

PacketCable™

Business SIP Services (BSS) Provisioning Specification

PKT-SP-BSS-PROV-I01-090129

DRAFT

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Document Status Sheet

Document Control Number:	PKT-SP-BSS-PROV-I01-090129			
Document Title:	Business SIP Services (BSS) Provisioning Specification			
Revision History:	I01 - Released 1/29/09			
Date:	January 29, 2009			
Status:	Work in Progress	Draft	Issued	Closed
Distribution Restrictions:	Author Only	CL/Member	CL/Member/Vendor	Public

Key to Document Status Codes

Work in Progress	An incomplete document, designed to guide discussion and generate feedback that may include several alternative requirements for consideration.
Draft	A document in specification format considered largely complete, but lacking review by Members and vendors. Drafts are susceptible to substantial change during the review process.
Issued	A stable document, which has undergone rigorous member and vendor review and is suitable for product design and development, cross-vendor interoperability, and for certification testing.
Closed	A static document, reviewed, tested, validated, and closed to further engineering change requests to the specification through CableLabs.

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1 SCOPE

1.1 Introduction and Purpose

This document specifies the use of the PacketCable UE (User Equipment) Provisioning Framework to configure and manage 2.0 UEs (embedded and standalone UEs) supporting the PacketCable Business SIP Services (BSS) application.

The PacketCable architecture provides a generic Provisioning Framework for UEs, but requires PacketCable application efforts such as BSS to specify application-specific requirements and data models. This document specifies such requirements and the data model for the PacketCable BSS application.

1.2 Document Overview

The document is structured as follows:

- Section 2 – References
- Section 3 – Terms and Definitions
- Section 4 – Abbreviations
- Section 5 – Informative section providing a description of BSS Provisioning
- Section 6 – Normative section providing the BSS Provisioning requirements
- Annex A – BSS Management requirements (Normative)

1.3 Requirements

Throughout this document, the words that are used to define the significance of particular requirements are capitalized. These words are:

"MUST"	This word means that the item is an absolute requirement of this specification.
"MUST NOT"	This phrase means that the item is an absolute prohibition of this specification.
"SHOULD"	This word means that there may exist valid reasons in particular circumstances to ignore this item, but the full implications should be understood and the case carefully weighed before choosing a different course.
"SHOULD NOT"	This phrase means that there may exist valid reasons in particular circumstances when the listed behavior is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.
"MAY"	This word means that this item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because it enhances the product, for example; another vendor may omit the same item.

2 REFERENCES

2.1 Normative References

In order to claim compliance with this specification, it is necessary to conform to the following standards and other works as indicated, in addition to the other requirements of this specification. Notwithstanding, intellectual property rights may be required to use or implement such normative references.

[EUE-DATA]	PacketCable E-UE Provisioning Data Models Specification, PKT-SP-E-UE-DATA-I02-080710, July 10, 2008, Cable Television Laboratories, Inc.
[RST-EUE-PROV]	PacketCable RST EUE Provisioning Specification, PKT-SP-RST-EUE-PROV-I02-080710, July 10, 2008, Cable Television Laboratories, Inc.
[RST-UE-PROV]	PacketCable RST UE Provisioning Specification, PKT-SP-RST-UE-PROV-I01-080905, September 5, 2008, Cable Television Laboratories, Inc.
[UE-DATA]	PacketCable UE Provisioning Data Models Specification, PKT-SP-UE-DATA-I01-080905, September 5, 2008, Cable Television Laboratories, Inc.

2.2 Informative References

This specification uses the following informative references:

[BSSF]	PacketCable Business SIP Services (BSS) Specification, PKT-SP-BSSF-I01-080905, September 5, 2008, Cable Television Laboratories, Inc.
[CANN]	CableLabs Assigned Names and Numbers Specification, CL-SP-CANN-I02-080306, March 6, 2008, Cable television Laboratories, Inc.
[EUE-PROV]	PacketCable EUE Provisioning Specification, PKT-SP-EUE-PROV-I02-080710, July 10, 2008, Cable Television Laboratories, Inc.
[ISO/IEC 19501]	ISO/IEC 19501:2005 Information technology - Open Distributed Processing - Unified Modeling Language (UML) Version 1.4.2.
[OMA-DM]	Enabler Release Definition for Device Management version 1.2, OMA-ERELD-DM-V1_2-20070209-A, February 9, 2007, Open Mobile Alliance.
[ARCH-FRM TR]	PacketCable Architecture Framework Technical Report, PKT-TR-ARCH-FRM-V05-080425, April 25, 2008, Cable Television Laboratories, Inc.
[RFC 2578]	IETF RFC 2578/STD0058, Structure of Management Information Version 2 (SMIv2), April 1999.
[RSTF]	PacketCable Residential SIP Telephony Feature Specification, PKT-SP-RSTF-I04-080710, July 10, 2008, Cable Television Laboratories, Inc.
[UE-PROV]	PacketCable UE Provisioning Specification, PKT-SP-UE-PROV-I01-080905, September 5, 2008, Cable Television Laboratories, Inc.

2.3 Reference Acquisition

- Cable Television Laboratories, Inc., 858 Coal Creek Circle, Louisville, CO 80027; Phone +1-303-661-9100; Fax +1-303-661-9199; <http://www.cablelabs.com>.
- Internet Engineering Task Force (IETF) Secretariat, 4600 Center Oak Plaza, Sterling, VA 20166, Phone +1-571-434-3500, Fax +1-571-434-3535, <http://www.ietf.org/>.
- Open Mobile Alliance (OMA), OMA Office, 4275 Executive Square, Suite 240, La Jolla, CA 92037, Fax +1-858-623-0743, Internet: <http://www.openmobilealliance.com/>

3 TERMS AND DEFINITIONS

This specification uses the following terms:

Cable Modem	A DOCSIS compliant device which provides data transport connectivity from RFI to IP networks.
Configuration	Configuration is the process of defining and propagating data to network elements for providing services.
Data Model	An abstract model that describes representation of data in a system.
Description Framework	A specification for how to describe the management syntax and semantics for a particular device type.
Embedded User Equipment	Contains the interface to a physical voice device, a network interface, CODECs, and all signaling and encapsulation functions required for VoIP transport, class features signaling, and QoS signaling.
eUE	The logical PacketCable UE component of an E-UE, complies with eSAFE and PacketCable requirements.
E-UE	Embedded User Equipment. A single physical device embedded with an eDOCSIS-compliant DOCSIS Cable Modem and a PacketCable eUE.
Interior node	A node that may have child nodes, but cannot store any value. The Format property of an interior node is node.
Management	Management refers to the protocols, methodologies and interfaces that enable oversight services in a Service Provider Network.
Management Information Base	The description of the data items used by the Network Management for management and configuration of the PacketCable compliant E-UE. Such description is done based on the formal meta-language SMI defined by the corresponding IETF standards.
Management object	A management object (MO) is a subtree of the OMA DM management tree, which is intended to be a (possibly singleton) collection of nodes that are related in some way. For example, the ./DevInfo nodes form a management object. A simple management object may consist of one single node.
Management server	A network-based entity that issues OMA DM commands to devices and correctly interprets responses sent from the devices.
Management tree	The mechanism by which the management client interacts with the device, e.g., by storing and retrieving values from it and by manipulating the properties of it, for example the access control lists.
Network Management	The functions related to the management of data across the network.
Node	A node is a single element in a management tree. There can be two kinds of nodes in a management tree: interior nodes and leaf nodes. The Format property of a node provides information about whether a node is a leaf or an interior node.
Permanent node	A node is permanent if the DDF property Scope is set to Permanent. If a node is not permanent, it is dynamic. A permanent node can never be deleted.

Provisioning	Provisioning refers to the processes involved in the initialization of user attributes and resources to provide services to a User. This involves protocols, methodologies, and interfaces to network elements such as: Order Entry and Workflow Systems that carry out business processes, Operational Support Elements that handle network resources, Application Servers that offer services and Use Equipment that offer services.
Request for Comments	Request for Comments. Technical policy documents approved by the IETF, which are available on the World Wide Web at http://www.ietf.cnri.reston.va.us/rfc.html

4 ABBREVIATIONS AND ACRONYMS

This specification uses the following abbreviations:

BSS	Business SIP Services
DDF	Device Description Framework
DOCSIS®	Data-Over-Cable Service Interface Specifications
E-UE	Embedded User Equipment
IMS	IP Multimedia Subsystem
MIB	Management Information Base
MO	Managed Objects
OMA	Open Mobile Alliance
OMA DM	OMA Device Management
RFC	Request for Comments
RFI	Radio Frequency Interface
RST	Residential SIP Telephony
SIP	Session Initiation Protocol
SNMP	Simple Network Management Protocol
UE	User Equipment
UML	Unified Modeling Language

5 TECHNICAL OVERVIEW

PacketCable is a CableLabs specification effort designed to support the convergence of voice, video, data, and mobility technologies. The PacketCable architecture describes a set of functional groups and logical entities, as well as a set of interfaces that support the information flows exchanged between entities. For more information about PacketCable, please refer to the PacketCable Architecture Framework Technical Report [ARCH-FRM TR].

As part of these efforts, PacketCable specifies applications built upon the PacketCable architecture. One such application is Business SIP Services (BSS). This document describes the configuration and management requirements applicable to Embedded User Equipment (E-UE) and Standalone User Equipment (UE) supporting the BSS application. Within the context of this document, any reference to UE needs to be interpreted as User Equipment that supports the BSS application, sometimes referred to as an BSS UE. For more information on the BSS application, please refer to [BSSF].

This document covers the following areas: BSS Application Provisioning and Data Model for E-UEs and UEs.

5.1 User Equipment (UE)

PacketCable is based on SIP (Session Initiation Protocol) and IMS (IP Multimedia Subsystem), and supports a wide variety of clients with varying characteristics and capabilities, including software and hardware-based, standalone, and embedded devices (with other cable devices, e.g., DOCSIS Cable Modems). Consistent with IMS terminology, all PacketCable clients are called User Equipment (UE). For more information about UEs in PacketCable, please refer to the PacketCable Architecture Technical Report [ARCH-FRM TR]. Note that in the context of PacketCable specifications, the IMS term UE is split into two designations: E-UE to denominate Embedded UEs and UE to denominate standalone UEs.

5.2 RST and BSS

PacketCable Application RST (Residential SIP Telephony) defines telephony features for the residential customer. The BSS defines telephony features for business users. BSS is built on top of RST. The direct consequence of this is that the BSS Provisioning and management requirements are an extension of the RST requirements for UEs. The BSS specification [BSSF] indicates which RST features are overlapping or different in the context of a BSS UE. The provisioning and Management requirements of the BSS features are defined in this specification.

5.3 UE Provisioning Framework

The UE Provisioning Framework provides configuration and management requirements based on the PacketCable 2.0 Provisioning specifications. For more information on the UE Provisioning Framework, please refer to [RST-EUE-PROV] for E-UEs and [UE-PROV] for UEs.

5.4 UE Management Model Components

The UE Device Provisioning Data Model follows the principles of Management interface and Management protocols independence. Please refer to [UE-DATA] for details on the usage of UML models. Figure 1 represents the expansion of BSS data models for the Management interfaces UEs that support Simple Network Management Protocol (SNMP) [RFC 2578] and Open Mobile Alliance Device Management [OMA-DM]. Consequently, this specification defines SNMP management interface requirements and OMA DM requirements for BSS features derived from the BSS object model.

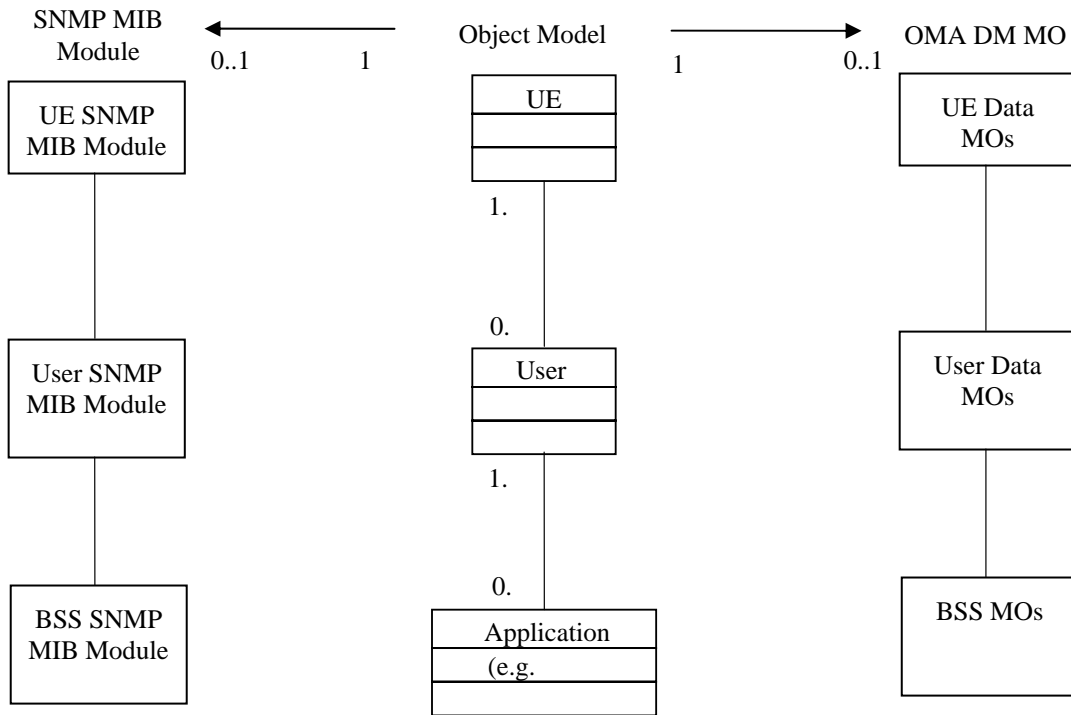


Figure 1 - UE Device Provisioning Data Model

5.5 OMA DM

OMA DM defines a list of requirements to provide an interoperable framework for managing devices. The OMA management end points are termed OMA client (user device) and OMA DM Server, (the management application, normally associated with a service provider or a third party organization). See [UE-PROV] for an OMA DM overview and applicability for the UE.

5.6 SNMP

SNMP is the management protocol used for PacketCable E-UEs. SNMP provisioning offers a backward compatible provisioning framework of E-UE with previous PacketCable specifications.

6 UE MANAGEMENT MODEL

6.1 UE Device Data Model

The BSS data model applies to both E-UEs and UEs, as introduced in Section 5.4. This specification follows the model of [UE-DATA] to represent the BSS provisioning and management requirements. For E-UEs, the BSS Object model is mapped into SNMP MIB Modules and BSS UE requirements are mapped into OMA DM DDF documents. All the modeling considerations in [UE-DATA] are applicable to this specification.

6.2 SNMP Provisioning Requirements for BSS

This section defines requirements to support the BSS provisioning requirements for the SNMP management interface.

The BSS UE that supports the SNMP management interface complies with the Object Models and SNMP MIB Modules defined in Table 1.

Table 1 - SNMP BSS UE Data Requirements

Reference	Object Model	MIB Module	Description
Annex A	BSS	PCKT-BSS-MIB	BSS Features

6.2.1 BSS UE SNMP Requirements

The UE that supports the SNMP management interface MUST implement:

- The BSS object model defined in Annex A.
- The BSS MIB Module defined in Annex A.
- The management requirements defined in [RST-EUE-PROV] and [EUE-DATA].

6.3 OMA DM Provisioning Requirements for BSS

This section defines requirements to support the BSS provisioning requirements for the OMA DM management interface.

The UE that supports the OMA DM management interface complies with the Object Models and MOs defined in Table 2.

Table 2 - OMA DM BSS UE Data Requirements

Reference	Object Model	MO DDF URN	DDF Path	Description
Annex A	BSS	urn:cablelabs:pktc2:oma:dm:bss	./Pktc2	BSS Features

6.3.1 UE BSS OMA DM Requirements

The UE that supports the OMA DM management interface MUST implement:

- The BSS object model defined in Annex A.
- The BSS MO defined in Annex A.
- The management requirements defined in [RST-UE-PROV] and [UE-DATA].

6.4 UE RST and BSS Provisioning Relationship

The BSS feature data models are defined in this document as extensions to Residential SIP Telephony (RST) data models. As a consequence, the provisioning of BSS features vary with respect to the general guidelines on applications and user mappings as defined in PacketCable 2.0 Provisioning Framework [UE-PROV] and [EUE-PROV]. Specifically:

- BSS is an application defined as ‘Business SIP Telephony Services’ with an Application identifier ‘2’ registered in [CANN].
- The BSS-capable UE MUST allow the configuration of BSS features only when they are mapped to a BSS Application profile.
- The BSS-capable UE MUST ignore the configuration of BSS features if they are mapped to an RST Application profile. In such cases, the UE MUST report an exception as indicated in the corresponding provisioning spec. For example, if SCA (Shared Call Appearance) is mapped to an RST application profile during provisioning, an E-UE will complete registration, ignore the BSS features and become operational with the RST configuration profile.
- The provisioning of the BSS application profile map to application features MUST use the RST Application Profile to Features map object definition. This mapping will include the BSS features and RST features that apply to BSS profiles as defined in [BSSF].

Figure 2 shows an example of a UE user identity B provisioned with a BSS application and user identity A provisioned with an RST application. For both users identities, the RST application profile construct is used to map BSS and RST features for user identity B and RST-only features for user identity A.

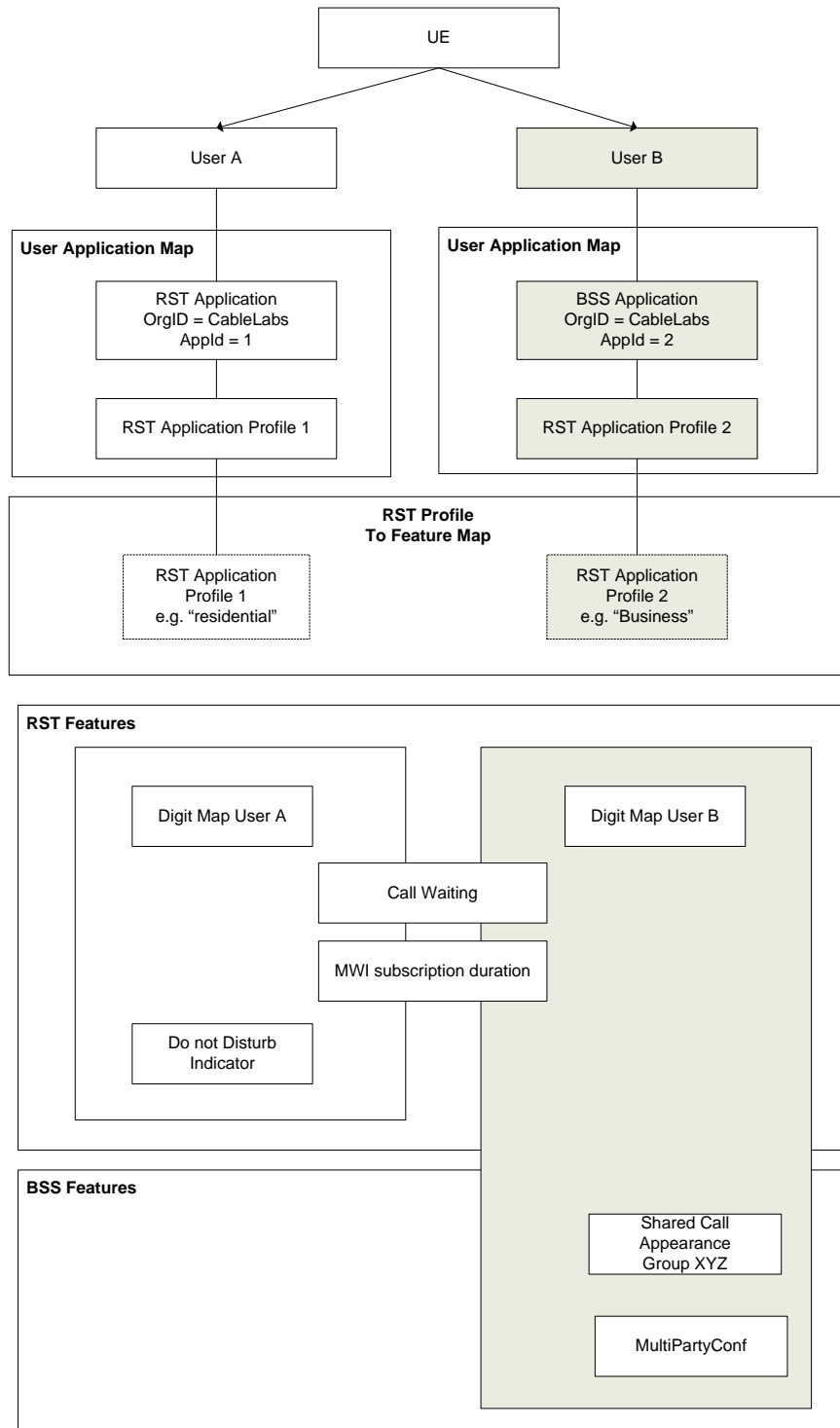


Figure 2 - UE RST and BSS Provisioning Relationship

Annex A BSS Management Requirements

A.1 BSS Object Model Overview

This section defines the management model for the BSS features applicable to UEs.

Unless specified, the UE MUST NOT persist operator configuration data using the data models herein described. Other documents that reference this object model might change the persistent requirement of the device. This data model is defined after the UE and may be applicable to other types of PacketCable devices.

A.2 BSS Object Model Definitions

A.2.1 BSS Object Model Data Types

There are no defined Data Types for this Object model. This section defines data types used in the CLIENT-DEV object model.

A.2.2 BSS Object Model Class Diagram

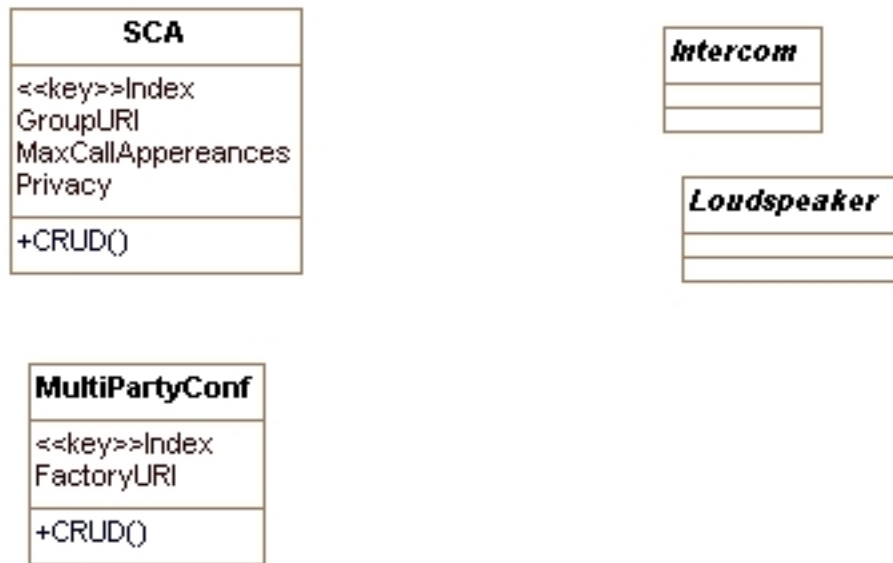


Figure 3 - BSS Object Model Diagram

A.2.2.1 Intercom Object

This object defines the management requirements for the Intercom feature. There are no attributes defined for the Intercom feature object. The intercom feature is enabled if it is referenced by a BSS application profile configuration; otherwise, it is disabled.

A.2.2.2 Loudspeaker Object

This object defines the management requirements for the Loudspeaker feature. There are no attributes defined for the Loudspeaker feature object. The Loudspeaker feature is enabled if it is referenced by a BSS application profile configuration; otherwise, it is disabled.

A.2.2.3 SCA Object

This object represents the management requirements of the Shared Call Appearance Feature (SCA).

- Object Operations:

One user is associated with a single SCA. The SCA object can have many instances in order to associate each user in the UE to a single SCA.

Table 3 - SCA Object

Attribute Name	Type	Access	Type Constraints	Units	Default
Index	unsignedInt	key			
GroupURI	URI	CRUD			""
MaxCallAppearances	unsignedInt	CRUD		appearances	1
Privacy	Enum	CRUD	public(1) private(2)		private

- Index

This key represents the unique identifier of this SCA instance.

- GroupURI

This attribute represents the URI of the SCA group.

- MaxCallAppearances

This attribute indicates the maximum number of simultaneous call appearances within the SCA group.

- Privacy

This attribute indicates if other users within the same SCA group can bridge into this entity active SCA.

The value 'public' indicates other SCA group members can barge in to ("bridge") the active SCA. The value 'private' indicates other users can't barge in to the active SCA.

A.2.2.4 MultiPartyConf Object

This object represents the management requirements of the Multi-Party Conference Calling feature.

- Object Operations:

A user is associated with a single Conference Factory URI, Therefore, the MultiPartyConf object can have many instances in order to associate each user in the UE to a single Conference Factory URI.

Table 4 - MultiPartyConf Object

Attribute Name	Type	Access	Type Constraints	Units	Default
Index	unsignedInt	key			
FactoryURI	URI	CRUD			""

- Index

This key represents the unique identifier of this object instance.

- FactoryURI

This attribute represents the conference factory URI.

A.3 BSS SNMP MIB MODULE

```

PKTC-BSS-MIB DEFINITIONS ::= BEGIN

IMPORTS
    MODULE-IDENTITY,
    OBJECT-TYPE,
    Unsigned32
        FROM SNMPv2-SMI
    OBJECT-GROUP,
    MODULE-COMPLIANCE
        FROM SNMPv2-CONF
    SnmpAdminString
        FROM SNMP-FRAMEWORK-MIB

    RowStatus
        FROM SNMPv2-TC
    pktcApplicationMibs
        FROM CLAB-DEF-MIB;

    pktcBSSMib MODULE-IDENTITY
    LAST-UPDATED "200901290000Z" -- January 29, 2009
    ORGANIZATION "Cable Television Laboratories, Inc."
    CONTACT-INFO
        "Broadband Network Services
        Cable Television Laboratories, Inc.
        858 Coal Creek Circle,
        Louisville, CO 80027, USA
        Phone: +1 303-661-9100
        Email: mibs@cablelabs.com

        Acknowledgements:
        Thomas Clack, Broadcom
        Eugene Nechamkin, Broadcom
        Josh Littlefield, Cisco
        Phillip Freyman Motorola
        Richard Wikoff, Sonus Networks.
        Robert Dianda, Time Warner Cable
        Eduardo Cardona, CableLabs"
    DESCRIPTION
        "This MIB module contains configuration MIB
        objects for supporting BSS Features specified in
        the PacketCable BSS specification."
    REVISION "200901290000Z" -- January 29, 2009
    DESCRIPTION
        "Initial version, published as part of the CableLabs
        BSS Provisioning Specification I01.
        Copyright 2009 Cable Television Laboratories, Inc.
        All rights reserved."

    ::= { pktcApplicationMibs 3 }

-- Textual Conventions

-- Object Definitions
pktcBSSNotifications OBJECT IDENTIFIER ::= { pktcBSSMib 0 }
pktcBSSObjects OBJECT IDENTIFIER ::= { pktcBSSMib 1 }

pktcBSSSCATable OBJECT-TYPE
    SYNTAX SEQUENCE OF PktcBSSSCAEntry
    MAX-ACCESS not-accessible

```

```

STATUS      current
DESCRIPTION
  "This object represents the management requirements of the Shared Call
Appearance Feature (SCA)."
```

::= {pktcBSSObjects 1 }

```

pktcBSSSCAEntry  OBJECT-TYPE
SYNTAX      PktcBSSSCAEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
  "The Conceptual row of pktcBSSSCATable"
INDEX {
  pktcBSSSCAIndex
}
 ::= {pktcBSSSCATable 1 }
```

```

PktcBSSSCAEntry ::= SEQUENCE {
  pktcBSSSCAIndex
    Unsigned32,
  pktcBSSSCAGroupURI
    SnmpAdminString,
  pktcBSSSCAMaxCallAppearances
    Unsigned32,
  pktcBSSSCAPrivacy
    INTEGER,
  pktcBSSSCARowStatus
    RowStatus
}
```

```

pktcBSSSCAIndex  OBJECT-TYPE
SYNTAX          Unsigned32
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
  "This key represents the unique identifier of this SCA
instance."
 ::= {pktcBSSSCAEntry 1 }
```

```

pktcBSSSCAGroupURI  OBJECT-TYPE
SYNTAX              SnmpAdminString
MAX-ACCESS          read-create
STATUS              current
DESCRIPTION
  "This attribute represents the URI of the SCA group."
DEFVAL {""}
 ::= {pktcBSSSCAEntry 2 }
```

```

pktcBSSSCAMaxCallAppearances  OBJECT-TYPE
SYNTAX          Unsigned32
UNITS           "appearances"
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
  "This attribute indicates the maximum number of simultaneous
call appearances within the SCA group."
DEFVAL {1}
 ::= {pktcBSSSCAEntry 3 }
```

```

pktcBSSSCAPrivacy  OBJECT-TYPE
SYNTAX             INTEGER {
  public(1),
  private(2)
}
MAX-ACCESS          read-create
STATUS              current
DESCRIPTION
```

```

        "This attribute indicates whether other users within the
        same SCA group can bridge into this entity active SCA.
        The value 'public' indicates other SCA group members
        can barge in ('bridge') onto the active SCA.
        The value 'private' indicates other users can't barge in
        onto the active SCA."
    DEFVAL { private }
    ::= {pktcBSSSCAEntry 4 }

pktcBSSSCARowStatus      OBJECT-TYPE
    SYNTAX      RowStatus
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The conceptual row status of this object."
    ::= {pktcBSSSCAEntry 5 }

pktcBSSMultiPartyConfTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF PktcBSSMultiPartyConfEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object represents the management requirements
        of the Multi-Party Conference Calling feature."
    ::= {pktcBSSObjects 2 }

pktcBSSMultiPartyConfEntry OBJECT-TYPE
    SYNTAX      PktcBSSMultiPartyConfEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The Conceptual row of pktcBSSMultiPartyConfTable.
        A user is associated with a single Conference Factory URI.
        Therefore, the MultiPartyConf object can have many instances
        in order to associate each user in the UE to a single
        Conference Factory URI."
    INDEX {
        pktcBSSMultiPartyConfIndex
    }
    ::= {pktcBSSMultiPartyConfTable 1 }

PktcBSSMultiPartyConfEntry ::= SEQUENCE {
    pktcBSSMultiPartyConfIndex
        Unsigned32,
    pktcBSSMultiPartyConfFactoryURI
        SnmpAdminString,
    pktcBSSMultiPartyConfRowStatus
        RowStatus
}

pktcBSSMultiPartyConfIndex OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This key represents the unique identifier of this object instance."
    ::= {pktcBSSMultiPartyConfEntry 1 }

pktcBSSMultiPartyConfFactoryURI OBJECT-TYPE
    SYNTAX      SnmpAdminString
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This attribute represents the conference factory URI."
    DEFVAL { "" }
    ::= {pktcBSSMultiPartyConfEntry 2 }

```

```

pktcBSSMultiPartyConfRowStatus    OBJECT-TYPE
    SYNTAX      RowStatus
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The conceptual row status of this object."
    ::= { pktcBSSMultiPartyConfEntry 3 }

-- Conformance Definitions
pktcBSSMibConformance OBJECT IDENTIFIER ::= { pktcBSSMib 2 }
pktcBSSMibCompliances OBJECT IDENTIFIER ::= { pktcBSSMibConformance 1 }
pktcBSSMibGroups      OBJECT IDENTIFIER ::= { pktcBSSMibConformance 2 }

pktcBSSCompliance MODULE-COMPLIANCE
    STATUS      current
    DESCRIPTION
        "The compliance statement for the UE BSS features."
    MODULE -- this MODULE
    MANDATORY-GROUPS {
        pktcBSSGroup
    }
    ::= { pktcBSSMibCompliances 1 }

pktcBSSGroup OBJECT-GROUP
    OBJECTS {
        pktcBSSSCAGroupURI,
        pktcBSSSCAMaxCallAppearances,
        pktcBSSSCAPrivacy,
        pktcBSSSCARowStatus,
        pktcBSSMultiPartyConfFactoryURI,
        pktcBSSMultiPartyConfRowStatus
    }
    STATUS      current
    DESCRIPTION
        "Group of objects implemented in the UE for
        BSS features."
    ::= { pktcBSSMibGroups 1 }

END

```

A.4 BSS OMA Management Objects (MO)

A.4.1 BSS High Level MO

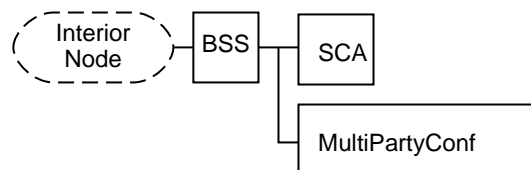


Figure 4 - BSS High Level OMA Management Object

A.4.2 BSS Nodes

A.4.2.1 BSS SCA Node MO tree

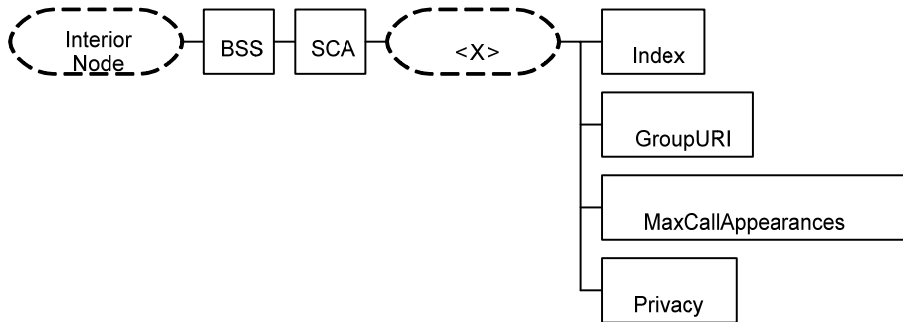


Figure 5 - Node SCA of BSS OMA Management Object

A.4.2.2 BSS SCA MO Node Description

MO Element	Status	Occurrence	Format	Access Type
./BSS/SCA	current	One	Node	Get
./BSS/SCA<X>	current	OneOrMore	Node	Add, Get, Replace
./BSS/Index/<X>/Index	current	OneOrZero		Add, Get, Replace
./BSS/GroupURI/<X>/GroupURI	current	OneOrZero		Add, Get, Replace
./BSS/MaxCallAppearances/<X>/MaxCallAppearances	current	OneOrZero		Add, Get, Replace
./BSS/Privacy/<X>/Privacy	current	OneOrZero		Add, Get, Replace

A.4.2.3 BSS MultiPartyConf Node MO tree

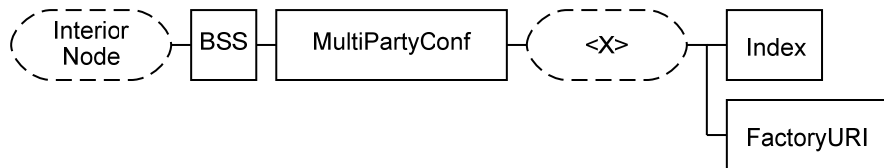


Figure 6 - Node MultiPartyConf of BSS OMA Management Object

A.4.2.4 BSS MultiPartyConf Node Description

MO Element	Status	Occurrence	Format	Access Type
./BSS/MultiPartyConf	current	One	Node	Get
./BSS/MultiPartyConf<X>	current	OneOrMore	Node	Add, Get, Replace
./BSS/Index/<X>/Index	current	OneOrZero		Add, Get, Replace
./BSS/FactoryURI/<X>/FactoryURI	current	OneOrZero		Add, Get, Replace

A.4.3 BSS OMA Device Description Framework (DDF)

```

<?xml version='1.0' ?>
<MgmtTree>
  <VerDTD>1.2</VerDTD>
  <Man>PacketCable - Cable Laboratories Inc.</Man>
  <!--This DDF considers as model the UE MO (as defined in the PacketCable
specifications) followed by a colon character (e.g., BSS:) -->
  <Mod>BSS:</Mod>
  <Node>
    <NodeName>BSS</NodeName>
    <Path>./Pktc2</Path>
    <DFProperties>
      <AccessType>
        <Get/>
      </AccessType>
      <DefaultValue/>
      <Description>The node that defines the BSS MO tree.</Description>
      <DFFormat>
        <node/>
      </DFFormat>
      <Occurrence>
        <One/>
      </Occurrence>
      <Scope>
        <Permanent/>
      </Scope>
      <DFTitle>The interior node holding all nodes of the PacketCable
BSS MO three</DFTitle>
      <DFType>
        <DDFName>urn:cablelabs:pktc2:oma:dm:bss</DDFName>
      </DFType>
      <CaseSense>
        <CIS/>
      </CaseSense>
    </DFProperties>
    <Node>
      <NodeName>SCA</NodeName>
      <DFProperties>
        <AccessType>
          <Get/>
        </AccessType>
        <DFFormat>
          <node/>
        </DFFormat>
        <Occurrence>
          <One/>
        </Occurrence>
        <DFTitle>BSS.SCA</DFTitle>
        <DFType>
          <DDFName/>
        </DFType>
      </DFProperties>
      <Node>
        <NodeName/>
        <DFProperties>
          <AccessType></AccessType>
          <DFFormat>
            <node/>
          </DFFormat>
          <Occurrence>
            <OneOrMore/>
          </Occurrence>
          <DFTitle/>
          <DFType>
            <DDFName/>
          </DFType>
        </DFProperties>
      </Node>
    </Node>
  </Node>
</MgmtTree>

```

```

<Node>
  <NodeName>Index</NodeName>
  <DFProperties>
    <AccessType></AccessType>
    <DefaultValue></DefaultValue>
    <Description/>
    <DFFormat>
      <int/>
    </DFFormat>
    <Occurrence>
      <One/>
    </Occurrence>
    <Scope>
      <Permanent/>
    </Scope>
    <DFTitle/>
    <DFType>
      <MIME>text/plain</MIME>
    </DFType>
    <CaseSense/>
  </DFProperties>
  <Value/>
</Node>
<Node>
  <NodeName>GroupURI</NodeName>
  <DFProperties>
    <AccessType></AccessType>
    <DefaultValue></DefaultValue>
    <Description/>
    <DFFormat>
      <chr/>
    </DFFormat>
    <Occurrence>
      <One/>
    </Occurrence>
    <Scope>
      <Permanent/>
    </Scope>
    <DFTitle/>
    <DFType>
      <MIME>text/plain</MIME>
    </DFType>
    <CaseSense/>
  </DFProperties>
  <Value/>
</Node>
<Node>
  <NodeName>MaxCallAppearances</NodeName>
  <DFProperties>
    <AccessType></AccessType>
    <DefaultValue></DefaultValue>
    <Description/>
    <DFFormat>
      <int/>
    </DFFormat>
    <Occurrence>
      <One/>
    </Occurrence>
    <Scope>
      <Permanent/>
    </Scope>
    <DFTitle/>
    <DFType>
      <MIME>text/plain</MIME>
    </DFType>
    <CaseSense/>
  </DFProperties>

```



```

        <Value/>
    </Node>
    <Node>
        <NodeName>Privacy</NodeName>
        <DFProperties>
            <AccessType></AccessType>
            <DefaultValue></DefaultValue>
            <Description/>
            <DFFormat>
                <chr/>
            </DFFormat>
            <Occurrence>
                <One/>
            </Occurrence>
            <Scope>
                <Permanent/>
            </Scope>
            <DFTitle/>
            <DFType>
                <MIME>text/plain</MIME>
            </DFType>
            <CaseSense/>
        </DFProperties>
        <Value/>
    </Node>
</Node>
</Node>
<Node>
    <NodeName>MultiPartyConf</NodeName>
    <DFProperties>
        <AccessType>
            <Get/>
        </AccessType>
        <DFFormat>
            <node/>
        </DFFormat>
        <Occurrence>
            <One/>
        </Occurrence>
        <DFTitle>BSS.MultiPartyConf</DFTitle>
        <DFType>
            <DDFName/>
        </DFType>
    </DFProperties>
    <Node>
        <NodeName/>
        <DFProperties>
            <AccessType></AccessType>
            <DFFormat>
                <node/>
            </DFFormat>
            <Occurrence>
                <OneOrMore/>
            </Occurrence>
            <DFTitle/>
            <DFType>
                <DDFName/>
            </DFType>
        </DFProperties>
    </Node>
    <Node>
        <NodeName>Index</NodeName>
        <DFProperties>
            <AccessType></AccessType>
            <DefaultValue></DefaultValue>
            <Description/>
            <DFFormat>
                <int/>
            </DFFormat>
        </DFProperties>
    </Node>

```

```

        </DFFormat>
        <Occurrence>
          <One/>
        </Occurrence>
        <Scope>
          <Permanent/>
        </Scope>
        <DFTitle/>
        <DFType>
          <MIME>text/plain</MIME>
        </DFType>
        <CaseSense/>
      </DFProperties>
    <Value/>
  </Node>
<Node>
  <NodeName>FactoryURI</NodeName>
  <DFProperties>
    <AccessType></AccessType>
    <DefaultValue></DefaultValue>
    <Description/>
    <DFFormat>
      <chr/>
    </DFFormat>
    <Occurrence>
      <One/>
    </Occurrence>
    <Scope>
      <Permanent/>
    </Scope>
    <DFTitle/>
    <DFType>
      <MIME>text/plain</MIME>
    </DFType>
    <CaseSense/>
  </DFProperties>
  <Value/>
</Node>
</Node>
</Node>
</MgmtTree>

```

Appendix I Acknowledgements

CableLabs wishes to thank the PacketCable Provisioning focus team participants for various contributions and efforts that led to the development of this specification. Specifically, the following individuals are thanked for their direct contributions (alphabetical by company name):

Thomas Clack, Broadcom

Eugene Nechamkin, Broadcom

Josh Littlefield, Cisco

Phillip Freyman, Motorola

Richard Wikoff, Sonus Networks

Robert Dianda, Time Warner Cable

Eduardo Cardona and the PacketCable Architects, CableLabs, Inc.
