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Partie 26-10: Protocole de contrôle de dispositif de téléphonie — Niveau 2 — Service de gestion des appels

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ISO/IEC 29341-26-10 was prepared by UPnP Forum and adopted, under the PAS procedure, by joint technical committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

The list of all currently available parts of ISO/IEC 29341 series, under the general title *Information technology — UPnP Device Architecture*, can be found on the ISO web site.

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Original UPnP Document

Reference may be made in this document to original UPnP documents. These references are retained in order to maintain consistency between the specifications as published by ISO/IEC and by UPnP Implementers Corporation and later by UPnP Forum. The following table indicates the original UPnP document titles and the corresponding part of ISO/IEC 29341:

UPnP Document Title	ISO/IEC 29341 Part
UPnP Device Architecture 1.0	ISO/IEC 29341-1:2008
UPnP Device Architecture Version 1.0	ISO/IEC 29341-1:2011
UPnP Device Architecture 1.1	ISO/IEC 29341-1-1:2011
UPnP Device Architecture 2.0	ISO/IEC 29341-1-2
UPnP Basic:1 Device	ISO/IEC 29341-2
UPnP AV Architecture:1	ISO/IEC 29341-3-1:2008
UPnP AV Architecture:1	ISO/IEC 29341-3-1:2011
UPnP AVTransport:1 Service	ISO/IEC 29341-3-10
UPnP ConnectionManager:1 Service	ISO/IEC 29341-3-11
UPnP ContentDirectory:1 Service	ISO/IEC 29341-3-12
UPnP RenderingControl:1 Service	ISO/IEC 29341-3-13
UPnP MediaRenderer:1 Device	ISO/IEC 29341-3-2
UPnP MediaRenderer:2 Device	ISO/IEC 29341-3-2:2011
UPnP MediaServer:1 Device	ISO/IEC 29341-3-3
UPnP AVTransport:2 Service	ISO/IEC 29341-4-10:2008
UPnP AVTransport:2 Service	ISO/IEC 29341-4-10:2011
UPnP ConnectionManager:2 Service	ISO/IEC 29341-4-11:2008
UPnP ConnectionManager:2 Service	ISO/IEC 29341-4-11:2011
UPnP ContentDirectory:2 Service	ISO/IEC 29341-4-12
UPnP RenderingControl:2 Service	ISO/IEC 29341-4-13:2008
UPnP RenderingControl:2 Service	ISO/IEC 29341-4-13:2011
UPnP ScheduledRecording:1	ISO/IEC 29341-4-14
UPnP ScheduledRecording:2	ISO/IEC 29341-4-14:2011
UPnP MediaRenderer:2 Device	ISO/IEC 29341-4-2
UPnP MediaServer:2 Device	ISO/IEC 29341-4-3
UPnP AV Datastructure Template:1	ISO/IEC 29341-4-4:2008
UPnP AV Datastructure Template:1	ISO/IEC 29341-4-4:2011
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UPnP DigitalSecurityCameraMotionImage:1 Service	ISO/IEC 29341-5-10
UPnP DigitalSecurityCameraSettings:1 Service	ISO/IEC 29341-5-11
UPnP DigitalSecurityCameraStillImage:1 Service	ISO/IEC 29341-5-12
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UPnP ControlValve:1 Service	ISO/IEC 29341-6-10
UPnP HVAC_FanOperatingMode:1 Service	ISO/IEC 29341-6-11
UPnP FanSpeed:1 Service	ISO/IEC 29341-6-12
UPnP HouseStatus:1 Service	ISO/IEC 29341-6-13
UPnP HVAC_SetpointSchedule:1 Service	ISO/IEC 29341-6-14
UPnP TemperatureSensor:1 Service	ISO/IEC 29341-6-15
UPnP TemperatureSetpoint:1 Service	ISO/IEC 29341-6-16
UPnP HVAC_UserOperatingMode:1 Service	ISO/IEC 29341-6-17

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UPnP SwitchPower:1 Service	ISO/IEC 29341-7-11
UPnP DimmableLight:1 Device	ISO/IEC 29341-7-2
UPnP InternetGatewayDevice:1 Device	ISO/IEC 29341-8-1
UPnP LANHostConfigManagement:1 Service	ISO/IEC 29341-8-10
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UPnP DeviceSecurity:1 Service	ISO/IEC 29341-13-10
UPnP SecurityConsole:1 Service	ISO/IEC 29341-13-11
UPnP ContentDirectory:3 Service	ISO/IEC 29341-14-12:2011
UPnP MediaServer:3 Device	ISO/IEC 29341-14-3:2011
UPnP ContentSync:1	ISO/IEC 29341-15-10:2011

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UPnP Low Power Architecture:1	ISO/IEC 29341-16-1:2011
UPnP LowPowerProxy:1 Service	ISO/IEC 29341-16-10:2011
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UPnP TwoWayMotionMotor:1 Service	ISO/IEC 29341-19-10:2011
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UPnP ConnectionManager:3 Service	ISO/IEC 29341-20-11
UPnP ContentDirectory:4 Device	ISO/IEC 29341-20-12
UPnP RenderingControl:3 Service	ISO/IEC 29341-20-13
UPnP ScheduledRecording:2 Service	ISO/IEC 29341-20-14
UPnP MediaRenderer:3 Service	ISO/IEC 29341-20-2
UPnP MediaServer:4 Device	ISO/IEC 29341-20-3
UPnP AV Datastructure Template:1	ISO/IEC 29341-20-4
UPnP InternetGatewayDevice:2 Device	ISO/IEC 29341-24-1
UPnP WANIPConnection:2 Service	ISO/IEC 29341-24-10
UPnP WANIPv6FirewallControl:1 Service	ISO/IEC 29341-24-11
UPnP WANConnectionDevice:2 Service	ISO/IEC 29341-24-2
UPnP WANDevice:2 Device	ISO/IEC 29341-24-3
UPnP Telephony Architecture:2	ISO/IEC 29341-26-1
UPnP CallManagement:2 Service	ISO/IEC 29341-26-10
UPnP MediaManagement:2 Service	ISO/IEC 29341-26-11
UPnP Messaging:2 Service	ISO/IEC 29341-26-12
UPnP PhoneManagement:2 Service	ISO/IEC 29341-26-13
UPnP AddressBook:1 Service	ISO/IEC 29341-26-14
UPnP Calendar:1 Service	ISO/IEC 29341-26-15
UPnP Presense:1 Service	ISO/IEC 29341-26-16
UPnP TelephonyClient:2 Device	ISO/IEC 29341-26-2
UPnP TelephonyServer:2 Device	ISO/IEC 29341-26-3
UPnP Friendly Info Update:1 Service	ISO/IEC 29341-27-1
UPnP MultiScreen MultiScreen Architecture:1	ISO/IEC 29341-28-1
UPnP MultiScreen Application Management:1 Service	ISO/IEC 29341-28-10
UPnP MultiScreen Screen:1 Device	ISO/IEC 29341-28-2

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UPnP MultiScreen Application Management:2 Service	ISO/IEC 29341-29-10
UPnP MultiScreen Screen:2 Device	ISO/IEC 29341-29-2
UPnP IoT Management and Control Architecture Overview:1	ISO/IEC 29341-30-1
UPnP DataStore:1 Service	ISO/IEC 29341-30-10
UPnP IoT Management and Control Data Model:1 Service	ISO/IEC 29341-30-11
UPnP IoT Management and Control Transport Generic:1 Service	ISO/IEC 29341-30-12
UPnP IoT Management and Control:1 Device	ISO/IEC 29341-30-2
UPnP Energy Management:1 Service	ISO/IEC 29341-31-1

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1 Scope

This service definition is compliant with [1]. It defines a service type referred to herein as the *CallManagement* service.

The *CallManagement* service is a UPnP service that allows control points to use the telephony features(e.g., voice call, video call, and data transfer etc.) provided by a Telephony Server (TS).

The *CallManagement* service enables the following features to a Telephony Control Point (TelCP):

- start an outgoing call
- accept an incoming call
- modify the capability of an existing call (e.g., changing from a voice call to a video call)
- terminate a call
- preview call logs
- register a call back and check the availability of the registered call back

To realize these features, the *CallManagement* service manages the connectivity of calls and media streams.

2 Normative References

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

[1] – UPnP Device Architecture, version 1.0, UPnP Forum, October 15, 2008. Available at: http://www.upnp.org/specs/arch/UPnP-arch-DeviceArchitecture-v1.0-20081015.pdf. Latest version available at: http://www.upnp.org/specs/arch/UPnP-arch-DeviceArchitecture-v1.0.pdf.

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[10] – *MediaManagement:2*, UPnP Forum, December 10, 2012. Available at: http://www.upnp.org/specs/ phone/UPnP-phone-MediaManagement-v2-Service-20121210.pdf. Latest version available at: http://www.upnp.org/specs/phone/UPnP-phone-MediaManagement-Service.pdf.

[11] – IETF RFC 2046, Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types, N. Freed, Innosft, N. Borenstein, First Virtual, November 1996. Available at: http://www.ietf.org/rfc/rfc2046.txt.

[12] – *ConnectionManager:1*, UPnP Forum, June 25, 2002. Available at: http://www.upnp.org/specs/av/UPnP-av-ConnectionManager-v1-Service-20020625.pdf. Latest version available at: http://www.upnp.org/specs/av/UPnP-av-ConnectionManager-Service.pdf.

3 Terms, definitions, symbols and abbreviated terms

For the purposes of this document, the terms and definitions given in [1] and the following apply.

3.1 Provisioning terms

3.1.1
conditionally allowed
CA
The definition or behavior depends on a condition. If the specified condition is met, then the definition or behavior is allowed, otherwise it is not allowed.

3.1.2
conditionally required
CR
The definition or behavior depends on a condition. If the specified condition is met, then the definition or behavior is required, otherwise it is not allowed.

3.1.3
not allowed
The definition or behavior is prohibited by this specification. Opposite of required.

3.2 Symbols

3.2.1
::
signifies a hierarchical parent-child (parent::child) relationship between the two objects separated by the double colon. This delimiter is used in multiple contexts, for example: Service::Action(), Action()::Argument, parentProperty::childProperty.

3.3 Terms

3.3.1
Call
connection between parties that are communicating with each other. The connection can be for voice, video, or data transmission.

3.3.2
CallID
unique identifier of a Call.

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3.3.3
Call Status
indicator of the state(e.g., Calling, Ringing, and Talking etc.) of a Call at a particular point in time.

3.3.4
Media Stream
a flow of media (e.g., audio, video, and data etc.) which is sent and/or received between two parties involved in a Call.

3.3.5
Media Session
series of interactions for flow of media among the parties involved in the Call.

3.3.6
Media Session ID
unique identifier of the Media Session for a Call.

Figure 1 shows the relationship among Media Streams, Media Session and Media Session ID. A Media Session can include multiple Media Streams.

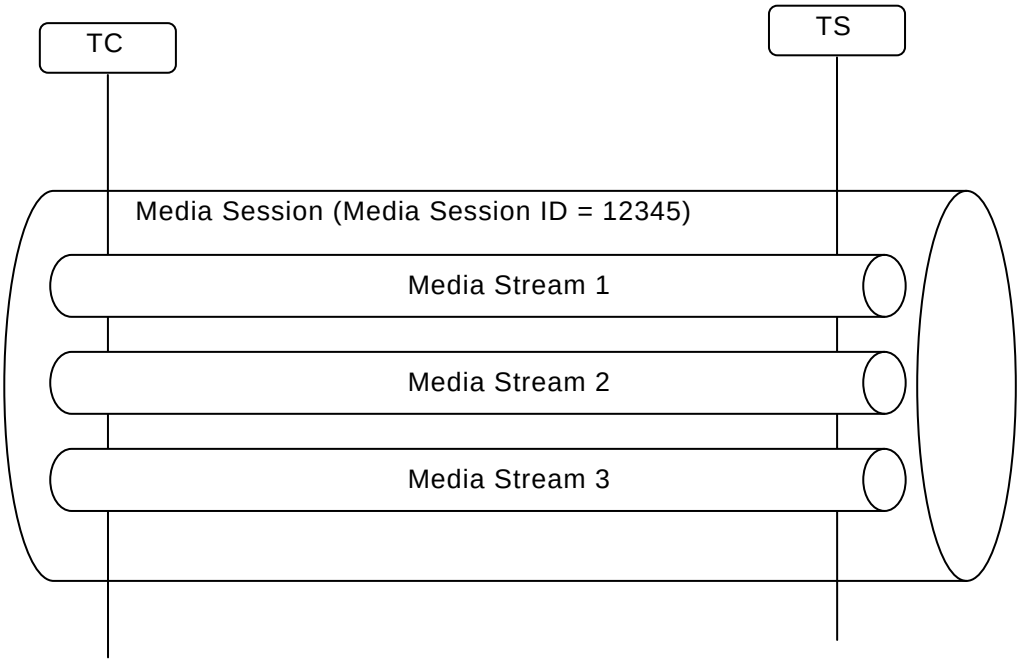


Figure 1 — Relationship among Media Stream, Media Session and Media Session ID

3.3.7
Media Capability
Media Stream's attributes which are negotiated before sending/receiving a Media Stream in a Media Session. Media Stream's attributes include a codec type, a codec parameter, IP address, and a port number etc. [7] defines one of the methods to describe Media Capability. And the Media Capabilities represent attributes for a set of Media Streams.

3.3.8
Caller
terminal which initiates a Call.

3.3.9
Callee
terminal which receives a Call.

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3.3.10
Remote Party
Callee, relative to the Caller

Caller, relative to the Callee

3.3.11
Peer
parcipant in a Call.

3.3.12
Monopolize
to obtain the exclusive rights to control a specific Call managed by the *CallManagement* service. When a Call is successfully Monopolized by an identity, the *CallManagement* service only allows this specific identity to manage the Call, until the Call is terminated or this identity hands over the exclusive rights to control the Call to another identity.

3.3.13
Monopolizer
identity (a TelCP or a user) that currently has the exclusive rights to control a specific Call managed by the *CallManagement* service.

3.3.14
Call Monopolization
mechanisms that allow an identity (a TelCP or a user) to Monopolize a Call managed by the *CallManagement* service. See 5.2.2 in detail.

3.3.15
Monopolization Mode Call
Call which is Monopolized.

3.3.16
Non-Monopolization Mode Call
Call which is not Monopolized. Therefore, any TelCP can control a Non-Monopolization Mode Call.

3.3.17
TelCPName
unique name for the TelCP.

3.3.18
Secret Key
unique value assigned to a TelCP. The *CallManagement* service uses the Secret Key to verify whether an authorized TelCP is invoking the action.

3.3.19
Push Information
feature that enables a TS to event information received from a service provider on WAN side. This feature also allows to event some status changes that occurs within a TS.

3.3.20
Early Media
media (e.g., audio and video) that is sent and/or received before a Call is accepted or rejected by a Callee. Typical examples of Early Media generated by a Callee are ringing tone and announcements (e.g., queuing status). Early Media generated by a Caller typically consists of voice commands or dual tone multi-frequency (DTMF) tones to drive interactive voice response (IVR) systems.

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3.3.21
Content Sharing
feature that enables a TS or TC to share content (e.g., audio, video or image etc.) to the Remote Party using the Media Session during a Call. See 5.2.6 for more detail.

3.3.22
Parallel Call
secondary Call established between the devices which are selected by the Peers already participating in a regular telephony Call.

3.3.23
Parallel Call Setup
process to exchange identities of terminals which will establish Parallel Call.

3.4 Abbreviated terms

3.4.1
GUI
Graphical User Interface

3.4.2
ID
Identifier

3.4.3
SDP
Session Description Protocol

3.4.4
TC
Telephony Client

3.4.5
TelCP
Telephony Control Point

3.4.6
TS
Telephony Server

4 Notations and conventions

4.1 Text conventions

- Strings that are to be taken literally are enclosed in “double quotes”.
- Words that are emphasized are printed in *italic*.
- Keywords that are defined by the UPnP Working Committee are printed using the *forum* character style.
- Keywords that are defined in [1] are printed using the **arch** character style.

4.2 Data Types

This specification uses data type definitions from two different sources. Data types from [1] are used to define state variable and action argument data types. The XML Schema data types [9] are used to define property data types.

For UPnP Device Architecture defined Boolean data types, it is strongly recommended to use the value “**0**” for false, and the value “**1**” for true. The values “**true**”, “**yes**”, “**false**”, or “**no**” may also be used but are not recommended. The values “**yes**” and “**no**” are deprecated and shall not be sent out by devices but shall be accepted on input.

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