MIBs location in 802.16g Reference Model

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Purpose:

For discussion of the 802.16g reference model and location of MIBs

MIBs location 802.16g Reference Model

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Outline

- Present 802.16g Reference Model
- 802.16f Fixed MIBs Definition and Use
- Mobile MIBs Definition and Use
- Impact of location of MIBs
- Recommendation
- Discussion

Present 802.16g Reference Model
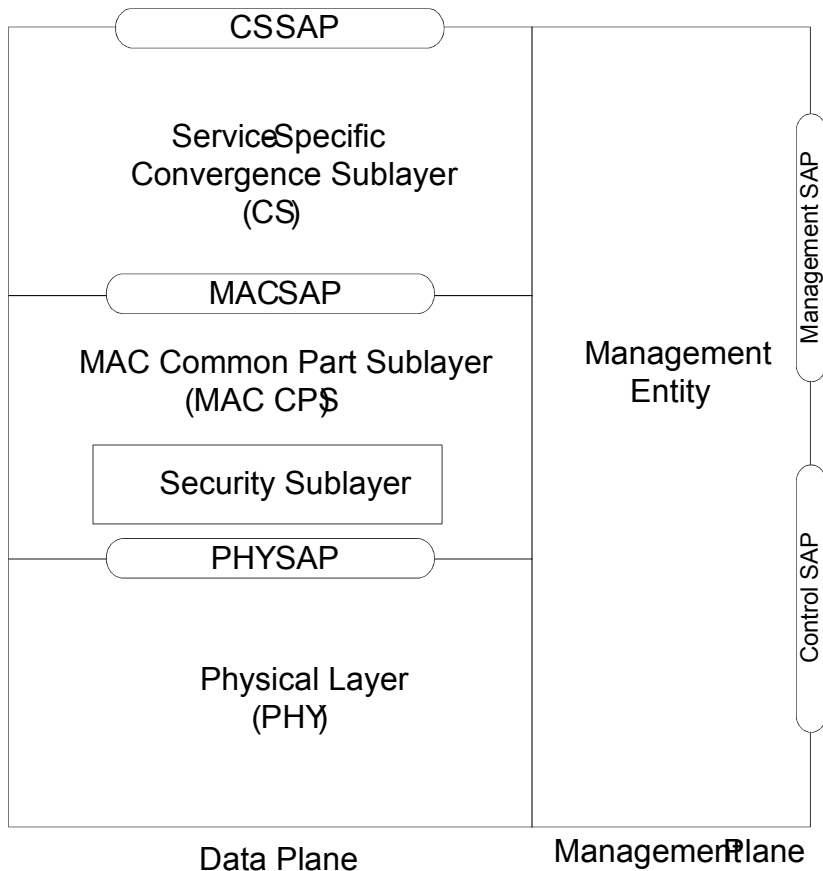
- Service Access Points (SAPs)
  - Logical interfaces
  - Not Implementation specific
  - Codifies interaction and parameters
- Management SAP
  - Example functional aspects
    - Network Monitoring
- Control SAP
  - Example functional aspects
    - Authentication
    - Accounting

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802.16f Fixed MIB Definition & Use

- Defines an SMIv2 protocol neutral MIB with SNMP as most likely protocol for use
  - Two MIBs : (1) wmanIfMib and (2) wmanDevMib defined

- Both (1) & (2) mandatory on BS. Also mandatory on SS implementing SNMP.
  - SNMPv2 compatible, SNMPv3 optional but recommended for secure and flexible access to MIB
  - **Important Implications!:** If SNMP is not used over the air, then SS <u>need not</u> implement MIBs (1) and (2).
    - MAC management messages or some other protocol required to manage SS
    - Parameters definitions if not using MIBs it is currently undefined (as 802.16f does not cover)

Mobile MIBs Definition and use

- 802.16i project proposed
- Understanding is:
  - A protocol neutral definition will be done using IRP methodology
  - SNMP MIB will be one of the solution sets
  - XML/CORBA based solution sets also may be defined
- Over the Air definitions will still need to be optimal

Impact of Location of MIBs

MS/SS

BS

Network Management Server

802.16f model

SNMP Agent → SNMP → SNMP Agent ← SNMP → SNMP Servers

SNMP MIBs

SNMP MIBs

M-SAP

MAC Management → 802.16g → MAC Management ← M-SAP → SNMP Agent ← SNMP → SNMP Servers

C-SAP

Generic Management Data

Generic Management Data

C-SAP

SNMP MIBs

MAC and Management Layer
Needs ability to evolve on its own
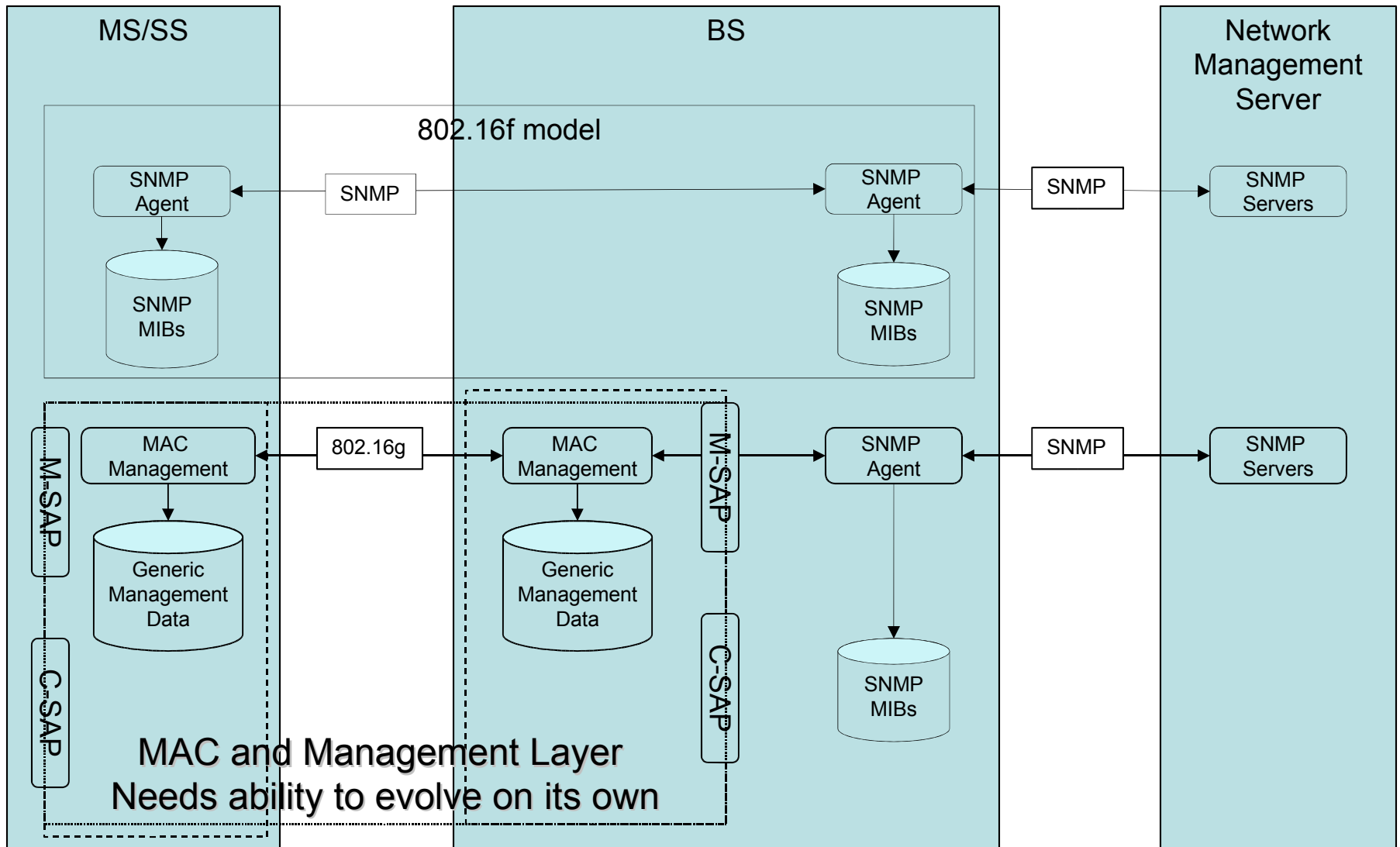
Recommendation

- Option 1:
  - Define MIB within the MAC Management Entity (ME)
- Option 2:
  - Define MIB outside MAC Management Entity
- Option 3:
  - Define MIB partially within ME and partially without
  - Allows implementations to scale over the SAP interfaces
  - Allows MAC layer protocol independence

Discussion

Backup

Architectural Model

CS SAP

Service Specific Convergence Sublayer

MAC SAP

MAC Common Part Sublayer (CPS)

Security Sublayer

PHY SAP

PHY Sublayer

Management Entity
Service Specific Convergence Sublayer

Management Entity
MAC Common Part Sublayer (CPS)

Security Sublayer

Management Entity
PHY Sublayer

Management SAP

Scope of 802.16g

Control & Data Plane   *Management Plane*

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