Lesson 3
LWM2M Web Connectivity Protocol

Lightweight

- ‘Lightweight’ means in general that S/W component or object does not depend on a call to the system resources during execution
- Example of a call to a system resource is calling an API for display-menu or calling a network function in the system software (OS).

Lightweight in LWM2M

- Transfers up to 100s of bytes unlike the web-pages of 1000s of bytes
- Data transfer formats between client and server: Binary and has TLV (Tag Length Value) or JSON (Java Script Object Notation) batches of objects arrays or resource arrays or MIME (Multipurpose Internet Mail Extensions) Type file

LWM2M (Lightweight Machine to Machine) Protocol

- An Application-layer protocol specified by OMA (Open Mobile Alliance) for transfer of service data between the machines
- Uses Compact and Efficient data model

Data Transfer between M2M client and M2M Service

- A client object sends a request or receives a response of the LWM2M server over the access and CoRE networks
- M2M Area Local Network M2M Client objects can also communicate through COAP clients

LWM2M (Lightweight Machine to Machine) Protocol

- A M2M Gateway protocol generally interface to CoAP for the web connectivity

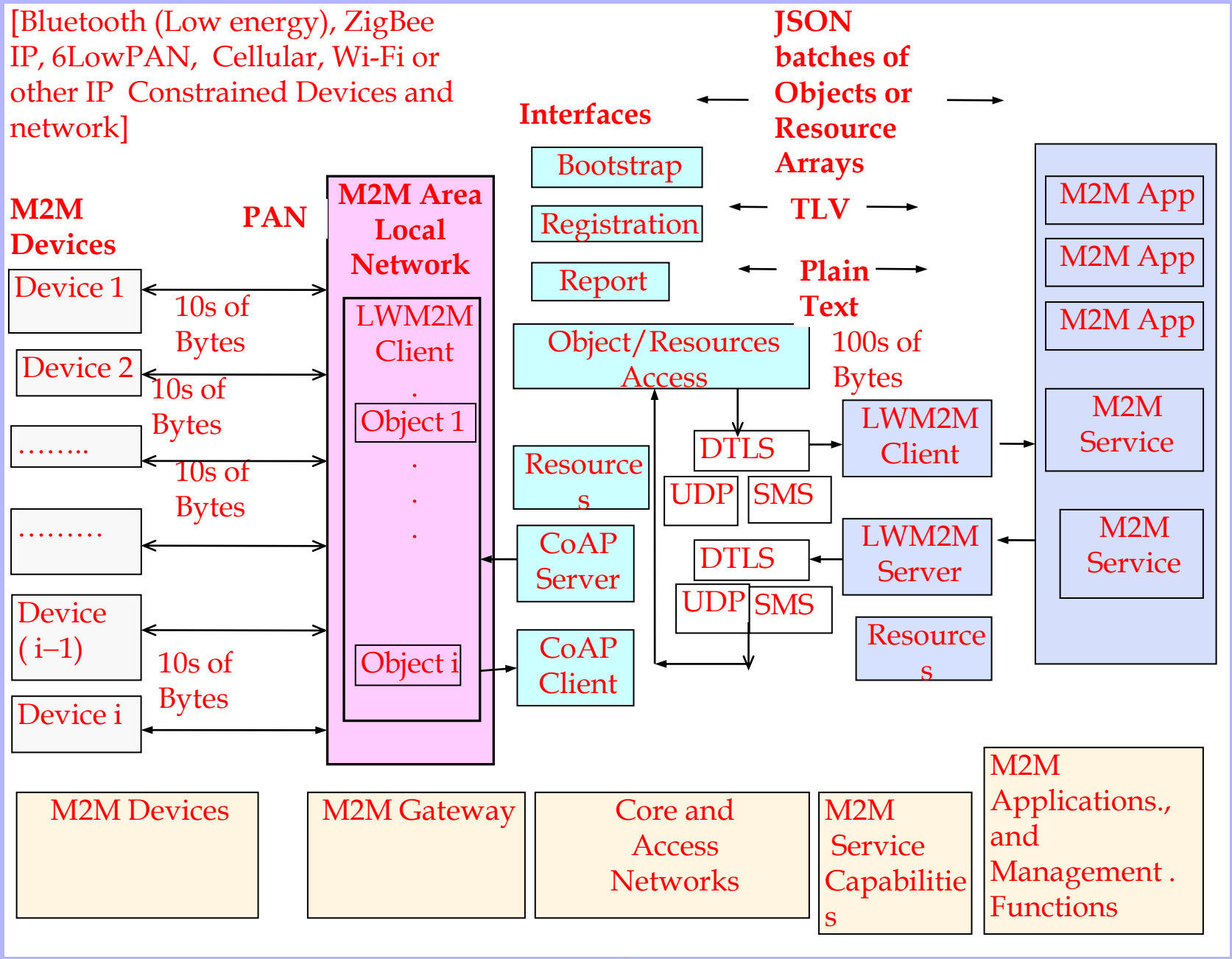

Fig. 3.3 Devices network connectivity using LWM2M

Features of LWM2M Objects and resources

- An object or resource use CoAP, DTLS, and UDP or SMS standard protocols for sending a request or response.
- Use of (i) plain text for a resource or (ii) Use of JSON (Java Script Object Notation) during a single data transfer.

LWM2M Features

- (iii) Uses binary TLV format data transfer for a package for a batch of resource-representations in a single data transfer
- Objects or its resource access using URI (Universal resource identifier)

Interface Functions LWM2M-CoAP

- (i) bootstrapping,
- (ii) registration, deregister or update a client and its objects,
- (iii) or reporting the notifications with new resource values, and
- (iv) service and management access through server

Summary

We learnt

- LWM2M is M2M gateway protocol to connect M2M client with M2M service
- LWM2M communicates 100 bytes of data
- Use binary TLV or JSON or MIME formats

Summary

We learnt

- Uses URI
- LWM2M client Interfaces to a CoAP client and then to DTLS
- M2M service interfaces to LWM2M server to receive client rquests for service

End of Lesson 3 on LWM2M Web-Connectivity Protocol