

Meeting #6

Sophia-Antipolis, France 23 - 27

August 1999

Agenda Item: 10.4, 15.3, and 16.4
Source: NTT DoCoMo
Title: Evaluation procedure
Document for: Discussion

1. Abstract

This contribution proposes a new function called "Evaluation procedure" and its impact on the current protocols.

"Evaluation procedure" is a procedure which is nothing different from the conventional procedure, but is used to evaluate if a set of specific procedures and function entities (e.g. physical resources, application part) within UTRAN nodes are functioning well.

DoCoMo believes that the normality of a UTRAN node cannot only be proven by self-diagnostic function, but can be proven if and only if a set of total UTRAN procedures can also be successfully performed. This function is intended to perform such procedure.

2. Discussion

Evaluation procedure may be applied to various cases, such as when a new baseband-card is installed in NodeB in order to extend the frequency bandwidth. After such installation, evaluation of the new baseband-card must be performed before deploying the card.

It is natural that self-diagnostic function of the new entity (baseband-card, in this case) shall be performed in order to confirm all of its functions. But some operators (at least DoCoMo) are also keen to confirm if the entity after installation is really durable to perform the routines. It must also be noticed that the existing entity (deploying baseband-card, in this case) must keep providing the services without any interrupt. It is believed that there shall be some mechanism to perform evaluation procedure while providing services through the existing facility. One possibility to incorporate this requirement is to add a new information element "*evaluation indicator*" to some of UTRAN protocol messages.

Information element "*evaluation indicator*" shall be introduced to the following messages:

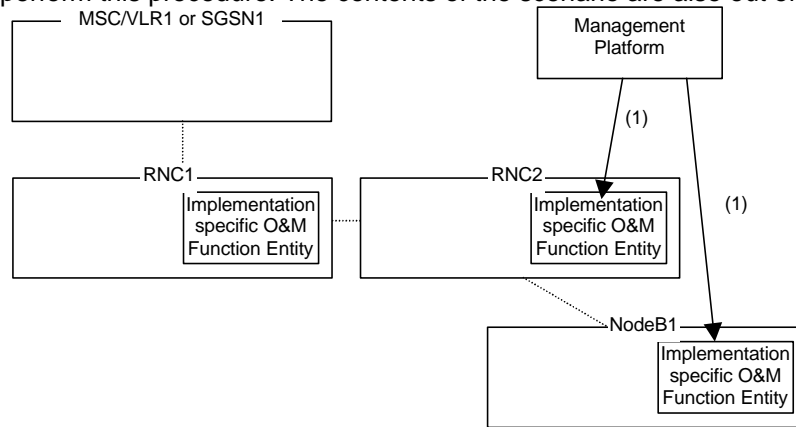
NBAP: Radio Link Setup Request

RNSAP: Radio Link Setup Request

RANAP: Radio Access Bearer Assignment Request

The story below explains an example case how this evaluation procedure works:

(1) Before deploying the evaluation procedure, the Management Platform transfers a “scenario” to the UTRAN nodes (to RNC 2 and NodeB1 in this case), instructing “*If the node receives a message with evaluation indicator enabled, the node is required to utilize a specific physical resource XXX (e.g. specific baseband-card)*”. This instructions is performed through implementation specific O&M procedure. It is out of scope how to perform this procedure. The contents of the scenario are also out of scope.

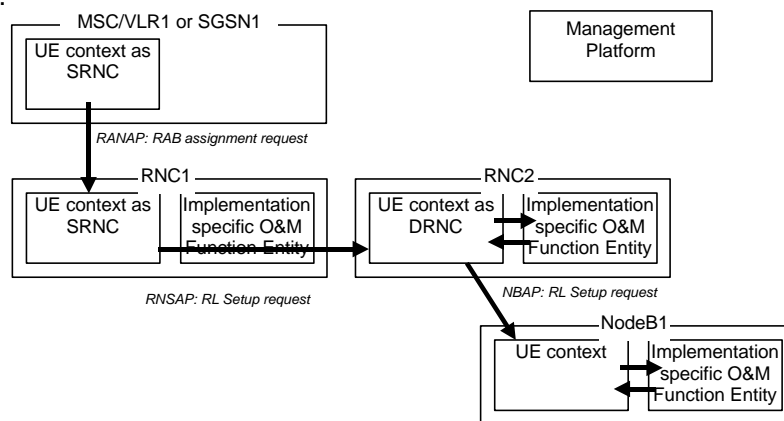


Instructions from the Management Platform to UTRAN nodes

(2) As the MSC *in evaluation mode* triggers **Radio Access Bearer Assignment** procedure, the MSC/VLR sends “**RAB assignment Request**” message with the evaluation indicator enabled to the RNC1. Then the RNC1 creates UE context in itself and sends “**Radio Link Setup Request**” to the RNC2. It must be noted that the RNC1 is doing no special operation, since the RNC1 is not given an instruction from the Management Platform.

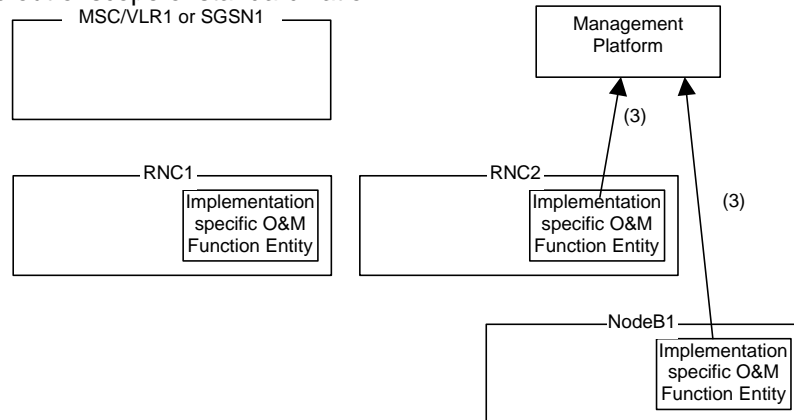
As the RNC2 receives the message, the RNC2 also created UE context in itself. The RNC2 notices that the indicator in the message is enabled so that the RNC allocates previously instructed specific physical resources according to the scenario and starts implementation specific evaluation function internally (e.g. logging)

Along with this, the RNC2 sends “**Radio Link Setup Request**” to the NodeB1. NodeB1 also allocates previously instructed specific physical resources according to the scenario and starts implementation specific evaluation function internally. The allocation and internal evaluation function are also out of scope of standardization.



Set of UTRAN procedures performed with evaluation indicator enabled

(3) After the whole set of procedures are completed (i.e. upon deletion of UE context in the nodes), the UTRAN nodes will report the results of evaluation to the Management Platform. The management platform will evaluate the result whether the specific physical resource is functioning or not. This procedure is also out of scope of standardization.



After whole set of procedures, reports are sent from UTRAN nodes to the Management Platform

3. Proposal

In conclusion, it is proposed that UTRAN shall provide some mechanism to make distinction between evaluation procedures and conventional procedure in protocol level.

As one way to incorporate such requirement, it is proposed to add a new information element called “*evaluation indicator*” to “**RANAP: RAB Assignment Request**”, “**RNSAP: RL Addition Request**” and “**RNSAP/NBAP: RL Setup Request**” messages.

The following modification shall be made to the corresponding baseline document.

[25.413 RANAP specification]

9.1.1.1 RADIO ACCESS BEARER ASSIGNMENT REQUEST

Information element	Reference	Type
Message type		M
Bearers x n to be setup or modified		C1
RAB ID		M
NAS Binding Information		M
Bearer parameters		M (1)
User Plane mode		M
Transport Address		M
Iu transport association		M
Priority level and pre-emption indication		O (2)
Bearer linking		O
Bearers x n to be released		C1
RAB ID		M
Cause		M
<u>Evaluation indicator</u>		<u>O</u>

[25.423 RNSAP specification]

9.1.2 RADIO LINK SETUP REQUEST

Information Element	Reference	Type
Message Discriminator		M
Message Type		M
....
Evaluation indicator		Q

[25.433 NBAP specification]

9.1.2 RADIO LINK SETUP REQUEST

This message is sent from CRNC to Node B in order to start radio link setup for the UE in the NodeB.

Information Element	Reference	Type
Message Discriminator		M
Message Type		M
....
Evaluation indicator		Q