3GPP TSG-CN Meeting #24 **NP-040260**
02 – 04 June 2004, Seoul, KOREA

Source: **CN5 (OSA)**

Title: **4 Rel-5 CRs 29.198-01 OSA API Part 1: Overview**

Agenda item: **8.2 (OSA Enhancements [OSA2])**

Document for: **APPROVAL**

Doc-1st-	Spec	CR	Rev	Phase	Subject	Cat	Version	Doc-2nd-	Workite
NP-040260	29.198-01	029	-	Rel-5	Correct Java Rulebook to support API design pattern introduced by PAM SCS	F	5.5.0	N5-040045	OSA2
NP-040260	29.198-01	031	-	Rel-6	Correct Java Rulebook to support API design pattern introduced by PAM SCS	A	6.0.1	N5-040119	OSA2
NP-040260	29.198-01	032	-	Rel-5	Correct Java Rulebook to conform to Java accepted standards	F	5.5.0	N5-040345	OSA2
NP-040260	29.198-01	033	-	Rel-6	Correct Java Rulebook to conform to Java accepted standards	A	6.0.1	N5-040346	OSA2

CR-Form-v7

CHANGE REQUEST

⌘ **29.198-01** **CR** **029** ⌘ **rev** **-** ⌘ Current version: **5.5.0** ⌘

*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 **X**

Title:	⌘	Correct Java Rulebook to support API design pattern introduced by PAM SCS
Source:	⌘	CN5 AePONA – Eamonn Murray
Work item code:	⌘	OSA2
Date:	⌘	06/02/2004
Category:	⌘	**F**
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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The PAM SCS introduced in Release 5 introduces an API pattern not evident in other SCSs. The SCS may invoke methods on the application in which the application may return a type to the SCS. The Java rulebook requires modification in order to accommodate this API behaviour.
Summary of change:	⌘	Correct the callback rule in the Java rulebook
Consequences if not approved:	⌘	Existing J2SE rulebook cannot be used to support Java realisation of PAM

Clauses affected:	⌘	C 4.9

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

Other comments:	⌘	

********** Start of Change # 1 **********

C 4.9 Callback Rule

The UML callback design pattern for all callbacks that return a type ~~non client-to-service interfaces (Parlay interface numbers 1, 3, 4, 5 and 6 [Fig 1])~~ is represented in Java with the callback design pattern. The UML callback design pattern for all callbacks that return void ~~client-to-service interfaces (Parlay interface number 2 [Fig 1])~~ is represented in Java with the event listener design pattern.

The UML client-to-service interfaces ~~(Parlay interface number 2)~~ with the IpAppXxxx naming convention are represented in Java with the XxxxListener naming convention.

The IpService.setCallback method can be deleted; the interfaces that inherited the setCallback method now have associated addXxxxListener and removeXxxxListener methods. According to the *TpSessionID* mapping, IpService.setCallbackWithSessionID() method is deleted.

The XxxxListener listener interfaces will extend java.util.EventListener. The asynchronous methods of previously named IpAppXxxx, typically labelled yyyyYyyyRes and yyyyYyyyyErr but also yyyyYyyy, will be renamed onYyyyYyyyRes and onYyyyYyyyErr but also onYyyyYyyy. Each method will have an event parameter, typically labelled YyyyYyyyResEvent and YyyyYyyyErrEvent, but also YyyyYyyyEvent. Events will be classes that extend java.util.EventObject and contain a private constructor (with multiple parameters – one per class carried by the event) and a number of public getter methods (one per "gettable" class carried by the event). Events are read-only and serializable.

Example 26:

Listener Interface:

```
package org.csapi.jr.se.cc.mpccs;

MultiPartyCallListener extends java.util.EventListener{

public void onGetInfoResEvent(GetInfoResEvent event)
public void onGetInfoErrEvent(GetInfoErrEvent event)
public void onSuperviseResEvent(SuperviseResEvent event)
public void onSuperviseErrEvent(SuperviseErrEvent event)
public void onCallEndedEvent(CallEndedEvent event)
public void onCreateAndRouteCallLegErrEvent(CreateAndRouteCallLegErrEvent event)
}
```

MuliPartyCall Interface additional methods:

```
public void addMultiPartyCallListener(MultiPartyCallListener multiPartyCallListener);
public void removeMultiPartyCallListener(MultiPartyCallListener multiPartyCallListener);
```

********** End of Change # 1 **********

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CHANGE REQUEST

⌘ 29.198-01 CR 031 ⌘rev - ⌘ Current version: 6.0.1 ⌘

*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 X

Title:	⌘	Correct Java Rulebook to support API design pattern introduced by PAM SCS
Source:	⌘	CN5 AePONA – Eamonn Murray
Work item code:	⌘	OSA2
Date:	⌘	06/02/2004
Category:	⌘	A
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)*
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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:	⌘	The PAM SCS introduced in Release 5 introduces an API pattern not evident in other SCSs. The SCS may invoke methods on the application in which the application may return a type to the SCS. The Java rulebook requires modification in order to accommodate this API behaviour.
Summary of change:	⌘	Correct the callback rule in the Java rulebook
Consequences if not approved:	⌘	Existing J2SE rulebook cannot be used to support Java realisation of PAM

Clauses affected:	⌘	C 4.9

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

Other comments:	⌘	

********** Start of Change # 1 **********

C 4.9 Callback Rule

The UML callback design pattern for all callbacks that return a type ~~non client-to-service interfaces (Parlay interface numbers 1, 3, 4, 5 and 6 [Fig 1])~~ is represented in Java with the callback design pattern. The UML callback design pattern for all callbacks that return void ~~client-to-service interfaces (Parlay interface number 2 [Fig 1])~~ is represented in Java with the event listener design pattern.

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The XxxxListener listener interfaces will extend java.util.EventListener. The asynchronous methods of previously named IpAppXxxx, typically labelled yyyyYyyyRes and yyyyYyyyyErr but also yyyyYyyy, will be renamed onYyyyYyyyRes and onYyyyYyyyErr but also onYyyyYyyy. Each method will have an event parameter, typically labelled YyyyYyyyResEvent and YyyyYyyyErrEvent, but also YyyyYyyyEvent. Events will be classes that extend java.util.EventObject and contain a private constructor (with multiple parameters – one per class carried by the event) and a number of public getter methods (one per "gettable" class carried by the event). Events are read-only and serializable.

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public void onSuperviseErrEvent(SuperviseErrEvent event)
public void onCallEndedEvent(CallEndedEvent event)
public void onCreateAndRouteCallLegErrEvent(CreateAndRouteCallLegErrEvent event)
}
```

MuliPartyCall Interface additional methods:

```
public void addMultiPartyCallListener(MultiPartyCallListener multiPartyCallListener);
public void removeMultiPartyCallListener(MultiPartyCallListener multiPartyCallListener);
```

********** End of Change # 1 **********

Annex E (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Mar 2001	CN_11	NP-010134	047	--	CR 29.198: for moving TS 29.198 from R99 to Rel-4 (N5-010158)	3.2.0	4.0.0
Jun 2001	CN_12	NP-010330	001	--	Corrections to OSA API Rel4 (Correction to IDL namespace to align with that of ETSI and Parlay equivalent APIs: Change org.open_service_access root namespace to org.csapi) (N5-010267)	4.0.0	4.1.0
Sep 2001	CN_13	NP-010464	002	--	Changing references to JAIN	4.1.0	4.2.0
Dec 2001	CN_14	NP-010594	003	--	Replace Out Parameters with Return Types	4.2.0	4.3.0
Dec 2001	CN_14	NP-010594	004	--	Remove the perception that the OSA API only uses CORBA for its transport mechanism	4.2.0	4.3.0
Mar 2002	--	--	--	--	Editorial update (no CR) following Hong Kong CN5#16	4.3.0	4.3.1
Jun 2002	CN_16	NP-020181	005	--	Addition of support for Java API technology realisation	4.3.1	5.0.0
Jun 2002	CN_16	NP-020182	006	--	Addition of support for WSDL realisation	4.3.1	5.0.0
Jun 2002	CN_16	NP-020184	007	--	Adding the full naming convention for exceptions	4.3.1	5.0.0
Jun 2002	CN_16	NP-020184	008	--	Correction of References in OSA specifications	4.3.1	5.0.0
Jun 2002	CN_16	NP-020184	009	--	Addition of text describing the technology realisations of the Parlay/OSA specification	4.3.1	5.0.0
Sep 2002	CN_17	NP-020427	010	--	Addition to ObjectRef description in WSDL Mapping Rules	5.0.0	5.1.0
Sep 2002	CN_17	NP-020427	011	--	Addition of sequence tag to Choice types	5.0.0	5.1.0
Sep 2002	CN_17	NP-020427	012	--	Replace all occurrences of the xsd:anyURI type to xsd:string	5.0.0	5.1.0
Sep 2002	CN_17	NP-020427	013	--	Correction to Namespace mapping in WSDL Mapping Rules	5.0.0	5.1.0
Sep 2002	CN_17	NP-020427	014	--	Correction to xmlns:wsdl Namespace	5.0.0	5.1.0
Sep 2002	CN_17	NP-020427	015	--	Prepend class name to <message> name.	5.0.0	5.1.0
Sep 2002	CN_17	NP-020427	016	--	Correction to void return types in WSDL Mapping Rules	5.0.0	5.1.0
Sep 2002	CN_17	NP-020427	017	--	Add missing CORBA realization rules in Part 1	5.0.0	5.1.0
Sep 2002	CN_17	NP-020427	018	--	Add general introduction to the OSA APIs in Part 1	5.0.0	5.1.0
Sep 2002	CN_17	NP-020395	020	--	Add text to clarify relationship between 3GPP and ETSI/Parlay OSA specifications	5.0.0	5.1.0
Mar 2003	CN_19	--	--	--	Editorial update (no CR) following Bangkok CN5#22 (Introduction, Reference Titles)	5.1.0	5.1.1
Jun 2003	CN_20	NP-030298	022	1	Removal of un-used references	5.1.1	5.2.0
Jun 2003	CN_20	NP-030239	023	--	Correction to Java Realisation Annex	5.1.1	5.2.0
Sep 2003	CN_21	NP-030352	024	--	Correction to Java Realisation Annex	5.2.0	5.3.0
Dec 2003	CN_22	NP-030547	025	--	Add Java Realization rules to solve MPCC name conflicts	5.3.0	5.4.0
Dec 2003	CN_22	NP-030547	026	--	Correction to Java Realisation Rulebook	5.3.0	5.4.0
Dec 2003	CN_22	NP-030553	027	--	Add OSA API support for 3GPP2 networks	5.4.0	6.0.0
Feb 2004	--	--	--	--	Added Java code attachment 2919801J2EE.zip which was delivered late by outside developers. See Annex C; clause C 1.3 Javadoc	6.0.0	6.0.1

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CHANGE REQUEST

⌘ **29.198-01** **CR** **032** ⌘ **rev** **-** ⌘ Current version: **5.5.0** ⌘

*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 **X**

Title:	⌘	Correct Java Rulebook to conform to Java accepted standards
Source:	⌘	CN5 John-Luc Bakker
Work item code:	⌘	OSA2
Date:	⌘	19/05/2004
Category:	⌘	**F**
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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Java code, and a rulebook for developing it, were introduced into the OSA specifications in September 2003. The Java production process is not required to take into account evolution of the Java source. To allow for Java API evolution; Java supports the deprecated tag.
Summary of change:	⌘	This document introduces required use of the deprecated tag when applying the production process. The deprecated tag enforces backward compatibility.
Consequences if not approved:	⌘	Different versions of the Java source can evolve without carry-over of the previous code. This situation will discourage companies from developing implementations which use the Java code part of the OSA specifications.

Clauses affected:	⌘	Annex C.3.6.8

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

Other comments:	⌘	Mirror CR to this CR exist for Rel-6 in N5-040346

C.3.6.8 Deprecation

Java source can evolve between one version and the next. Three causes of evolution are identified:

- Through applying changes to the UML
- Through applying changes to the rulebook
- Through improving the Java production process

In order to maintain backward compatibility, the Java community applies the /** @deprecated */ tag. Java source shall maintain backward compatibility. Changes between subsequent versions shall be indicated through applying the deprecated tag.

Deprecated Java source remains deprecated for as long as UML deprecation history is remained.

Annex D (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Mar 2001	CN_11	NP-010134	047	--	CR 29.198: for moving TS 29.198 from R99 to Rel-4 (N5-010158)	3.2.0	4.0.0
Jun 2001	CN_12	NP-010330	001	--	Corrections to OSA API Rel4 (Correction to IDL namespace to align with that of ETSI and Parlay equivalent APIs: Change org.open_service_access root namespace to org.csapi) (N5-010267)	4.0.0	4.1.0
Sep 2001	CN_13	NP-010464	002	--	Changing references to JAIN	4.1.0	4.2.0
Dec 2001	CN_14	NP-010594	003	--	Replace Out Parameters with Return Types	4.2.0	4.3.0
Dec 2001	CN_14	NP-010594	004	--	Remove the perception that the OSA API only uses CORBA for its transport mechanism	4.2.0	4.3.0
Mar 2002	--	--	--	--	Editorial update (no CR) following Hong Kong CN5#16	4.3.0	4.3.1
Jun 2002	CN_16	NP-020181	005	--	Addition of support for Java API technology realisation	4.3.1	5.0.0
Jun 2002	CN_16	NP-020182	006	--	Addition of support for WSDL realisation	4.3.1	5.0.0
Jun 2002	CN_16	NP-020184	007	--	Adding the full naming convention for exceptions	4.3.1	5.0.0
Jun 2002	CN_16	NP-020184	008	--	Correction of References in OSA specifications	4.3.1	5.0.0
Jun 2002	CN_16	NP-020184	009	--	Addition of text describing the technology realisations of the Parlay/OSA specification	4.3.1	5.0.0
Sep 2002	CN_17	NP-020427	010	--	Addition to ObjectRef description in WSDL Mapping Rules	5.0.0	5.1.0
Sep 2002	CN_17	NP-020427	011	--	Addition of sequence tag to Choice types	5.0.0	5.1.0
Sep 2002	CN_17	NP-020427	012	--	Replace all occurrences of the xsd:anyURI type to xsd:string	5.0.0	5.1.0
Sep 2002	CN_17	NP-020427	013	--	Correction to Namespace mapping in WSDL Mapping Rules	5.0.0	5.1.0
Sep 2002	CN_17	NP-020427	014	--	Correction to xmlns:wsdl Namespace	5.0.0	5.1.0
Sep 2002	CN_17	NP-020427	015	--	Prepend class name to <message> name.	5.0.0	5.1.0
Sep 2002	CN_17	NP-020427	016	--	Correction to void return types in WSDL Mapping Rules	5.0.0	5.1.0
Sep 2002	CN_17	NP-020427	017	--	Add missing CORBA realization rules in Part 1	5.0.0	5.1.0
Sep 2002	CN_17	NP-020427	018	--	Add general introduction to the OSA APIs in Part 1	5.0.0	5.1.0
Sep 2002	CN_17	NP-020395	020	--	Add text to clarify relationship between 3GPP and ETSI/Parlay OSA specifications	5.0.0	5.1.0
Mar 2003	CN_19	--	--	--	Editorial update (no CR) following Bangkok CN5#22 (Introduction, Reference Titles)	5.1.0	5.1.1
Jun 2003	CN_20	NP-030298	022	1	Removal of un-used references	5.1.1	5.2.0
Jun 2003	CN_20	NP-030239	023	--	Correction to Java Realisation Annex	5.1.1	5.2.0
Sep 2003	CN_21	NP-030352	024	--	Correction to Java Realisation Annex	5.2.0	5.3.0
Dec 2003	CN_22	NP-030547	025	--	Add Java Realization rules to solve MPCC name conflicts	5.3.0	5.4.0
Dec 2003	CN_22	NP-030547	026	--	Correction to Java Realisation Rulebook	5.3.0	5.4.0
Apr 2004	CN_23bis	NP-040154	028	--	Correct Java Code to conform with Java Rulebook in TS 29.198-01 and to remove errors	5.4.0	5.5.0

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CHANGE REQUEST

⌘ **29.198-01** **CR** **033** ⌘ **rev** **-** ⌘ Current version: **6.0.1** ⌘

*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 **X**

Title:	⌘	Correct Java Rulebook to conform to Java accepted standards
Source:	⌘	CN5 John-Luc Bakker
Work item code:	⌘	OSA2
Date:	⌘	19/05/2004
Category:	⌘	**A**
Release:	⌘	*REL-6*

Use one of the following categories:
F *(correction)*
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Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Java code, and a rulebook for developing it, were introduced into the OSA specifications in September 2003. The Java production process is not required to take into account evolution of the Java source. To allow for Java API evolution; Java supports the deprecated tag.
Summary of change:	⌘	This document introduces required use of the deprecated tag when applying the production process. The deprecated tag enforces backward compatibility.
Consequences if not approved:	⌘	Different versions of the Java source can evolve without carry-over of the previous code. This situation will discourage companies from developing implementations which use the Java code part of the OSA specifications.

Clauses affected:	⌘	Annex C.3.6.8

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

Other comments:	⌘	This is a Rel-6 mirror to the CR in N5-040345

C.3.6.8 Deprecation

Java source can evolve between one version and the next. Three causes of evolution are identified:

- Through applying changes to the UML
- Through applying changes to the rulebook
- Through improving the Java production process

In order to maintain backward compatibility, the Java community applies the /** @deprecated */ tag. Java source shall maintain backward compatibility. Changes between subsequent versions shall be indicated through applying the deprecated tag.

Deprecated Java source remains deprecated for as long as UML deprecation history is remained.

Annex E (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Mar 2001	CN_11	NP-010134	047	--	CR 29.198: for moving TS 29.198 from R99 to Rel-4 (N5-010158)	3.2.0	4.0.0
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Dec 2001	CN_14	NP-010594	004	--	Remove the perception that the OSA API only uses CORBA for its transport mechanism	4.2.0	4.3.0
Mar 2002	--	--	--	--	Editorial update (no CR) following Hong Kong CN5#16	4.3.0	4.3.1
Jun 2002	CN_16	NP-020181	005	--	Addition of support for Java API technology realisation	4.3.1	5.0.0
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Mar 2003	CN_19	--	--	--	Editorial update (no CR) following Bangkok CN5#22 (Introduction, Reference Titles)	5.1.0	5.1.1
Jun 2003	CN_20	NP-030298	022	1	Removal of un-used references	5.1.1	5.2.0
Jun 2003	CN_20	NP-030239	023	--	Correction to Java Realisation Annex	5.1.1	5.2.0
Sep 2003	CN_21	NP-030352	024	--	Correction to Java Realisation Annex	5.2.0	5.3.0
Dec 2003	CN_22	NP-030547	025	--	Add Java Realization rules to solve MPCC name conflicts	5.3.0	5.4.0
Dec 2003	CN_22	NP-030547	026	--	Correction to Java Realisation Rulebook	5.3.0	5.4.0
Dec 2003	CN_22	NP-030553	027	--	Add OSA API support for 3GPP2 networks	5.4.0	6.0.0
Feb 2004	--	--	--	--	Added Java code attachment 2919801J2EE.zip which was delivered late by outside developers. See Annex C; clause C 1.3 Javadoc	6.0.0	6.0.1