

# ETSI ES 204 915-8 V1.1.1 (2008-05)

---

ETSI Standard

## Open Service Access (OSA); Application Programming Interface (API); Part 8: Data Session Control SCF (Parlay 6)



**iTeh STANDARD PREVIEW**  
(standards.iteh.ai)

Full standard:  
<https://standards.iteh.ai/catalog/standards/sist/527686ba-f398-4d11-b773-2ff68dd3cb4e/etsi-es-204-915-8-v1.1.1-2008-05>



---

**Reference**DES/TISPAN-01032-8-OSA

---

---

**Keywords**API, IDL, OSA, UML

---

**ETSI**

650 Route des Lucioles  
F-06921 Sophia Antipolis Cedex - FRANCE

---

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C  
Association à but non lucratif enregistrée à la  
Sous-Préfecture de Grasse (06) N° 7803/88

---

**Important notice**

---

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at

<http://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, please send your comment to one of the following services:

[http://portal.etsi.org/chaicor/ETSI\\_support.asp](http://portal.etsi.org/chaicor/ETSI_support.asp)

---

**Copyright Notification**

---

No part may be reproduced except as authorized by written permission.  
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2008.

© The Parlay Group 2008.

All rights reserved.

**DECT**<sup>TM</sup>, **PLUGTESTS**<sup>TM</sup>, **UMTS**<sup>TM</sup>, **TIPHON**<sup>TM</sup>, the TIPHON logo and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.

**3GPP**<sup>TM</sup> is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

# Contents

Intellectual Property Rights .....	6
Foreword.....	6
1 Scope .....	7
2 References .....	7
3 Definitions and abbreviations.....	7
3.1 Definitions .....	7
3.2 Abbreviations .....	7
4 Data Session Control SCF.....	8
4.1 General requirements on support of methods.....	9
5 Sequence Diagrams .....	9
5.1 Network Controlled Notifications .....	9
5.2 Enable Data Session Notification.....	10
5.3 Address Translation With Charging.....	11
6 Class Diagrams.....	12
7 The Service Interface Specifications .....	13
7.1 Interface Specification Format .....	13
7.1.1 Interface Class .....	13
7.1.2 Method descriptions.....	13
7.1.3 Parameter descriptions.....	13
7.1.4 State Model.....	13
7.2 Base Interface.....	13
7.2.1 Interface Class IpInterface .....	13
7.3 Service Interfaces .....	14
7.3.1 Overview .....	14
7.4 Generic Service Interface .....	14
7.4.1 Interface Class IpService .....	14
7.4.1.1 Method setCallback().....	14
7.4.1.2 Method setCallbackWithSessionID().....	14
8 Data Session Control Interface Classes.....	15
8.1 Interface Class IpAppDataSession .....	15
8.1.1 Method connectRes().....	16
8.1.2 Method connectErr().....	16
8.1.3 Method superviseDataSessionRes().....	16
8.1.4 Method superviseDataSessionErr() .....	17
8.1.5 Method dataSessionFaultDetected() .....	17
8.2 Interface Class IpAppDataSessionControlManager .....	17
8.2.1 Method dataSessionAborted() .....	18
8.2.2 Method reportNotification().....	18
8.2.3 Method dataSessionNotificationContinued().....	18
8.2.4 Method dataSessionNotificationInterrupted().....	19
8.2.5 Method abortMultipleDataSessions() .....	19
8.3 Interface Class IpDataSession .....	19
8.3.1 Method connectReq() .....	20
8.3.2 Method release() .....	20
8.3.3 Method superviseDataSessionReq() .....	20
8.3.4 Method setDataSessionChargePlan().....	21
8.3.5 Method setAdviceOfCharge().....	21
8.3.6 Method deassignDataSession().....	21
8.3.7 Method continueProcessing() .....	22
8.4 Interface Class IpDataSessionControlManager.....	22
8.4.1 Method destroyNotification() .....	23

8.4.2	Method changeNotification()	23
8.4.3	Method enableNotifications()	23
8.4.4	Method disableNotifications()	24
8.4.5	Method getNotifications()	24
8.4.6	Method createNotifications()	24
9	State Transition Diagrams	25
9.1	State Transition Diagrams for IpDataSession	25
9.1.1	Network Released State	26
9.1.2	Finished State	26
9.1.3	Application Released State	26
9.1.4	Active State	27
9.1.5	Setup State	27
9.1.6	Established State	27
10	Data Session Control Service Properties	27
11	Data Definitions	28
11.1	Data Session Control Data Definitions	28
11.1.1	IpAppDataSession	28
11.1.2	IpAppDataSessionRef	28
11.1.3	IpAppDataSessionControlManager	28
11.1.4	IpAppDataSessionControlManagerRef	28
11.1.5	IpDataSession	29
11.1.6	IpDataSessionRef	29
11.1.7	IpDataSessionControlManager	29
11.1.8	IpDataSessionControlManagerRef	29
11.2	Event Notification data definitions	29
11.2.1	TpDataSessionEventName	29
11.2.2	TpDataSessionMonitorMode	29
11.2.3	TpDataSessionEventCriteria	30
11.2.4	TpDataSessionEventInfo	30
11.2.5	TpDataSessionChargePlan	30
11.2.6	TpDataSessionChargeOrder	31
11.2.7	TpDataSessionChargeOrderCategory	31
11.2.8	TpChargePerVolume	32
11.2.9	TpDataSessionIdentifier	32
11.2.10	TpDataSessionError	32
11.2.11	TpDataSessionAdditionalErrorInfo	32
11.2.12	TpDataSessionErrorType	32
11.2.13	TpDataSessionFault	33
11.2.14	TpDataSessionReleaseCause	33
11.2.15	TpDataSessionSuperviseVolume	33
11.2.16	TpDataSessionSuperviseReport	33
11.2.17	TpDataSessionSuperviseTreatment	34
11.2.18	TpDataSessionReport	34
11.2.19	TpDataSessionAdditionalReportInfo	34
11.2.20	TpDataSessionReportRequest	34
11.2.21	TpDataSessionReportRequestSet	34
11.2.22	TpDataSessionReportType	35
11.2.23	TpDataSessionEventCriteriaResult	35
11.2.24	TpDataSessionEventCriteriaResultSet	35
<b>Annex A (normative):</b>	<b>OMG IDL Description of Data Session Control SCF</b>	<b>36</b>
<b>Annex B (informative):</b>	<b>W3C WSDL Description of Data Session Control SCF</b>	<b>37</b>
<b>Annex C (informative):</b>	<b>Java™ API Description of the Data Session Control SCF</b>	<b>38</b>
<b>Annex D (informative):</b>	<b>Contents of 3GPP OSA R7 Data Session Control</b>	<b>39</b>
<b>Annex E (informative):</b>	<b>Description of Data Session Control for 3GPP2 cdma2000 networks</b>	<b>40</b>
E.1	General Exceptions	40

E.2	Specific Exceptions .....	40
E.2.1	Clause 1: Scope .....	40
E.2.2	Clause 2: References .....	40
E.2.3	Clause 3: Definitions and abbreviations .....	40
E.2.4	Clause 4: Data Session Control SCF .....	40
E.2.5	Clause 5: Sequence Diagrams .....	40
E.2.6	Clause 6: Class Diagrams .....	40
E.2.7	Clause 7: The Service Interface Specifications .....	40
E.2.8	Clause 8: Data Session Control Interface Classes .....	41
E.2.9	Clause 9: State Transition Diagrams .....	41
E.2.10	Clause 10: Data Session Control Service Properties .....	41
E.2.11	Clause 11: Data Definitions.....	41
E.2.12	Annex A (normative): OMG IDL Description of Data Session Control SCF .....	41
E.2.13	Annex B (informative): W3C WSDL Description of Data Session Control SCF .....	41
<b>Annex F (informative):</b>	<b>Record of changes .....</b>	<b>42</b>
F.1	Interfaces .....	42
F.1.1	New .....	42
F.1.2	Deprecated.....	42
F.1.3	Removed.....	42
F.2	Methods .....	42
F.2.1	New .....	42
F.2.2	Deprecated.....	42
F.2.3	Modified.....	43
F.2.4	Removed.....	43
F.3	Data Definitions .....	43
F.3.1	New .....	43
F.3.2	Modified.....	43
F.3.3	Removed.....	43
F.4	Service Properties.....	43
F.4.1	New .....	43
F.4.2	Deprecated.....	44
F.4.3	Modified.....	44
F.4.4	Removed.....	44
F.5	Exceptions .....	44
F.5.1	New .....	44
F.5.2	Modified.....	44
F.5.3	Removed.....	44
F.6	Others .....	44
History	.....	45

---

## Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://webapp.etsi.org/IPR/home.asp>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

---

## Foreword

This ETSI Standard (ES) has been produced by ETSI Technical Committee Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN).

The present document is part 8 of a multi-part deliverable covering Open Service Access (OSA); Application Programming Interface (API), as identified below. The API specification (ES 204 915) is structured in the following parts:

- Part 1: "Overview";
- Part 2: "Common Data Definitions";
- Part 3: "Framework";
- Part 4: "Call Control";
- Part 5: "User Interaction SCF";
- Part 6: "Mobility SCF";
- Part 7: "Terminal Capabilities SCF";
- Part 8: "Data Session Control SCF";**
- Part 9: "Generic Messaging SCF";
- Part 10: "Connectivity Manager SCF";
- Part 11: "Account Management SCF";
- Part 12: "Charging SCF";
- Part 13: "Policy Management SCF";
- Part 14: "Presence and Availability Management SCF";
- Part 15: "Multi-Media Messaging SCF";
- Part 16: "Service Broker SCF".

The present document has been defined jointly between ETSI, The Parlay Group (<http://www.parlay.org>) and the 3GPP, in co-operation with a number of JAIN™ Community (<http://www.java.sun.com/products/jain>) member companies.

**The present document forms part of the Parlay 6.0 set of specifications.**

**The present document is equivalent to 3GPP TS 29.198-8 V7.0.0 (Release 7).**

---

# 1 Scope

The present document is part 8 of the Stage 3 specification for an Application Programming Interface (API) for Open Service Access (OSA).

The OSA specifications define an architecture that enables application developers to make use of network functionality through an open standardised interface, i.e. the OSA APIs.

The present document specifies the Data Session Control Service Capability Feature (SCF) aspects of the interface. All aspects of the Data Session Control SCF are defined here, these being:

- Sequence Diagrams.
- Class Diagrams.
- Interface specification plus detailed method descriptions.
- State Transition diagrams.
- Data Definitions.
- IDL Description of the interfaces.
- WSDL Description of the interfaces.

The process by which this task is accomplished is through the use of object modelling techniques described by the Unified Modelling Language (UML).

---

# 2 References

The references listed in clause 2 of ES 204 915-1 contain provisions which, through reference in this text, constitute provisions of the present document.

ETSI ES 204 915-1: "Open Service Access (OSA); Application Programming Interface (API); Part 1: Overview (Parlay 6)".

---

# 3 Definitions and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in ES 204 915-1 apply.

## 3.2 Abbreviations

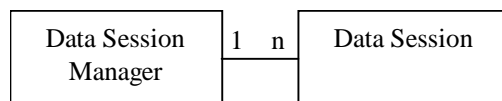
For the purposes of the present document, the abbreviations given in ES 204 915-1 apply.

## 4 Data Session Control SCF

The Data Session control network service capability feature consists of two interfaces:

- 1) Data Session manager, containing management functions for data session related issues;
- 2) Data Session, containing methods to control a session.

A session can be controlled by one Data Session Manager only. Data Session Manager can control several sessions.



NOTE: The term "data session" is used in a broad sense to describe a data connection/session. For example, it comprises a PDP context in GPRS.

**Figure 1: Data Session control interfaces usage relationship**

The Data Session Control service capability features are described in terms of the methods in the Data Session Control interfaces. Table 1 gives an overview of the Data Session Control methods and to which interfaces these methods belong.

**Table 1: Overview of Data Session Control interfaces and their methods**

Data Session Manager	Data Session
createNotifications	connectReq
destroyNotification	connectRes
dataSessionNotificationInterrupted	connectErr
dataSessionNotificationContinued	release
reportNotification	superviseDataSessionReq
dataSessionAborted	superviseDataSessionRes
getNotifications	superviseDataSessionErr
changeNotification	dataSessionFaultDetected
enableNotifications	setAdviceofCharge
disableNotifications	setDataSessionChargePlan

The session manager interface provides the management functions to the data session service capability features. The application programmer can use this interface to enable or disable data session-related event notifications.

The following clauses describe each aspect of the Data Session Control Service Capability Feature (SCF).

The order is as follows:

- The Sequence diagrams give the reader a practical idea of how each of the SCF is implemented.
- The Class relationships clause shows how each of the interfaces applicable to the SCF, relate to one another.
- The Interface specification clause describes in detail each of the interfaces shown within the Class diagram part.
- The State Transition Diagrams (STD) show the transition between states in the SCF. The states and transitions are well-defined; either methods specified in the Interface specification or events occurring in the underlying networks cause state transitions.
- The Data Definitions clause shows a detailed expansion of each of the data types associated with the methods within the classes. Note that some data types are used in other methods and classes and are therefore defined within the Common Data types part ES 204 915-2.



## 4.1 General requirements on support of methods

An implementation of this API which supports or implements a method described in the present document, shall support or implement the functionality described for that method, for at least one valid set of values for the parameters of that method.

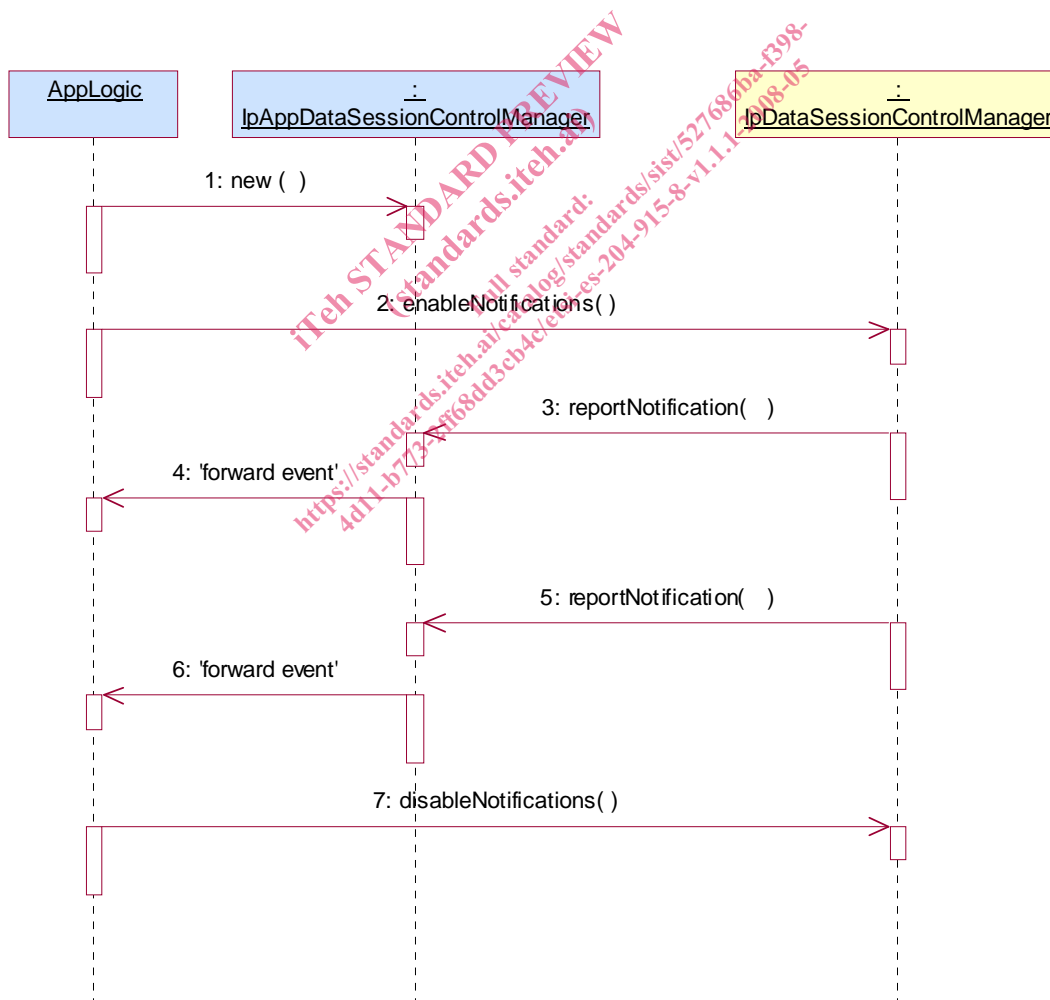
Where a method is not supported by an implementation of a Service interface, the exception `P_METHOD_NOT_SUPPORTED` shall be returned to any call of that method.

Where a method is not supported by an implementation of an Application interface, a call to that method shall be possible, and no exception shall be returned.

## 5 Sequence Diagrams

### 5.1 Network Controlled Notifications

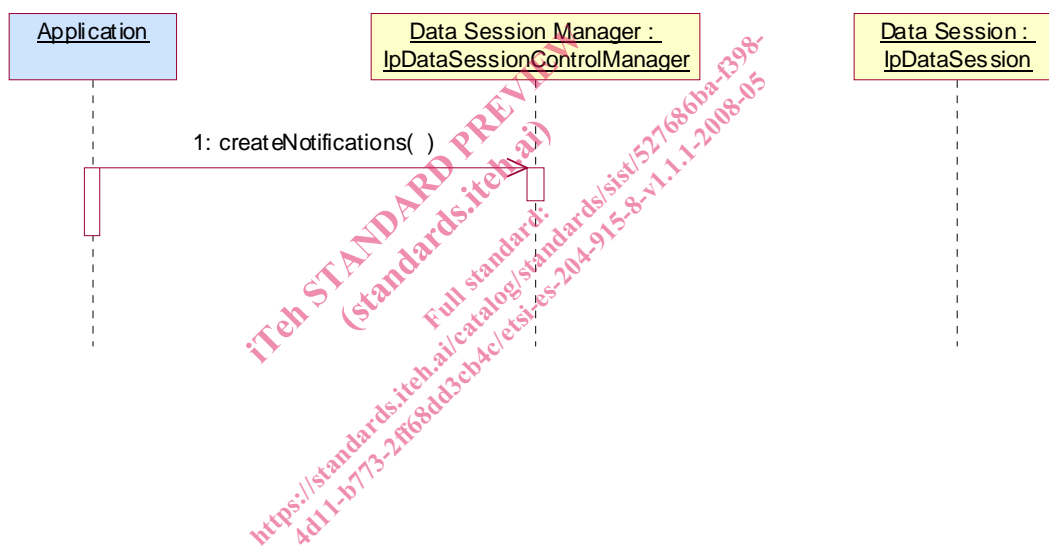
The following sequence diagram shows how an application can receive notifications that have not been created by the application, but are provisioned from within the network.



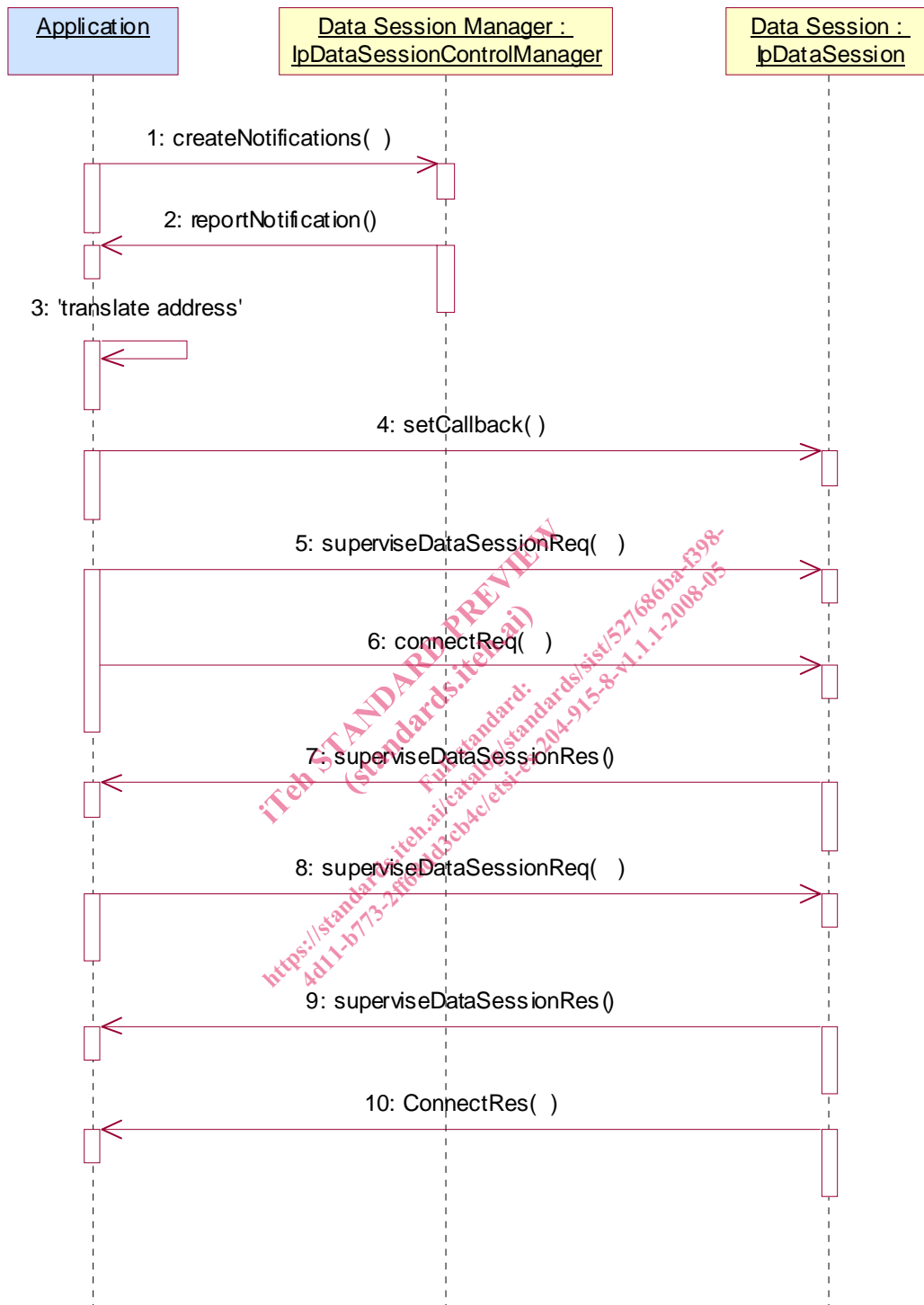
- 1: The application is started. The application creates a new `IpAppDataSessionControlManager` to handle callbacks.

- 2: The enableNotifications method is invoked on the IpDataSessionControlManager interface to indicate that the application is ready to receive notifications that are created in the network. For illustrative purposes we assume notifications of type "B" are created in the network.
- 3: When a network created trigger occurs the application is notified on the callback interface.
- 4: The event is forwarded to the application.
- 5: When a network created trigger occurs the application is notified on the callback interface.
- 6: The event is forwarded to the application.
- 7: When the application does not want to receive notifications created in the network anymore, it invokes disableNotifications on the IpDataSessionControlManager interface. From now on the gateway will not send any notifications to the application that are created in the network. The application will still receive notifications that it has created itself until the application removes them.

## 5.2 Enable Data Session Notification



## 5.3 Address Translation With Charging



## 6 Class Diagrams

Data Session Control Class Diagram:

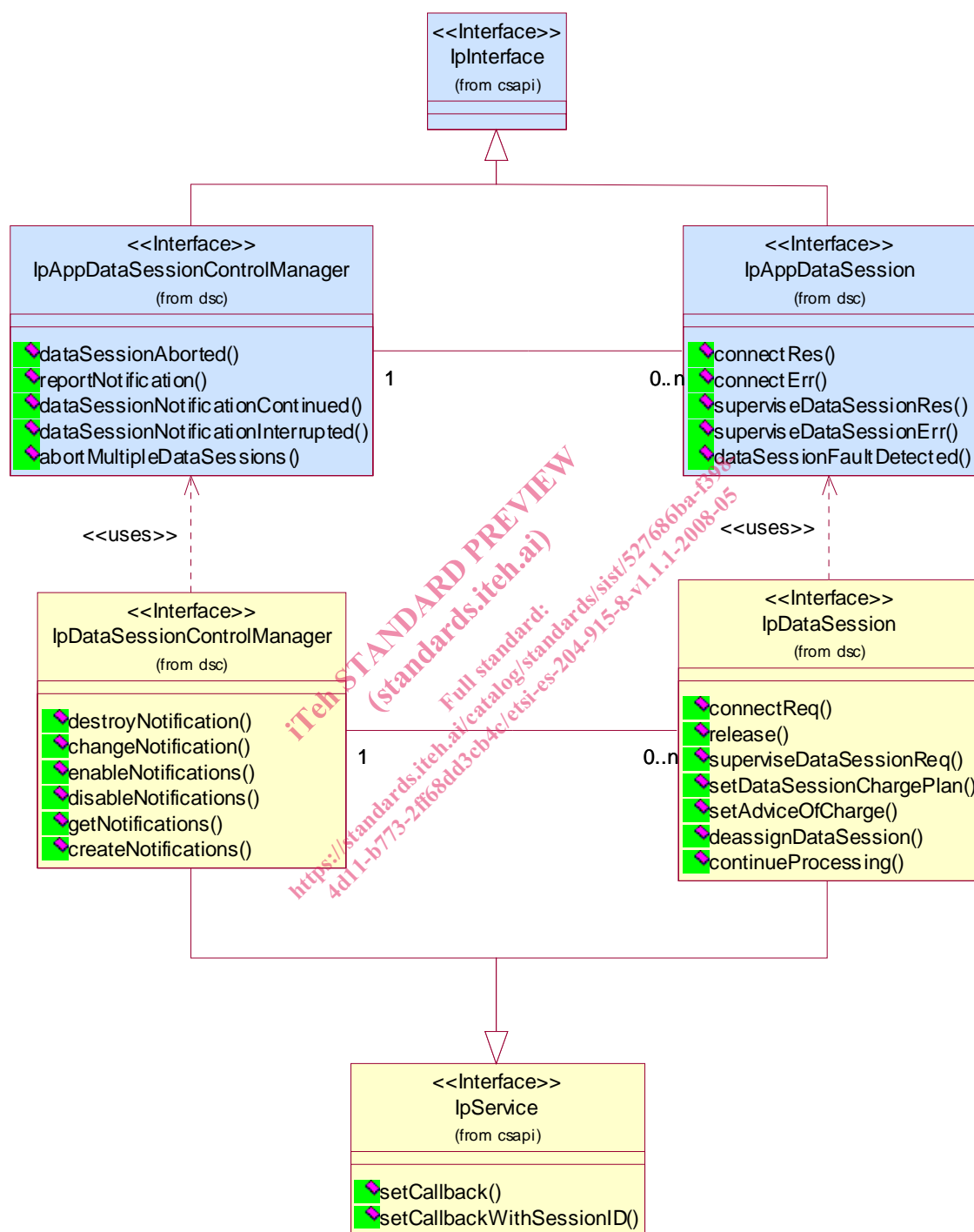


Figure 2: Package Overview