Scheduling offset for Relay Stations

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Venue:

IEEE 80216-08/020; IEEE 802.16 Letter Ballot Recirc #28c, on P802.16j/D4

Base Contribution:

IEEE C802.16-08/113

Purpose:

Review and discuss in support for the adoption of the proposal contained in C80216j-08/112.

RS scheduling offset

Summary

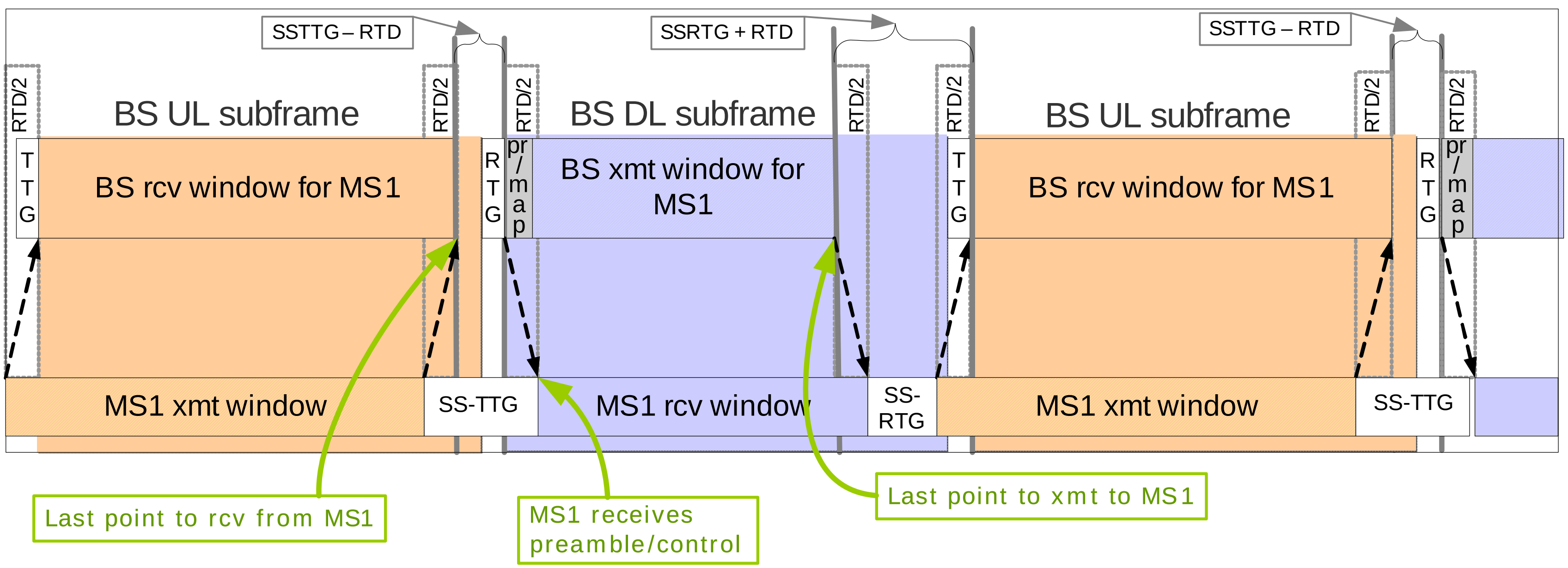
- Provide the capability for the RS and its superordinate station to coordinate the size of transmit/receive windows within relay zones
- In 802.16e, the BS is able to do this with the SS/MS since it has control over DL and UL scheduling for all zones.
- With an RS, scheduling is done by the superordinate zone and the RS
- It is proposed to introduce a Scheduling Offset that is provided to the RS from its superordinate station

RS scheduling offset

802.16e SSRTG/SSTTG allowances

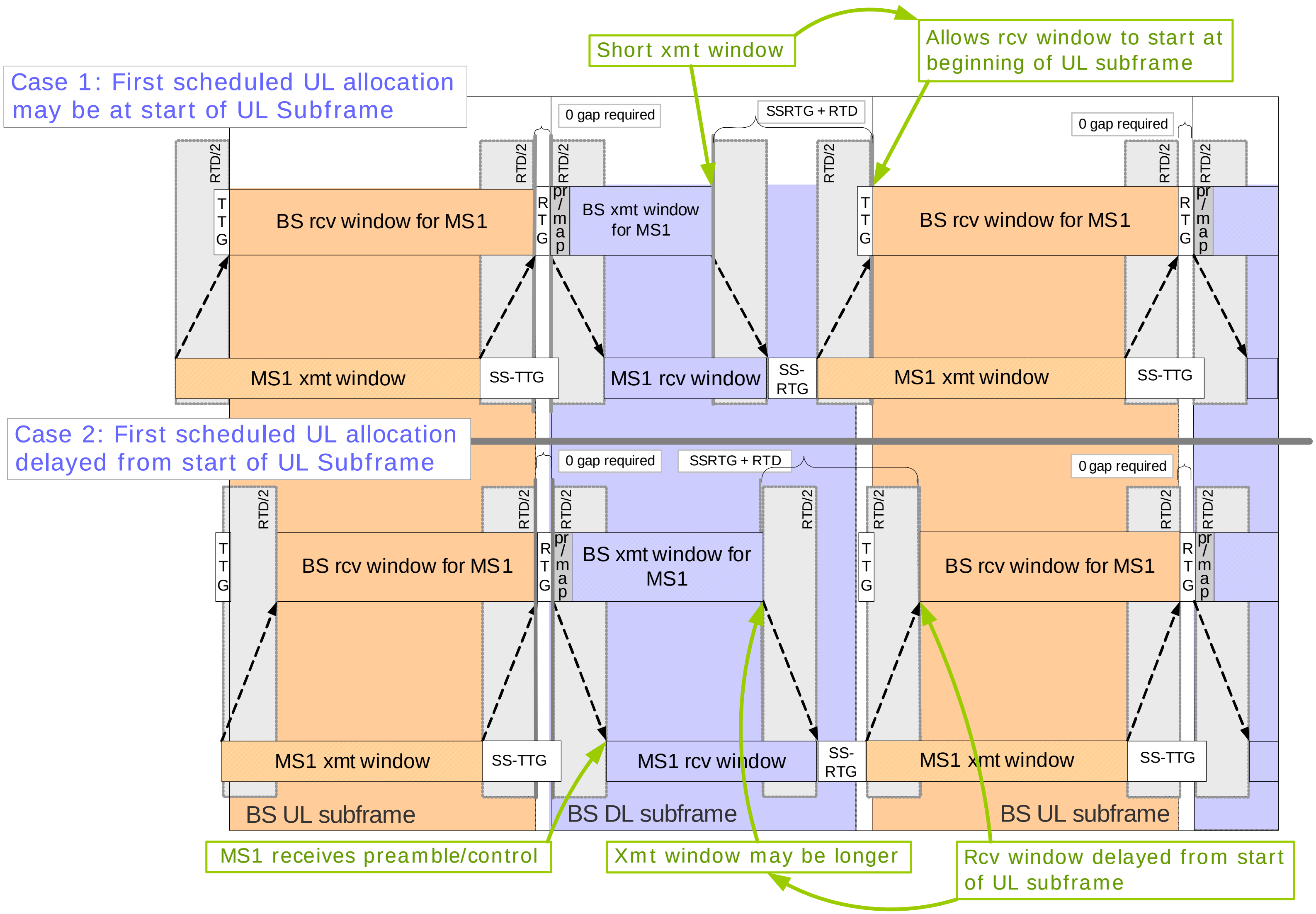
The BS shall not :

- Transmit DL information to a station later than (SSRTG+RTD) before the beginning of its first scheduled UL allocation in any UL subframe
- Transmit DL Information to it earlier than (SSTTG–RTD) after the end of the last scheduled UL allocation, where RTD denotes round-trip delay
- In addition, the SS should be allowed to receive the DL preamble for each frame that contains DL data for it by assuring the period specified above does not overlap with the preamble



RS scheduling offset

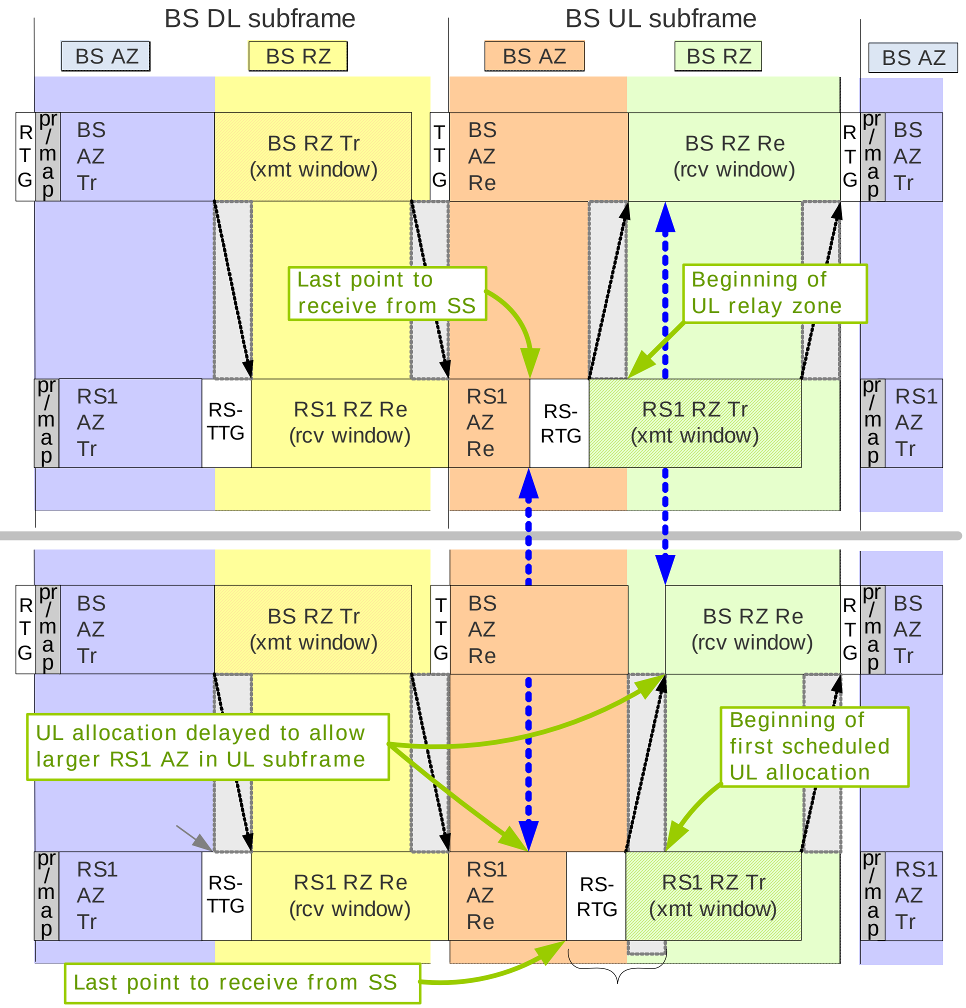
Beginning of MS's first scheduled UL allocation is flexible



RS scheduling offset

- It would be beneficial to have similar capability for RSs to optimize the size of the xmt/rcv windows
- However, scheduling is controlled by the RS and superordinate node rather than just a BS

- For example, in the UL subframe of the figures, in order to delay the "last point to receive from SS", the RS needs to know the MR-BS will not schedule it until later.
- However, the RS UL allocation from the MR-BS is received after SS UL allocation from the RS.



RS scheduling offset

Proposal

- Provide capability for the transmit/receive windows to be balanced between relay zones
- RS’s superordinate station provides the RS with the earliest time that it may be scheduled in the UL relay zone on a slowly changing basis based on the RTD
- RS may use this information to determine when to stop scheduling subordinate stations
- An RS may request a scheduling offset based on the RTD of subordinate station