

# MBS Synchronization

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Purpose:

To Explain the MBS synchronization in baseline document for further discussion

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# ***MBS synchronization***

According to the 16e standard, MBS transmission of BSs "should" be synchronized. (see section 6.3.23.2.2)

## ***6.3.23.2.2 Performance enhancement with macro diversity***

***To increase the receiving performance, MBS transmission in a group of BS should be synchronized. In such case, each BS shall transmit the same PDUs, using the same transmission mechanism (symbol, subchannel, modulation, and etc.) at the same time.***

# *RS Downlink Processing Delay* (11.8.3.7.21 in the baseline document)

‘RS Downlink Processing Delay’ is a maximum fixed delay time (unit: frame) for support delivery of timing-related messages and data.

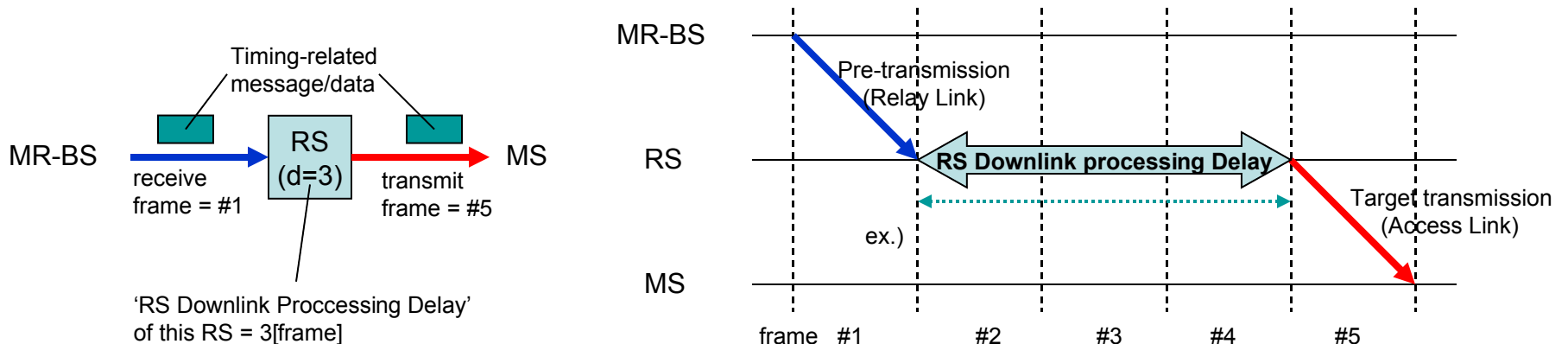
It consists of following processing time:

PHY(RF and Baseband), MAC ( including to identify message type (by CID) etc) scheduling and queuing (take some margin into account).

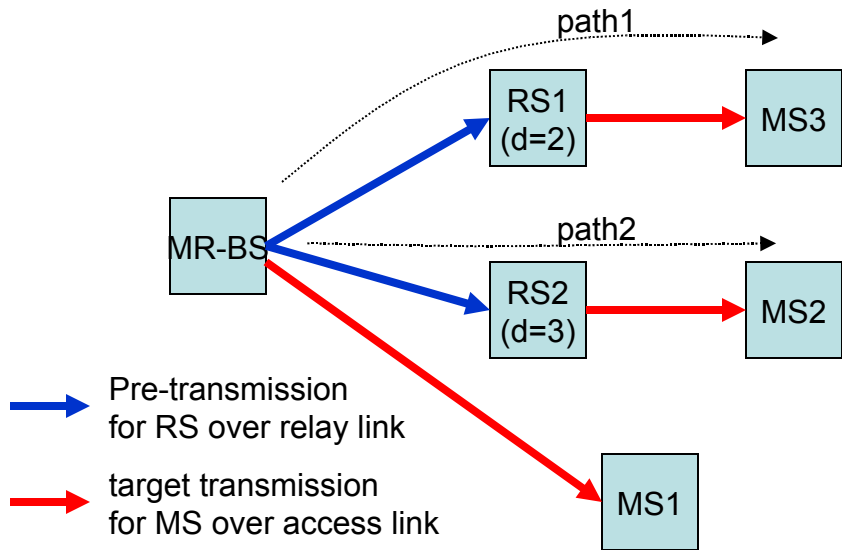
Each RS has own ‘RS Downlink Processing Delay’ as a capability parameter, based on RS design and implementation (processor power, buffer, etc.).

To simplify the synchronization issues, timing related messages and data are received at RS, and transmitted from RS after ‘RS Downlink Processing Delay’.

Example:



# Example of MBS synchronization



RS Downlink Processing Delay  
 RS1 = 2 frame , RS2 = 3 frame

Cumulative delay

path1 = 2+0\* = 2 frame

path2 = 3+0\* = 3 frame

\* intermediate hop count. ex) If 2 RSs on a path, this value = 1.

Max. cumulative delay: 3 frames (path2)

Waiting time

RS1: 1 frame , RS2: 0 frame

MR-BS: 3 frame

