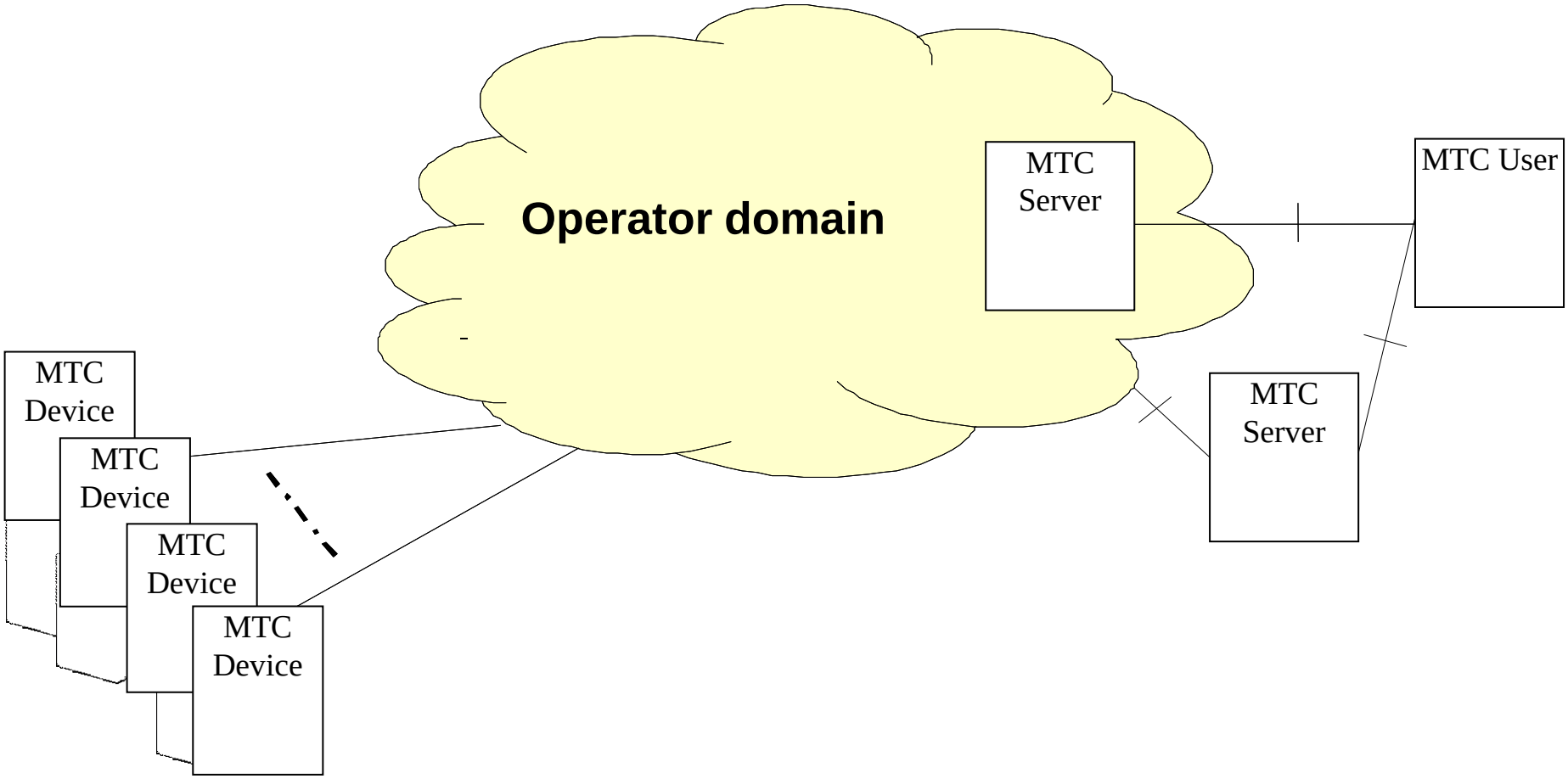
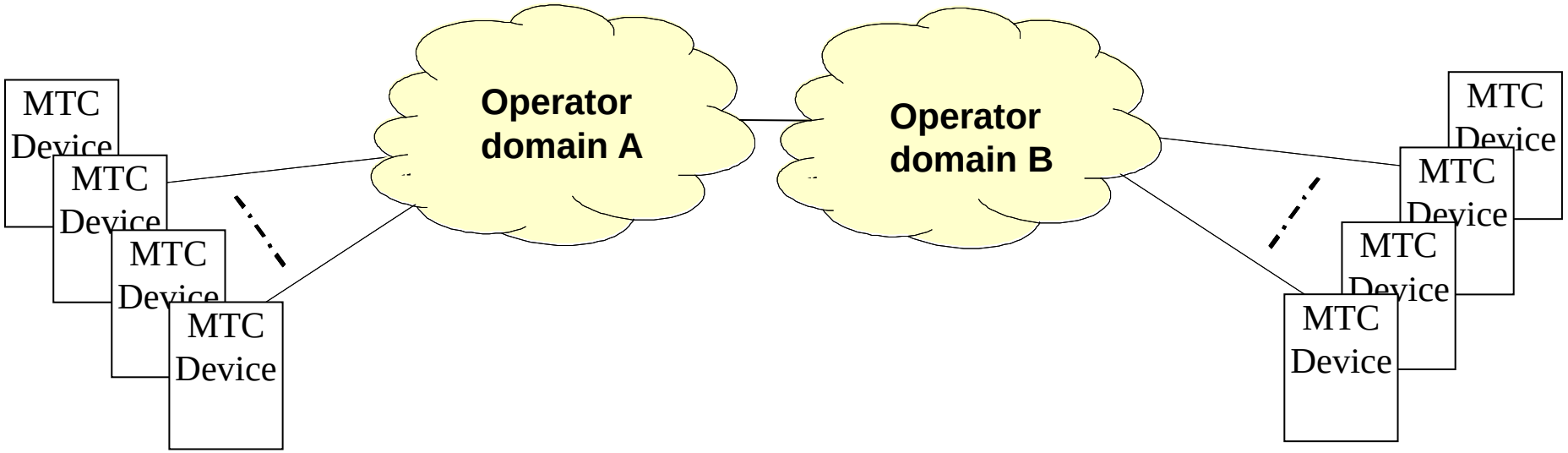
Implication of 3GPP Link Characteristics on Lightweight IP Design

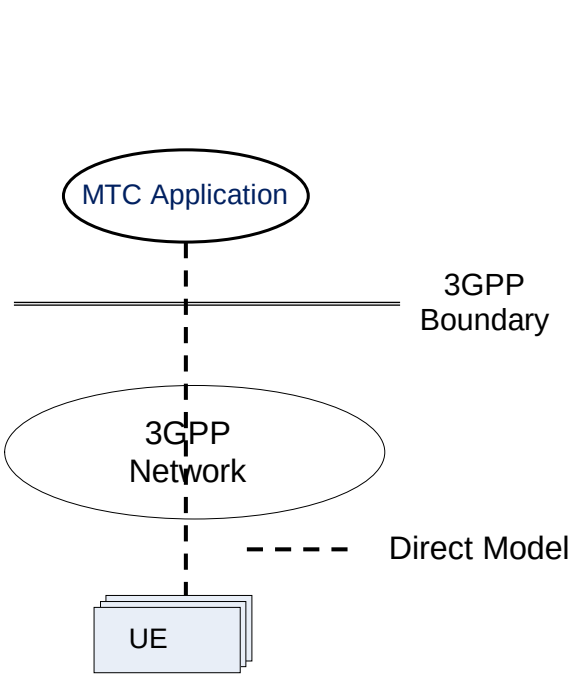
MTC Scenario (1)



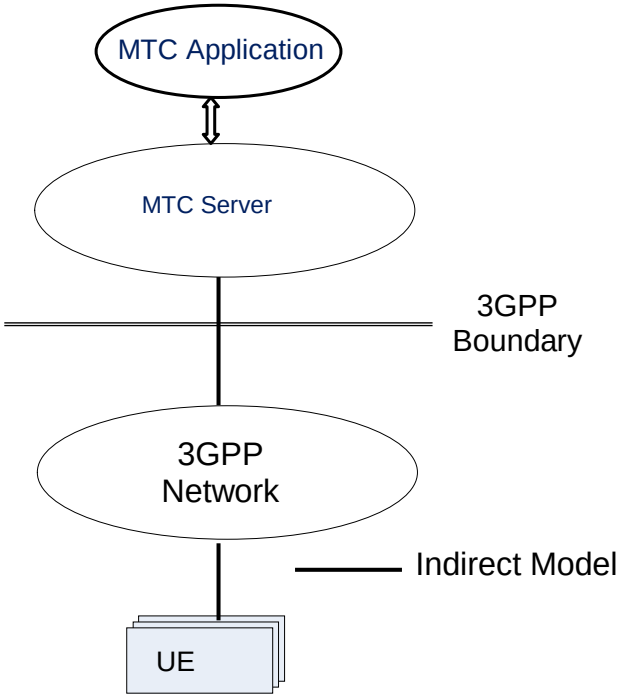
MTC Scenario (2)



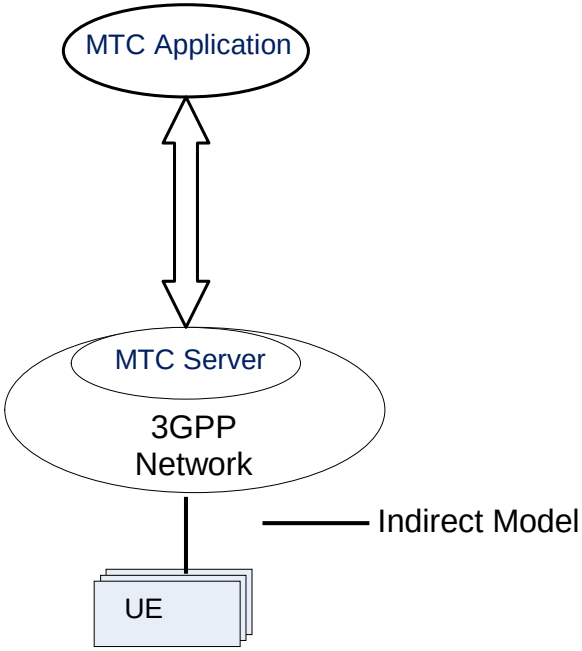
MTC Communication Model



A) Direct communication, under 3GPP operator control



B) Service Provider controlled communication



C) 3GPP operator controlled communication

Note: MTC device to MTC device communication is not considered.

MTC Feature

- Low Mobility
- Time Controlled
- Small Data Transmissions
- Infrequent Mobile Terminated
- MTC Monitoring
- Secure Connection
- Group Based MTC Features
  - Group Based Policing
  - Group Based Addressing

Impact Analysis (1) – Communication Model

- MTC communication model may imply that the constrained node only need so-called client function and does not need server function in app layer.

Impact Analysis (2)- Network Layer

- RFC3316 specified general IPv6 implementation for 3GPP terminals.
- TR23.888 implies private IPv4 based communication between MTC device and MTC server. IPv4 support is needed for MTC devices, such as address configuration, etc.

Impact Analysis(3)- Transport Layer

- Small data transmission implies <1k bytes per transmission. For simplification purpose UDP can be used.

Impact Analysis (4) – APP layer

- TR23.888 implies private IPv4 based communication between MTC device and MTC server. IPv4 support is needed for app layer protocol such as CoAP. The service discovery can no longer rely on IPv6 based multicast.

Comments and Questions?

- Thank you.