Signaling Protocols and Procedures for Citizens Broadband Radio Service (CBRS):

WInnForum Recognized CBRS Grouping Information

Document WINNF-SSC-0010

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Table of Contents

List of Tables

WInnForum Recognized CBRS Grouping Information

1   Introduction

This document specifies Citizens Broadband Radio Service (CBRS) Grouping Information supported by the standards, e.g. [n.6][n.7], developed by the Wireless Innovation Forum Spectrum Sharing Committee for the CBRS band.

2   Scope

This document specifies CBRS Grouping Information. There are two types of Grouping Information:

- Grouping Parameters: used to communicate grouping information from the Citizens Broadband Radio Service Devices (CBSDs)/Domain Proxy (DP) to Spectrum Access System (SAS)
- Grouping Configuration: used to communicate grouping configuration from SAS to CBSD/DP.

This document only contains Group types and IDs that have been defined by the WInnForum or Third-Party proprietary Group types and/or IDs that have been registered with the WInnForum via a Grouping Information registration request [n.1]. Third-party proprietary Group types that are not registered in this document can be used for operation but groupType values of such Groups must be a string prefixed with CBRS Vendor/Admin IDs registered in WINNF-SSC-0013 [n.11].

The entity or individual that defines a particular Grouping Information is responsible for fully defining the Grouping Information such that implementation can be accomplished [n.1].

3   References

3.1   Normative references

The following referenced documents are necessary for the application of the present document.

[n.1]   "Spectrum Sharing Committee Policy and Procedure CBRS Grouping Information Registration," WINNF-SSC-0009.

[n.2]   VOID.

[n.3]   VOID

[n.4]   "Requirements for Commercial Operation in the U.S. 3550-3700 MHz Citizens Broadband Radio Service Band," WINNF-TS-0112.

[n.5]   "CBRS Coexistence Technical Specifications," CBRSA-TS-2001.

[n.6]   "Signaling Protocols and Procedures for Citizens Broadband Radio Service (CBRS): Extensions to Spectrum Access System (SAS) - Citizens Broadband Radio Service Device (CBSD) Interface Technical Specification (Release 2)," WINNF-TS-3002.

[n.7]   "Signaling Protocols and Procedures for Citizens Broadband Radio Service (CBRS): Extensions to Spectrum Access System (SAS) - SAS Interface Technical Specification (Release 2)," WINNF-TS-3003

[n.8]   "CBRS Operational and Functional Requirements (Release 2)," WINNF-TS-1001

[n.9]   "Signaling Protocols and Procedures for Citizens Broadband Radio Service (CBRS): Spectrum Access System (SAS) - Citizens Broadband Radio Service Device (CBSD) Interface Technical Specification (Release 1)," WINNF-TS-0016.

[n.10]   "CBRS Deployment Guidelines for Installers", WINNF-TR-5001

[n.11]   "WInnForum Registry of CBRS Vendor/Admin IDs for Third-Party Proprietary Feature Prefixes", WINNF-SSC-0013,

4   Definitions and abbreviations

4.1   Definitions

CBRS band: The 3550-3700 MHz Citizens Broadband Radio Service band.

Citizens Broadband Radio Service Device (CBSD): Fixed Stations, or networks of such stations, that operate on a Priority Access or General Authorized Access basis in the Citizens Broadband Radio Service band.

Domain Proxy (DP): The DP is a logical entity that can represent one or more CBSD(s) to the SAS. The DP presents a consistent and secure interface to the SAS that can convey all messages pertaining to the SAS-CBSD interface for client CBSDs.

Spectrum Access System (SAS): A system that authorizes and manages use of spectrum for the Citizens Broadband Radio Service in accordance with subpart F.

4.2   Abbreviations

CBRS   Citizens Broadband Radio Service
CBSD   Citizens Broadband Radio Service Device
DP   Domain Proxy
SAS   Spectrum Access System

5   Version Compatibility

This document is applicable to the Release 2 feature "Enhanced CBSD Group Handling" specified in [n.6] and [n.7].

6   Grouping Parameters

The *GroupParam* JSON object is used to communicate grouping information from the CBSD/DP to SAS and is defined in section 8.2.8 of WINNF-TS-3002 [n.6].

6.1   VOID

6.2   Coexistence Group (CxG)

Coexistence Group (CxG) has been defined by the WInnForum in WINNF-TS-0112 [n.4]. This Group type identifies a Group of CBSDs that coordinate their own interference within the group according to a common interference management policy [n.4].

6.2.1 CBRS Alliance Coexistence Group

CBRS Alliance Coexistence Group (CxG) and its common interference management policy has been defined by CBRS Alliance in CBRSA-TS-2001 [n.5].

6.2.1.1 groupType
The *groupType* value is "COEXISTENCE_GROUP".

6.2.1.2 groupId
The *groupId* value is "CBRS_ALLIANCE".

6.2.1.3 GroupInfo Object Definition
See details of *GroupInfo* object definition in CBRSA-TS-2001 [n.5].

6.3 Single Frequency Group (SFG)

6.3.1 Principal-Subordinate SFG

Principal-Subordinate SFG is defined in Annex 2 of WINNF-TS-1001 [n.8].

6.3.1.1 groupType
The *groupType* value is "PRINCIPAL_SUBORDINATE_SFG".

6.3.1.2 groupId
The *groupId* values are assigned on demand when the first member of the planned Group indicates its membership. The *groupId* values are not registered with WInnForum and are not guaranteed by WInnForum to be unique. Coordination of *groupId* values is managed by the CBSD Users in collaboration with the managing SAS.

6.3.1.3 GroupInfo Object Definition

The *GroupInfo* object is defined in Table 1.

Table 1: *GroupInfo* Object Definition

Parameter	Presence	Description
NAME: *cbsdType* **DATA TYPE**: string	Optional	This parameter represents a type of CBSD in this Group. Acceptable values are: ▪ "PRINCIPAL" ▪ "SUBORDINATE" The default value of this parameter is "SUBORDINATE".

6.3.2 Interdependent SFG

Interdependent SFG is defined in Annex 3 of WINNF-TS-1001 [n.8].

6.3.2.1   *groupType*

The *groupType* value is "INTERDEPENDENT_SFG".

6.3.2.2   *groupId*

The *groupId* values are assigned on demand when the first member of the planned Group indicates its membership. The *groupId* values are not registered with WInnForum and are not guaranteed by WInnForum to be unique. Coordination of *groupId* values is managed by the CBSD Users in collaboration with the managing SAS.

6.3.2.3   *GroupInfo* Object Definition

The *GroupInfo* object is not defined for this type of SFG.

6.3.3   *Separable SFG*

Separable SFG is defined in Annex 4 of WINNF-TS-1001 [n.8].

6.3.3.1   *groupType*

The *groupType* value is "SEPARABLE_SFG".

6.3.3.2   *groupId*

The *groupId* values are assigned on demand when the first member of the planned Group indicates its membership. The *groupId* values are not registered with WInnForum and are not guaranteed by WInnForum to be unique. Coordination of *groupId* values is managed by the CBSD Users in collaboration with the managing SAS.

6.3.3.3   *GroupInfo* Object Definition

The *GroupInfo* object is not defined for this type of SFG.

6.4   Spectrum Reuse Group (SRG)

Spectrum Reuse Group has been defined per a Grouping Information registration request [n.1].

6.4.1   *General*

This Group type identifies a Group of CBSDs operated by a CBSD User or a group of CBSD Users where the CBSDs can use the same spectrum. SAS is not involved in the interference management among the members of this group.

6.4.1.1   *groupType*

The *groupType* value is "SPECTRUM_REUSE".

6.4.1.2   *groupId*

The *groupId* values are assigned on demand when the first member of the Group indicates its membership. The *groupId* values are not registered with WInnForum and are not guaranteed by

WInnForum to be unique. Coordination of *groupId* values is managed by the CBSD Users in collaboration with the managing SAS.

6.4.1.3   *GroupInfo* Object Definition

The *GroupInfo* object for SRG is not defined in this version of this document.

6.5   Passive DAS

Passive DAS is defined in Annex 7 of WINNF-TS-1001 [n.8].

6.5.1   General

This Group type identifies a Group of CBSDs belonging to the same Passive DAS chain of antennas (Transmission Points) fed from a unique Radio Unit.

6.5.1.1   groupType

The *groupType* value is "PASSIVE_DAS".

6.5.1.2   groupId

The *groupId* is a string of <FCC-ID>:<Serial Number>:<Chain_ID>, where <FCC-ID> and <Serial Number> are the FCC-ID and Serial Number of the Radio Unit feeding the Passive DAS chain. Chain ID is a unique identifier for the Passive DAS chain of antennas (Transmission Points) according to WINNF-TR-5001 [n.10].

6.5.1.3   *GroupInfo* Object Definition

The *GroupInfo* object for Passive DAS is not defined in this version of this document.

7   Grouping Configuration

The *GroupConfig* JSON object is used to communicate grouping configuration from SAS to the CBSD/DP and it is defined in Table 16 of WINNF-TS-3002 [n.6]. The *GroupConfig* object includes the *groupConfigInfo* parameter (data type: *GroupConfigInfo* object) containing details of the grouping configuration.

7.1   Coexistence Group (CxG)

7.1.1   CBRS Alliance Coexistence Group

GroupConfigInfo object definition for CBRS Alliance CxG is defined in Table 2.

Table 2: *GroupConfigInfo* Object Definition

Parameter	Presence	Description
NAME: *cbrsAllianceConfig* **DATA TYPE**: object: *CbrsAllianceConfig*	Optional	See definition of the *CbrsAllianceConfig* object in CBRSA-TS-2001 [n.5].

7.2 Single Frequency Group (SFG)

7.2.1 Principal-Subordinate SFG

GroupConfigInfo object definition for Principal-Subordinate SFG is not defined in this version of this document.

7.2.2 Independent SFG

GroupConfigInfo object definition for Independent SFG is not defined in this version of this document.

7.2.3 Separable SFG

GroupConfigInfo object definition for Separable SFG is not defined in this version of this document.

7.3 Spectrum Reuse Group (SRG)

GroupConfigInfo object definition for SRG is not defined in this version of this document.

7.4 Passive DAS

GroupConfigInfo object definition for Passive DAS is not defined in this version of this document.

8 Document History

		Document history
V1.0.0	31 January 2019	Initial Version approved for Publication by SSC Steering Group
V2.0.0	19 February 2020	Revision published to align with WINNF-SSC-3002
V3.0.0	30 September 2020	Spectrum Reuse Group is registered with this document.
V4.0.0	20 November 2020	Passive DAS is registered with this document.
V4.1.0	19 February 2021	Clarification on scope of this document.