Video SWG Minutes during SA4#118e

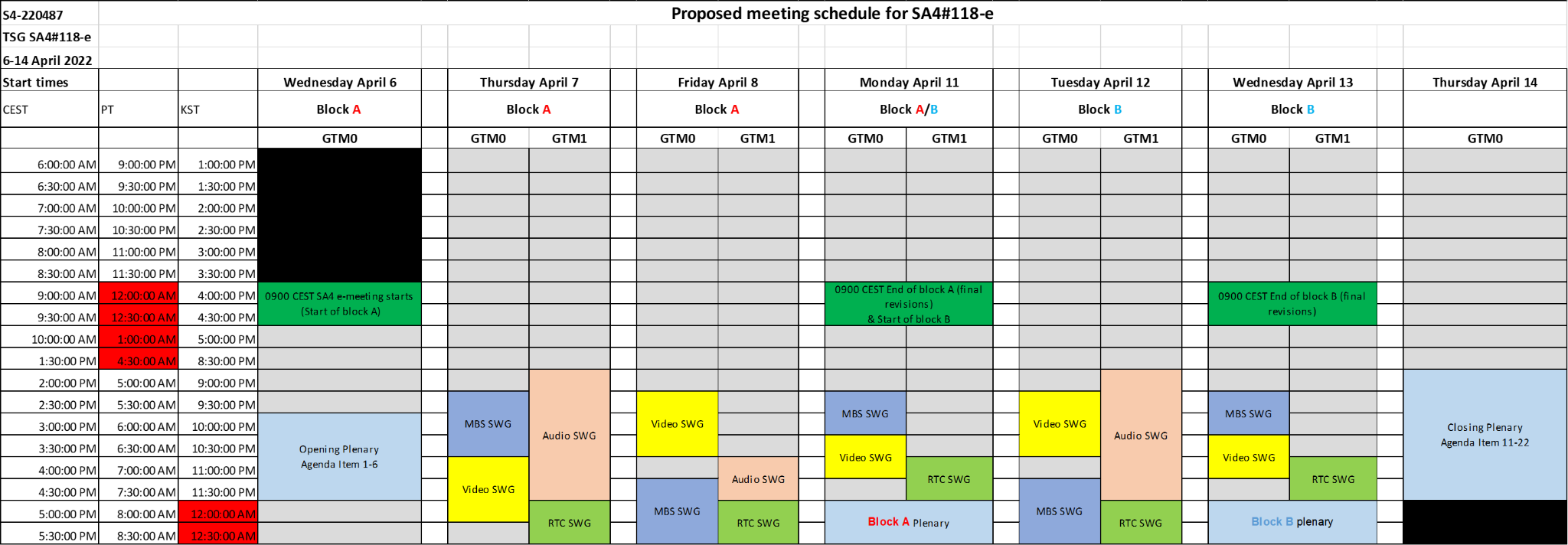
## 9.1 Opening of the session

Mr. Gilles Teniou (Tencent, Chairman of Video SWG) opens the Video SWG on April 7, 2022 at 14:30 CEST.

E-mail discussion started already on Wed, 6 Apr 2022 07:49:09 +0000.

| [Start of SA4#118-e meeting - VIDEO SWG](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;b17cbe0d.2204A&S=) | teniou(TeniouGilles) | Wed, 6 Apr 2022 07:49:09 +0000 |
| --- | --- | --- |

**SA4 Schedule:**



**Video Schedule**

| **one/session** | **Date** | **CEST** | **PDT** | **KST** |
| --- | --- | --- | --- | --- |
| Start of SA4 e-meeting (Email) | 6th Apr. | 9am | Midnight | 4pm |
| Start of Block A | 6th Apr. | 9am | Midnight | 4pm |
| **SA4 Opening plenary** | | | | |
| **Opening plenary Telco** | 6th Apr. | 3pm  5pm | 6am  8am | 10pm  midnight |
| **VIDEO SWG Sessions (Block A)** | | | | |
| Slot 1 (90min) | 7th Apr. | 4pm  5:30pm | 7am  8:30am | 11pm  0:30am (+1) |
| Slot 2 (90min) | 8th Apr. | 2:30pm  4pm | 5:30am  7am | 9:30pm  11pm |
| End of Block A (final revisions)  Start of Block B | 11th Apr. | 9am | Midnight | 4pm |
| Slot 3 (60min) | 11th Apr. | 3:30pm  4:30pm | 6:30am  7:30am | 9:30pm  10:30pm |
| Block A plenary | 11th Apr. | 5pm  6pm | 8am  9am | Midnight (+1)  1am (+1) |
| **VIDEO SWG Sessions (Block B)** | | | | |
| Slot 4 (90 min) | 12th Apr. | 2:30pm  4pm | 5:30am  7am | 9:30pm  11pm |
| End of Block B | 13th Apr. | 9am | Midnight | 4pm |
| Slot 5 (60min) | 13th Apr. | 3:30pm  4:30pm | 6:30am  7:30am | 9:30pm  10:30pm |
| Block B plenary | 13th Apr. | 5pm  6pm | 8am  9am | Midnight (+1)  1am (+1) |
| **SA4 Closing plenary** | | | | |
| **Closing plenary Telco** | 14th Apr. | 2pm  5pm | 5am  8am | 9pm  Midnight |

Mr. Thomas Stockhammer (Qualcomm) is assigned as scribe.

The minutes are shared [Video SWG Minutes during SA4#118e](https://docs.google.com/document/d/1vfl8hYZjyGuqBJrlZT0JDRRJ4j_HWpW426RA_OoqCv0/edit?usp=sharing).

Attendees are listed [here](#nxqqgbcxu6u7), please add attendance ‘Y’.

All e-mail discussions during the meeting can be tracked here:

* https://list.etsi.org/scripts/wa.exe?A1=ind2204A&L=3GPP\_TSG\_SA\_WG4\_VIDEO
* https://list.etsi.org/scripts/wa.exe?A1=ind2204B&L=3GPP\_TSG\_SA\_WG4\_VIDEO

The agenda and the registration of documents are agreed.

The latest timestamp for e-mail is here: Wed, 13 Apr 2022 14:40:30 +0000

## 9.2 Registration of documents

| **TDoc** | **Title** | **Source** | **Agenda item** |
| --- | --- | --- | --- |
| [**S4-220478**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220478.zip) | LS Reply on QoS support with PDU Set granularity | Intel | 5 |
| [S4-220460](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220460.zip) | LS on QoS support with PDU Set granularity | 3GPP SA2 | 5.2 |
| [**S4-220374**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220374.zip) | [MeCAR] Some thoughts on structuring | Qualcomm Incorporated | 9.5 |
| [**S4-220375**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220375.zip) | [MeCAR] AR Glass Media Capabilities | Qualcomm Incorporated | 9.5 |
| [**S4-220421**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220421.zip) | [MeCAR] Proposed Work Plan v1.0 | Xiaomi Communications | 9.5 |
| [**S4-220479**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220479.zip) | Proposed specification skeleton for MeCAR | Tencent | 9.5 |
| [**S4-220365**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220365.zip) | TR26.955: Proposed Editor's Update from Telcos | Qualcomm Incorporated | 9.6 |
| [**S4-220366**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220366.zip) | [FS\_5G\_Video] Status after AHG Calls | Qualcomm Incorporated | 9.6 |
| [**S4-220367**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220367.zip) | [FS\_5G\_Video] Final fixes on Anchor Results | Qualcomm Incorporated | 9.6 |
| [**S4-220368**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220368.zip) | [FS\_5G\_Video] Characterization Updates | Qualcomm Incorporated | 9.6 |
| [**S4-220369**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220369.zip) | [FS\_5G\_Video] Verification Updates | Qualcomm Incorporated | 9.6 |
| [**S4-220370**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220370.zip) | [FS\_5G\_Video] Software Updates | Qualcomm Incorporated | 9.6 |
| **S4-220371** | [FS\_5G\_Video] General Updates and Initial Conclusions | Qualcomm Incorporated | 9.6 |
| [**S4-220376**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220376.zip) | Scenario 3-4-5 | InterDigital, Europe, Ltd. Ericsson LM, Fraunhofer HHI, Qualcomm Inc | 9.6 |
| [**S4-220399**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220399.zip) | [FS\_5G\_Video] Alternative fixes on Anchor Results for S1 | Qualcomm CDMA Technologies | 9.6 |
| [**S4-220406**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220406.zip) | Update to the categorization of VVC, subclause 8.2 | Ericsson LM, Fraunhofer HHI, InterDigital, Qualcomm Inc. | 9.6 |
| [**S4-220408**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220408.zip) | Verification report | Qualcomm Inc. | 9.6 |
| [**S4-220430**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220430.zip) | [FS\_5G\_Video] Characterization Updates | Qualcomm Incorporated | 9.6 |
| [**S4-220441**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220441.zip) | [FS\_5GVideo] Reconstructed md5sums for EVC bitstreams | Samsung Electronics Ltd. | 9.6 |
| [**S4-220484**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220484.zip) | [FS\_5GVideo] VMAF and MS-SSIM results in S3 and S5 | Ericsson LM, InterDigital | 9.6 |
| [**S4-220372**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220372.zip) | [FS\_XRTraffic] ADUs, PDU Sets and Metrics | Qualcomm Incorporated | 9.7 |
| **S4-220373** | [FS\_XRTraffic] Proposed Updates to TR26.926 | Qualcomm Incorporated | 9.7 |
| [**S4-220390**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220390.zip) | [FS\_AI4Media] Proposed Time and Work Plan v1.0 | Samsung Electronics Iberia SA | 9.8 |
| [**S4-220391**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220391.zip) | [FS\_AI4Media] Proposed Skeleton | Samsung Electronics Iberia SA | 9.8 |
| [**S4-220392**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220392.zip) | [FS\_AI4Media] Proposed Permanent Document v0.0.1 | Samsung Electronics Iberia SA | 9.8 |
| [**S4-220438**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220438.zip) | AI/ML Use Cases | Qualcomm Technologies Ireland | 9.8 |
| [**S4-220439**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220439.zip) | Formats for DL models | Qualcomm Technologies Ireland | 9.8 |
| [**S4-220382**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220382.zip) | Feasibility Study on AR and MR QoE Metrics | China Unicom, Huawei | 9.9 |
| [**S4-220428**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220428.zip) | Draft SID on XR Service Collaboration Extension in the Network Media Layer | China Mobile Com. Corporation | 9.9 |
| [**S4-220429**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220429.zip) | Discussion on XR collaboration extension | China Mobile Com. Corporation | 9.9 |
| [**S4-220424**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220424.zip) | [DRAFT] LS Reply on QoS support with PDU Set granularity | Huawei, HiSilicon | 9.10 |

## 9.3 Reports and liaisons from other groups

| [S4-220460](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220460.zip) | LS on QoS support with PDU Set granularity | 3GPP SA2 | Jayeeta Saha |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[LSin, 460, Block A, 8th Apr. 1200CEST] LS on QoS support with PDU Set granularity from SA2](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;ad1d1d5c.2204A&S=) | teniou(TeniouGilles) | Wed, 6 Apr 2022 17:21:32 +0000 |
| --- | --- | --- |
| [[LSin, 460, Block A, 8th Apr. 1200CEST] LS on QoS support with PDU Set granularity from SA2](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;c119ba3f.2204B&S=) | Thomas Stockhammer | Fri, 8 Apr 2022 09:10:50 +0000 |
| [[LSin, 460, Block A, 8th Apr. 1200CEST] LS on QoS support with PDU Set granularity from SA2](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;ad583ea0.2204B&S=) | Emmanuel Thomas | Fri, 8 Apr 2022 11:15:08 +0000 |
| [[LSin, 460, Block A, 8th Apr. 1200CEST] LS on QoS support with PDU Set granularity from SA2](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;bb6d3212.2204B&S=) | panqi (E) | Fri, 8 Apr 2022 11:52:23 +0000 |

**Revisions:**

* none

**Online Discussion:**

* See S4-220372

**Decision:**

* We will reply - see 220372

**S4-220460** is **replied to in S4-220492.**

## 9.4 CRs to Features in Release 17 and earlier

No documents

## 9.5 MeCAR (Media Capabilities for Augmented Reality)

*WID:* [*SP-220242*](https://www.3gpp.org/ftp/TSG_SA/TSG_SA/TSGs_95E_Electronic_2022_03/Docs/SP-220242.zip) *New WID on ‘Media Capabilities for Augmented Reality’*

| [**S4-220374**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220374.zip) | [MeCAR] Some thoughts on structuring | Qualcomm Incorporated | Thomas Stockhammer |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[MeCAR, 374, Block B, 12th Apr. 1200CEST] Thoughts on structuring](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;52776a03.2204B&S=) | teniou(TeniouGilles) | Mon, 11 Apr 2022 09:35:36 +0000 |
| --- | --- | --- |
| [[MeCAR, 374, Block B, 12th Apr. 1200CEST] Thoughts on structuring](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;5f20f96e.2204B&S=) | teniou(TeniouGilles) | Tue, 12 Apr 2022 12:01:10 +0000 |

**Revisions:**

* No revisions

**Online Discussion:**

* Gilles discusses on how to add it to a PD
* Stefan D: I kind of agree on some parts, but not maybe fully on the processes
  + Thomas: Let’s just make sure that the process moves. We have agenda items, e-mail agreements and so on. If you have comments, please do so
  + Gilles: It is a starting point in the PD
  + Stefan D: still would possibly want to change later

**Decision:**

* Agreed to issue a permanent document
* Agreed to add this to Permanent document

**S4-220374** is **agreed.**

| [**S4-220501**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220501.zip) | [MeCAR] Permanent document v0.1.0 | Xiaomi Communications (Rapporteur) | Emmanuel Thomas |
| --- | --- | --- | --- |

**Online Discussion:**

* Emmanuel presents
* Thomas: thank you, very nice

**Decision:**

* agreed

**S4-220501** is **agreed and presented to SA4 plenary.**

| [**S4-220375**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220375.zip) | [MeCAR] AR Glass Media Capabilities | Qualcomm Incorporated | Thomas Stockhammer |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[MeCAR, 375, Block B, 12th Apr. 1200CEST] AR Glass Media capabilities](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;11283220.2204B&S=) | teniou(TeniouGilles) | Mon, 11 Apr 2022 09:35:52 +0000 |
| --- | --- | --- |
| [[MeCAR, 375, Block B, 12th Apr. 1200CEST] AR Glass Media capabilities](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;11bb099d.2204B&S=) | Milan Jelinek | Mon, 11 Apr 2022 13:15:28 +0000 |
| [[MeCAR, 375, Block B, 12th Apr. 1200CEST] AR Glass Media capabilities](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;bb913531.2204B&S=) | Huan-yu Su | Mon, 11 Apr 2022 08:28:11 -0500 |
| [[MeCAR, 375, Block B, 12th Apr. 1200CEST] AR Glass Media capabilities](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;f45a16f0.2204B&S=) | Thomas Stockhammer | Mon, 11 Apr 2022 13:30:35 +0000 |
| [[MeCAR, 375, Block B, 12th Apr. 1200CEST] AR Glass Media capabilities](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;4c84fa47.2204B&S=) | Emmanuel Thomas | Tue, 12 Apr 2022 11:42:18 +0000 |

| [[MeCAR, 375, Block B, 12th Apr. 1200CEST] AR Glass Media capabilities](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;5f7b15ec.2204B&S=) | teniou(TeniouGilles) | Tue, 12 Apr 2022 11:54:18 +0000 |
| --- | --- | --- |

| [[MeCAR, 375, Block B, 12th Apr. 1200CEST] AR Glass Media capabilities](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;ebd70ce.2204B&S=) | Milan Jelinek | Wed, 13 Apr 2022 07:16:51 +0000 |
| --- | --- | --- |
| [[MeCAR, 375, Block B, 12th Apr. 1200CEST] AR Glass Media capabilities](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;d63413b.2204B&S=) | teniou(TeniouGilles) | Wed, 13 Apr 2022 11:48:04 +0000 |

**Revisions:**

* https://www.3gpp.org/ftp/tsg\_sa/WG4\_CODEC/TSGS4\_118-e/Inbox/Drafts/VIDEO/S4-220375-Media-Capabilities\_rXM.docx

**Online Discussion:**

* Emmanuel: have some online comments
* Stefan D:
  + changes from Emmanuel are ok
  + Why audio low-latency is mentioned?
  + Thomas: this is a requirement from our product

**Decision:**

* Revised to 502 taking into account the revisions and the comments on AAC removal

**S4-220375** is **revised to S4-220502.**

| [**S4-220502**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220502.zip) | [MeCAR] AR Glass Media Capabilities | Qualcomm Incorporated | Thomas Stockhammer |
| --- | --- | --- | --- |

**S4-220502** is **agreed.**

| [**S4-220421**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220421.zip) | [MeCAR] Proposed Work Plan v1.0 | Xiaomi Communications | Emmanuel Thomas |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[MeCAR, 421, Block B, 12th Apr. 1200CEST] Work plan](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;c6ce1a34.2204B&S=) | teniou(TeniouGilles) | Mon, 11 Apr 2022 09:35:03 +0000 |
| --- | --- | --- |
| [[MeCAR, 421, Block B, 12th Apr. 1200CEST] Work plan](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;d1e49f0c.2204B&S=) | Thomas Stockhammer | Mon, 11 Apr 2022 21:46:55 +0000 |
| [[MeCAR, 421, Block B, 12th Apr. 1200CEST] Work plan](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;d641b749.2204B&S=) | Emmanuel Thomas | Tue, 12 Apr 2022 11:22:03 +0000 |
| [[MeCAR, 421, Block B, 12th Apr. 1200CEST] Work plan](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;76e3054a.2204B&S=) | Thomas Stockhammer | Tue, 12 Apr 2022 12:12:39 +0000 |

| [[MeCAR, 421, Block B, 12th Apr. 1200CEST] Work plan](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;8f57169b.2204B&S=) | Emmanuel Thomas | Tue, 12 Apr 2022 17:34:35 +0000 |
| --- | --- | --- |

**Revisions:**

* <https://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_118-e/Inbox/Drafts/VIDEO/S4-220421_r1.docx>
* https://www.3gpp.org/ftp/tsg\_sa/WG4\_CODEC/TSGS4\_118-e/Inbox/Drafts/VIDEO/S4-220421\_r2.docx

**Online Discussion:**

* Emmanuel presents r01
* Thomas: We should add a bold note on the dependency of other work items on this work item
  + Resolution???
* Thomas: What about a permanent document? High profile work item
  + Gilles: Important to track agreements
  + Emmanuel: May not be needed at this meeting, but possibly later
  + Thomas: What about the agreements from this meeting?
  + Gilles: maybe good to create a permanent document
  + Emmanuel: What to be added? Only specification text? Also process information?
  + Gilles: could be both
* Emmanuel presents r02
  + Thomas: let’s make sure that closing plenary is aware of this - also study items.

**Decision:**

* On r1:
  + Please add introduction on dependency of other work items
  + Please add permanent document
  + Please create revision r02
* On r02:
  + Agreed with addition of study item

**S4-220421** is **revised to S4-220503.**

| [**S4-220503**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220503.zip) | [MeCAR] Proposed Work Plan v1.0 | Xiaomi Communications | Emmanuel Thomas |
| --- | --- | --- | --- |

**S4-220503** is **agreed and presented to SA4 plenary.**

| [**S4-220479**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220479.zip) | Proposed specification skeleton for MeCAR | Tencent | Gilles Teniou |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[MeCAR, 479, Block B, 12th Apr. 1200CEST] Drat TS skeleton](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;652c34d1.2204B&S=) | teniou(TeniouGilles) | Mon, 11 Apr 2022 09:35:20 +0000 |
| --- | --- | --- |
| [[MeCAR, 479, Block B, 12th Apr. 1200CEST] Drat TS skeleton](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;c3287bf0.2204B&S=) | Thomas Stockhammer | Mon, 11 Apr 2022 19:58:57 +0000 |
| [[MeCAR, 479, Block B, 12th Apr. 1200CEST] Drat TS skeleton](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;b139634f.2204B&S=) | teniou(TeniouGilles) | Tue, 12 Apr 2022 11:26:58 +0000 |
| [[MeCAR, 479, Block B, 12th Apr. 1200CEST] Drat TS skeleton](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;af843960.2204B&S=) | Thomas Stockhammer | Tue, 12 Apr 2022 12:06:49 +0000 |

**Revisions:**

* <https://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_118-e/Inbox/Drafts/VIDEO/Draft%20TS%2026.119%20Media%20Capabilitities%20for%20AR%20v0.1.0%20rm.docx>
* R01: https://www.3gpp.org/ftp/tsg\_sa/WG4\_CODEC/TSGS4\_118-e/Inbox/Drafts/VIDEO/S4-220479R1%20Draft%20TS%2026.119%20Media%20Capabilitities%20for%20AR%20v0.1.0.docx

**Online Discussion:**

* Online discussion
  + We have an offline meeting with the rapporteur, editor, and the commenter to address the comments.
* Gilles presents r01.
  + Shuai: <cannot be understood>. On chat: q:The objective is described to specify additional KPI and simple QoE metrics, so we suggest the editor notes can be align with this sentence. q we don't think that additional QoE metrics is clear. In my view, MeCar ia aiming at identify and specify simple QoE metrics from VR QoE metrics can be reused or enhanced for AR media
    - Gilles: clarifies that the editor’s note is the work item objectives.
    - Thomas: just do a verbatim copy of the work item objectives.
  + Imed: Would there be some requirements? For example if we reference from Split rendering
    - Gilles: more on functionalities, but not requirements. We have KPIs to define the capabilities
    - Thomas: in the Split Rendering, you would define the required functions in order to render complex scenes

**Decision:**

* Agreed r02 with copy of verbatim objectives

**S4-220479** is **revised to S4-220504.**

| [**S4-220504**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220504.zip) | TS 26.119 v0.1.0 | Tencent | Gilles Teniou |
| --- | --- | --- | --- |

**S4-220504** is **agreed and presented to SA4 plenary.**

## 9.6 FS\_5GVideo (Feasibility Study on 5G Video Codec Characteristics)

WID: [SP-210378](https://www.3gpp.org/ftp/tsg_sa/TSG_SA/TSGs_92E_Electronic_2021_06/Docs/SP-210378.zip) Feasibility Study on 5G Video Codec Characteristics (FS\_5GVideo)

| [**S4-220365**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220365.zip) | TR26.955: Proposed Editor's Update from Telcos | Qualcomm Incorporated | Thomas Stockhammer |
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**E-mail Discussion:**

| [[FS\_5GVideo, 365, Block A, 7th Apr. 1200CEST] Proposed Editor's Update from Telcos](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;79fab2b3.2204A&S=) | teniou(TeniouGilles) | Wed, 6 Apr 2022 07:50:07 +0000 |
| --- | --- | --- |
| [[FS\_5GVideo, 365, Block A, 7th Apr. 1200CEST] Proposed Editor's Update from Telcos](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;224e0f9e.2204A&S=) | teniou(TeniouGilles) | Thu, 7 Apr 2022 11:13:48 +0000 |

**Revisions:**

* **none**

**Online Discussion:**

* **none**

**Decision:**

**S4-220365** is **agreed.**

| [**S4-220493**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220493.zip) | TR26.955v1.6.0 | Qualcomm Incorporated | Thomas Stockhammer |
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**S4-220493** is **presented to SA4 plenary.**

| [**S4-220366**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220366.zip) | [FS\_5G\_Video] Status after AHG Calls | Qualcomm Incorporated | Thomas Stockhammer |
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**E-mail Discussion:**

| [[FS\_5GVideo, 366, Block A, 7th Apr. 1200CEST] Status after AHG Calls](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;e8c8a482.2204A&S=) | teniou(TeniouGilles) | Wed, 6 Apr 2022 07:50:29 +0000 |
| --- | --- | --- |
| [[FS\_5GVideo, 366, Block A, 7th Apr. 1200CEST] Status after AHG Calls](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;6ef94b8.2204A&S=) | teniou(TeniouGilles) | Thu, 7 Apr 2022 11:15:11 +0000 |

**Revisions:**

* **none**

**Online Discussion:**

* **none**

**Decision:**

* **none**

**S4-220366** is **agreed.**

| [**S4-220494**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220494.zip) | [FS\_5G\_Video] Status after SA4#118e | Qualcomm Incorporated | Thomas Stockhammer |
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**S4-220494** is **presented to SA4 plenary.**

| [**S4-220367**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220367.zip) | [FS\_5G\_Video] Final fixes on Anchor Results | Qualcomm Incorporated | Thomas Stockhammer |
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**E-mail Discussion:**

| [[FS\_5GVideo, 367, Block A, 7th Apr. 1200CEST] Final fixes on Anchor Results](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;d80a72bf.2204A&S=) | teniou(TeniouGilles) | Wed, 6 Apr 2022 07:50:58 +0000 |
| --- | --- | --- |
| [[FS\_5GVideo, 367, Block A, 7th Apr. 1200CEST] Final fixes on Anchor Results](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;fda1da3d.2204A&S=) | Thomas Stockhammer | Thu, 7 Apr 2022 09:41:09 +0000 |
| [[FS\_5GVideo, 367, Block A, 7th Apr. 1200CEST] Final fixes on Anchor Results](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;2225a0c6.2204A&S=) | Gaëlle Martin-Cocher | Thu, 7 Apr 2022 13:57:01 +0000 |
| [[FS\_5GVideo, 367, Block A, 7th Apr. 1200CEST] Final fixes on Anchor Results](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;37d18bf0.2204B&S=) | Thomas Stockhammer | Fri, 8 Apr 2022 08:12:28 +0000 |

**Revisions:**

* **none**

**Online Discussion:**

* See 399

**Decision:**

* See 399

**S4-220367** is **noted.**

| [**S4-220368**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220368.zip) | [FS\_5G\_Video] Characterization Updates | Qualcomm Incorporated | Thomas Stockhammer |
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**S4-220368** is **revised to S4-220430.**

| [**S4-220369**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220369.zip) | [FS\_5G\_Video] Verification Updates | Qualcomm Incorporated | Thomas Stockhammer |
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**E-mail Discussion:**

| [[FS\_5GVideo, 369 Block A, 7th Apr. 1200CEST] Verification updates](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;966f85f9.2204A&S=) | teniou(TeniouGilles) | Wed, 6 Apr 2022 07:51:16 +0000 |
| --- | --- | --- |
| [[FS\_5GVideo, 369 Block A, 7th Apr. 1200CEST] Verification updates](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;f5be916a.2204A&S=) | Thomas Stockhammer | Thu, 7 Apr 2022 09:54:17 +0000 |
| [[FS\_5GVideo, 369 Block A, 7th Apr. 1200CEST] Verification updates](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;a6acb634.2204A&S=) | Rajan Laxman Joshi | Thu, 7 Apr 2022 13:48:34 +0000 |
| [[FS\_5GVideo, 369 Block A, 7th Apr. 1200CEST] Verification updates](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;eea5cb0c.2204A&S=) | Thomas Stockhammer | Thu, 7 Apr 2022 13:51:39 +0000 |

**Revisions:**

* **none**

**Online Discussion:**

* Thomas explains the details on what was done and what the S2 fix provides.

**Decision:**

* We agree on 369. We continue to investigate the issue with S2 HDR and S1.

**S4-220369** is **agreed.**

| [**S4-220370**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220370.zip) | [FS\_5G\_Video] Software Updates | Qualcomm Incorporated | Thomas Stockhammer |
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**E-mail Discussion:**

| [[FS\_5GVideo, 370 Block A, 7th Apr. 1200CEST] Software updates](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;2e5699b0.2204A&S=) | teniou(TeniouGilles) | Wed, 6 Apr 2022 07:51:33 +0000 |
| --- | --- | --- |
| [[FS\_5GVideo, 370 Block A, 7th Apr. 1200CEST] Software updates](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;4d21116a.2204A&S=) | teniou(TeniouGilles) | Thu, 7 Apr 2022 11:45:01 +0000 |
| [[FS\_5GVideo, 370 Block A, 7th Apr. 1200CEST] Software updates](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;abebb92c.2204A&S=) | Thomas Stockhammer | Thu, 7 Apr 2022 11:57:12 +0000 |
| [[FS\_5GVideo, 370 Block A, 7th Apr. 1200CEST] Software updates](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;464fc0c7.2204A&S=) | teniou(TeniouGilles) | Thu, 7 Apr 2022 12:10:25 +0000 |
| [[FS\_5GVideo, 370 Block A, 7th Apr. 1200CEST] Software updates](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;77857903.2204A&S=) | Thomas Stockhammer | Thu, 7 Apr 2022 12:22:05 +0000 |

**Revisions:**

* none

**Online Discussion:**

* Thomas explains that updates had been done on the SW

**Decision:**

* Software updates are done, need to be documented.

**S4-220370** is **agreed.**

| [**S4-220371**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220371.zip) | [FS\_5G\_Video] General Updates and Initial Conclusions | Qualcomm Incorporated | Thomas Stockhammer |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [371 Uploaded](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;741fcb9b.2204B&S=) | Thomas Stockhammer | Mon, 11 Apr 2022 08:50:56 +0000 |
| --- | --- | --- |

| [[FS\_5GVideo, 371, Block A-ext, 12th Apr. 1200CEST] General Updates and Initial Conclusions](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;658b703f.2204B&S=) | teniou(TeniouGilles) | Mon, 11 Apr 2022 14:40:50 +0000 |
| --- | --- | --- |
| [[FS\_5GVideo, 371, Block A-ext, 12th Apr. 1200CEST] General Updates and Initial Conclusions](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;608575de.2204B&S=) | teniou(TeniouGilles) | Mon, 11 Apr 2022 14:43:01 +0000 |
| [[FS\_5GVideo, 371, Block A-ext, 12th Apr. 1200CEST] General Updates and Initial Conclusions](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;35895193.2204B&S=) | Dmytro Rusanovskyy | Tue, 12 Apr 2022 07:16:32 +0000 |

| [[FS\_5GVideo, 371, Block A-ext, 12th Apr. 1200CEST] General Updates and Initial Conclusions](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;485a9f85.2204B&S=) | teniou(TeniouGilles) | Wed, 13 Apr 2022 12:15:55 +0000 |
| --- | --- | --- |
| [[FS\_5GVideo, 371, Block A-ext, 12th Apr. 1200CEST] General Updates and Initial Conclusions](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;7c976366.2204B&S=) | Thomas Stockhammer | Wed, 13 Apr 2022 13:10:55 +0000 |

**Revisions:**

* **R01:** https://www.3gpp.org/ftp/tsg\_sa/WG4\_CODEC/TSGS4\_118-e/Inbox/Drafts/VIDEO/S4-220371-26.955-General-GIlles.docx

**Online Discussion:**

* Agreed with the comment
* Rajan: there are no comments included
  + Madhukar: same issue
  + Thomas: no audio
* Gilles presents the revision r01

**Decision:**

* **Agreed with the comments above**

**S4-220371** is **agreed.**

| [**S4-220376**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220376.zip) | Scenario 3-4-5 | InterDigital, Europe, Ltd. Ericsson LM, Fraunhofer HHI, Qualcomm Inc | Gaelle Martin-Cocher |
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**E-mail Discussion:**

| [[FS\_5GVideo, 376 Block A, 7th Apr. 1200CEST] Scenario 3-4-5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;8d86d983.2204A&S=) | teniou(TeniouGilles) | Wed, 6 Apr 2022 07:51:50 +0000 |
| --- | --- | --- |
| [[FS\_5GVideo, 376 Block A, 7th Apr. 1200CEST] Scenario 3-4-5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;aa2e55cc.2204A&S=) | Alexandros Tourapis | Wed, 6 Apr 2022 07:57:01 -0700 |
| [[FS\_5GVideo, 376 Block A, 7th Apr. 1200CEST] Scenario 3-4-5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;f869c821.2204A&S=) | Gaëlle Martin-Cocher | Thu, 7 Apr 2022 14:06:58 +0000 |
| [[FS\_5GVideo, 376 Block A, 7th Apr. 1200CEST] Scenario 3-4-5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;1e743a16.2204B&S=) | Gaëlle Martin-Cocher | Fri, 8 Apr 2022 12:05:09 +0000 |

| [[FS\_5GVideo, 376 Block A, 7th Apr. 1200CEST] Scenario 3-4-5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;af23dbe3.2204B&S=) | Rajan Laxman Joshi | Mon, 11 Apr 2022 02:10:27 +0000 |
| --- | --- | --- |
| [[FS\_5GVideo, 376 Block A, 7th Apr. 1200CEST] Scenario 3-4-5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;c4b0dddd.2204B&S=) | teniou(TeniouGilles) | Mon, 11 Apr 2022 11:53:47 +0000 |

**Revisions:**

* https://www.3gpp.org/ftp/tsg\_sa/WG4\_CODEC/TSGS4\_118-e/Inbox/Drafts/VIDEO/S4-220376\_scenario-3-4-5-rev1.docx

**Online Discussion:**

* Gaelle presents the document
  + Thomas: Unclear what the sentences means. We should not confuse, we should just remove.
    - Gaelle: ok, we can remove
  + Alexis: You are claiming that this is only for GDR. Removing is not appropriate. It is still valuable information. GDR is a different experiment. Still valuable evaluation.
    - Gaelle: I am not asking to remove the bitstreams. Not undoing the work. These scenarios do not make sense for comparison.
  + Dmytro: Share support for contribution. 3GPP creates TR with certain statement. Testing fixed QP in codecs is ok for research. Does not reflect mobile configurations. Application usefulness is not clear, unreasonable.
  + Madhukar: I am not getting was is going on - similar as Thomas. You can do error resilience study and so on. This is best what you can do.
  + Alexis: also unclear what is done here
  + Gilles: If we exclude GDR from the anchors.
  + Gaelle: We are not to propose to remove S3 and S5, for S4 we can do. Fixed QP is not realistic for scenario suggesting.
    - Gilles: What makes S4-JM-01 good and S4-JM-02 is bad?
    - Gaelle: does not reflect traces we analysed for sharing. Not realistic
    - Gilles: we also do not rate control, so this is a characterization
  + Thomas: We can remove the data, but we should not say anything that we did not complete the work.
  + Gaelle: we do not have to remove, but keep parts for later
  + Dmytro: Fixed QP is used, not cascading. Propose to keep bitstream.
  + Rajan: fixed QP in frame is also not used generally. The argument is not convincing. Also when was this decided? Minutes?
  + John: agree that this should be removed from characterization.
* Gaelle presents rev1
  + Gilles: They are defined, but not used for codec characterization. Do we still need to keep the documented? Would remove everything
  + Alexis: HEVC and AVC supports GDR, so this is weird. You need rate control, and GDR. This is not part of the reference encoder. Should we add GDR into HM? We do not need JM?
  + Gaelle: Was designed in JVET to test GDR. We want to encourage implementation GDR.
* We revisit this in Block A washup
  + See e-mail for chairman: <https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;c4b0dddd.2204B&S=>
  + Options:

1. Those configurations are updated (e.g. allowing QP cascading) which means that a significant amount of work is required for re-generating the anchors, and calculating the metrics and…
2. Those configurations are ignored from the codec characterization. In this case, the question of keeping them documented into the TR needs to be addressed. If there is agreement from the group to exclude these configurations, I would then prefer to remove all related text in the TR.
3. There is no agreement at all on the proposal and no easy alternative, the contribution is noted with the risk that we may not reach agreement in the characterization results.
   * Gaelle: i don't think the first proposal is realistic
   * Rajan: We do not have flexible QP per frame either
     + Dmytro: Agree on this, but cascaded QP is well known and per frame QP changes. We agree on what is presented by Interdigital.
   * Gilles: lack of consensus means that we would note. But this would challenge the rest of the work, including the characterization results.
   * Madhukar: We suggest keeping the results, as they had been produced anyways.
   * The chairman does not see a consensus and hence proposes to note the document.

**Decision:**

* The chairman does not see a consensus and hence proposes to note the document.

**S4-220376** is **noted.**

| [**S4-220399**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220399.zip) | [FS\_5G\_Video] Alternative fixes on Anchor Results for S1 | Qualcomm CDMA Technologies | Thomas Stockhammer |
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**E-mail Discussion:**

* See discussion at 367

**Revisions:**

* **none**

**Online Discussion:**

* Thomas explains the situation with respect to 367 and 399. 399 is an alternative. Both set the partitions to 0. 399 sets the IDRPeriod to 0.
* Gilles: Why is IDRPeriod set causing problems?
  + Alexis: This is because of the specific hierarchy, was never tested. Also as HEVC and VVC use open GOP, this should also be used.
* Gaelle: see my e-mail - How do contributions relate
  + Gilles: they impact the same anchors
* Lukasz: Has this been checked?
  + Thomas: It has been checked
  + Lukasz: ok
* Gaelle: What about VMAF zeroing?
  + Thomas: other contribution
  + Gaelle: ok
* Gaelle: We are changing AVC anchors. What about cross-check
  + Thomas: old was not cross-checked
  + Gaelle: this is problem
  + Gilles: see at the end what results are cross-checked and how we can use those.

**Decision:**

* We note 367 and agree on 399 - characterization updates need not be done.
* We move forward with the anchors and address cross-check later

**S4-220399** is **agreed.**

| [**S4-220406**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220406.zip) | Update to the categorization of VVC, subclause 8.2 | Ericsson LM, Fraunhofer HHI, InterDigital, Qualcomm Inc. | Dmytro Rusanovskyy |
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**E-mail Discussion:**

| [[FS\_5GVideo, 406 Block A, 7th Apr. 1200CEST] Update to the categorization of VVC, subclause 8.2](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;a0afbd72.2204A&S=) | teniou(TeniouGilles) | Wed, 6 Apr 2022 07:52:10 +0000 |
| --- | --- | --- |
| [[FS\_5GVideo, 406 Block A, 7th Apr. 1200CEST] Update to the categorization of VVC, subclause 8.2](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;9bf24418.2204A&S=) | teniou(TeniouGilles) | Thu, 7 Apr 2022 12:36:41 +0000 |

**Revisions:**

* **none**

**Online Discussion:**

* none

**Decision:**

* Agreed - add VVC results to TR

**S4-220406** is **agreed.**

| [**S4-220408**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220408.zip) | Verification report | Qualcomm Inc. | Dmytro Rusanovskyy |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[FS\_5GVideo, 408 Block A, 7th Apr. 1200CEST] Verification report](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;91b327ab.2204A&S=) | teniou(TeniouGilles) | Wed, 6 Apr 2022 07:52:32 +0000 |
| --- | --- | --- |

| [S4-220408](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;5385a86b.2204A&S=) | John Simmons | Mon, 4 Apr 2022 18:17:22 -0700 |
| --- | --- | --- |
| [S4-220408](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;b5f48339.2204A&S=) | Dmytro Rusanovskyy | Wed, 6 Apr 2022 02:43:37 +0000 |
| [S4-220408](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;12a5e590.2204A&S=) | Alexandros Tourapis | Wed, 6 Apr 2022 20:36:20 -0700 |
| [S4-220408](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;9b2c008e.2204A&S=) | Dmytro Rusanovskyy | Thu, 7 Apr 2022 14:31:36 +0000 |
| [S4-220408](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;3af3b319.2204A&S=) | Alexandros Tourapis | Thu, 7 Apr 2022 07:42:44 -0700 |
| [S4-220408](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;2458ed.2204A&S=) | Dmytro Rusanovskyy | Thu, 7 Apr 2022 17:31:25 +0000 |
| [S4-220408](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;c74d4810.2204A&S=) | Alexandros Tourapis | Thu, 7 Apr 2022 12:32:28 -0700 |

**Revisions:**

* **none**

**Online Discussion:**

* No discussion on e-mail.
* Dmytro explains the situation - can we get logfiles?
* John: yes we get logfiles

**Decision:**

**S4-220408** is **agreed.**

| [**S4-220430**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220430.zip) | [FS\_5G\_Video] Characterization Updates | Qualcomm Incorporated | Thomas Stockhammer |
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**E-mail Discussion:**

* Not triggered

**Revisions:**

* **none**

**Online Discussion:**

* Thomas presents the details. He makes clear that this is not intended for agreement but basically a workflow verification
* Lukasz asks on the process of updating
  + Thomas: I will send a message for every time I touch the database
* Alexis:
  + Can we do a curve fitting drawing for left ones.
  + Bicubic may be used
* Other potential improvements
  + Add log to x axis
  + Increase the legend size
  + Update to loss with different colors
  + One digit, but 0 added
  + Define BD-PSNR rate and so on, for example BDR(rate)
* Madhukar: adding in square brackets to draft TR
* Thomas: Also add clear statement on which numbers have been verified

**Decision:**

* Agreed with the above updates

**S4-220430** is **agreed.**

| [**S4-220441**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220441.zip) | [FS\_5GVideo] Reconstructed md5sums for EVC bitstreams | Samsung Electronics Ltd. | Rajan Joshi |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[FS\_5GVideo, 441 Block A, 7th Apr. 1200CEST] Reconstructed md5sums for EVC bitstreams](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;99e496dd.2204A&S=) | teniou(TeniouGilles) | Wed, 6 Apr 2022 07:52:43 +0000 |
| --- | --- | --- |
| [[FS\_5GVideo, 441 Block A, 7th Apr. 1200CEST] Reconstructed md5sums for EVC bitstreams](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;18a1b519.2204A&S=) | Rajan Laxman Joshi | Thu, 7 Apr 2022 04:38:27 +0000 |
| [[FS\_5GVideo, 441 Block A, 7th Apr. 1200CEST] Reconstructed md5sums for EVC bitstreams](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;47fcd87e.2204B&S=) | Thomas Stockhammer | Fri, 8 Apr 2022 07:49:46 +0000 |

**Revisions:**

* https://www.3gpp.org/ftp/tsg\_sa/WG4\_CODEC/TSGS4\_118-e/Inbox/Drafts/VIDEO/S4-220441-r1-Samsung.zip

**Online Discussion:**

* Rajan presents revision 1
* Thomas: What is the impact on the time plan if we agree this?
* Gaelle: good to see the bitstream updated. We will try to check this.
* Rajan: I am sympathetic to the timeline concern
* Gaelle: on the timeline concern: we will need to add note (not editor note) to qualify the results and configuration if there are doubts or no verification
* Gilles: we should remove what is not agreed/verified
* Thomas: Can I upload the bitstreams? Can I upload S1? Can I upload S2? Can I upload S3 to S5?
  + Gilles: We have agreed on S1 and S2

**Decision:**

* We agree on revision 1, we upload the bitstreams.
* Rajan will work with Thomas on updates to TR.

**S4-220441** is **revised to S4-220491.**

| [**S4-220491**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220491.zip) | [FS\_5GVideo] Reconstructed md5sums for EVC bitstreams | Samsung Electronics Ltd. | Rajan Joshi |
| --- | --- | --- | --- |

**S4-220491** is **agreed.**

| [**S4-220484**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220484.zip) | [FS\_5GVideo] VMAF and MS-SSIM results in S3 and S5 | Ericsson LM, InterDigital | Lukasz Litwic |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[FS\_5GVideo, 484 Block A, 7th Apr. 1200CEST] VMAF and MS-SSIM results in S3 and S5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;69c3cf08.2204A&S=) | teniou(TeniouGilles) | Wed, 6 Apr 2022 07:52:53 +0000 |
| --- | --- | --- |
| [[FS\_5GVideo, 484 Block A, 7th Apr. 1200CEST] VMAF and MS-SSIM results in S3 and S5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;f82aef60.2204A&S=) | Alexandros Tourapis | Wed, 6 Apr 2022 07:37:47 -0700 |
| [[FS\_5GVideo, 484 Block A, 7th Apr. 1200CEST] VMAF and MS-SSIM results in S3 and S5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;4530036b.2204A&S=) | Lukasz Litwic | Thu, 7 Apr 2022 07:24:02 +0000 |
| [[FS\_5GVideo, 484 Block A, 7th Apr. 1200CEST] VMAF and MS-SSIM results in S3 and S5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;89261231.2204A&S=) | Thomas Stockhammer | Thu, 7 Apr 2022 08:38:22 +0000 |
| [[FS\_5GVideo, 484 Block A, 7th Apr. 1200CEST] VMAF and MS-SSIM results in S3 and S5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;d973da7f.2204A&S=) | Rajan Laxman Joshi | Thu, 7 Apr 2022 13:36:22 +0000 |
| [[FS\_5GVideo, 484 Block A, 7th Apr. 1200CEST] VMAF and MS-SSIM results in S3 and S5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;de461dc7.2204A&S=) | Rajan Laxman Joshi | Thu, 7 Apr 2022 13:43:07 +0000 |
| [[FS\_5GVideo, 484 Block A, 7th Apr. 1200CEST] VMAF and MS-SSIM results in S3 and S5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;d2d5f9f7.2204A&S=) | Alexandros Tourapis | Thu, 7 Apr 2022 07:07:20 -0700 |
| [[FS\_5GVideo, 484 Block A, 7th Apr. 1200CEST] VMAF and MS-SSIM results in S3 and S5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;8db5d57a.2204A&S=) | Lukasz Litwic | Thu, 7 Apr 2022 14:30:05 +0000 |
| [[FS\_5GVideo, 484 Block A, 7th Apr. 1200CEST] VMAF and MS-SSIM results in S3 and S5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;5eb2d3a1.2204A&S=) | Alexandros Tourapis | Thu, 7 Apr 2022 07:32:35 -0700 |
| [[FS\_5GVideo, 484 Block A, 7th Apr. 1200CEST] VMAF and MS-SSIM results in S3 and S5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;1bcc6902.2204A&S=) | Lukasz Litwic | Thu, 7 Apr 2022 15:47:45 +0000 |
| [[FS\_5GVideo, 484 Block A, 7th Apr. 1200CEST] VMAF and MS-SSIM results in S3 and S5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;b25a98cc.2204A&S=) | Thomas Stockhammer | Thu, 7 Apr 2022 17:31:13 +0000 |
| [[FS\_5GVideo, 484 Block A, 7th Apr. 1200CEST] VMAF and MS-SSIM results in S3 and S5](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;d9418fcd.2204A&S=) | Thomas Stockhammer | Thu, 7 Apr 2022 17:37:07 +0000 |

**Revisions:**

* none

**Online Discussion:**

* Gilles summarizes the discussion.
* Lukasz clarifies the intent, to zero out
* Alexis:
  + We should just know why this is the case?
* Thomas:
  + Likely generated with a different tools
  + We can track this, but likely not worth it
* Alexis: agree
* Lukasz: agree

**Decision:**

* Agreed - we zero out the metrics

**S4-220484** is **agreed.**

| [**S4-220495**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220495.zip) | [FS\_5G\_Video] Proposed Updated Work Plan | Qualcomm Incorporated | Thomas Stockhammer |
| --- | --- | --- | --- |

**Online Discussion:**

* Thomas presents

**Decision:**

* No comments

**S4-220495** is **agreed.**

| [**S4-220496**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220496.zip) | [FS\_5G\_Video] Proposed Updates to Plots and Verification Documentation | Qualcomm Incorporated | Thomas Stockhammer |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [496 - BD-RATE](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;8c072273.2204B&S=) | Thomas Stockhammer | Mon, 11 Apr 2022 14:36:52 +0000 |
| --- | --- | --- |

**Online Discussion:**

* Thomas presents
  + Still 2 digits -> need to fixed
* Lukasz: What are the differences in the plots? Overlapping?
  + Thomas: overlap not done - need to do do
* Lukasz: Interpolation may cause more issues
  + Thomas: this is why we present it
  + Dmytro: does this cause more problems - should we do some checks to validate the presentation.
  + Alexis: do pchip in log-domain, not in the linear domain.
* Madhukar: What are the accuracy mapping details?
  + Thomas: 3 metrics, 2 accuracy, 1 characterization
* Lukasz: Would not overload, but no interpolation.

**Decision:**

* Agree on everything except the use of pchip

**S4-220496** is **agreed.**

| [**S4-220497**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220497.zip) | [FS\_5G\_Video] SIMD Update to AV1 build system configuration | Google | John Simmons |
| --- | --- | --- | --- |

**Online Discussion:**

* John Simmons presents, explains that they would like to make it available,

**Discussion:**

* Agree on everything except the use of pchip
* Thomas: What does it mean for the currently provided bitstreams and results?
  + John: bitstreams will be updated and also results.
* Thomas: Assume that there will be new results, what will happen when?
  + John: will provide during this meeting
  + Gilles: accept as candidate bitstreams
  + Dmytro: accept that we need some time to check the details. So only candidate bitstreams.

**Decision:**

* We agree on the document.
* We still get one more document to compile the details

**S4-220497** is **agreed.**

| [**S4-220499**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220499.zip) | [FS\_5G\_Video] Updated AV1 bitstreams | Google | John Simmons |
| --- | --- | --- | --- |

**S4-220499** is **withdrawn.**

## 9.7 FS\_XRTraffic (Feasibility Study on Typical Traffic Characteristics for XR Services and other Media)

*WID:* [*SP-200054*](https://www.3gpp.org/ftp/tsg_sa/TSG_SA/TSGS_87E_Electronic/Docs/SP-200054.zip) *Feasibility Study on Typical Traffic Characteristics for XR Services and other Media*

| [**S4-220372**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220372.zip) | [FS\_XRTraffic] ADUs, PDU Sets and Metrics | Qualcomm Incorporated | Thomas Stockhammer |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[Reply LS, 372 Block A, 8th Apr. 1200CEST] LS Reply on QoS support with PDU Set granularity](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;c101394b.2204A&S=) | teniou(TeniouGilles) | Wed, 6 Apr 2022 07:53:25 +0000 |
| --- | --- | --- |
| [[Reply LS, 372 Block A, 8th Apr. 1200CEST] LS Reply on QoS support with PDU Set granularity](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;6e6e14e.2204A&S=) | Zhao, Shuai | Wed, 6 Apr 2022 08:18:21 +0000 |
| [[Reply LS, 372 Block A, 8th Apr. 1200CEST] LS Reply on QoS support with PDU Set granularity](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;9a146dc0.2204A&S=) | teniou(TeniouGilles) | Wed, 6 Apr 2022 11:33:08 +0000 |
| [[Reply LS, 372 Block A, 8th Apr. 1200CEST] LS Reply on QoS support with PDU Set granularity](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;18a35532.2204A&S=) | Hakju Ryan Lee | Wed, 6 Apr 2022 22:05:33 +0900 |
| [[Reply LS, 372 Block A, 8th Apr. 1200CEST] LS Reply on QoS support with PDU Set granularity](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;b87bf891.2204A&S=) | Zhao, Shuai | Wed, 6 Apr 2022 15:12:37 +0000 |

**Revisions:**

* **none**

**Online Discussion:**

* Thomas presents this
* Thorsten:
  + SA4 should start working on the usage of PDU Sets. Application should defined what to add to a PDU set. We should look at the coding, IPB is not working like this. GDR is for example used for low latency. SA4 can study.
  + We should respond, but we need to continue work on this issue. Also to support SA2 in the definitions.
* Frederic:
  + This communication may be along line 2, but what are gaining
  + Also believe audio should added
* Thomas:
  + We have quite some data on TR 26.926
  + Audio is considered in our doc
* Qi:
  + We need to study in SA4 what a PDU Set
  + Application knows what PDU set, can provide this to 5GS
  + Agree with Thomas on what the benefits are
* Bo:
  + We may not see benefits in the SA4 perspective, but on the RAN side.
  + On SA4 side, we could gain on more capacity
* Thomas:
  + I am doubtful on the value of the network actively dropping packets. If you have packets to drop, why would you even send them. 99% of packets should get through, what is the gain if you drop PDU Set packets if one packet is dropped.
* Shuai:
  + Slicing is not the intention. Should removed from SA2
  + We talk about IP packets. PDU set can used in different scenarios
  + We look on validity of the concepts
  + Middlebox may be smart in dropping packets. Study
  + There are cases when you can drop packets can be beneficial.
* Qi:
  + In SA2, the idea is that PDU Set is defined such that you treat a group packets with QoS, rather than each single PDU
* Thorsten:
  + On packet dropping, this is dangerous. We also should consider packet delay. Also which packets are consumed together within a deadline.
  + We should look into concrete use cases.
* Gilles summarizes where we stand
* Thomas proposes that we create a draft LS from this meeting, complete it after SA4#118e and let SA2 people know that they can participate.

**Decision:**

* **We agree on basic principles**
* **We agree to create draft LS from this meeting**
* **We schedule an offline call next week to attempt to draft a reply LS**
* **If we can not complete the LS, we would schedule a call after SA4#118e.**

**S4-220372** is **agreed.**

| **S4-220373** | [FS\_XRTraffic] Proposed Updates to TR26.926 | Qualcomm Incorporated | Thomas Stockhammer |
| --- | --- | --- | --- |

**S4-220373** is **withdrawn.**

## 9.8 FS\_AI4Media (Feasibility Study on Artificial Intelligence (AI) and Machine Learning (ML) for Media)

*WID:**SP-220XXX Feasibility Study on Artificial Intelligence (AI) and Machine Learning (ML) for Media*

| [**S4-220390**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220390.zip) | [FS\_AI4Media] Proposed Time and Work Plan v1.0 | Samsung Electronics Iberia SA | Eric Yip |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[FS\_AI4Media, 390, Block B, 12th Apr. 1200CEST] work plan](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;f9f2a3e0.2204B&S=) | teniou(TeniouGilles) | Mon, 11 Apr 2022 09:36:21 +0000 |
| --- | --- | --- |
| [[FS\_AI4Media, 390, Block B, 12th Apr. 1200CEST] work plan](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;939d9a7d.2204B&S=) | teniou(TeniouGilles) | Tue, 12 Apr 2022 10:20:20 +0000 |

**Decision:**

* **Agreed based on e-mail discussion.**

**S4-220390** is **agreed.**

| [**S4-220391**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220391.zip) | [FS\_AI4Media] Proposed Skeleton | Samsung Electronics Iberia SA | Eric Yip |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[FS\_AI4Media, 391, Block B, 12th Apr. 1200CEST] proposed TR skeleton](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;1c4ee3d0.2204B&S=) | teniou(TeniouGilles) | Mon, 11 Apr 2022 09:36:36 +0000 |
| --- | --- | --- |
| [[FS\_AI4Media, 391, Block B, 12th Apr. 1200CEST] proposed TR skeleton](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;15763503.2204B&S=) | teniou(TeniouGilles) | Tue, 12 Apr 2022 10:46:40 +0000 |

| [[FS\_AI4Media, 391, Block B, 12th Apr. 1200CEST] proposed TR skeleton](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;4e034d2a.2204B&S=) | teniou(TeniouGilles) | Wed, 13 Apr 2022 11:55:53 +0000 |
| --- | --- | --- |

**Revisions:**

* **none**

**Online Discussion:**

* **none**

**Decision:**

* **Agreed based on e-mail discussion**

**S4-220391** is **agreed.**

| [**S4-220392**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220392.zip) | [FS\_AI4Media] Proposed Permanent Document v0.0.1 | Samsung Electronics Iberia SA | Eric Yip |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[FS\_AI4Media, 392, Block B, 12th Apr. 1200CEST] proposed Permanent document](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;76dde2d2.2204B&S=) | teniou(TeniouGilles) | Mon, 11 Apr 2022 09:36:58 +0000 |
| --- | --- | --- |
| [[FS\_AI4Media, 392, Block B, 12th Apr. 1200CEST] proposed Permanent document](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;25563df5.2204B&S=) | teniou(TeniouGilles) | Tue, 12 Apr 2022 10:59:39 +0000 |

**Revisions:**

* none

**Online Discussion:**

* none

**Decision:**

* Agreed based on e-mail discussion

**S4-220392** is **agreed.**

| [**S4-220500**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220500.zip) | [FS\_AI4Media] Proposed Permanent Document v0.1.0 | Samsung Electronics Iberia SA | Eric Yip |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[500 in Drafts folder] [FS\_AI4Media, 392, Block B, 12th Apr. 1200CEST] proposed Permanent document](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;7bc9cf7a.2204B&S=) | Eric Yip | Tue, 12 Apr 2022 23:07:56 +0900 |
| --- | --- | --- |

**Revisions:**

* none

**Online Discussion:**

* Eric presents

**Decision:**

* Agreed

**S4-220500** is **agreed and will be presented to SA4 plenary.**

| [**S4-220438**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220438.zip) | AI/ML Use Cases | Qualcomm Technologies Ireland | Imed Bouazizi |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[FS\_AI4Media, 438, Block B, 12th Apr. 1200CEST] AIML use cases](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;bf55833b.2204B&S=) | teniou(TeniouGilles) | Mon, 11 Apr 2022 09:37:12 +0000 |
| --- | --- | --- |
| [[FS\_AI4Media, 438, Block B, 12th Apr. 1200CEST] AIML use cases](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;da5eaac2.2204B&S=) | Eric Yip | Tue, 12 Apr 2022 14:10:00 +0900 |
| [[FS\_AI4Media, 438, Block B, 12th Apr. 1200CEST] AIML use cases](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;7d5fcc8e.2204B&S=) | teniou(TeniouGilles) | Tue, 12 Apr 2022 11:00:02 +0000 |

**Revisions:**

* **none**

**Online Discussion:**

* **none**

**Decision:**

* **Agreed to be added to permanent document**

**S4-220438** is **agreed.**

| [**S4-220439**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220439.zip) | Formats for DL models | Qualcomm Technologies Ireland | Imed Bouazizi |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[FS\_AI4Media, 439, Block B, 12th Apr. 1200CEST] Formats for DL models](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;8ffc8921.2204B&S=) | teniou(TeniouGilles) | Mon, 11 Apr 2022 09:37:35 +0000 |
| --- | --- | --- |
| [[FS\_AI4Media, 439, Block B, 12th Apr. 1200CEST] Formats for DL models](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;f4547b3d.2204B&S=) | Eric Yip | Tue, 12 Apr 2022 14:20:00 +0900 |
| [[FS\_AI4Media, 439, Block B, 12th Apr. 1200CEST] Formats for DL models](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;9971b9c0.2204B&S=) | teniou(TeniouGilles) | Tue, 12 Apr 2022 10:59:55 +0000 |

| [[FS\_AI4Media, 439, Block B, 12th Apr. 1200CEST] Formats for DL models](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;a6d0a95a.2204B&S=) | Imed Bouazizi | Tue, 12 Apr 2022 12:34:38 +0000 |
| --- | --- | --- |
| [[FS\_AI4Media, 439, Block B, 12th Apr. 1200CEST] Formats for DL models](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;e5db4210.2204B&S=) | Eric Yip | Tue, 12 Apr 2022 23:16:20 +0900 |

**Revisions:**

* **none**

**Online Discussion:**

* **none**

**Decision:**

* **Agreed to be added to permanent document**

**S4-220439** is **agreed.**

| [**S4-220498**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220498.zip) | TR26.927v0.1.0 | Tencent | Gilles Teniou |
| --- | --- | --- | --- |

**Revisions:**

* **none**

**Online Discussion:**

* Gilles presents

**Decision:**

* Agreed

**S4-220498** is **agreed and is presented to SA4 plenary.**

## 9.9 New Work / New Work Items and Study Items

| [**S4-220382**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220382.zip) | Feasibility Study on AR and MR QoE Metrics | China Unicom, Huawei | Shuai Gao |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[New work, 382, Block B, 12th Apr. 1200CEST] study on QoE Metrics for AR/MR](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;ee4ca876.2204B&S=) | teniou(TeniouGilles) | Mon, 11 Apr 2022 09:37:49 +0000 |
| --- | --- | --- |
| [[New work, 382, Block B, 12th Apr. 1200CEST] study on QoE Metrics for AR/MR](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;389e2c18.2204B&S=) | Thomas Stockhammer | Mon, 11 Apr 2022 21:28:03 +0000 |
| [[New work, 382, Block B, 12th Apr. 1200CEST] study on QoE Metrics for AR/MR](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;41e5a8b0.2204B&S=) | gaos30 | Tue, 12 Apr 2022 17:08:16 +0800 |
| [[New work, 382, Block B, 12th Apr. 1200CEST] study on QoE Metrics for AR/MR](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;834127e0.2204B&S=) | Thomas Stockhammer | Tue, 12 Apr 2022 09:20:23 +0000 |
| [[New work, 382, Block B, 12th Apr. 1200CEST] study on QoE Metrics for AR/MR](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;d78ce901.2204B&S=) | Gunnar Heikkilä | Tue, 12 Apr 2022 10:08:47 +0000 |
| [[New work, 382, Block B, 12th Apr. 1200CEST] study on QoE Metrics for AR/MR](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;63c4cc58.2204B&S=) | Emmanuel Thomas | Tue, 12 Apr 2022 11:47:08 +0000 |

| [[New work, 382, Block B, 12th Apr. 1200CEST] study on QoE Metrics for AR/MR](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;37713ced.2204B&S=) | gaos30 | Tue, 12 Apr 2022 20:56:19 +0800 |
| --- | --- | --- |

**Revisions:**

* https://www.3gpp.org/ftp/tsg\_sa/WG4\_CODEC/TSGS4\_118-e/Inbox/Drafts/VIDEO/S4-220382%20r01\_China%20Unicom.doc

**Online Discussion:**

* **Gunnar:** 
  + overlap with meCAR, simple metrics
  + Complex end user oriented metrics is not an easy task, means subjective tests
* Gao:
  + We believe that we addressed the dependency to meCAR
  + We do not believe that we need any methodology
* Thomas: Repeat the two main issues
  + Objectives are unclear about the relation to WI mecar, referring to the architecture
  + We miss the methodology, we clearly do believe that this is relevant if we address the details. However, once these details are clarified we would support this as good metrics adds credibility to SA4.
* Gao:
  + Repeats that it is believed that everything is clear.
  + Repeats that VR metrics do not have any methodology either
* Gilles:
  + We may be asked in SA plenary on what is simple and what is advanced.

**Decision:**

* No rush at this meeting. We can look at this at SA4#119e and a revised version.

**S4-220382** is **noted.**

| [**S4-220428**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220428.zip) | Draft SID on XR Service Collaboration Extension in the Network Media Layer | China Mobile Com. Corporation | Yujian Yin |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[New work, 428&429, Block B, 12th Apr. 1200CEST] XR service collaboration extension - SID and Discussion](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;b34f2adb.2204B&S=) | teniou(TeniouGilles) |
| --- | --- |
| [[New work, 428&429, Block B, 12th Apr. 1200CEST] XR service collaboration extension - SID and Discussion](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;b273d1dd.2204B&S=) | Thomas Stockhammer |
| [[New work, 428&429, Block B, 12th Apr. 1200CEST] XR service collaboration extension - SID and Discussion](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;d0acdf6e.2204B&S=) | Yujian Yin |

**Revisions:**

* none

**Online Discussion:**

* Gilles summarizes
* Thomas: I do not believe that the issues are addressed. We also do not understand where AREA stands. We remain reluctant on the objectives. We do not believe that the issues are resolved.
* Yujian has audio connection problems

**Decision:**

* Agreed as the basis for future work. The concerns should be taken into account
* Not sufficient supporting companies

**S4-220428** is **agreed.**

| [**S4-220429**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220429.zip) | Discussion on XR collaboration extension | China Mobile Com. Corporation | Yujian Yin |
| --- | --- | --- | --- |

**E-mail Discussion:**

See 428

**Revisions:**

**Online Discussion:**

* See 428

**Decision:**

* See 428

**S4-220429** is **noted.**

## 9.10 Liaisons and Liaison Responses

| [**S4-220478**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220478.zip) | LS Reply on QoS support with PDU Set granularity | Intel | Shuai Zhao |
| --- | --- | --- | --- |

**E-mail Discussion:**

Not triggered

**Revisions:**

**Online Discussion:**

* **See S4-220372**

**Decision:**

* **parked**

**S4-220478** is **noted.**

| [**S4-220424**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220424.zip) | [DRAFT] LS Reply on QoS support with PDU Set granularity | Huawei, HiSilicon | Qi Pan |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [[Reply LS, 424 Block A, 8th Apr. 1200CEST] LS Reply on QoS support with PDU Set granularity](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;8874e750.2204A&S=) | teniou(TeniouGilles) | Wed, 6 Apr 2022 13:15:23 +0000 |
| --- | --- | --- |
| [[Reply LS, 424 Block A, 8th Apr. 1200CEST] LS Reply on QoS support with PDU Set granularity](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;4ca1dbc4.2204B&S=) | Thomas Stockhammer | Fri, 8 Apr 2022 09:45:58 +0000 |
| [[Reply LS, 424 Block A, 8th Apr. 1200CEST] LS Reply on QoS support with PDU Set granularity](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;384eb8a1.2204B&S=) | Thomas Stockhammer | Fri, 8 Apr 2022 09:58:23 +0000 |
| [[Reply LS, 424 Block A, 8th Apr. 1200CEST] LS Reply on QoS support with PDU Set granularity](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;c3e6ddfb.2204B&S=) | Thorsten Lohmar | Fri, 8 Apr 2022 10:29:15 +0000 |
| [[Reply LS, 424 Block A, 8th Apr. 1200CEST] LS Reply on QoS support with PDU Set granularity](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;75aebf20.2204B&S=) | Thorsten Lohmar | Fri, 8 Apr 2022 10:38:28 +0000 |
| [[Reply LS, 424 Block A, 8th Apr. 1200CEST] LS Reply on QoS support with PDU Set granularity](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;9b08048d.2204B&S=) | Emmanuel Thomas | Fri, 8 Apr 2022 10:54:11 +0000 |
| [[Reply LS, 424 Block A, 8th Apr. 1200CEST] LS Reply on QoS support with PDU Set granularity](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;7521972d.2204B&S=) | panqi (E) | Fri, 8 Apr 2022 12:36:07 +0000 |

| [[Reply LS, 424 Block A, 8th Apr. 1200CEST] LS Reply on QoS support with PDU Set granularity](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;66af3c75.2204B&S=) | Thorsten Lohmar |
| --- | --- |
| [[Reply LS, 424 Block A, 8th Apr. 1200CEST] LS Reply on QoS support with PDU Set granularity](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;ab149e08.2204B&S=) | Emmanuel Thomas |

**Revisions:**

* **none**

**Online Discussion:**

* **See S4-220372**

**Decision:**

* **parked**

**S4-220424** is **merged to S4-220492.**

| [**S4-220492**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220492.zip) | [DRAFT] Reply LS on QoS support with PDU Set granularity | S4 Video SWG | Thomas Stockhammer |
| --- | --- | --- | --- |

**E-mail Discussion:**

| [Draft-S4-220492r01: Draft Reply LS to SA2 on PDU Sets](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;21ec6f3c.2204B&S=) | Thomas Stockhammer | Tue, 12 Apr 2022 10:53:13 +0000 |
| --- | --- | --- |
| [Draft-S4-220492r01: Draft Reply LS to SA2 on PDU Sets](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;84c4b9a2.2204B&S=) | Thomas Stockhammer | Tue, 12 Apr 2022 18:52:58 +0000 |
| [Draft-S4-220492r01: Draft Reply LS to SA2 on PDU Sets](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;e71d8c80.2204B&S=) | Zhao, Shuai | Tue, 12 Apr 2022 20:54:18 +0000 |
| [Draft-S4-220492r01: Draft Reply LS to SA2 on PDU Sets](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;f98cc8da.2204B&S=) | panqi (E) | Wed, 13 Apr 2022 03:54:06 +0000 |
| [Draft-S4-220492r01: Draft Reply LS to SA2 on PDU Sets](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;cb15dda8.2204B&S=) | yixuelei(雷艺学) | Wed, 13 Apr 2022 04:34:07 +0000 |

| [Upload S4-220492](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;d16a7960.2204B&S=) | Thomas Stockhammer | Wed, 13 Apr 2022 08:50:30 +0000 |
| --- | --- | --- |

**Revisions:**

| [Draft-S4-220492r01\_QCOM.docx](https://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_118-e/Inbox/Drafts/VIDEO/Draft-S4-220492r01_QCOM.docx) | 4/12/2022 18:51 | 40,9 KB |
| --- | --- | --- |
| [Draft-S4-220492r01\_QCOM\_Intel.docx](https://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_118-e/Inbox/Drafts/VIDEO/Draft-S4-220492r01_QCOM_Intel.docx) | 4/12/2022 20:50 | 43,8 KB |
| [Draft-S4-220492r01\_QCOM\_Intel\_Huawei.docx](https://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_118-e/Inbox/Drafts/VIDEO/Draft-S4-220492r01_QCOM_Intel_Huawei.docx) | 4/13/2022 3:52 | 45,8 KB |
| [Draft-S4-220492r01\_QCOM\_Intel\_Huawei\_Tencent.docx](https://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_118-e/Inbox/Drafts/VIDEO/Draft-S4-220492r01_QCOM_Intel_Huawei_Tencent.docx) | 4/13/2022 4:33 | 47,2 KB |
| [S4-220492r02\_Huawei.docx](https://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_118-e/Inbox/Drafts/VIDEO/S4-220492r02_Huawei.docx) | 4/13/2022 9:25 | 42,9 KB |

**Online Discussion:**

* Thomas presents the [revision from Huawei](https://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_118-e/Inbox/Drafts/VIDEO/S4-220492r02_Huawei.docx)
  + He disagrees to the change in answer 4
  + He is ok with the change in issue 5
* On answer 4:
  + Qi explains the details
  + Mary-Luc: Xiaomi disagrees with striking in issue 4 after 3 hours discussion - not the appropriate way.
  + Lei: packet loss cannot be avoided in wireless.
  + Thomas: never do congestion control by dropping packets. We strongly urge that we make sure SA2 understands this message. Rate control is much better
  + Xiaomi - Mary-Luc Champel to Everyone: it is written "should be avoided", not "shall be avoided"..
* James: excellent document - good information. Not happy that the text is taken out. Very important information for SA2. Would strongly urge to keep 5.
* Xiaomi - Mary-Luc Champel to Everyone: Xiaomi also believes clause 5 should not be deleted. There is so much misconception among other groups that I,B,P GOPs are the basis of video coding when closed GOPs are no longer used today most of the time
* Not able to complete everything. We can have another offline
* Thomas: happy to organize, but want to make sure that SA2 colleagues are not present to tell SA4 what to respond. This wouold be a waste of time.

**Decision:**

* **We have another offline**
* **We revised to 505 and present to SA4 plenary if it seems agreeable**

**S4-220492** is **revised to S4-220505.**

| [Offline on S4-220505: Draft Reply LS to SA2 on QoS support with PDU Set granularity (Part 3)](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;fe608dc3.2204B&S=) | Thomas Stockhammer | Wed, 13 Apr 2022 14:40:30 +0000 |
| --- | --- | --- |

| [**S4-220505**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_118-e/Docs/S4-220505.zip) | [DRAFT] Reply LS on QoS support with PDU Set granularity | S4 Video SWG | Thomas Stockhammer |
| --- | --- | --- | --- |

**S4-220505** is **presented to SA4 plenary.**

## 9.11 Any Other Business

### Report

The report will be made available in **S4-220506**.

### Output documents

| 5.2 | Other 3GPP groups |  | SA2/QoS: 460->505 (tentative) |
| --- | --- | --- | --- |
| 12.4 | Video SWG |  | 506 |
| 15.4 | MeCAR (Media Capabilities for Augmented Reality) |  | TP: 503  TS: 504  PD: 501 |
| 16.1 | FS\_XRTraffic (Feasibility Study on Typical Traffic Characteristics for XR Services and other Media) |  | none |
| 16.2 | FS\_5GVideo (Feasibility Study on 5G Video Codec Characteristics) |  | TP: 495  TR: 493  PD: 494 |
| 16.5 | FS\_AI4Media (Feasibility Study on Artificial Intelligence (AI) and Machine Learning (ML) for Media) |  | TP: 390  TR: 498  PD: 500 |

### AHG Telcos

* 3GPP SA4 Video SWG Telco (May 3, 2022, 15:30 – 17:30 CEST, Host Qualcomm)

| [3GPP SA4 Video SWG Telco (May 3, 2022)](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_VIDEO;ce1a71cc.2204B&S=) | Thomas Stockhammer | Mon, 11 Apr 2022 15:48:42 +0000 |
| --- | --- | --- |

## 9.12 Close of the session

The chairman thanked the participants. Thomas Stockhammer thanked the chairman on behalf of the delegates.

The online session was closed on April 13, 2022 at 16:42 (CEST).

No more e-mail approval is pending.

## 9.13 Attendees

| TITLE | Family Name | Given Name | Organization Represented | Present |
| --- | --- | --- | --- | --- |
| Mr. | Achter | Johannes | Deutsche Telekom AG |  |
| Dr. | Ahsan | Saba | Nokia Denmark |  |
| Mr. | Aracena | Mauricio | Ericsson LM |  |
| Ms. | Arora | Akansha | TSDSI |  |
| Mr. | AUMONT | FRANCK | InterDigital France R&D, SAS |  |
| Dr. | Bae | BeomSik | Samsung Electronics Benelux BV |  |
| Dr. | Bouazizi | Imed | Qualcomm Technologies Ireland |  |
| Dr. | Bradbury | Richard | BBC |  |
| Dr. | Bruhn | Stefan | Dolby Laboratories Inc. |  |
| Dr. | Budagavi | Madhukar | Samsung Electronics Polska |  |
| Mr. | Burman | Bo | Ericsson France S.A.S |  |
| Mr. | Chakraborty | Prasenjit | Samsung R&D Institute UK |  |
| Mr. | Champel | Mary-Luc | Beijing Xiaomi Electronics |  |
| Dr. | Chan | Yee Sin | Facebook India |  |
| Dr. | Chen | Lulin | MediaTek Inc. | Yes |
| Dr. | Chiba | Tsunehiko | VIAVI Solutions |  |
| Mr. | Chien | Wei-Jung | Qualcomm Technologies Int |  |
| Mr. | Choi | Hyung-Nam | Motorola Mobility UK Ltd. |  |
| Mr. | Chou | Joey | Intel Korea, Ltd. |  |
| Dr. | Curcio | Igor | Nokia Italy |  |
| Mr. | Dawkins | Spencer | Tencent |  |
| Mr. | De Bont | Frans | Philips International B.V. |  |
| Mr. | Defrance | Serge | InterDigital France R&D, SAS |  |
| Mr. | Doehla | Stefan | Fraunhofer IIS |  |
| Dr. | Ehara | Hiroyuki | Panasonic Corporation |  |
| Dr. | El Essaili | Ali | Ericsson GmbH, Eurolab |  |
| Mr. | Fontaine | Loic | InterDigital Belgium. LLC |  |
| Mr. | Gabin | Frederic | Dolby Laboratories Inc. |  |
| Mrs. | Gao | Fei | China Mobile Com. Corporation |  |
| Mr. | Gao | Shuai | China Unicom |  |
| Mr. | Gao | Yuan | Huawei Technologies France |  |
| Mr. | Gibellino | Diego | TELECOM ITALIA S.p.A. |  |
| Dr. | Gierlich | Hans Wilhelm | HEAD acoustics GmbH |  |
| Dr. | Gorley | Paul | BBC |  |
| Mr. | Gu | Xiaojun | Huawei Technologies R&D UK |  |
| Prof. | Guan | Ke | BJTU |  |
| Mr. | Gudumasu | Srinivas | InterDigital Communications | Yes |
| Mr. | Gunkel | Simon | KPN N.V. |  |
| Mr. | Guo | Yi | Intel Belgium SA/NV |  |
| Dr. | Hamza | Ahmed | InterDigital Communications | Yes |
| Dr. | Han | Jae-Shin | LG Electronics Deutschland |  |
| Dr. | He | Xuan (Shane) | Nokia France |  |
| Dr. | He | Yong | Qualcomm Tech. Netherlands B.V | Yes |
| Mr. | Heikkilä | Gunnar | Ericsson Japan K.K. | Yes |
| Dr. | Holub | Jan | Mesaqin.com s.r.o (Ltd.) |  |
| Mr. | Homkar | Ajay | Cadence Design Systems Inc. |  |
| Mr. | Howells | Elfed | Huawei Telecommunication India |  |
| Dr. | Hu | James | AT&T GNS Belgium SPRL |  |
| Dr. | Isabelle | Scott | Amazon |  |
| Mr. | Jang | Jaehyuk | Samsung Electronics Co., Ltd |  |
| Mr. | Jansson Toftgård | Tomas | Ericsson LM |  |
| Dr. | Jelinek | Milan | VoiceAge Corporation |  |
| Dr. | Joshi | Rajan | Samsung Electronics Romania |  |
| Dr. | Jung | Kyunghun | Facebook Japan K.K. |  |
| Ms. | Kang | HyunJeong | Samsung Electronics France SA |  |
| Miss | ke | xiaowan | vivo Communication Technology |  |
| Miss | Kedalagudde | Meghashree D | Intel Corporation SAS |  |
| Dr. | Kim | Wuk | Harman GmbH |  |
| Dr. | Kolan | Prakash | Samsung R&D Institute India |  |
| Dr. | Kroon | Peter | Apple Benelux B.V. |  |
| Mr. | Kwon | WooSuk | LG Electronics Inc. |  |
| Mr. | Laaksonen | Lasse | Nokia UK |  |
| Mr. | Lau | Stephen | Kepler |  |
| Dr. | Lee | Brian | Dolby Laboratories Inc. | Yes |
| Dr. | Lee | Hakju Ryan | Samsung Guangzhou Mobile R&D |  |
| Dr. | Lei | Yixue | Tencent |  |
| Mr. | Lemotheux | Julien | Orange Spain | Yes |
| Mr. | Leung | Nikolai | Qualcomm Incorporated |  |
| Miss | LI | QIUTING | ZTE Corporation |  |
| Dr. | Litwic | Lukasz | Ericsson Hungary Ltd |  |
| Mr. | Liu | Dan | ZTE Corporation |  |
| Mr. | LIU | Jianning(Carry) | Beijing Xiaomi Software Tech |  |
| Mr. | Lo | Charles | Qualcomm Israel Ltd. |  |
| Dr. | Lohmar | Thorsten | Ericsson GmbH, Eurolab |  |
| Ms. | Lu | Wei | Xiaomi Technology |  |
| Mr. | Luetzenkirchen | Thomas | Intel Deutschland GmbH |  |
| Mr. | Ma | Liangping | QUALCOMM Europe Inc. - Italy | Yes |
| Dr. | Mandal | Priyatosh | TSDSI |  |
| Mrs. | Martin-Cocher | Gaelle | InterDigital, Europe, Ltd. |  |
| Miss | Martinez Tarradell | Marta | Intel Corporation Italia SpA |  |
| Dr. | Mika | Johann | ORS |  |
| Mr. | Morita | Naotaka | NTT Advanced Technology Corpor |  |
| Dr. | Moriya | Takehiro | NTT |  |
| Mr. | Multrus | Markus | Fraunhofer IIS |  |
| Mr. | Nangia | Vijay | Motorola Mobility UK Ltd. |  |
| Dr. | Ni | Hui | HiSilicon Technologies Co. Ltd |  |
| Mr. | Niang | Mamadou M. | Verizon Spain |  |
| Dr. | Oh | Sejin | Dolby Laboratories Inc. |  |
| Mr. | Onno | Stephane | InterDigital Finland Oy |  |
| Dr. | Palat | Sudeep | Intel Corporation (UK) Ltd |  |
| Dr. | Pan | Qi | HUAWEI TECHNOLOGIES Co. Ltd. | Yes |
| Mr. | Pazos | Marcelo | Qualcomm Europe Inc. Sweden |  |
| Dr. | Peng | Ke | OPPO |  |
| Mr. | Pihlajakuja | Tapani | Nokia Belgium |  |
| Mr. | Pilz | Jens | Sennheiser Electronic GmbH |  |
| Mr. | Plante | Fabrice | Apple Italia S.R.L. | yes |
| Mr. | Pousi | Timo | Oy LM Ericsson AB |  |
| Mr. | Pudney | Chris | VODAFONE Group Plc |  |
| Mr. | Ragot | Stephane | Orange Romania |  |
| Mr. | Rämö | Anssi | Nokia Poland |  |
| Mr. | Reimes | Jan | HEAD acoustics GmbH |  |
| Mr. | Rhyu | Sungryeul | Samsung Electronics GmbH |  |
| Dr. | Ridge | Justin | Nokia Japan |  |
| Dr. | Rusanovskyy | Dmytro | Qualcomm India Pvt Ltd |  |
| Ms. | Saha | Jayeeta | ETSI |  |
| Mr. | Sanchez de la Fuente | Yago | Fraunhofer HHI |  |
| Mr. | Schevciw | Andre | Qualcomm Technologies Int |  |
| Dr. | Schierl | Thomas | Fraunhofer HHI |  |
| Dr. | Shailendra | Samar | Intel Technology India Pvt Ltd |  |
| Mr. | Shan | Changhong | Intel China Ltd. |  |
| Ms. | Shen | Yang | Beijing Xiaomi Mobile Softwar |  |
| Mr. | Simmons | John | Google Inc. |  |
| Mr. | Singer | David | Apple (UK) Limited |  |
| Dr. | Sodagar | Iraj | Tencent Cloud |  |
| Dr. | Song | Jaeyeon | BEIJING SAMSUNG TELECOM R&D |  |
| Mr. | Steck | Chris | DTS Licensing Limited |  |
| Dr. | Stockhammer | Thomas | Qualcomm CDMA Technologies | yes |
| Mr. | Stojanovski | Saso | Intel Finland Oy |  |
| Dr. | Su | Huan-yu | HuaWei Technologies Co., Ltd |  |
| Mr. | sun | zhao | Huawei Tech.(UK) Co.. Ltd |  |
| Mr. | Suzuki | Rihito | NTT corporation |  |
| Dr. | Szczerba | Marek | Philips International B.V. |  |
| Mr. | Szucs | Paul | Sony Europe B.V. | yes |
| Dr. | TAN | PENG | TELUS |  |
| Dr. | Tech | Gerhard | Fraunhofer HHI |  |
| Mr. | Teniou | Gilles | Tencent |  |
| Mr. | THIENOT | Cedric | ENENSYS |  |
| Mr. | Thomas | Emmanuel | Xiaomi Communications | yes |
| Dr. | Tossavainen | Antero | Huawei Technologies Sweden AB |  |
| Dr. | Tourapis | Alexandros | Apple GmbH |  |
| Mr. | Tsujikawa | Toru | NTT |  |
| Mr. | Varga | Imre | Qualcomm Austria RFFE GmbH |  |
| Mr. | Wang | Bin | Beijing Xiaomi Mobile Softwar |  |
| Mr. | Wang | Dong | Guangdong OPPO Mobile Telecom. |  |
| Dr. | Wang | Xin | MediaTek Inc. |  |
| Dr. | Wey | Jun Shan | Verizon Switzerland AG |  |
| Ms. | WU | Jinhua | Beijing Xiaomi Mobile Software |  |
| Mr. | Xie | Minjie | OPPO |  |
| Mr. | Xu | Song | China Mobile Com. Corporation | yes |
| Dr. | Yang | Hyun-Koo | Samsung Electronics Nordic AB | yes |
| Mr. | Yao | Yizhi | Intel Technology Poland SP Zoo |  |
| Mrs. | Yin | Yujian | China Mobile Com. Corporation |  |
| Mr. | Yip | Eric | Samsung Electronics Iberia SA |  |
| Dr. | ZHANG | Yu | ABS |  |
| Miss | Zhang | Zhijiao | CENC |  |
| Dr. | Zhang | Zhuoyun | Tencent Cloud |  |
| Dr. | Zhao | Shuai | Intel Sweden AB | Yes |