Network Management Study Group Pre-Meeting Inputs

IEEE 802.16 Presentation Submission

Document Number:

IEEE S802.16mgt-04/00

Date Submitted:

2004-05-11

Source:

David Johnston
Intel
2111 NE 25th
Hillsboro, OR 97124

Voice: 503 264 3855
Fax: 503 202 5047
E-mail: dj.johnston@intel.com, david.johnston@ieee.org

Venue:

May 2004 802.16 Interim, Shenzhen, China

Base Document:

Purpose:

Summarize and categorize inputs to the Network Management Study group.

Network Management SG Inputs

David Johnston, Intel,
dj.johnston@intel.com

Inputs By Subject Area

Interfaces
-BS-AAA server
-MIB Access
    -Local
    -Over link
-L3 Compatibility
    -Mobility
    -Triggers
-802 Compliant CS

Handover
-Roaming
-BS-BS Neighbour querying
-Context blob
    -Structure
    -Semantics
-Service flow HO context switching
    -And inter operator
    -And ARQ management

RRM
-Distributed interference mgmt
-Network wide RRM

Infrastructure
-Reference models
-AAA norms

Security
-Secure Key Exchange
-Mutual Authorization
-Mutual SS-AAA authentication
-Fast key re-establishment
-Auth only link cipher
-Crypt only link cipher
-Efficient link cipher
-Efficient Broadcast protection

.16e changes
-Removing Reference models

Information
-Neighbour lists
-Transport for low latency & predictive info
-RF environment info

Common Elements

- Backwards compatibility
  - Use standards negotiation mechanisms
- Balanced Security Requirements
  - Methods that combine efficiency and security
- Advanced Mobility Management
  - HO signaling optimizations
- RRM
  - Distributed interference management
  - Spectrum management

MIBs

- Want Hiperlan alignment
- Text ready now
- Mobility needs to be addressed sooner or later
- MIB access signaling independent from MIB definition

Security Requirements

- A DES fix mode..
  - A way of using legacy DES-CBC implementation with SW upgrades to IV use to enable secure operation
- An auth only mode..
  - Prevents service theft, spoofing and replay without the overhead of encryption
- A crypto only mode..
  - Requirements not clear (to me at least)
- Industrial strength authorization and authentication
  - Mutual, >= 128 bit strength, FIPS

Infrastructure / Network Models

- Alignment with common network models needed for various deployment scenarios
- Network models out of scope for normative text of the 802.16 stack
- Can we adopt informative models?
- Can we refer to external specs?
  - WiMax, 3GPP, 3GPP2, IETF

Interfaces

- Service & Primitive definitions
  - Allows defined management service primitives (not physical interfaces!)
  - Adds structure to management plane
    - Improves spec quality and consistency
  - Enables network state signaling
    - Triggers, etc.
  - Enables support for 802.21 primitives
  - Can bring spec into line with 802.1
    - Enables provider bridging, OAM, 802.1Q etc
    - Enables implementation compatibility with 802.3/11/17 bridges
    - Is simpler – See 802.1ad_D2 section 6.4.1

.16e/Netman Issues

- Advanced Mobility Management
  - HO signaling optimizations
    - Do we finish it in .16e or leave the more elaborate optimizations to Netman?
- EAP
  - .16e defines primitive EAP support
    - Fix it in .16e or remove it and wait for PKMv2 to do more complete integration?
- Reference Models
  - .16e has a model already
    - Sufficient for some purposes
    - Not sufficient for the needs of core network integration
    - Does it need trimming in .16e?