3.1.1 MessageId Element

The RMP MUST include the MessageId element in a Reliable Message, an Acknowledgment message, a Fault message and a PollRequest message. In a request message, the sender MUST include a groupId attribute.

o   a **groupId** attribute

Table 3 MessageId Element

Cardinality	1
Value	None
Attributes	groupId (RFC2396 *See 3.1.1 for details)
Child elements	SequenceNum
Fault	InvalidMessageId
	InvalidMessageParameters

(1) groupId attribute

The RMP MUST include this attribute in the MessageId element. This attribute is to identify a sequence of messages, where each sequence is of length 1 or more. The sending RMP MUST use a distinct globally unique groupId for any distinct group of messages. Any group of messages will have a common groupId value. The syntax of this identification is URI, as defined in [RFC2396]. It is RECOMMENDED to use the Message-ID schema, as defined in [RFC2392].

3.1.1.1 SequenceNum Element

The sender must include the SequenceNum element for a Group with more than one message.

When a message includes a MessageOrder element, the SequenceNum element is used for guaranteeing the message order within the group of messages specified by the same groupId value. In other words, the sequence of numbered messages that the receiver node presents to the application MUST be sent in the same order as the sequence of numbered messages that the sender application has produced, within the group of messages having the same groupId value.

When the sender requests Guaranteed Message Ordering, the sender MUST use Guaranteed Message Delivery and Duplicate Elimination for that message as well. In particular, the sender MUST include both an AckRequested element and a

DuplicateElimination element, as well as the MessageOrder element for Guaranteed Message Ordering.

This element includes the following attributes:

- a **groupExpiryTime** attribute

- a **groupMaxIdleDuration** attribute

- a **number** attribute attribute

    - a **status** attribute

In a request message, the sender MAY include either a groupExpiryTime attribute or a groupMaxIdleDuration attribute corresponding to the group termination parameters specified in section 2.5.1:

If the MessageOrder element appears in the message sent, the receiver of the message MUST make messages available to the application layer only after all messages with lower number with the same groupId have been made available to the application. Example 6 illustrates some message fragments with SequenceNum element: