

RTCWEB	D. Burnett
Internet-Draft	Voxeo
Intended status: Standards Track	October 20, 2012
Expires: April 23, 2013	

IANA Registry for RTCWeb Media Constraints

draft-burnett-rtcweb-constraints-registry-02

Abstract

Specifications in W3C's Media Capture Task Force and WebRTC Working Group have need of a registry in which to maintain a list of HTML media constraints. This document defines this registry.

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1. Introduction

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There are two W3C specifications that have need of a registry in which to represent constraints: **Media Capture and Streams** [W3C.WD-mediacapture-streams-20120628] and **WebRTC 1.0: Real-time Communication Between Browsers** [W3C.WD-webrtc-20120821]. In the former, the `getUserMedia()` method on the `NavigatorUserMedia` interface takes a "constraints" argument. In the latter, the `addStream()` method on the `RTCPeerConnection` interface and the constructor for `RTCPeerConnection` both take optional "constraints" parameters. All three of these parameters make use of a data structure representing a list of constraints on the HTML media or media connection to be established. Additionally, both specifications may at some point define `getCapabilities()` methods that are used to query the web browser about its capabilities. It is possible that the returned data structure will specify the browser's capabilities in terms of constraints that it can satisfy. The data structures and their use are defined in the aforementioned specifications. This document specifies the registry used to define individual constraint names, their allowed values, and their meanings.

2. Requirements Language

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The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in **RFC 2119** [RFC2119].

3. IANA Considerations

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This document defines a registry "RTCWeb Media Constraints" for use by W3C specifications needing to indicate constraints on HTML Media, both as used by web application authors to indicate preferences and as used by web browsers to indicate constraints they can satisfy.

3.1. RTCWeb Media Constraints

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IANA SHALL create a new name space of "RTCWeb Media Constraints". All maintenance within and additions to the contents of this name space MUST be according to the "Specification Required with Expert Review" registration policy as defined in **RFC5226** [RFC5226]. The registry is initially empty. The registry is defined in the remainder of this section.

Each registry entry consists of a Name, a Media Type, and a Reference (or list of references).

An RTCWeb Media Constraint Name MUST satisfy the following **ABNF** [RFC5234] specification:

```
rtcweb-media-constraint = constraint-type constraint
constraint-type         = "min" / "max" / "enum"
constraint              = %x41-5A 0*constraint-char
constraint-char         = ALPHA / DIGIT
```

RTCWeb Media Constraint Names are case-sensitive.

The Media Type MUST be one of the values as specified by the following ABNF specification:

```
rtcweb-media-type = "audio" / "video" / "RTCPeerConnection"
```

A registration request MUST include the following information:

- The RTCWeb Media Constraint Name to be registered
- The applicable Media Type for the Name
- Name and Email address of a contact person for the registration
- Organization or individuals having the change control
- Reference(s) to the specification(s) defining the constraint

3.1.1. Designated Expert Instructions

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RTCWeb Media Constraint Names are of unlimited length according to the syntax. However, it is RECOMMENDED that they be no longer than 80 characters in total. This is to keep them reasonable for humans to read and use. It is RECOMMENDED that Names use camel case, i.e., when a Name consists of multiple words, the first character of each word SHOULD be an uppercase character, with all others being lowercase. This recommendation only applies to the characters following the constraint-type.

An RTCWeb Constraint MUST be relevant for the Media Type given. For example, a Constraint with Media Type of "audio" MUST be relevant to audio media streams and connections, while a Constraint of Media Type "video" MUST be relevant to video media streams and connections.

A constraint MUST satisfy the following criteria based upon its constraint-type:

min

When used by a web application author, the constraint MUST represent the minimum value the author is willing to accept. When returned by a web browser as a capability, the constraint MUST represent the minimum value that the web browser could satisfy if requested to by the web application author. The constraint specification MUST clearly define the units associated with the value if the value itself does not specify them.

max

When used by a web application author, the constraint MUST represent the maximum value the author is willing to accept. When returned by a web browser as a capability, the constraint MUST represent the maximum value that the web browser could satisfy if requested to by the web application author. The constraint specification MUST clearly define the units associated with the value if the value itself does not specify them.

enum

The constraint specification MUST enumerate all allowed values.

The constraint MUST be well enough defined in the given references that it is understandable by implementors and application developers that will use the constraint. The constraint SHOULD NOT duplicate a condition that can be achieved using constraints already defined in the registry. The constraint name SHOULD be appropriate and specific enough for the constraint.

4. Security Considerations

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Since the constraints envisioned for this registry are fairly generic in nature, it is not expected that the mere existence of this registry will introduce any particular security issues. Any specification defining one or more new constraints SHOULD address any specific security issues that might be introduced by the constraint(s).

5. References

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5.1. Normative References

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- [RFC2119] [Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels,"](#) BCP 14, RFC 2119, March 1997 ([TXT](#), [HTML](#), [XML](#)).
- [RFC5234] Crocker, D. and P. Overell, "[Augmented BNF for Syntax Specifications: A BNF](#)," STD 68, RFC 5234, January 2008 ([TXT](#)).
- [RFC5226] Narten, T. and H. Alvestrand, "[Guidelines for Writing an IANA Considerations Section in RFCs](#)," BCP 26, RFC 5226, May 2008 ([TXT](#)).
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5.2. Informative References

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- [W3C.WD-webrtc-20120821] Bergkvist, A., Burnett, D., Jennings, C., and A. Narayanan, "[WebRTC 1.0: Real-Time Communication Between Browsers](#)," World Wide Web Consortium WD WD-webrtc-20120821, August 2012 ([HTML](#)).
- [W3C.WD-mediacapture-streams-20120628] Burnett, D. and A. Narayanan, "[Media Capture and Streams](#)," World Wide Web Consortium WD WD-mediacapture-streams-20120628, June 2012 ([HTML](#)).
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Appendix A. Acknowledgements

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The authors would like to thank the members of the W3C Media Capture Task Force and WebRTC Working Group, the members of the IETF RTCWEB Working Group, and the people who gave specific early review and feedback: Cullen Jennings and Travis Leithead.

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