SNS COLLEGE OF ENGINEERING

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Department of Information Technology

Course Name – 19IT503 Internet of Things

III Year / V Semester

Unit 3 – EVOLVING IoT STANDARDS & PROTOCOLS

Topic 4- 3GPP Service Requirements

3GPP – Service Requirements for Machine Type Communications

- Current mobile networks are optimized for human-to-human (H2H) traffic and not for M2M/MTC interactions
- 3GPP has started work on M2M specification in 2010 for interoperable solutions, particularly in the 3G/4G/LTE context.
- MTC Architecture Interfaces
- MTCu: provides MTC devices access to the 3GPP network for the transport of user traffic;
- MTCi: the reference point for MTC server to connect the 3GPP network via 3GPP bearer service; and
- MTCsms: the reference point for MTC server to connect the 3GPP network via 3GPP SMS.

3GPP – Service Requirements for Machine Type Communications

For MTC devices communicating with one or more MTC servers, the following use cases exist:

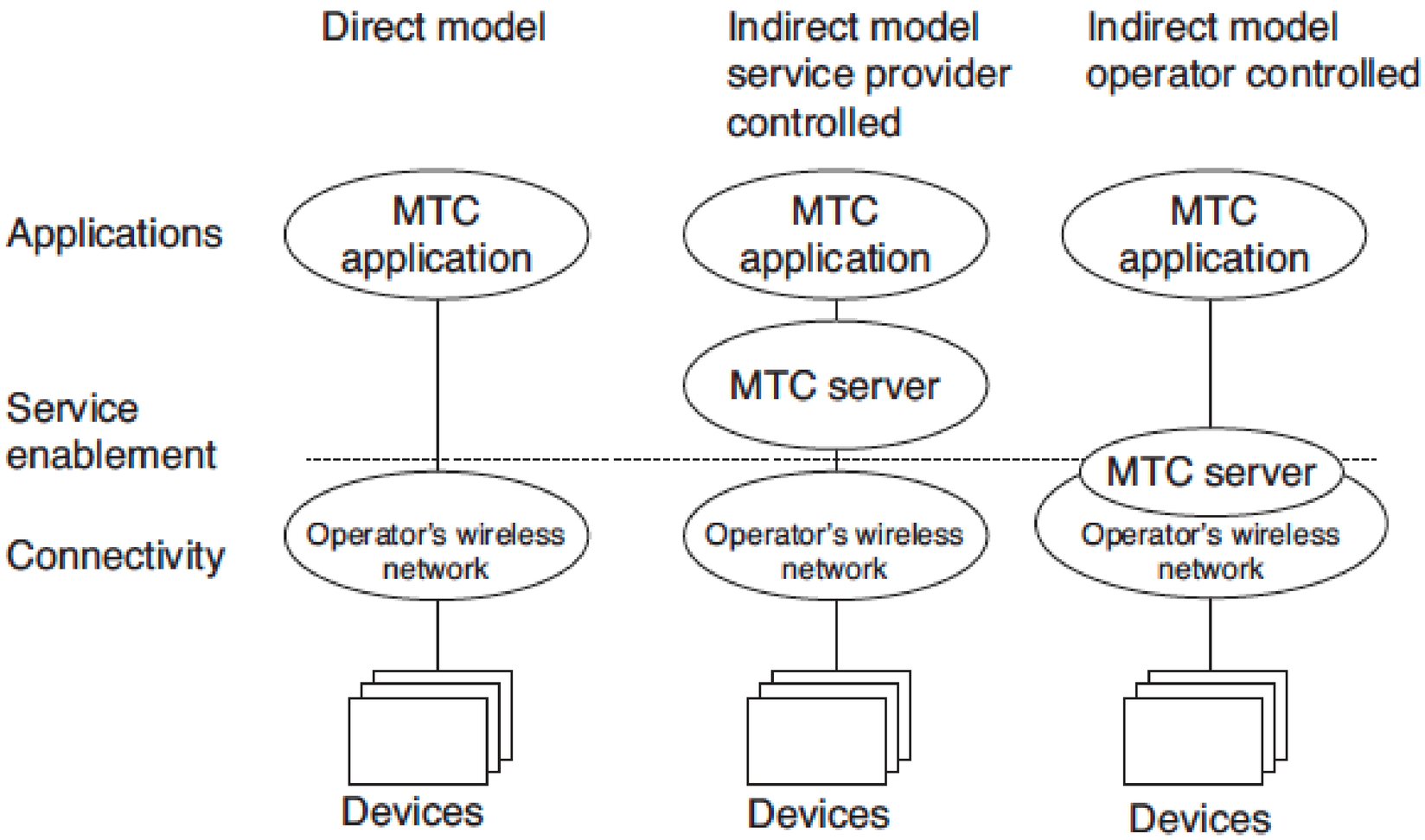
(a) MTC server controlled by the network operator; namely the MTC server is located in the operator domain. Here

– The network operator offers API (e.g., Open Systems Architecture [OSA]) on its MTC server(s)
– MTC user accesses MTC server(s) of the network operator via API

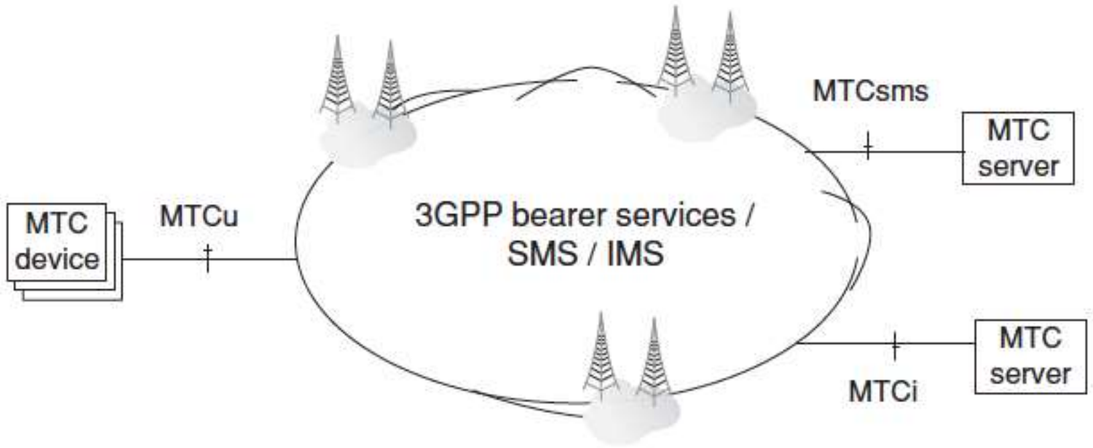
(b) MTC server not controlled by the network operator; namely MTC server is located outside the operator domain. Here

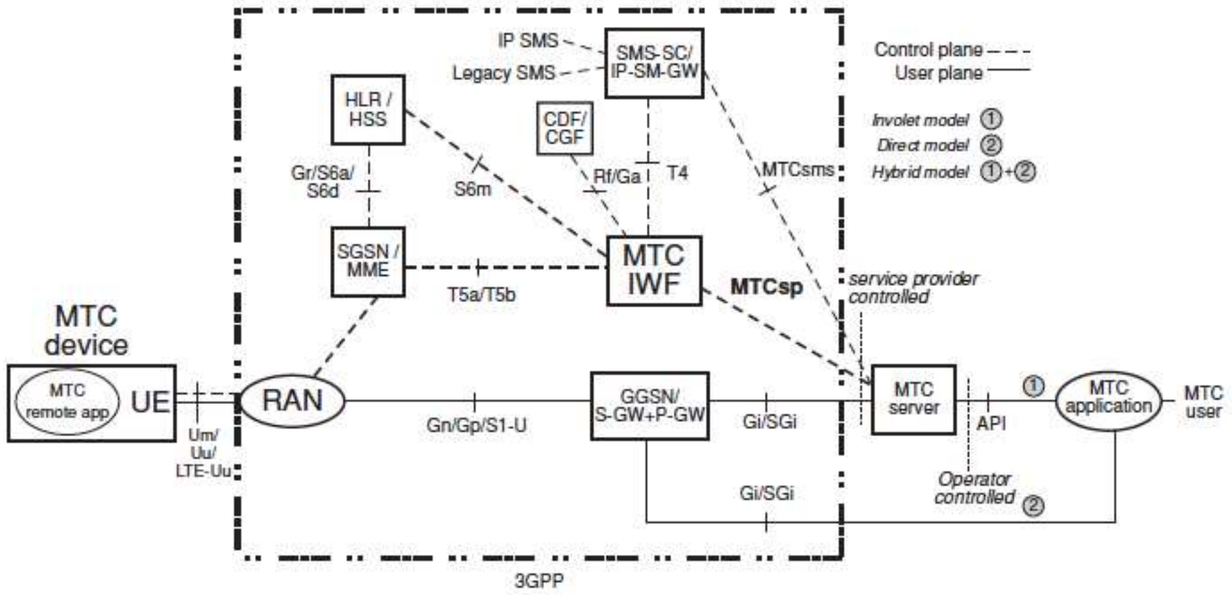
– The network operator offers the network connectivity to the MTC server(s) located outside of the network operator domain

3GPP – Service Requirements for Machine Type Communications



3GPP – Service Requirements for Machine Type Communications





3GPP – Service Requirements for Machine Type Communications

The architecture encompasses a number of models as follows:

- Direct model—direct communication provided by the 3GPP operator: The MTC application connects directly to the operator network without the use of any MTC Server.

- Indirect model—MTC service provider controlled communication: The MTC server is an entity outside of the operator domain. The MTCsp and MTCsms are external interfaces (i.e., to a third-party M2M service provider);

- Indirect model—3GPP operator controlled communication: The MTC server is an entity inside the operator domain. The MTCsp and MTCsms are internal to the public land mobile network (PLMN);

- Hybrid model: The direct and indirect models are used simultaneously in the hybrid model, for example, connecting the user plane using the direct model and doing control plane signalling using the indirect model.

THANK YOU