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Mission & Vision

MISSION

To provide and promote open interfaces to the security industry for effective interoperability.

VISION

All security systems share one interface.
Cornerstones of ONVIF

- Standardization of communication between IP-based physical security products
- Interoperability regardless of brand
- Openness to all companies and organizations
ONVIF Work

- Develop interface specifications that enable communications between networked components of a physical security system
- Work with international standards organizations, such as IEC
- Develop, package and market functionalities in the form of ONVIF profiles and add-ons
- Develop test tools for validating product conformance to ONVIF profiles and add-ons
ONVIF Development: 2008 to Present

2008
- Founded by Axis, Bosch & Sony
- Core Specification 1.0

2009
- First conformant product
- 100 members
- 200 profile conformant products

2010
- Scope extended to access control
- Core Specification 2.0

2011
- EN 50132-5-2 web services-based IP video protocols
- Profile S released

2013
- IEC 62676-2-3, web services-based IP video transmission protocols
  - Profile C released

2014/2015
- 2014: Profile G released
- 2015: Client test tool released

2016
- IEC 60839-11-31 web services-based IP protocols for electronic access control systems

2017
- Profile A released

2018
- 10,000 profile conformant products
- Profile T released

2019
- Profile T related IEC 62676-2-31 and IEC 62676-2-32 published
- Export File Format recommended by NIST IR 8161r1

2020
- Specification development on GitHub

2021
- 20,000 profile conformant products
- Profile D released
- Profile M released

2022
- IEC 62676-2-33 video transmission protocols for cloud uplink and remote management system access

2023
- 25,000 profile conformant products
Committee Structure: Roles & Responsibilities

**Steering Committee**
- ONVIF strategy, goals, rules and organization
- Finance and budget
- Membership authorization

**Technical Committee**
- Creation and maintenance of specifications
- Technical roadmap
- Approval of technical projects
- Creation and maintenance of profiles and add-ons
- Test specification and test tool development
- Developers’ Plugfest organization

**Technical Services Committee**
- ONVIF promotion
- Internal & external communication
- Communication tools

**Communication Committee**
Committee Working Groups

Through working groups, ONVIF strives for an effective transfer of customer needs into solutions.

• Technical Committee
  • Video Enhancement Working Group

• Technical Services Committee
  • Testing Working Group
  • Profile Working Group*
  • Add-on Working Group*

*When applicable
# Member Privileges

*Parent member and its Registered Affiliates share participation and voting privilege.*

<table>
<thead>
<tr>
<th>Privileges</th>
<th>Full</th>
<th>Contributing</th>
<th>Registered Affiliate</th>
<th>User</th>
<th>Observer</th>
</tr>
</thead>
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<tr>
<td>Vote for ONVIF Steering Committee member*</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Participate as an ONVIF Steering Committee member*</td>
<td>X</td>
<td></td>
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<tr>
<td>Add Registered Affiliates to membership</td>
<td>X</td>
<td>X</td>
<td></td>
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<td>Vote for committee member (except Steering Committee)*</td>
<td>X</td>
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<tr>
<td>Chair a committee*</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Participate in Technical, Technical Services and Communication Committees*</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Vote in Committees &amp; Working Groups*</td>
<td>X</td>
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<tr>
<td>Participate in ONVIF working groups</td>
<td>X</td>
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<td>Early access to specifications and related material</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Meeting participation (annual meeting and others)</td>
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<td>Access to specification drafts</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Ability to self-declare conformant products</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Use of ONVIF and profile logos for conformant products</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Use of conformance tools</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Use of ONVIF Member Tools</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>Use of ONVIF Member Portal</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Use of ONVIF Member logo</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Annual Membership Fee</td>
<td>$20,000 USD</td>
<td>$10,000 USD</td>
<td>$5,000 USD</td>
<td>$4,000 USD</td>
<td>$500 USD</td>
</tr>
</tbody>
</table>
ONVIF Members

- Membership levels:
  - Full members
  - Contributing members
  - Registered affiliates
  - User members
  - Observer members

ONVIF membership comprises leading companies in the global IP-based physical security products market, including frontrunners in camera, video management system and access control development.
ONVIF Profile Conformant Products


25,000+ Conformant Products
Interoperability
Why is there a need for interoperability?

- Technological acceleration drives system complexity
- Multi-vendor environment = Interface variety
- Surveillance systems are often long-term investments that require future proofing
Benefits of Interoperability

• Cost-efficient system setup
• Integrated system allows for more efficient workflows
• Flexibility in component selection; freedom of choice in design
• Secure future system development
ONVIF Profile
ONVIF Profile

• ONVIF has a wealth of specifications
• These specifications are grouped into profiles
• A profile has a fixed set of features
• Profiles make it easier to identify compatible products
ONVIF Profile

• A profile specifies a set of features that must be supported by both client and device

• Conformant products must support at least one profile...

• ...and can support more than one...
ONVIF Profile

- Features in a profile are either mandatory or conditional
- Mandatory features must be supported
- Conditional features only supported if relevant
  - i.e., PTZ functions can only be supported in PTZ cameras
ONVIF Profiles at a Glance

ONVIF® | A
For broader access control configuration

ONVIF® | C
For door control and event management

ONVIF® | D
For access control peripherals

ONVIF® | G
For edge storage and retrieval

ONVIF® | M
Metadata and events for analytics applications

ONVIF® | S
For basic video streaming

ONVIF® | T
For advanced video streaming
ONVIF Profile A

For access control configuration

• Granting/revoking credentials
• Creating schedules
• Assigning access rules

Device (e.g. door/access controller)  Client (e.g. management software)
ONVIF Profile C

For door control and event management

- Site information and configuration
- Event and alarm management
- Door access control

Device (e.g. access controller)  Client (e.g. management software)
ONVIF Profile D

For access control peripherals

• Transfers input credential identifiers and requests for access

• Performs actions such as locking/unlocking

Input device (e.g. token readers, biometric readers, cameras, keypads, sensors) and output device (e.g. locks, displays, LEDS)

Client (e.g. access control unit, management system)
ONVIF Profile G

For edge storage and retrieval

- Configure, request and control recording
- Receive audio and metadata stream

Device (e.g. camera, video encoder, NVR) → Client (e.g. VMS, NVR)
ONVIF Profile M

Metadata and events for analytics applications

• Supported metadata
• Supported events
• Streaming metadata and sending events

Device, including service (e.g. camera, cloud service)

Client (e.g. VMS, NVR, cloud service)
ONVIF Profile M – For IoT Systems

• Publishes message about event over MQTT – transport method used often by IoT applications

• Use case
  • Room temperature control
ONVIF Profile S

For basic video streaming

• Video streaming and configuration
ONVIF Profile T

For advanced video streaming

• H.264/H.265 video compression
• Imaging settings
• Motion alarm and tampering events
• Metadata streaming
• Bi-directional audio

Device (e.g. camera, video encoder)  Client (e.g. VMS, NVR)
ONVIF Add-on
ONVIF Add-on

• One or more features that solve one use case
  • Not enough to qualify as a profile by itself

• Allows for version handling
  • Features can be added/removed if there is market justification

• Devices/clients claiming add-on conformance must:
  • Pass add-on conformance tests
  • Conform to an ONVIF profile
Benefits of Add-on

• Allows ONVIF profile conformant device/client to claim conformance to additional capabilities outside of profiles

• Easier and quicker to develop and release due to its limited features as compared with a profile
## Profile vs. Add-on

<table>
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<th>Key Differences and Similarities</th>
<th>Applicable for ONVIF profile</th>
<th>Applicable for ONVIF add-on</th>
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<tr>
<td>Comprehensive enough to allow functional product development on its own</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Adaptable through version handling</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Covers specifications for both client and device</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Both client and device must pass conformance tests to claim conformance</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Can be proposed by any ONVIF member, but can only be developed by ONVIF full and contributing members</td>
<td>Yes</td>
<td>Yes</td>
</tr>
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</table>
ONVIF Conformance
What ONVIF conformance means

- ONVIF conformance is tied to a particular product and firmware/software version
- Product conforms to a profile and optionally, an add-on
- Product has passed ONVIF device/client test tool

Authoritative source of ONVIF conformant products: https://www.onvif.org/conformant-products/
ONVIF Benefits
Why Use ONVIF?

• In a multi-vendor environment, ONVIF conformant products from different brands can work together
• 25,000+ conformant products to match your needs and preferences, regardless of vendor
• Makes integration easier and future-proofs your installation
ONVIF for System Integrators

• Interoperability
  • Easier integration for flexible, cost-effective solutions

• Greater freedom
  • Flexibility to choose products from different vendors and meet specific needs of your customers
ONVIF for End Users

• Increased flexibility and greater freedom of choice

• Future-proof system for a more secure investment
  • No vendor lock-in
ONVIF for Manufacturers

• Easier market acceptance
• Access to projects
• Build partnerships
## Where to Get More Information

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<td>Profiles</td>
<td><a href="http://www.onvif.org/profiles/">www.onvif.org/profiles/</a></td>
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Thank you

For more information visit www.onvif.org

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