

802.16 Network Management Study Group Proposal

Network Architecture and Management
MAC Primitives & Actions

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Problems

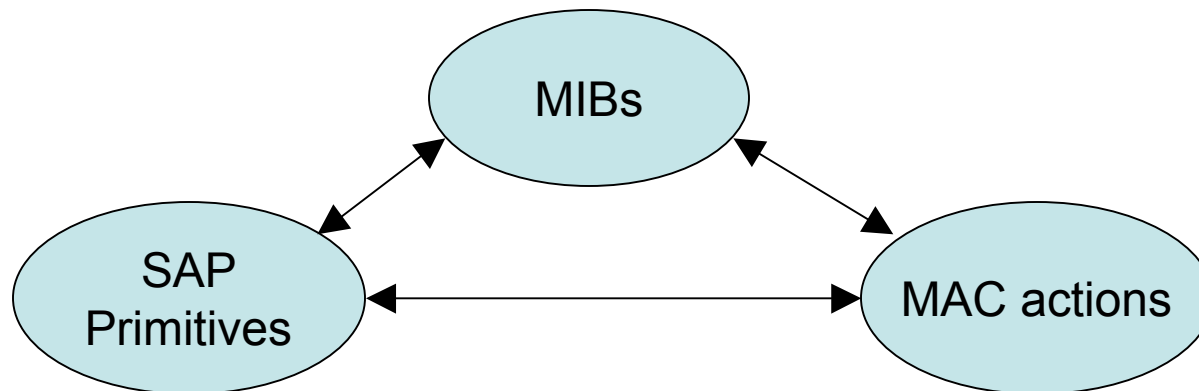
- Current MAC and CS layer interfaces (SAPs) in 802.16 are lightly defined leading to lack of interoperability for devices exposing those interfaces directly
- There is a 5 criteria commitment that 802.16 (and d and e) provide managed objects consistent with 802.1D practices. I.E. and ASN.1 MIB

.16e Mobility Problem Statement

- 16e working on WirelessMAN mobility
- Mobility requires
 - Data mobility support at the backbone, E.G. mobileIP etc.
 - 16e message primitives between network access points / BS to conduct intra-operator / intra-domain handovers (micro-mobility)
 - This needs to be addressed in the IEEE
 - Network communications between BS and other network entities to support other 16e features
 - There are a variety of RAN configurations and market segments i.e. cannot assume a single model
 - Such communications may require use of sub-IP and IP protocols
 - This activity is mostly out of scope of the IEEE
- Currently inter-AP / inter-BS communications and use of 802.21 triggers is out-of-scope of 16e PAR

Observations on Specification Practice

- Writing specifications in a particular form that defines behavior in terms of the relationship between



Is existing and successful practice for a number of reasons

Interface Definitions Needed

- End-to-end network models (RAN and core) for BWA systems depends on .16 CS Service and management SAP primitives. Primarily for reasons of mobility.
 - Determine the suitable models for fixed and mobile
 - RAN Network elements
 - L2.5 / L3 protocols such as Mobile IP
 - Security
 - IP services
 - ...

Other MAC Interface Issues May Need to be Addressed

- Consistent triggering primitives for handovers
- Securable link where required
- Optimized over-the-air mobility signaling
- Remote network management
 - e.g. using SNMP

Issues

- Addressing these things in .16d is an impossible process
 - Closing soon
- Addressing these things in .16e is a scope problem and fixed-mobile compatibility problem
- These things may need time to mature

Proposal

- Form an SG
- Will do its work before and during May meeting
- Expect to assess the suitability for and means of standardizing:
 - Management
 - MIBs
 - .16e link management MAC primitives
 - Network Models/Infrastructure
 - Primitives to support Layer 2.5/3 interfaces different BWA network architectures
 - CS service definition
 - Network security management and messaging
- And the means
 - One study group or two?

Motivations

- Address market need for standardization of infrastructure for BWA, especially mobile networks.
- May accommodate elements of .16e that currently sit poorly with the .16e scope
 - May shorten completion time for .16e

802.16 Motion

- Motion:

To bring forward the following motion to the EC:

- To form a study group within 802.16 to study drafting a PAR or PARs to address 802.16 management and network infrastructure
- Moved : David Johnston
- Seconded: Vladimir Yanover
- Approve:46 Disapprove:0 Abstain:0

LMSC Motion

- Motion:
To approve formation of the 802.16 Network Management Study Group, to be Chaired by David Johnston

Moved: Roger Marks

Seconded: Stuart Kerry

- Approve: 13
- Disapprove: 0
- Abstain: 0