Data management, privacy, data security, data enrichment and data consolidation

Data Management and Consolidation Gateway Functions

- Transcoding
- Integration
- Compaction
- Fusion

Transcoding

- Adaptation
- Conversions, and changes
- Using software which renders the web responses and messages
- Required in the IoT device acceptable Formats and representations

Data Privacy

- Examples: Patient medical data, data for a company supplies from and to different locations, and changes in inventories

Data Privacy

- Privacy and protection from consciously or unconsciously transferring to untrustworthy destination using the Internet

Privacy Model

- Depends on following components:
- (i) Device and Applications Identities management
- (ii) Authentication
- (iii) Authorisation
- (iv) Trust and
- v) Reputation

Data Security sub-layer for confidentiality and authorization

- A standard algorithm AES (Advanced Encryption Algorithm based on symmetric 128-bit block data encryption)

Data Security sublayer for confidentiality and authorization

- CCM mode (Counter with CBC-MAC)
- CBC stands for cryptographic block cipher with a block length of 128 bits.
- CCM is method which provisions for the authenticated encryption algorithm for confidentiality and authentication.

Data Gathering

- Data gathering means data-acquisition from the device(s)

Data Gathering

Four modes of data gathering are:

(i) Polling– means data sought from a device by addressing the device

(ii) Event based–

(iii) Scheduled interval–

(iv) Continuous monitoring–

Data Enrichment

- Adding value
- Security and
- Usability of the data

Data Dissemination: Prior Actions

- (i) **Aggregation** of joining together present and previously received data.
- (ii) **Compaction** making information short without changing the meaning or context

Data Dissemination: Prior Actions

- (iii) **Fusion** means formatting the information received in parts through various data frames and several types of data (or data from several sources),

Energy Dissipation due to Data Dissipation

- Higher the data rate, the greater will be the energy consumed
- Higher is the radio frequency used, the greater will be the energy consumed

Energy Dissipation due to Data Dissipation

- Energy efficient computations by using concepts of data aggregation, compaction and fusion

Summary

We learnt

- Data privacy and security,
- Data enrichment and consolidation,
- Data transformation
- Transcoding

Summary

We learnt

- Integration,
- Compaction,
- Fusion, and
- Dissemination

End of Lesson 5 on
Data management, privacy, data security, data enrichment and data consolidation