Source: **SA5 (Telecom Management)**

Title: **Rel-6 CR 32.102 v530 (Telecommunication management; Architecture): Update to UML repertoire to support more concise modeling of stage 2 specifications**

Document for: **Approval**

Agenda Item: **7.5.3**

Doc-1st-Level	Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Doc-2nd-Level	Workitem
SP-030403	32.102	030	-	Rel-6	Expansion to UML repertoire to support more concise modelling of stage 2 specifications	C	5.3.0	S5-036798	OAM-AR

CR-Form-v7

CHANGE REQUEST

| ⌘ | **32.102** CR **030** | ⌘ rev | **-** | ⌘ | Current version: | **5.3.0** | ⌘ |

*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 **X**   Core Network **X**

Title: ⌘	Expansion to UML repertoire to support more concise modelling of stage 2 specifications	
Source: ⌘	SA5 (david.raymer@motorola.com)	
Work item code: ⌘	OAM-AR	**Date:** ⌘ 05/09/2003
Category: ⌘ **C**		**Release:** ⌘ Rel-6

Use <u>one</u> 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 <u>one</u> 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: ⌘	Expansion to repertoire to support more concise modeling of stage 2 specifications
Summary of change: ⌘	Expansion to «names», addtion of «optional», updates to visibility and addition of subclause covering the use of association classes
Consequences if not approved: ⌘	If not approved, the UML diagrams in the stage 2 documents will not be capable of specifying the models with the necessary rigor to ensure interoperability of implementations.

Clauses affected: ⌘	Annex G

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.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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.

G.3.2   Stereotype

This sub-clause defines all allowable stereotypes that are summarized in the following table. Except <<Interface>>, <<Type>> and <<use>> (which are defined in [15]), all other stereotypes are extensions specifically designed for use in IRP IS specifications.

Table G.1: Stereotypes

Stereotype	Base Class	Affected Metamodel Elements
Interface	Class	
Type	Class	
ProxyClass	Class	
Archtetype	Classifier (subclause 2.5.2.10 of [15])	
InformationObjectClass	Classifier	
use	Association	
may use	Association	
may realize	Association	
emits	Association	
names	~~Aggregation~~Composition	--
opt (alternatively «optional»)	ModelElement	Attribute, Parameter, and Operation
%	~~VisiibilityKind~~3GPPVisibilityKind	--

End of Change in Clause G.3.2

Change in Clause G.3.2.9

G.3.2.9   <<names>>

It specifies a unidirectional ~~aggregation~~composition. The target instance is uniquely identifiable, within the namespace of the source entity, among all other targeted instances of the same target classifier and among other targeted instances of other classifiers that has the same ~~<<«names»>>~~ ~~aggregation~~ composition with the source.

Composition used as the act of name containment provides a semantic of a whole-part relationship between the domain and the named elements that are contained, even if only by name. From the management perspective access to the part is through the whole. Multiplicity shall be indicated on both ends of the relationship.

~~A source can have multiple <<names>> with multiple targets. The set of <<names>> used between the source and its targets forms the source namespace.~~

A target can not have multiple <<names>> with multiple sources, i.e. a target can not participate in or ~~belong to~~ multiple namespaces.

By convention, the name of the attribute in the target model element to hold part of the unique identification shall be formed by the name of the target class concatenated with "Id". There are two presentation options for the unique identifaction attribute of the class being named.

1.   The use of the role quailfier allow the unique identification attribute to be attached to the target end of the «names» association.   (see Figure G.9)

2.   The unique identification attribute may be indicated as a normal attribute within the class attribute compartment.

~~When used in specifications, the label <<names>> can be omitted to reduce clutter and to improve readability of class diagrams.~~

G.3.2.9.1   Sample

This shows that all instances of ManagedFunction~~MscFunction~~ are uniquely identifiable within the ManagedElement namespace. Note the use of the label ~~<<names>>~~supports in specifications is optional.
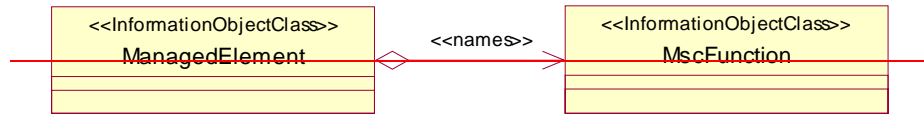
~~Figure G.9: <<names>> Notation~~
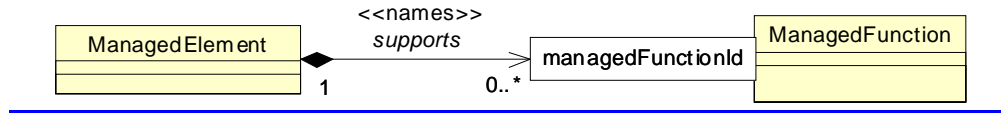

Figure G.9: <<names>> Notation, Composition and explicit Qualifier

---

End of Change in Clause G.3.2.9

New Clause G.3.2.10

G.3.2.10 «opt»

The «opt» enables the indication of optionality of attributes, parameters and operations (respectively) within the UML diagrams within TS32 series documents. The semantics of optionality are clearly defined within subclause 10.6 of this document.

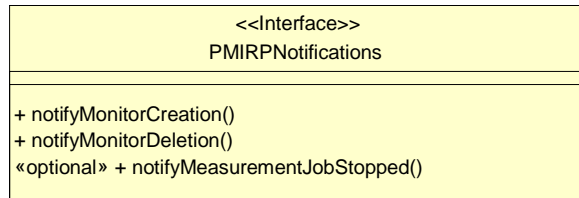In the absence of the «opt» stereotype, the attribute, parameter, or operation in question is mandatory.

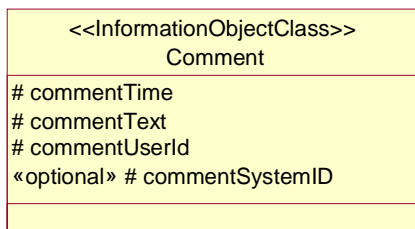**Figure G.x(a) Example of the use of optionality indicator for operations**

.

Figure G.x(b) Example of the use of optionality indicator for attributes

End of New Clause G.3.2.10

Annex H (informative):
Change history

Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
Dec 1999	S_06	SP-99578	--	--	Approved at TSG SA #6 and placed under Change Control	-	3.0.0
Mar 2000	S_07	SP-000015	001	--	resolving remaining R99 inconsistency between 32.101 & 32.102	3.0.0	3.1.0
Mar 2000	S_07	SP-000015	002	--	Correction of IRP-related terminology	3.0.0	3.1.0
Mar 2000	--	--	--	--	Cosmetic	3.1.0	3.1.1
Jun 2000	S_08	SP-000227	003	--	Clarification of compliance conditions	3.1.1	3.2.0
Jun 2000	S_08	SP-000228	004	--	Update ITU-T TMN related reference material	3.1.1	3.2.0
Jun 2000	S_08	SP-000229	005	--	Definition of the Mandatory/Optional/Conditional qualifiers used in the IRPs	3.1.1	3.2.0
Jun 2000	S_08	SP-000230	006	--	Correction of erroneous editing and usage of undefined term	3.1.1	3.2.0
Mar 2001	S_11	SP-010026	007	--	Add UMTS TMN conformance	3.2.0	4.0.0
Jun 2001	S_12	SP-010232	008	--	Correction of ITU-T TMN concerns	4.0.0	4.1.0
Jun 2001	S_12	SP-010232	009	--	Alignment with 3GPP drafting rules regarding headings	4.0.0	4.1.0
Jun 2001	S_12	SP-010232	010	--	Update of TM architectural aspects	4.0.0	4.1.0
Jun 2001	S_12	SP-010232	011	--	General clarifications and enhancements	4.0.0	4.1.0
Jun 2001	S_12	SP-010232	012	--	Alignment with 3GPP drafting rules regarding verbal forms for the expression of provisions	4.0.0	4.1.0
Jun 2001	S_12	SP-010232	013	--	Update and clarify compliance condition for a UMTS entity	4.0.0	4.1.0
Jun 2001	S_12	SP-010232	014	--	Delete OSA definition	4.0.0	4.1.0
Jun 2001	S_12	SP-010232	015	--	Enhancements of the IRP Concept	4.0.0	4.1.0
Sep 2001	S_13	SP-010466	016	--	Update and alignment of compliance conditions for UMTS Management Physical architectures	4.1.0	4.2.0
Sep 2001	S_13	SP-010522	017	--	Specify the Rule for IDL file names	4.1.0	4.2.0
Mar 2002	S_15	SP-020037	018	--	Add the rule on how all SA5 Solution Set specifications indicate a reference to a particular SA5 Information Service specification.	4.2.0	5.0.0
Mar 2002	S_15	SP-020037	019	--	Inclusion of the IMS in the 3G Telecom Management Architecture (32.102)	4.2.0	5.0.0
Sep 2002	S_17	SP-020450	020	--	Correction of diagrams describing entities of the mobile system to be managed	5.0.0	5.1.0
Sep 2002	S_17	SP-020450	021	--	IS Template Changes to support new UML Repertoire/Methodology	5.0.0	5.1.0
Sep 2002	S_17	SP-020450	022	--	Addition of 3GPP UML Repertoire for IRP: IS	5.0.0	5.1.0
Sep 2002	S_17	SP-020479	023	--	Add optional parameters in CORBA Solution Set IDLs	5.0.0	5.1.0
Dec 2002	S_18	SP-020726	024	--	Aligning IRP related terminology with SA5's SWGC IRP specifications (32.6xy)	5.1.0	5.2.0
Dec 2002	S_18	SP-020727	025	--	Updates and corrections to Integration Reference Points (IRPs) Introduction	5.1.0	5.2.0
Mar 2003	S_19	SP-030061	027	-	Add New Subclause to IS Template for Notification Related IOCs	5.2.0	5.3.0