

Agenda item:	16.3
Source:	Motorola, Ericsson, Siemens, and Alcatel
Title:	Removal of Node B Restarted and RNC Restarted procedures
Discussion for:	Decision

1 Introduction

This contribution proposes the removal of the Node B Restarted and RNC Restarted procedures.

2 Discussion

It is proposed to remove both the Node B Restart Indication and the RNC Restart Indication procedures. The reasoning for removal is detailed below.

Node B Restart Indication –reasons for removal

1. According to [1], the Node B Restart Indication message is sent before the Node B is to perform a restart. Unfortunately, this message will not be sent for unplanned restarts (e.g., power loss to Node B, main processor failure, etc...) as the Node B will have gone down before such an indication can be forwarded to the RNC. Thus, this message can only be sent for planned restarts.
2. Unplanned restarts will be detected via link failures (Layer 1 / 2); thus there is no need for a Layer 3 procedure (i.e., Node B Restart) for unplanned outages.
3. Through RAN3 discussions, the only planned restart mentioned has been for SW upgrades / downgrades. However, Node B SW upgrades / downgrades can change SW versions without requiring an outage (i.e., it is a live upgrade / downgrade). Thus, the use of the restart procedure for SW changes cannot be specified in the standards. If the intended purpose of the Node B Restart procedure is to inform the RNC that resources should not be used at this Node B as they will soon become unavailable due to a planned restart – the same functionality already exists with the Block Resource procedure. The Block Resource procedure informs the RNC that particular resources are not to be used, which actually allows a more graceful planned outage than the Node B Restart Indication. Furthermore, for manufactures that can perform SW and HW upgrades and downgrades without influencing traffic the use of the Node B restart procedure or the blocking procedure is not required.
4. The RNC already becomes aware of Node B restarts via the Audit Required message, so the Node B Restarted procedure message is redundant. However, since the Audit Required message can be sent for additional reasons besides a Node B restart (e.g., link outage), a cause field could be added to the message so that the RNC knows the reason for the audit and thus know of Node B restarts.
5. There is description lacking in [1] for the application of such a procedure. Additionally, it is very unclear what the receiving node should do with the information that the other node has restart. Unless a specific purpose is demonstrated and documented in [1], such a procedure should be removed or at the very least made FFS, otherwise the correct use of such a procedure between vendors cannot be guaranteed.

RNC Restart Indication –reasons for removal

1. According to [1], the RNC Restart Indication message is sent before the RNC is to perform a restart. Unfortunately, this message will not be sent for unplanned restarts (e.g., power loss to the RNC, main

processor failure, etc...) as the RNC will have gone down before such an indication can be forwarded to every Node B. Thus this message can only be sent for planned restarts.

2. Unplanned restarts will be detected via link failures (Layer 1 / 2); thus there is no need for a Layer 3 procedure (i.e., RNC Restart) for unplanned outages.
3. Through RAN3 discussions, the only planned restart mentioned has been for SW upgrades / downgrades. However, RNC SW upgrades / downgrades can change SW versions without requiring an outage (i.e., it is a live upgrade / downgrade). Thus, the use of the restart procedure for SW changes cannot be specified in the standards.
4. It has been mentioned that the RNC restart procedure could be used to indicate to the Node B that the air interface shall be "enabled" again by sending broadcast information. However, the enabling of the air interface after RNC restart is already indicated within the System Information Update procedure.
5. There is description lacking in [1] for the application of such a procedure. Additionally, it is very unclear what the receiving node should do with the information that the other node has restart. Unless a specific purpose is demonstrated and documented in [1], such a procedure should be removed or at the very least made FFS, otherwise the correct use of such a procedure between vendors cannot be guaranteed.

One final point is that restart is only one type of error. Why should the restart fault case have its own procedure when outages of the link, outage of a line termination device, etc... do not? The focus of NBAP should cover what needs to be done over the interface for a planned outage or fault, rather than on what fault has happened in one of the nodes.

3 Proposal

The following changes to TS 25.433 [1] are proposed –

1. Remove the section 8.1.2.2.1 Node B Restart Indication
2. Remove the section 8.1.2.3.1 RNC Restart Indication

4 References

[1] 3GPP TS 25.433 – NBAP Specification version 1.3.1