

ONVIF Profile Feature Overview v2.5

This table contains a summary of the features of the currently released ONVIF profiles. For more details or in case of lack of clarity, please refer to the Profile Specifications.

- [ONVIF Profile M Specification](#) [June 2021]
- [ONVIF Profile D Specification](#) [June 2021]
- [ONVIF Profile T Specification](#) [September 2018]
- [ONVIF Profile A Specification](#) [June 2017]
- [ONVIF Profile Q Specification](#) [July 2016 / July 2018 v1.1]
- [ONVIF Profile G specification](#) [June 2014]
- [ONVIF Profile C Specification](#) [December 2013]
- [ONVIF Profile S Specification](#) [December 2011 / March 2016 v1.1.1 / July 2018 v1.2]

Function Lists use the following abbreviations:

- M: Mandatory
- C: Conditional
- O: Optional

Features		Profiles															
		G		Q		S		T		C		A		D		M	
		Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client
		General															
System Settings		M	C	M	C	M	C	M	C	M	C	M	C	M	C	M	C
User Authentication	WS-Username Token					M	M										
	Digest Authentication	M	M	M	M	O	M	M	M	M	M	M	M	M	M	M	M
User Handling		M	C	M	M	M	C	M	C	M	C	M	M	M	M		
Query Services and Capabilities		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Device Discovery		M	C	M	M	M	C	M	M	M	C	M	M	M	M	O	M
Default Access Policy				M													
Network Configuration		M	C	M	C	M	C	M	M	M	M	M	C	M	M		
Zero configuration				C	C	C	C										
Firmware Upgrade				C	C												
Backup and Restore				C	C												
TLS Configuration				C	C												
IP Address Filtering						C	C					C	C				
NTP						C	C	C	C			M	C				
Automatic IP Assignment				C	C												
Media Profile Configuration						M	C	M	C							M	C
Media Transport	RTP/UDP	M	M			M	M ¹	M	M ¹							M	M ¹
	RTP/RTSP/HTTP/TCP	M	M			M		M								M	
	RTP/RTSP/HTTPS/TCP	C	C					C	C							C	C
	RTP/RTSP/TCP/WebSocket							C	O								
	RTP/UDP Multicast					C	C	M	C								
		Video															
Video Streaming	MJPEG	O	M			M	M										
	MPEG4	O	M			C	C										
	H.264	O	M			C	C		M ²	M						C ³	C ⁴
	H.265									M							

¹ Client must support at least one of UDP and HTTP

² Device must support at least one of H.264 and H.265

³ If supported, Device must support at least one of H.264 and H.265

⁴ If supported, Client must support both H.264 and H.265

Video Encoder Configuration						M	M	M	M										
Video Source Configuration						M	C	M	C										
Features		G		Q		S		T		C		A		D		M			
		Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client
Video																			
Media Profile for Streaming Ready out-of-the-box						M	C	M	M									C	C
Video Source Mode								C	C										
Video Streaming	RTSP/RTP					M	M	M	M									C	C
Imaging Settings								M	M										
Recording Search		M	M																
Replay Control		M	M																
Recording Control		M	C																
Recording Control	Using an on-board media source	C	C																
Recording Control - Dynamic Recording	Using a Receiver as Source	C	C																
	Recording	C	C																
Recording Control - Dynamic Tracks	Tracks	C	C																
Recording Source Configuration		M	C																
Events																			
Event Handling	Pull-point	M	C	M	M	M	M ⁵	M	M	M	M	M	M	M	M	M	M	C	C
	WS-Base-notification					M													
MQTT																		C	C
Standard Monitoring Events for Devices				M	C														
Media Profile Configuration Events								M	O									C	O
Access Control Events	Door									M	M								
External Authorization Events										C	C								
Duress Events										C	C								
Access Profile Event	Changes on Profile											M	M						
Credential Event	Changes on Credential											M	M						
Schedule Event	Changes on schedule											M	M						

⁵ Client must implement one or both from Pull Point and Base-Notification to support Event Handling

Special Days Schedule Event																C	C				
Reset Antipassback Violation Event																C	C				
Stored Events	Seek																	C	C	C	C
Motion Alarm Events								M	M												
Motion Region Detector Events								C	C												
Tampering Event								M	M												
Face Recognition Event																				C	C
License Plate Recognition Event																				C	C
Line Crossing Counter Event																				C	C
Features			G		Q		S		T		C		A		D		M				
			Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	
Audio																					
Audio Streaming	G.711							C	C												
	AAC							C	C	C ⁶	C ⁶										
	G726							C	C												
Audio Output Streaming	G.711									C	C										
	AAC									C	C										
Audio Encoder Configuration								C	C	C	C										
PTZ																					
PTZ Move	Absolute							C	C	C	M										
	Continuous							C	C	C	M										
	Relative							C	C												
PTZ Presets								C	C	C	C										
PTZ – Home Position								C	C	C	C										
PTZ Configuration								C	C	C	C										
Additional																					
Relay Outputs								C	C	C	C										
Auxiliary commands								C	C	C	C										
Focus Control										C	C										
Digital Inputs										C	C										

⁶ If supported, Device/ client must support at least one of G.711 and AAC

Configuration of On-Screen Display (OSD)									M	C										
JPEG Snapshot									M	O										
Metadata Configuration						M	C		M	C								M	O	
Metadata Streaming									M	C								M	M	
Media Profile for Metadata Streaming out-of-the-box																		M	M	
Features	G		Q		S		T		C		A		D		M					
	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client

Recording																				
Recording Search			M	M																
Replay Control			M	M																
Recording Control	Using an on-board media source		C	C																
	Using a Receiver as Source		C	C																
	Dynamic Tracks		C	C																
Recording Source Configuration			M	C																

Access																				
Access Profiles																		M	M	
Credential																		M	M	
Schedule																		M	M	
System component information	Access points											M	M						M	M
	Doors											M	M						M	M
	Areas											M	M							
Component state	Access points											M	M						C	M
	Doors											M	M						C	M
	Areas											M	M							
Door control												M	M						C	M
Access control decisions												M	M						C	M
Configuration change notification	Access											C	C						C	C
	Doors											C	C						C	M
	Areas											C	C						C	C
Access point control												C	C							
Reset Anti-Pass back Violation																		C	C	
Special Days Schedule																		C	C	
Persistent notification storage																		C	C	
Door Management																			C	C
Credential Format Types																			C	C
Credential Whitelisting																			C	C

Credential Blacklisting																			C	C								
Analytics																												
Motion Region Detector Configuration																									C	C		
Supported Metadata																											M	M
Analytics Profile Configuration																											M	C
Analytics Module																											M	C
Analytics Module Configuration																											M	O
Rules																											C	C
Rules Configuration																											C	O
Face Recognition Rule																											C	C
License Plate Recognition Rule																											C	C
Line Crossing Counter Rule																											C	C
Object Classification																											C	C
Human Face Metadata																											C	C
Human Body Metadata																											C	C
Vehicle Metadata																											C	C
License Plate Metadata																											C	C
Geo Location Metadata																											C	C
Image sending	Sending Image Reference																										C ⁷	C ⁸
	Sending Embedded Image																											C ⁷

⁷ If supported, Device must support at least one of Sending Image Reference and Sending Embedded Image

⁸ If supported, Client must support both Sending Image Reference and Sending Embedded Image

Revision History

Version	Date	Description	
1.0	28. Sep. 2016	ONVIF Profile Feature Overview v.1	André Eichhorn
1.1	10. Feb. 2017	ONVIF logo updated, Profile A RCv1.2: NTP feature added, hyperlinks to specifications updated	Andreas Schneider
2.0	09. Sep. 2017	ONVIF Profile A v1.0 released, Profile T RC v1.0 added, overall review and consolidation of table for clarity	Andrew Downs, André Eichhorn, Andreas Schneider, Fredrik Svensson, Nicolas Brochu, Hiroyuki Sano
2.1	10. Apr. 2018	Profile T (RC v1.4) updates: <ul style="list-style-type: none"> • Media Profile Configuration Events changed to Client Optional. • Make Snapshot Client Optional. • Remove Audio Output Configuration. Move Profile for Streaming Ready out-of-the-box from Event to Video section. Remove duplicate Zero Configuration entry.	Andrew Downs, Andreas Schneider, Fredrik Svensson
2.2	08. Oct. 2018	Profile T Release updates <ul style="list-style-type: none"> • Update Profile T Release Candidate to Profile T Release • Update Media Transport for G 	André Eichhorn
2.3	28. Nov. 2019	Event Handling updated for Profile S Audio Streaming updated for Profile T	André Eichhorn
2.4	30. Jun.2021	Updated for Profile M Release	Sriram Bhetanabottla
2.5	30. Jun.2021	Updated for Profile D Release	David Needham