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Information technology – UPnP device architecture –
Part 18-2: Remote Access Device Control Protocol – Remote Access Client
Service

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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland
Email: inmail@iec.ch
Web: www.iec.ch

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Email: csc@iec.ch
Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00



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INFORMATION TECHNOLOGY – UPNP DEVICE ARCHITECTURE –

Part 18-2: Remote Access Device Control Protocol – Remote Access Client Service

FOREWORD

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International Standard ISO/IEC 29341-18-2 was prepared by UPnP Forum Steering committee¹, was adopted, under the fast track procedure, by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

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

This International Standard has been approved by vote of the member bodies, and the voting results may be obtained from the address given on the second title page.

¹ UPnP Forum Steering committee, UPnP Forum, 3855 SW 153rd Drive, Beaverton, Oregon 97006 USA. See also "Introduction".

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1 Overview and Scope

This device definition is compliant with the UPnP Device Architecture version 1.0. It defines a device type referred to herein as *RAClient* device.

1.1 Introduction

The *RAClient* device is a UPnP device that allows control points to configure Remote Access Clients. This device provides control points with the following functionality:

- Enumerate the Remote Access Transport mechanisms supported by the Remote Access Client (RAC).
- Enumerate the Credentials Delivery mechanisms supported by the RAC.
- Configure active Remote Access Transport profiles.

This device does not address:

- Configure filters for allowing which local devices are visible in remote networks
- Configure filters for allowing which remote devices are visible in the local network
- Control level and content level Access Control for local devices which are exposed to remote networks

1.2 Notation

- In this document, features are described as Required, Recommended, or Optional as follows:

The key words “MUST,” “MUST NOT,” “REQUIRED,” “SHALL,” “SHALL NOT,” “SHOULD,” “SHOULD NOT,” “RECOMMENDED,” “MAY,” and “OPTIONAL” in this specification are to be interpreted as described in [RFC 2119].

In addition, the following keywords are used in this specification:

PROHIBITED – The definition or behavior is an absolute prohibition of this specification. Opposite of **REQUIRED**.

CONDITIONALLY REQUIRED – The definition or behavior depends on a condition. If the specified condition is met, then the definition or behavior is **REQUIRED**, otherwise it is **PROHIBITED**.

CONDITIONALLY OPTIONAL – The definition or behavior depends on a condition. If the specified condition is met, then the definition or behavior is **OPTIONAL**, otherwise it is **PROHIBITED**.

These keywords are thus capitalized when used to unambiguously specify requirements over protocol and application features and behavior that affect the interoperability and security of implementations. When these words are not capitalized, they are meant in their natural-language sense.

- Strings that are to be taken literally are enclosed in “double quotes”.
- Placeholder values that need to be replaced are enclosed in the curly brackets “{” and “}”.
- 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 by the UPnP Device Architecture are printed using the *arch* character style.
- A double colon delimiter, “::”, 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.

1.3 Vendor-defined Extensions

Whenever vendors create additional vendor-defined state variables, actions or properties, their assigned names and XML representation MUST follow the naming conventions and XML rules as specified in [DEVICE], Clause 2.5, “Description: Non-standard vendor extensions”.

1.4 References

1.4.1 Normative References

This clause lists the normative references used in this specification and includes the tag inside square brackets that is used for each such reference:

[DEVICE] – UPnP Device Architecture, version 1.0.

Available at: <http://www.upnp.org/specs/arch/UPnP-arch-DeviceArchitecture-v1.0-20080424.pdf>.

Latest version available at: <http://www.upnp.org/specs/arch/UPnP-arch-DeviceArchitecture-v1.0.pdf>.

[RATAConfig] – RATAConfig:1, UPnP Forum,

Available at: <http://www.upnp.org/specs/ra/UPnP-ra-RATAConfig-v1-Service-20090930.pdf>.

Latest version available at: <http://www.upnp.org/specs/ra/UPnP-ra-RATAConfig-v1-Service.pdf>.

[RFC 2119] – S. Bradner, RFC 2119: Key words for use in RFCs to Indicate Requirement Levels, 1997.

Available at: <http://www.faqs.org/rfcs/rfc2119.html>.

[XML] – “Extensible Markup Language (XML) 1.0 (Third Edition)”, François Yergeau, Tim Bray, Jean Paoli, C. M. Sperberg-McQueen, Eve Maler, eds., W3C Recommendation, February 4, 2004.

Available at: <http://www.w3.org/TR/2004/REC-xml-20040204/>.

1.4.2 Informative References

This clause lists the informative references that are provided as information in helping understand this specification:

[RAARCH] – RAArchitecture:1, UPnP Forum,

Available at: <http://www.upnp.org/specs/ra/UPnP-ra-RAArchitecture-v1-20090930.pdf>.

Latest version available at: <http://www.upnp.org/specs/ra/UPnP-ra-RAArchitecture-v1.pdf>.

2 Device Definitions

2.1 Device Type

The following service type identifies a device that is compliant with this specification:

urn:schemas-upnp-org:device:RAClient:1

[RAClient](http://schemas-upnp-org:device:RAClient:1) device is used herein to refer to this device type.

2.2 Terms and Abbreviations

2.2.1 Abbreviations

Table 2-1 — Abbreviations

Definition	Description
RA	Remote Access
RAC	Remote Access Client
RADA	Remote Access Discovery Agent
RAS	Remote Access Server
RATA	Remote Access Transport Agent

2.2.2 Terms

2.2.2.1 Management Console

The collection of Control Points used to configure and monitor Remote Access related services.

2.2.2.2 Remote Access Client

The Remote Access Client (RAC) is the peer physical device that is not part of the physical home network. The RAC is exposing only the UPnP devices and services that are embedded in the physical device.

2.2.2.3 Remote Access Network Interface

The RA network interface is the network interface that is created by the Remote Access Transport Agent. The settings for this interface are contained in a RATA profile.

2.2.2.4 Remote Access Server

The Remote Access Server (RAS) is the peer physical device located in the home network. RAS is exposing to the RAC the UPnP devices and services available in the physical home network as well as any embedded in the physical RAS device.

2.2.2.5 Remote Access Transport profile

A RATA profile is a configured RATA connection ready to be used by either accepting connections on the RAS side or to initiate connections on the RAC side.

2.2.2.6 Remote device

A remote device is a UPnP device that is not attached to the physical network where the RADA is located.

2.3 **RAClient** Device Architecture

This device is hosted by the Remote Access Client and is active on the LAN network interface. The device embeds the RATAConfig service that is used to configure the RA Transport Agent associated with the RA network interface.