

TSG-RAN Working Group 3 meeting #6  
Sophia Antipolis, France 24 – 27 August 1999

**Agenda Item:** 10.3, 16.3

**Source:** NTT DoCoMo

**Title:** Health Check (Layer3)

**Document for:** Decision

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References

[1] TS 25.413 RANAP specification version 1.1.1

[2] TS 25.433 NBAP specification version 1.1.2

1. Abstract

We propose the procedure to confirm the normality of Layer 3 level on Iu and Iub interfaces.

2. Discussion

In the middle of process to restart the UTRAN or CN application, any messages should not be sent from the neighboring node in CN or UTRAN, because they can disturb the restarting process. So the neighboring CN and UTRAN need to know if the partner is in the event of failure or not. In current RANAP procedure, RESET message is used after the loss of the reference. If it is long before the restoration, it may be impossible for facing node to detect abnormal situation of the other side immediately.

Also it is supposed that there is a possibility that only L3 entity is in abnormal situation though other functions are in normal situation. For example, it would be possible that signalling link is alive and the node is recognized as normal condition though L3 entity (APL) is in abnormal situation. In this case, the reset for the firmware could not be initiated.

So we propose a new message that enables for neighboring CN and UTRAN to detect the event of failure each other. It is possible for the normal condition node to indicate the normality by sending this message periodically. We assume that the proposed message is sent from CN to UTRAN and vice versa, which realizes notification of normality of Layer 3 level to neighboring UTRAN and CN simply and quickly.

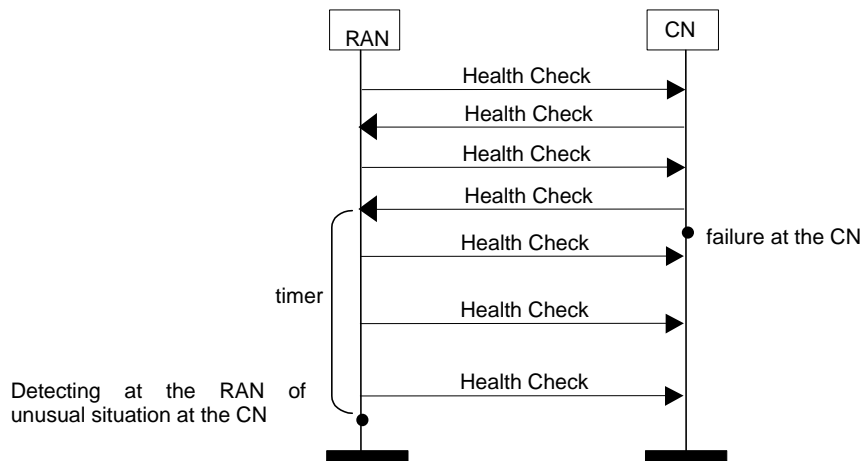


Figure1: Health check timer expired at the RAN

Due to the introduction of this procedure, when the abnormal situation on facing node is detected, the detecting node could take proper action.

For example,

- the notification to the maintenance system (O&M operator)

Moreover in the RNC abnormal condition case,

- CN would stop the paging message to an abnormal RNC, and not send RAB setup.

In the case of abnormal condition at CN,

- RNC could restrict the originating call and the location update. If RNC has alternative root, RNC would also change the root to CN.

### 3. Extension

The same situation can be told for the relationship other than Iu interface. Thus it is possible to apply this procedure to Iub interface.

### 4. Proposal

It has been proposed to incorporate the following statement into proper section in reference [1] and [2].

## **Annex 1**

### 8.X Health check

The UTRAN and CN can indicate each other their normality by sending HEALTH CHECK message periodically. This is sent as a connectionless global message. It is possible to recognise the abnormal situation in the other side by non-receipt of this message in a certain term.

Figure 8.X.1 shows the HEALTH CHECK message sent from UTRAN to CN.

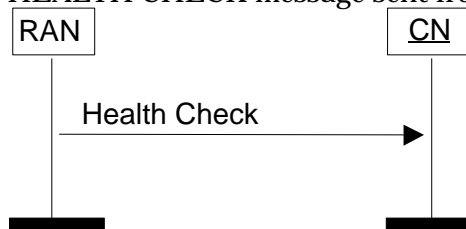


Figure8.X.1:HEALTH CHECK from UTRAN to CN

Figure 8.X.2 shows the HEALTH CHECK message sent from CN to UTRAN.

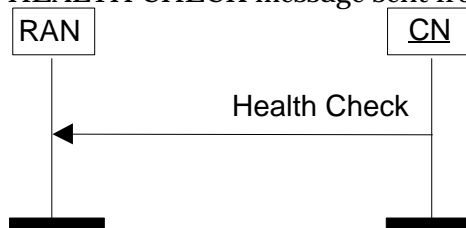


Figure8.X.2: HEALTH CHECK from CN to UTRAN

### 9.Y HEALTH CHECK

INFORMATION ELEMENT	REFERENCE	TYPE
Message Identifier		M

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### Annex 2.

#### X. Health check

The RNC and Node B can indicate each other their normality by sending HEALTH CHECK message periodically. It is possible to recognise the abnormal situation in the other side by non-receipt of this message in a certain term.

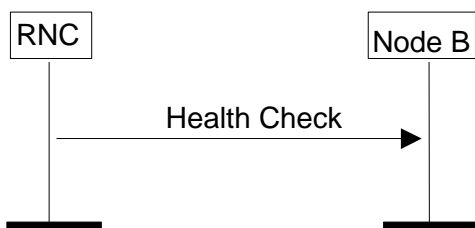
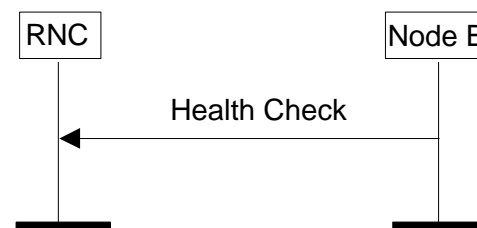


Figure X : HEALTH CHECK from RNC



FigureX : HEALTH CHECK from Node B

#### Y. HEALTH CHECK

INFORMATION ELEMENT	REFERENCE	TYPE
Message Identifier		M

