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Source(s)	<p>Yuefeng Zhou; Mike Hart; Sunil Vadgama Fujitsu Laboratories of Europe Ltd Hayes Park Central, Hayes End Road, Hayes, Middlesex, UB4 8FE, UK</p> <p>Masato Okuda Fujitsu Laboratories Ltd. Kamikodanaka 4-1-1, Kawasaki, 211-8588, Japan</p> <p>Haihong Zheng, Yousuf Saifullah, Shashikant Maheshwari Nokia Siemens Networks 6000 Connection Drive, Irving, TX 75019 USA</p> <p>Kenji Saito KDDI Corporation 3-10-10, Iidabashi, Chiyoda-ku, Tokyo 102-8460 Japan</p>	<p>Voice: +44 (0) 20 8573 4444 FAX: +44 (0) 20 8606 4539 E-mail: Yuefeng.zhou@uk.fujitsu.com Mike.hart@uk.fujitsu.com Sunil.vadgama@uk.fujitsu.com</p> <p>Voice: +81-44-754-2811 Fax: +81-44-754-2786 okuda@jp.fujitsu.com</p> <p>Voice: 972-894-5000 Email: Haihong.Zheng@nsn.com</p> <p>Voice: +81 80 5061 9967 E-mail: kenji@kddi.com</p>
Re:	IEEE 802.16j-06/027: "Call for Technical Proposals regarding IEEE Project P802.16j"	
Abstract	This proposal clarifies the service flow management in MR with distributed RS.	
Purpose	Discuss and adopt proposed text.	
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Service Management in MR with Distributed Scheduling RS

1. Introduction

In MR networks, the RS may use two types of scheduling. Centralized Scheduling is where MR-BS controls all the radio resource scheduling and MAP allocation. Distributed Scheduling is where some functionality of radio resource scheduling and MAC allocation are distributed to RS. This contribution proposes text to clarify the handling of service flow management in distributed scheduling case.

When MR-BS creating/modifying the QoS parameters of service flow, to facilitate the distributed scheduling RS, the MR-BS has to check and then inform the QoS information with the related RS, which include all the RSs on the path. Note that the service flow could be associated with a tunnel connection identified by a T-CID or an MS transport connection identified by a MS CID. Change of service flow parameter for a tunnel connection could be triggered by for example adding of new individual MS connection into the tunnel.

The initial admission control procedure is illustrated in Figure 1.

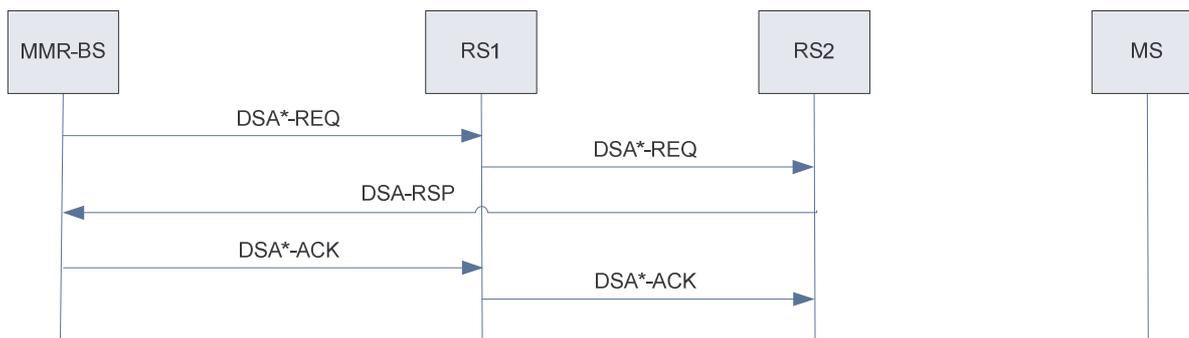


Figure 1: Admission Control Procedure

4. Specific Text Change

6.3.2.3.10 DSA-REQ message

[Insert the following text after the second paragraph of subclause 6.3.2.3.10:]

Before admitting a service flow, the MR-BS shall send a DSA*-REQ to all the RSs on the path. The CID associated with the service flow needs to be included in the Service Flow CID TLV field in this DSA*-REQ message. The CID could be a transport CID for an individual MS or a tunnel CID.

6.3.2.3.11 DSA-RSP message

[Insert the following text after the second paragraph of subclause 6.3.2.3.11:]

Upon receiving a DSA*-REQ from MR-BS, the access RS replies with a DSA-RSP directly to MR-BS using its basic CID.

6.3.2.3.12 DSA-ACK message

[Insert the following text after the second paragraph of subclause 6.3.2.3.12:]

Upon receiving a DSA-RSP from an access RS, the MR-BS may send a DSA*-ACK to all the RSs on the path. The CID associated with the service flow needs to be included in the Service Flow CID TLV field in this DSA*-ACK message together with the admitted service flow parameter. The CID could be the transport CID for an individual MS or a tunnel CID.

6.3.2.3.13 DSC-REQ message

[Insert the following text after the second paragraph of subclause 6.3.2.3.13:]

Before admitting changes to a service flow, the MR-BS shall send a DSC*-REQ to all the RSs on the path. The CID associated with the service flow needs to be included in the Service Flow CID TLV field in this DSC*-REQ message. The CID could be the transport CID for an individual MS or a tunnel CID.

6.3.2.3.14 DSC-RSP message

[Insert the following text after the second paragraph of subclause 6.3.2.3.14:]

Upon receiving DSC*-REQ from MR-BS, the access RS replies with a DSC-RSP directly to MR-BS using its basic CID.

6.3.2.3.15 DSC-ACK message

[Insert the following text after the second paragraph of subclause 6.3.2.3.15:]

Upon receiving a DSC-RSP from an access RS, the MR-BS may send a DSC*-ACK to all the RSs on the path. The CID associated with the service flow needs to be included in the Service Flow CID TLV field in this DSC*-ACK message together with the admitted service flow parameter. The CID could be the transport CID for an individual MS or a tunnel CID.

6.3.2.3.17 DSD-REQ message

[Insert the following text after the second paragraph of subclause 6.3.2.3.17:]

While deleting a service flow, the MR-BS shall also send a DSD*-REQ to all the RSs on the path between the MR-BS and the MS. The CID associated with the service flow needs to be included in the Service Flow CID TLV field in this DSD*-REQ message.

6.3.2.3.18 DSD-RSP message

[Insert the following text after the second paragraph of subclause 6.3.2.3.18:]

Upon receiving DSD*-REQ from MR-BS, the access RS replies with a DSD-RSP directly to MR-BS using its basic CID.

6.3.14.9.3 DSA

6.3.14.9.3.1 SS-initiated DSA

Insert the following table the end of 6.3.14.9.3.1:

In MR network with distributed scheduling, before MR-BS admitting the service flow and sending DSA-RSP to the requesting station which could be an MS or an access RS, the MR-BS shall send a DSA*-REQ to all the RSs on the path. Such DSA*-REQ is first sent from MR-BS to its subordinate RS using its basic CID. If its resource condition cannot support the requested SF parameter, it may update the SF parameter with the one it can support. It then sends the DSA*-REQ to its subordinated neighboring RS using the basic CID of the subordinate RS. This procedure is repeated by each RS, until the DSA*-REQ reaches the access RS. After processing the DSA*-REQ, the access RS replies with a DSA-RSP using its own basic CID directly to the MR-BS. If MR-BS receives DSA-RSP from the access RS within T48, it shall send DSA-RSP to the requesting station. Meanwhile MR-BS shall also send a DSA*-ACK with the admitted service flow parameter to all the RSs on the path, if the embedded routing scheme is used. The processing procedures of DSA*-ACK message on each RS are the same as those for the DSA*-REQ as described above.

6.3.14.9.3.2 BS-initiated DSA

Insert the following table the end of 6.3.14.9.3.2:

In MR network with distributed scheduling, before MR-BS sending DSA-REQ to an MS or an access RS, the MR-BS shall send DSA*-REQ to all the RSs on the path. Such DSA*-REQ is first sent from MR-BS to its subordinate RS using its basic CID. If its resource condition cannot support the requested SF parameter, it updates the SF parameter with the one it can support. It then sends the DSA*-REQ to its subordinated neighboring RS. This procedure is repeated by each RS, until the DSA*-REQ reaches the access RS. After processing the DSA*-REQ, the access RS replies with a DSA-RSP using its own basic CID directly to the MR-BS. The MR-BS then shall send DSA-REQ to the MS or access RS. Meanwhile MR-BS shall also send a DSA*-ACK with the admitted service flow parameter to all the RSs on the path, if the embedded routing scheme is used. The processing procedures of DSA*-ACK message on each RS are the same as those for the DSA*-REQ as described above.

6.3.14.9.4.1 SS-initiated DSC

Insert the following table the end of 6.3.14.9.4.1:

In MR network with distributed scheduling, before MR-BS admitting the changes and sending DSC-RSP to the requesting station which could be an MS or an access RS, the MR-BS shall send DSC*-REQ to all the RSs on the path. Such DSC*-REQ is first sent from MR-BS to its subordinate RS using its basic CID. If its resource condition cannot support the requested SF parameter, it updates

the SF parameter with the one it can support. It then sends the DSC*-REQ to its subordinated neighboring RS. This procedure is repeated by each RS, until the DSC*-REQ reaches the access RS. After processing the DSC*-REQ, the access RS replies with a DSC-RSP using its own basic CID directly to the MR-BS. If MR-BS receives DSC-RSP from the RS within T48, it shall send DSC-RSP to the requesting station. Meanwhile MR-BS shall also send a DSC*-ACK with the admitted service flow parameter to all the RSs on the path, if the embedded routing scheme is used. The processing procedures of DSC*-ACK message on each RS are the same as those for the DSC*-REQ as described above.

6.3.14.9.4.2 BS-initiated DSC

Insert the following table the end of 6.3.14.9.4.2:

In MR network with distributed scheduling, before MR-BS sending DSC-REQ to an MS or an access RS, the MR-BS shall send DSC*-REQ to all the RSs on the path. Such DSC*-REQ is first sent from MR-BS to its subordinate RS using its basic CID. If its resource condition cannot support the requested SF parameter, it updates the SF parameter with the one it can support. It then sends the DSC*-REQ to its subordinated neighboring RS. This procedure is repeated by each RS, until the DSC*-REQ reaches the access RS. After processing the DSC*-REQ, the access RS replies with a DSC-RSP using its own basic CID directly to the MR-BS. The MR-BS then shall send DSC-REQ to the MS or access RS. Meanwhile MR-BS shall also send a DSC*-ACK with the admitted service flow parameter to all the RSs on the path, if the embedded routing scheme is used. The processing procedures of DSC*-ACK message on each RS are the same as those for the DSC*-REQ as described above.

6.3.14.9.5 Connection release

6.3.14.9.5.1 SS-initiated DSD

Insert the following table the end of 6.3.14.9.5.1:

In MR network with distributed scheduling, upon receiving a DSD-REQ from an MS or an access RS, the MR-BS shall delete the service flow on relay link (MR-BS ~ RS) as well as the access link (RS-SS). The MR-BS shall send DSD*-REQ to all the RSs on the path. Such DSD*-REQ is first sent from MR-BS to its subordinate RS using its basic CID. The RS processes it and forwards it to its subordinate neighboring RS. This procedure is repeated by each RS, until the DSD*-REQ reaches the access RS. After processing the DSD*-REQ, the access RS replies with a DSD-RSP using its own basic CID directly to the MR-BS.

6.3.14.9.5.2 BS-initiated DSD

Insert the following table the end of 6.3.14.9.5.2:

In MR network with distributed scheduling, the MR-BS shall delete the service flow on relay link (MR-BS ~ RS) as well as the access link (RS-SS). The MR-BS shall send DSD*-REQ to all the RSs on the path. Such DSD*-REQ is first sent from MR-BS to its subordinate RS using its basic CID.

The RS processes it and forwards it to its subordinate neighboring RS. This procedure is repeated by each RS, until the DSD*-REQ reaches the access RS. After processing the DSD*-REQ, the access RS replies with a DSD-RSP using its own basic CID directly to the MR-BS.

10.1 Global values

[Add one row in table 342 as indicated]

<u>System</u>	<u>Name</u>	<u>Time reference</u>	<u>Minimum value</u>	<u>Default value</u>	<u>Maximum value</u>
<u>MR-BS</u>	<u>T48</u>	<u>Time the MR-BS waits for DSA*-RSP from RS</u>	<u>TBD</u>	<u>TBD</u>	<u>TBD</u>