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Re:	IEEE 802.16 NetMan Task Group Call for Contributions
Abstract	Proposal for Table of ~~Contencts~~Contents for the IEEE ~~802.16g specification~~802.16g specification. The Network Reference Model, Management Architecture Model, Management Functions like System configuration, Events/Statistics, AAA, Security, Handover and Physical layer management are described.
Purpose	To request NetMan Task Group to adopt the proposed text as baseline for the initial draft
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Proposal for Table of Contents

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Concept

This contribution proposes the table of contents and network reference models for the IEEE 802.16g specification. In the last IEEE 802.16 interim session #33 in Seoul we had proposed the scope and architectural considerations for this project in contribution IEEE C802.16g-04/07 [1]. This contribution derives the proposed Table of contents based on that work and other contributions [2] [3] [4] [5] [6] [7] [8] [9] [10].

Proposed Text

Adopt the following text as basis for initial working document.

1 Introduction

<Editors Notes: This section describes the scope of 802.16g and provides the purpose and use of the specification >

2 References

3 Definitions and Abbreviations

IRP – Integration Reference Point
NRM – Network Reference Model
MIB – Management Information Base

4 Requirements

<Editors Notes: This section describes the functional requirements that need to be addressed by the 802.16g specification. However this section is purely informational and meant to guide the development of this document.>

5 Information Model Concepts

<Editors Notes: This section is providing concept information about IRPs>

~~2~~6 ~~Overview~~Architectural Aspects

<Editors Notes: This section describes the functional aspects of 802.16g and how the different management procedures are specified. >

~~2.1~~6.1 Network Reference Model

< Editors Notes: This section provides the network reference model diagram and describes the details of various functional elements within the model. Assumptions about the network that are essential to this specification are described. ~~Intefaces~~Interfaces within scope of this specification are described. Primary management connection based and secondary management based management modes are described.>

6.2 Management Interfaces

< Editors Notes: This section providing Interface IRP reuse requirements and guidelines.>

~~2.2~~6.3 IRP ~~Management Architecture~~ Model Information Service (IS)

< Editors Notes: This section provides ~~a management architecture model diagram that lays out the functional layout of this specification. Assumptions within this model and how management procedures are structured within the 802.16 MAC are described.~~ the IEEE 802.16 protocol neutral IS resource model and NRM definitions.>~~>~~

37 Management Functions

3.1System Configuration and Provisioning

3.1.1Basic RF Configuration

<Editors Note: Procedures for setting and retrieving system information about frequency assignments for sectors, channel bandwidths, FFT sizes, Tx Power, etc. are described>

3.1.2Basic MAC Configuration

<Editors Note: Procedures for setting and retrieving MAC parameters like SDU size limits, PDU size limits, list of Service classes supported, scan list, packing, fragmentation, ARQ block sizes etc.are described>

3.1.3BS Time Configuration

<Editors Note: Procedures for setting and retrieving BS time information are described.>

3.1.4BS Service Provisioning

<Editors Note: Provisioning of the services on the BS are described. Ex: Operator IDs, BS IDs, setting and retrieval and what type of convergence layers are supported and their configuration parameters are described.>

3.1.5SS/MSS Provisioning

<Editors Note: Provisioning>

3.27.1 Monitoring Events and StatisticsFault Management

7.1.1 Events/Logs

7.1.2 Notification/Triggers

<Editors Note: Notification for events and trigger functions associated with some events are described>

7.2 Configuration Management

7.2.1 Capability Management

<Editors Note: Subscriber Basic Capabilities negotiation recommendations>

7.2.2 Basic RF Configuration

<Editors Note: Procedures for setting and retrieving system information about frequency assignments for sectors, channel bandwidths, FFT sizes, Tx Power, etc. are described>

7.2.3 Basic MAC Configuration

<Editors Note: Procedures for setting and retrieving MAC parameters like SDU size limits, PDU size limits, list of Service classes supported, scan list, packing, fragmentation, ARQ block sizes etc. are described>

7.2.4 BS Time Configuration

<Editors Note: Procedures for setting and retrieving BS time information are described.>

7.3 Accounting Management

7.4 Performance Management

7.5 Security Management

7.5.1 Authentication, Authorization and Accounting (AAA) Guidelines

<Editors Note: Recommendations for utilizing EAP, RADIUS protocols>

7.5.2 Security Context and Key Management

<Editors Note: Recommendations for establishment and management of Security Associations, Key establishment and caching policies.>

7.5.3 Security for Handoffs

<Editors Note: Recommendations for Security context re-establishment during handoffs, key binding and key usage policies>

7.5.4 Protecting Management Messages

<Editors Note: Recommendations for protecting management messages.>

~~3.2.1~~Service Flow Management~~Monitored Events and Statistics~~

~~<Editors Note: Monitoring Statistics on the SS/MSS and BS.~~

~~Some of the statistics maybe:~~

- ~~CINR~~
- ~~Rx Power~~
- ~~Tx Power~~
- ~~Tx/Rx MCS sets for the various allocation slots~~
- ~~Rx FEC block errors~~
- ~~ARQ Retransmits~~
- ~~Etc.~~

~~MIBs will not be specified here but in the 802.16f specification.>~~

~~3.2.2Notification/Triggers~~

~~<Editors Note: Notification for events and trigger functions associated with some events are described>~~

~~3.2.3Database and Logging~~

~~<Editors Note: How events and statistics are stored and how they are retrieved is specified.~~
~~Ex: MIBs is one way of collecting events and statistics. Also statistics/events and their periodicity of collection is described.>~~

~~3.37~~.6 Managing Connections

7.6.1 BS Service Provisioning

<Editors Note: Provisioning of the services on the BS are described. Ex: Setting and retrieval of Operator IDs, BS IDs etc. and type of convergence layers supported and their configuration parameters are described.>

7.6.2 SS/MSS Provisioning

<Editors Note: Provisioning. Configuration and management for BS initiated connections and service flow creations for static and dynamic QoS>

7.6.3 SS/MSS Connection Management

<Editors Note: Recommendations for utilizing DHCP protocol>

~~3.3.1Capability Management~~

~~<Editors Note: Subscriber Basic Capabilities negotiation recommendations >~~

~~3.3.2~~7.6.4 ~~Admission control and QoS Mapping~~QoS Management

<Editors Note: CID and SFID Management, Managing Bandwidth Requests and Grants. QoS Mapping for 802.16-Service-Flows to Network-Flows >

7.6.5 Managing Connection Resources

<Editors Note: Managing constraints on the CID and SFID related resources. Recommendations on when CIDs could be recycled etc.>

7.6.6 Managing Multicast Broadcast Services

<Editors Note: >

7.7 Subscriber Mode Management

~~3.3.3~~7.7.1 Managing Device States

<Editors Note: Idle Mode, Sleep Mode, Active Mode>

~~3.3.4Managing Connection Resources~~

~~<Editors Note: Managing constraints on the CID and SFID related resources. Recommendations on when CIDs could be recycled etc.>~~

~~3.3.5Managing Broadcast and Multicast Services~~

~~<Editors Note: >~~

7.8 Roaming Management

~~*3.4Managing AAA and Security Functions*~~

~~3.4.1Authentication, Authorization and Accounting (AAA) Guidelines~~

~~<Editors Note: Recommendations for utilizing EAP, RADIUS protocols>~~

~~3.4.2Security Context and Key Management~~

<Editors Note: Recommendations for establishment and management of Security Associations, Key establishment and caching policies.>

3.4.3Security for Handoffs

<Editors Note: Recommendations for Security context re-establishment during handoffs, key binding and key usage policies>

3.4.4Protecting Management Messages

<Editors Note: Recommendations for protecting MAC management messages which are not always associated with a SA-Id. >

3.57.9 Mobility and Handover Management

3.5.17.9.1 MobilityHandover RequirementsParameters

<Editors Note: Requirements for different kinds of handoff (Hard-Handoff, FBSS, SHO). Thresholds etc.>

3.5.1.17.9.1.1 Handover Context for Connections

3.5.1.27.9.1.2 Neighbor List Management

7.9.2 Connection Management during handover

3.5.27.9.3 Paging Management

7.9.3.1 Paging Procedure

3.5.37.9.4 Location Update Management

7.9.4.1 Location Update Procedure

7.9.5 MSS Handover Management

<Editors Note: How an MSS handles its handover functions>

7.9.6 Inter BS Handover Management

<Editors Note: How a BS handles its handover functions with neighboring BSes>

7.9.7 Macro Diversity Management

<Editors Note: How a BS along with the NCMS entities handles macro diversity>

3.5.47.9.8 Handover Control Protocol Procedures

<Editors Note: Handover protocol message flow diagrams and explanations>

~~3.5.4.1~~7.9.8.1 Hard Handoff Procedures

~~3.5.4.2~~7.9.8.2 Fast Base Station Switching Procedures

~~3.5.4.3~~7.9.8.3 Soft Handoff Procedures

7.9.9 Backbone Messages

7.9.10 Interface SAP for Upper Layer Protocols

< Editors Notes: This section provides triggers for upper layer protocols on events occurring in the 802.16 air interface. This section includes definitions from P802.16e/D4 Annex D4.2>

~~3.6~~7.10 Radio Resource ~~Physical Layer~~ Management

~~3.6.1Physical Layer Calibration and Tuning~~

~~<Editors Note: Includes scan times, recommendations for timing and frequency synchronization procedures>~~

~~3.6.2MAP Management~~

~~<Editors Note: PHY Specific Sections that Include Subchannelization zone, AAS zone, MIMO zone management>~~

~~3.6.3~~7.10.1 Radio Measurement and Reporting

<Editors Note: PHY Specific sections for SS/MSS and BS Radio Measurements>

~~3.6.4~~7.10.2 Power Control Management

<Editors Note: PHY Specific sections>

References

[1] IEEE C802.16g-04/07, 802.16g Scope and Architectural Considerations (Jose Puthenkulam, Prakash Iyer, 04/08/29)

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[3] IEEE C802.16g-04/05, The type of MIB and process of management by EMS (Chi-Man Lee, Ki-Jun Lee, Dong-Cheol Lee, 04/08/20)

[4] IEEE C802.16g-04/04, The issues related with Roaming (Ki-Jun Lee, Dong-Cheol Lee, Chi-Man Lee, 04/08/20)

[5] IEEE C802.16g-04/02, The scope of IEEE 802.16g (Min-Sung Kim, Yongjoo Tcha, Seong-Choon Lee, 04/08/17)

[6] IEEE C802.16g-04/01, 802.16 Accounting based on IEEE 802.1X Accounting (Dongkie Lee, DongIl Moon, DongRyul Lee, JongKuk Ahn, KangIl Koh, Sihun Ryu, Sungho Ha, 04/08/17)

[7] IEEE C802.16g-04/08r1, An Architecture to Develop Network Management Standards, Scott Migaldi, Joerg Schmidt, Mike Truss

[8] IEEE C802.16g-04/13, Proposed Table of Contents, Ronny Kim, Changjae Lee

[9] IEEE C802.16g-04/09r1, Proposed Table of Contents, Scott Migaldi, Joerg Schmidt

[10] IEEE C802.16g-04/15, Table of contents of 802.16g, Min-Sung Kim, Yongjoo Tcha, Seong-Choon Lee, Seung-Hun Oh, Young-Han Kim