TSG-RAN Working Group 3 meeting #7
Sophia Antipolis, France, 20-24 September1999

TSGW3#7(99)c70

Agenda Item: 15.3

Source: **Nortel Networks**

Title: Resource Status Indication message content refinement for NodeB logical resources availability management

Document for: Approval

---

1 Introduction

This contribution presents a way to refine the Resource Status Indication message content in order to provide the UMTS network operator with detailed and precise information on NodeB logical resources availability, to provide the RNC callP function with precise service impact of resource state changes.

2 Rational

As a NodeB logical resource manager, the RNC needs to know NodeB logical resources states to be able to:

- Allow the RNC CallP function to use or not logical resources depending on their availability/capacity
- Inform the operator of logical resources availability and capacity

A separate contribution is proposed for NodeB capacity modelling (please refer to [R3]).

The availability of the logical resources is reported to the RNC using the Resource Status Indication message. The resource operational state is useful for both indicating to the CallP function that the resource can be used or not (e.g enabled/disabled) and to inform the operator of this availability.

The RNC also needs to know the impact of the resource state change on the resource service. Moreover, The operator needs refinements in the resource availability. It is important to be able to make the difference between a resource which is unavailable due to a local maintenance at NodeB level (presumably, this unavailability will be temporary) and a logical resource which is unavailable because its supporting hardware is failed or not installed. It is also mandatory to be able report the impact of resource blocking on child resources.

An existing standard TMN parameter called the availability status allow to do that (see [R2]).

Example:

The availability status allow to make the difference between a resource disabled due to local maintenance, a resource disabled due to a failure or due to the absence of a supporting hardware or due to a father resource which is blocked:

- In case of local maintenance: operational state = disabled, availability status = off duty
- In case of failure: operational state = disabled, availability status = failed
- In case of hardware absence: operational state = disabled, availability status = not installed
- In case of a blocked father resource: operational state = disabled, availability status = dependency

The service degradation can be reported using:

- Operational state = enabled, availability status = degraded

Please, refer to [R3] for a detailed description on the service impact (e.g. capacity) modelling.

We propose to replace the existing service impact level and cause parameters in the resource Status Indication message by the standard TMN Availability Status. Only the values described in section will have to be supported.

3 Resource Status Indication

This message is sent from the Node B to the CRNC to notify the CRNC of the status of the resources at Node B.

Information Element	Reference	Type
Message Discriminator		M
Message Type		M
Indication Type (FFS)		O
Resource Impact		**M**
NodeB ID[1]		**O**
Resource Operational State		M
Resource Availability Status		O[2]
NodeB Control Port ID[1]		**O**
Resource Operational State		M
Resource Availability Status		O
Cell ID		**O**
Resource Operational State		M
Resource Availability Status		O
BCH ID		**O**
Cell ID[3]		M
Resource Operational State		M
Resource Availability Status		O
PCH ID		**O**
Cell ID		M
Resource Operational State		M
Resource Availability Status		O
FACH ID		**O**
Cell ID		M
Resource Operational State		M
Resource Availability Status		O
RACH ID		**O**
Cell ID		M
Resource Operational State		M
Resource Availability Status		O
DSCH ID		**O**
Cell ID		M
Resource Operational State		M

1 It is proposed to add NodeB object in this message in [R4]

2 The availability status is optional when the resource works properly with its full nominal capacity (operational state = disabled)

3 It is proposed to add hierarchical object dependency in [R4]

Resource Availability Status		O
USCH ID		**O**
Cell ID		M
Resource Operational State		M
Resource Availability Status		O
Traffic Termination Point ID[4]		**O**
Resource Operational State		M
Resource Availability Status		O
Communication Control Port ID		**O**
Traffic Termination Point ID[3]		M
Resource Operational State		M
Resource Availability Status		O
Transaction ID		M

NOTE:

- The resource objects defined above is an initial list only. The addition or removal of further objects is ffs.
- The reporting of all the states of all objects or only states of objects which have changed using this message is FFS.

4 It is proposed to add Traffic Termination Point object in [R3]

4 Resource Availability Status

The resource availability status indicate the availability status of the associated resource following NodeB failure.
The resource availability status is used to:

- refine the operational state by indicating the cause of the operational state value
- indicate level of impact on the related logical resource of a Node B

In accordance with [R2] , the resource availability status can have the following values:

1. Failed (associated operational state value = disabled)
2. Off duty (associated operational state value = disabled)
3. Degraded (associated operational state value = enabled)
4. Not installed (associated operational state value = disabled)
5. Dependency (associated operational state value = disabled)

5 Proposal

- Replace section 9.1.30 of [R1] with section 3 of this contribution
- Replace section 9.2.1.34 of [R1] with section 4 of this contribution

6 Reference

- [R1] : TS 25.433 – NBAP Specification V.1.2.1, Source: Editor
- [R2] : CCITT Rec. X.731: Information technology - open systems interconnection – system management: state management function
- [R3] : R3-99c71 : Node B Capacity management on Iub interface, Source: Nortel Networks
- [R4] : R3-99c69 : Addition of NodeB and NodeB Control Port objects in Resource Status Indication message, Source: Nortel Networks