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Fifth Generation Fixed Network (F5G); F5G Use Cases Release #2

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Reference

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Foreword

This Group Report (GR) has been produced by ETSI Industry Specification Group (ISG) Fifth Generation Fixed Network (F5G).

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1 Scope

The present document describes the use cases to be enabled by the Fifth Generation Fixed Network (F5G). These use cases include services to residential, business and vertical industry customers as well as functionalities to optimize the management and performance of F5G. These use cases will be used as input to a gap analysis and a technology landscape study, aiming to extract the technical requirements needed for their implementations. The use cases are identified based on their influence on the fixed network architecture and requirements. The context and description of each use case are presented in the present document.

2 References

2.1 Normative references

Normative references are not applicable in the present document.

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

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The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

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3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the following terms apply:

AI annotation: task of labelling data with metadata in preparation for training a machine learning model

rendering: process of generating a photorealistic or non-photorealistic image from a 2D or 3D model by means of a computer program

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

6DoF	Six Degrees of Freedom
AC	Access Controller
ACIA	Alliance for Connected Industries and Automation
AggN	Aggregation Network
AGV	Automated Guided Vehicle
AI	Artificial Intelligence
AN	Access Network
AP	Access Point
API	Application Programming Interface
AR	Augmented Reality
ASI	Asynchronous Serial Interface
ATM	Automatic Teller Machine
AZ	Availability Zone
B2B	Business to Business
B2C	Business to Customer
BBU	Base Band Unit
BIP	Bit-Interleaved Parity
BNG	Broadband Network Gateway
CAPEX	CAPital EXpenditure
CCTV	Closed Circuit TeleVision
CDN	Content Delivery Network
CE	Customer Equipment
CFP	C Form-factor Pluggable
CO	Central Office
CoS	Class of Service

CPE	Customer Premise Equipment
CPN	Customer Premises Network
CR	Computed Radiography
CR	Core Router
CSP	Communication Service Provider
CT	Communication Technology/Computed Tomography
CU	Central Unit
CWDM	Coarse Wavelength Division Multiplexing
DBA	Dynamic Bandwidth Allocation
DC	Data Centre
DC-GW	Data Center Gateway
DCI	Data Centre Interconnect
DHCP	Dynamic Host Control Protocol
DICOM	(Digital Imaging and Communications in Medicine)
DIM	Dynamic Integrity Measurement
DR	Digital Radiography
DSA	Digital Subtraction Angiography
DSL	Digital Subscriber Line
DSLAM	Digital Subscriber Line Access Multiplexer
DT	Digital Twin
DU	Distributed Unit
DWDM	Dense Wavelength Division Multiplexing
E2E	End to End
EAU	Electrical Aggregation Unit
EG	Enterprise Gateway
eMBB	Enhanced Mobile Broadband
EMI	Electro-Magnetic Interference
EMS	Element Management System
ERP	Enterprise Resource Planning
EU	European Union
F5G	Fifth Generation Fixed Network
FAT	Fibre Access Terminal
FDMA	Frequency-Division Multiple Access
FEC	Forward Error Correction
FFC	Full-Fibre Connection
FGW	Fibre GateWay
FIN	Fibre in-premises Network
FPS	First Person Shooter
FTTB	Fibre To The Building
FTTB/C	Fibre To The Building/Curb
FTTC	Fibre To The Curb
FTTH	Fibre To The Home
FTTR	Fibre To The Room
FWL	Fixed Wireless Link
GE	Gigabit Ethernet
GiGE Vision®	GiGabit Ethernet Vision
GIS	Geographic Information System
GPON	Gigabit-capable Passive Optical Network
GPS	Global Positioning System
GPU	Graphics Processing Unit
GRE	Guaranteed Reliable Experience
GVCP	GiGE Vision Control Protocol
GVSP	GiGE Vision Stream Protocol
HD	High Definition
HDR	High Dynamic Range
HDTV	High Definition TeleVision
HGW	Home Gateway
HIS	Hospital Information System
HMD	Head-Mounted-Display
HMI	Human Machine Interface
HQ	Head Quarter
HSI	High Speed Internet

HW	HardWare
IBC	International Broadcasting Centre
ICT	Information and Communication Technology
IIoT	Industrial Internet of Things
IOR	Industrial Optical Ring
IP	Internet Protocol
IPTV	Internet Protocol TeleVision
ISP	Internet Service Provider
IT	Information Technology
LAN	Local Area Network
LiFi	Light Fidelity
LoS	Line of Sight
MAC	Media Access Control
MDU	Multiple Dwelling Unit
MES	Manufacturing Execution System
ML	Machine Learning
mMTC	Massive Machine Type Communication
MOBA	Multiplayer Online Battle Arena
MOOC	Massive Open Online Course
MPEG	Moving Picture Experts Group
MPLS	Multiprotocol Label Switching
MR	Mixed Reality
MRI	Magnetic Resource Imaging
MSA	Multi-Source Agreement
MSCO	Multi-Service Connectivity Orchestrator
MWDM	Metro Wavelength Division Multiplexing
NFV	Network Functions Virtualisation
NMS	Network Management System
OA	Office Automation
OAM	Operation And Maintenance
ODN	Optical Distribution Network
ODTR	Optical Time Domain Reflectometer
OEHC	Optical Electric Hybrid Cable
OLO	Optical Local Oscillator
OLT	Optical Line Termination
OMCI	ONU Management and Control Interface
ONU	Optical Network Unit
OPC UA	Open Platform Communications Unified Architecture
OPC	Open Platform Communications
OPEX	Operational Expenses
ORE	Optical Ring End
ORH	Optical Ring Head
ORP	Optical Ring Passive
OS	Operating System
OSS	Operation Support System
OT	Operational Technology
OTDR	Optical Time Domain Reflectometer
OTN	Optical Transport Network
OXC	Optical Cross-Connect
P2MP	Point-to-MultiPoint
P2P	Point to Point
PACS	Picture Archiving and Communication Systems
PC	Personal Computer
PCC	Point Cloud Compression
PDM	Polarization-Division Multiplexed
PE	Provider Edge
PET-CT	Positron Emission Tomography-Computed Tomography
PLC	Programmable Logical Controller
PM	Post Meridiem
PoD	Point of Delivery
PoE	Power over Ethernet
POL	Passive Optical LAN

PON	Passive Optical Network
PoP	Point of Presence
PTP	Precise Time Protocol
QSFP	Quad (4-channel) Small Form-factor Pluggable
RA	Remote Attestation
RAC	Real Application Cluster
RAN	Radio Access Network
RAW	Reliable and Available Wireless
RF	Radio Frequency
RFS	Resource Facing Services
RGBD	Red Green Blue Depth
RIS	Radiology Information System
RN	Remote Node
RRH	Radio Remote Head
RSSI	Received Signal Strength Indication
RTT	Round Trip Time
RTU	Remote Terminal Unit
RU	Radio Unit
SA	StandAlone
SCADA	Supervisory Control and Data Acquisition
SD	Standard Definition
SDI	Serial Digital Interface
SDN	Software-Defined Network
SD-WAN	Software-Defined Wide Area Network
SFP	Small Form-factor Pluggable
SLA	Service-Level Agreement
SME	Small and Medium Enterprises
SNI	Service Node Interface
SRLG	Shared Risk Link Group
STP	Shielded Twisted Pair
TCP	Transmission Control Protocol
TDMA	Time Division Multiple Address
TPM	Trusted Platform Module
TSN	Time-Sensitive Networking
TTM	Time To Market
TV	TeleVision
TWT	Target Wake Time
UA	Unified Architecture
UAC	User Application Client
UAS	User Application Server
UDP	User Datagram Protocol
UHD	Ultra-High Definition
UPF	User Plane Function
URLLC	Ultra-Reliable and Low Latency Communications
UTP	Unshielded Twisted Pair
VAS	Value Added Services
VLAN	Virtual Local Area Network
VM	Virtual Machine
VoIP	Voice over Internet Protocol
VPC	Virtual Private Cloud
V-PCC	Video codec based Point Cloud Compression
vPLC	virtual Programmable Logic Controller
VPN	Virtual Private Network
VR	Virtual Reality
VR/AR	Virtual Reality/Augmented Reality
VTM	Video Teller Machine
VXLAN	Virtual eXtensible Local Area Network
WDM	Wavelength Division Multiplexing
Wi-Fi®	Wireless Fidelity
WLAN	Wireless Local Area Network
XFP	Gigabit Small Form-factor Pluggable
XG-PON	10-Gigabit-capable Passive Optical Network