

ONVIF™ Profile Policy

Version 2.0

September 2014

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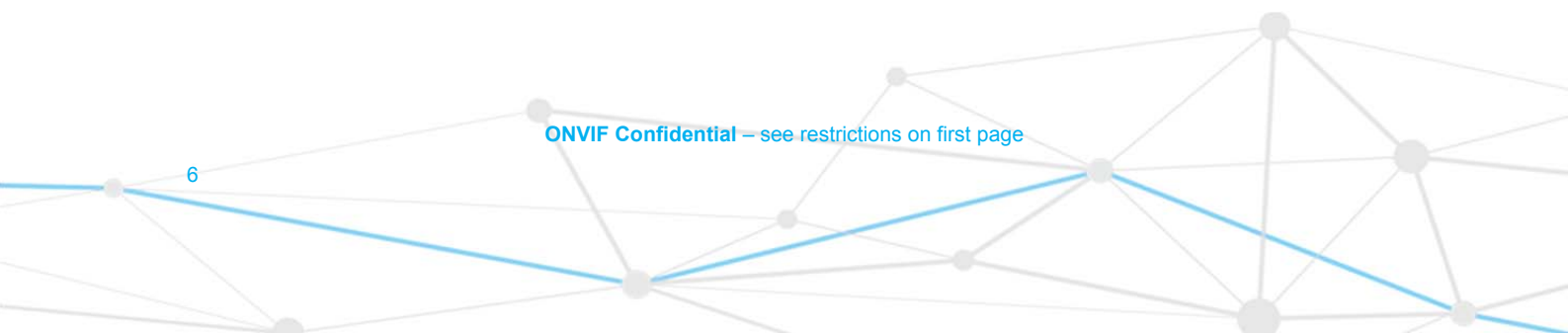
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1 Scope

This document describes the concept and principles of conformance Profiles as applied in ONVIF and provides the set of policies governing the creation, modification, deprecation and conformance for ONVIF Profiles.

1.1 IMPORTANT

This ONVIF Profile Policy v2.0 replaces the previously released version 1.0. As of September 30, 2014 ONVIF Members shall and Committees shall follow the processes described in this document and shall fulfil all the conditions listed in this document.

1.2 Process Overview

Fig. 1 provides an overview process flow for the creation, modification and deprecation of an ONVIF Profile.

2 Normative References

[ONVIF Conformance]	ONVIF Conformance Process Specification
[ISO/IEC Directives Part 2]	ISO/IEC Directives, Part 2: Rules for the structure and drafting of International Standards, Annex H: Verbal forms for the expression of provisions

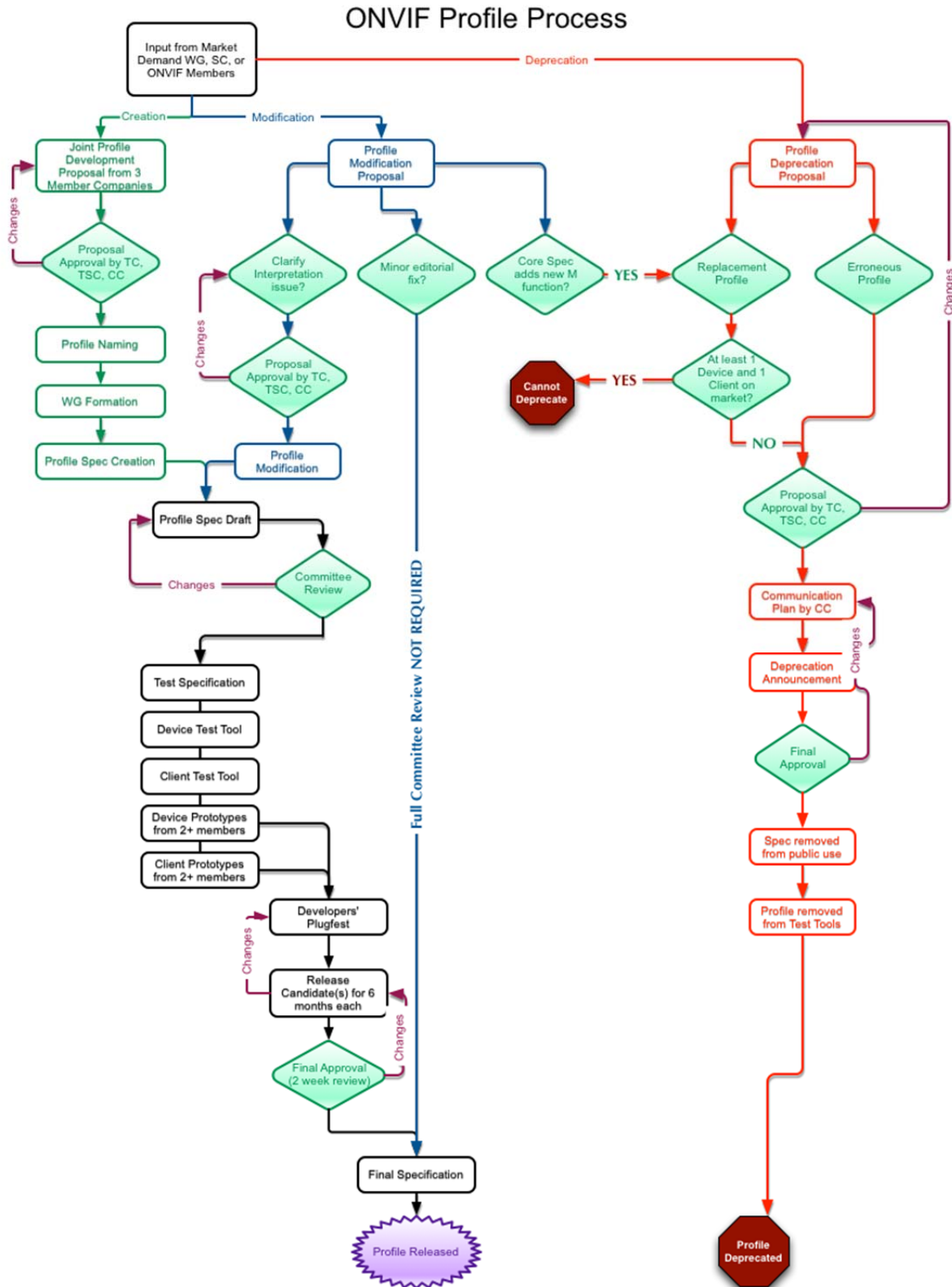


Fig. 1: Process overview for the creation, modification and deprecation of an ONVIF Profile.

3 Terms and Definitions

This section provides details about the conventions, definitions and abbreviations that are being used in ONVIF Profile Policy document.

3.1 Conventions

The key words “shall”, “shall not”, “should”, “should not”, “may”, “need not”, “can”, “cannot” in this specification are to be interpreted as described in [ISO/IEC Directives Part 2].

3.2 Definitions

capability command	command which allows a Client to ask for the services provided by a Device
function	Web Service call implemented to trigger some specific task or process on a product
feature	specified distinguishing characteristic or functionality of a product
functional freeze period	period starting with the publication of the Release Candidate version of an ONVIF Profile specification
ONVIF Client	networked appliance or software program that uses ONVIF Web Services
ONVIF Device	networked appliance or software program that exposes one or multiple ONVIF Web Services
ONVIF Product	ONVIF Device and / or ONVIF Client

3.3 Abbreviations

C	conditional (if supported)
CC	ONVIF Communication Committee
M	mandatory
O	optional
RC	Release Candidate
SC	ONVIF Steering Committee
TC	ONVIF Technical Committee
TSC	ONVIF Technical Services Committee

4 Profile Concept

This section provides details about what defines a Profile, how it is used and what it contains.

4.1 Objectives

The primary objective of a Profile is to communicate the required aspects of the ONVIF technical specifications to ensure interoperability of supported features between ONVIF Devices and Clients.

The ONVIF Profile abstracts the underlying functionality and Web Services to make it easier for users and installers to understand which functions that ONVIF conformant products will interoperate.

An ONVIF Profile is an invariant subset of technical and test specifications, such that the requirements and functionalities of a Profile will never change over time. A new release of an ONVIF Network Interface Specification Set will not impact the existing Profiles; hence the latest ONVIF Network Interface Specification Set release shall always be used for new implementations. This means that an ONVIF Device with a specific Profile can interoperate with an ONVIF Client that supports the same Profile. Both systems will successfully communicate together regardless of the specification version used to implement these products.

4.2 Description

A Profile defines a specific and unambiguous set of features that:

- an ONVIF Device shall implement and support, and
- an ONVIF Client shall use to support that particular functional interoperability with an ONVIF Device that claims conformance to that Profile.

A Profile shall specify the set of required features. The technical details of a Profile are described in a Profile Specification document targeted at developers of ONVIF Clients and Devices. Once defined and publicly released, the Profile shall never change regardless of the ONVIF Network Interface Specification Set version. However, the definition of these features may be further clarified to solve interpretation issues. New features shall not be added to an existing Profile.

For ONVIF Devices and ONVIF Clients conformance to at least one Profile shall be declared.

4.3 Requirement Levels

For each feature a Profile specification shall define the requirement level for an ONVIF Device and for an ONVIF Client that claim conformance to the respective Profile. The Profile specification shall also contain a function list that states the functions requirement level for Device and Client that implement that feature.

The requirement levels for features are:

Mandatory = Feature that shall be implemented by an ONVIF Device or ONVIF Client.

Conditional = Feature that shall be implemented by an ONVIF Device or ONVIF Client if it support that functionality in any way, including any proprietary way. Features that are conditional are marked with “if supported” in a Profile specification.

The requirement levels for functions are:

Mandatory = Function that shall be implemented by an ONVIF Device or ONVIF Client.

Conditional = Function that shall be implemented by an ONVIF Device or ONVIF Client if it supports that functionality.

Optional = Function that may be implemented by an ONVIF Device or ONVIF Client

Function Lists use the following abbreviations:

M = Mandatory

C = Conditional

O = Optional

All functions shall be implemented as described in corresponding ONVIF Network Interface Specification Set.

4.4 Backward Compatibility

New functions or features cannot be added to existing Profiles. ONVIF products conforming to the same Profile shall interoperate independent of the date when their conformance to the respective Profile was declared. If a new feature is needed, it will require a new Profile to be created.

4.5 Profile Specification Content

A Profile definition shall include the following elements:

Overview -	explains the concept of the new Profile.
Technical Specification Version Requirement	defines the minimum version of the ONVIF specification(s) that shall be used to implement the Profile.
Client Requirements	defines the required functionality that shall be implemented by an ONVIF Client to interact with an ONVIF Device that is conformant to the same Profile.
Device Requirements	defines the required features that shall be implemented by an ONVIF Device to interact with an ONVIF Client that is conformant to the same Profile.
Discovery Scope	defines the method that an ONVIF Device shall communicate its support of the Profile to an ONVIF Client.

5 Creation of a New Profile

This section provides details about the requirements for the proposal and creation of a new Profile, the development steps, the approver of the new Profile, and the impact of the new Profile on existing Profiles and specifications.

5.1 Initiating Creation of a New Profile

The following condition shall be the driver for the creation of a new Profile:

- Market demand: New features or requirements clearly identified demonstrating a clear need for ONVIF interoperability in the market. If there is no clear market demand for a specific functionality, ONVIF may not create a Profile to address it.
- Triggering Profile development by identified market demand: CC shall advertise their findings and motivate members to develop Profile proposals, but no change to basic requirement that a Profile proposal needs 3 proposing member companies.
- Summary for each Profile proposal with key features and relation to other Profiles in non-technical language.

If ONVIF identifies a technology segment and agrees that needs to be addressed, a Profile may be developed that is based upon component applications, but will allow ONVIF to move into a solution based Profile in the future which would fully encapsulate the originating Profile (e.g. Profile C encapsulated by Profile A).

5.2 Profile Development Proposal

Once the market demand has been identified, any group of ONVIF members may submit a Profile development proposal to all of the ONVIF committees for review. The proposal shall identify a feature set comprehensive enough such that a functional product can be developed solely on this Profile specification ('stand-alone'). The newly proposed Profile shall sufficiently differ from existing ONVIF Profiles, alternatively a deprecation schedule of a similar Profile shall be proposed. See Annex A: Example Profile Proposal.

ONVIF members supporting a Profile proposal are expected to take initiative in prototyping features of the new Profile during the course of Profile specification development until final release of this Profile.

Summary for each Profile proposal with key features and relation to other Profiles in non-technical language must be presented.

Proposing companies to introduce Profile proposals at a next face-to-face meeting during the plenary sessions and / or at a Joint Meeting of Committees.

5.3 Approval of New Profile Development

Once a new Profile development proposal has been submitted, each of the ONVIF committees shall review and approve (or reject) the proposal based upon the following responsibilities:

Technical Committee	Creation, review and approval of all technical specifications essential for the Profile. The TC should analyse all existing Profiles that may be impacted by the introduction of the new Profile. Any identified impacts and proposed actions shall be clearly communicated to each of the ONVIF committees.
Technical Services Committee	Creation, review and approval of all test specifications that verify and enforce Profile conformance. The TSC should provide a list of potential impacts a new Profile would have on Test Specification and Test Tool development to the appropriate working groups. TSC to establish a Profile proposal homepage on wush for all circulated Profile proposals as document location and starting point for a potential later WG homepage.
Communication Committee	Contribute with information on market demand for a certain Profile development. Initiate, review and approve marketing and other communications related to the new Profile. This includes the specific naming/branding of the ONVIF Profiles. Proposers and the WG may submit suggestions.

Committees are asked to respond to proposers and shall provide their statement of approval or disapproval (including comments) within 4 weeks after the submission of the Profile proposal. Supporting statements, reference to committee minutes and comments by the committees shall be compiled as part of the terms of reference.

Proposing members are encouraged to utilize a face-to-face meeting to present a (draft) Profile proposal to all committees and to discuss market demand. At least an open web-meeting for all committee members shall be arranged to discuss any open questions on the Profile Proposal, . The meeting shall be arranged and convened by the proposing members.

During the Profile development process, all committees shall get the right to issue change requests to be discussed & agreed with all other committees (and the WG), in full consideration of consequences on release schedule, test tool development etc. .

Once a new Profile development proposal has been approved by all committees, a corresponding work item(s) shall be created and assigned

- by TSC to the workgroup responsible for creating the respective Release Candidate of the Profile,
- by TC to the workgroup responsible for creating the respective network interface specifications.

TSC and TC shall issue a call for membership for these working groups to all full and contributing members as soon as possible after the approval of the Profile proposal. The approved Profile proposal should be shared as part of the supporting materials.

5.4 Profile Creation Process

Following is a step-by-step description of Profile creation process:

Draft	Once work on a proposed Profile has been approved, a draft Profile Specification shall be developed by the working group responsible for Profile creation.
Committee Review	The new Profile definition is reviewed and approved by each of the ONVIF committees.
Test specification	Tests shall be written specifying the requirements for validating conformance to the Profile Specification and in accordance to the ONVIF Network Interface Specification Set and ONVIF Test specifications.
Device Test Tool	A Device test tool shall be created to verify the conformance of a Device to the Profile Specification. The Device test tool/ test specification shall cover all mandatory and conditionally mandatory functionality. The test tool shall introduce a Profile specific test set in diagnostic mode for at least one test tool release.
Device prototypes	Each mandatory and conditional feature shall be prototyped independently by at least 2 members. A Device prototype shall pass all mandatory and the applicable conditional Profile specific conformance tests in the diagnostic or conformance mode according to the Device Test Tool.
Client prototypes	Each mandatory and conditional feature shall be prototyped independently by at least 2 members. Client prototypes shall be tested successfully in a developers' plugfest with respective Device prototypes.
Release Candidate	Once the Profile WG deems the draft Profile Specification ready, the Profile Specification shall enter a functional freeze period, enabling the following processes (in order): <ol style="list-style-type: none">1. The WG chairman/TSC chairman to call for review of the Draft Release Candidate Profile Specification is by all 4 committees and requesting feedback within 2 weeks.2. Upon uniform approval RC Profile specification to be published by ONVIF for at least 6 month.3. CC to make public announcement about the new RC.

Release candidate period	Profile WG to monitor and resolve implementation issues resulting from the Profile Specification or the test tool.
Developers' Plugfest	Drafts or Release Candidate versions of a Profile specification shall be tested with prototypes at least once during a developers' plugfest.
Final	A Profile Specification qualifies for Final release status once the above listed criteria have been completed successfully.

Final approval for release of the Profile is the responsibility of the ONVIF TC and TSC.

- a) The respective TSC WG shall notify TSC upon verification that the Release Candidate is ready for final approval.
- b) TSC chairman shall call for the final approval of the Profile Specification by the TC and TSC at least 1 month prior to the scheduled release. Committees shall give a qualified response within 2 weeks.
- c) TSC chairman shall notify all committees of the final approval status of a Release Candidate Profile Specification.

5.5 Profile Naming Guidelines

Profile Naming and a related style guide are part of the overall ONVIF visual identity to be developed and maintained by the Communication Committee. The Communication Committee sets the Profile name. The Profile name shall be set as early as possible in the Profile development process, preferably with the set-up of the responsible WG.

The Profile proposers and/or the concerned working group may submit one or more name proposals for each new Profile with an explanation of the new Profile concept to the Communication Committee. The Communication Committee can either choose one of the proposed names or submit a new proposed name.

6 Profile Modification

This section provides details for making any change to a released Profile Specification. Generally, any modification of a Profile should follow the established ONVIF Errata Process.

6.1 Initiating Modification of an Existing Profile

Allowed changes include spelling and editorial fixes. Minor editorial changes will not require full Committee reviews. No modification to technical content shall be allowed. If required, a working Profile should be thoroughly tested prior to release using implementation prototypes and feedback from member companies during the Release Candidate period.

The following conditions may be required to modify a Profile Specification:

- a) Error in the Profile Specification Document:
An error in the Profile Specification that does not require a backward incompatible change may be fixed in order to prevent confusion.
- b) Modification to the ONVIF Network Interface Specification Set:
A change to the ONVIF Network Interface Specification Set that does not require a backward incompatible change, may be clarified in the existing Profile Specification in order to prevent confusion. A new Profile should be created in the case where an added function needs to be mandatory.
- c) Clarification for an Interpretation Issue:
A clarification in the Test Specification that does not require a backward incompatible change may be clarified in the existing Profile Specification in order to prevent confusion. There should be an iterative process between the TSC and the work group to ensure such interpretation issues will be included before the release version of a Profile.

6.2 Profile Modification Proposal

Once the modification issue has been identified, any group of ONVIF members may submit a Profile modification proposal using the established ONVIF Errata Process. The responsible working group shall coordinate the review of the proposal with each of the ONVIF Committees for any substantive changes to the existing Profile. Minor editorial changes will not require full Committee reviews.

6.3 Approval of Modified Profile Development

If required, once a Profile modification proposal has been submitted, each of the ONVIF committees shall review and approve (or reject) the proposal based upon the following responsibilities:

Technical Committee	Review and approve of all technical content impacted by the modified Profile. The TC should analyse all existing Profiles that may be impacted by the introduction of the modified Profile. Any identified impacts and proposed actions shall be clearly communicated to each of the ONVIF committees.
Technical Services Committee	Creation and review and approval of all tests that verify and enforce conformance to the modified Profile. The TSC should not decide how tests for Profile conformance should be defined, but it should provide a list of potential impacts a modified Profile would have on Test Specification and Test Tool development to the appropriate working groups.
Communication Committee	Initiate, review and approve marketing and other communications related to the modified Profile.

Once a Profile modification proposal has been approved, a corresponding work item shall be created and assigned to the working group responsible for Profile modification, which will create the respective Release Candidate of the Profile update.

6.4 Profile Modification Process

Following is a step-by-step description of Profile modification process:

Draft:	Once work on a proposed modification to a Profile has been approved, the appropriate working group shall revise a draft of the modified Profile Specification.
Committee Review	If required, the modified Profile definition is reviewed and approved by each of the ONVIF committees. Minor editorial changes will not require full Committee reviews.
Release Candidate	If required, once the draft Profile Specification is deemed ready by the TC and TSC, the Profile Specification shall enter a functional freeze period. This is not required for minor editorial changes. The functional freeze period for a Release Candidate will enable the following processes (in order):
Test specification	Tests shall be written specifying the requirements for validating conformance to the modified Profile Specification and in accordance to the ONVIF Core and ONVIF Test specifications.
Prototyping	At least 2 prototypes each of a Client or Device implementing all respective mandatory features shall be created by member companies independently of each other. Device prototypes shall pass the conformance tests according to the Device Test Tool. Client prototypes shall be tested successfully in a developers' plugfest with respective Device prototypes.

Device Test Tool	A Device test tool shall be created to verify the conformance of a Device to the Profile Specification. The Device test tool/ test specification shall cover all mandatory and conditionally mandatory functionality.
Developers' Plugfest	A Profile specification shall be tested at least once during a developers' plugfest.
Final	A Profile Specification qualifies for Final release status once the above listed criteria have been completed successfully.

Final approval for release of the Profile is the responsibility of the ONVIF TC and TSC.

7 Profile Deprecation

This section provides details for deprecating a Profile.

7.1 Initiating Deprecation of an Existing Profile

The following conditions may be required to deprecate a Profile Specification:

a) Replacement Profile

A Profile may be deprecated when a new replacement Profile is introduced due to additional mandatory features that cannot be made backward compatible in the original Profile Specification. The existing Profile shall not be deprecated if there is at least one Device and one Client available in the market that claims conformance against the Profile.

b) Erroneous Profile

A Profile may be deprecated due to an erroneous specification that cannot be made backward compatible in the original Profile Specification.

7.2 Profile Deprecation Proposal

Once the deprecation issue has been identified, any group of ONVIF members may submit a Profile deprecation proposal to all of the ONVIF committees for review.

7.3 Approval of Profile Deprecation

Once a Profile deprecation proposal has been submitted, each of the ONVIF committees shall review and approve (or reject) the proposal based upon the following responsibilities:

Technical Committee	The TC should analyse all existing Profiles that may be impacted by the deprecation of the Profile. Any identified impacts and proposed actions shall be clearly communicated to each of the ONVIF committees.
Technical Services Committee	The TSC should provide a list of potential impacts a deprecated Profile would have on Test Specification and Test Tool development to the appropriate working groups for further review and appropriate action. TSC shall propose a grace period and its rationale for the deprecation of the existing Profile under question, to be agreed by all committees.
Communication Committee	Initiate, review and approve marketing and other communications related to the deprecated Profile.
Steering Committee	Following the approval of the other committees, it is the responsibility of the Steering Committee to give the final approval for deprecation of the particular Profile.

Once a Profile deprecation proposal has been approved, a corresponding work item shall be

created and assigned to an appropriate working group, which will take the proper actions to deprecate the Profile.

7.4 Profile Deprecation Process

Following is a step-by-step description of Profile deprecation process:

Work Item	Once work on a proposed deprecation of a Profile has been approved, the various committees shall review the Profile Specification to be deprecated and a related communication plan created by the Communication Committee.
Announcement	An active survey is initiated to all member companies regarding their support of the existing Profile. Following supportive feedback from members, the intention to deprecate the particular Profile is publicly announced by ONVIF (websites, press release etc.) specifying the reasoning and schedule for the deprecation.
Final	The particular Profile Specification shall be formally deprecated once all committee reviews and approvals have been completed. The communication plan is then enacted to remove the Profile Specification from public use after a specified grace period.
Update Test Tool	Conformance testing for the Profile shall be removed from the ONVIF Test Tools after the end of the specified grace period.

8 Profile Conformance

The process for declaring conformance of a Client or Device to an ONVIF Profile Specification is described in the [ONVIF Conformance] Specification.

8.1 Conformance to one Profile or multiple Profiles

To be conformant with a Profile specification all mandatory and applicable conditional requirements of the respective Profile shall be implemented and supported by the Device or Client. If the parallel implementation of multiple Profiles results in more strict requirements due to combinatory effects those shall be followed to be able to claim conformance.

8.2 Network Interface Specification Requirements

As stated in the [ONVIF Conformance] Specification, all mandatory features for the Profile shall be implemented by the Device or Client in order to claim ONVIF conformance, despite whether the ONVIF Device Test Tool can fully test the functionality of the Profile specification or not.

8.3 Test Tool

Test cases for all mandatory and conditional mandatory features as listed in a Profile specification shall be defined as [Test Specification]. ONVIF Test Tools shall implement these test cases and verify conformance of a device or client to the respective Profile(s).

Failed tests on mandatory, conditional and optional functions shall violate the ONVIF conformance process, as specified in the [ONVIF Conformance] Specification.

Annex A

Example Profile Proposal

(informative)

The following example is provided for informative purposes only. To review actual Profile proposals, please see the ONVIF Members area of <http://www.onvif.org>.

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ONVIF

Quick Install Profile

Proposal

Version 1.0 Draft

December 2013



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A.1 Quick Install Profile Proposal

A.1.1 Overview

This section explains the concept of the new Profile.

Out-of-the-box interoperability is a key market demand for IP security Devices. ONVIF is addressing this need by providing standardized interfaces to network security products. In the context of security Devices ONVIF translates “out-of-the-box” interoperability to a “quick install” Profile. This caters to the security specific needs of a easy set-up mechanism as well as security, data-integrity and privacy concerns after set-up.

An ONVIF Device compliant to the Quick Install Profile is an ONVIF Device that can be discovered and configured by an ONVIF Client.

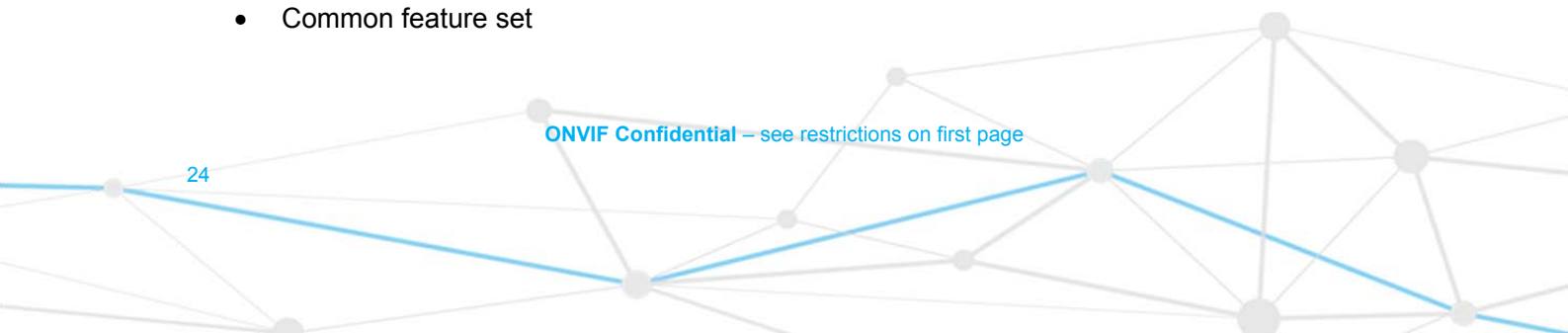
An ONVIF Client compliant to the Quick Install Profile is an ONVIF Client that can discover, configure and control an ONVIF Device compliant to the Quick Install Profile over an IP network.

A.1.2 Market Demand

This section defines the market demand to provide justification for creation of the Profile.

The ONVIF vision is that all Security Systems share one Interface. To help determine how the market perceives ONVIF’s success in meeting that vision, it continually executes an outreach initiative targeting System Integrators and A&E’s. One such initiative was the 2013 Survey by the ONVIF Communications Committee (refer to *130603_ONVIF Communication Baseline.pptx*). From these activities and the survey, it was concluded that the market has the following expectations of ONVIF:

- Plug’n’Play / Interoperability
- Future Proofing
- Easy Configuration
- Common feature set



In addition:

- >50% have specified or have seen ONVIF as a requirement for projects.
- 55% determined that they experienced problems getting ONVIF conformant products working together.
- The top 2 issues encountered by installers are setup and initial configuration
- The main motivator for ONVIF to be specified and deployed is Interoperability

It has been demonstrated that ONVIF members and the market as a whole has used many key terms (Plug'n'Play, Interoperability, Compatibility, Performance) interchangeably. This has led to confusion and has consequently eroded confidence in ONVIF as a standard and as a brand. Within ONVIF, the specific definition of these terms is:

Interoperability	The ability of systems, units to provide services to and accept services from other systems, units and to use the services so exchanged to enable them to operate together.
Conformity	Test, proof and document of compliance in actions, behaviour, etc., with certain accepted standards or norms.
Compatibility	The ability to interchange components of a system resulting in continued operation and no adverse behaviours within the system.
Performance	Testing to determine quality attributes of a system; how it performs in terms of responsiveness and stability under a particular workload. It can also serve to investigate measure, validate or verify scalability, reliability and resource usage.

The following quotes from various full members demonstrate this issue:

“Our products support ONVIF, which is a plug-and-play standard for building IP video systems with products from multiple vendors.”

“Enjoy the Almost Plug-and-Play Integration Experience – ONVIF”

“We have worked very closely together to use the latest ONVIF specifications to achieve this plug-and-play integration of our products”

“ONVIF are the new security industry standards that promote plug and play interoperability with all components”

“If the integrator and end user agree on using only ONVIF-certified security solutions, we're on our way back to the plug-and-play world of analogue.”

It is the mission of ONVIF to provide and promote open interfaces to the security industry for effective interoperability. Whilst other Profiles concentrate on providing high level functionality, there is a gap in with regards the consistency of manufacturers to implement the optional or conditional features that would provide a smoother installation, setup and common maintenance experience.

For example, on any given ONVIF conformant Device there may be:

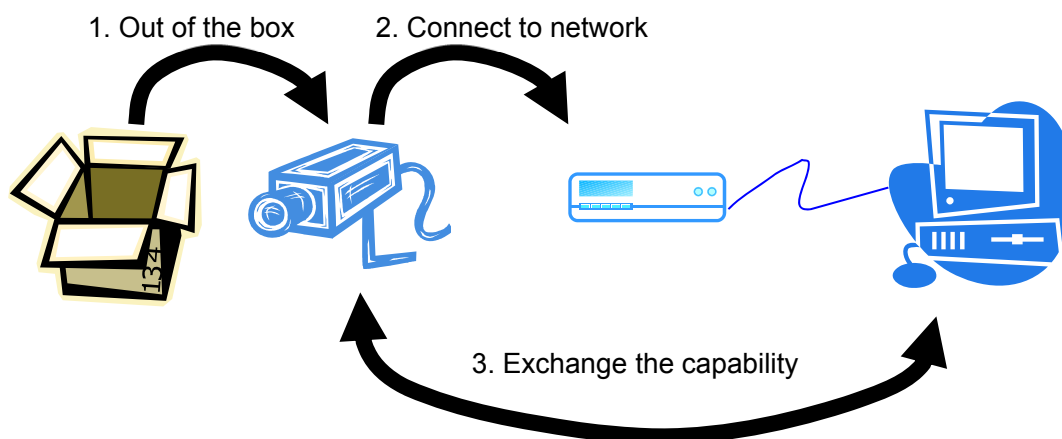
- Manufacturer specific settings for DHCP / default IP addresses

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- Manufacturer specific settings for default user / pwd settings
- No ONVIF interface enabled by default
- No consistent way to set the time or set NTP
- No way to determine which ONVIF Profiles are supported by the Device

These and other needs will be addressed by this Quick Install Profile. The resulting Profile should allow manufacturers to develop product that will allow a consistent setup and basic Device level configuration.

The meaning of “quick install” is that ONVIF Device and ONVIF Client can mutually exchange capabilities and become ready to communicate for required features in Profile specification without any error after delivering from the factory.



A.1.3 Use Cases

This section defines the anticipated typical usage of the Profile

An installer plugs has installed multiple Devices on a network and wishes to discover them on the network. The installer runs a ONVIF Quick Install Client that lists the Devices it has found, and allows the installer to set the common settings such as IP Address, NTP, Time, authentication and security settings. It does not matter what type of Device the Client is communicating to, as these settings are common to all Device types.

An system administrator wishes to find all Devices on a deployed system and generate a report of the firmware version for review. He connects a Quick Install Client and which discovers every Device, and queries for the firmware version. The resulting report is used to determine if any updates should be applied. The Quick Install Client could then be used to selectively apply the appropriate firmware updates.

A new Quick Install network switch is deployed in a network. There are Quick Install conformant Devices plugged in to this switch. The switch discovers each Device and records its port, IP address and what Profiles it supports. This is exposed in the administration User Interface of the Switch. In addition, the switch can query the Devices to determine what Profiles are supported and apply traffic prioritization QoS configurations to those ports depending on the response.

A Quick Install network monitor is installed on the network and is used to discover all Devices on the network. It then can pro-actively monitor and report any issues intelligently based on the type of Device, and its Profile capability.

- Easy set-up facilitates the commissioning of IP security Devices, by allowing a single mode of discovery and basic configuration. (Multi-vendor / Multi-disciplines)
- Unified configuration tool for basic set-up across Devices from different vendors and different disciplines

A.1.3.1 References

A.1.3.1.1 Videos

- [2012 ISC West Interop Demo](#) (Created by ONVIF)
- [2010 Security Essen Demo](#) (Created by ONVIF)
- [ONVIF vs PSIA](#) (Created independently)
- [2012 Pelco ONVIF video](#) (Created by Pelco)

A.1.3.1.2 Plug'n'play and ONVIF expected

- http://www.axis.com/solutions/video/critical_infrastructure/
- http://ipvm.com/report/onvif_ip_camera_test
- <http://ipvm.com/updates/1908>
- http://www.acti.com/news/Software/Firmware_3_13_16_AC
- http://www.securityinfowatch.com/press_release/10497663/milestone-is-first-vms-to-support-bosch-200-series-ip-cameras
- <http://www.arecontvision.com/supports/INTEGRATING-ARECONT-VISION-CAMERAS>
- http://www.ifsecglobal.com/document.asp?doc_id=552661&site=ifsecglobal

A.1.4 Mandatory Features

This section defines the functionality that must be implemented by an ONVIF Device to interact with an ONVIF Client that is conformant to the same Profile.

NOTE: Following are proposed features only, to be confirmed and detailed by the assigned Profile WG, which will also differentiate the requirement levels for Devices and Clients. Technologies will also be selected by the Profile WG, and are provided here as examples only.

- Device Discovery (for example, WS-Discovery)

- Authentication (for example, Http digest authentication)
- Default access policy as defined in the service specifications
- Automatic network identification (for example, DHCP and/or Zeroconf network configuration in the absence of a DHCP server, per RFC 3927)
- Update firmware
- Synchronize date/time (for example, NTP)

A.1.5 Conditional Features

This section defines the conditionally required functionality that must be implemented properly, if supported, by an ONVIF Device to interact with an ONVIF Client that is conformant to the same Profile.

NOTE: Following are proposed features only, to be confirmed and detailed by the assigned Profile WG, which will also differentiate the requirement levels for Devices and Clients. Technologies will also be selected by the Profile WG, and are provided here as examples only.

- Standard Events
- Advanced Security feature
- If the new Profile specification is used in combination with other Profiles, the 'Quick install' principles shall also be applicable for all mandatory features of these Profiles for the Device and Client implementation

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Annex B

Use of Mandatory, Conditional, and Optional

B.1 Description of Requirement Levels

This annex addresses the recommended description of a feature and its functions with related requirement levels by the terms Mandatory, Conditional, and Optional as they refer to either a Client or a Device in a Profile specification.

- A feature is briefly introduced and reference to the respective clause in the ONVIF Network Interface Specification Set is given.
- Device and Client specific requirements for the conformance to the specified Profile are described.
- Individual tables focusing either on the requirement level for a Client or a Device list the requirement level of this Profile for the feature in general and for the related functions individually.

B.2 Example

The technical content in the following example is provided for informative purposes only to illustrate the description of Profile requirements. To review actual (draft) Profile specifications, please refer to the ONVIF homepage or see at the ONVIF Members area of <http://www.onvif.org>.

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1.0 Event handling

- Retrieving and filtering of events from a Device

1.0.1 Profile requirements

- The Base Notification Interface of the WS-BaseNotification as described in the ONVIF Core Specification v2.4.1 Section 9.1 is not mandatory for Profile Q conformance. The Real-time Pull-Point Notification Interface described in section 9.2 is Mandatory for Profile Q conformance.

1.0.2 Device Requirements

- Device shall support at least two pull point subscriptions as described in the ONVIF Network Interface Specification Set (Event Service) by returning MaxPullPoints set to no less than two in the GetServiceCapabilities response.

1.0.3 Client Requirements

- Client shall implement event handling with a pull point using the SetSynchronizationPoint, CreatePullPointSubscription and PullMessage operations if any of the specific events described in this specification are supported.

1.0.4 Event Handling Function List for Devices

Event Handling	Device MANDATORY		
	Function	Service	Requirement
	SetSynchronizationPoint	Event	M
	CreatePullPointSubscription	Event	M
	PullMessages	Event	M
	GetEventProperties	Event	M
	Renew	Event	M
	Unsubscribe	Event	M
	TopicFilter parameter of CreatePullPointSubscriptionRequest	Event	M
	MessageContentFilter parameter of GetEventPropertiesResponse	Event	M

1.0.5 Event Handling Function List for Clients

Event Handling	Client MANDATORY		
	Function	Service	Requirement
	SetSynchronizationPoint	Event	M
	CreatePullPointSubscription	Event	M
	PullMessages	Event	M
	GetEventProperties	Event	M
	Renew	Event	C
	Unsubscribe	Event	C
	TopicFilter parameter of CreatePullPointSubscriptionRequest	Event	O
	MessageContentFilter parameter of GetEventPropertiesResponse	Event	O

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