Technical Specification Group Services and System Aspects   ***TSGS#9(00)0437***
Meeting #9, Hawaii, USA, 25-28 September 2000

Source: **SA WG5 (Telecom Management)**

Title: **CRs to Telecommunications Management; Fault Management; Part 1: 3G fault management requirements (32.111-1)**

Document for: **Approval**

Agenda Item: **7.5.3**

Doc-1st-Level	Doc-2nd-Level	Spec	CR	Rev	Phase	Cat	Subject	Version-Current	Version-New
SP-000437	S5-000407	32.111-1	001		R99		Clarification On Mediation Function Algorithms	3.1.0	3.2.0
SP-000437	S5-000406	32.111-1	002		R99		Clarification On Clear Alarm Suppression	3.1.0	3.2.0

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

32-111-1	CR	001	Current Version:	V3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to:	**SA#9**	for approval	**X**	strategic		(for SMG
list expected approval meeting # here ↑		for information		non-strategic		*use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG   *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects:
(at least one should be marked with an X)
   (U)SIM [ ]   ME [ ]   UTRAN / Radio [ ]   Core Network [**X**]

Source:	**SA5#14** (Fault Management)	**Date:**	12 September 2000

Subject:	Clarification On Mediation Function Algorithms

Work item:	

Category:

(only one category shall be marked with an X)

				Release:		
F	Correction	**X**			Phase 2	
A	Corresponds to a correction in an earlier release				Release 96	
B	Addition of feature				Release 97	
C	Functional modification of feature				Release 98	
D	Editorial modification				Release 99	**X**
					Release 00	

Reason for change:

Clause 5.2.1 of TS 32.111-1 states the following:

If a mediation application function is needed, it works according to the following principles:

- Every alarm notification generated by a functional object in a subordinate entity is mapped to an alarm report of the corresponding ("equivalent") functional object at the Itf-N. If the functional object generating the original alarm notification has not a direct corresponding object at the Itf-N, the mediation functions maps the alarm to the next superior functional object in accordance with the containment tree of the Itf-N.

- Every state change notification generated by a functional object in a subordinate entity is mapped to a state change report of the corresponding ("equivalent") functional object at the Itf-N. If the functional object generating the original state change notification has not a direct corresponding object at the Itf-N, the mediation functions maps the alarm to the next superior functional object in accordance with the containment tree of the Itf-N.

The behaviour of the mediation function is beyond the scope of the Itf-N interface. However, typical or recommended behaviour can be specified. This contribution clarifies that the bullet items indicate possible behaviour.

Clauses affected:	5.2.1

Other specs affected:

Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:	

5.2.1　Mapping of alarm and related state change event reports

The alarm and state change reports received by the NM relate to functional objects in accordance with the information model of Itf-N. This information model tailored for a multi-vendor capability is different from the information model of the EM-NE interface (if an EM is available) or from the internal resource modelling within the NE (in case of direct NM-NE interface). Thus a mapping of alarm and related state change event reports is performed by a mediation function within the subordinate entity.

The mediation function translates the original alarm/state change event reports (which may contain proprietary parameters or parameter values) taking into account the information model of the Itf-N.

~~If a mediation application function is needed, it works according to the following principles:~~The following examples describe potential mediation function behaviour:

- ~~Every alarm~~Alarm notification~~s~~ generated by a functional object in a subordinate entity can be ~~is~~ mapped to ~~an~~ alarm report~~s~~ of the corresponding ("equivalent") functional object at the Itf-N. If the functional object generating the original alarm notification has not a direct corresponding object at the Itf-N, the mediation functions maps the alarm to the next superior functional object in accordance with the containment tree of the Itf-N.

- ~~Every state~~State change notification~~s~~ generated by a functional object in a subordinate entity can be ~~is~~ mapped to ~~a~~ state change report~~s~~ of the corresponding ("equivalent") functional object at the Itf-N. If the functional object generating the original state change notification has not a direct corresponding object at the Itf-N, the mediation functions maps the alarm to the next superior functional object in accordance with the containment tree of the Itf-N.

Every alarm notification generated by a manufacturer-specific, equipment-related object in the subordinate entity is mapped to an alarm report of a generic logical object, which models the corresponding equipment-related resource.

CHANGE REQUEST	*Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.*

32-111-1 CR **002**	Current Version: V3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to: **SA#9**	for approval	X	strategic		(for SMG
list expected approval meeting # here ↑	for information		non-strategic		use only)

Form: CR cover sheet, version 2 for 3GPP and SMG   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM ☐   ME ☐   UTRAN / Radio ☐   Core Network **X**
(at least one should be marked with an X)

Source:	**SA5#14** (Fault Management)	**Date:**	14 September 2000

Subject:	Clarification On Clear Alarm Suppression

Work item:	

Category: F   Correction   **X**   **Release:**

(only one category shall be marked with an X)

				Release:	
F	Correction	**X**		Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	**X**
				Release 00	

Reason for change:	Clause 4.1.4 of TS 32.111-1 states the following:

The system operator shall be able to allow or suppress alarm reporting for each NE. As a minimum, the following criteria shall be supported for alarm filtering:

- the NE that generated the alarm, i.e. all alarm messages for that NE will be suppressed;
- the device/resource/function to which the alarm relates;
- the severity of the alarm, except "clear". Suppression of alarm clear messages shall be determined according to the following stipulations:
  - if the initial alarm was not suppressed, then the alarm cleared message shall also be forwarded;
  - if the initial alarm was suppressed, then the criteria set for alarm suppression at the time the cleared message occurs shall be taken into account;
- the time at which the alarm was detected, i.e. the alarm time; and,
- any combination of the above criteria.

Maintaining the alarm filtering criteria associated with each alarm can be expensive, especially when each managing system has different alarm filtering criteria. It is made even more difficult when considering alarms may be discovered via network element alarm synchronization (as an example, alarms arriving during failures of the Itf-N interface) and implicitly cleared via network element alarm synchronization. It may be unclear which alarm filtering criteria to associate with a discovered alarm.

Thus, the suppression of alarm clear messages will be performed according to the current alarm filtering (i.e., alarm clear messages handled the same as with alarm messages), this is in line with the assumption that has been used to produce the fault management IRP IS and the relevant solution sets. Differences, due to changes to the alarm filter, can be corrected through the use of alarm synchronization. It is recommended that an alarm synchronization request be performed by a managing system following the changing of an alarm filter.

Clauses affected: 4.1.4

Other specs affected:

Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:

4.1.4 Alarm forwarding and filtering

As soon as an alarm is entered into or removed from the active alarms list Alarm notifications shall be forwarded by the NE, in the form of unsolicited notifications;

If forwarding is not possible at this time, e.g. due to communication breakdown, then the notifications shall be sent as soon as the communication capability has been restored. The storage space is limited. The storage capacity is Operator and implementation dependent. If the number of delayed notifications exceeds the storage space then an alarm synchronisation procedure shall be run when the communication capability has been restored.

The OS shall detect the communication failures that prevent the reception of alarms and raise an appropriate alarm to the operator.

If the N interface is implemented in the NE, then the destination of the notifications is the NM, and the interface shall comply with the stipulations made in clause 5. If the N interface resides in the EM, proprietary means may be employed to forward the notifications to the EM. Note that, even if the N interface is implemented in the NE, the EM may still also receive the notifications by one of the above mechanisms, however, the present document does not explicitly require the NEs to support the EM as a second destination.

The event report shall include all information defined for the respective event (cf. subclauses 4.1.1, 4.1.2 and 4.1.3), plus an identification of the NE that generated the report.

The system operator shall be able to allow or suppress alarm reporting for each NE. As a minimum, the following criteria shall be supported for alarm filtering:

- the NE that generated the alarm, i.e. all alarm messages for that NE shall be suppressed;

  the device/resource/function to which the alarm relates;

-

- the severity of the alarm;

the severity of the alarm, except "clear". Suppression of alarm clear messages shall be determined according to the following stipulations:

~ if the initial alarm was not suppressed, then the alarm cleared message shall also be forwarded;

~ if the initial alarm was suppressed, then the criteria set for alarm suppression at the time the cleared message occurs shall be taken into account;

- the time at which the alarm was detected, i.e. the alarm time; and,

- any combination of the above criteria.

The result of any command to modify the forwarding criteria shall be confirmed by the NE to the requesting operator.