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Re:	Working group review, document IEEE 802.16-01/49	
Abstract	The document contains text that relates to comments submitted on document P802.16ab-01/01r2	
Purpose	For insertion into document P802.16ab-01/01r2	
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Section to replace section 6.2.7.11.1.5:

6.2.7.11.1.5 Channel state information transfer

The SS will obtain all necessary downlink and uplink parameters as described in section 6.2.9 (in IEEE P802.16/D4-2001). The next step is the initial ranging and automatic adjustments stage. The ranging mechanism was originally created to handle natural interference (e.g. fades), and is capable of handling other sort of interference (e.g. man-made interference). The ranging mechanism already has all the provisions to be used both during the SS network entry process, and during periodic SS maintenance.

The initial ranging mechanism basically consists of a series of transactions where the SS send a RNG-REQ message, and the BS answers by a RNG-RSP message ordering the SS to change its transmission power or timing parameters. During periodic maintenance the SS is either polled by the BS to transmit a RNG-REQ message, or sends it independently. The BS answer by a RNG-RSP message, and the SS corrects its parameters as instructed by the BS.

In order to utilize the ranging mechanism for dynamic frequency selection the following TLV are added to the RNG-REQ message,

Name	Type	Length	Value	Scope
Base Station ID (optional)	?	6	The BS ID the SS is sending the RNG-REQ message to (determined from the DL-MAP message)	RNG-REQ
Downlink channel ID (optional)	?	1	The downlink channel ID the SS is sending the RNG-REQ message to (determined from the DCD message)	RNG-REQ
Uplink EIRP (optional)	?	1	EIRP power emitted SS, expressed as a signed integer (range —128 to 127) in units of 1dBm	RNG-REQ
Mean RSSI (optional)	?	1	Mean RSSI measured by the SS, expressed as a signed integer (range —128 to 127) in units of 1dBm	RNG-REQ
Mean CCI (optional)	?	1	Mean CCI measured by the SS, expressed as a signed integer (range —128 to 127) in units of 1dBm	RNG-REQ
CCI variance (optional)	?	1	CCI variance measured by the SS, expressed as a signed integer (range —128 to 127) in units of 1dBm	RNG-REQ
RSSI variance (optional)	?	1	RSSI variance measured by the SS, expressed as a signed integer (range —128 to 127) in units of 1dBm	RNG-REQ
RSSI Fading rate (optional)	?	1	RSSI variance measured by the SS, expressed as a signed integer (range —128 to 127) in units of 0.1dBm/msec	RNG-REQ

Table 1: additional TLV set for RNG-REQ message

The following TLV are added to the RNG-RSP message,

Name	Type	Length	Value	Scope
Base Station ID override (optional)	?	6	The BS ID the SS should operate with. The SS shall restart the network entry process on this BS.	RNG-RSP
DFS info request	?	1	0 = No DFS information required 1 = Send DFS information (e.g. the TLV values listed in table 1) in the next RNG-REQ message	RNG-RSP

Table 2: additional TLV set for RNG-RSP message

The initial ranging procedure executed by the SS and the BS is exactly the same as described in section 6.2.9.6 (in IEEE P802.16/D4-2001), except that the BS should request the DFS info in one or more of the RNG-RSP

messages. The SS shall reply with an appropriate RNG-REQ message containing the request information. The RNG-REQ/RSP transactions continue until the BS is satisfied with the results.

During periodic ranging the BS may request the DFS info using a RNG-RSP message and the SS must reply with an appropriate RNG-REQ message.

Notes — not to be included in the above section:

The following parameters have been dropped from the current messages,

- **Vendor ID of SS** — This parameter is transferred in the REG-REQ message, and is already defined as a TLV (see section 11.4.3 in IEEE P802.16/D4-2001).
- **Downlink Channel Configuration Setting (current, assigned)** — The BS knows this downlink channel parameters and so does the SS (or it would not receive). The SS sends the BS ID and channel ID on the uplink going message, so there is no reason any for any confusion as to what downlink channel the SS was listening to.
- **Uplink Channel Configuration Setting (current, assigned)** — All uplink channel settings are done dynamically through the UCD and the UL-MAP messages. Settings such as uplink frequency override are already defined for the ranging message.
- **Downlink channel ID (assigned)** — Not required, as the RNG-RSP already has a setting of downlink frequency override.
- **Uplink EIRP setting** — Not required, as the RNG-RSP message already has the capability to adjust uplink power