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Abstract	Uplink Allocation Window Start Time for Relay Stations		
Purpose	Accept for inclusion into P802.16j specification		
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Uplink Allocation Window Start Time for Relay Stations

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Summary

- Provide the capability for the RS and its superordinate station to coordinate the size of transmit/receive windows within relay zones.
- In 802.16e, the BS is able to do this with the SS/MS since it has control over DL and UL scheduling for all zones.
- With an RS, scheduling is done by the superordinate zone and the RS.
- It is proposed to introduce a Allocation Window Start Time that is provided to the RS from its superordinate station.
- Please see S802.16j-08/132.ppt for supporting discussion.

Proposed text changes:

Modify Section 6.3.2.3.5 as follows:

6.3.2.3.5 RNG-REQ (ranging request) message

An RNG-REQ shall be transmitted by the SS at initialization and periodically to determine network delay and to request power and/or DL burst profile change. The format of the RNG-REQ message is shown in Table 42. The RNG-REQ message may be sent in initial ranging and data grant intervals.

[...]

The following TLV parameter may be included in RNG-REQ message in order for an RS to request from its superordinate station a value to be used for the start time of the RS's uplink Allocation Window, where an RS's Allocation Window is the time portion of an uplink relay zone in which the RS may be allocated resources, the Allocation Window start time is expressed in units of symbols referenced to the start of the relay zone, and the Allocation Window ends at the end of the relay zone.

RS Allocation Window Start Time

This TLV is provided by an RS to a superordinate station in order to request a value to be used for the start time of the RS's uplink Allocation Window.

[...]

Modify Section 6.3.2.3.6 as follows:

6.3.2.3.6 RNG-RSP (ranging response) message

An RNG-RSP shall be transmitted by the BS in response to a received RNG-REQ. In addition, it may also be transmitted asynchronously to send corrections based on measurements that have been made on other received data or MAC messages. As a result, the SS shall be prepared to receive a RNG-RSP at any time, not just following a RNG-REQ transmission. The format of the RNG-REQ message is shown in Table 43.

[...]

The following TLV parameter may be included in RNG-RSP message in order for a superordinate station to provide a value to be used for the start time of the RS's uplink Allocation Window, where an RS's Allocation Window is the time portion of an uplink relay zone in which the RS may be allocated resources, the Allocation Window start time is expressed in units of symbols referenced to the start of the relay zone, and the Allocation Window ends at the end of the relay zone.

RS Allocation Window Start Time

This TLV is provided by a superordinate station to an RS and specifies a value to be used for the start time of the RS's uplink Allocation Window.

[...]

Modify Section 11.5 as follows:

11.5 RNG-REQ management message encodings

The encodings in Table 569 are specific to the RNG-REQ message (6.3.2.3.5).

[...]

Name	Type(1 byte)	Length	Value(variable length)	PHY scope
[...]				
<u>RS Allocation Window Start Time</u>	<u>xx</u>	<u>1</u>	<u>The number of symbols from the start of an uplink relay zone where the Allocation Window of an RS starts.</u> <u>An RS's Allocation Window is the time portion of an uplink relay zone in which the RS may be allocated resources. The Allocation Window start time is expressed in units of symbols referenced to the start of the relay zone and the Allocation Window ends at the end of the relay zone.</u>	<u>OFDMA</u>

Modify Section 11.6 as follows:

11.6 RNG-RSP management message encodings

CID update encodings (11.7.10) and SAID update encodings (11.7.18) may be used in RNG-RSP for reestablishing connections. When CID update encodings or SAID update encodings are used in RNG-RSP, those will be included in the compound REG-RSP encodings TLV. When the compound SBC-RSP encodings and REG-RSP encodings are included in RNG-RSP for HO optimization, the target BS shall only include TLV fields which values are different from what are used in the serving BS. For the TLV fields that are not included in the compound SBC-RSP and REG-RSP encodings, the MS shall set the values according to what are used in the serving BS. The encodings in Table 572 are specific to the RNG-RSP message (6.3.2.3.6).

[...]

Name	Type (1 byte)	Length	Value(variable length)	PHY scope
Timing Adjust	1	4	Tx timing offset adjustment (signed 32-bit). The amount of time required to adjust SS transmission so the bursts will arrive at the expected time instance at the BS. Units are PHY-specific (see 10.3). The SS shall advance	-

			its burst transmission time if the value is negative and delay its burst transmission if the value is positive.	
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[...]

<u>RS Allocation Window Start Time</u>	<u>1</u>	<u>1</u>	<p><u>The number of symbols from the start of an uplink relay zone where the Allocation Window of an RS starts.</u></p> <p><u>An RS's Allocation Window is the time portion of an uplink relay zone in which the RS may be allocated resources. The Allocation Window start time is expressed in units of symbols referenced to the start of the relay zone and the Allocation Window ends at the end of the relay zone.</u></p>	<u>OFDMA</u>
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