Technical Specification Group Services and System Aspects
Meeting #15, Cheju Island, Korea, 11-14 March 2002

TSGS#15(02)0029

Source: **SA5 (Telecom Management)**

Title: **3 Rel-4 CR 32.111-2 (Fault Management; Alarm Integration Reference Point; Part 2 Information Service)**

Document for: **Decision**

Agenda Item: **7.5.3**

Doc-1st-Level	Spec	CR	I	Phase	Subject	Cat	Version-Current	Version-New	Doc-2nd-Level	Workitem
SP-020029	32.111-2	013		Rel-4	**Addition of parameter in Alarm List Rebuilt notification**	F	4.2.0	4.3.0	S5-010776	OAM-FM
SP-020029	32.111-2	014		Rel-4	**Addition of new notification notifyPotentialFaultyAlarmList**	F	4.2.0	4.3.0	S5-010777	OAM-FM
SP-020029	32.111-2	015		Rel-4	**Additional trigger event for notifyAlarmListRebuilt**	F	4.2.0	4.3.0	S5-020158	OAM-FM

3GPP TSG-SA5 (Telecom Management) **S5-010776**
Meeting #24, Cancun, MEXICO, 26 – 30 November 2001 **S5C010506rev3**

CR-Form-v4

CHANGE REQUEST

⌘ **32.111-2** **CR** **013** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

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Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network **X**

Title:	⌘	Addition of parameter in Alarm List Rebuilt notification
Source:	⌘	SA5
Work item code:	⌘	OAM-NIM
Date:	⌘	01/03/2002
Category:	⌘	**B**
Release:	⌘	Rel-5

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)*

Reason for change:	⌘	Current Alarm List (AL) Rebuilt notification can only indicate that the Alarm List has been rebuilt. It cannot indicate that the Alarm List has been verified in which case the AL would not have to be rebuilt.
Summary of change:	⌘	Add an optional parameter in notifyAlarmListRebuilt() to indicate whether or not alarm alignment is required.
Consequences if not approved:	⌘	The IRPManager may unnecessarily be forced to proceed with a potentially long alignment process.

Clauses affected:	⌘	Sub-clause 6.7.4.2
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

6.7.4.2 Input Parameters

Parameter Name	Qualifier	Matching Information	Comment
`objectClass`	M,F	It carries the `IRPAgent.objectClass` or alternatively, the object class of another MO.	If it carries the IRPAgent.objectClass, then all `AlarmInformation` instances in the AlarmList may have been rebuilt. If it carries the object class of another MO, then all `AlarmInformation` instances of the ~~related to the~~ MO identified by the parameter `objectInstance` and its subordinate MOs may have been rebuilt. The `AlarmInformation` instances not related to the subject MO and its subordinate MOs are not subject to rebuilt.

…

…

systemDN	C,F	IRPAgent.systemDN where the IRPAgent is related to the AlarmIRP that is related to this AlarmList.	
notificationType	M,F	"notifyAlarmListRebuilt".	
reason	M	"Agent-NE communication error", "Agent restarts", "indeterminate". Other values can be added.	It carries the reason why the IRPAgent has rebuilt the AlarmList. This may carry different reasons than that carried by the immediate previous notifyPotentialFaultyAlarmList.
alarmListAlignmentRequirement	O (note)	ENUM (alignmentRequired, alignmentNotRequired)	It carries an enumeration of "alignmentRequired" and "alignmentNotRequired". IRPAgent uses alignmentRequired to indicate that IRPAgent current AL is not identical to the one that could have been built using (a) IRPAgent AL information at the time it emits the immediate previous notifyPotentialFaultyAlarmList() and (b) the notifications (carrying alarm information) emitted after the previously identified notification and before the subject notification. Otherwise, the IRPAgent uses alignmentNotRequired. When this parameter is absent, it implies alignmentRequired.

Note: If IRPAgent supports notifyPotentialFaultyAlarmList() notification, it shall support this parameter. If IRPAgent does not support notifyPotentialFaultyAlarmList() notification, it shall not support this parameter.

3GPP TSG-SA5 (Telecom Management) **S5-010777**
Meeting #24, Cancun, MEXICO, 26 – 30 November 2001 **S5C010509rev2**

CR-Form-v4

CHANGE REQUEST

⌘ **32.111-2 CR 014** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

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Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network **X**

Title:	⌘	Addition of new notification notifyPotentialFaultyAlarmList
Source:	⌘	SA5
Work item code:	⌘	OAM-NIM
Date:	⌘	01/03/2002
Category:	⌘	**B**
Release:	⌘	Rel-5

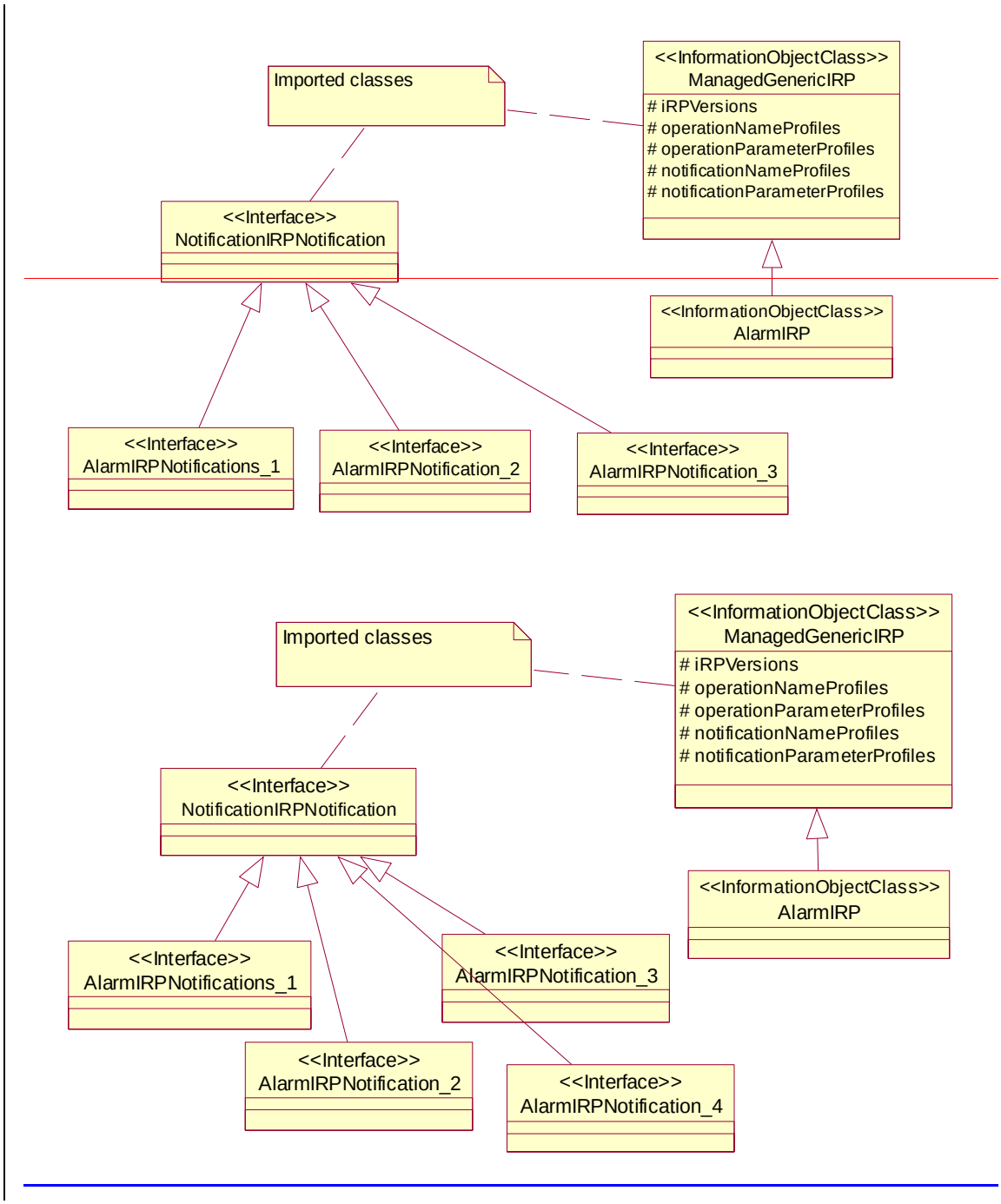
Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

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)

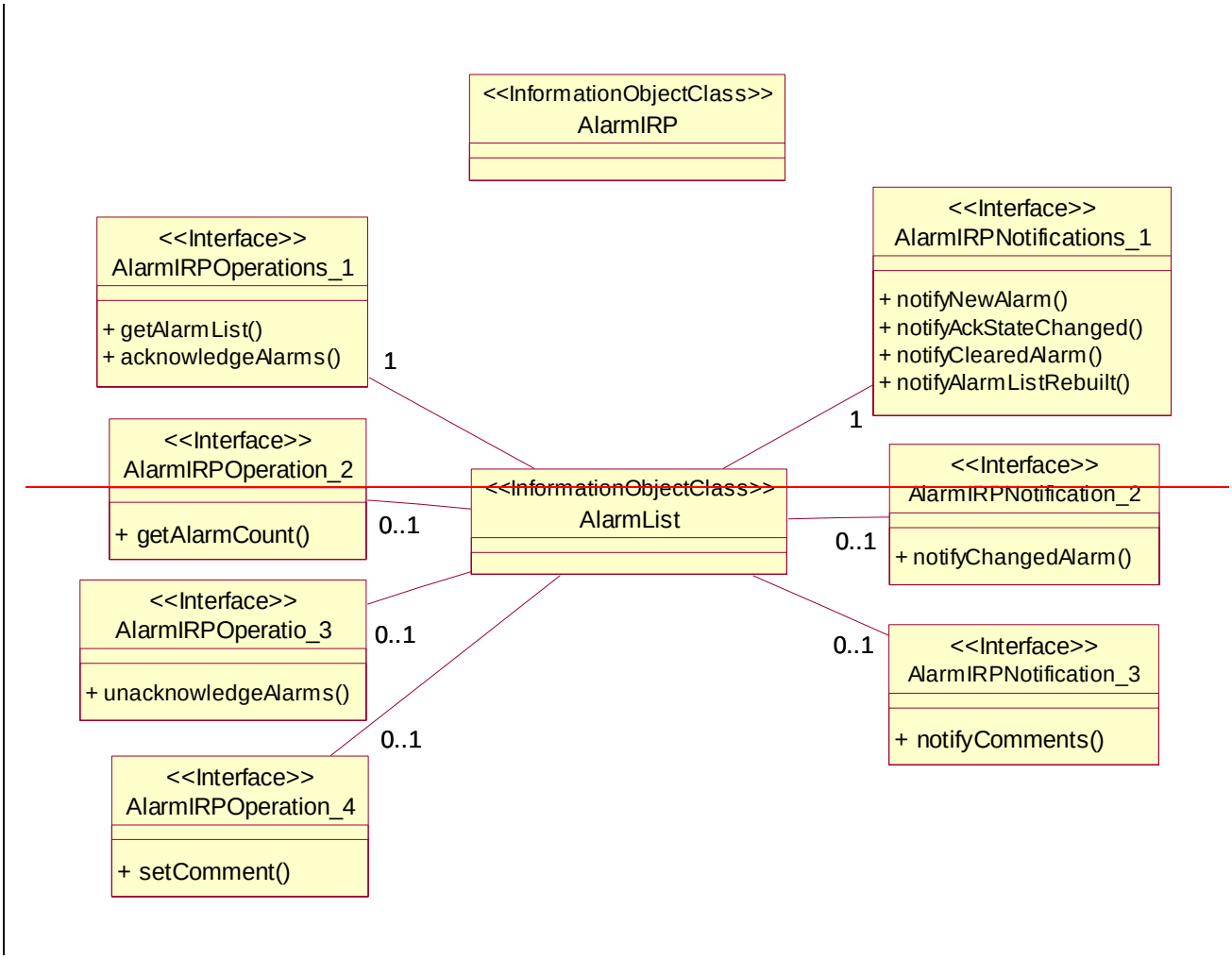
Reason for change:	⌘	The IRPManager is not notified when IRPAgent has detected that the integrity of its AlarmList is faulty. Under such case, the IRPManager may perform some function that could be harmful because the function is performed based on the faulty AlarmList.
Summary of change:	⌘	Add new notification notifyPotentialFaultyAlarmList() which the Agent can invoke as soon as it knows it needs to rebuild all or part of its AlarmList (AL). One such occasion is when the Agent detects "communication link down between Agent and NE(s)".
Consequences if not approved:	⌘	When IRPAgent has problem maintaining the integrity of the active alarm list (such as the case when communication link between Agent and NE is down), it has no way to indicate the problem to IRPManager immediately. The consequence is then that the Managers' actions that depend on the integrity of Alarm List information may be harmful.

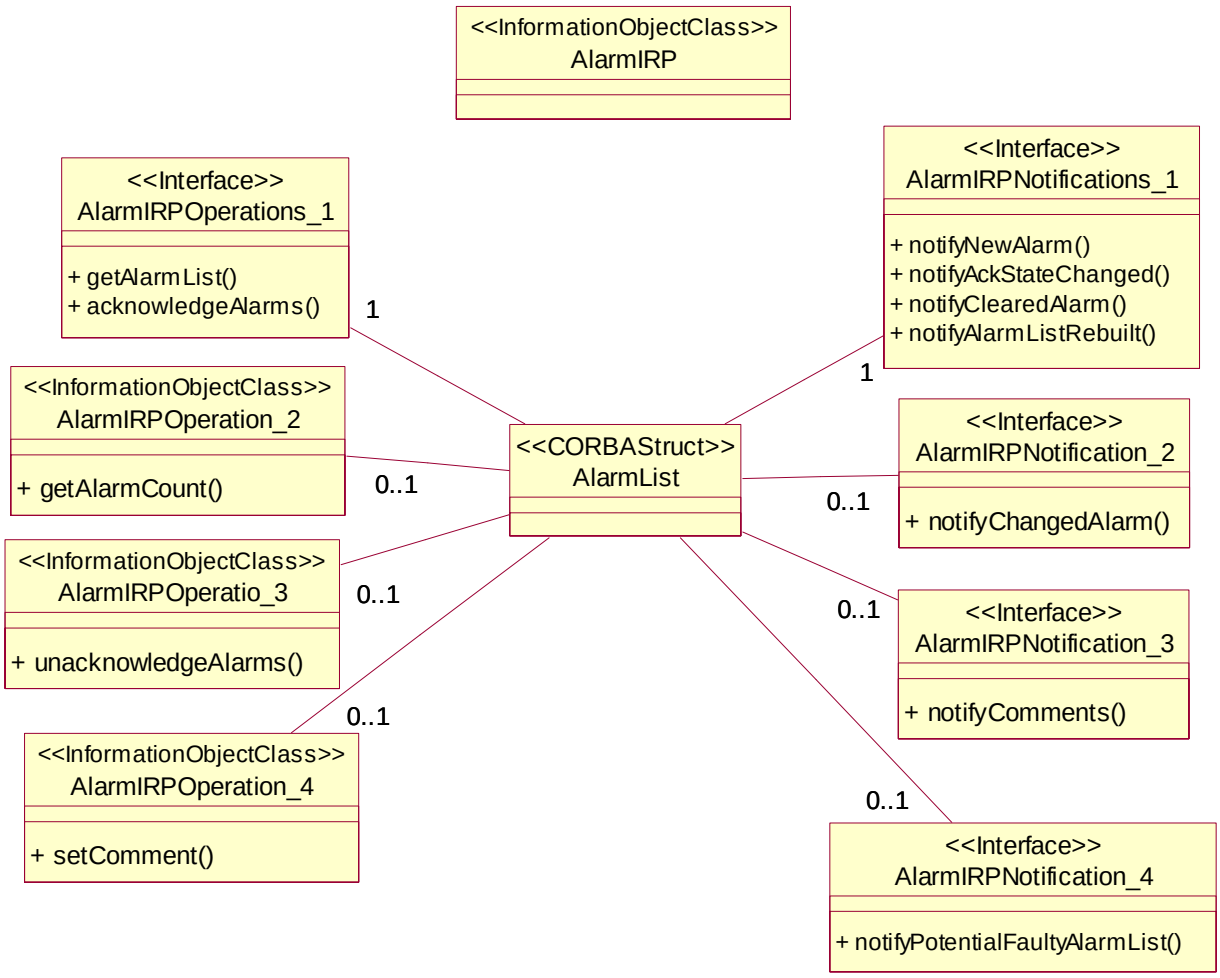
Clauses affected:	⌘	Sub-clause 5.2.2 and 6.1. Add new sub-clause 6.10
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

5.2.2. Inheritance



6.1 Class diagram

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AlarmIRP
<<Interface>>
AlarmIRPOperations_1
+ getAlarmList()
+ acknowledgeAlarms()
<<Interface>>
AlarmIRPNotifications_1
+ notifyNewAlarm()
+ notifyAckStateChanged()
+ notifyClearedAlarm()
+ notifyAlarmListRebuilt()
<<InformationObjectClass>>
AlarmIRPOperation_2
+ getAlarmCount()
<<CORBAStruct>>
AlarmList
<<Interface>>
AlarmIRPNotification_2
+ notifyChangedAlarm()
<<InformationObjectClass>>
AlarmIRPOperatio_3
+ unacknowledgeAlarms()
<<Interface>>
AlarmIRPNotification_3
+ notifyComments()
<<InformationObjectClass>>
AlarmIRPOperation_4
+ setComment()
<<Interface>>
AlarmIRPNotification_4
+ notifyPotentialFaultyAlarmList()
1
1
0..1
0..1
0..1
0..1
0..1
0..1

6.10 Interface AlarmIRPNotification_4

6.10.1 notifyPotentialFaultyAlarmList (O)

6.10.1.1 Definition

The IRPAgent or its related AlarmIRP maintains an AlarmList. They can lose confidence in the integrity of its AlarmList. Under this condition, IRPAgent or its related AlarmIRP or the related AlarmList shall invoke notifyPotentialFaultyAlarmList. They then can begin to rebuild the faulty AlarmList, if found necessary. After the successful rebuilt or the discovery that rebuilt is not necessary, they shall invoke notifyAlarmListRebuilt notification.

This notification can identify a set of AlarmInformation that is potentially faulty or unreliable. This identification is done in the following way. If the MOI of an AlarmInformation is the same or is a subordinate to the MOI carried in the notification, then the AlarmInformation may be faulty or unreliable.

This notification can identify all the AlarmInformation instances of the AlarmList that are potentially faulty or unreliable. In this case, the notification shall carry a MOI identifying the IRPAgent.

The IRPManager behavior, on reception of this notifyPotentialFaultyAlarmList notification, is not specified. The IRPManager behavior is considered not essential for the specification of the interface itself. However, the following are recommended actions the IRPManager should take, in case it receives this notification.

1. The IRPManager should not perform any task requiring the integrity of the AlarmInformation identified as faulty or unreliable by the subject notification.
2. The IRPManager should not invoke operations that require integrity of the AlarmList such as getAlarmList., acknolwedgeAlarms operations.

6.10.1.2 Input Parameters

	Parameter Name	Qualifier	Matching Information	Comment
	objectClass	M,F	It carries the class of the IRPAgent or alternatively, the class of another MO.	If it carries the IRPAgent.objectClass, then all AlarmInformation instances in the AlarmList may not be reliable. If it carries the object class of another MO, then all AlarmInformation instances of the MO identified by the parameter objectInstance and its subordinate MOs may not be reliable. The AlarmInformation instances not related to the subject MO and its subordinate MOs are reliable.
	objectInstance	M,F	It carries the DN of the IRPAgent or alternatively, the DN of another MO.	If objectClass carries the IRPAgent.objectClass, then this parameter carries the DN of the IRPAgent. If objectClass carries the object class of another MO, then this parameter carries the DN of the MO instance.
	notificationId	M	This carries the semantics of notification identifier.	
	eventTime	M,F	It carries the time when the IRPAgent has lost confidence of its AlarmList content.	
	systemDN	C,F	IRPAgent.systemDN where the IRPAgent is related to the AlarmIRP that is related to this AlarmList.	
	notificationType	M,F	"notifyPotentialFaultyAlarmList".	
	reason	M	"Agent-NE communication error", "Agent restarts", "indeterminate". Other values can be added.	It carries the reason why the IRPAgent has to rebuild its AlarmList.

6.10.1.3 Triggering Event

6.10.1.3.1 From-state

faultyAlarmListDetected.

Assertion Name	Definition
faultyAlarmListDetected	IRPAgent detects faults in part or whole of its AlarmList.

6.10.1.3.2 To-state

faultyAlarmList

Assertion Name	Definition
faultyAlarmList	IRPAgent initiates the AlarmList rebuild process.

3GPP TSG-SA5 (Telecom Management) **S5-020158**
Meeting #26, Miami / FL, USA, 25 February - 1 March 2002 **S5C020118r1**

CR-Form-v6.1

CHANGE REQUEST

⌘ **32.111-2** **CR** **015** ⌘ **rev** ⌘ Current version: **4.2.0** ⌘

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Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network **X**

Title:	⌘	Additional trigger event for notifyAlarmListRebuilt
Source:	⌘	SA5
Work item code:	⌘	OAM-NIM
Date:	⌘	01/03/2002
Category:	⌘	**C**
Release:	⌘	REL-5

Use one of the following categories:
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R96 *(Release 1996)*
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R98 *(Release 1998)*
R99 *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change:	⌘	To eliminate an undesirable IRPAgent behaviour that it may or may not emit notifyAlarmListRebuilt after it has initialised, re-initialised, rebooted and cold-started.
Summary of change:	⌘	Add a triggering event From-state for notifyAlarmListRebuilt
Consequences if not approved:	⌘	The IRPAgent will have an undesirable behaviour described above in “reason for change”.

Clauses affected:	⌘	6.7.4.3.1
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

6.7.4.3 Triggering Event

6.7.4.3.1 From-state

alarmListRebuilt_0 OR alarmListRebuilt_1.

Assertion Name	Definition
alarmListRebuilt_0	IRPAgent has cold-started, initialised, re-initialised or rebooted and it has initiated procedure to rebuild its AlarmList.
alarmListRebuilt_1	IRPAgent loses confidence in part or whole of its AlarmList. IRPAgent has initiated procedure to repair its AlarmList.