Source: **SA5 (Telecom Management)**

Title: **2 Rel-6 CR 32.111-2/3 (Fault Management;: Alarm IRP: IS & CORBA SS) : Remove references to GSM 12.11**

Document for: **Decision**

Agenda Item: **7.5.3**

Doc-1st-Level	Spec	CR	Ph	Subject	Cat	Ver-Cur	Doc-2nd-Level	WI
SP-030628	32.111-2	028	Rel-6	Remove references to GSM 12.11	F	5.4.0	S5-037278	OAM-NIM
SP-030628	32.111-3	032	Rel-6	Remove references to GSM 12.11	F	5.4.0	S5-037279	OAM-NIM

3GPP TSG-SA5 (Telecom Management) **S5-037278**
Meeting #36, Shanghai, CHINA, 17 - 21 Nov 2003

CR-Form-v7

CHANGE REQUEST

⌘ **32.111-2** **CR** **028** ⌘ **rev** **-** ⌘ Current version: **5.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☒

Title:	⌘	Remove references to GSM 12.11
Source:	⌘	**SA5** (J.Schmidt@Motorola.com)
Work item code:	⌘	OAM-NIM
Date:	⌘	21/11/2003
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Remove reference to GSM 12.11 to avoid continued dependency on this specification.
Summary of change:	⌘	Replacing references to GSM 12.11 with “2G & 3G Wireless”.
Consequences if not approved:	⌘	As this specification (32.111-2), as well as other specifications of the 32.111-series, is intended to replace functionality defined by GSM 12.11, references to specification GSM 12.11 are not appropriate.

Clauses affected:	⌘	2, Annex B

Other specs affected: ⌘	Y	N	
		X	Other core specifications
		X	Test specifications
		X	O&M Specifications

⌘

Other comments: ⌘

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

KEEP the History box of the TS to be changed (see end of the present document), please

Change in Clause 2

[4] ~~3GPP TS 12.11: "Fault management of the Base Station System (BSS)" version 6.2.0 Release 1997.~~Void

End of Change in Clause 2

Changes in Annex B

Annex B (normative): Probable Causes

This appendix lists probable causes and their corresponding event types.

Sources of these probable causes are ITU-T Recommendation M.3100 [11], ITU-T Recommendation X.721 [3], ITU-T Recommendation X.733 [2], and ITU-T Recommendation X.736 [15] ~~and GSM 12.11 [4]~~. In addition, propable causes for 3G and 3G wireless systems are listed.

~~The list may be extended in the future, e.g. with UMTS specific probable causes.~~

Table B.1: Probable Causes from ITU-T Recommendation M.3100 [11]

M.3100 Probable cause	Event type
Indeterminate	Unknown
Alarm Indication Signal (AIS)	Communications
Broadcast Channel Failure	Communications
Call Setup Failure	Communications
Communications Receive Failure	Communications
Communications Transmit Failure	Communications
Connection Establishment Error	Communications
Degraded Signal	Communications
Demodulation Failure	Communications
Far End Receiver Failure (FERF)	Communications
Framing Error	Communications
Invalid Message Received	Communications
Local Node Transmission Error	Communications
Loss Of Frame (LOF)	Communications
Loss Of Pointer (LOP)	Communications
Loss Of Signal (LOS)	Communications
Modulation Failure	Communications
Payload Type Mismatch	Communications
Transmission Error	Communications
Remote Alarm Interface	Communications
Remote Node Transmission Error	Communications
Routing Failure	Communications
Excessive Bit Error Rate (EBER)	Communications
Path Trace Mismatch	Communications
Unavailable	Communications
Signal Label Mismatch	Communications
Loss Of Multi Frame	Communications
Antenna Failure	Equipment
Back Plane Failure	Equipment
Battery Charging Failure	Equipment
Data Set Problem	Equipment
Disk Failure	Equipment
Equipment Identifier Duplication	Equipment
External IF Device Problem	Equipment
Frequency Hopping Failure	Equipment
IO Device Error	Equipment
Line Card Problem	Equipment
Loss Of Redundancy	Equipment
Loss Of Synchronization	Equipment
Multiplexer Problem	Equipment
NE Identifier Duplication	Equipment
Power Problem	Equipment
Power Supply Failure	Equipment
Processor Problem	Equipment
Protection Path Failure	Equipment
Protecting Resource Failure	Equipment
Protection Mechanism Failure	Equipment
Real Time Clock Failure	Equipment
Receiver Failure	Equipment
Replaceable Unit Missing	Equipment
Replaceable Unit Type Mismatch	Equipment
Signal Quality Evaluation Failure	Equipment
Synchronization Source Mismatch	Equipment
Terminal Problem	Equipment
Timing Problem	Equipment
Transceiver Failure	Equipment
Transmitter Failure	Equipment
Trunk Card Problem	Equipment
Replaceable Unit Problem	Equipment
Air Compressor Failure	Environmental
Air Conditioning Failure	Environmental
Air Dryer Failure	Environmental

M.3100 Probable cause	Event type
Battery Discharging	Environmental
Battery Failure	Environmental
Commercial Power Failure	Environmental
Cooling Fan Failure	Environmental
Cooling System Failure	Environmental
Engine Failure	Environmental
Fire Detector Failure	Environmental
Fuse Failure	Environmental
Generator Failure	Environmental
Low Battery Threshold	Environmental
Pump Failure	Environmental
Rectifier Failure	Environmental
Rectifier High Voltage	Environmental
Rectifier Low F Voltage	Environmental
Ventilation System Failure	Environmental
Enclosure Door Open	Environmental
Explosive Gas	Environmental
External Equipment Failure	Environmental
External Point Failure	Environmental
Fire	Environmental
Flood	Environmental
High Humidity	Environmental
High Temperature	Environmental
High Wind	Environmental
Ice Build Up	Environmental
Intrusion Detection	Environmental
Low Fuel	Environmental
Low Humidity	Environmental
Low Cable Pressure	Environmental
Low Temperature	Environmental
Low Water	Environmental
Smoke	Environmental
Toxic Gas	Environmental
Application Subsystem Failure	Processing Error
Configuration Or Customisation Error	Processing Error
Database Inconsistency	Processing Error
File Error	Processing Error
Storage Capacity Problem	Processing Error
Memory Mismatch	Processing Error
Corrupt Data	Processing Error
Loss of Real Time	Processing Error
Out Of CPU Cycles	Processing Error
Out Of Memory	Processing Error
Reinitialized	Processing Error
Software Environment Problem	Processing Error
Software Error	Processing Error
Software Download Failure	Processing Error
Timeout Expired	Processing Error
Underlying Resources Unavailable	Processing Error
Version Mismatch	Processing Error
Bandwidth Reduced	Quality of service
Congestion	Quality of service
Excessive Error Rate	Quality of service
Excessive Response Time	Quality of service
Excessive Retransmission Rate	Quality of service
Reduced Logging Capability	Quality of service
System Resources Overload	Quality of service

Table B.2: Probable Causes from ITU-T Recommendation X.721 [3] / ITU-T Recommendation X.733 [2] / ITU-T Recommendation X.736 [15]

X.721/X.733/X.736 Probable Cause	Event type
Adapter Error	Equipment
Application Subsystem Failure	Processing error
Authentication Failure	Security Service or Mechanism Violation
Bandwidth Reduction	Quality of service
Breach of Confidentiality	Security Service or Mechanism Violation
Cable Tamper	Physical Violation
Call Establishment Error	Communications
Communication Protocol Error	Communications
Communication Subsystem Failure	Communications
Configuration or Customizing Error	Processing error
Congestion	Quality of service
Corrupt Data	Processing error
CPU Cycles Limit Exceeded	Processing error
Data Set or Modem Error	Equipment
Degraded Signal	Communications
Delayed Information	Time Domain Violation
Denial of Service	Operational Violation
DTE-DCE Interface Error	Communications
Duplicate Information	Integrity Violation
Enclosure Door Open	Environmental
Equipment Malfunction	Equipment
Excessive Vibration	Environmental
File Error	Processing error
Fire Detected	Environmental
Flood Detected	Environmental
Framing Error	Communications
Heating or Ventilation or Cooling System Problem	Environmental
Humidity Unacceptable	Environmental
Information Missing	Integrity Violation
Information Modification detected	Integrity Violation
Information out of Sequence	Integrity Violation
Input/Output Device Error	Equipment
Input Device Error	Equipment
Intrusion Detection	Physical Violation
Key Expired	Time Domain Violation
LAN Error	Communications
Leak Detection	Environmental
Local Node Transmission Error	Communications
Loss of Frame	Communications
Loss of Signal	Communications
Material Supply Exhausted	Environmental
Multiplexer Problem	Equipment
Non-Repudiation Failure	Security Service or Mechanism Violation
Out of Hours Activity	Time Domain Violation
Out of Memory	Processing error
Out of Service	Operational Violation
Output Device Error	Equipment
Performance Degraded	Quality of service
Power Problem	Equipment
Pressure Unacceptable	Environmental
Procedural Error	Operational Violation
Processor Problem	Equipment
Pump Failure	Environmental
Queue Size Exceeded	Quality of service
Receive Failure	Equipment
Receiver Failure	Equipment
Remote Node Transmission Error	Communications
Resource at or Nearing Capacity	Quality of service
Response Time Excessive	Quality of service
Re-transmission Rate Excessive	Quality of service
Software Error	Processing error

X.721/X.733/X.736 Probable Cause	Event type
Software Program Abnormally Terminated	Processing error
Software Program Error	Processing error
Storage Capacity Problem	Processing error
Temperature Unacceptable	Environmental
Threshold Crossed	Quality of service
Timing Problem	Equipment
Toxic Leak Detected	Environmental
Transmit Failure	Equipment
Transmitter Failure	Equipment
Unauthorised Access Attempt	Security Service or Mechanism Violation
Underlying Resource Unavailable	Processing error
Unexpected Information	Integrity Violation
Unspecified Reason	Operational Violation
Unspecified Reason	Physical Violation
Unspecified Reason	Security Service or Mechanism Violation
Version Mismatch	Processing error

Table B.3: Probable Causes ~~from GSM 12.11 [4]~~for 2G & 3G Wireless Systems

2G & 3G Wireless Systems~~GSM 12.11 Probable Cause~~	Event Type
A-bis to BTS interface failure	Equipment
A-bis to TRX interface failure	Equipment
Antenna problem	Equipment
Battery breakdown	Equipment
Battery charging fault	Equipment
Clock synchronization problem	Equipment
Combiner problem	Equipment
Disk problem	Equipment
Equipment failure	Equipment
Excessive receiver temperature	Equipment
Excessive transmitter output power	Equipment
Excessive transmitter temperature	Equipment
Frequency hopping degraded	Equipment
Frequency hopping failure	Equipment
Frequency redefinition failed	Equipment
Line interface failure	Equipment
Link failure	Equipment
Loss of synchronization	Equipment
Lost redundancy	Equipment
Mains breakdown with battery back-up	Equipment
Mains breakdown without battery back-up	Equipment
Power supply failure	Equipment
Receiver antenna fault	Equipment
Receiver Failure	Equipment
Receiver multicoupler failure	Equipment
Reduced transmitter output power	Equipment
Signal quality evaluation fault	Equipment
Timeslot hardware failure	Equipment
Transceiver problem	Equipment
Transcoder problem	Equipment
Transcoder or rate adapter problem	Equipment
Transmitter antenna failure	Equipment
Transmitter antenna not adjusted	Equipment
Transmitter failure	Equipment
Transmitter low voltage or current	Equipment
Transmitter off frequency	Equipment
Database inconsistency	Processing error
File system call unsuccessful	Processing error
Input parameter out of range	Processing error
Invalid parameter	Processing error
Invalid pointer	Processing error
Message not expected	Processing error
Message not initialized	Processing error
Message out of sequence	Processing error
System call unsuccessful	Processing error
Timeout expired	Processing error
Variable out of range	Processing error
Watch dog timer expired	Processing error
Cooling system failure	Environmental
External equipment failure	Environmental
External power supply failure	Environmental
External transmission device failure	Environmental
Fan failure	Environmental
High humidity	Environmental
High temperature	Environmental
Intrusion detected	Environmental
Low humidity	Environmental
Low temperature	Environmental
Smoke detected	Environmental
Excessive Error Rate	Quality of service
Reduced alarm reporting	Quality of service
Reduced event reporting	Quality of service

2G & 3G Wireless Systems~~GSM 12.11 Probable Cause~~	Event Type
Reduced logging capability	Quality of service
System resources overload	Quality of service
Broadcast channel failure	Communications
Connection establishment error	Communications
Invalid message received	Communications
Invalid MSU received	Communications
LAPD link protocol failure	Communications
Local alarm indication	Communications
Remote alarm indication	Communications
Routing failure	Communications
SS7 protocol failure	Communications
Transmission error	Communications

Table B.4 identifies probable causes that are defined by more than one standard. This is for information only.

Table B.4: Duplicated Probable Causes

Duplicated Probable Cause	~~GSM 12.11~~2G & 3G	X.721 X.733	X.736	M.3100	Event Type
Broadcast Channel Failure	X			X	Communications
Call Establishment Failure (X.721/X.733) Call Setup Failure (M.3100)		X		X	Communications
Connection Establishment Error	X			X	Communications
Degraded Signal		X		X	Communications
Framing Error		X		X	Communications
Invalid Message Received	X			X	Communications
Local Node Transmission Error		X		X	Communications
Loss of Frame		X		X	Communications
Loss of Signal		X		X	Communications
Remote Node Transmission Error		X		X	Communications
Routing Failure	X			X	Communications
Antenna Failure (M.3100) Antenna Problem (~~GSM 12.11~~2G & 3G)	X			X	Equipment
Battery Charging Failure (M.3100) Battery Charging Fault (~~GSM 12.11~~2G & 3G)	X			X	Equipment
Disk Failure (M.3100) Disk Problem (~~GSM 12.11~~2G & 3G)	X			X	Equipment
Equipment Failure (~~GSM 12.11~~2G & 3G) Equipment Malfunction (X.721/X.733)	X	X			Equipment
Frequency Hopping Failure	X			X	Equipment
IO Device Error (M.3100) Input/Output Device Error (X.721/X.733)		X		X	Equipment
Loss Of Redundancy (M.3100) Lost Redundancy (~~GSM 12.11~~2G & 3G)	X			X	Equipment
Loss Of Synchronization	X			X	Equipment
Multiplexer Problem		X		X	Equipment
Power Problem		X		X	Equipment
Power Supply Failure	X			X	Equipment
Processor Problem		X		X	Equipment
Receiver Failure	X	X		X	Equipment
Signal Quality Evaluation Failure (M.3100) Signal Quality Evaluation Fault (~~GSM 12.11~~2G & 3G)	X			X	Equipment
Timing Problem		X		X	Equipment
Transceiver Failure (M.3100) Transceiver Problem (~~GSM 12.11~~2G & 3G)	X			X	Equipment
Transmitter Failure	X	X		X	Equipment
Cooling System Failure	X			X	Environmental
External Equipment Failure	X			X	Environmental
Enclosure Door Open		X		X	Environmental
Fan Failure (~~GSM 12.11~~2G & 3G) Cooling Fan Failure (M.3100)	X			X	Environmental
Fire Detected (X.721/X.733) Fire (M.3100)		X		X	Environmental
Flood Detected (X.721/X.733) Flood (M.3100)		X		X	Environmental
High Humidity	X			X	Environmental
High Temperature	X			X	Environmental
Intrusion Detected (~~GSM 12.11~~2G & 3G) Intrusion Detection (X.736/M.3100)	X		X	X	Environmental (~~GSM 12.11~~2G & 3G); Physical Violation (X.736/M.3100)
Low Humidity	X			X	Environmental
Low Temperature	X			X	Environmental
Pump Failure		X		X	Environmental
Smoke Detected (~~GSM 12.11~~2G & 3G) Smoke (M.3100)	X			X	Environmental
Application Subsystem Failure		X		X	Processing Error

Duplicated Probable Cause	~~GSM 12.11~~2G & 3G	X.721 X.733	X.736	M.3100	Event Type
Bandwidth Reduced (M.3100) Bandwidth Reduction (X.721/X.733)		X		X	Processing Error
Configuration or Customization Error (M.3100) Configuration or Customizing Error (X.721/X.733)		X		X	Processing Error
Database Inconsistency	X			X	Processing Error
File Error		X		X	Processing Error
Storage Capacity Problem		X		X	Processing Error
Excessive Bit Error Rate (M.3100) Excessive Error Rate (~~GSM 12.11~~2G & 3G)	X			X	Processing Error
Corrupt Data		X		X	Processing Error
Out Of Memory		X		X	Processing Error
Software Error		X		X	Processing Error
Timeout Expired	X			X	Processing Error
Underlaying Resource Unavailable (M.3100) Underlying Resource Unavailable (X.721/X.733)		X		X	Processing Error
Version Mismatch		X		X	Processing Error
Congestion		X		X	Quality of Service
Reduced Logging Capability	X			X	Quality of Service
System Resources Overload	X			X	Quality of Service
Excessive Response Time (M.3100) Response Time Excessive (X.721/X.733)		X		X	Quality of Service
Excessive Retransmission Rate (M.3100) Re-Transmission Rate Excessive (X.721/X,733)		X		X	Quality of Service

End of Changes in Annex B
End of Document

Annex D (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Mar 2000	S_07	SP-000012	--	--	Approved at TSG SA #7 and placed under Change Control	2.0.0	3.0.0
Mar 2000	--	--	--	--	Cosmetic	3.0.0	3.0.1
Jun 2000	S_08	SP-000250	004	--	Split of TS - Part 2: Alarm Integration Reference Point (IRP): Information Service (IS)	3.0.1	3.1.0
Sep 2000	--	--	--	--	Cosmetic	3.1.0	3.1.1
Sep 2000	S_09	SP-000438	001	--	Correction of qualifier for SystemDN	3.1.1	3.2.0
Sep 2000	S_09	SP-000438	002	--	Addition of a missing constraint in acknowledgeAlarm operation	3.1.1	3.2.0
Dec 2000	S_10	SP-000520	003	--	Incorrect modifiable attributes	3.2.0	3.3.0
Dec 2000	S_10	SP-000520	004	--	Add acknowledgement information to getAlarmList result	3.2.0	3.3.0
Dec 2000	S_10	SP-000520	005	--	Identification of valid Event Types and Extended Event Types within Notifications	3.2.0	3.3.0
Dec 2000	S_10	SP-000520	006	--	A cleared Alarm shall be given perceived severity "Cleared" and nothing else	3.2.0	3.3.0
Dec 2000	S_10	SP-000520	007	--	Inconsistent behaviour for cleared not yet acknowledged alarms	3.2.0	3.3.0
Jun 2001	S_12	SP-010282	008	--	Alarm IRP: IS Rel4 - Addition of feature	3.3.1	4.0.0
Sep 2001	S_13	SP-010474	009	--	Definition of thresholdInfo in Alarm IRP: IS	4.0.0	4.1.0
Dec 2001	S_14	SP-010639	010	--	Correction of notifyChangedAlarm example #2	4.1.0	4.2.0
Dec 2001	S_14	SP-010639	011	--	Update of notificationId missing in To-state of notifyClearedAlarm	4.1.0	4.2.0
Mar 2002	S_15	SP-020028	012	--	Addition of "perceivedSeverity" as parameter to "acknowledgeAlarms operation" (IS)	4.2.0	4.3.0
Mar 2002	S_15	SP-020039	013	--	Addition of parameter in Alarm List Rebuilt notification	4.2.0	4.3.0
Mar 2002	S_15	SP-020039	014	--	Addition of new notification notifyPotentialFaultyAlarmList	4.2.0	4.3.0
Mar 2002	S_15	SP-020039	015	--	Additional trigger event for notifyAlarmListRebuilt	4.2.0	4.3.0
Mar 2002	S_15	--	--	--	Automatic upgrade to Rel-5 (no Rel-5 CR)	4.3.0	5.0.0
Sep 2002	S_17	SP-020477	017	--	Add clearAlarms() operation for Alarm IRP:IS	5.0.0	5.1.0
Sep 2002	S_17	SP-020478	018	--	Add security alarms support in Alarm IRP: IS	5.0.0	5.1.0
Dec 2002	S_18	SP-020751	020	--	Add additionalInformation parameter in notification in Alarm IRP: IS	5.1.0	5.2.0
Mar 2003	S_19	SP-030062	022	--	Add Missing ITU-T M.3100 Probable Causes	5.2.0	5.3.0
Mar 2003	S_19	SP-030063	024	--	Corrections regarding Alarm Acknowledgement and Alarm Comments - alignment with 32.111-1	5.2.0	5.3.0
Mar 2003	S_19	SP-030138	025	--	Add Missing security event types and probable causes	5.2.0	5.3.0
Jun 2003	S_20	SP-030275	026	--	Correction of imported references table for managedGenericIRP	5.3.0	5.4.0

3GPP TSG-SA5 (Telecom Management) **S5-037279**
Meeting #36, Shanghai, CHINA, 17 - 21 Nov 2003

CR-Form-v7

CHANGE REQUEST

⌘ **32.111-3** **CR** **032** ⌘ **rev** **-** ⌘ Current version: **5.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☒

Title:	⌘	Remove references to GSM 12.11
Source:	⌘	**SA5** (J.Schmidt@Motorola.com)
Work item code:	⌘	OAM-NIM
Date:	⌘	21/11/2003
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
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Consequences if not approved:	⌘	As this specification (32.111-3), as well as other specifications of the 32.111-series, is intended to replace functionality defined by GSM 12.11, references to specification GSM 12.11 are not appropriate.

Clauses affected:	⌘	Annex A.1

Other specs affected: ⌘	Y	N		⌘
		X	Other core specifications	
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

KEEP the History box of the TS to be changed (see end of the present document), please

A.1 IDL specification (file name "AlarmIRPConstDefs.idl")

```
#ifndef AlarmIRPConstDefs_idl
#define AlarmIRPConstDefs_idl

#include "CosNotification.idl"
#include "ManagedGenericIRPConstDefs.idl"

// This statement must appear after all include statements
#pragma prefix "3gppsa5.org"

/* ## Module: AlarmIRPConstDefs
This module contains commonly used definitions for Alarm IRP
================================================================
*/
module AlarmIRPConstDefs
{


   /*
   This block identifies the alarm types specified for this IRP version.
   These types carry the same semantics as the TMN ITU-T defined event
   types of the same name.
   Their encodings for this version of Alarm IRP are defined here.  Other IRP
   documents, or other versions of Alarm IRP, shall identify their own
   alarm types for their use.  They shall define their encodings
   as well.  Values defined here are unique among themselves.
   */
   interface AlarmType
   {
      const string COMMUNICATIONS_ALARM = "x1";
      const string PROCESSING_ERROR_ALARM = "x2";
      const string ENVIRONMENTAL_ALARM = "x3";
      const string QUALITY_OF_SERVICE_ALARM = "x4";
      const string EQUIPMENT_ALARM = "x5";
      const string INTEGRITY_VIOLATION = "x6";
      const string OPERATIONAL_VIOLATION = "x7";
      const string PHYSICAL_VIOLATION = "x8";
      const string SECURITY_SERVICE_OR_MECHANISM_VIOLATION = "x9";
      const string TIME_DOMAIN_VIOLATION = "x10";
   };

   /*
   This block identifies the notification types defined by this
   Alarm IRP version.
   */
   interface NotificationType
   {
      const string NOTIFY_FM_NEW_ALARM = "x1";
      const string NOTIFY_FM_CHANGED_ALARM = "x2";
      const string NOTIFY_FM_ACK_STATE_CHANGED = "x3";
      const string NOTIFY_FM_COMMENT_ADDED = "x4";
      const string NOTIFY_FM_CLEARED_ALARM = "x5";
      const string NOTIFY_FM_ALARM_LIST_REBUILT = "x6";
      const string NOTIFY_FM_POTENTIAL_FAULTY_ALARM_LIST = "x7";
   };

   /*
   This block identifies the levels of severity.
```

```
*/
interface PerceivedSeverity
{
   const short INDETERMINATE = 1;
   const short CRITICAL = 2;
   const short MAJOR = 3;
   const short MINOR = 4;
   const short WARNING = 5;
   const short CLEARED = 6;
};

/*
This block identifies the probable cause of a reported alarm.
*/
interface ProbableCause
{
   /*
   Probable causes originating from M.3100.
   Values below correspond to M.3100 values.
   */
   const short INDETERMINATE = 0;
   const short ALARM_INDICATION_SIGNAL = 1;
   const short CALL_SETUP_FAILURE = 2;
   const short DEGRADED_SIGNAL_M3100 = 3;
   const short FAR_END_RECEIVER_FAILURE = 4;
   const short FRAMING_ERROR_M3100 = 5;
   const short LOSS_OF_FRAME = 6;
   const short LOSS_OF_POINTER = 7;
   const short LOSS_OF_SIGNAL = 8;
   const short PAYLOAD_TYPE_MISMATCH = 9;
   const short TRANSMISSION_ERROR = 10;
   const short REMOTE_ALARM_INTERFACE = 11;
   const short EXCESSIVE_BIT_ERROR_RATE = 12;
   const short PATH_TRACE_MISMATCH = 13;
   const short UNAVAILABLE = 14;
   const short SIGNAL_LABEL_MISMATCH = 15;
   const short LOSS_OF_MULTI_FRAME = 16;
   const short COMMUNICATIONS_RECEIVE_FAILURE = 17;
   const short COMMUNICATIONS_TRANSMIT_FAILURE = 18;
   const short MODULATION_FAILURE = 19;
   const short DEMODULATION_FAILURE = 20;
   // Values 21-26 correspond to duplicated probable causes
   // Values 27-50 are reserved for M.3100 potential future extensions
   const short BACK_PLANE_FAILURE = 51;
   const short DATA_SET_PROBLEM = 52;
   const short EQUIPMENT_IDENTIFIER_DUPLICATION = 53;
   const short EXTERNAL_DEVICE_PROBLEM = 54;
   const short LINE_CARD_PROBLEM = 55;
   const short MULTIPLEXER_PROBLEM_M3100 = 56;
   const short NE_IDENTIFIER_DUPLICATION = 57;
   const short POWER_PROBLEM_M3100 = 58;
   const short PROCESSOR_PROBLEM_M3100 = 59;
   const short PROTECTION_PATH_FAILURE = 60;
   const short RECEIVER_FAILURE_M3100 = 61;
   const short REPLACEABLE_UNIT_MISSING = 62;
   const short REPLACEABLE_UNIT_TYPE_MISMATCH = 63;
   const short SYNCHRONISATION_SOURCE_MISMATCH = 64;
   const short TERMINAL_PROBLEM = 65;
   const short TIMING_PROBLEM_M3100 = 66;
   const short TRANSMITTER_FAILURE_M3100 = 67;
   const short TRUNK_CARD_PROBLEM = 68;
   const short REPLACEABLE_UNIT_PROBLEM = 69;
   const short REAL_TIME_CLOCK_FAILURE = 70;
```

```
// Values 71-80 correspond to duplicated probable causes
const short PROTECTION_MECHANISM_FAILURE = 81;
const short PROTECTING_RESOURCE_FAILURE = 82;
// Values 83-100 are reserved for M.3100 potential future extensions
const short AIR_COMPRESSOR_FAILURE = 101;
const short AIR_CONDITIONING_FAILURE = 102;
const short AIR_DRYER_FAILURE = 103;
const short BATTERY_DISCHARGING = 104;
const short BATTERY_FAILURE = 105;
const short COMMERICAL_POWER_FAILURE = 106;
const short COOLING_FAN_FAILURE = 107;
const short ENGINE_FAILURE = 108;
const short FIRE_DETECTOR_FAILURE = 109;
const short FUSE_FAILURE = 110;
const short GENERATOR_FAILURE = 111;
const short LOW_BATTERY_THRESHOLD = 112;
const short PUMP_FAILURE_M3100 = 113;
const short RECTIFIER_FAILURE = 114;
const short RECTIFIER_HIGH_VOLTAGE = 115;
const short RECTIFIER_LOW_F_VOLTAGE = 116;
const short VENTILATION_SYSTEM_FAILURE = 117;
const short ENCLOSURE_DOOR_OPEN_M3100 = 118;
const short EXPLOSIVE_GAS = 119;
const short FIRE = 120;
const short FLOOD = 121;
const short HIGH_HUMIDITY = 122;
const short HIGH_TEMPERATURE = 123;
const short HIGH_WIND = 124;
const short ICE_BUILD_UP = 125;
const short INTRUSION_DETECTION = 126;
const short LOW_FUEL = 127;
const short LOW_HUMIDITY = 128;
const short LOW_CABLE_PRESSURE = 129;
const short LOW_TEMPERATURE = 130;
const short LOW_WATER = 131;
const short SMOKE = 132;
const short TOXIC_GAS = 133;
// Values 134-135 correspond to duplicated probable causes
const short EXTERNAL_POINT_FAILURE = 136;
// Values 137-150 are reserved for potential M.3100 future extensions
const short STORAGE_CAPACITY_PROBLEM_M3100 = 151;
const short MEMORY_MISMATCH = 152;
const short CORRUPT_DATA_M3100 = 153;
const short OUT_OF_CPU_CYCLES = 154;
const short SOFTWARE_ENVIRONMENT_PROBLEM = 155;
const short SOFTWARE_DOWNLOAD_FAILURE = 156;
const short LOSS_OF_REAL_TIME = 157;
const short REINITIALIZED = 158;
// Values 159-167 correspond to duplicated probable causes
// Values 168-200 are reserved for potential M.3100 future extensions
// Values 201-202 correspond to duplicated probable causes
const short EXCESSIVE_ERROR_RATE = 203;
// Values 204-207 correspond to duplicated probable causes
// Values 208-300 are reserved for potential M.3100 future extensions
/*
Probable causes originating from X.721.
Values below correspond to X.721 values with an offset of 300.
*/
const short ADAPTER_ERROR = 301;
const short APPLICATION_SUBSYSTEM_FAILURE = 302;
const short BANDWIDTH_REDUCTION = 303;
// Value 304 corresponds to a duplicated probable cause
const short COMMUNICATION_PROTOCOL_ERROR = 305;
```

```
const short COMMUNICATION_SUBSYSTEM_FAILURE = 306;
const short CONFIGURATION_OR_CUSTOMIZING_ERROR = 307;
const short CONGESTION = 308;
// Value 309 corresponds to a duplicated probable cause
const short CPU_CYCLES_LIMIT_EXCEEDED = 310;
const short DATA_SET_OR_MODEM_ERROR = 311;
// Value 312 corresponds to a duplicated probable cause
const short DTE_DCE_INTERFACE_ERROR = 313;
// Value 314 corresponds to a duplicated probable cause
const short EQUIPMENT_MALFUNCTION = 315;
const short EXCESSIVE_VIBRATION = 316;
const short FILE_ERROR = 317;
// Values 318-320 correspond to duplicated probable causes
const short HEATING_OR_VENTILATION_OR_COOLING_SYSTEM_PROBLEM = 321;
const short HUMIDITY_UNACCEPTABLE = 322;
const short INPUT_OUTPUT_DEVICE_ERROR = 323;
const short INPUT_DEVICE_ERROR = 324;
const short LAN_ERROR = 325;
const short LEAK_DETECTION = 326;
const short LOCAL_NODE_TRANSMISSION_ERROR = 327;
// Values 328-329 correspond to duplicated probable causes
const short MATERIAL_SUPPLY_EXHAUSTED = 330;
// Value 331 corresponds to a duplicated probable cause
const short OUT_OF_MEMORY = 332;
const short OUTPUT_DEVICE_ERROR = 333;
const short PERFORMANCE_DEGRADED = 334;
// Value 335 corresponds to a duplicated probable cause
const short PRESSURE_UNACCEPTABLE = 336;
// Values 337-338 correspond to duplicated probable causes
const short QUEUE_SIZE_EXCEEDED = 339;
const short RECEIVE_FAILURE = 340;
// Value 341 corresponds to a duplicated probable cause
const short REMOTE_NODE_TRANSMISSION_ERROR = 342;
const short RESOURCE_AT_OR_NEARING_CAPACITY = 343;
const short RESPONSE_TIME_EXCESSIVE = 344;
const short RETRANSMISSION_RATE_EXCESSIVE = 345;
const short SOFTWARE_ERROR = 346;
const short SOFTWARE_PROGRAM_ABNORMALLY_TERMINATED = 347;
const short SOFTWARE_PROGRAM_ERROR = 348;
// Value 349 corresponds to a duplicated probable cause
const short TEMPERATURE_UNACCEPTABLE = 350;
const short THRESHOLD_CROSSED = 351;
// Value 352 corresponds to a duplicated probable cause
const short TOXIC_LEAK_DETECTED = 353;
const short TRANSMIT_FAILURE = 354;
// Value 355 corresponds to a duplicated probable cause
const short UNDERLYING_RESOURCE_UNAVAILABLE = 356;
const short VERSION_MISMATCH = 357;
// Values 358-500 are reserved for potential X.721 future extensions
/*
Probable causes ~~ originating from GSM 12.11~~for 2G & 3G wireless systems.
~~Values below correspond to GSM 12.11 values with an offset of 500.~~
*/
const short A_BIS_TO_BTS_INTERFACE_FAILURE = 501;
const short A_BIS_TO_TRX_INTERFACE_FAILURE = 502;
const short ANTENNA_PROBLEM = 503;
const short BATTERY_BREAKDOWN = 504;
const short BATTERY_CHARGING_FAULT = 505;
const short CLOCK_SYNCHRONISATION_PROBLEM = 506;
const short COMBINER_PROBLEM = 507;
const short DISK_PROBLEM = 508;
// Value 509 corresponds to a duplicated probable cause
const short EXCESSIVE_RECEIVER_TEMPERATURE = 510;
```

```
const short EXCESSIVE_TRANSMITTER_OUTPUT_POWER = 511;
const short EXCESSIVE_TRANSMITTER_TEMPERATURE = 512;
const short FREQUENCY_HOPPING_DEGRADED = 513;
const short FREQUENCY_HOPPING_FAILURE = 514;
const short FREQUENCY_REDEFINITION_FAILED = 515;
const short LINE_INTERFACE_FAILURE = 516;
const short LINK_FAILURE = 517;
const short LOSS_OF_SYNCHRONISATION = 518;
const short LOST_REDUNDANCY = 519;
const short MAINS_BREAKDOWN_WITH_BATTERY_BACKUP = 520;
const short MAINS_BREAKDOWN_WITHOUT_BATTERY_BACKUP = 521;
const short POWER_SUPPLY_FAILURE = 522;
const short RECEIVER_ANTENNA_FAULT = 523;
// Value 524 corresponds to a duplicated probable cause
const short RECEIVER_MULTICOUPLER_FAILURE = 525;
const short REDUCED_TRANSMITTER_OUTPUT_POWER = 526;
const short SIGNAL_QUALITY_EVALUATION_FAULT = 527;
const short TIMESLOT_HARDWARE_FAILURE = 528;
const short TRANSCEIVER_PROBLEM = 529;
const short TRANSCODER_PROBLEM = 530;
const short TRANSCODER_OR_RATE_ADAPTER_PROBLEM = 531;
const short TRANSMITTER_ANTENNA_FAILURE = 532;
const short TRANSMITTER_ANTENNA_NOT_ADJUSTED = 533;
// Value 534 corresponds to a duplicated probable cause
const short TRANSMITTER_LOW_VOLTAGE_OR_CURRENT = 535;
const short TRANSMITTER_OFF_FREQUENCY = 536;
const short DATABASE_INCONSISTENCY = 537;
const short FILE_SYSTEM_CALL_UNSUCCESSFUL = 538;
const short INPUT_PARAMETER_OUT_OF_RANGE = 539;
const short INVALID_PARAMETER = 540;
const short INVALID_POINTER = 541;
const short MESSAGE_NOT_EXPECTED = 542;
const short MESSAGE_NOT_INITIALISED = 543;
const short MESSAGE_OUT_OF_SEQUENCE = 544;
const short SYSTEM_CALL_UNSUCCESSFUL = 545;
const short TIMEOUT_EXPIRED = 546;
const short VARIABLE_OUT_OF_RANGE = 547;
const short WATCH_DOG_TIMER_EXPIRED = 548;
const short COOLING_SYSTEM_FAILURE = 549;
const short EXTERNAL_EQUIPMENT_FAILURE = 550;
const short EXTERNAL_POWER_SUPPLY_FAILURE = 551;
const short EXTERNAL_TRANSMISSION_DEVICE_FAILURE = 552;
// Values 553-560 correspond to duplicated probable causes
const short REDUCED_ALARM_REPORTING = 561;
const short REDUCED_EVENT_REPORTING = 562;
const short RECUCED_LOGGING_CAPABILITY = 563;
const short SYSTEM_RESOURCES_OVERLOAD = 564;
const short BROADCAST_CHANNEL_FAILURE = 565;
const short CALL_ESTABLISHMENT_ERROR = 566;
const short INVALID_MESSAGE_RECEIVED = 567;
const short INVALID_MSU_RECEIVED = 568;
const short LAPD_LINK_PROTOCOL_FAILURE = 569;
const short LOCAL_ALARM_INDICATION = 570;
const short REMOTE_ALARM_INDICATION = 571;
const short ROUTING_FAILURE = 572;
const short SS7_PROTOCOL_FAILURE = 573;
const short TRANSMISSION_FAILURE = 574;
// Value 575 corresponds to a duplicated probable cause
// Values 576-700 are reserved for potential GSM 12.11 future extensions
// for 2G & 3G wireless systems
/*
Probable causes originating from M.3100 security alarm causes.
Values below correspond to M.3100 values with an offset of 700.
```

```
   */
   const short AUTHENTICATION_FAILURE= 701;
   const short BREACH_OF_CONFIDENTIALITY = 702;
   const short CABLE_TAMPER = 703;
   const short DELAYED_INFORMATION = 704;
   const short DENIAL_OF_SERVICE = 705;
   const short DUPLICATE_INFORMATION = 706;
   const short INFORMATION_MISSING = 707;
   const short INFORMATION_MODIFICATION_DETECTED = 708;
   const short INFORMATION_OUT_OF_SEQUENCE = 709;
   // Value 710 corresponds to a duplicated probable cause
   const short KEY_EXPIRED = 711;
   const short NON_REPUDIATION_FAILURE = 712;
   const short OUT_OF_HOURS_ACTIVITY = 713;
   const short OUT_OF_SERVICE = 714;
   const short PROCEDURAL_ERROR = 715;
   const short UNAUTHORISED_ACCESS_ATTEMPT = 716;
   const short UNEXPECTED_INFORMATION= 717;
   const short UNSPECIFIED_REASON = 718;
   // Values 719-800 are reserved for potential M.3100 future extensions
};

/*
This block identifies the acknowledgement state of a reported alarm.
*/
interface AckState
{
   const short ACKNOWLEDGED = 1;
   const short UNACKNOWLEDGED = 2;
};

/*
This block identifies attributes which are included as part of the Alarm IRP
These attribute values should not clash with those defined for the attributes
of notification header (see IDL of Notification IRP).
*/
interface AttributeNameValue
{
   const string ALARM_ID = "f";
   const string PROBABLE_CAUSE = "g";
   const string PERCEIVED_SEVERITY = "h";
   const string SPECIFIC_PROBLEM = "i";
   const string ADDITIONAL_TEXT = "j";
   const string ACK_TIME = "k";
   const string ACK_USER_ID = "l";
   const string ACK_SYSTEM_ID = "m";
   const string ACK_STATE = "n";
   const string COMMENTS = "o";
   const string BACKED_UP_STATUS = "p";
   const string BACK_UP_OBJECT = "q";
   const string THRESHOLD_INFO = "r";
   const string TREND_INDICATION = "s";
   const string STATE_CHANGE_DEFINITION = "t";
   const string MONITORED_ATTRIBUTES = "u";
   const string PROPOSED_REPAIR_ACTIONS = "v";
   const string CORRELATED_NOTIFICATIONS = "w";
   const string REASON = "x";
   const string CLEAR_USER_ID = "y";
   const string CLEAR_SYSTEM_ID = "z";
   const string ALARM_LIST_ALIGNMENT_REQUIREMENT = "ff";
};

/*
```

```
   Defines the content of a Comment
   */
   struct Comment
   {
      ManagedGenericIRPConstDefs::IRPTime comment_time;
      string comment_text;
      string user_id;
      string system_id;
   };

   /*
   Defines a set of comments which are placed in the COMMENTS attribute
   of a structured event.
   */
   typedef sequence <Comment> CommentSet;

   /*
   It indicates if an object has a back up.
   True implies backed up.  False implies not backed up.
   */
   typedef boolean BackedUpStatusType;

   /*
   It indicates if the threshold crossed was in the up or down direction.
   */
   enum ThresholdIndicationType {Up, Down};


   /*
   It indicates if the AlarmList alignment is required.
   */
   enum AlarmListAlignmentRequirementType {Required, NotRequired};



/* FloatTypeOpt is an optional type.
   If the discriminator is true the value is present.
   Otherwise the value is null.
*/
union FloatTypeOpt switch (boolean)
{
   case TRUE: float value;
};


/* ThresholdLevelIndType describes multi-level
   threshold crossings.
   Up is the only permitted choice for a counter.
   If indication is "up", low value is optional.

   @member indication: indicates up or down direction
     of crossing.
   @member low: the low observed value.
   @member high: the high observed value.
*/

struct ThresholdLevelIndType
{
    ThresholdIndicationType indication;
    FloatTypeOpt low;
    float high;
};
```

```
/* ThresholdLevelIndTypeOpt is an optional type.
   If the discriminator is true the value is present.
   Otherwise, the value is null.
*/

union ThresholdLevelIndTypeOpt switch (boolean)
{
  case TRUE: ThresholdLevelIndType value;
};


/* ThresholdInfoType indicates some guage or counter
   attribute passed a set threshold.

   @member attributeID: identifies the attribute that
     crossed the threshold.
   @member observedValue: attributes that are of type
     integer will be converted to floats.
   @member thresholdlevel: This parameter is for
     multi-level threhsolds. Optional.
   @member armTime: May contain empty string.
*/

struct ThresholdInfoType
{
  string attributeID;
  float observedValue;
  ThresholdLevelIndTypeOpt thresholdLevel;
  string armTime;
};


   /*
   It indicates if some observed condition is getting better, worse,
   or not changing.
   */
   enum TrendIndicationType {LessSevere, NoChange, MoreSevere};

   /*
   It is used to report a changed attribute value.
   */
   struct AttributeValueChangeType
   {
      string attribute_name;
      any    old_value;  // type depends on attribute
      any    new_value;  // type depends on attribute
   };

   typedef sequence <AttributeValueChangeType> AttributeChangeSetType;

   /*
   It is used to report an attribute and its value.
   */
   struct AttributeValueType
   {
      string attribute_name;
      any    value;  // type depends on the attribute
   };

   typedef sequence <AttributeValueType> AttributeSetType;

   typedef sequence <long> NotifIdSetType;
```

```
/*
This holds identifiers of notifications that are correlated.
*/
struct CorelatedNotification
{
   string source;  // Contains DN of MO that emitted the set of notifications
                   // DN string format in compliance with Name Convention for
                   // Managed Object.
                   // This may be a zero-length string.  In this case, the MO
                   // is identified by the value of the MOI attribute
                   // of the Structured Event, i.e., the notification.
   NotifIdSetType notif_id_set;  // Set of related notification ids
};

/*
Correlated Notification sets are sets of Correlated Notification
structures.
*/
typedef sequence <CorelatedNotification> CorrelatedNotificationSetType;

/*
Define the structure of Alarm ID and Perceived Severity used within the
alarm acknowledgment operation. Note: perceived_severity is an optional
parameter. If this value is present, it must have one of the defined values
of Interface PerceivedSeverity.
*/
struct AlarmInformationIdAndSev
{
   string alarm_information_reference;
   ManagedGenericIRPConstDefs::ShortTypeOpt perceived_severity;
};

/*
Define set of the above structure of Alarm ID and Perceived Severity.
*/
typedef sequence <AlarmInformationIdAndSev> AlarmInformationIdAndSevSeq;

/*
It indicates the reason for an alarm acknowledgement to have failed:
  - The specified Alarm Information is absent from the Alarm List
  - The Perceived Severity to be acknowledged has changed and/or is different
    within the Alarm List
  - The acknowledgement failed for some other reason
*/
enum AcknowledgeFailureCategories
{
   UnknownAlarmId,
   WrongPerceivedSeverity,
   AcknowledgmentFailed
};

/*
Define the structure returned when an operation fails for a set of alarm ids.
A reason is provided in order to indicate why the operation failed.
*/
struct BadAlarmInformationId
{
   string alarm_information_reference;
   string reason;
};

/*
Define the structure returned when the acknowledge operation fails for a set
```

```
   of alarm ids.
   A failure category and a reason are provided in order to indicate why the
   operation failed.
   */
   struct BadAcknowledgeAlarmInfo
   {
      string alarm_information_reference;
      AcknowledgeFailureCategories failure_category;
      string reason;
   };

   typedef sequence <BadAlarmInformationId> BadAlarmInformationIdSeq;
   typedef sequence <BadAcknowledgeAlarmInfo> BadAcknowledgeAlarmInfoSeq;
   typedef sequence <string> AlarmInformationIdSeq;
   typedef CosNotification::EventBatch AlarmInformationSeq;
};
#endif
```

End of Changes in Annex A.1
End of Document

Annex B (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Mar 2000	S_07	SP-000012	--	--	Approved at TSG SA #7 and placed under Change Control	2.0.0	3.0.0
Mar 2000	--	--	--	--	cosmetic	3.0.0	3.0.1
Jun 2000	S_08	SP-000253	005	--	Split of TS - Part 3: Alarm Integration Reference Point (IRP): CORBA Solution Set (SS)	3.0.1	3.1.0
Sep 2000	S_09	SP-000439	003	--	Correct push_structured_event of push_structured_events	3.1.0	3.2.0
Sep 2000	S_09	SP-000439	004	--	Remove the use of interface to encapsulate const strings	3.1.0	3.2.0
Dec 2000	S_10	SP-000521	001	1	Allow "Structured Event Filterable Body Fields" to be absent if parameters are not used	3.2.0	3.3.0
Dec 2000	S_10	SP-000521	002	1	Specific behaviour of the Iterator	3.2.0	3.3.0
Dec 2000	S_10	SP-000521	005	--	Inconsistent qualifiers	3.2.0	3.3.0
Mar 2001	S_11	SP-010032	006	--	Missing how "Notify Alarm List Rebuilt" reason attribute is located in Structured Event	3.3.0	3.4.0
Mar 2001	S_11	SP-010032	007	--	Use alarmInformationBody in additionalInformation.ackTime	3.3.0	3.4.0
Jun 2001	S_12	SP-010239	008	--	Probable Cause "Intrusion Detection" is missing	3.4.0	3.5.0
Jun 2001	S_12	SP-010282	009	--	Alarm IRP: CORBA SS Rel4 - Addition of feature.	3.5.1	4.0.0
Sep 2001	S_13	SP-010469	010	--	Correction of BadAlarmInformationIdSeq parameter type	4.0.0	4.1.0
Sep 2001	S_13	SP-010474	011	--	Definition of thresholdInfo in Alarm IRP: CORBA SS	4.0.0	4.1.0
Sep 2001	S_13	SP-010522	012	--	Eliminate guesses on IDL file names in Alarm IRP: CORBA SS	4.0.0	4.1.0
Mar 2002	S_15	SP-020015	014	--	Correction of erroneous and addition of missing mapping tables	4.1.0	4.2.0
Mar 2002	S_15	SP-020028	015	--	Addition of "perceivedSeverity" as parameter to "acknowledgeAlarms" operation (CORBA SS)	4.1.0	4.2.0
Mar 2002	S_15	--	--	--	Automatic upgrade to Rel-5 (no Rel-5 CR)	4.2.0	5.0.0
Sep 2002	S_17	SP-020476	017	--	Addition of "indeterminate" probable cause in IDL definition	5.0.0	5.1.0
Sep 2002	S_17	SP-020477	018	--	Add clearAlarm and other updates	5.0.0	5.1.0
Sep 2002	S_17	SP-020478	021	--	Add security alarms support in Alarm IRP: CORBA SS	5.0.0	5.1.0
Sep 2002	S_17	SP-020479	019	--	Add optional string parameters in CORBA Solution Set	5.0.0	5.1.0
Dec 2002	S_18	SP-020751	023	--	Add additionalInformation parameter in notification in Alarm IRP: CORBA SS (Alignment with Information Service in Rel-5 32111-2)	5.1.0	5.2.0
Dec 2002	S_18	SP-020752	024	--	Add notifyPotentialFaultyAlarmList in Alarm IRP: CORBA SS (Alignment with Information Service in Rel-5 32111-2)	5.1.0	5.2.0
Mar 2003	S_19	SP-030064	026	--	Correction of CORBA ALARM_IRP_VERSION in line with adopted Rel-5 policy	5.2.0	5.3.0
Mar 2003	S_19	SP-030062	028	--	Add missing ITU-T M.3100 Probable Cause values & Correct CORBA IDL errors	5.2.0	5.3.0
Mar 2003	S_19	SP-030138	029	--	Correction of CORBA IDL Optional clearSystemId	5.2.0	5.3.0
Jun 2003	S_20	SP-030276	030	--	Correction of CORBA type definition in struct "AlarmInformationIdAndSev"	5.3.0	5.4.0