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Source(s)	David Xiang, Phillip Barber, Jim Carlo, Duke Dang, Lucy Chen, John Lee mailto: dxiang@futurewei.com HUAWEI
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Abstract	Fix broken message flow in HO decision & initiation
Purpose	Adoption
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Fix broken message flow in HO decision & initiation

David Xiang, Phillip Barber, Jim Carlo, Duke Dang, Lucy Chen, John Lee
HUAWEI

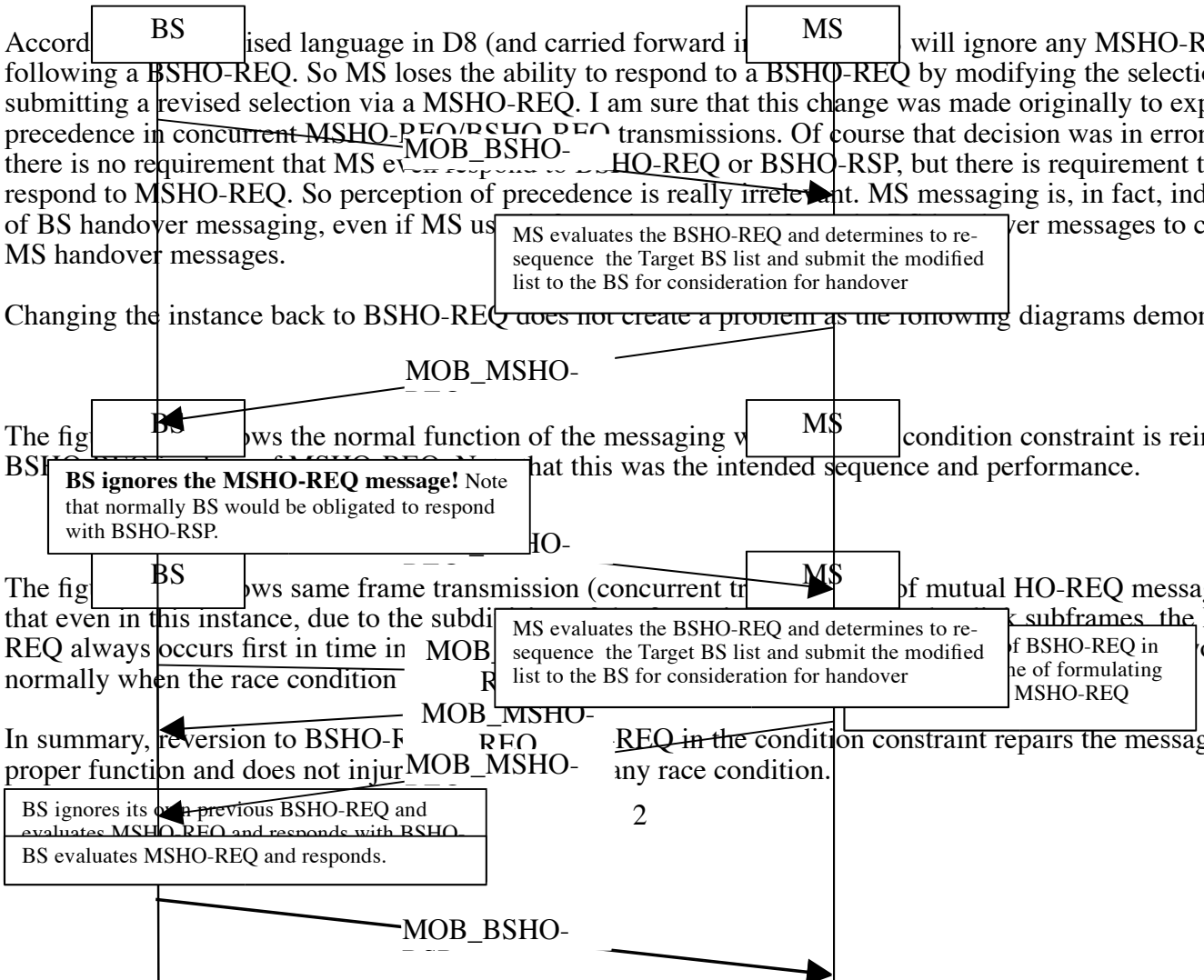
Problem Definition

There is a problem in HO decision & initiation.

A change to the D8 document on handover race condition mitigation has broken the normal messaging sequencing. More specifically, a change to 6.3.21.2.2 HO decision & initiation, page 178, paragraph 2 was changed to:

> If an MS that transmitted a MOB_MSHO-REQ message detects an incoming MOB_BSHO-REQ message, it may respond with a MOB_MSHO-REQ or a MOB_HO-IND message and ignore its own previous request. A BS that transmitted a MOB_BSHO-REQ message and detects an incoming MOB_MSHO-REQ message from the same MS shall ignore its **MOB_MSHO-REQ [emphasis added]**. A BS that transmitted a MOB_BSHO-REQ message and detects an incoming MOB_HO-IND message from the same MS shall ignore its own previous request.

The change of the message (in bold in the text) from MOB_BSHO-REQ to MOB_MSHO-REQ has disastrous results as can be seen in the following diagram.



Accord ised language in D8 (and carried forward i will ignore any MSHO-REQ following a BSHO-REQ. So MS loses the ability to respond to a BSHO-REQ by modifying the selection and submitting a revised selection via a MSHO-REQ. I am sure that this change was made originally to express BS precedence in concurrent MSHO-REQ/BSHO-REQ transmissions. Of course that decision was in error since there is no requirement that MS ev HO-REQ or BSHO-RSP, but there is requirement that BS respond to MSHO-REQ. So perception of precedence is really irrelevant. MS messaging is, in fact, independent of BS handover messaging, even if MS us er messages to construct MS handover messages.

Changing the instance back to BSHO-REQ does not create a problem as the following diagrams demonstrate:

The fig ows the normal function of the messaging w condition constraint is reinstated as BSH hat this was the intended sequence and performance.

The fig ows same frame transmission (concurrent tr of mutual HO-REQ messages. Note that even in this instance, due to the subdi subframes, the BSHO-REQ always occurs first in time in orks normally when the race condition

In summary, reversion to BSHO-R REQ in the condition constraint repairs the message flow to proper function and does not injur ny race condition.

MS evaluates the BSHO-RSP and determines to:
Resequence the Target BS list and re-submit the modified list to the BS for consideration for handover as another MSHO-REQ, or;
Accept the BSHO-REQ and issue a HO-IND response with HO_IND_type=0b00, or;
Reject the BSHO-REQ and issue a HO-IND respond with HO_IND_type=0b10, or;
Ignore the BSHO-RSP message and issue no MS message

Remedy

Revert language in 6.3.21.2.2 HO decision & initiation, page 178, paragraph 2 back to original text.

Proposed Text Changes

[In 6.3.21.2.2 HO decision & initiation, page 178, lines 12-18, modify paragraph as:]
If an MS that transmitted a MOB_MSHO-REQ message detects an incoming MOB_BSHO-REQ message, it may respond with a MOB_MSHO-REQ or a MOB_HO-IND message and ignore its own previous request. A BS that transmitted a MOB_BSHO-REQ message and detects an incoming MOB_MSHO-REQ message from the same MS shall ignore its ~~MOB_MSHO-REQ~~ MOB_BSHO-REQ. A BS that transmitted a MOB_BSHO-REQ message and detects an incoming MOB_HO-IND message from the same MS shall ignore its own previous request.

Operator Operator
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