadcasting platform in Japan with a total of 3 million subscribers. In addition, SKY Perfect JSAT's satellite communications services, which cover Asia, Russia, Middle East, Oceania, North America and Indian Ocean to Pacific Ocean regions, play a vital role in supporting communications infrastructures for mobile backhaul, government, aviation, maritime, oil & gas and disaster recovery. For more information, visit our corporate website (https://www.skyperfectjsat.space/en/) and Space Business website (https://www.skyperfectjsat.space/jsat/en/).

Source: NTT DOCOMO

Document JAPCOR0020220117ei1h0002t



# NTT DoCoMo Inc. - Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform Stations (HAPS)

NTT DoCoMo Inc. published this content on 17 Jan 2022 and is solely responsible for the information contained herein. Distributed by PUBT, unedited and unaltered, on 17 Jan 2022 01:06:03 UTC. 892 words

17 January 2022

Private Companies News via PUBT

**PCNVB** 

English

Copyright 2022. As included in the Information

\* Click here to view this document in its original format

Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform Stations (HAPS)

January 17, 2022

TOKYO, JAPAN, January 17, 2022 --- Airbus, Nippon Telegraph and Telephone Corporation (NTT), NTT DOCOMO, INC. (DOCOMO) and SKY Perfect JSAT Corporation (SKY Perfect JSAT) jointly announced that they have begun studying the feasibility of collaborating on future high-altitude platform stations (HAPS)-based connectivity services as part of a future space-based wireless connectivity ecosystem.

Launched with a memorandum of understanding (MOU), the study will attempt to identify the early deployment requirements of a HAPS-based network. The collaboration will investigate the use of the Airbus Zephyr, the leading solar-powered, stratospheric unmanned aerial system (UAS), and the wireless communication networks of NTT, DOCOMO and SKY Perfect JSAT in order to test HAPS connectivity, identify practical applications, develop required technologies and ultimately launch space-based wireless broadband services.

In the global push to further advance 5G and eventually introduce 6G, initiatives are under way to expand coverage worldwide, including in the oceans and in the air. Such initiatives will include HAPS, which fly in the stratosphere about 20 km above the earth, and non-terrestrial network (NTN) technologies using geostationary-orbit (GEO) satellites and low Earth-orbit (LEO) satellites. HAPS networks are deemed to be a relatively easy solution for air and sea connectivity and an effective platform for deploying disaster countermeasures and many industrial applications. The provision of space-based radio access network services using NTN technologies, collectively called Space RAN (radio access network), is expected to support worldwide mobile communications with ultra-wide coverage and improved disaster resistance as well enhanced 5G and 6G. In addition, HAPS platforms can also interconnect to the nearest terrestrial network gateway and extend the reach of existing mobile services directly to end-user devices, providing service options including as rural, emergency and maritime connectivity.

With the signing of the MOU, the four companies will discuss and identify possible future developments necessary to unlock future HAPS-based connectivity services, lobby for standardization and institutionalization of HAPS operations, and explore business models for commercializing HAPS services.

Specific themes will include the applicability of HAPS for mobile connectivity on the ground and base station backhaul, 1 the performance of various frequency bands in HAPS systems, the technological considerations for linking HAPS with satellites and ground base stations, and the establishment of a cooperative system to test a network combining NTN technology, satellites and HAPS.

As separately announced on November 15, 2021, DOCOMO and Airbus have successfully conducted a propagation test between the ground and a "Zephyr S" HAPS aircraft in the stratosphere, demonstrating the possibility of providing stable communication with such a configuration.

\* Base station backhaul refers to a fixed line that supports high-speed, high-capacity information transmission between a large number of wireless base stations in a mobile communications network and the core network.

# About Airbus

Airbus pioneers sustainable aerospace for a safe and united world. The Company constantly innovates to provide efficient and technologically-advanced solutions in aerospace, defence, and connected services. In

Page 119 of 148 © 2022 Factiva, Inc. All rights reserved.

commercial aircraft, Airbus offers modern and fuel-efficient airliners and associated services. Airbus is also a European leader in defence and security and one of the world's leading space businesses. In helicopters, Airbus provides the most efficient civil and military rotorcraft solutions and services worldwide.

#### About NTT

#### About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations. https://www.nttdocomo.co.jp/english/.

#### About SKY Perfect JSAT

SKY Perfect JSAT Corporation is a leader in the converging fields of broadcasting and communications. It is Asia's largest satellite operator with a fleet of 16 satellites, and Japan's only provider of both multi-channel pay-TV broadcasting and satellite communications services. SKY Perfect JSAT delivers wide range of entertainment through "SKY PerfecTV!", the most extensive broadcasting platform in Japan with a total of 3 million subscribers. In addition, SKY Perfect JSAT's satellite communications services, which cover Asia, Russia, Middle East, Oceania, North America and Indian Ocean to Pacific Ocean regions, play a vital role in supporting communications infrastructures for mobile backhaul, government, aviation, maritime, oil & gas and disaster recovery. For more information, visit our corporate website (https://www.skyperfectjsat.space/en/).

#### \* Original Link

#### Disclaimer

NTT DoCoMo Inc. published this content on 17 January 2022 and is solely responsible for the information contained therein. Distributed by <u>Public</u>, unedited and unaltered, on 17 January 2022 01:06:14 UTC.

Document PCNVB00020220117ei1h000dy



NTT - Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform Stations (HAPS)- Targeting future global wireless-connectivity services combining satellites and HAPS -

NTT - Nippon Telegraph & Telephone Corporation published this content on 17 Jan 2022 and is solely responsible for the information contained herein. Distributed by PUBT, unedited and unaltered, on 17 Jan 2022 01:03:42 UTC.

1.056 words

17 January 2022

Public Companies News and Documents via PUBT

**LCDVP** 

English

Copyright 2022. As included in the Information

\* Click here to view this document in its original format

Airbus, NTT, DOCOMO and SKY Perfect JSAT Jointly Studying Connectivity Services from High-Altitude Platform Stations (HAPS)- Targeting future global wireless-connectivity services combining satellites and HAPS -

TOKYO, JAPAN, January 17, 2022-Airbus, Nippon Telegraph and Telephone Corporation (NTT), NTT DOCOMO, INC. (DOCOMO) and SKY Perfect JSAT Corporation (SKY Perfect JSAT) jointly announced that they have begun studying the feasibility of collaborating on future high-altitude platform stations (HAPS)-based connectivity services as part of a future space-based wireless connectivity ecosystem.

Launched with a memorandum of understanding (MOU), the study will attempt to identify the early deployment requirements of a HAPS-based network. The collaboration will investigate the use of the Airbus Zephyr, the leading solar-powered, stratospheric unmanned aerial system (UAS), and the wireless communication networks of NTT, DOCOMO and SKY Perfect JSAT in order to test HAPS connectivity, identify practical applications, develop required technologies and ultimately launch space-based wireless broadband services.

# Fig. 1 Airbus "Zephyr" HAPS aircraft

In the global push to further advance 5G and eventually introduce 6G, initiatives are under way to expand coverage worldwide, including in the oceans and in the air. Such initiatives will include HAPS, which fly in the stratosphere about 20 km above the earth, and non-terrestrial network (NTN) technologies using geostationary-orbit (GEO) satellites and low Earth-orbit (LEO) satellites. HAPS networks are deemed to be a relatively easy solution for air and sea connectivity and an effective platform for deploying disaster countermeasures and many industrial applications. The provision of space-based radio access network services using NTN technologies, collectively called Space RAN (radio access network), is expected to support worldwide mobile communications with ultra-wide coverage and improved disaster resistance as well enhanced 5G and 6G. In addition, HAPS platforms can also interconnect to the nearest terrestrial network gateway and extend the reach of existing mobile services directly to end-user devices, providing service options including as rural, emergency and maritime connectivity.

Fig. 2 Communication via satellites and HAPS

Fig. 3 Configuration of space integrated computing network

Fig. 4 Space RAN system structure

With the signing of the MOU, the four companies will discuss and identify possible future developments necessary to unlock future HAPS-based connectivity services, lobby for standardization and institutionalization of HAPS operations, and explore business models for commercializing HAPS services.

Specific themes will include the applicability of HAPS for mobile connectivity on the ground and base station backhaul,1 the performance of various frequency bands in HAPS systems, the technological considerations for linking HAPS with satellites and ground base stations, and the establishment of a cooperative system to test a network combining NTN technology, satellites and HAPS.

As separately announced on November 15, 2021, DOCOMO and Airbus have successfully conducted a propagation test between the ground and a "Zephyr S" HAPS aircraft in the stratosphere, demonstrating the possibility of providing stable communication with such a configuration.

1 Base station backhaul refers to a fixed line that supports high-speed, high-capacity information transmission between a large number of wireless base stations in a mobile communications network and the core network.

#### Related Releases

#### **About Airbus**

Airbus pioneers sustainable aerospace for a safe and united world. The Company constantly innovates to provide efficient and technologically-advanced solutions in aerospace, defence, and connected services. In commercial aircraft, Airbus offers modern and fuel-efficient airliners and associated services. Airbus is also a European leader in defence and security and one of the world's leading space businesses. In helicopters, Airbus provides the most efficient civil and military rotorcraft solutions and services worldwide.

#### **About NTT**

NTT believes in resolving social issues through our business operations by applying technology for good. We help clients accelerate growth and innovate for current and new business models. Our services include digital business consulting, technology and managed services for cybersecurity, applications, workplace, cloud, data center and networks all supported by our deep industry expertise and innovation. As a top 5 global technology and business solutions provider, our diverse teams operate in 80+ countries and regions and deliver services to over 190 of them. We serve over 80% of Fortune Global 100 companies and thousands of other clients and communities around the world. For more information on NTT, visit www.global.ntt/.

# About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations.

# https://www.nttdocomo.co.jp/english/.

#### About SKY Perfect JSAT

SKY Perfect JSAT Corporation is a leader in the converging fields of broadcasting and communications. It is Asia's largest satellite operator with a fleet of 16 satellites, and Japan's only provider of both multi-channel pay-TV broadcasting and satellite communications services. SKY Perfect JSAT delivers wide range of entertainment through "SKY PerfecTV!", the most extensive broadcasting platform in Japan with a total of 3 million subscribers. In addition, SKY Perfect JSAT's satellite communications services, which cover Asia, Russia, Middle East, Oceania, North America and Indian Ocean to Pacific Ocean regions, play a vital role in supporting communications infrastructures for mobile backhaul, government, aviation, maritime, oil & gas and disaster recovery. For more information, visit our corporate website (https://www.skyperfectjsat.space/en/) and Space Business website (https://www.skyperfectjsat.space/jsat/en/).

# \* Original Link

### Disclaimer

NTT - Nippon Telegraph & Telephone Corporation published this content on 17 January 2022 and is solely responsible for the information contained therein. Distributed by <a href="Public">Public</a>, unedited and unaltered, on 17 January 2022 01:06:14 UTC.

Document LCDVP00020220117ei1h000gr



# BTB to sell Docomo Pacific wireless services in Guam

136 words
11 January 2022
Telecompaper Asia
TELASI
English
Copyright 2022 Telecompaper. All Rights Reserved.

Docomo Pacific has signed a **partnership** agreement with Beyond the Box Guam (BTB), a store for Premium Apple products and for customers looking to buy Apple iPhone handsets and accessories without an annual contract. BTB will now serve as exclusive authorized dealer for Docomo Pacific wireless services.

New and existing BTB customers can now purchase Appledevices with mobile services through a Docomo Pacific Prepaid or Postpaid Mobile Plan, all in one place.

Beyond the Box has launched an iPhone 13 giveaway contest in celebration of the partnership. Customers can sign up for a Docomo Pacific Access USD 60 or USD 80 plan in the Beyond the Box Guam Micronesia Mall location until 30 January for an official entry. The winner will be selected on 31 January.

Document TELASI0020220111ei1b0008e



# KT Corporation, NTT DOCOMO and Fujitsu Cooperate towards Test Facility Construction and Successful Interoperability Testing for Open RAN in Korea

697 words
6 January 2022
M2 Presswire
MTPW
English
© 2022, M2 Communications. All rights reserved.

Three companies to collaborate towards "5G Open RAN Ecosystem" to promote introduction of Open RAN

Tokyo, Global — KT Corporation (hereinafter KT) and Fujitsu Limited (hereinafter Fujitsu) have completed a verification facility at the KT Research and Development Center in Seoul, South Korea, at which the two companies leveraged Fujitsu's Open RAN based 5G base station equipment to successfully test call connection during interoperability trials for open fronthaul (1). NTT DOCOMO, INC. (hereinafter NTT DOCOMO) has provided Fujitsu with technical support throughout the project. With the construction of this new test facility, KT will accelerate the introduction of Open RAN technology to Korea's 5G network.

As a result of their successful collaboration, the three companies have concluded a Memorandum of Understanding (effective date January 6, 2022), centering on the introduction of software-defined virtualized RAN (hereinafter vRAN) and RAN Intelligent Controller (RIC) (2) in alignment with the "5G Open RAN Ecosystem" (3), an initiative whose participants include NTT DOCOMO and Fujitsu. In this Memorandum of Understanding, the three companies agree to cooperate towards further activities including the construction of an O-RAN test facility and multi-vendor interoperability testing in Korea.

In addition to these activities, the three companies will continue to create market-leading innovations and target the global expansion of Open RAN.

The multi-vendor RAN architecture enables optimum solutions for a variety of deployment scenarios, including small, space-saving base stations that can cover areas in city centers where communication is concentrated, or base stations that can cover wide areas and can thus contribute to efficient and flexible equipment procurement and cost reductions. Open specifications also make it possible to create safe and transparent RAN architecture.

5G mobile networks are becoming increasingly popular in Korea, and the demand for 5G is expected to grow even further in the future. KT is considering the introduction of multi-vendor Open RAN to reduce equipment procurement and construction costs and to achieve flexible network construction capabilities. To this end, KT and Fujitsu constructed an Open RAN verification facility and conducted testing for multi-vendor interoperability with O-RAN open fronthaul in October 2021. For the testing facility, KT has adopted Fujitsu's 5G base stations, which were the world's first O-RAN compliant (4) base stations adopted for commercial service by NTT DOCOMO. The tests involved verification of the interoperability between the base station controllers (CU: Central Unit/DU: Distributed Unit) of Fujitsu's 5G base station equipment and a Korean medium-sized vendor's radio unit, as well as end-to-end communication tests. The companies successfully verified O-RAN compliant operation during the tests.

Fujitsu supplied KT with 5G base station equipment and provided support during the verification tests, while Fujitsu in turn received NTT DOCOMO's technical support for multi-vendor interoperability testing.

Moving forward, KT aims to further expand its verification facilities with an eye toward the future introduction of Open RAN based vRAN and RIC systems.

The three companies plan to further strengthen their collaboration as part of the "5G Open RAN Ecosystem" initiative.

1. Open fronthaul:

O-RAN standardized interface that connects CU/DU and RU.

2. RAN Intelligent Controller (RIC):

RAN Controller able to optimize the management of radio resources and automize operations.

# 3. 5G Open RAN Ecosystem:

Activity by NTT DOCOMO, Fujitsu and partner companies with the objective to globally accelerate open radio access networks (open RAN), and help enable flexible network deployment to serve diverse company and operator needs in the 5G era, including vRAN commercialization.

# 4. O-RAN compliant:

Compliance with common specification developed by the O-RAN ALLIANCE (Open Radio Access Network ALLIANCE), an industry group that promotes standardization with the aim of realizing a next-generation radio access network that is open and extensible. KT, Fujitsu and NTT DOCOMO are members of the O-RAN ALLIANCE.

((M2 Communications disclaims all liability for information provided within M2 PressWIRE. Data supplied by named party/parties. Further information on M2 PressWIRE can be obtained at <a href="http://www.m2.com">http://www.m2.com</a> on the world wide web. Inquiries to info@m2.com)).

Document MTPW000020220106ei16003h1



#### KT, NTT Docomo, Fujitsu partner on 5G Open RAN ecosystem testing in South Korea

317 words
6 January 2022
Telecompaper Asia
TELASI
English
Copyright 2022 Telecompaper. All Rights Reserved.

South Korean operator KT and Fujitsu have completed a verification facility at the KT Research and Development Center in Seoul. The two companies used Fujitsu's Open RAN based 5G base station equipment to test call connection during interoperability trials for open fronthaul. <u>Japanese operator NTT Docomo</u> has provided Fujitsu with technical support throughout the project. With the construction of this new test facility, KT plans to accelerate the introduction of Open RAN technology to Korea's 5G network.

As a result of their collaboration, the three companies have concluded a Memorandum of Understanding, to introduce software-defined virtualized RAN and RAN Intelligent Controller in line with the '5G Open RAN Ecosystem', an initiative whose participants include NTT Docomo and Fujitsu. The three partners plan to jointly develop an O-RAN test facility and multi-vendor interoperability testing in Korea. In addition to these activities, the three companies target the global expansion of Open RAN.

KT. Fujitsu started testing for multi-vendor interoperability with O-RAN open fronthaul at end-2021

KT and Fujitsu carried oput an Open RAN verification facility and conducted testing for multi-vendor interoperability with O-RAN open fronthaul in October 2021. For the testing facility, KT used Fujitsu's 5G base stations. The tests involved verification of the interoperability between the base station controllers of Fujitsu's 5G base station equipment and a Korean medium-sized vendor's radio unit, as well as communication tests. The companies verified O-RAN compliant operation during the tests. Fujitsu supplied KT with 5G base station equipment and provided support during the verification tests, while Fujitsu in turn received NTT Docomo's technical support for multi-vendor interoperability testing.

Moving forward, KT aims to further expand its verification facilities with an eye toward the future introduction of Open RAN based vRAN and RIC systems.

Document TELASI0020220106ei1600002



# KT Corporation, NTT DOCOMO and Fujitsu Cooperate towards Test Facility Construction and Successful Interoperability Testing for Open RAN in Korea

935 words 6 January 2022 09:24 JCN Newswire JAPCOR English

Copyright 2022 JCN Newswire, a division of Japan Corporate News Network K.K. All rights reserved.

Three companies to collaborate towards "5G Open RAN Ecosystem" to promote introduction of Open RAN

TOKYO, Jan 6, 2022 - (JCN Newswire) - KT Corporation (hereinafter KT) and Fujitsu Limited (hereinafter Fujitsu) have completed a verification facility at the KT Research and Development Center in Seoul, South Korea, at which the two companies leveraged Fujitsu's Open RAN based 5G base station equipment to successfully test call connection during interoperability trials for open fronthaul (1). NTT DOCOMO, INC. (hereinafter NTT DOCOMO) has provided Fujitsu with technical support throughout the project. With the construction of this new test facility, KT will accelerate the introduction of Open RAN technology to Korea's 5G network.

As a result of their successful collaboration, the three companies have concluded a Memorandum of Understanding (effective date January 6, 2022), centering on the introduction of software-defined virtualized RAN (hereinafter vRAN) and RAN Intelligent Controller (RIC) (2) in alignment with the "5G Open RAN Ecosystem" (3), an initiative whose participants include NTT DOCOMO and Fujitsu. In this Memorandum of Understanding, the three companies agree to cooperate towards further activities including the construction of an O-RAN test facility and multi-vendor interoperability testing in Korea.

In addition to these activities, the three companies will continue to create market-leading innovations and target the global expansion of Open RAN.

The multi-vendor RAN architecture enables optimum solutions for a variety of deployment scenarios, including small, space-saving base stations that can cover areas in city centers where communication is concentrated, or base stations that can cover wide areas and can thus contribute to efficient and flexible equipment procurement and cost reductions. Open specifications also make it possible to create safe and transparent RAN architecture.

5G mobile networks are becoming increasingly popular in Korea, and the demand for 5G is expected to grow even further in the future. KT is considering the introduction of multi-vendor Open RAN to reduce equipment procurement and construction costs and to achieve flexible network construction capabilities. To this end, KT and Fujitsu constructed an Open RAN verification facility and conducted testing for multi-vendor interoperability with O-RAN open fronthaul in October 2021. For the testing facility, KT has adopted Fujitsu's 5G base stations, which were the world's first O-RAN compliant (4) base stations adopted for commercial service by NTT DOCOMO. The tests involved verification of the interoperability between the base station controllers (CU: Central Unit/DU: Distributed Unit) of Fujitsu's 5G base station equipment and a Korean medium-sized vendor's radio unit, as well as end-to-end communication tests. The companies successfully verified O-RAN compliant operation during the tests.

Fujitsu supplied KT with 5G base station equipment and provided support during the verification tests, while Fujitsu in turn received NTT DOCOMO's technical support for multi-vendor interoperability testing.

Moving forward, KT aims to further expand its verification facilities with an eye toward the future introduction of Open RAN based vRAN and RIC systems.

The three companies plan to further strengthen their collaboration as part of the "5G Open RAN Ecosystem" initiative.

- (1) Open fronthaul: O-RAN standardized interface that connects CU/DU and RU.
- (2) RAN Intelligent Controller (RIC): RAN Controller able to optimize the management of radio resources and automize operations.

- (3) 5G Open RAN Ecosystem: Activity by NTT DOCOMO, Fujitsu and partner companies with the objective to globally accelerate open radio access networks (open RAN), and help enable flexible network deployment to serve diverse company and operator needs in the 5G era, including vRAN commercialization.
- (4) O-RAN compliant: Compliance with common specification developed by the O-RAN ALLIANCE (Open Radio Access Network ALLIANCE), an industry group that promotes standardization with the aim of realizing a next-generation radio access network that is open and extensible. KT, Fujitsu and NTT DOCOMO are members of the O-RAN ALLIANCE.

# **About KT Corporation**

KT Corporation, as a digital platform business (DIGICO) that is operated based on AI, Big Data, and Cloud (ABC), we provide advanced information and communications technology (ICT) services based on convergence between cutting-edge IoT technology and business sectors. KT Corporation is committed to leading the way as a business specializing in digital technology that will revolutionize our future way of life by creating social and economic public value and achieving balanced growth in the communications and platform business. <a href="https://corp.kt.com/eng/">https://corp.kt.com/eng/</a>

# About Fujitsu

Fujitsu is the leading Japanese information and communication technology (ICT) company offering a full range of technology products, solutions and services. Approximately 126,000 Fujitsu people support customers in more than 100 countries. We use our experience and the power of ICT to shape the future of society with our customers. Fujitsu Limited (TSE:6702) reported consolidated revenues of 3.6 trillion yen (US\$34 billion) for the fiscal year ended March 31, 2021. For more information, please see www.fujitsu.com.

#### About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations. <a href="https://www.nttdocomo.co.jp/english">www.nttdocomo.co.jp/english</a>.

Source: Fujitsu Ltd

Document JAPCOR0020220106ei160005l



# KT Corporation, NTT DOCOMO and Fujitsu Cooperate towards Test Facility Construction and Successful Interoperability Testing for Open RAN in Korea

935 words 6 January 2022 09:24 JCN Newswire JAPCOR English

Copyright 2022 JCN Newswire, a division of Japan Corporate News Network K.K. All rights reserved.

Three companies to collaborate towards "5G Open RAN Ecosystem" to promote introduction of Open RAN

TOKYO, Jan 6, 2022 - (JCN Newswire) - KT Corporation (hereinafter KT) and Fujitsu Limited (hereinafter Fujitsu) have completed a verification facility at the KT Research and Development Center in Seoul, South Korea, at which the two companies leveraged Fujitsu's Open RAN based 5G base station equipment to successfully test call connection during interoperability trials for open fronthaul (1). NTT DOCOMO, INC. (hereinafter NTT DOCOMO) has provided Fujitsu with technical support throughout the project. With the construction of this new test facility, KT will accelerate the introduction of Open RAN technology to Korea's 5G network.

As a result of their successful collaboration, the three companies have concluded a Memorandum of Understanding (effective date January 6, 2022), centering on the introduction of software-defined virtualized RAN (hereinafter vRAN) and RAN Intelligent Controller (RIC) (2) in alignment with the "5G Open RAN Ecosystem" (3), an initiative whose participants include NTT DOCOMO and Fujitsu. In this Memorandum of Understanding, the three companies agree to cooperate towards further activities including the construction of an O-RAN test facility and multi-vendor interoperability testing in Korea.

In addition to these activities, the three companies will continue to create market-leading innovations and target the global expansion of Open RAN.

The multi-vendor RAN architecture enables optimum solutions for a variety of deployment scenarios, including small, space-saving base stations that can cover areas in city centers where communication is concentrated, or base stations that can cover wide areas and can thus contribute to efficient and flexible equipment procurement and cost reductions. Open specifications also make it possible to create safe and transparent RAN architecture.

5G mobile networks are becoming increasingly popular in Korea, and the demand for 5G is expected to grow even further in the future. KT is considering the introduction of multi-vendor Open RAN to reduce equipment procurement and construction costs and to achieve flexible network construction capabilities. To this end, KT and Fujitsu constructed an Open RAN verification facility and conducted testing for multi-vendor interoperability with O-RAN open fronthaul in October 2021. For the testing facility, KT has adopted Fujitsu's 5G base stations, which were the world's first O-RAN compliant (4) base stations adopted for commercial service by NTT DOCOMO. The tests involved verification of the interoperability between the base station controllers (CU: Central Unit/DU: Distributed Unit) of Fujitsu's 5G base station equipment and a Korean medium-sized vendor's radio unit, as well as end-to-end communication tests. The companies successfully verified O-RAN compliant operation during the tests.

Fujitsu supplied KT with 5G base station equipment and provided support during the verification tests, while Fujitsu in turn received NTT DOCOMO's technical support for multi-vendor interoperability testing.

Moving forward, KT aims to further expand its verification facilities with an eye toward the future introduction of Open RAN based vRAN and RIC systems.

The three companies plan to further strengthen their collaboration as part of the "5G Open RAN Ecosystem" initiative.

(1) Open fronthaul:

O-RAN standardized interface that connects CU/DU and RU.

(2) RAN Intelligent Controller (RIC):

Page 129 of 148 © 2022 Factiva, Inc. All rights reserved.

RAN Controller able to optimize the management of radio resources and automize operations.

#### (3) 5G Open RAN Ecosystem:

Activity by NTT DOCOMO, Fujitsu and partner companies with the objective to globally accelerate open radio access networks (open RAN), and help enable flexible network deployment to serve diverse company and operator needs in the 5G era, including vRAN commercialization.

# (4) O-RAN compliant:

Compliance with common specification developed by the O-RAN ALLIANCE (Open Radio Access Network ALLIANCE), an industry group that promotes standardization with the aim of realizing a next-generation radio access network that is open and extensible. KT, Fujitsu and NTT DOCOMO are members of the O-RAN ALLIANCE.

#### About KT Corporation

KT Corporation, as a digital platform business (DIGICO) that is operated based on AI, Big Data, and Cloud (ABC), we provide advanced information and communications technology (ICT) services based on convergence between cutting-edge IoT technology and business sectors. KT Corporation is committed to leading the way as a business specializing in digital technology that will revolutionize our future way of life by creating social and economic public value and achieving balanced growth in the communications and platform business. <a href="https://corp.kt.com/eng/">https://corp.kt.com/eng/</a>

#### About Fujitsu

Fujitsu is the leading Japanese information and communication technology (ICT) company offering a full range of technology products, solutions and services. Approximately 126,000 Fujitsu people support customers in more than 100 countries. We use our experience and the power of ICT to shape the future of society with our customers. Fujitsu Limited (TSE:6702) reported consolidated revenues of 3.6 trillion yen (US\$34 billion) for the fiscal year ended March 31, 2021. For more information, please see <a href="https://www.fujitsu.com">www.fujitsu.com</a>.

#### About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations.

www.nttdocomo.co.ip/english.

Source: Fujitsu Ltd

Document JAPCOR0020220106ei1600001



# NTT - KT Corporation, NTT DOCOMO and Fujitsu Cooperate towards Test Facility Construction and Successful Interoperability Testing for Open RAN in KoreaThree companies to collaborate towards "5G Open RAN Ecosystem" to promote introduction of Open RAN

NTT - Nippon Telegraph & Telephone Corporation published this content on 06 Jan 2022 and is solely responsible for the information contained herein. Distributed by PUBT, unedited and unaltered, on 06 Jan 2022 00:54:07 UTC.

882 words

6 January 2022

Public Companies News and Documents via PUBT

**LCDVP** 

English

Copyright 2022. As included in the Information

\* Click here to view this document in its original format

KT Corporation, NTT DOCOMO and Fujitsu Cooperate towards Test Facility Construction and Successful Interoperability Testing for Open RAN in KoreaThree companies to collaborate towards "5G Open RAN **Ecosystem**" to promote introduction of Open RAN

January 6, 2022

Tokyo, Global, January 6, 2022 --- KT Corporation (hereinafter KT) and Fujitsu Limited (hereinafter Fujitsu) have completed a verification facility at the KT Research and Development Center in Seoul, South Korea, at which the two companies leveraged Fujitsu's Open RAN based 5G base station equipment to successfully test call connection during interoperability trials for open fronthaul (1). NTT DOCOMO, INC. (hereinafter NTT DOCOMO) has provided Fujitsu with technical support throughout the project. With the construction of this new test facility, KT will accelerate the introduction of Open RAN technology to Korea's 5G network.

As a result of their successful collaboration, the three companies have concluded a Memorandum of Understanding (effective date January 6, 2022), centering on the introduction of software-defined virtualized RAN (hereinafter vRAN) and RAN Intelligent Controller (RIC) (2) in alignment with the "5G Open RAN Ecosystem" (3), an initiative whose participants include NTT DOCOMO and Fujitsu. In this Memorandum of Understanding, the three companies agree to cooperate towards further activities including the construction of an O-RAN test facility and multi-vendor interoperability testing in Korea.

In addition to these activities, the three companies will continue to create market-leading innovations and target the global expansion of Open RAN.

The multi-vendor RAN architecture enables optimum solutions for a variety of deployment scenarios, including small, space-saving base stations that can cover areas in city centers where communication is concentrated, or base stations that can cover wide areas and can thus contribute to efficient and flexible equipment procurement and cost reductions. Open specifications also make it possible to create safe and transparent RAN architecture.

5G mobile networks are becoming increasingly popular in Korea, and the demand for 5G is expected to grow even further in the future. KT is considering the introduction of multi-vendor Open RAN to reduce equipment procurement and construction costs and to achieve flexible network construction capabilities. To this end, KT and Fujitsu constructed an Open RAN verification facility and conducted testing for multi-vendor interoperability with O-RAN open fronthaul in October 2021. For the testing facility, KT has adopted Fujitsu's 5G base stations, which were the world's first O-RAN compliant (4) base stations adopted for commercial service by NTT DOCOMO. The tests involved verification of the interoperability between the base station controllers (CU: Central Unit/DU: Distributed Unit) of Fujitsu's 5G base station equipment and a Korean medium-sized vendor's radio unit, as well as end-to-end communication tests. The companies successfully verified O-RAN compliant operation during the tests.

Fujitsu supplied KT with 5G base station equipment and provided support during the verification tests, while Fujitsu in turn received NTT DOCOMO's technical support for multi-vendor interoperability testing.

Moving forward, KT aims to further expand its verification facilities with an eye toward the future introduction of Open RAN based vRAN and RIC systems.

The three companies plan to further strengthen their collaboration as part of the "5G Open RAN Ecosystem" initiative.

- \* Open fronthaul: O-RAN standardized interface that connects CU/DU and RU.
- \* RAN Intelligent Controller (RIC): RAN Controller able to optimize the management of radio resources and automize operations.
- \* 5G Open RAN Ecosystem: Activity by NTT DOCOMO, Fujitsu and partner companies with the objective to globally accelerate open radio access networks (open RAN), and help enable flexible network deployment to serve diverse company and operator needs in the 5G era, including vRAN commercialization.
- \* O-RAN compliant: Compliance with common specification developed by the O-RAN ALLIANCE (Open Radio Access Network ALLIANCE), an industry group that promotes standardization with the aim of realizing a next-generation radio access network that is open and extensible. KT, Fujitsu and NTT DOCOMO are members of the O-RAN ALLIANCE.

About KT Corporation

About Fujitsu

About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations. <a href="https://www.nttdocomo.co.jp/english/">https://www.nttdocomo.co.jp/english/</a>.

\* Original Link

Disclaimer

NTT - Nippon Telegraph & Telephone Corporation published this content on 06 January 2022 and is solely responsible for the information contained therein. Distributed by <a href="Public">Public</a>, unedited and unaltered, on 06 January 2022 00:56:07 UTC.

Document LCDVP00020220106ei16000dx



#### NEC contributes packet core to DOCOMO's 5G SA services launch

283 words 5 January 2022 Optical Networks Daily OBSERV English

© 2022 Electronics International Disclaimer: Whilst every effort has been taken to ensure the accuracy of the information contained in this report, neither Electronics International nor its agents or sources can be held responsible for any inaccuracy.

NEC provided its packet core (5GC) and base stations (5G RUs, CU/DU) for the 5G standalone (SA)-based services that NTT DOCOMO launched commercially on December 13, 2021.

NEC's 5G Core for SA enables flexible operation for a variety of services thanks to its **cloud**-native architecture, featuring container and separation of Control and User Plane (CUPS). In addition, drawing on network slicing technology, NEC's 5GC for SA helps create customized networks on demand according to the different requirements for 5G services that include eMBB(enhanced Mobile Broadband), mMTC (massive Machine Type Communication), and URLLC (Ultra-Reliable and Low Latency Communications).

NEC confirmed that its 5G CU/DU, which was previously operating as non-standalone (NSA) on DOCOMO's commercial network, has been seamlessly migrated to 5G SA, simply by a software upgrade in conjunction with the aforementioned 5GC.

"5G SA enables the provision of networking solutions that can flexibly accommodate a wide variety of use cases," said Hiroshi Kobayashi, Senior Vice President NTT DOCOMO. "Through its 5G SA, NTT DOCOMO will contribute to the creation of new value and the resolution of social issues, and promote the further advancement of its 5G network to make the lives of its customers more convenient and prosperous."

"I am honored to have been able to contribute to the commercial launch of NTT DOCOMO's 5G SA services," said Atsuo Kawamura, Executive Vice President, NEC. "By providing high-quality and reliable 5GC and base station equipment, we will strongly support the expansion of DOCOMO's 5G services, as well as contribute to the further development of next-generation mobile infrastructure throughout global markets."

Document OBSERV0020220106ei1500002



# NEC contributes packet core to DOCOMO's 5G SA services launch

283 words 23 December 2021 Optical Networks Daily OBSERV English

© 2021 Electronics International Disclaimer: Whilst every effort has been taken to ensure the accuracy of the information contained in this report, neither Electronics International nor its agents or sources can be held responsible for any inaccuracy.

NEC provided its packet core (5GC) and base stations (5G RUs, CU/DU) for the 5G standalone (SA)-based services that NTT DOCOMO launched commercially on December 13, 2021.

NEC's 5G Core for SA enables flexible operation for a variety of services thanks to its **cloud**-native architecture, featuring container and separation of Control and User Plane (CUPS). In addition, drawing on network slicing technology, NEC's 5GC for SA helps create customized networks on demand according to the different requirements for 5G services that include eMBB(enhanced Mobile Broadband), mMTC (massive Machine Type Communication), and URLLC (Ultra-Reliable and Low Latency Communications).

NEC confirmed that its 5G CU/DU, which was previously operating as non-standalone (NSA) on DOCOMO's commercial network, has been seamlessly migrated to 5G SA, simply by a software upgrade in conjunction with the aforementioned 5GC.

"5G SA enables the provision of networking solutions that can flexibly accommodate a wide variety of use cases," said Hiroshi Kobayashi, Senior Vice President NTT DOCOMO. "Through its 5G SA, NTT DOCOMO will contribute to the creation of new value and the resolution of social issues, and promote the further advancement of its 5G network to make the lives of its customers more convenient and prosperous."

"I am honored to have been able to contribute to the commercial launch of NTT DOCOMO's 5G SA services," said Atsuo Kawamura, Executive Vice President, NEC. "By providing high-quality and reliable 5GC and base station equipment, we will strongly support the expansion of DOCOMO's 5G services, as well as contribute to the further development of next-generation mobile infrastructure throughout global markets."

Document OBSERV0020211230ehcn0002t



# NEC contributes to Docomo's 5G standalone services launch with packet core

133 words
23 December 2021
Telecompaper Asia
TELASI
English
Copyright 2021 Telecompaper. All Rights Reserved.

NEC announced that it provided packet core (5GC) and base stations (5G RUs, CU/DU) for the 5G standalone (SA)-based services that NTT Docomo launched commercially in Japan on 13 December.

NEC's 5G Core for SA enables flexible operation for a variety of services thanks to its **cloud**-native architecture, featuring container and separation of Control and User Plane (CUPS). In addition, drawing on network slicing technology, NEC's 5GC for SA helps create customised networks on demand according to the different requirements for 5G services.

NEC's 5G CU/DU, which was previously operating as non-standalone (NSA) on Docomo's commercial network, was migrated to 5G SA, by a software upgrade in conjunction with the aforementioned 5GC.

Document TELASI0020211223ehcn0005m



# NEC Contributes to NTT DOCOMO's 5G Standalone (SA) Services Launch with Packet Core

433 words 22 December 2021 16:57 JCN Newswire JAPCOR English

Copyright 2021 JCN Newswire, a division of Japan Corporate News Network K.K. All rights reserved.

TOKYO, Dec 22, 2021 - (JCN Newswire) - NEC Corporation (TSE: 6701) today announced it has provided packet core (5GC) and base stations (5G RUs, CU/DU) for the 5G standalone (SA)-based services that NTT DOCOMO, INC. (DOCOMO) launched commercially on December 13, 2021.

NEC's 5G Core for SA enables flexible operation for a variety of services thanks to its **cloud**-native architecture, featuring container and separation of Control and User Plane (CUPS)\*. In addition, drawing on network slicing technology, NEC's 5GC for SA helps create customized networks on demand according to the different requirements for 5G services that include eMBB (enhanced Mobile Broadband), mMTC (massive Machine Type Communication), and URLLC (Ultra-Reliable and Low Latency Communications).

Moreover, NEC's 5G CU/DU, which was previously operating as non-standalone (NSA) on DOCOMO's commercial network, has been seamlessly migrated to 5G SA, simply by a software upgrade in conjunction with the aforementioned 5GC.

"5G SA enables the provision of networking solutions that can flexibly accommodate a wide variety of use cases," said Hiroshi Kobayashi, Senior Vice President NTT DOCOMO. "Through its 5G SA, NTT DOCOMO will contribute to the creation of new value and the resolution of social issues, and promote the further advancement of its 5G network to make the lives of its customers more convenient and prosperous."

"I am honored to have been able to contribute to the commercial launch of NTT DOCOMO's 5G SA services," said Atsuo Kawamura, Executive Vice President, NEC. "By providing high-quality and reliable 5GC and base station equipment, we will strongly support the expansion of DOCOMO's 5G services, as well as contribute to the further development of next-generation mobile infrastructure throughout global markets."

For more information on NEC 5GC read our blog "Discover the real 5G"

bit.ly/3mmoC7i

\*A technology that provides a virtual operating environment with fewer computer resources by constructing an application execution environment on an operating system that is isolated from other processes on the OS.

About NEC Corporation

NEC Corporation has established itself as a leader in the integration of IT and network technologies while promoting the brand statement of "Orchestrating a brighter world." NEC enables businesses and communities to adapt to rapid changes taking place in both society and the market as it provides for the social values of safety, security, fairness and efficiency to promote a more sustainable world where everyone has the chance to reach their full potential. For more information, visit NEC at <a href="https://www.nec.com">https://www.nec.com</a>.

Source: NEC Corporation

Document JAPCOR0020211222ehcm0002t



# Central Nippon Expressway and NTT Docomo to conclude a partnership agreement in the event of a disaster

231 words
21 December 2021
Nikkei Business Trends
NIKBST
English
Copyright 2021. Nikkei Inc.

Central Nippon Expressway (Central Nippon Expressway, Nagoya) and NTT Docomo (Chiyoda-ku, Tokyo) signed a **partnership** agreement on December 15, 2021 with the aim of developing quick recovery activities in the event of a disaster. In addition to sharing the emergency contact point of both companies from normal times, it will provide information on the damage status and recovery status of equipment managed by both companies in the event of a disaster, and will also cooperate with each other to restore equipment. For example, Central Nippon Expressway will support the passage of emergency vehicles of NTT Docomo in closed sections and provide some facilities in the service area and parking area as a recovery hub. NTT Docomo will provide support such as cooperation for securing communication necessary for disaster recovery activities of Central Nippon Expressway and lending of communication terminals such as smartphones and tablets.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020211222ehcl0000c



# Sequans' Monarch 2 GM02S Module Successfully Completes Interoperability Testing for Use in Japan by NTT DOCOMO and KDDI

998 words 13 December 2021 13:00 PR Newswire PRN English

Copyright © 2021 PR Newswire Association LLC. All Rights Reserved.

PARIS, Dec. 13, 2021 /PRNewswire/ -- Sequans Communications S.A. (NYSE: SQNS) announced successful completion of interoperability testing of its Monarch 2 GM02S module with NTT DOCOMO, INC. and KDDI, two of Japan's largest mobile operators. Monarch 2 GM02S is based on Sequans' second-generation Monarch 2 platform, which is an LTE-M/NB-IoT chip designed to support massive IoT applications including meters, trackers, sensors, and wearables. The Monarch 2 GM02S module delivers ultra-low power consumption, support for integrated SIM (iUICC), and a Single-SKU(TM) RF front end that supports deployment in any band worldwide. It is fully backwards compatible with Sequans first generation Monarch platform.

"Our IoT customers will benefit from the maturity and ultra-low power consumption of Sequans' Monarch 2 GM02S module," said Yoshiki Fujima, General Manager of Solution Service Department, NTT DOCOMO. "The module has powerful capabilities and it is a comprehensive IoT connectivity solution enabling device makers to launch new products quickly on our LTE-M network."

"Sequans' Monarch 2 GM02S module is one of the most advanced cellular IoT connectivity solutions in the market today," said Hiroshi Tsuji, General Manager of Service & Product Technology Department, KDDI. "It can be deployed in any band worldwide, ensuring success in IoT. We are pleased that Sequans' Monarch 2 GM02S module has passed our certification tests and is ready to support the design and deployment of new IoT devices on our network."

"Japan is one of the most exciting markets in the world for IoT and we are pleased that our Monarch 2 GM02S module can now support IoT developers and device makers in Japan," said Georges Karam, Sequans CEO. "Japan has great expertise in IoT segments such as smart city, smart home, wearables and other IoT-related tech and we look forward to seeing many new Sequans-connected IoT devices launching on Japan's mobile networks very soon. This new step is expanding the reach of Monarch 2 GM02S module already largely used in Europe and North America."

# Monarch 2 GM02S Module Product Description

Monarch 2 GM02S is the industry's most advanced LTE Cat M1/NB1/NB2 connectivity solution. It is based on Sequans' second-generation Monarch 2 chip platform, which is designed and optimized to support massive IoT. Monarch 2 provides significant improvements in performance and power consumption, while providing seamless migration for Monarch 1 customers because it is based on Sequans' existing LTE-M/NB-IoT protocol stack--one of the most mature and proven in the entire LTE ecosystem. Monarch 2 GM02S provides powerful support for integrated SIM (iUICC), enabled by its integrated high level EAL5+ secure enclave that is standards-based and GSMA-compliant, providing best-in-class security. Monarch 2 GM02S also includes Sequans' Single-SKU(TM) RF front end, supporting deployment in any band worldwide, for true global deployment capability. A low-power application MCU allows customers to port their own code into the module via a feature rich SDK. On top of its ultra-low power consumption, Monarch 2 GM02S utilizes a single rail power supply starting at 2.2 V, the lowest voltage supported by any LTE-M/NB-IoT module in the industry today.

### **About Sequans**

Sequans Communications S.A. (NYSE: SQNS) is a leading developer and supplier of cellular IoT connectivity solutions, providing chips and modules for 5G/4G massive and broadband IoT. For 5G/4G massive IoT applications, Sequans provides a comprehensive product portfolio based on its flagship Monarch LTE-M/NB-IoT and Calliope Cat 1 chip platforms, featuring industry-leading low power consumption, a large set of integrated functionalities, and global deployment capability. For 5G/4G broadband IoT applications, Sequans offers a product portfolio based on its Cassiopeia Cat 4/Cat 6 4G and high-end Taurus 5G chip platforms, optimized for low-cost residential, enterprise, and industrial applications. Founded in 2003,

Sequans is based in Paris, France with additional offices in the United States, United Kingdom, Israel, Hong Kong, Singapore, Finland, Taiwan, South Korea, and China. Visit Sequans online at <a href="https://www.sequans.com">www.sequans.com</a>, and follow us on Twitter and Linked-In

Forward Looking Statements

#### About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations.

https://www.nttdocomo.co.jp/english/.

#### About KDDI

KDDI is telecommunication service provider in Japan, offering both mobile and fixed-line communications. With its well-established base of over 40 million customers, and through mobile services and shops offering its "au" brand, KDDI is expanding its services into the "Life Design" business, which includes e-commerce, fintech, nationwide electric power utility services, entertainment and education. With a 60-year history, KDDI is now focusing on creating smart infrastructure through IoT technologies and open innovation with partners and start-up companies in diverse industries. KDDI is accelerating the global growth of its telecommunications consumer business, with operations in Myanmar and Mongolia, and in the global ICT business with the "TELEHOUSE" brand. KDDI (TYO:9433) is listed on the Tokyo stock exchange.

# http://www.kddi.com/english/

Sequans media relations: Kimberly Tassin (USA), +1.425.736.0569, kimberly@sequans.com

Sequans investor relations: Kim Rogers (USA), +1 385.831.7337, kim@haydenir.com

View original content to download multimedia:

https://www.prnewswire.com/news-releases/sequans-monarch-2-gm02s-module-successfully-completes-interoperability-testing-for-use-in-japan-by-ntt-docomo-and-kddi-301442471.html

**SOURCE Sequans Communications** 

(END)

Document PRN0000020211213ehcd0006k



# Sequans' Monarch 2 GM02S Module Successfully Completes Interoperability Testing for Use in Japan by NTT DOCOMO and KDDI

Sequans Communications; PR Newswire 1,002 words 13 December 2021 13:00 PR Newswire Europe TWOTEN English

Copyright © 2021 PR Newswire Europe Limited. All Rights Reserved.

PARIS, Dec. 13, 2021 /PRNewswire/ -- Sequans Communications S.A. (NYSE: SQNS) announced successful completion of interoperability testing of its Monarch 2 GM02S module with NTT DOCOMO, INC. and KDDI, two of Japan's largest mobile operators. Monarch 2 GM02S is based on Sequans' second-generation Monarch 2 platform, which is an LTE-M/NB-loT chip designed to support massive loT applications including meters, trackers, sensors, and wearables. The Monarch 2 GM02S module delivers ultra-low power consumption, support for integrated SIM (iUICC), and a Single-SKU™ RF front end that supports deployment in any band worldwide. It is fully backwards compatible with Sequans first generation Monarch platform.

# https://mma.prnewswire.com/media/1521139/Sequans Communications Logo.jpg

"Our IoT customers will benefit from the maturity and ultra-low power consumption of Sequans' Monarch 2 GM02S module," said Yoshiki Fujima, General Manager of Solution Service Department, NTT DOCOMO. "The module has powerful capabilities and it is a comprehensive IoT connectivity solution enabling device makers to launch new products guickly on our LTE-M network."

"Sequans' Monarch 2 GM02S module is one of the most advanced cellular IoT connectivity solutions in the market today," said Hiroshi Tsuji, General Manager of Service & Product Technology Department, KDDI. "It can be deployed in any band worldwide, ensuring success in IoT. We are pleased that Sequans' Monarch 2 GM02S module has passed our certification tests and is ready to support the design and deployment of new IoT devices on our network."

"Japan is one of the most exciting markets in the world for IoT and we are pleased that our Monarch 2 GM02S module can now support IoT developers and device makers in Japan," said Georges Karam, Sequans CEO. "Japan has great expertise in IoT segments such as smart city, smart home, wearables and other IoT-related tech and we look forward to seeing many new Sequans-connected IoT devices launching on Japan's mobile networks very soon. This new step is expanding the reach of Monarch 2 GM02S module already largely used in Europe and North America."

# Monarch 2 GM02S Module Product Description

Monarch 2 GM02S is the industry's most advanced LTE Cat M1/NB1/NB2 connectivity solution. It is based on Sequans' second-generation Monarch 2 chip platform, which is designed and optimized to support massive IoT. Monarch 2 provides significant improvements in performance and power consumption, while providing seamless migration for Monarch 1 customers because it is based on Sequans' existing LTE-M/NB-IoT protocol stack—one of the most mature and proven in the entire LTE ecosystem. Monarch 2 GM02S provides powerful support for integrated SIM (iUICC), enabled by its integrated high level EAL5+ secure enclave that is standards-based and GSMA-compliant, providing best-in-class security. Monarch 2 GM02S also includes Sequans' Single-SKU™ RF front end, supporting deployment in any band worldwide, for true global deployment capability. A low-power application MCU allows customers to port their own code into the module via a feature rich SDK. On top of its ultra-low power consumption, Monarch 2 GM02S utilizes a single rail power supply starting at 2.2 V, the lowest voltage supported by any LTE-M/NB-IoT module in the industry today.

### **About Sequans**

Sequans Communications S.A. (NYSE: SQNS) is a leading developer and supplier of cellular IoT connectivity solutions, providing chips and modules for 5G/4G massive and broadband IoT. For 5G/4G massive IoT applications, Sequans provides a comprehensive product portfolio based on its flagship Monarch LTE-M/NB-IoT and Calliope Cat 1 chip platforms, featuring industry-leading low power consumption, a large set of integrated functionalities, and global deployment capability. For 5G/4G broadband IoT applications, Page 140 of 148 © 2022 Factiva, Inc. All rights reserved.

Sequans offers a product portfolio based on its Cassiopeia Cat 4/Cat 6 4G and high-end Taurus 5G chip platforms, optimized for low-cost residential, enterprise, and industrial applications. Founded in 2003, Sequans is based in Paris, France with additional offices in the United States, United Kingdom, Israel, Hong Kong, Singapore, Finland, Taiwan, South Korea, and China. Visit Sequans online at <a href="https://www.sequans.com">www.sequans.com</a>, and follow us on Twitter and Linked-In

#### Forward Looking Statements

#### About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations.

# https://www.nttdocomo.co.jp/english/.

#### About KDDI

KDDI is telecommunication service provider in Japan, offering both mobile and fixed-line communications. With its well-established base of over 40 million customers, and through mobile services and shops offering its "au" brand, KDDI is expanding its services into the "Life Design" business, which includes e-commerce, fintech, nationwide electric power utility services, entertainment and education. With a 60-year history, KDDI is now focusing on creating smart infrastructure through IoT technologies and open innovation with partners and start-up companies in diverse industries. KDDI is accelerating the global growth of its telecommunications consumer business, with operations in Myanmar and Mongolia, and in the global ICT business with the "TELEHOUSE" brand. KDDI (TYO:9433) is listed on the Tokyo stock exchange.

# http://www.kddi.com/english/

Sequans media relations: Kimberly Tassin (USA), +1.425.736.0569, kimberly@sequans.com

Sequans investor relations: Kim Rogers (USA), +1 385.831.7337, kim@haydenir.com

Logo - https://mma.prnewswire.com/media/1521139/Sequans Communications Logo.jpg

https://rt.prnewswire.com/rt.gif?NewsItemId=EN93643&Transmission\_Id=202112130800PR\_NEWS\_EURO\_ND\_EN93643&DateId=20211213

Document TWOTEN0020211213ehcd003xv

# Sequans' Monarch 2 GM02S Module Successfully Completes Interoperability Testing for Use in Japan by NTT DOCOMO and KDDI

Sequans Communications; PR Newswire 1,004 words 13 December 2021 13:00 PR Newswire Asia PRNASI English

Copyright © 2021 PR Newswire Association LLC. All Rights Reserved.

PARIS, Dec. 13, 2021 /PRNewswire/ -- Sequans Communications S.A. (NYSE: SQNS) announced successful completion of interoperability testing of its Monarch 2 GM02S module with NTT DOCOMO, INC. and KDDI, two of Japan's largest mobile operators. Monarch 2 GM02S is based on Sequans' second-generation Monarch 2 platform, which is an LTE-M/NB-IoT chip designed to support massive IoT applications including meters, trackers, sensors, and wearables. The Monarch 2 GM02S module delivers ultra-low power consumption, support for integrated SIM (iUICC), and a Single-SKU™ RF front end that supports deployment in any band worldwide. It is fully backwards compatible with Sequans first generation Monarch platform.

# https://mma.prnewswire.com/media/1521139/Sequans Communications Logo.jpg

"Our IoT customers will benefit from the maturity and ultra-low power consumption of Sequans' Monarch 2 GM02S module," said Yoshiki Fujima, General Manager of Solution Service Department, NTT DOCOMO. "The module has powerful capabilities and it is a comprehensive IoT connectivity solution enabling device makers to launch new products quickly on our LTE-M network."

"Sequans' Monarch 2 GM02S module is one of the most advanced cellular IoT connectivity solutions in the market today," said Hiroshi Tsuji, General Manager of Service & Product Technology Department, KDDI. "It can be deployed in any band worldwide, ensuring success in IoT. We are pleased that Sequans' Monarch 2 GM02S module has passed our certification tests and is ready to support the design and deployment of new IoT devices on our network."

"Japan is one of the most exciting markets in the world for IoT and we are pleased that our Monarch 2 GM02S module can now support IoT developers and device makers in Japan," said Georges Karam, Sequans CEO. "Japan has great expertise in IoT segments such as smart city, smart home, wearables and other IoT-related tech and we look forward to seeing many new Sequans-connected IoT devices launching on Japan's mobile networks very soon. This new step is expanding the reach of Monarch 2 GM02S module already largely used in Europe and North America."

# Monarch 2 GM02S Module Product Description

Monarch 2 GM02S is the industry's most advanced LTE Cat M1/NB1/NB2 connectivity solution. It is based on Sequans' second-generation Monarch 2 chip platform, which is designed and optimized to support massive IoT. Monarch 2 provides significant improvements in performance and power consumption, while providing seamless migration for Monarch 1 customers because it is based on Sequans' existing LTE-M/NB-IoT protocol stack—one of the most mature and proven in the entire LTE ecosystem. Monarch 2 GM02S provides powerful support for integrated SIM (iUICC), enabled by its integrated high level EAL5+ secure enclave that is standards-based and GSMA-compliant, providing best-in-class security. Monarch 2 GM02S also includes Sequans' Single-SKU™ RF front end, supporting deployment in any band worldwide, for true global deployment capability. A low-power application MCU allows customers to port their own code into the module via a feature rich SDK. On top of its ultra-low power consumption, Monarch 2 GM02S utilizes a single rail power supply starting at 2.2 V, the lowest voltage supported by any LTE-M/NB-IoT module in the industry today.

# **About Sequans**

Sequans Communications S.A. (NYSE: SQNS) is a leading developer and supplier of cellular IoT connectivity solutions, providing chips and modules for 5G/4G massive and broadband IoT. For 5G/4G massive IoT applications, Sequans provides a comprehensive product portfolio based on its flagship Monarch LTE-M/NB-IoT and Calliope Cat 1 chip platforms, featuring industry-leading low power consumption, a large set of integrated functionalities, and global deployment capability. For 5G/4G broadband IoT applications, Sequans offers a product portfolio based on its Cassiopeia Cat 4/Cat 6 4G and high-end Taurus 5G chip platforms, optimized for low-cost residential, enterprise, and industrial applications. Founded in 2003,

Sequans is based in Paris, France with additional offices in the United States, United Kingdom, Israel, Hong Kong, Singapore, Finland, Taiwan, South Korea, and China. Visit Sequans online at <a href="https://www.sequans.com">www.sequans.com</a>, and follow us on <a href="https://www.sequans.com">Twitter</a> and <a href="https://www.sequans.com">Linked-In</a>

#### Forward Looking Statements

#### About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 83 million subscriptions, is one of the world's foremost contributors to 3G, 4G and 5G mobile network technologies. Beyond core communications services, DOCOMO is challenging new frontiers in collaboration with a growing number of entities ("+d" partners), creating exciting and convenient value-added services that change the way people live and work. Under a medium-term plan toward 2020 and beyond, DOCOMO is pioneering a leading-edge 5G network to facilitate innovative services that will amaze and inspire customers beyond their expectations.

https://www.nttdocomo.co.jp/english/.

#### About KDDI

KDDI is telecommunication service provider in Japan, offering both mobile and fixed-line communications. With its well-established base of over 40 million customers, and through mobile services and shops offering its "au" brand, KDDI is expanding its services into the "Life Design" business, which includes e-commerce, fintech, nationwide electric power utility services, entertainment and education. With a 60-year history, KDDI is now focusing on creating smart infrastructure through IoT technologies and open innovation with partners and start-up companies in diverse industries. KDDI is accelerating the global growth of its telecommunications consumer business, with operations in Myanmar and Mongolia, and in the global ICT business with the "TELEHOUSE" brand. KDDI (TYO:9433) is listed on the Tokyo stock exchange.

#### http://www.kddi.com/english/

Sequans media relations: Kimberly Tassin (USA), +1.425.736.0569, kimberly@sequans.com

Sequans investor relations: Kim Rogers (USA), +1 385.831.7337, kim@haydenir.com

Logo - https://mma.prnewswire.com/media/1521139/Sequans\_Communications\_Logo.jpg

**SOURCE Sequans Communications** 

https://rt.prnewswire.com/rt.gif?NewsItemId=AE93643&Transmission\_Id=202112130800PR\_NEWS\_ASPR\_AE93643&DateId=20211213

Document PRNASI0020211213ehcd002s3



# Japan to trial wide-area 5G Open RAN in 2022 - report

176 words
9 December 2021
Telecompaper Asia
TELASI
English
Copyright 2021 Telecompaper. All Rights Reserved.

Japan will set up a wide area experimental network in 2022 to test 5G open radio access networks (Open RAN), Nikkei reports, without citing sources. The project will be led by the Ministry of Internal Affairs and Communications. NTT Docomo, Rakuten Mobile and NEC are expected to be included in the project.

Japanese regulators believe Open RAN will reduce costs, and make Japanese companies more competitive against Chinese rivals. The government selected Yokosuka Research Park (YRP) in Kanagawa prefecture near Tokyo as an experimental area for Docomo and Rakuten to conduct tests. The two companies are expected to study the **connectivity** and security of base stations that the various groups have developed.

In order to bring the experiments closer to practical application, YRP will be networked with other sites within a 30 km radius, including Docomo's own development site. According to the ministry, Japan's four top telecom operators will be ready to roll out 5G base stations across the country by April 2024.

Document TELASI0020211209ehc9000b9



#### Nokia readies O-RAN fronthaul with NTT DOCOMO for multi-vendor 5G operation

CT Bureau
Distributed by Contify.com
421 words
8 December 2021
Communications Today
ATCOMT
English
Copyright © 2021. ADI Media Pvt. Ltd.

Nokia today announced that it is ready to supply its O-RAN fronthaul multi-vendor solution to NTT DOCOMO, INC.'s (DOCOMO) 5G network following successful testing. The move will enable the Japanese operator to further select independent combinations of <a href="hardware">hardware</a> and software to optimize its network in the future. It follows the work of the O-RAN ALLIANCE in creating a common specification enabling interoperability between different vendors. It is the latest milestone demonstrating Nokia's commitment to O-RAN and open networks.

During the trial at DOCOMO's Lab in Yokosuka, Nokia's 5G O-RAN AirScale baseband was successfully integrated and tested with third-party O-RUs (radio units). Nokia's O-RAN capabilities are built on top of its AirScale software and provide the same high level of performance, functionality, and security as Nokia's radio products. Nokia is helping to prepare for the network architecture of the future by building open interfaces on top of its existing solutions, offering CSPs a choice to pursue O-RAN. Nokia has already made significant investments in O-RAN by leading the early deployment of the RAN Intelligent Controller (RIC) and the open fronthaul.

The O-RAN ALLIANCE was formed in 2018 to define common interfaces between systems to reduce complexity and accelerate the deployment of multi-vendor RANs. It specified an eCPRI-based 7-2x open interface between the Radio Unit (O-RU) and Distributed Unit (O-DU). This is the only standardized fronthaul interface that enables multi-vendor interoperability while optimizing the cost of fronthaul transmission and maximizing radio-frequency performance.

Sadayuki Abeta, General Manager of Radio Access Network Development Department, NTT DOCOMO, commented: "NTT DOCOMO has been actively driving open RAN standardization and commercialization, being the world's first operator to deploy multi-vendor O-RAN solutions for the 5G network. Successful testing with Nokia is an important step in further accelerating open RAN commercialization and its global expansion."

Tommi Uitto, President of Mobile Networks at Nokia, said: "This project with NTT DOCOMO is further evidence of our commitment to leading the open mobile future by investing in Open RAN solutions. Open RAN technology will enrich the mobile ecosystem with new solutions and business models and support an expanded multi-vendor ecosystem. We have the scale and capabilities to address the increased customer demand for this technology, underpinned by the world-class network performance and security that only Nokia can deliver."

Document ATCOMT0020211210ehc80002t



# NTT Docomo to start cooperation with Saison Automobile & Fire Insurance on safe driving support service

265 words 8 December 2021 Nikkei Business Trends NIKBST English Copyright 2021. Nikkei Inc.

On November 29, 2021, NTT Docomo will start providing services that link the safe driving support service "NTT Docomo Drivers Support" with the accident response service of Saison Automobile & Fire Insurance (Toshima-ku, Tokyo). NTT Docomo's communication drive recorder, smartphone application, and **cloud** computing will be linked to record video and vehicle location information when an accident or trouble occurs. In addition, it will notify the family in real time, and it will automatically notify the application by detecting abnormalities in the parking lot. If a customer who is using "NTT Docomo Drivers Support" has a contract for "Adult automobile insurance" of SAISON AUTOMOBILE & FIRE INSURANCE, when a drive recorder detects an impact equivalent to an accident, it will send accident data such as images and vehicle location information to SAISON AUTOMOBILE & FIRE INSURANCE Are automatically linked.

When SAISON AUTOMOBILE & FIRE INSURANCE is notified of the accident, it will be possible to receive prompt response, and it is possible to smoothly proceed with the accident resolution without submitting video data for negotiating negotiations and negligence ratio judgment.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020211209ehc8000gs



# NTT Group to collaborate with Sydney Institute of Technology to create a safe and smarts city

298 words 8 December 2021 Nikkei Business Trends NIKBST English Copyright 2021. Nikkei Inc.

NTT Group (NTT, NTT Data, NTT Docomo, NTT in the UK, NTT TechnoCross, NTT Research in the US) had partnered with the Sydney Institute of Technology to develop a safe and smart city in New South Wales, Australia (announced on November 30, 2021). By supporting the creation of innovative technologies such as **sustainability** and decarbonization, the company will promote economic growth and local employment in the state, fostering human resources, and globally expanding technology. The two parties will promote collaboration in three fields: Development of advanced technologies and products, market development using advanced R&D technology, and construction of a startup **ecosystem** through industry-academia collaboration.

As the first step of the collaboration, the two companies will accelerate the collaboration in the cyber security field in Sydney by demonstrating an encrypted information sharing platform utilizing ABE (attribute-based encryption) technology of NTT Group and applying it to the system in the university. In addition, it will establish 5G DX Square to create 5G business and use cases, and promote innovation in the field of sports analytics combined with URV technology. In the future, it will expand its collaboration in the field of digital twin and quantum computing to support the education of future digital professionals in the state.

Disclaimer: The English translations provided through this service are the result of automatic and mechanical translation of contents written in Japanese and created by Nikkei or licensed by a third party, by an automatic translation system provided by a third party after certain processing of the contents by Nikkei. Nikkei disclaims all warranties, express or implied, related to the English translations, including any warranty of accuracy, reliability, validity and fitness for a particular purpose.

Document NIKBST0020211209ehc80008d

# **Search Summary**

Text	virtual real estate or virtual properties or digital real esate or digital real assets or digital properties or metaverse properties or digital plots or virtual plots or virtual land or virtual reality platform or manufacturing simulation or virtual simulation or digital twins or virtual manufacturing or immersive learning or mixed-reality learning or metaverse learning or VR learning or AR learning or VR training or virtual recruitment or 3d training or training metaverse or virtual retail or virtual shopping or virtual clienteling or omnichannel shopping or humanising digital retail or immersive virtual stores or 3d virtual store or metaverse shopping or virtual clothing or virtual goods or gaming or digital avatar or digital character or virtual game or 3D avatars or virtual reality or interoperable VR space or digital financial ecosystems or metaverse wallets or robo advisory or virtual financial data or digital bank branches or digital touchpoint or blockchain wallets or digital wallets or digital wedding or virtual wedding or virtual event or virtual concert or virtual theme park or virtual classroom or virtual learning or virtual school or immersive learning or devices or OEM or infrastructure or cloud or data anlytics or aritifical intelligence or cybersecurity or privacy or payments or platform or partnership or connectivity or hardware or CRM or content or ethics or sustainability or education or digital inclusion or ecosystem or venturing or funding or investment or metaverse or CDN or cables
Date	In the last year
Source	All Sources
Author	All Authors
Company	NTT DOCOMO, INC.
Subject	All Subjects
Industry	All Industries

Region	All Regions
Language	English
Results Found	309
Timestamp	18 April 2022 7:41