

TSG-RAN Working Group 3 meeting #4
Warwick,UK , 1st -4th June 1999

TSGR3#3(99)435

Agenda Item: 21
Source: Mannesmann Mobilfunk
Title: List of important O&M procedures
Document for: Approval

Within this contribution important O&M procedures are listed. Each procedure will be described briefly.

Rationale

The intention of the technical report I3.05 NodeB O&M Functional Description was to summarise all required information to be able to standardise the signalling of NodeB logical O&M. The initial approach was to define the NodeB functional model and to assign O&M functions from this model to implementation specific O&M and logical O&M. In addition to this approach a list of significant UTRAN O&M procedures with brief descriptions of each procedure helps to clarify the NodeB O&M functional model. Furthermore this list can identify additional elementary O&M functions not included in the NodeB O&M functional model.

Starting from an analysis of significant and sometimes time-consuming procedures the following list summarises O&M procedures that should be supported in the UTRAN. The list does not intend to be complete.

Network Expansion Procedure

Network Expansion in general includes expansion of existing elements and integration of new elements. The most frequent expansion processes are:

- NodeB Expansion** The NodeB Expansion means a modification of several NodeB parameters that are possibly provided by a previous planning process.
- NodeB Installation** Installation of a new NodeB including setting of all required parameters. Additionally the NodeB is attached to the appropriate RNC and all links are dimensioned accordingly. Possibly causes Expansion/Modification of adjacent NodeBs. An automatic configuration with the download of all required, not vendor specific data can reduce the required effort significantly
- NodeB Swap** In case of integration of a new RNC one or more NodeBs are detached from neighbouring RNCs and attached to the new RNC. After configuration of the NodeB and the new RNC and all according links the NodeB is detached from the old RNC and operates connected to the new RNC. Possibly NodeB expansion procedures are triggered in all affected NodeBs (in the neighbouring cells).

Cellular Network Configuration Procedure

Cellular network configuration processes deal with all modifications to network elements that have impact on the radio access network. For example parameters required for power management or synchronisation may be modified. A notification message to the according element indicating the planned configuration

changes will be sent. In case of a smaller modification this notification message will contain all necessary information for the modification. If the modification requires a larger amount of data to be transferred than the notification message may contain only name and location of a required data file to be downloaded. Afterwards the affected network element(s) can integrate the supplied modifications and report the results of the performed parameter update. The element itself can choose the best time (in case of NodeB in cooperation with the RNC) for the update according to its current load, etc.

Remote Update Procedure

Remote Update Procedure includes the remote software update of all network elements. Within this update process also self-checks and consistency checks are included. A status request message asking for a response from the affected network elements with the current release number can avoid release conflicts during the update procedure. The update procedure itself can be implemented with pull or with push technologies. A notification message to elements indicating a new software release and the location of the required file could be used to trigger an automatic download of the new release (pull technology). Or, the responses of the status request messages can be used to compose a multicast message carrying the new software release to all affected elements (push technology).

Network Optimisation Procedure

In order to identify possible modifications that allow an improvement of the overall network performance this process type consists of the collection of measurement data and of the decision process to trigger network expansion and/or configuration procedures to optimise the network. Since expansion and configuration processes are handled separately the network optimisation process deals in this context only with the collection of measurement data.

Network Monitoring and Fault Management Procedures

In addition to performance measurements collected in the network optimisation procedure this process observes the status of network elements and handles alarm and event notifications. Additionally customer complaints are considered.

This list should be used to derive requirements to the O&M functions of UTRAN elements and to identify all information that has to be exchanged via Iub, i.e. NBAP messages, to provide the required functionality.

Proposal

Mannesmann Mobilfunk proposes to include this initial list of important O&M procedures in the according chapter of I3.05.