

Instruction: Enter position as Y, N or A. That way below tally will count correctly		1. All entities MUST support H.264	2. All entities MUST support VP8	3. All entities MUST support both H.264 and VP8	4. Browsers MUST support both H.264 and VP8, other entities MUST support at least one of H.264 and VP8	5. All entities MUST support at least one of H.264 and VP8	6. All entities MUST support H.261	7. There is no MTI video codec	8. All entities MUST support H.261 and all entities MUST support at least one of H.264 and VP8	9. All entities MUST support Theora	10. All entities MUST implement at least two of (VP8, H.264, H.261)	11. All entities MUST implement at least two of (VP8, H.264, H.263)	12. All entities MUST support decoding using both H.264 and VP8, and MUST support encoding using at least one of H.264 or VP8	13. All entities MUST support H.263	14. All entities MUST implement at least two of (VP8, H.264, Theora)	15. All entities MUST support decoding using Theora.	16. All entities MUST support Motion JPEG
Sum of Yes		48	40	9	12	10	5	12	4	7	5	5	7	6	6	1	1
Sum of Acceptable		11	17	38	34	16	23	30	28	26	30	25	20	19	27	15	25
Sum of No		41	41	53	54	74	72	58	68	66	65	70	73	75	66	83	74
		59%	58%	47%	46%	26%	28%	42%	32%	33%	35%	30%	27%	25%	33%	16%	26%
		100	98	100	100	100	100	100	100	99	100	100	100	100	99	99	100
Responder	Date	All entities MUST support H.264	All entities MUST support VP8	All entities MUST support both H.264 and VP8	Browsers MUST support both H.264 and VP8, other entities MUST support at least one of H.264 and VP8	All entities MUST support at least one of H.264 and VP8	All entities MUST support H.261	There is no MTI video codec	All entities MUST support H.261 and all entities MUST support at least one of H.264 and VP8	All entities MUST support Theora	All entities MUST implement at least two of (VP8, H.264, H.261)	All entities MUST implement at least two of (VP8, H.264, H.263)	All entities MUST support decoding using both H.264 and VP8, and MUST support encoding using at least one of H.264 or VP8	All entities MUST support H.263	All entities MUST implement at least two of (VP8, H.264, Theora)	All entities MUST support decoding using Theora.	All entities MUST support Motion JPEG
Adam Roach (adam@nostrum.com)	12/9/2013	Y	Y	N	N	N	A	N	A	A	A	A	N	A	A	A	N
Alexandre Gouailard (agouailard@gmail.com)	12/10/2013	N	Y	N	N	N	A	N	N	A	N	N	N	N	N	N	N
Stefan Håkansson (stefan.hakansson@ericsson.com)	12/10/2013	Y	N	N	N	N	N	A	N	N	N	A	N	A	N	N	N
Bernard Aboba (bernard_aboba@hotmail.com)	12/10/2013	Y	N	N	N	N	N	A	N	N	N	N	N	N	N	N	N
bryandonnovan@gmail.com	12/10/2013	A	Y	A	A	A	N	A	Y	A	A	A	A	A	Y	Y	N
cowwoc@bbs.darttech.org	12/10/2013	N	Y	A	A	N	A	N	A	A	Y	A	Y	A	Y	A	A
Lorenzo Miniero (lorenzo@meetecho.com)	12/11/2013	N	Y	N	A	N	A	N	A	Y	A	A	N	A	Y	N	N
Vanessa Sulikowski (vsulikow@cisco.com)	12/11/2013	Y	A	A	Y	Y	A	N	A	N	A	Y	Y	A	A	N	A
Salvatore Loreto (salvatore.loreto@ericsson.com)	12/11/2013	Y	N	N	N	N	N	A	N	N	N	N	N	A	N	N	N
Maik Merten (maikmerten@googlemail.com)	12/11/2013	N	Y	N	N	N	A	N	A	Y	Y	N	N	N	Y	N	A
Roman Shpount (roman@telurix.com)	12/11/2013	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Engel Nyst (engel.nyst@gmail.com)	12/11/2013	N	A	N	A	A	Y	Y	Y	A	A	N	N	N	A	A	A
Daniel Theophanes (theophad@tmbx.com)	12/14/2013	N	Y	N	N	N	A	N	A	A	A	N	N	N	N	A	N
Steve McFarlin (steve@tokbox.com)	12/16/2013	N	Y	A	A	N	N	A	A	A	A	N	N	N	A	N	N
Gustavo Garcia (gg@tokbox.com)	12/16/2013	N	Y	N	N	N	A	N	A	A	A	A	N	Y	A	N	N
Harald Alvestrand (harald@alvestrand.no)	12/17/2013	N	Y	A	A	N	N	N	A	N	A	A	A	N	A	N	N
David Singer (dsinger@apple.com)	12/18/2013	Y	N	N	N	Y	N	A	N	N	N	Y	N	Y	N	N	A
Richard Shockey (richard@shockey.us)	12/18/2013	Y	A	A	A	Y	N	N	N	N	N	Y	Y	N	N	N	N
Dan Romascanu (dromasca@avaya.com)	12/19/2013	Y	A	A	A	N	N	N	A	N	A	A	A	N	A	N	N
Christer Holmberg (christer.holmberg@ericsson.com)	12/19/2013	Y	N	N	N	Y	N	Y	N	N	N	N	A	A	N	N	A
Matthew Kaufman (matthew.kaufman@skype.net)	12/20/2013	N	N	N	N	A	N	Y	N	N	N	N	N	N	N	N	N
Alan Johnstone (alan.b.johnston@gmail.com)	12/23/2013	Y	A	A	Y	N	N	N	N	N	N	A	N	N	A	N	N
Sanjay Mishra (sanjay.mishra@verizon.com)	12/24/2013	Y	N	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N
Gunnar Hellstrom (gunnar.hellstrom@omnitor.se)	12/24/2013	Y	A	A	A	N	N	N	N	N	N	A	N	A	N	N	N
Roni Even (ron.even.tlv@gmail.com)	12/25/2013	Y	N	A	A	N	N	N	N	N	N	A	A	N	N	N	N
Silvia Pfeiffer (silviapfeiffer1@gmail.com)	12/26/2013	N	A	N	N	N	A	N	A	A	A	N	A	N	A	N	Y
Stephan Wenger (stewe@stewe.org)	12/27/2013	A	A	N	N	N	N	Y	N	N	N	N	N	N	N	N	N
Brent Kelly (bkelly@kelcor.com)	12/27/2013	A	A	Y	N	N	N	A	N	N	N	A	N	N	N	N	N
Tim Panton (tim@phonefromhere.com)	12/28/2013	N	Y	N	A	A	N	A	N	N	N	N	N	N	N	N	N
Ross Finlayson (finlayson@live555.com)	12/29/2013	N	Y	N	N	N	A	N	A	A	A	N	N	N	A	N	N
Kalyani Bogineni (Kalyani.Bogineni@verizonwireless.com)	1/5/2014	Y	N	A	A	N	N	N	N	N	N	N	N	N	N	N	N
Peter Dunkley (peter.dunkley@crocodiernet.net)	12/20/2013	A	Y	A	Y	N	N	N	A	N	A	N	Y	N	A	N	N
Nico Pranke (Nico.Pranke@citrix.com)	1/7/2014	Y	Y	Y	Y	Y	N	N	A	N	A	A	Y	N	N	N	N
Paul Coverdale (coverdale@sympatico.ca)	1/7/2014	Y	N	A	N	N	A	N	A	N	N	N	N	N	N	N	N
John Leslie (john@ilc.net)	1/7/2014	N	N	N	N	Y	A	N	N	N	Y	N	N	N	N	N	N
Serge Lachapelle (sergel@webtrc.org)	1/8/2014	N	Y	A	Y	N	N	A	N	N	N	N	N	N	N	N	N
Stephane Proust (stephane.proust@orange.com)	1/8/2104	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Adam Fineberg (fineberg@vine.me)	1/7/2014	A	Y	A	N	N	A	N	Y	A	A	Y	A	A	A	N	A
Gaelle Martin-Cocher (gmartincocher@blackberry.com)	1/8/2014	Y	N	N	N	N	N	Y	N	N	N	A	N	Y	N	N	A
cb.liste@gmail.com	1/8/2014	N	N	N	N	A	N	Y	N	N	N	N	N	N	N	N	N
Steve Donovan (srdonovan@usdonovans.com)	1/8/2014	A	A	A	N	N	A	N	A	A	A	A	A	A	A	N	A
Hervé W. (H.O.Waka.V+ieff@gmail.com)	1/8/2014	N	N	N	N	N	Y	N	N	Y	A	N	N	N	A	N	A
Xavier Marjou (xavier.marjou@orange.com)	1/9/2014	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Justing Uberti (juberti@google.com)	1/9/2014	N	Y	A	A	A	N	N	N	N	A	N	N	N	N	N	N
Markus Isomaki@nokia.com	1/9/2014	Y	N	N	N	N	N	A	N	N	N	N	N	A	N	N	N
Leon Geyser (lgeyser@gmail.com)	1/9/2014	N	N	N	N	N	A	N	A	N	A	N	N	N	A	N	N
Andrew Allen (aallen@blackberry.com)	1/8/2014	Y	N	N	N	N	N	Y	N	N	N	A	N	Y	N	N	A
Miguel Casas-sanchez (mcasas@google.com)	1/9/2014	N	Y	N	N	N	N	N	A	N	N	N	N	N	N	N	A
Bossiel (bossiel@yahoo.fr)	1/10/2014	Y	N	Y	Y	Y	N	A	N	N	N	A	N	N	N	N	N
Gavin LLewellyn (gavin.llewellyn@crocodiernet.net)	1/9/2014	A	Y	A	A	A	N	N	A	N	A	A	Y	N	A	A	N
Erik Lagerway (erik@hookflash.com)	1/9/2014	N	Y	N	Y	A	N	A	N	N	N	N	N	N	N	N	N
Benjamin Schwartz (bemasco@google.com)	1/9/2014	N	Y	N	N	A	Y	A	Y	Y	Y	N	N	N	Y	A	A
Robin Raymond (robin@hookflash.com)	1/9/2014	N	A	N	A	N	N	Y	N	N	N	N	N	N	N	N	A
Peter Thatcher (pthatcher@google.com)	1/10/2014	N	Y	N	N	A	A	A	A	A	A	N	N	N	A	N	A

Instruction: Enter position as Y, N or A. That way below tally will count correctly		1. All entities MUST support H. 264	2. All entities MUST support VP8	3. All entities MUST support both H.264 and VP8	4. Browsers MUST support both H.264 and VP8, other entities MUST support at least one of H.264 and VP8	5. All entities MUST support at least one of H.264 and VP8	6. All entities MUST support H. 261	7. There is no MTI video codec	8. All entities MUST support H.261 and all entities MUST support at least one of H.264 and VP8	9. All entities MUST support Theora	10. All entities MUST implement at least two of {VP8, H.264, H. 261}	11. All entities MUST implement at least two of {VP8, H.264, H. 263}	12. All entities MUST support decoding using both H.264 and VP8, and MUST support encoding using at least one of H.264 or VP8	13. All entities MUST support H. 263	14. All entities MUST implement at least two of {VP8, H.264, Theora}	15. All entities MUST support decoding using Theora.	16. All entities MUST support Motion JPEG
Bo Burman (bo.burman@ericsson.com)	1/10/2014	Y	N	N	N	N	N	A	N	N	N	N	N	A	N	N	N
Jonathan Roseberg (jdrosen@jdrosen.net)	1/10/2014	Y	N	A	A	N	N	N	N	N	N	N	N	N	N	N	N
Suhas Nandakumar (suhasieff@gmail.com)	1/10/2014	Y	N	A	A	N	N	N	N	N	N	N	N	N	N	N	N
Espen Berger (espeberg@cisco.com)	1/10/2014	Y	N	A	A	N	N	N	N	N	N	N	N	N	N	N	N
Pål-Erik Martinsen (palmarti@cisco.com)	1/10/2014	Y	N	A	A	N	N	N	N	N	N	N	N	N	N	N	N
Arnaud Morin (arnaud1.morin@orange.com)	1/10/2014	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Keith Drage (keith.drage@alcatel-lucent.com)	1/10/2014	Y	N	A	A	N	N	A	N	N	N	N	N	N	N	N	N
Martin Germán (mgerman@fing.edu.uy)	1/10/2014	Y	N	N	N	N	N	N	N	N	N	N	A	N	N	N	N
stephane.cazeaux@orange.com	1/10/2014	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
alexander.holt@gmail.com	1/10/2014	Y	A	A	A	N	N	N	N	A	N	N	A	N	N	A	N
Göran Eriksson (goran.ap.eriksson@ericsson.com)	1/10/2014	Y	N	N	N	N	N	A	N	N	N	N	N	N	N	N	N
David Benham (dbenham@cisco.com)	1/10/2014	Y	N	A	A	N	N	N	N	N	N	N	N	N	N	N	N
Subha Dhesikan (sdhesika@cisco.com)	1/10/2014	Y	N	A	A	N	N	N	N	N	N	N	N	N	N	N	N
Jeremy Fuller (jeremy.fuller@genband.com)	1/10/2014	Y		Y	A	N	N	Y	N	N	N	N	N	N	N	N	N
Frode Kileng (frodek@tele.no)	1/10/2014	A	A	A	A	Y	A	Y	A	N	A	N	A	N	N	N	A
Mo Zanaty (mzanaty@cisco.com)	1/10/2014	Y	N	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N
Jonathan Lemox (jonathan@vidyo.com)	1/10/2014	Y	Y	A	A	N	N	Y	N	N	N	A	A	A	N	N	N
Svein Yngvar Willassen (svein@appear.in)	1/10/2014	A	A	A	N	N	A	N	A	A	A	A	A	A	A	N	A
Björn Hoehrmann (berhoerm@gmx.net)	1/10/2014	N		N		N	A	N	N	A	N	N	N	N	N	A	N
Mohammed Raad (mohammedraad@raadtech.com)	1/11/2014	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N
matt frost (mcfrost@gmail.com)	1/12/2014	N	Y	A	A	N	N	N	N	N	N	N	N	N	N	N	N
Andrew Hutton <andrew.hutton@unify.com>	1/10/2014	Y	A	A	N	N	N	A	N	N	N	N	A	N	A	N	N
Michael Gorham <michael@cranumcafe.com>	1/10/2014	N	Y	N	N	N	N	N	N	A	N	N	A	N	N	A	N
Daniel-Constantin Mierla <miconda@gmail.com>	1/10/2014	N	Y	N	N	N	A	A	A	A	A	N	A	N	N	A	A
Jan-Ivar Bruaroey <jib@mozilla.com>	1/11/2014	N	Y	A	N	N	N	N	N	A	N	N	N	N	A	N	N
Mandyam, Giridhar <mandyam@quicinc.com>	1/11/2014	Y	N	N	N	N	N	A	N	N	N	N	N	Y	N	N	N
Mike Linksvayer <ml@gondwanaland.com>	1/11/2014	N	Y	A	A	A	A	A	A	Y	A	N	A	N	A	A	A
Bernhard Feiten@telekom.de	1/12/2014	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
HAYASHI, Tatsuya <lef.mutualauth@gmail.com>	1/12/2014	A	Y	Y	Y	Y	N	N	N	A	A	A	Y	N	A	A	N
Karl Stahl <karl.stahl@intertex.se>	1/12/2014	Y	Y	A	A	A	N	N	N	N	N	N	A	N	N	N	N
Basil Mohamed Gohar <basilgohar@librevideo.org>	1/12/2014	N	Y	N	N	N	Y	N	Y	Y	Y	N	N	N	Y	A	A
Coban, Muhammed <mcoban@qti.qualcomm.com>	1/12/2014	Y	N	N	N	N	N	A	N	N	N	N	N	Y	N	N	A
Krasimir Kolarov <kolarov@apple.com>	1/12/2014	Y	N	N	N	Y	N	A	N	N	N	Y	N	A	N	N	N
Badri Rajasekar <badri@tokbox.com>	1/13/2014	N	Y	N	A	N	A	N	A	N	N	N	N	N	N	N	N
Stockhammer Thomas <stockhammer@nomor.de>	1/12/2014	Y	N	N	N	A	N	A	N	N	N	A	N	A	N	N	A
Randell Jesup <randell-jett@jesup.org>	1/12/2014	N	Y	A	A	N	N	N	A	A	A	N	N	N	A	N	N
Eric Rescorla <ekr@rtfm.com>	1/12/2014	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N
Mark Harris <mark.hs@gmail.com>	1/13/2014	N	Y	N	N	A	A	A	A	A	A	N	N	N	A	A	A
Otto J Wittner <otto.wittner@uninett.no>	1/13/2014	N	Y	N	N	N	A	N	A	A	A	N	N	N	A	N	A
Chris Caviglioli <chris.caviglioli@intel.com>	1/13/2014	N		Y	N	N	N	N	N	N	N	N	N	N	N	N	N
holger.debelts@telekom.de	1/13/2014	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N
OSCAR DIVORRA ESCODA <ode@tid.es>	1/13/2014	N	A	N	A	N	N	N	N	N	N	N	N	N	N	N	N
"Martin J. Dürst" <duerst@it.aoyama.ac.jp>	1/12/2014	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Uwe Rauscherbach (uwe.rauscherbach@nln.com)	1/10/2014	Y	N	N	N	N	N	A	N	N	N	N	N	A	N	N	N
Adrian Grange (agrangeg@google.com)	1/10/2014	N	Y	A	N	N	N	A	N	N	N	N	A	N	N	N	N
Jeremy Laurenson (jlaurens@cisco.com)	1/13/2014	Y	N	A	Y	N	N	N	A	N	A	A	N	N	A	N	N

Responder	Date	1. All entities MUST support H.264	2. All entities MUST support VP8	3. All entities MUST support both H.264 and VP8	4. Browsers MUST support both H.264 and VP8, other entities MUST support at least one of H.264 and VP8	5. All entities MUST support at least one of H.264 and VP8	6. All entities MUST support H.261	7. There is no MTI video codec	8. All entities MUST support H.261 and all entities MUST support at least one of H.264 and VP8	9. All entities MUST support Theora	10. All entities MUST implement at least two of (VP8, H.264, H.261)	11. All entities MUST implement at least two of (VP8, H.264, H.263)	12. All entities MUST support decoding using both H.264 and VP8, and MUST support encoding using at least one of H.264 or VP8	13. All entities MUST support H.263	14. All entities MUST implement at least two of (VP8, H.264, Theora)	15. All entities MUST support decoding using Theora.	16. All entities MUST support Motion JPEG	
Adam Roach (adam@nostrum.com)	12/9/2013			First, the specification of these specific two codecs as MTI creates a union. Second, forcing all implementations to source and maintain two codecs just to remain compliant creates additional, unnecessary barriers to entry.	The specification of these specific two codecs as MTI creates a union browser should be treated differently. It's taking the risk of defining several class of citizens, and have to handle a definition of "browsers" (do application which include webkit fall under this for example.)	Assuming this is the only statement made on video codecs, this would represent a failure of the working group to define an interoperable communications protocol. If the specifications produced by standards bodies result in compliant implementations that can't interoperate with each other, then we're better off with proprietary, unstandardized implementations. If we go this way, we may as well shut down the WG and send everyone off to do useful things, since the WG's reason for existing will have been nullified.		Assuming this is the only statement made on video codecs, this would represent a failure of the working group to define an interoperable communications protocol. If the specifications produced by standards bodies result in compliant implementations that can't interoperate with each other, then we're better off with proprietary, unstandardized implementations. If we go this way, we may as well shut down the WG and send everyone off to do useful things, since the WG's reason for existing will have been nullified.	Forcing all implementations to source and maintain two codecs just to remain compliant creates additional, unnecessary barriers to entry.	Forcing all implementations to source and maintain two codecs just to remain compliant creates additional, unnecessary barriers to entry.	Forcing all implementations to source and maintain two codecs just to remain compliant creates additional, unnecessary barriers to entry.	First, the specification of these specific two codecs as MTI creates a union. Second, forcing all implementations to source and maintain two codecs just to remain compliant creates additional, unnecessary barriers to entry.		Forcing all implementations to source and maintain two codecs just to remain compliant creates additional, unnecessary barriers to entry.		As far as I can tell, this is the only codec proposed so far that actually cannot transmit usable video streams over average consumer broadband connections in real-time.		
Alexandre Gouaillard (agouaillard@gmail)	12/10/2013	Feeling not comfortable with h.264 situation / license / IP.		In our opinion, only one MTI is needed to have interop. More than one would not improve interop, but would increase risks and maintenance.	According to an IPR disclosure the IPR owner is unwilling to license its IPR needed to implement VP8. It seems senseless to mandate implementation of technology that can't be licensed on any terms.	This does not provide a common code for interop. between webcr implementations.	We are concerned that the quality achievable, and the bandwidth requirement are barely acceptable, however, we could live with it.	We believe we need a common code for minimal interop.	In our opinion, only one MTI is needed to have interop. More than one would not improve interop, but would increase risks and maintenance.		In our opinion, only one MTI is needed to have interop. More than one would not improve interop, but would increase risks and maintenance.	In our opinion, only one MTI is needed to have interop. More than one would not improve interop, but would increase risks and maintenance.	According to an IPR disclosure the IPR owner is unwilling to license its IPR needed to implement VP8. It seems senseless to mandate implementation of technology that can't be licensed on any terms.	Feeling not comfortable with h.263 situation / license / IP.	In our opinion, only one MTI is needed to have interop. More than one would not improve interop, but would increase risks and maintenance.	does not solve the problem of encoding.	Same reason as 6. b, just worse: We are concerned that the quality achievable, and the bandwidth requirement are barely acceptable, however, we could live with it.	
Stefan Håkansson (stefan.h.hakansson@ericss)	12/10/2013		According to an IPR disclosure the IPR owner is unwilling to license its IPR needed to implement VP8. It seems senseless to mandate implementation of technology that can't be licensed on any terms.	According to an IPR disclosure the IPR owner is unwilling to license its IPR needed to implement VP8. It seems senseless to mandate implementation of technology that can't be licensed on any terms.	According to an IPR disclosure the IPR owner is unwilling to license its IPR needed to implement VP8. It seems senseless to mandate implementation of technology that can't be licensed on any terms.	Accomplishes nothing since I expect all implementations to support one of them anyway.	Inferior quality, implementations not widespread		The fallback would be h.261, meaning inferior quality; implementations not widespread	The licensing/IPR situation is not well understood with regards to Theora, nor is its performance (in terms of quality vs. bitrate)	The fallback would be h.261, meaning inferior quality; implementations not widespread		According to an IPR disclosure the IPR owner is unwilling to license its IPR needed to implement VP8. It seems senseless to mandate implementation of technology that can't be licensed on any terms.		The fallback would be Theora, and for it the licensing/IPR situation is not well understood, nor is its performance (in terms of quality vs. bitrate).	The licensing/IPR situation is not well understood with regards to Theora, nor is its performance (in terms of quality vs. bitrate).	The performance (in terms of quality vs. bitrate) is lousy.	
Bernard Aboba (bernard_aboba@h)	12/10/2013		VP8 has not yet completed the MPEG standardization process and additional IPR declarations are therefore possible, or even likely. Also, we have an IPR declaration with a refusal to license.	VP8 has not yet completed the MPEG standardization process and additional IPR declarations are therefore possible, or even likely. Also, we have an IPR declaration with a refusal to license.	VP8 has not yet completed the MPEG standardization process and additional IPR declarations are therefore possible, or even likely. Also, we have an IPR declaration with a refusal to license.	All implementations will do this anyway so why bother?	Poor quality; no incentive to implement.		The fallback would be h.261, meaning inferior quality; implementations not widespread	The licensing/IPR situation is not well understood with regards to Theora, nor is its performance (in terms of quality vs. bitrate)	The fallback would be h.261, meaning inferior quality; implementations not widespread	H.263 quality is inferior and will require additional licensing fees.		H.263 quality is inferior, will require licensing fees.		The fallback would be Theora, and for it the licensing/IPR situation is not well understood, nor is its performance (in terms of quality vs. bitrate).	The licensing/IPR situation is not well understood with regards to Theora, nor is its performance (in terms of quality vs. bitrate).	The performance (in terms of quality vs. bitrate) is lousy.
bryandonovan@gr	12/10/2013	ipr concerns, prefer FOSS		less compliant browser chooses de-facto MTI. Same as no MTI, I think.	less compliant browser chooses de-facto MTI. Same as no MTI, I think.	prefer to not transcode	want MTI with better coding efficiency, or none	may require transcoding when ms/apple implement, possibly by 2015									coding efficiency	
covwoc@bbs.darktech.org	12/10/2013	Concerned about IPR and software licensing of H.264 codec, and royalty fees.		Concerned about IPR and software licensing of H.264 codec, and royalty fees.	Concerned about IPR and software licensing of H.264 codec, and royalty fees.	This does not guarantee interoperability. Basic P2P chat should not require transcoding.	Better than requiring transcoding	This does not guarantee interoperability. Basic P2P chat should not require transcoding.	I prefer option 10	Better than requiring transcoding		Concerned about IPR status of H.263		Concerned about IPR status of H.263		Better than requiring transcoding	Better than requiring transcoding	

Responder	Date	1. All entities MUST support H.264	2. All entities MUST support VP8	3. All entities MUST support both H.264 and VP8	4. Browsers MUST support both H.264 and VP8, other entities MUST support at least one of H.264 and VP8	5. All entities MUST support at least one of H.264 and VP8	6. All entities MUST support H.261	7. There is no MTI video codec	8. All entities MUST support H.261 and all entities MUST support at least one of H.264 and VP8	9. All entities MUST support Theora	10. All entities MUST implement at least two of (VP8, H.264, H.261)	11. All entities MUST implement at least two of (VP8, H.264, H.263)	12. All entities MUST support decoding using both H.264 and VP8, and MUST support encoding using at least one of H.264 or VP8	13. All entities MUST support H.263	14. All entities MUST implement at least two of (VP8, H.264, Theora)	15. All entities MUST support decoding using Theora.	16. All entities MUST support Motion JPEG
Lorenzo Miniero (lorenzo@meetech.com)	12/11/2013	I have serious concerns on the licensing burdens that come with H.264. Anyone that does not already have a license and can't get one would be unable to support video. The Cisco module would not solve the issue, as it would still require a separate license for parts of the specification that are not covered, and cannot be safely depended on in the long run. Besides, it couldn't be just linked to, but one would need to download it on the fly for every installation.		I have serious concerns on the licensing burdens that come with H.264. Anyone that does not already have a license and can't get one would be unable to support video. The Cisco module would not solve the issue, as it would still require a separate license for parts of the specification that are not covered, and cannot be safely depended on in the long run. Besides, it couldn't be just linked to, but one would need to download it on the fly for every installation.	While it may be acceptable for me, as it would allow me NOT to implement H.264, I must say it's closer to a NO than to an ACCEPTABLE. If I start thinking about browser makers outside of the "Fantastic Fours". I have serious concerns on the licensing burdens that come with H.264. Anyone that does not already have a license and can't get one would be unable to support video, and this would include most of the open source browsers, especially those in Fedora and Debian. The Cisco module would not solve the issue, as it would still require a separate license for parts of the specification that are not covered, and cannot be safely depended on in the long run. Besides, it couldn't be just linked to, but one would need to download it on the fly for every installation.	Implementations wouldn't be interoperable.	Quality wouldn't be great, but it's not a dealbreaker: some video is better than no video.	We do need a MTI video. I'd only be okay with such a consensus if it meant that we're giving up now, until we manage to find a suitable candidate later on.	Considering how divided the group is on those two codecs, we'd still be stuck with low quality video for most of the calls.		Considering how divided the group is on those two codecs, we'd still be stuck with low quality video for most of the calls.	Considering how divided the group is on those two codecs, we'd still be stuck with low quality video for most of the calls.	H.263 is much better than H.261, which means decent quality, but apparently there still are licensing burdens to it, which makes it better than H.264 but not that much.	H.263 is much better than H.261, which means decent quality, but apparently there still are licensing burdens to it, which makes it better than H.264 but not that much.		I said YES to Theora as the MTI, but this option makes no sense, since it doesn't mandate anything on the encoder side.	It's bandwidth consumption for reasonable resolutions/framerate is so overkill I really can't see it working anywhere out of a LAN.
Vanessa Sulkowski (vsulkow@cisco.com)	12/11/2013																
Salvatore Loreto (salvatore.loreto@ericsson.com)	12/11/2013		my concerns are related to the fact that one IPR owner has declared to be unwilling to license its IPRs needed to implement VP8	It does not make sense to me to have two similar codecs	I don't like the distinction between browsers and other entities, as it can create interop problem in the webRTC world	this solution doesn't seem to solve the interop problem, that is the reason behind MTI	Inferior quality, implementations not widespread										
					Does not guarantee interoperability for anything but browsers. My understanding is that there may be clients that are not browsers.	Does not guarantee interoperability.		This will guarantee (very) basic video interoperability. H.261 should be the codec with the lowest possible IPR risk.	Will guarantee spurious interoperability failures in P2P scenarios.			Licensing situation for H.263 is unclear. If it turns out that the proposed H.263 baseline is deployable without licensing, my "No" will transform into a "Yes" in a spectacular fashion.	Licensing situation for H.263 is unclear. If it turns out that the proposed H.263 baseline is deployable without licensing, my "No" will transform into a "Yes".				
Maik Merten (maikmerten@google.com)	12/11/2013	H.264 licensing. In the event of the H.264 baseline profile actually becoming royalty-free, which has been discussed for years without results. "Yes"		H.264 licensing.		Does not guarantee interoperability.						Licensing situation for H.263 is unclear. If it turns out that the proposed H.263 baseline is deployable without licensing, my "No" will transform into a "Yes".	Licensing situation for H.263 is unclear. If it turns out that the proposed H.263 baseline is deployable without licensing, my "No" will transform into a "Yes".			Does not guarantee interoperability.	Coding efficiency is by far the lowest of all proposed codecs. Still better than "no MTI", as this at least allows for visual content with low update frequency.
Roman Shpount (roman@telurix.com)	12/11/2013	See email: Licensing issues. Difficulties for small player to ensure license coverage and avoid risk. Cisco binary doesn't work for optimized server operations.	It is acceptable since implementation is provided by Google under reasonable license terms. It is not a strong yes since VP8 is not formally defined by any standard's body.	Not acceptable due to H.264 licensing. Creates additional burden on development and support	Not acceptable due to H.264 licensing. Creates additional burden on development and support	Does not result in MTI.	Quality is not acceptable for modern video communications	Video is essential to WebRTC	Essentially makes H.261 an MTI, but its quality is not acceptable for modern video communications	No better then VP8 since it never went through a standard body, but much worse quality wise.	Additional burden on implementation and support with a strong option of using H.261 for call which is not acceptable due to quality.	Additional burden on implementation and support with a strong option of using H.263 for call which is not acceptable due to quality.	Decoding H.264 has exactly the same licensing issues as encoding it, so it is as unacceptable for me as simple H.264 support	Quality is much worse then H.264 and VP8. Still requires IPR licensing	Additional support burden. Theora can be used for communications but its quality is much worse then VP8 or H.264	Does not create an MTI	Resulting quality would be so bad it would be almost unusable.

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Engel Nyst (engel.nyst@gmail.com)	12/11/2013	MPEG-LA owns patents /and/ uses them aggressively to stifle development of open standards. I do not see this as remotely appropriate for "Mandatory"-to-implement. I am concerned about the fake appearances Cisco is giving. The code "appears" to be BSD-licensed, and github repository gives no indication to well intended people that in reality it's not. Forking the repository and building a derivative release "already runs afoul" of MPEG-LA restrictions and exposes people to uncertainty and being chased for fees, when it's a natural thing to do. Misleading people that an implementation is open source when it's not is an unacceptable action in my book, under any shape or form; and I will keep short here as to other practical scenarios and issues that it brings.		MPEG-LA owns patents /and/ uses them aggressively to stifle development of open standards. I do not see this as remotely appropriate for "Mandatory"-to-implement. Misleading innocent actors that it's open sourced when it's not, is an unacceptable action in my book.	MPEG-LA owns patents /and/ uses them aggressively to stifle development of open standards. I do not see this as remotely appropriate for "Mandatory"-to-implement. Misleading innocent actors that it's open sourced when it's not, exposes them even more to uncertainty and doubt. Interoperability issues. However, at least I see in this option a narrow and difficult path to many, not all, compliant setups, at the price of ignoring the codec one doesn't implement or use in practice.	Interoperability issues. However, at least the islands that will result are feasible setups taken in isolation. Not optimal, but I could live with it considering all the context of this decision.		The result in practice is "islands" in other options, so might as well not choose a mandatory-but-not-used-in-practice solution. Interoperability not achieved for the next years before an open standard is ready at the quality of the day. However the objection should be read as softened by the above.			MPEG-LA owns patents /and/ uses them aggressively to stifle development of open standards. I do not see this as remotely appropriate for "Mandatory"-to-implement. Misleading innocent actors that it's open sourced like any other when it's not, exposes them even more to uncertainty and doubt.	MPEG-LA owns patents /and/ uses them aggressively to stifle development of open standards. I do not see this as remotely appropriate for "Mandatory"-to-implement. Misleading innocent actors that it's open sourced like any other when it's not, exposes them even more to uncertainty and doubt.	Too risky still. Patent aggressivity and bad faith.				Quality issues.	
Daniel Theophanes (theophad@mbx.com)	12/14/2013	See email for full comments: IPR beyond what MPEG-LA licens give rights to. Cisco's offer doesn't solve all issues. Prefer a dog that might bite, rather the one that has.		There only needs to be one MTI by definition.		The posted H.261 video samples appeared to be acceptable quality and acceptable frame rate for a fail-back codec. Maybe that's all the MTI should be. Most people interact within social groups that have similar preferences and pressures so it is likely a better codec will be chosen much greater then 70% of the time.	The ASCII Art codec MAY be preferable to this. Oh, maybe that's not an IETF standard. I mean RFC, I mean...											
Steve McFarlin (steve@tokbox.com)	12/16/2013	Not all platforms expose access to a hardware or software encoder. If every feasible platform exposed H.264 APs then my reply would be "Acceptable 0.4". I also feel the IPR burden is too much on smaller players implementing MCUs's.	While I don't like putting my faith with other companies when it comes to IPR, I truly believe that Google will in good faith deal with any IPR issues that arise in the future. I think the gamble is an acceptable risk.	While I still think the IPR on 264 is a burden, I think this is acceptable with respect to the browser space. My only concern is this option might just fragment/split the webtrc space with conforming and non conforming implementations. If selected I full expect FOSS implementations to be mostly VP8. With this said as long as the major players (browsers) implement both, then any custom non conforming RTC stack will still work in most cases. There is still 264 IPR issues on conforming MCUs that do any coding tasks with the 264 data. There are also IPR issues related to broadcasting and the sale of H.264 content, but those are obviously outside the scope of this discussion.	There is still 264 IPR issues on MCUs that do any coding tasks with the 264 data. There are also IPR issues related to broadcasting and the sale of H.264 content, but those are obviously outside the scope of this discussion.	This only makes sense if we want to 'see who wins'. Given the division amongst many people I suspect we would see more 244 xor VP8 implementations then ones with both.	While the video is usable, it just can't compete in the modern video communications space.	If no consensus is made on any other option then I see no other choice. This group needs to move forward at some point.	I really don't like the fallback to 261. It is just not a good codec.	While better than 261, I feel having at least one modern codec as a modern video communications.	I really don't like 261. It is not a good codec for IPR holder to select targets.	As far as I am aware 263 still has IPR issues. This just forces compliant stacks into a possible IPR violation issue.	While I think the risk of an IPR suite for disturbing a H. 264 decoder is small, I would not put it past some NPE popping up and forcing you to visit that lovely court in Texas. The visit alone would put any small player instantly out of business assuming they did not 'pay the fee'. This option in a IETF spec just makes it that much easier for a NPE or IPR holder to select targets.	Possible IPR issues. Not a modern codec. (I understand VP8 and 264 are not modern codecs per say, but at least they are 'more' modern than 263).	Theora is a better quality codec than 261, and does not have any possible IPR issues that 263 has. I am not sure of the IPR status of Theora, and I don't ever recall seeing someone sued for it. Then again maybe there has never been a big enough target for anyone who thinks they have IPR on Theora from coming forward. I would personally be willing to take a risk on the much more than 263 or distributing a H.264 decoder.	Maybe I have not had enough or had too much coffee today, but I don't see the logic in this option at the moment.	I understand the need to enumerate all options, but this just has so much FAIL attached to it. Do we really need interop with old Canon network cams (lol)? On the positive side I think Firefox still supports motion JPEG streaming as a relic from the Netscape implementation back in 96 (or earlier). Kidding aside, this will be way too bandwidth intensive to achieve good quality video.	

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Harald Alvestrand (harald@alvestrand)	12/17/2013	This option locks the entire ecosystem into the MPEG-LA licensing scheme. This is harmful for the development of the ecosystem.		This option locks the ecosystem into the MPEG-LA licensing scheme, but the inclusion of a royalty-free alternative means that entities that do not claim conformance can leave out H.264, and still be members of the ecosystem; therefore, the harm to the ecosystem is less than a pure H.264 MTI.	This locks the browser part of the ecosystem into the MPEG-LA licensing scheme. The current large browser vendors (Apple, Microsoft, Google, Mozilla) all have current or planned strategies for H.264 licensing agreements - H.264 licensing fees are not an issue for them (including the Cisco/Mozilla alliance). This option allows other entities to claim conformance while still communicating with the browser ecosystem; it is therefore less objectionable than 3, but still gets a lower score because the inconsistent requirements allow some cases of interoperability failure. It does require new browsers to find a way to live with H.264 licensing in order to claim conformance.	option does not give interoperability.	H.261 is presumably royalty free, the quality impact is high enough to isolate baseline codec users from the ecosystem.	fails to achieve interoperability.	This achieves very limited interoperability between high quality islands, but will allow a high quality ecosystem to evolve, even if isolated, and is therefore less objectionable than the pure "H.261 as MTI" alternative.	IPR and quality properties of this codec are not different enough from those of VP8 to make it an "alternative that makes a difference"; the IPR status is approximately equal, and the quality is definitely worse.	This achieves very limited interoperability between high quality islands, but will allow a high quality ecosystem to evolve. In contrast to 8, this allows entities without H.261 to claim a high quality ecosystem to evolve.	This achieves limited interoperability at a slightly higher quality level than with H.261, but at the cost of some IPR risk. It allows a high quality ecosystem to evolve.	It is not clear what the implication of this alternative is.	H.263 raises some IPR risk, but gives better quality interoperation than H.261.	This achieves limited interoperability at a reasonable quality, but the advantage of including Theora in the mix seems limited in terms of reassuring people with IPR worries.	alternative does not give interoperability, since it doesn't have an MTI encoder.	same logic as for 6 applies. In addition, the bitrate shown for MJPEG is appallingly high for any reasonable quality.
David Singer (singer@apple.com)	12/18/2013		VP8 has a formal declaration of unlicensable IPR, https://ietf.org/ipr/2035/ .	VP8 has a formal declaration of unlicensable IPR, https://ietf.org/ipr/2035/ .	VP8 has a formal declaration of unlicensable IPR, https://ietf.org/ipr/2035/ . Also, 'browser' is ill-defined, and it is not correct to try to divide the world in this way.		Few have H.261 implemented any more, and those that don't, will not implement to comply with this requirement.		Few have H.261 implemented any more, and those that don't, will not implement to comply with this requirement.	Theora is not 'current', it has an unclear license situation, is poorly supported in hardware.			VP8 has a formal declaration of unlicensable IPR, https://ietf.org/ipr/2035/ .		Theora is not 'current'. It has an unclear license situation, is poorly supported in hardware. VP8 has a formal declaration of unlicensable IPR, https://ietf.org/ipr/2035/ .	Theora is not 'current', it has an unclear license situation, is poorly supported in hardware.	
Richard Shockey (richard@shockey.us)	12/18/2013						Not efficient on the wire by any reasonable operational standard.	A decision of no MTI codec impedes interoperability and ultimately IMHO dooms the entire project.	leave H.261 out of this.		Either VP8 or 264 but not one of 3. I object to the inclusion of H.261 as unacceptable.				No more than 2.		
Dan Romascanu (dromasca@avaya.com)	12/19/2013		There are still unresolved IPR claims. Availability of a binary distribution would alleviate these concerns.	There are still unresolved IPR claims. Availability of a binary distribution would alleviate these concerns.	are still unresolved IPR claims on VP8. Availability of a binary distribution would alleviate these concerns	No interoperability	Unacceptable RT quality	No interoperability. This would change in 'Acceptable' if a videocodec WG is chartered immediately to develop an IPR-clean video codec specification, on the lines of the work done for the audio codec which resulted in OPU, and the RTCWEB commits to adopt it as MTI codec	: RT quality is not guaranteed	ncertain IPR status for Theora	RT quality is not guaranteed	RT quality is not guaranteed	are still unresolved IPR claims on VP8.	unacceptable RT quality	uncertain IPR status on Theora, there are still unresolved IPR claims on VP8.	uncertain IPR status on Theora	inefficient codec, high BW requirements, IPR issues
Christer Holmberg (holmberg@ericsson.com)	12/19/2013		Unclear IPR situation	One MTI codec is enough	There are no justification for distinguishing between browsers and non-browsers.		We shall look forward, not backward.		One MTI codec is enough	Unclear IPR situation	One MTI codec is enough	One MTI codec is enough	Acceptable, even though I still think one MTI codec is enough	We can look a little backward, if really needed.	One MTI codec is enough	Strange criteria (decoding only).	May not work in resource restricted scenarios.
Matthew Kaufman (matthew.kaufman@skype.net)	12/20/2013	There are entities that are unable to comply with the license terms around H.264	There are entities that are unable to accept the legal risk of shipping VP8	There are entities that are unable to comply with the license terms around H.264 and there are entities that are unable to accept the legal risk of shipping VP8	There are entities that are unable to comply with the license terms around H.264 and there are entities that are unable to accept the legal risk of shipping VP8. Additionally I have seen no justification for distinguishing between browsers and non-browsers.		There appear to be no entities that are prevented from shipping one of these at this time based on the responses I have seen, however we may find at a future time that this is not true. It also will be meaningless at a future time when a new codec comes along that is in all ways superior. I also believe that it will be reasonable to have "audio-only WebRTC devices", and those obviously won't want to ship either codec.	All of my other objections are remedied by this option. Additionally, this entire straw poll is flawed in that the technical community is answering on behalf of their respective legal departments, who are not present for the discussion.	Old inefficient codec. No reason to be forced to carry the cost of having this code	Old inefficient codec. No reason to be forced to carry the cost of having this code	H.261 is an Old inefficient codec. No reason to be forced to carry the cost of having this code.	H.263 is an older, less efficient codec but still has IPR issues that some entities will not be able to meet. There are few entities that can meet this by shipping VP8 and H.264.	At this time I am not convinced that there is a way for all entities to comply with the decoding requirement.	Older less-efficient codec. IPR issues.	Code cost and IPR risk of carrying Theora. Also my understanding of Theora is that there is no separate smaller decoder-only codebase.	Code cost and IPR risk of carrying Theora. Also my understanding of Theora is that there is no separate smaller decoder-only codebase.	Codec does not provide sufficient quality at reasonable bandwidth for any use case.

Responder	Date	1. All entities MUST support H.264	2. All entities MUST support VP8	3. All entities MUST support both H.264 and VP8	4. Browsers MUST support both H.264 and VP8, other entities MUST support at least one of H.264 and VP8	5.All entities MUST support at least one of H.264 and VP8	6. All entities MUST support H.261	7. There is no MTI video codec. Doesn't guarantee interoper. This would be Acceptable if the IETF immediately moved forward with a VIDEO Working Group to standardize a new IPR free video codec	8. All entities MUST support H.261 and all entities MUST support at least one of H.264 and VP8	9. All entities MUST support Theora	10. All entities MUST implement at least two of (VP8, H.264, H.261)	11. All entities MUST implement at least two of (VP8, H.264, H.263)	12. All entities MUST support decoding using both H.264 and VP8, and MUST support encoding using at least one of H.264 or VP8	13. All entities MUST support H.263	14. All entities MUST implement at least two of (VP8, H.264, Theora)	15. All entities MUST support decoding using Theora.	16. All entities MUST support Motion JPEG
Alan Johnstone alan.b.johnston@gmail.com	12/23/2013		A VP8 binary from Google would turn this into a Yes	A VP8 binary from Google would turn this into a Yes		Doesn't guarantee interop	Quality of H.261 is not acceptable		Quality of H.261 is not acceptable	IPR on Theora is even more unknown than VP8	Quality of H.261 is not acceptable	A VP8 binary from Google would turn this into a Yes Not a clean option requiring one codec in one direction and another one in a different and may present interoperability challenges		Quality of H.263 is not sufficient for it to be the sole MTI video codec	A VP8 binary from Google would turn this into a Yes	IPR on Theora is even more unknown than VP8	Most of us don't live in South Korea or Japan and hence don't have enough bandwidth
Sanjay Mishra mishra@verizon.com	12/24/2013		Prefer H.264 over VP8 as MTI		No objection but a comment. Prefer that all entities support both H.264 and VP8	Do not support VP8 over H.264 as MTI		Risks interoperability	Do not support possible outcome of VP8 and H.261 as MTI	Adds deployment and Operations care as this is not known to be a wider deployment	Do not support possible outcome of VP8 and H.261 as MTI	Do not support possible outcome of VP8 and H.263 as MTI		Not a good choice for MTI given wider deployment of H.264	Do not support possible outcome of VP8 and Theora as MTI	Adds deployment and Operations care as this codec is not known to be a wider deployment	Low quality video
Gunnar Helstrom gunnar.helstrom@omnitor.com	12/24/2013		Will cause more interoperability problems with other environments than H.264	More complex than plain H.264	Will cause more problems with interop with other environments than plain H.264.	Does not encourage interoperability sufficiently.	H.261 has no suitable formats for modern cameras.	Acceptable if MTI is agreed by another powerful organization.	H.261 has no suitable formats for modern cameras.	Not sufficient wide spread before to be of interest.	Complex construction. H.261 is not sufficient.	Will cause risk for transcoding to achieve interop with other environments.	Asymmetric agreed to have interoperability risks	Quite good, but said to not agree on latest generation.	Theora is too little implemented to be of interest.	Theora is too little implemented	MJPEG is too bandwidth hungry
Roni Even (ron.even.tv@gmail.com)	12/25/2013		Inteop issues with video conferencing		Complicate the implementation but provide interoperability	Does not provide interoperability	low quality	There are better options like having more than one MTI codec.	H.261 does not provide the quality	Not widespread enough for interoperability	H.261 is not the right codec	A better solution if cannot agree on one MTI codec	better have newer codecs	will not address interoperability	No MTI codec and no interoperability		bandwidth and interoperability issues
Silvia Pfeiffer (silvipfeiffer1@gmail.com)	12/26/2013	The licensing situation of H.264, where you have to pay a license to MPEG-LA and to companies like AT&T (see http://www.att.com/gem/sites/psales?pid=19116) is not acceptable. * nor for an open Web (imagine if we all had to pay license fees for the use of UTF-8 or ASCII - how much limited would we be to publish content/communicate - any bureaucracy is an obstacle to innovation and non RF-licensing is such an obstacle), * nor for the open source community (see http://sgallagh.wordpress.com/2013/11/06/ietf-mi-codes-and-federal/ for a clear discussion of why OpenH.264 is not a solution), * nor does it agree with the IETF's preference of using technologies with no known IPR claims, or with royalty-free licenses (see ftc3979), * nor does it agree with the W3C's assurance that Recommendations can be implemented on a royalty-free (RF) basis (see http://www.w3.org/ConsortiumPatent-Policy-20040205). Therefore, having H.264 as the one and only MTI is not acceptable.	VP8 satisfies the IETF's preference of royalty-free licenses more so than H.264, because it covers both encoders and decoders, while the H.264 IP licenses are only for decoders and because all known patents (bar one) are available royalty-free. The agreement between Google and MPEG-LA is reassuring for the IPR of those 11 companies that were part of the VP8 pool at MPEG-LA (http://www.mpegla.com/ListMPEG%20LA%20News%20List/Attachments/88/n-13-03-07.pdf). The VP8 cross-license agreement with further companies (http://www.webm-cd.org/vp8/primary-licensors) is further reassuring. The Nokia IPR declaration (https://datatracker.ietf.org/ipr/pr/2035) without willingness to license is obviously an issue for some of us. As much as I have a gut feeling that the Nokia claims are only patent trolling, there is certainly FUD. I would go to 100% "Yes" if there was an analysis of the Nokia IPR that credibly refutes the claims.	Having both codecs supported helps bring interoperability with legacy devices into WebRTC. However, we cannot require the implementation of H.264 for the reasons stated in 1.b. Also, a clean split the WebRTC world with live transcoding services, which introduces latency and is therefore not desirable.	Browsers are just sample players. If we accepted a rule like this, we would need to extend it to all players, including mobile phone apps, desktop apps etc. Such a rule would clearly split the WebRTC world into two camps, with browsers being the link between them, which is not desirable.	This is just as bad as not choosing an MTI codec, see 7. b. It also splits the world into two camps, which can only interoperate with live transcoding services, which introduces latency and is therefore not desirable.	It's as bad as going back to G. 711 for audio. But since I would only use where devices do not speak the same higher quality codec, it might be acceptable. This might be more future-proof than the (H.261, H.264, VP8) combination, since H.265, VP9 and even Daala are already on the horizon.	We might as well give up on standardisation efforts, since this does not provide for any interoperability. Having said this, I believe if we drag out the MTI selection a bit longer, we may end up with better choices, such as VP9 or Daala for which the patent situation should be clearer.	I think we can achieve the same effect with 6. but 6. is a bit more future-proof than the support of several codecs certainly increases maintenance requirements, but a compromise is certainly required. Maybe H.261 as the MTI and a recommendation on H.264 or VP8 as the newer codecs to implement right now with a need to review every 2 years or so.	Theora is an older codec than VP8 - I thought the world had moved on to VP8 by now, both from a quality and from an IPR POV. However, if we have to pick an old codec, I would prefer Theora over H.261 as the MTI for its better quality/bandwidth use.	It's effectively the same as 8 and thus 8.b applies.	H.263 is as much encumbered as H.264, so why go back to an older codec than the same IPR issues that all issues of 1.b still apply to this option.	Same as 3.b except not every device has to do both codecs, which is easier for creating applications that only serve part of the market.	same as 11.b misapplying yesterday's technology just for compliance with "requirements" of a business model that is not mine does not make sense to me. especially when many the folks subscribing to the business model don't want this alternative themselves.	This is not a solution to MTI - a video conference needs both decoding and encoding ends to interoperate.		I actually like adding Motion JPEG as a codec, because JPEG decoding is readily available. However, M-JPEG is not a solution for the video MTI codec because of its high bandwidth need and poor adaptability to available bandwidth. I'd want it, however, as a solution to low framerate, high resolution video needs such as document cameras and maybe even screen sharing. This should be a separate discussion.
Stephan Wenger (stewe@stewe.org)	12/27/2013	Preference for SVC, H.265, modern codecs with scalability in general	Preference for SVC, H.265, modern codecs with scalability in general		High cost (licensing, risk allowance) for no gain	No interop point		misapplying yesterday's technology just for compliance with "requirements" of a business model that is not mine does not make sense to me. In addition: High cost (licensing, risk allowance) for no gain	Hi risk for no gain. W3C/WhatWG looked into this, carefully, and decided against it.	misapplying yesterday's technology just for compliance with "requirements" of a business model that is not mine does not make sense to me. In addition: High cost (licensing, risk allowance) for no gain	misapplying yesterday's technology just for compliance with "requirements" of a business model that is not mine does not make sense to me. In addition: High cost (licensing, risk allowance) for no gain	misapplying yesterday's technology just for compliance with "requirements" of a business model that is not mine does not make sense to me. In addition: High cost (licensing, risk allowance) for no gain	High cost (licensing, risk allowance) for no gain. Does not mitigate encoder patent risk in any meaningful way.	Potentially very high cost (licensing, risk allowance) for no gain	Hi risk for no gain. W3C/WhatWG looked into this, carefully, and decided against it.	technically inferior beyond reason.	
Brent Kelly (bkelly@kelcor.com)	12/27/2013	May kill video WebRTC innovation given liability risk			More work for implementing the standard, but it could allow the different camps to optimize their own preferred codec. More risk too.		I'd hate this option to win the day, but at least the rest of the standard would not be held hostage by the video issue	Don't like H.261									
Tim Pantoni (tim@phonemh.net)	12/28/2013	The license(s) of H.264 imposes too many quantified financial/legal restrictions on its use to support the level and kinds of innovative use that weRtK may see if it is successful. As such it risks damaging innovative players and entrenching the world view of the existing players. The cisco plugin marginally mitigates this, but does not address mobile apps, or future business models that don't fit in the current license grant.	Same objection as 1) - It exposes all webRTC use to the full range of legal risk for both codecs		In theory this risks is a significant level of interop failure, but in practice it will probably end up as a "the market will decide" option, with the huge majority of users ending up using a single codec.	The codec will be unacceptable for a large number of (mobile) use cases requiring dynamic bandwidth adjustment.	The codec will be unacceptable for a large number of (mobile) use cases requiring dynamic bandwidth adjustment.	The H261 codec will be unacceptable for a large number of (mobile) use cases. This option is worse than 5) since it reduces the pressure on the browser makers to avert interop failure.		Along with the objections to 5) and 6) This also brings added complexity in implementation, api, user interface and signalling - for a minimal (or zero) benefit.	SDP is really bad at specifying asymmetric connections - with the current API's this would ensure that every javascript programmer would need to become an SDP expert.	H263 is unlikely to be acceptable for a large number of (mobile) use cases requiring dynamic bandwidth adjustment.				unlikely to be acceptable for a large number of (mobile) use cases requiring dynamic bandwidth adjustment.	

Responder	Date	1. All entities MUST support H.264	2. All entities MUST support VP8	3. All entities MUST support both H.264 and VP8	4. Browsers MUST support both H.264 and VP8, other entities MUST support at least one of H.264 and VP8	5. All entities MUST support at least one of H.264 and VP8	6. All entities MUST support H.261	7. There is no MTI video codec	8. All entities MUST support H.261 and all entities MUST support at least one of H.264 and VP8	9. All entities MUST support Theora	10. All entities MUST implement at least two of (VP8, H.264, H.261)	11. All entities MUST implement at least two of (VP8, H.264, H.263)	12. All entities MUST support decoding using both H.264 and VP8, and MUST support encoding using at least one of H.264 or VP8	13. All entities MUST support H.263	14. All entities MUST implement at least two of (VP8, H.264, Theora)	15. All entities MUST support decoding using Theora.	16. All entities MUST support Motion JPEG
Ross Finlayson (rfinlayson@live555)	12/28/2013	The licensing requirements for H.264 will likely be unworkable for many people - e.g., those that produce open source software distributions, and those developers who cannot use Cisco's binary (e.g., because they're developing for platforms that permit statically-linked applications only). (Generally speaking, licensing schemes that rely upon counting or monitoring copies of data seem anachronistic in the Internet age.) H.264 may well end up becoming the "de facto standard" video codec (at least for the next few years), and should, perhaps, be "highly recommended" for WebRTC, but because of the licensing requirements, it cannot be made "mandatory" to implement.		See my response to question 1	The term "browser" isn't well-defined in this context. An application may support the RTCPWeb protocols, and render audio/video, but might not necessarily be thought of as being a general-purpose web browser. So it doesn't seem to make sense to make such a distinction. See also my response to question 1.	This doesn't guarantee interoperability between any two endpoints.	(but not as good as option 10; entities that are willing to implement both H.264 and VP8 should not also be required to implement H.261).	This will probably be what we end up with, unfortunately, but it's not something that the IETF should state definitively, because it makes it harder for us to ever change our minds about this in the future. Saying "The IETF has not reached consensus on a MTI video codec" is better than saying "The IETF has reached consensus that there is no MTI video codec".	(but not as good as option 10; entities that are willing to implement both H.264 and VP8 should not also be required to implement H.261).			H.263 is encumbered, right?	See my response to question 1.	H.263 is encumbered, right?	Unless we also specify that "encoders" support Theora, this doesn't guarantee interoperability.	JPEG is a very poor codec for video (because every frame is an "I-frame"). It also has very high bandwidth requirements (for reasonably video quality), and is poorly suited for streaming via RTP over a WAN, because each JPEG frame will typically be fragmented over very many RTP packets, but the loss of any one of these RTP packets will typically make the entire frame un-renderable by the receiver.	
Peter Dunkley (peter.dunkley@crocodiler.com)	12/20/2013	Yes, I am concerned about the difficulty (in terms of licensing) of using H.264 on iOS, Windows Mobile, and similar platforms as the Cisco binary will not be usable in all cases.			Yes, this will not ensure interoperability which is the whole point of an MTI codec.	Yes, as time goes on people will move away from H.264 and VP8 for better performing codecs. It would seem pointless to start off with such an old one.	Yes, interoperability is important and an MTI video codec will be needed for this.	Yes, I don't like the idea of falling back to H.261 but this at least means there a good chance of a better codec being selected.	Yes, as time goes on people will move away from H.264 and VP8 for better performing codecs. It would seem pointless to start off with such an old one.	Yes, I don't like the idea of falling back to H.261 but this at least means there a good chance of a better codec being selected.	Yes, I don't like the idea of falling back to H.261 but this at least means there a good chance of a better codec being selected.	Yes, there are licensing requirements for H.263 and unlike H.264 there is no Cisco (or other) binary to at least help with this on some platforms.	Yes, there are licensing requirements for H.263 and unlike H.264 there is no Cisco (or other) binary to at least help with this on some platforms.	Yes, there are licensing requirements for H.263 and unlike H.264 there is no Cisco (or other) binary to at least help with this on some platforms.	Yes, I don't like the idea of falling back to Theora but this at least means there a good chance of a better codec being selected.	Yes, as time goes on people will move away from H.264 and VP8 for better performing codecs. It would seem pointless to start off with such an old one.	Yes, as time goes on people will move away from H.264 and VP8 for better performing codecs. It would seem pointless to start off with such an old one.
Paul Coverdale (coverdale@sympa)	1/7/2014		IPR status unclear and lack of interoperability with existing video services	Not ideal, but provides interoperability (albeit with IPR risk)	Not ideal, but provides interoperability. Though we call it webrtc, I don't favor browsers being a mandatory middleman. (I do trust at least a few browsers to support both, regardless of our MTI wording.)	Doesn't provide interoperability	Poor quality, and doesn't provide interoperability with existing video services	Basically lets the market decide	Poor quality of H.261, not widely deployed	Doesn't provide interoperability with existing video services	Poor quality of H.261, not widely deployed		Doesn't provide full interoperability with existing video services	Not widely deployed	Doesn't solve interoperability	Doesn't solve interoperability	Not a viable proposal
John Leslie (john@ic.net)	1/7/2014	Too many potential implementors have IPR problems	Too many potential implementors have IPR problems	Too many potential implementors have IPR problems (Note, I do support these as SHOULD)	Too many potential implementors have IPR problems	Too many potential implementors have IPR problems		I dislike giving up; but the horse appears pretty dead. Punting to another group would be a Yes. Not in favor, but I would hate for this workgroup, that has proven to be capable of iteration and consensus on other topics, to spend more time on this. We tried, we failed. There is a lot of other work to be accomplished. Also, a lot is happening in this space with VP8, Daala and this other codec I keep hearing about, making this conversation less and less interesting with every month that goes by.	#10 is much better.	IPR situation is unclear.		IPR situation is unclear.	Too many potential implementors have IPR problems.	IPR situation is unclear.	IPR situation is unclear.	Doesn't solve the issue, and IPR situation is unclear.	IPR situation is unclear (and decidedly not worth clarifying!).
Serge Lachapelle (sergel@webrtc.org)	1/8/2014	Licensing methods from MPEG-LA make it hard for individuals and small companies to build services (non-commercial or commercial, in or out of the browser, in or out various app stores) around WebRTC. The amounts involved and accounting chores required are a serious issue for many small companies / individuals. This will hurt the eco system.			I object to the H.264 licensing cost and chores as I wrote in 1b, but this one opens up the MTI to individuals and small companies to build services (non-commercial or commercial, in or out of the browser, in or out various app stores) that interop without with payments or accounting chores.	Similar to 3b	The 90's called. They want their codec back. This will seriously hurt users, especially users with fixed cap mobile data plans. They will get a subpar experience and be penalized financially for using a MTI based solution. With everyone leaving desktops and large chunks of population moving to mobile links for their home broadband, this is an issue.	261 is too old to offer acceptable performance. These high bitrates would hurt innocent users' mobile data plans in the name of interop.	Needs investigation. While I feel it is better than 261, I have no clue how it performs for RTC, nor has this been discussed much in this group.	We can do better than this. This is the equivalent of 6. The fall back will create situations that do not perform well on mobile devices. Showing a h.261 stream on a retina screen that is acceptable must be impossible at normal mobile bitrates. These high bitrates would hurt innocent users' mobile data plans in the name of interop. Not acceptable.	H.263 has not been debated or analyzed enough. How does one license it? Does one need to license it? What % of bw does it take more than VP8 or 264?	Why would we do this? Unclear to me.	H.263 has not been debated or analyzed enough. How does one license it? Does one need to license it?	In all honesty, I do not know enough of Theora nor do I feel it has been debated in this group enough to form an opinion.	MTI should be encoded as well.	Bitrates are incredibly high. This would kill any mobile data plan immediately and hurt end users.	
Adam Fineberg (fineberg@vine.me)	1/7/2014				Shouldn't differentiate between types without clearer delineation.	No interop guarantee		No interop guarantee								No guarantee of encoding in compatible format	

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Gaëlle Martin-Cocher (gmartincocher@bl)	1/8/2014			- One MTI is enough if the codec provides "good enough" performances. - VP8 Brings a higher cost or does not allow to interoperate with existing solutions/platforms. - VP8 is not yet a standard and would benefit of going through the full ISO process.	- There is no reason to make a distinction between browser and non-browser. - One MTI is enough if the codec provides "good enough" performances. - VP8 Brings a higher cost or does not allow to interoperate with existing solutions/platforms. - VP8 is not yet a standard and would benefit of going through the full ISO process.	- Does not insure interoperability - This is somewhat equivalent to no MTI while slowing down the widespread adoption of a more powerful codec by RTCWeb.	- In terms of "old codecs" H263 would be a better choice. - It took years to remove normative support of H261 from specifications and platforms, RTCWeb should not mandate it back.	-	- In terms of "old codecs" H263 would be a better choice than H261. - It took years to remove normative support of H261 from specifications and platforms, RTCWeb should not mandate it back. - VP8 Brings a higher cost or does not allow to interoperate with existing solutions/platforms. - VP8 is not yet a standard and would benefit of going through the full ISO process.	-	- In terms of "old codecs" H263 would be a better choice than H261. - It took years to remove H261 from specifications and platforms, RTCWeb should not mandate it back. - VP8 Brings a higher cost or does not allow to interoperate with existing solutions/platforms. - VP8 is not yet a standard and would benefit of going through the full ISO process.	-	- VP8 Brings a higher cost or does not allow to interoperate with existing solutions/platforms. - VP8 is not yet a standard and would benefit of going through the full ISO process.	-	- Theora is not widely supported in hardware - Theora's licensing status is not clear enough - VP8 Brings a higher cost or does not allow to interoperate with existing solutions/platforms. - VP8 is not yet a standard and would benefit of going through the full ISO process.	-	-	
cb.list6@gmail.com	1/8/2014	There are entities that are unable to comply with the license terms around H.264	There are entities that are unable to accept the legal risk of shipping VP8	There are entities that are unable to accept the legal risk of shipping VP8	There are entities that are unable to comply with the license terms around H.264 and there are entities that are unable to accept the legal risk of shipping VP8. Additionally I am comfortable trying to define "browsers"	The selection of the MTI codec(s) must ensure all implementations have at least one codec in common. option does not address that requirement.	Old inefficient codec. No reason to be forced to carry the cost of having this code.	All of my other objections are remedied by this option. Additionally, this entire straw poll is flawed in that the technical community is answering on behalf of their respective legal departments, who are not present for the discussion.	Old inefficient codec. No reason to be forced to carry the cost of having this code.	Old inefficient codec. No reason to be forced to carry the cost of having this code.	H.263 is an older, less efficient codec but still has IPR issues that some entities will not be able to meet. There are few entities that can meet this by shipping VP8 and H.264.	H.263 is an older, less efficient codec but still has IPR issues that some entities will not be able to meet. There are few entities that can meet this by shipping VP8 and H.264.	At this time I am not convinced that there is a way for all entities to comply with the decoding requirement.	Older less-efficient codec. IPR issues.	Code cost and IPR risk of carrying Theora. Also my understanding of Theora is that there is no separate smaller decoder-only codebase.	Code cost and IPR risk of carrying Theora. Also my understanding of Theora is that there is no separate smaller decoder-only codebase.	Codec does not provide sufficient quality at reasonable bandwidth for any use case.	
Steve Donovan (srdonovan@usdon)	1/8/2014				I don't see the benefit of differentiating browsers and "other entities". Interop should exist between all reweb implementations.	The selection of the MTI codec(s) must ensure all implementations have at least one codec in common. option does not address that requirement.	Quality/bitrates not as bad as MJPEG. Available bitrates go up, even in mobile space. Those 256kbit/s streams are just 31.25 kilobytes per second (32 kilobyte/sec). Implementations aren't widespread now, but were, vic, ffmpeg/libav, IVS, microsoft (M261), intel has at least one if not more (intel's ipp library 7.0), pvr-gp4	The selection of the MTI codec(s) must ensure all implementations have at least one codec in common. option does not address that requirement.		IPR FUD was spread in the past without any followup claims despite commercial products. http://wiki.xiph.org/Games_that_us	That's no guarantee, but neither is h264. Uncertainty about its quality/bitrates is not a strong argument; tools are freely available to encode and decode.	Twice the maintenance burden. Licensing burden for h264, unresolved claims for vp8. H.261 can be avoided by those that can and wish to do so.	Twice the maintenance burden. Licensing burden for h264, unresolved claims for vp8.	Twice the maintenance burden. Licensing burden for h264, unresolved claims for vp8.	Licensing burden for h264.	Licensing burden for h263	Could still cause negotiation failure if the implementer just wants a rubber stamp that says "I've been compliant" and does not implement Theora encoding.	As I understand it, this does not guarantee successful negotiation of a video codec.
Hervé W. (H.O.W. aka.V+ietf@gmail.com)	1/8/2014	Fixating on either H.264 or VP8 was not productive and don't like the patent licensing situation. OpenH264 is generous, but far from perfect.	Fixating on either H.264 or VP8 was not productive and choosing VP8 while the Nokia claims are unresolved is not a good plan.	Twice the risk, twice the maintenance burden. Risk of negotiating failure if multiple parties aren't browsers.	Twice the risk, twice the maintenance burden. Risk of negotiating failure.	Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties for VP8	Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties for VP8	Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties for VP8	Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties for VP8	Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties for VP8	Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties for VP8	Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties for VP8	Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties for VP8	Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties for VP8	Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties for VP8	Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties for VP8	Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties for VP8	Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties for VP8
Xavier Marjou (xmarjou@orange.com)	1/9/2014		Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties	Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties for VP8	Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties for VP8	Transcoding (ie: cost + lower quality video) needed for interworking with existing video services + IPR uncertainties for VP8	Law quality + transcoding needed for interoperability	Transcoding possibly needed even for basic calls between different types of browsers.	Transcoding needed for interoperability if VP8 or H.261	Transcoding needed for interoperability	Transcoding needed for interoperability if VP8 or H.261	Transcoding needed for interoperability if VP8 or H.263	Transcoding possibly needed even for basic calls between different types of browsers.	Transcoding needed for interoperability	Transcoding needed for interoperability	Transcoding needed for interoperability	Transcoding needed for interoperability + bad quality + bit rate	

Responder	Date	1. All entities MUST support H.264	2. All entities MUST support VP8	3. All entities MUST support both H.264 and VP8	4. Browsers MUST support both H.264 and VP8, other entities MUST support at least one of H.264 and VP8	5. All entities MUST support at least one of H.264 and VP8	6. All entities MUST support H. 261	7. There is no MTI video codec	8. All entities MUST support H. 261 and all entities MUST support at least one of H.264 and VP8	9. All entities MUST support Theora	10. All entities MUST implement at least two of (VP8, H.264, H. 261)	11. All entities MUST implement at least two of (VP8, H.264, H. 263)	12. All entities MUST support decoding using both H.264 and VP8, and MUST support encoding using at least one of H.264 or VP8	13. All entities MUST support H. 263	14. All entities MUST implement at least two of (VP8, H.264, Theora)	15. All entities MUST support decoding using Theora.	16. All entities MUST support Motion JPEG
Justing Uberti (uberti@google.com)	1/9/2014	This forces all conformant WebRTC implementations to have to deal with MPEG-LA licensing restrictions, thereby stunting the growth of the ecosystem.	No objections. Google is a strong supporter of this option and is willing to provide a binary VP8 plugin, if doing so would make life easier for certain WebRTC implementations.	Not possible for implementations that can't deal with MPEG-LA reasons to be conformant.	Not possible for implementations that can't deal with MPEG-LA restrictions to be conformant, but non-browser endpoints can be completely conformant.	This is the best of the no-guaranteed-interop outcomes; at least the possible cases that app developers need to handle are known. Of the "acceptable", it is my least-preferred choice.	The quality of H.261 is low enough that I don't think it is possible to create a competitive application that works between apps that only agree on H.261.	No interoperability, or limits on what codecs might be encountered.	Like #10, but worse because all implementations need to incur the technical cost of a H.261 implementation.	The quality of Theora is low enough that I don't think it is possible to create a competitive application that works between apps that only agree on H.261.	No objections; better than #8, since browsers are not forced to deal with H.261.	Worse than #10.	Not clear what the benefit is over #3.	Worse than #1.	Worse than #10.	The quality of MJPEG is low enough that I don't think it is possible to create a competitive application that works between apps that only agree on H.261.	Worse than #6.
Markus. Isomaki@nokia.com Leon Geyser (lgeyser@gmail.com)	1/9/2014 1/9/2014		VP8 has not been developed and is not maintained through an open and recognized standardization process. It provides no additional technical value over H.264, which is widely used in real-time video conferencing, has wide hardware support, and is included in various other video related standards. This makes it unsuitable as mandatory to implement.	VP8 has not been developed and is not maintained through an open and recognized standardization process. It provides no additional technical value over H.264, which is widely used in real-time video conferencing, has wide hardware support, and is included in various other video related standards.	VP8 has not been developed and is not maintained through an open and recognized standardization process. It provides no additional technical value over H.264, which is widely used in real-time video conferencing, has wide hardware support, and is included in various other video related standards. Making browsers a special case creates confusion.	This is in practice no better than "There is no MTI video codec" from interoperability perspective.	H.261 does not offer high enough quality and is not widely enough supported.	Does not accomplish interoperability but still better than some of the either-or or lower quality fallback options. In case none of the other options gets a clear consensus behind it, the WG should accept this option for now rather than spending more time arguing. Otherwise we risk having many more areas of interop problems for the next 2-3 years, after which all of the codecs now considered may be legacy from competitive services perspective anyway.	H.261 does not offer high enough quality and is not widely enough supported.	There has been very little analysis on Theora in WebRTC context compared to other codecs being considered.	VP8 has not been developed and is not maintained through an open and recognized standardization process. It provides no additional technical value over H.264, which is widely used in real-time video conferencing, has wide hardware support, and is included in various other video related standards.	This would achieve interoperability with reasonable minimum quality, but Option 13 would achieve the same in practice in a cleaner way. These two-out-of-three options should not be a preferred way for standards setting.	Making a distinction between encoding and decoding creates confusion. Benefits are not clear enough.	VP8 has not been developed and is not maintained through an open and recognized standardization process. It provides no additional technical value over H.264, which is widely used in real-time video conferencing, has wide hardware support, and is included in various other video related standards.	This is not the best option, but as a fallback better than H.261 or Theora. Quality would be acceptable for some use cases. H.263 is still somewhat widely available.	There has been very little analysis on Theora in WebRTC context compared to other codecs being considered.	MJPEG is too inefficient to be useful in most situations.
				Too strict requirements	Too strict requirements	Won't help interoperability.	Won't help interoperability.									Won't help interoperability.	Very bandwidth intensive.
					There doesn't seem to be sufficiently good reasons to have different requirements for browsers and other entities. Browsers will need to communicate with existing H.264 systems if universal interoperability is to be achieved. One MTI is enough to ensure interoperability adding additional MTI Codecs adds additional cost complexity and risk.												
				One MTI is enough to ensure interoperability adding additional MTI Codecs adds additional cost complexity and risk.	VP8 adds a higher cost to interoperate with existing deployed systems which are H.264.	VP8 adds a higher cost to interoperate with existing deployed systems which are H.264.			H.263 would be better if we are going back in time. H.261 quality is very poor.		H.263 would be better if we are going back in time. H.261 quality is very poor.		Similar concerns still exist for VP8 decoding as for encoding.			Theora does not have much hardware support	
				VP8 adds a higher cost to interoperate with existing deployed systems which are H.264.	VP8 adds a higher cost to interoperate with existing deployed systems which are H.264.	VP8 adds a higher cost to interoperate with existing deployed systems which are H.264.			H.261 is obsolete and took years to remove from specifications and platforms. It is therefore not acceptable that RTCWeb now mandate it.		H.261 is obsolete and took years to remove from specifications and platforms. It is therefore not acceptable that RTCWeb now mandate it.		VP8 adds a higher cost to interoperate with existing deployed systems which are H.264.			VP8 adds a higher cost to interoperate with existing deployed systems which are H.264.	
				VP8 is not yet standardized by a recognized standards organization and therefore is not subject to the obligations that standards organizations place.	VP8 is not yet standardized by a recognized standards organization and therefore is not subject to the obligations that standards organizations place.	VP8 is not yet standardized by a recognized standards organization and therefore is not subject to the obligations that standards organizations place.			Since practically H.261 quality will be unacceptable to users we will need to rely on the other two codecs so this basically gets us into the same situation as 5 with two separate camps with different non interoperable codecs		Since practically H.261 quality will be unacceptable to users we will need to rely on the other two codecs so this basically gets us into the same situation as 5 with two separate camps with different non interoperable codecs		VP8 is not yet standardized by a recognized standards organization and therefore is not subject to the obligations that standards organizations place.			VP8 is not yet standardized by a recognized standards organization and therefore is not subject to the obligations that standards organizations place.	
				A declaration of un-licensable IPR has been made against VP8 and the impact of this is not clear.	A declaration of un-licensable IPR has been made against VP8 and the impact of this is not clear.	A declaration of un-licensable IPR has been made against VP8 and the impact of this is not clear.			Theora does not have much hardware support		Theora does not have much hardware support		A declaration of un-licensable IPR has been made against VP8 and the impact of this is not clear.			A declaration of un-licensable IPR has been made against VP8 and the impact of this is not clear.	
Andrew Allen (aallen@blackberry.com) Miguel Casas-sanchez (mccasas@google.com) Bossiel (bossiel@yahoo.fr)	1/8/2014 1/9/2014 1/10/2014		Just adds higher cost for interoperability with the existing deployed systems which are H.264.							Licensing status is unclear							

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Gavin Llewellyn (gavin.llewellyn@crocodile)	1/9/2014						I think audio-only (perhaps accompanied with a still picture transferred over a DataChannel) would give a better user experience than poor quality video.	I think we should aim for guaranteed interoperability by implementing at most two codecs.	I think audio-only (perhaps accompanied with a still picture transferred over a DataChannel) would give a better user experience than poor quality video.	If you're going to mandate a single codec, at least make it one of the two real contenders - don't try to achieve compromise by making everyone equally unhappy.	I think audio-only (perhaps accompanied with a still picture transferred over a DataChannel) would give a better user experience than poor quality video.			Guarantees licensing headaches, but still gives you a sub-optimal result.			Seriously?	
Erik Lagerway (erik@hookflash.com)	1/9/2014	Insisting on royalty bearing codec will have an adverse effect on software development, specifically with indie development in mind. I would take the IPR issues over royalties.	It seems this codec is getting closer to MPEG-LA thumbs up so I don't see why we should not all use this codec as a minimum. It's also the current codec in the majority of WebRTC implementations today.	Insisting on royalty bearing code will have an adverse effect on software development, specifically with indie development in mind. I would take the IPR issues over royalties.	This is likely the best scenario after VP8		Feels like we are going backwards here.	If we can't agree on a specific codec this could be a way forward and put the MTI issue to rest.	Feels like we are going backwards here.	Too obscure.	Mandating one codec is hard enough.	Mandating one codec is hard enough.	Mandating one codec is hard enough.		Feels like we are going backwards here.	Mandating one codec is hard enough.	Too obscure.	Too obscure.
Benjamin Schwartz (bemasco@google.com)	1/9/2014	We are discussing not just an IETF standard but a Web standard. Web standards must take an even stronger stance against legal straitjackets because usage is enormous in scale and unpredictably creative in nature.		An ecosystem where all the large browser providers support both codecs would be good for small providers of webrtc-enabled browsers, programs, and devices, who might only be able to ship one codec. However, this option makes no distinction, e.g. requiring every copy of Gnome Epiphany and KDE Konqueror to include h.264 enc and dec in order to be compliant. A "MUST support one, SHOULD support both" might be acceptable.			BUT I reject the phrasing of this question, because I believe the option on the mailing list was raised without resolving the distinction between H.261 and MPEG-1 Part 2. I believe that MPEG-1 Part 2 is a suitable MTI codec for rtcweb. It was completed 24 years ago, and finalized 22 years ago, so its IPR status is clear. It has widespread hardware and software support, is very low complexity to decode in software, and has compression efficiency similar to DVD video.	Sometimes it is smarter to admit failure than to pretend success.	BUT I reject the phrasing of this question, because I believe the option on the mailing list was raised without performance to MPEG-4 Part 2 or H.263+. Its long-standing broad deployment, deliberately old-fashioned internal design, and MPEG LA's "granting Google a license to use" techniques that may be essential to VP8 and earlier-generation VPx video compression technologies", combine to make its IPR status exceptionally clear.	Theora, a.k.a. VP3.2, is similar in techniques and performance to MPEG-4 Part 2 or H.263+. Its long-standing broad deployment, deliberately old-fashioned internal design, and MPEG LA's "granting Google a license to use" techniques that may be essential to VP8 and earlier-generation VPx video compression technologies", combine to make its IPR status exceptionally clear.		I'm not aware of any IPR benefit conferred by H.263 over H.264.			A decode-only MTI doesn't accomplish much, but I suppose it's better than nothing.	It wouldn't be interoperable video, but at least it would get us interoperable slideshows.		
Robin Raymond (robin@hookflash.com)	1/9/2014	Due to IPR, Markets forces will adequately determine where H.264 must be done and there is a strong incentive to add H.264 where-ever possible. We don't need to mandate in use cases where this is not true. Not all implementations can download a pre-compiled binary to "work around" the licensing fee issue at run-time.	While there is concern over IPR, this appears to be free at the moment. I would change my opinion the moment any licensing fees became attached.	Due to IPR, Markets forces will adequately determine where H.264 must be done and there is a strong incentive to add H.264 where-ever possible. We don't need to mandate in use cases where this is not true. Not all implementations can download a pre-compiled binary to "work around" the licensing fee issue at run-time.	Mandating for browser is fine so long as not every instance requires licensing issues.	Market forces will ensure sufficient compatibility since there is an incentive to do both.	Would prefer market forces to mandate legacy	Market forces / natural incentives to be compatible will ensure compatibility.	Would prefer market forces to mandate legacy	While it's great that a free implementation exists, I worry about its optimization on mobile devices.	See #1, effectively causes many to need to implement H.261 if they can't do H.264	See #1, effectively causes many to need to implement H.263 even if they don't need it.	See #1	Would prefer no MTI / market forces to this	See #1, effectively causes many to need to implement Theora even if they don't need it	While it's great that a free implementation exists, I worry about its optimization on mobile devices.	It's not ideal but it's fairly light weight for implementation (albeit high bandwidth relatively speaking). Effectively to me this means "let market forces decide compatibility" with an absolute bare minimal fallback.	
Peter Thatcher (pthatcher@google.com)	1/10/2014	Too many IPR issues which would cause an "Mandatory to Implement" codec to be a "Mandatory to License" codec, which would lock out too many smaller players from the WebRTC community.	High quality with low IPR issues makes it a good MTI codec.	Too many IPR issues which would cause an "Mandatory to Implement" codec to be a "Mandatory to License" codec, which would lock out too many smaller players from the WebRTC community.	Treating browsers special doesn't relieve the IPR issues enough. It seems less than obvious how to define exactly what is a "browser" in this context. VP8 does not provide any technical advantage over H.264, is not developed or maintained through any recognized standardization process, and is currently formally not possible to license.	It doesn't really achieve anything, but there's not much to disagree with.	The quality is low, but perhaps better than no MTI, and acceptable for some use cases.	If this means "we should never have an MTI", I'd say "NO". If this means "we admit we can't decide one right now in this forum, and we'll either wait or try another forum", I'd find that acceptable.	The same as #5 and #6.	Lower quality than VP8, but not any better with IPR issues (as far as I know), so I don't see the point. But I could still live with it.	Sort of the same as #5 and #6.	Too many IPR issues.	If it were clear that there were no IPR issues with decoding H.264, then I would say this is "YES", but since it's not clear, I have to go with "NO".	Too many IPR issues.	VP8 does not provide any technical advantage over H.264, is not developed or maintained through any recognized standardization process, and is currently formally not possible to license. Theora has unclear performance and licensing and is not widely supported.	It doesn't accomplish anything, but leaves baggage in the standard.	This isn't very useful for most use cases, but may be acceptable for some (low-framerate screencast, or use on fast LANs)	
Bo Burman (bo.burman@ericsson.com)	1/10/2014		VP8 does not provide any technical advantage over H.264, is not developed or maintained through any recognized standardization process, and is currently formally not possible to license.	VP8 does not provide any technical advantage over H.264, is not developed or maintained through any recognized standardization process, and is currently formally not possible to license.	Does not provide interoperability between all WebRTC implementations.	H.261 cannot support sufficient quality or bandwidth efficiency and is not widely supported.	Acceptable as outcome if no other MTI consensus can be found.	The fallback H.261 cannot support sufficient quality or bandwidth efficiency and is not widely supported.	Theora has unclear performance and licensing and is not widely supported.	H.261 cannot support sufficient quality or bandwidth efficiency and is not widely supported.	Expect that option 13 will effectively be the same and that option is preferable since it is more lightweight.	Sufficient quality and bandwidth efficiency for some use cases and thus better fallback option than MJPEG, H.261 or Theora.	Don't really see the benefit compared to option 3. VP8 does not provide any technical advantage over H.264, is not developed or maintained through any recognized standardization process, and is currently formally not possible to license.		VP8 does not provide any technical advantage over H.264, is not developed or maintained through any recognized standardization process, and is currently formally not possible to license. Theora has unclear performance and licensing and is not widely supported.	Don't see any practical point with just specifying decoding in a communication scenario. Theora has unclear performance and licensing and is not widely supported.	MJPEG does not provide sufficient bandwidth efficiency for most use cases.	

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Jonathan Roseberg (jdrosen@jdrosen.net)	1/10/2014		Unlicenseable IPK claims: high risk of trolls coming out of the wordworks; lack of interoperability with install base of H.264 based systems; lack of current broad support for hardware acceleration	put this down as acceptable, as opposed to NO, because I believe that primary problem here is what the browsers implement. As I am not a browser vendor, it would be OK by me if they all decide to implement both - since it means H.264 is there, ensuring interoperability. In other words, I don't think rfcweb "compliance" is as meaningful outside of the browser - only interoperability with webRTC. Thus I view #3 and #4 as effectively identical.		Will not result in interoperability.	: Quality nowhere near acceptable for commercial application.	Will not result in interoperability.	Will frequently result in H.261 ((Chrome to install base) and this is not acceptable from a quality perspective.	Will not produce interoperability with install base.	Will result in H.261 in too many cases and this will not provide sufficient quality.	Will result in H.263 in too many cases and this will not provide sufficient quality.	From a patent perspective is equivalent to implementing both.	Quality not sufficient for commercial use.	Will not produce interoperability with install base.		Quality not sufficient for commercial use.
Suhas Nandakumar (suhasietf@gmail.com)	1/10/2014		Lack of broad support with the existing install base.	Results in interoperable solutions with existing install base as well as future H264 and VP8 install bases.	Results in non inter-operable solutions or more sadly silo'd communications.	WebRTC MUST attempt to deliver high quality Video experiences.		Will not result in interoperability.	Ends up in non-interoperability or poor video quality because of H.261.	Will not result in inter-operable solution. Very low install base.	Atleast* ends up causing inter-operable complications and that is bad for WebRTC. H261 becomes Lowest Common Denominator and kills high quality video experience for the end-users. It would be worse, if end-users turn of video altogether rather than experiencing poor video quality	Atleast* ends up causing inter-operable complications. More-over H.263 will not live up to the high quality video experience, if selected as the common codec.		Poor video quality, not good for WebRTC.	Will not produce interoperability with the install base.	Poor interoperability with the existing install base.	Quality not sufficient for commercial use.
Espen Berger (espeberg@cisco.com)	1/10/2014		VP8 has no interop with existing products in	-	-	Its old and has limited compression compared to H264		This choice does not move us forward to having interoperable audio and video between vendors									
Pai-Erik Martinen (palmarti@cisco.com)	1/10/2014		Will cause lack of interop with existing products	Ensures interop with "legacy" products	No interop	No interop	Quality concerns	No interop	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company
Arnaud Morin (arnaud1.morin@orange.com)	1/10/2014		Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Low quality or too high bandwidth	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company	Interco with legacy network needs transcoding, it's not acceptable for my company
Keith Drage (keth.drage@alcatel-lucent.com)	1/10/2014		We are interested in interworking webRTC communications with the existing telecommunications infrastructure. All video there is currently H.264.	The addition of VP8 means additional costs and real-time performance risks for interworking equipment with existing telecommunications infrastructure which we would prefer to avoid.	The addition of VP8 means additional costs and real-time performance risks for interworking equipment with existing telecommunications infrastructure which we would prefer to avoid.	This provides no solution to interworking with existing telecommunication infrastructure assuming the implementation decision is effectively made by the browser provider rather than the application.	There is no existing current telecommunications infrastructure implementing this and therefore to promote this is as a solution would be wasted effort that would achieve no interoperability with existing telecommunications technology is unknown.	Given the amount of resource spent trying to find a MTI codec without success, we would rather park the issue and move on. In any case, the decision on an MTI codec would need to be taken again in a few years time. We believe that lack of an MTI codec is not a major barrier to deployment.	answers to 5) and 6).	answers to 5) and 6).	This option can result in the exclusion on H.264, which is the main codec deployed in existing telecommunications environments, and therefore there will be no interoperability with existing telecommunications environments without transcoding.	This option can result in the exclusion on H.264, which is the main codec deployed in existing telecommunications environments, and therefore there will be no interoperability with existing telecommunications environments without transcoding.	This option can result in the exclusion on H.264, which is the main codec deployed in existing telecommunications environments, and therefore there will be no interoperability with existing telecommunications environments without transcoding.	This option can result in the exclusion on H.264, which is the main codec deployed in existing telecommunications environments, and therefore there will be no interoperability with existing telecommunications environments without transcoding.	This option can result in the exclusion on H.264, which is the main codec deployed in existing telecommunications environments, and therefore there will be no interoperability with existing telecommunications environments without transcoding.	This option can result in the exclusion on H.264, which is the main codec deployed in existing telecommunications environments, and therefore there will be no interoperability with existing telecommunications environments without transcoding.	This option can result in the exclusion on H.264, which is the main codec deployed in existing telecommunications environments, and therefore there will be no interoperability with existing telecommunications environments without transcoding.
Martin German (mgerman@ling.edu uy)	1/10/2014		This would point the market to being only VP8 and would ensure that all communications outside webRTC would need the video transcoded. While that is technically feasible, we would prefer to limit those scenarios where it is necessary, e.g. multiparty conference.														
stephane.cazeaux@orange.com	1/10/2014		This option does not meet the use cases where compatibility with existing devices and services is required.	Having two codecs brings no benefits to any use case (pure webRTC or compatibility with existing services) compared to H.264 only. On the contrary, it adds costs and risks to all devices that would need to support both codecs.	Same as 2 and 3.	Global compatibility will not be guaranteed, even between two browsers. H.264 is widely used. This might corner the existing installed base, if VP8 is chosen by majority of vendors.	Same as 2.	Same as 5.	Same as 2 and 5.	Same as 2.	Same as 3.	Same as 3.	Same as 5.	Same as 2.	Same as 3.	Same as 5.	Same as 2.
alexander.hchl@gmail.com	1/10/2014						Poor quality.	This may not allow interoperability among browsers.	Poor quality of H.261.		Poor quality of H.261.	See 5b.		Prefer H.264 over H.263	See 9.b		

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Bjoern Hoehrmann (bjoernh@gmx.net)	1/10/2014	The current Working Group charter says "The working group will try to avoid encumbered technologies that require royalties or other encumbrances that would prevent such technologies from being easy to use". It seems many potential implementers and users would be unable to obtain H.264 licenses under non-discriminatory and reasonable terms for private and commercial use. Current H.264 licensing practices are also often unclear and are likely to put various parties at risk. A simple example for the latter point is the distribution of recorded WebRTC sessions on a web site that generates revenue in some form. It is likely people are going to do that, but doing so in a legally sound manner is often unduly burdensome under current licensing practices.	Proponents of this exclusive option have not made a convincing case. I note in passing that 'video/webm' has not been registered with IANA.					This might be acceptable after properly reviewed changes to the charter.									
Mohammed Raad (mohammedraad@)	1/11/2014	My technical opinion is that VP8 is a better option. Added to that the fact that H.264 has been the target of what seems to be successful litigation over IP that is not part of the current licensing pool. This has not happened to VP8 yet, nonetheless getting H.264 IP owners to develop some sort of workable unencumbered solution around H.264 has been like herding cats. I don't see that as a viable option if web video coding is to continue to be evolved.		In my opinion, VP8 is technically better and has been shown to be more defendable against IPR licensing claims so far, so there is no reason to force entities to support both.	I don't think this would help interoperability if that is the objective. Also, browsers are now deployed on a multitude of platforms with varying capability, why must these platforms be burdened with more codecs to support than other platforms?		This is not a technically justifiable option in my opinion.	Even if we have a group of MTI codecs, that would be better than this, at least in that case people can develop useful transcoding platforms.	This makes no sense.	A technically inferior solution that has the same IPR problems as any of the better technical solutions.	This reads as though this is a play on words to make the implementation of both VP8 and H.264 more acceptable to the market.	Whilst this may make sense as a consensus option, it practically does not resolve the IPR problem that many have expressed (and have experienced) with H.264.	Not a good technical option.	same as (10).		A technically inferior solution when there is a genuinely better alternative.	Throwing this in simply increases the level of disagreement (I'm not objecting to the technical merits, just that it is not an option that helps resolve the issues the WG is having in selecting an MTI).
Andrew Hutton (andrew.hutton@unify.com)	1/10/2014		The fact that there is a known IPR declaration against VP8 which states the owner is unwilling to license is of course a concern indicating that it may be too early to make a decision on making VP8 MTI. I would prefer to wait until the situation is clearer.	The fact that there is a known IPR declaration against VP8 which states the owner is unwilling to license is of course a concern indicating that it may be too early to make a decision on making VP8 MTI. I would prefer to wait until the situation is clearer.	The fact that there is a known IPR declaration against VP8 which states the owner is unwilling to license is of course a concern indicating that it may be too early to make a decision on making VP8 MTI. I would prefer to wait until the situation is clearer. There is no mandate/requirement to create separate specifications for different entities.	Does not guarantee interoperability. IPR/licensing issues AND would require transcoding in certain use cases.	Inferior quality and no current implementations in browsers.	This may not allow interoperability. A MTI video codec is imperative for this day and age.	Inferior quality and no current H.261 webRTC implementations. The fact that there is a known IPR declaration against VP8 which states the owner is unwilling to license is of course a concern indicating that it is too early to make a decision on making VP8 MTI. I would prefer to wait until the situation is clearer.	No current Theora webRTC implementations and unclear license situation.	Inferior quality and no current H.261 webRTC implementations. The fact that there is a known IPR declaration against VP8 which states the owner is unwilling to license is of course a concern indicating that it is too early to make a decision on making VP8 MTI. I would prefer to wait until the situation is clearer.	The fact that there is a known IPR declaration against VP8 which states the owner is unwilling to license is of course a concern indicating that it is too early to make a decision on making VP8 MTI. I would prefer to wait until the situation is clearer.	The fact that there is a known IPR declaration against VP8 which states the owner is unwilling to license is of course a concern indicating that it is too early to make a decision on making VP8 MTI. I would prefer to wait until the situation is clearer.	Acceptable, given there are no IPR/licensing issues decoding H.264.	Unclear license situation and no current webRTC implementations regarding Theora and the fact that there is a known IPR declaration against VP8 which states the owner is unwilling to license is of course a concern indicating that it is too early to make a decision on making VP8 MTI. I would prefer to wait until the situation is clearer.	Unclear license situation and no current webRTC implementations.	Inferior quality and no current webRTC implementations.
Michael Gorham (michael@cranium)	1/10/2014	Too many IPR/licensing issues. Changes to a "Yes" if the H.264 baseline profile actually becomes royalty-free. Too many IPR issues and licensing constraints that makes its usage effectively impossible in a lot of cases. It has royalty fees (some known, but many unknown) – imposing a financial revenue from implementers/users towards various companies via Internet/IETF standards is beyond common sense, openness for everyone and target for innovation that governed Internet evolution so far. Full hardware H.264 encoders/decoders don't really exist at scale, especially on exiting mobile devices where it would be relevant, or at least not exposed to any third parties – expecting that some vendors will do it is comparable with expecting all claims of VP8 IPR will be dismissed.		IPR/licensing issues.	IPR/licensing issues.	Poor quality.			Poor quality of H.261.		Poor quality of H.261 and H.264 licensing issues.	See 5b.		Yes, if no IPR/licensing issues.	See 9.b.		Poor quality.
Daniel-Constantin Mierla (miconda@gmail.com)	1/10/2014				Too many already known IPR, licensing and other kinds of issues for H.264 (See 1).	Too many already known IPR, licensing and other kinds of issues for H.264 (See 1).		Better let the market to decide than impose upfront a wrong choice.			No if there are risks on H.263 IPR/licensing not to be royalty free for all use cases, then better use VP8 that has higher chances to be cleared out of issues. Yes, otherwise.	Only if there are no IPR/licensing issues decoding H.264.	If there are risks on H.263 IPR/licensing not to be royalty free for all use cases, then better use VP8 that has higher chances to be cleared out of issues. Yes, otherwise.		If there are risks on Theora IPR/licensing not to be royalty free for all use cases, then better use VP8 that has higher chances to be cleared out of issues. Yes, otherwise.	Only if there are no IPR/licensing issues decoding Theora.	
Jan-Ivar Bruaroey (jib@mozilla.com)	1/11/2014	- Does not achieve interoperability, because it is not FOSS. - Still license encumbered. Even with decoder binary gift, this is still the blue pill. - Encoding is key to interoperability.	Risk. It might be prudent to wait a bit for Nokia claim to unfold (or fold). - Still best option until Daala.	- A compromise that marginalizes FOSS license-free gets noncomply-labeled).	- What's a non-browser? Weakness of tying limits to names. - Not interoperable.	- Not interoperable.	- I'm unfamiliar with H.261, but claims of low quality makes me uninterested.	- Not interoperable.	- Interoperably indistinguishable from #6 to me.	- Seems like a less famous yet-to-be-sued VP8.	- I'm unfamiliar with H.261, but claims of IPR make me uninterested.	- I'm unfamiliar with H.263, but claims of IPR make me uninterested + seems old.	- I'm unfamiliar with H.263, but claims of IPR make me uninterested + seems old.	- Theora seems like a less famous yet-to-be-sued VP8.	- Theora seems like a less famous yet-to-be-sued VP8.	- Too bandwidth demanding.	

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							Section 7 of https://datacenter.leff.org/doc/draft-burman-rtoweb-h264-proposal/ provides performance data for H.264. I do not believe that H.261 would provide equivalent or superior performance under identical testing conditions, and no data has been provided to the IETF or on the mailing lists proving otherwise. This option would allow a presumably inferior codec (H.261) to be the fallback option. Moreover, H.261 does not allow for interop with legacy systems and standards such as 3GPP IMS Video Telephony.		Section 7 of https://datacenter.leff.org/doc/draft-burman-rtoweb-h264-proposal/ provides performance data for H.264. I do not believe that H.261 would provide equivalent or superior performance under identical testing conditions, and no data has been provided to the IETF or on the mailing lists proving otherwise. This option would allow a presumably inferior codec (H.261) to be the fallback option. Moreover, H.261 does not allow for interop with legacy systems and standards such as 3GPP IMS Video Telephony.							Section 7 of https://datacenter.leff.org/doc/draft-burman-rtoweb-h264-proposal/ provides performance data for H.264. I do not believe that Ogg would provide equivalent or superior performance under identical testing conditions, and no data has been provided to the IETF or on the mailing lists proving otherwise. This option would allow a presumably inferior codec (Ogg) to be the fallback option. Moreover, this does not allow interop with legacy systems and standards such as 3GPP IMS Video Telephony.	Section 7 of https://datacenter.leff.org/doc/draft-burman-rtoweb-h264-proposal/ provides performance data for H.264. I do not believe that M-JPEG would provide equivalent or superior performance under identical testing conditions, and no data has been provided to the IETF or on the mailing lists proving otherwise. This option would allow a presumably inferior codec (M-JPEG) to be the fallback option. Moreover, this does not allow interop with legacy systems and standards such as 3GPP IMS Video Telephony.
Mandym. Giridhar <mandyam@quicni>	1/11/2014		Does not allow interop with legacy systems and standards such as 3GPP IMS Video Telephony. VP8 standardization is incomplete.	Does not allow interop with legacy systems and standards such as 3GPP IMS Video Telephony. VP8 standardization is incomplete.	Does not allow interop with legacy systems and standards such as 3GPP IMS Video Telephony. VP8 standardization is incomplete.	This option potentially allows negotiation failure.											
Mike Linkavayer <ml@gondwanaland>	1/11/2014	Makes FLOSS projects 2nd class citizens at best, does not augur well for escaping dependence on encumbered codecs in next generation.															Makes FLOSS projects 2nd class citizens at best, does not augur well for escaping dependence on encumbered codecs in next generation.
Bernhard Felten@telekom.de HAYASHI Tatsuya <sf-mutualauth@gmail>	1/12/2014		YES, because of worse interoperability to other services.			YES, because of worse interoperability to other services in case of VP8	YES, quality too bad.		YES, because of worse interoperability with good quality to other services .	YES, quality too bad.			Worse than #3			YES, because of worse interoperability to other services .	YES, quality too bad.
	1/12/2014			Better													
		- Only if a downloadable codec (like Cisco's offering, for IPR concern) slot and multiple codec slots are recommended: "SHOULD" - we must not get locked into another 50 years of "Video G.711" base level now - and also other services (IPR or not) should be able to use browsers if providing their own downloadable codec - will also drive improvement and innovation (VP8, H.26x...) - Transcoding (which we got as priority request from day one of the "VP8 only days", from both SP and PBX/UC side, must be avoided [1] as being against the core idea of WebRTC															
Karl Stahl <karl.stahl@interfex.se>	1/12/2014					Only if codec slots also are mandated: "MUST"	No, simply too old/bad										

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Basil Mohamed Gohar <basilgohar@librevi>	1/12/2014	H.264 carries with it an exploit licensing burden that will bring with it exclusion of use cases, including but not limited to free software implementations (as defined by the Free Software Foundation) and stifle adoption of the standard as a result. This will effectively limit rtweb to "the same old players" that are already entrenched in the market and lock out smaller entities.		The same objections in #1 apply here. Additionally, it should be noted that the parallel of "two MTI audio codecs" cannot apply here because there were no free software licensing issues in the two proposed codecs that would impede adoption. This is not the case with H.264, to be precise.	In addition to the challenges presented by mandating H.264 as mentioned above in my objections in #1 and #3 above, this one has the additional challenge of applying different rules on an arbitrary and ambiguous distinction. What, exactly, is a browser? Can the same application be a "browser" sometimes, and a "phone" another time? Having this in the spec would likely be a great hindrance to adoption, even if the currently known interested browser vendors agree, it would not be representative of any future additional ones.	While this option gives a wider choice of what codec to implement, the result will be two "islands" in the rtweb world - the H.264 one and the VP8 one. This alone will not yield any mechanism with which to guarantee interop between clients.		This will result in the same problem as presented in 5, namely, islands in the rtweb world. Therefore, it's not a good option. Comparisons to HTML5 <video> are apt, in that, despite being years old and supported, no single standard codec emerged as suitable for all cases by market choices, and we still have some sites only supporting certain codecs (e.g., Vimeo) and even some switching the nature of what they support (e.g., YouTube) isolating certain user agents and therefore users.			This option, while seemingly offering a wider choice, will force a valid implementation of rtweb to include royalty-bearing code for either H.264 or H.263, neither of which can currently be implemented nor deployed without exposing the implementor or the user to some licensing fees.	Only decoding H.264 video does not fully eliminate the licensing issues that were mentioned in my previous points, therefore it is not any better than them.	H.263 is not any better off than H.264 from a licensing perspective, and may actually be worse in that manner.		This sounds like a weak option because it doesn't imply much about the rest of the implementation. It does, however, imply that at least one side of each rtweb communication setup support encoding with Theora, which is something I am already for.			
Coban, Muhammed <mcoban@qti.qualcomm.com>	1/12/2014		VP8 has not completed an open standardization process. VP8 does not allow interoperability with existing solutions.	VP8 has not completed an open standardization process. VP8 does not allow interoperability with existing solutions.	VP8 has not completed an open standardization process. VP8 does not allow interoperability with existing solutions.	Does not provide sufficient bandwidth efficiency and is not widely supported.			Does not provide sufficient bandwidth efficiency and is not widely supported.	Not widely supported.	See #5, #6	Option 13 is cleaner.	See #3.		See #2, #5, #9	See #9, not clear why support only decoding.		
Krasimir Kolarov <kolarov@apple.com>	1/12/2014		VP8 has a formal declaration of unlicensable IPR, https://ietf.org/ipr/2035/	VP8 has a formal declaration of unlicensable IPR, https://ietf.org/ipr/2035/	VP8 has a formal declaration of unlicensable IPR, https://ietf.org/ipr/2035/	H.261 is no longer widely supported and is unlikely to be so if mandated here	Acceptable as outcome if no MTI consensus is reached.	H.261 is no longer widely supported and is unlikely to be so if mandated here.	H.261 is no longer widely supported and is unlikely to be so if mandated here.	Theora has unclear license situation and is not widely supported.	VP8 has a formal declaration of unlicensable IPR, https://ietf.org/ipr/2035/	VP8 has a formal declaration of unlicensable IPR, https://ietf.org/ipr/2035/	VP8 has a formal declaration of unlicensable IPR, https://ietf.org/ipr/2035/	VP8 has a formal declaration of unlicensable IPR, https://ietf.org/ipr/2035/	VP8 has a formal declaration of unlicensable IPR, https://ietf.org/ipr/2035/	Theora has unclear license situation and is not widely supported.	Theora has unclear license situation and is not widely supported.	
Badri Rajasekar <badri@tokbox.com>	1/13/2014	The feasibility of supporting H264 in all platforms is questionable given licensing issues (despite the Cisco binaries) and availability of APIs. The burden of IPR issue is going to deter small application developers especially in non-browser entities.		Same objections as point 1 and VP8 is a better alternative in this light	Interoperability is key and this would necessitate transcoding at a server or some equally non-viable option for effectively using WebRTC.	Although H.261 would be a step back in terms of quality needs of WebRTC video.	There needs to be a consensus for platform adoption. Lack of an MTI video codec is hurting forward progress of WebRTC.	H.261 is not viable from a quality perspective and this mostly going to end up as fallback to H.261 in several scenarios without the advantages of H264/VP8 quality.	Technically this seems like a step back.	While superficially it appears fine, in my opinion it will hurt interoperability.	IPR issues with H.263 and H.264 are problematic.	The IPR risk of H.264 is only partially mitigated with decoding and I believe this will hurt adoption by small developers.	H.263 doesn't provide better quality (as compared to VP8/H264) and potential IPR risks.	Same problem as Point 10.	Same as 9.	Existing market support might be limited and again performance concerns.		
Stockhammer Thomas <stockhammer@no>	1/12/2014		VP8 standardization is incomplete. Threat of unlicensable IPR. Not interoperable with 3GPP MTSI.		This option potentially results in negotiation failure.	Not widely supported, low coding efficiency and other restrictions	see #6	unclear licensing and not widely supported.	see #6 and #2	Double Implementation/test but as H.263 and H.264 widely supported, so ok!	see #2.	prefer higher efficiency H.264, but ok	see #2 and #9	see #9	prefer higher efficiency H.264		prefer higher efficiency H.264	

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Randell Jesup <randell-ietf@jesup.org>	1/12/2014	<p>The downloadable codec from Cisco does not cover everyone's use-cases or requirements. Cisco's download while offered for the foreseeable future could in theory be yanked at any time, perhaps due to circumstances beyond the management's control. (It does cost them money.) It's unclear how well this covers the use-cases of WebRTC server developers. Also, the Cisco option only provides assurances from MPEG-LA; this does not cover the encoder (and so an IPR claim against Cisco could force it to be pulled). See also http://www.att.com/gen/sites/psales?pid=19116 which is not covered by the Cisco MPEG-LA agreement.</p> <p>Also, small entities that might need to license directly via MPEG-LA would be blocked from the market due to legal costs, time, accounting for uses, etc.</p>	A downloadable option similar to Cisco's H.264 may resolve some of the issues that people have with VP8 IPR worries.	<p>Somewhat acceptable because it provides a guaranteed fallback if H.264 got pulled. This would still cause major problems for both those who won't/can't do H.264 or won't/can't do VP8. (See downloadable option though.) Those that won't do one can break MTI; if those are only servers this won't be horrible but if browsers break the MTI it could lead to interop failure.</p>	Same issues as #3	<p>Causes major problems for the feature due to inability to complete video calls. Calls will fail and the user won't understand.</p>	Does not provide reasonable quality interoperability.	<p>While we may end up there by default, it does not produce an acceptable result. Calls will fail and the user won't understand. Same problem as #5. Acceptable only as a "will be decided later" case, and pretty bad there. Probably preferred to some of the other No's though, so maybe Acceptable (0.05)</p>	<p>Preferred only over the worse options like No MTI or H.261 only. Barely acceptable as it will ensure completion of calls. Same issues as #6. Would accept this over No MTI or H.261 only. #10 would be preferred over this.</p>	<p>Similar to objections to #6 (though likely better quality), however with some added IPR risk. Similar to #13 with perhaps less IPR issues (to be seen though).</p>	<p>Guarantees interoperability. Doesn't guarantee high quality, could cause real problems for people with constrained or capped bandwidth (i.e. mobile). Similar issues to #3, though somewhat better. Prefer to #3.</p>	<p>Better than #10 (lower bandwidth requirement, more impls available) modulo that some entities would not feel comfortable with being forced to implement H.263 (and license it, fail to comply with the spec, or risk going license-less). Provides an acceptable (if not good) quality interop fallback; slightly improves legacy interop with older technologies. Downloadable codecs for H.264 and VP8 will help if those meet the MTI requirement. If a downloadable H.263 codec were available and licensed, this would be more preferred.</p>	<p>Slightly preferred over requiring both, in that many IPR pitfalls might be in the encoders (and may simplify devices with only one hardware encoder).</p>	<p>Worse than #1 as there's no downloadable option and has IPR issues</p>	<p>Similar to #11; no requirement to license H.263 but adds some IPR risk and removes old-legacy interop.</p>	<p>Decode-only Theora MTI is weird/useless</p>	<p>Quality at bandwidth is unlikely to be good enough to ensure acceptable interop. Similar to H.261 with the improvement of re-use of common implementations, but with a downside of considerably lower quality at the same bitrate/resolution.</p>

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Mark Harris <mark.hsj@gmail.com>	1/13/2014	H.264 patent license restricts participation.	H.264 patent license restricts participation.	H.264 patent license restricts participation.	H.264 patent license restricts participation.	Revisit to ensure interoperability when the codec landscape changes.	Revisit to ensure interoperability when the codec landscape changes.	Revisit to ensure interoperability when the codec landscape changes.				H.264 and H.263 patent licenses restrict participation.	H.264 patent license restricts participation.	H.263 patent license restricts participation.			<p>Although it may not be suitable for full motion video over the Internet, Motion JPEG is a nice option for sending individual photos, presentation slides, screen shots, or even a single still profile picture in the event that the user is unable or does not wish to transmit live video for whatever reason. Browsers already contain optimized JPEG decoders which are unlikely to be going away any time soon given the vast quantity of JPEG images on the web. Although it is possible to send images over the data channel, that requires the JavaScript to handle this as a special case and does not allow the browser to give the user the option to simply substitute a still JPEG image (or series of images) when live video is requested.</p> <p>If a common modern video codec could be guaranteed to be available, there would be little reason to consider this option since modern video codecs can also do a great job encoding still pictures. However it is looking increasingly likely that there will be no MTI modern video codec for some time. A guarantee that at least still images can be processed, even in the absence of a common modern video codec, and without special provisions in the JS to process images over the data channel, still adds quite a bit of value over audio-only. Most people already have audio-only capabilities that are far better integrated since they've been around much longer, and would therefore be reluctant to move to WebRTC if it was also seen as only able to guarantee audio communication.</p> <p>Even the most basic feature phones can already decode JPEG images and have a camera capable of producing single JPEGs, so it makes a great lowest common denominator that all devices capable of meeting other WebRTC requirements.</p>

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Mark Harris <mark.hsi@gmail.com>	1/13/2014	H.264 patent license restricts participation.		H.264 patent license restricts participation.	H.264 patent license restricts browser participation.	Revisit to ensure interoperability when the codec landscape changes.		Revisit to ensure interoperability when the codec landscape changes. NO, failed negotiations between browser/entities will occur more often than acceptable				H.264 and H.263 patent licenses restrict participation.	H.264 patent license restricts participation.	H.263 patent license restricts participation.			should be able to handle, even if they do not have a camera, CPU, Internet connection, or hardware encoder APIs sufficient to support full motion video. Therefore there is little reason to select no MTI over this, unless there is an explicit desire to allow audio-only devices to claim WebRTC conformance, which in my opinion would dilute the value of that label. To clarify my position, I am not suggesting that all entities should be required to support 30 fps Motion JPEG, which as others have pointed out would require quite a bit of bandwidth. Decoding and display at 1 fps or possibly even less may be a suitable minimum requirement, in order to ensure that at a minimum still images such as photos, slides, and screen shots can be processed. As for encoding, I am open to any minimum requirement from an ability to send a single preselected JPEG, to a requirement for 1 fps Motion JPEG live video, with restart markers to facilitate decoding when some packets of a frame are lost. Any entity supporting more than 1 fps video should also implement a more advanced video codec. Adoption of Motion JPEG as MTI should also not preclude adoption of an additional video codec as MTI at a later date, once the video codec landscape changes and consensus can be reached on a more advanced video codec.
Otto J Wittner <otto.wittner@uninet.no>	1/13/2014	truly (as possible) royalty free codec required			NO, truly (as possible) royalty free codec required	NO, truly (as possible) royalty free codec required			Acceptable, but as VP8 is "next gen Theora" it seems like a step backwards			unclear royalty situation for H.263	rtoweb is not only about streaming.	unclear royalty situation for H.263		but a SHOULD would be fair legacy content 1.	

Responder	Date	1. All entities MUST support H.264	2. All entities MUST support VP8	3. All entities MUST support both H.264 and VP8	4. Browsers MUST support both H.264 and VP8, other entities MUST support at least one of H.264 and VP8	5. All entities MUST support at least one of H.264 and VP8	6. All entities MUST support H.261	7. There is no MTI video codec	8. All entities MUST support H.261 and all entities MUST support at least one of H.264 and VP8	9. All entities MUST support Theora	10. All entities MUST implement at least two of {VP8, H.264, H.261}	11. All entities MUST implement at least two of {VP8, H.264, H.263}	12. All entities MUST support decoding using both H.264 and VP8, and MUST support encoding using at least one of H.264 or VP8	13. All entities MUST support H.263	14. All entities MUST implement at least two of {VP8, H.264, Theora}	15. All entities MUST support decoding using Theora.	16. All entities MUST support Motion JPEG
Chris Caviglioli <chris.caviglioli@intel.com>	1/13/2014	incomplete. This is necessary, but not sufficient. One codec isn't enough	incomplete. This is necessary, but not sufficient. One codec isn't enough	there is no commercially-viable alternative. Transcoding must be avoided at all costs if we intend to provide a good end-user experience. Given the passion behind each camp, we must deploy both. Android, iOS and Windows commercial logo requirements mandate the presence of H.264 encode and decode anyhow. No device will be missing H.264 ... all Android devices have H.264 and VP8 (both).	This implies that browsers will be able to talk to each other, but some other entities will not... unless they have a browser on board. For commercial success, browsers must tap into native hardware codecs. #3 is a better option.	This forces a hodge-podge of transcoding and that won't work.	H.261 is obsolete, cannot handle higher resolutions and contributes to the data tsunami in our networks. That is exactly the reason we're moving to H.265 and VP9... to reduce bandwidth, increase quality... let's not go backwards.	The market will fragment into camps and nobody wins. WebRTC becomes a passing "flash in the pan" because systems don't work with each other. As it is not a technical problem, a technical body will not be able to solve the problem.	Wasteful. H.261 must be categorically avoided because it wastes transmission bandwidth to communicate mediocre quality.	Wasteful. Rare codec -- not widely available in hardware -- and obsolete technology (same argument against H.261 above)	Wasteful. H.261 must be categorically avoided because it wastes transmission bandwidth to communicate mediocre quality. Transcoding issues.	Wasteful. H.263 must be categorically avoided because it wastes transmission bandwidth to communicate mediocre quality. Transcoding issues.	So complex that this will be hard to explain... and doesn't solve the transcoding issue	Wasteful. H.263 must be categorically avoided because it wastes transmission bandwidth to communicate mediocre quality.	Wasteful. Theora must be categorically avoided because it wastes transmission bandwidth to communicate mediocre quality. Transcoding issues	Wasteful. Theora must be categorically avoided because it wastes transmission bandwidth to communicate mediocre quality. Transcoding issues.	Wasteful. Motion JPEG must be categorically avoided because it wastes transmission bandwidth to communicate mediocre quality. Transcoding issues.
holger.debelts@telekom.de	1/13/2014	No new arguments. Basically royalties with unclear business outlook for license buyers.	As VP9 is approaching, I see this as a kind of backward looking specification.	Does not make any sense as previously stated by many others.	It is already happening in major browsers, so why adding this here?	See 1b/2b.	User experience not state of the art. Backward looking technology.	See 6b.	See 6b.	Also no clear future outlook regarding legal issues.	Does not ensure interoperability. See 1b/2b/6b.	See 10 b.	Does not solve the issues mentioned above.	See 1b and old technology.	See 1b and old technology.	See 9b.	Historic.
OSCAR DIVORRA ESCODA <code@td.es>	1/13/2014	While probably, by maturity, technical quality, presence and deployment in the market, and legacy interoperability, H.264 could be the preferred MTI, its current IPR situation doesn't seem right for adoption by the start-up environment. Hence, IPR licensing model should be addressed in order to be able to go with it as MTI.	While it is somehow de-facto deployed, and already enabling current work in WebRTC (free of charge), its IPR situation, basically backed by Google, doesn't seem completely crystal clear. Also, the predominant video codec in the general video market is H.264 and many applications are enabled with this last. By picking VP8 for WebRTC we can expect that at some point transcoding will be necessary to give VP8 streams interoperability with existing systems as well as in use cases like Archiving. It may be necessary transcoding to H.264 to give proper versatility to recorded video data. Hw support is still far from ideal.	Considering #1 and #2 this would make things worse by adding costs to codecs support and service developments.	As an exception to above, in the situation where #1 concerns where solved, and it was desired migration from #2 to #1, this case would be acceptable as a transitory situation. Also, if HW support for #2 does not really improve in non browser entities, this could help	Problems with interoperability.	Very old technology. A significant step-back wrt VP8/H.264, and probably not practical for a successful WebRTC. It is probably similar to no MTI, forcing industry to integrate some other codec, without the consensus of an MTI, leading to interoperability problems.	Problems with interoperability.	#5 and #6 issues together.	Similar to #6.	Similar to #3 combined with #6.	Similar to #3.	Similar to #3.	Not better than #1	Similar to #6.	Similar to #6 jointly with #7.	Possible quality vs bitrate seems far from the requirements for RTC.
"Martin J. Dürst" <duerst@it.oyama.ac.jp>	1/12/2014	See Email	In my judgment, the remaining 0.2 are mostly FUD (if Nokia or some third party thinks it's not, they should submit a much more precise declaration), and some "out of left field" patent troll risk that unfortunately never can be excluded. Google has to be commended for doing virtually everything (except betting "all" the money of their company) possible to make VP8 usable widely. A Cisco-binary like binary may be helpful to the extent that it may make it more difficult for a troll to attack the user of the binary.	This is the compromise that hurts everybody	The delineation between browsers and non-browsers is unclear, and there are open-source browsers (or installations thereof) that may not be able to use H.264, even in the form of the Cisco binary.	Same as 7 (no MTI), just without admitting it.	H.261 is the best quality available codec that we can assume to be without patent encumbrment. There is also widespread (if slightly dated) industry experience. It is clear that most video experts don't like its quality/performance. But then the pool of video experts tends to contain a lot of people who care about high video quality more than the average user, and even more than the user who really depends on video, in particular people who rely on sign language. As it has been shown that H.261 is old dog sign language, it's the minimum we can require to achieve accessible interoperability.	If we have to admit it, we'd better admit it. Of course I'd prefer another outcome, but maybe it would be better to postpone discussions until such time as the rest of RTCWeb is finished, and only then give it another try. If we can't find consensus, then the only reason to continue to actively discuss this issue is the pressure it may create on players to come forward with better solutions	This is similar to 6 (must support H.261), but in addition enshrines current "best of breed" codecs, which means more work to update specs when VP9 and the like become fully practical.	I don't think there are significantly less risks with Theora than with VP8, so I don't think it's worth prescribing, because quality is less than VP8.	This is similar to 8 (MUST H.261, must one of H.264 and VP8). It is less favorable because it locks in current best-of-breed codecs, but more favorable because it allows some players to support two modern codecs rather than an old and a new one.	H.263 doesn't solve the H.264 licensing problems (unless we wait quite a few more years), and is lower in quality than H.264, so why bother.	This would be a solution if either MPEG managed to at least make the decoding of H.264 royalty-free, or if a significant number of jurisdictions made patents non-applicable to decoding. The later point may sound strange to some, but it can be argued both in theory for source coding and in practice for video coding that the difficulty is essentially all in the encoder; the decoder is just a set of instructions to re-create the original, and such sets of instructions aren't usually patentable, and the actual instruction sequence is sent to the receiver anyway.	See choice 11.	See choice 9.	If it can be shown that Motion JPEG produces acceptable results for sign language, then this is an alternative to H.261.	
Uwe Rauscherbach (uwe.rauscherbach@nsr	1/10/2014	VP8 has not been developed in a collaborative process by an SDO, but is owned and controlled by one company. VP8 does not interoperate with most existing equipment and systems, requiring transcoding.	The additional support of VP8 adds complexity, but does not provide additional technical value compared to H.264, which is widely available in mobile terminals and fixed-line services alike. Additionally, same concerns as with (2).	Distinguishing between browsers and non-browsers may be difficult. Also, this does not achieve interoperability between "non-browsers". For "browsers", same concerns as with (3).	This is what the implementations in the market do anyway, so putting this into specs does not change the current situation.	This means at least a part of the users have to cope with the drawbacks of H.261 - see (6). Additionally, same concerns as with (2).	Note: Given the fact that there are such strong positions, this corresponds to relying on the marketplace to decide this.	This means at least a part of the users have to cope with the drawbacks of H.261 - see (6). Additionally, same concerns as with (2).	VP8 has not been developed in a collaborative process by an SDO, but is owned and controlled by one company. VP8 does not interoperate with most existing equipment and systems, requiring transcoding.	VP8 has not been developed in a collaborative process by an SDO, but is owned and controlled by one company. VP8 does not interoperate with most existing equipment and systems, requiring transcoding.	VP8 has not been developed in a collaborative process by an SDO, but is owned and controlled by one company. VP8 does not interoperate with most existing equipment and systems, requiring transcoding.	VP8 has not been developed in a collaborative process by an SDO, but is owned and controlled by one company. VP8 does not interoperate with most existing equipment and systems, requiring transcoding.	Note: H.263 is an outdated codec, and has recently been removed by 3GPP from their IMS specification. The quality it can provide is however better than that achieved by H.261. So, even though we do not favour this option, as this codec has just been taken out of service in the SDO, but is owned and controlled by one company. VP8 does not interoperate with most existing equipment and systems, requiring transcoding.	VP8 has not been developed in a collaborative process by an SDO, but is owned and controlled by one company. VP8 does not interoperate with most existing equipment and systems, requiring transcoding.	This option will not provide interoperability. Additionally, same concerns as with (9).	Purely based on intra-frame coding, the quality delivered by Motion JPEG is even worse than that of H.261 at the same bitrate.	

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Adrian Grange (a.grange@google.com)	1/10/2014	Complex licensing and burden of book-keeping is a big barrier, particularly for small and medium sized operators. WebRTC is most likely to succeed with fewer and lower barriers to entry where niche and innovative businesses can operate more on a par with the big service providers.		Far from ideal. The higher implementation and maintenance burden of specifying two codecs is a particular issue for smaller service providers, but it does pass the 'guaranteed interop' test. Complex licensing and burden of book-keeping for H.264 is a big barrier, particularly for small and medium sized operators.	This fails the 'guaranteed interoperability' test, the major/sole reason for an MTI codec, for operation between non-browser peers.	Fails the 'guaranteed interoperability' test, the major/sole reason for an MTI codec	We should be planning for the future, not resurrecting the (distant) past. H.261 does not do the right thing for the user, it does not make the best available use of available bandwidth. Better options exist (VP8 being my choice).	Far from ideal in that it fails the 'guaranteed interop' test, but an acceptable placeholder if consensus cannot be reached.	In practice, this is little different to specifying H.261 as the MTI. We should be planning for the future, not resurrecting the (distant) past. H.261 does not do the right thing for the user, it does not make the best available use of available bandwidth.	We should be planning for the future, not resurrecting the (distant) past. VP8 is a better option.	In practice, this is little different to specifying H.261 as the MTI. We should be planning for the future, not resurrecting the (distant) past. H.261 does not do the right thing for the user, it does not make the best available use of available bandwidth.	In practice, this is little different to specifying H.263 as the MTI. We should be planning for the future, not resurrecting the (distant) past. H.263 does not do the right thing for the user, it does not make the best available use of available bandwidth.	Better than inflicting the higher implementation and maintenance burden of specifying two encoders, and does pass the 'guaranteed interop' test. Complex licensing and burden of book-keeping for H.264 is a big barrier, particularly for small and medium sized operators.	We should be planning for the future, not resurrecting the (distant) past. H.263 does not do the right thing for the user, it does not make the best available use of available bandwidth.	In practice, this is little different to specifying Theora as the MTI. We should be planning for the future, not resurrecting the (distant) past. VP8 is a better option.	This fails the 'guaranteed interoperability' test, the major/sole reason for an MTI codec. We should be planning for the future, not resurrecting the (distant) past. VP8 is a better option.	Unacceptable compression performance and I suspect would not be used in practice, so I believe this would fail the 'guaranteed interoperability' test. Probably the worst of the proposed options.
Jeremy Laurenson (jlaurenson@cisco.com)	1/13/2014		Does not solve interoperability to existing video systems, which was the purpose of SDP manipulation in the first place.	If IPR issues arise for either codec, this would have to be revisited. 'Cost' for non-browsers to implement is an issue.	If IPR issues arise for either codec for browser vendors, this would have to be revisited.	Does not solve for interop, my primary source of issue.	Does not solve for interop, my primary source of issue.		High barrier to entry and substandard 'fallback'	Does not solve for interop, my primary source of issue.			Does not solve for interop to existing 264 systems, my primary source of issue.				