**Source: SA4 MBS SWG Chairman[[1]](#footnote-1)**

**Title: 3GPP SA4 MBS SWG report at SA4#108-e**

**Document for: Approval**

**Agenda item: 13.2**

MBS SWG Minutes during SA4#108-e

## 8.1 Opening of the session

The MBS SWG email discussions started on Thursday 02 April at 1618 CEST.

MBS SWG Telcos are on:

* Monday 6 April 1800-1900 CEST
* Tuesday 7 April 1800-2000 CEST
* Wednesday 8 April 1400-1530 CEST

Mr. Frédéric Gabin (Ericsson, Chairman of MBS SWG) opens the telco sessions on April 6 at 1800 CEST.

Scribes: Lucia and Paul volunteered.

## 8.2 Registration of documents

The following documents were allocated

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| --- | --- | --- |
| 8.1 | Opening of the session |  |
| 8.2 | Registration of documents |  |
| 8.3 | Reports/Liaisons from other groups/meetings | 533 (CTA)538  538 (DVB TM-Mcast) |
| 8.4 | Issues for immediate consideration |  |
| 8.5 | CRs to features in Release 15 and earlier |  |
| 8.6 | CRs to completed features in Release 16 | 5GMSA: 539, 541, 591, 512->594, 593, 601, 568->597, 572, 575, 576, 590, 594, 602  MC\_XMB: 579-> (wednesday)  TEI16: 580-> (wednesday) |
| 8.7 | 5GMS3 (5G Media Streaming stage 3) | TP: 600 (telco)  26.512: 509, 511, 513, 514, 540, 542, 553, 554, 573, 574, 577, 588, 611,  26.511: 510, 522, 555, 556, 557, |
| 8.8 | FS\_5GMS\_Multicast (Feasibility Study on Multicast Architecture Enhancements for 5GMSA) | TP: 598  26.802: 612 |
| 8.9 | FS\_XRTraffic (Feasibility Study on Typical Traffic Characteristics for XR Services and other Media) | TP: 563  26.925: 564 |
| 8.10 | FS\_EMSA (Feasibility Study on Streaming Architecture extensions For Edge processing) | TP: 545nt  26.803: 544, 596 |
| 8.11 | New Work / New Work Items and Study Items |  |
| 8.12 | Others including TEI |  |
| 8.13 | Review of the future work plan (next meeting dates, hosts) |  |
| 8.14 | Any Other Business |  |
| 8.15 | Close of the session |  |

## 8.3 Reports/Liaisons from other groups/meetings

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| [**S4-200533**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200533.zip) | Common Media Client Data CTA-5004 (community review) | Consumer Technology Association’s WAVE |

**Presenter: Thomas Stockhammer**

**Discussion:**

* Richard: indeed it seems to be adding parameters in the m4d interface. question whether this is relevant to 5G or whether this is going to the Application Provider directly
* Thomas: work is very relevant for us
* Lucia: what are we going to tell them exactly? they asked feedback for yesterday (6th April)
* Thomas: we are going to give them a detailed answer in May and if we are too late, then be it

**Decision:**

* Thomas wil draft an LS response in 628

**S4-200533** is replied to in 628

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| [**S4-200538**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200538.zip) | Liaison to 3GPP SA4  PHASE 1 TECHNICAL SPECIFICATION ON ABR MULTICAST | DVB Technical Module, TM-Mcast |

**Presenter: Thomas**

**Discussion:**

* proposes to postpone to next e-meeting

**Decision:**

* postponed to next SA4 e-meeting

**S4-200538** is postponed

## 8.4 Issues for immediate consideration

none

## 8.5 CRs to Features in Release 15 and earlier

none

## 8.6 CRs to completed features in Release 16

5GMSA

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| [**S4-200539**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200539.zip) | CR on Domain Model for Uplink Streaming | Qualcomm India Pvt Ltd |

**Presenter:**

**Discussion:**

**Decision:**

**S4-200539** is noted/approved/agreed/revised…

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| [**S4-200541**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200541.zip) | Corrections to Stage 2 Ingest Configuration Procedures | Qualcomm India Pvt Ltd |

**Presenter:**

**Discussion:**

**Decision:**

**S4-200541** is noted/approved/agreed/revised…

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| [**S4-200591**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200591.zip) | Corrections and clarifications for consumption reporting | Tencent |

**Presenter:**

**Discussion:**

**Decision:**

* revision to 619

**S4-200591** is revised to 619

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| [**S4-200619**](https://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Inbox/S4-200619.zip) | Corrections and clarifications for consumption reporting | Tencent |

**Presenter: Zhuoyun Zhang**

**Discussion:**

**Decision:**

* revised to 629 as draft CR

**S4-200619** is not pursued byt the content is agreed and will be revised in 629 as draft CR

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| [**S4-200594**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200594.zip) | Add sample percentage to 5GMSA stage 2 Consumption Reporting | BBC |

**Presenter:**

**Discussion:**

**Decision:**

**S4-200594** is agreed

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| [**S4-200593**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200593.zip) | Network assistance provided by 5GMSu AF | Tencent |

**Presenter:**

**Discussion:**

**Decision:**

**S4-200593** is noted/approved/agreed/revised…

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| [**S4-200601**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200601.zip) | 5GMSA Network Assistance | Sony Europe B.V. |

**Presenter: Paul Szucs**

**Discussion:**

* Paul: there were comments via email
* Paul: proposal of a set of metrics for Network Assistance for consumption reporting;
* Paul agrees with the comments that were provided via email but hasn’t made a revision of the document yet
* Gunnar: proposal is ok for stage 2 but not for stage 3, because currently metrics reporting does not follow the REST-based API
* Paul: agrees, wording needs adjusting
* Imed: is this a new features? and does this apply to the RAN-based approach as well? and how will it work out then?
* Paul: yes it can apply to the RAN-based Network Assistance approach as well. its not a new feature, since it is part of Network Assistance
* Imed: stage 2 is supposed to be frozen and the assistance is part of stage 2 but this proposal is something new, its the reporting of this assistance. it could wait for release 17
* Thomas: we should identify what is broken. We should make sure we dont take too much load for 5GMS. He asks Gunnar if we introduced new reporting parameters.
* Gunnar: no we have copy pasted from previous release and interface does not use REST
* Paul: assumption was that the interface was supposed to be specified using REST
* Thomas: all metrics should be aligned with 26.247. we have never discussed the metrics proposed in this document
* Paul: Network Assistance addresses QoE, it is true that now metrics are done via DASH but it seems strange
* Imed: agrees with Gunnar about not doing QoE reporting using REST API. its the config of QoE reporting that should be done via REST APIs, but the reporting itself should be done as done so far
* Gunnar: configuration of QoE reporting is not using REST APIs
* Imed: we have that in the configuration over M3d
* Gunnar: in principle we could have additional metrics to the standard metrics. if we should add network assistance metrics then we should look at consumption reporting too and ask ourselves why we have two separate things
* Fred: there are quite some concerns and it seems it would be hard to finish this work in the timeframe for rel-16
* Gilles: we would like to see 5GMS as soon as possible, with a simplified set of features, before considering optimizations. Network assistance is for Orange lower priority and we think it should be addressed at a later stage
* Paul: he understands this decision for the metrics, but the change on the configuration is still needed (table 4.2.3-5)
* Thorsten: Media AF-based
* Richard: needs to be more precise, distinguishing between RAN-based and Media AF -based
* Thorsten / Lucia: rename Media AF with 5GMSd AF

**Decision:**

* only change 1 is agreed

**S4-200601** is partially agreed.

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| [**S4-200623**](https://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Inbox/S4-200623.zip) | Correction of Provisioning Session Concept | Ericsson LM, BBC |

**Presenter: Richard Bradbury**

**Discussion:**

* none

**Decision:**

* document is agreed

**S4-200623** is agreed

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| --- | --- | --- |
| [**S4-200624**](https://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Inbox/S4-200624.zip) | Collaboration Model: Multi-MNO Distribution | Ericsson LM |

**Presenter: Thorsten Lohmar**

**Discussion:**

* Richard: change in 423, there is another draft CR from BBC with a similar change, might be an issue during merging with this draft CR. he will do the best in his draft CR to make sure it will no conflict with Thorsten’s
* Thorsten: Richard is compiling a giant draft CR which will be agreed at the end of this meeting and have a baseline for the 109 meeting?
* Fred: no, the giant draft CR should be agreed at this meeting and Richard will make the baseline during the telcos preceding the 109 meeting
* Thorsten: if its a draft CR for the next meeting then people can still challenge its content for the next meeting
* Fred: no people cannot challenge agreed content

**Decision:**

* document is agreed

**S4-200624** is agreed

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| [**S4-200597**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200597.zip) | Rename Ingest Session Configuration as Content Hosting Configuration | BBC |

**Presenter:**

**Discussion:**

**Decision:**

**S4-200597** is noted/approved/agreed/revised…

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| [**S4-200572**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200572.zip) | Correction of Provisioning Session Concept | Ericsson LM, BBC |

**Presenter:**

**Discussion:**

**Decision:**

**S4-200572** is noted/approved/agreed/revised…

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| [**S4-200575**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200575.zip) | Discussion of Multi-MNO Distribution Scenario | Ericsson LM |

**Presenter:**

**Discussion:**

**Decision:**

**S4-200575** is noted/approved/agreed/revised…

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| [**S4-200576**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200576.zip) | Collaboration Model: Multi-MNO Distribution | Ericsson LM |

**Presenter:**

**Discussion:**

**Decision:**

**S4-200576** is noted/approved/agreed/revised…

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| [**S4-200590**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200590.zip) | Corrections on network slicing | Tencent |

**Presenter:**

**Discussion:**

**Decision:**

**S4-200590** is noted/approved/agreed/revised…

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| [**S4-200594**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200594.zip) | Add sample percentage to 5GMSA stage 2 Consumption Reporting | BBC |

**Presenter:**

**Discussion:**

**Decision:**

**S4-200594** is noted/approved/agreed/revised…

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| [**S4-200602**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200602.zip) | 5GMSA Remote Control | Sony Europe B.V., Ericsson LM |

**Presenter: Paul Szucs**

**Discussion:**

* Paul: there was an email discussion
* Thomas: we are an exception for stage 3 and we are doing new features in stage 2, that’s not ok when stage 2 is frozen since summer 2019. he would have technical comments as well, but the main problem is that we are doing already too many things for this release that adding new features becomes too much
* Paul: this document is just a clarification, its not adding new features
* Thorsten: maybe we can get a compromise, there is no intention to add stage 3 text. the client is currently mentioned that it exists but not specified. we can do the same for remote control, stating that it can be done, on application layer, so we dont need to do any stage 3 work
* Imed: even in the context of FLUS there was a similar discussion. for remote control in download, he things it will need the addition of new control plane interfaces
* Thorsten: but the 5GMS control plane is running on the 5G user plane
* Imed: i’m talking about or group’s terminology not SA2’s terminology
* Paul: M5d always mentioned control of the media, this contribution is just formalizing it
* Thomas: bringing new features in stage 2 will require stage 3 work and we have no time for that
* Paul: would like to discuss this issue offline

**Decision:**

* offline discussions on this document, which is parked for tomorrow

**S4-200602** is parked.

MC\_XMB

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| [**S4-200579**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200579.zip) | Correction on xMB for MCData | Ericsson LM |

**Presenter:**

**Discussion:**

**Decision:**

**S4-200579** is noted/approved/agreed/revised…

TEI16

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| [**S4-200580**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200580.zip) | Correction on Annex L.4 (MBMS Download Profile) | Ericsson LM |

**Presenter:**

**Discussion:**

**Decision:**

**S4-200580** is noted/approved/agreed/revised…

## 8.7 5GMS3 (5G Media Streaming stage 3)

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| [**S4-200611**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200611.zip) | Procedure for the OpenAPI implementation of the 5GMS APIs | Qualcomm Inc |

**Presenter: Imed Bouazizi**

**Discussion:**

* Richard: the document to be created, is it for later releases, meaning later than rel-16?
* Imed: we can create a permanent document. Once we think it is in a good shape we can create a quick Work or Study item for a TR/TS. For now (rel-16) we rely on what is in TS 26.512.
* Thorsten: at some point we should merge this with CT3/4 and SA5 folders. it would be good if these other groups can review these APIs. it would be good to plan from the beginning that we are structuring the APIs so that it is easy to merge with the CT / SA5 docs. suggestion to revisit this in June. proposal: start with own repository, but review decision in June, and lets immediately apply the same structure as CT groups in case we decide to merge
* Imed agrees
* Fred: should this agreement be reflected in Section 2 of the document?
* Imed: yes it will be done
* Thorsten: question. we will need to ask for repository and certain structure needs to be copied according to CT approach
* Imed: will contact ETSI to ask
* Thomas is finally heard: why would we need a new work item?
* Fred asks Imed to clarify
* Imed: there will be some normative parts, etc. how to do error handling. idea is to create a common TS or TR that we can reference. but we can start with a permanent document for now and then upgrade to a TS or TR. whether this will happen in rel-16 he has some doubts
* Thomas: why don't we create an Annex?
* Fred thinks its a good idea
* Imed: that is maybe one way, but we have APIs everywhere, so there has to be a common document at some point
* Cedric: you can use comments in the Swagger tool for the APIs
* Imed: should document how to make use of the comments. no immediate answer
* Cedric: will we have something similar for M6d or M7d?
* Imed: everything that has an end point, but does not think it applies to M6d or M7d. what to do with these interfaces is a good question that needs to be dealt with anyways. but doesnt think should be REST APIs
* Thorsten: on error handling there was discussion, and he suggests aligning with CT3. lets use as much as possible data types introduced by them
* Imed agrees
* Fred: asks if the doc can be directly added to the Annex skipping the step of a revision of this doc
* Richard: if we want to put it in the Annex then maybe we would need a bit more than just this document
* Imed: if we decide for the Annex then pCR will have more formal text
* Fred: can we draft a pCR already this week or not?
* Thomas: every decision we are taking today should be documented in some way, even putting text in brackets if needed. lets move on
* Imed: can prepare a pCR if he gets tdoc
* Fred: agreeing in principle is risky
* Thorsten: revise this document and start a document on how to document and so on
* Imed: what we send to ETSI is a very simple request of creating a folder

**Decision:**

* agreed

**S4-200611** is agreed and revised in 620 (revision of this doc) and then a pCR will be created in 621

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| [**S4-200600**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200600.zip) | Work Plan for 5GMS3 v0.10 | Sony Europe B.V. |

**Presenter: Paul Szucs**

**Discussion:**

* Paul: shall we confirm the telco dates first
* Fred: we discussed to increase the number of telcos in between meetings
* Fred: no objections with the dates so these are agreed
* Paul: the request to get the ETSI folder
* Thomas: the way of proceeding is different whether we go for an exception or not. if we agree on the exception we should make this as one of the first decisions at 109e meeting
* Thorsten: exception is designed in such a way that we can check at the next meeting we will check are we done or not
* Fred: add the following note at SA4 109 : if an exception is to be requested then decide early at the beginning of the meeting
* Thomas; he agrees if we agree that it is very likely that we will need the exception. he doesnt understand why we are hiding now that we will have an exception
* Richard: agrees with Thomas, since everyone agrees that we will need it. what happens if SA plenary says “no” to this request?
* Fred: then our work may be ending up to be part of rel-17. fallback could be rescoping rel-17 so that part stays in rel-16 and part goes to rel-17
* Thorsten: can we add the plan of merging the APIs to the CT APIs?

**Decision:**

* we expect exception to be requested. decision will be taken as early as possible in SA4 109e

**S4-200580** is revised to 622

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| [**S4-2006**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200600.zip)22 | Work Plan for 5GMS3 v0.11 | Sony Europe B.V. |

**Presenter: Paul Szucs**

**Discussion:**

**Decision:**

* .

**S4-200622** is r

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| [**S4-200511**](http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Docs/S4-200511.zip) | 5GMSA Domain Model and API Design Principles | BBC |

**Presenter: Richard Bradbury**

**Discussion:**

* Richard: there was an offline discussion and Thorsten should provide some input
* Thorsten: we probably need more time, we cant have a revision ready for tomorrow
* Fred: can we look at the revision tomorrow or will we note it?

**Decision:**

* revised to 630

**S4-200511** is revised to 630, which will be noted

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| [**S4-200626**](https://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_108-e/Inbox/S4-200626.zip) | General Updates, TV Video Profile Updates and Subtitles | Qualcomm Incorporated |

**Presenter: Thomas Stockhammer**

**Discussion:**

* Gilles: is there any particular capabilities to be defined for multiple tracks?
* Thomas: surely that is defined but you never play 2 tracks in parallel. this is more of a manifest level. subtitle support is useful
* Fred: is there a context for subtitles without video?
* Thomas: this is not the discussion right now
* Fred: would you ever declare your ability to receive subs if you dont have video support?
* Thomas: yes, in a radio scenario
* Gilles: likes the integration of those 3 original docs in this new doc. its important enabler for TV services; in the TV profile there is a note in section 5.4.4.1: there is a check to be done. does the check need to be done prior?
* Thomas: note is wrong, it should be: “In the absence of both” → “In the absence of that being done…”
* Fred: Is this a requirement?
* Gilles: let’s turn this note into an editor’s note, so that we have time to check whether there are discrepancies, eventually we need to remove that text from a note and write it down as a proper requirement with “shall”
* Thomas: does not have an answer now
* Gilles: let's make it an editor’s note so that we have time to solve the issue in between now and the next meeting. let’s decide what the expectation should be only when we find discrepancies

**Decision:**

* document is agreed except for Note in 5.4.4.1 which is to be turned into an editor’s note

**S4-200626** is agreed except for Note in 5.4.4.1

## 8.8 FS\_5GMS\_Multicast (Feasibility Study on Multicast Architecture Enhancements for 5GMSA)

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

## 8.10 FS\_EMSA (Feasibility Study on Streaming Architecture extensions For Edge processing)

632 work plan

## 8.11 New Work / New Work Items and Study Items

## 8.12 Others including TEI

None

## 8.13 Review of the future work plan

## 8.14 Any Other Business

None

## 8.15 Close of the session

The chairman thanked the delegates and closed the session at 1332 on 23rd January.

## 

## Annex A: Attendees

|  |  |  |  |
| --- | --- | --- | --- |
| **NAME LAST** | **FIRST** | **COMPANY** | **Attended** |
| Stockhammer | **Thomas** | **Qualcomm Incorporated** | yes |
| Teniou | **Gilles** | **Orange** | yes |
| Gabin | **Frédéric** | **Ericsson** | yes |
| Thienot | **Cedric** | **Enensys** | Yes |
| Heikkilä | **Gunnar** | **Ericsson** | Yes |
| Bouazizi | **Imed** | **Qualcomm Incorporated** | yes |
| Singer | **David** | **Apple** |  |
| Lo | **Charles** | **Qualcomm Incorporated** |  |
| Lohmar | **Thorsten** | **Ericsson** | yes |
| Oyman | **Ozgur** | **Intel** |  |
| Szucs | **Paul** | **Sony Corporation** | yes |
| D’Acunto | **Lucia** | **KPN** | Yes |
| Hamza | **Ahmed** | **InterDigital Communications** |  |
| Singh | **Gurdeep** | **Fraunhofer HHI** | yes |
| Oh | **Sejin** | **LG Electronics Inc.** |  |
| Huang | **Cheng** | **ZTE Corporation** |  |
| Curcio | **Igor** | **Nokia Corporation** |  |
| Ahsan | **Saba** | **Nokia Corporation** | yes |
| Sodagar | **Iraj** | **Tencent America** | yes |
| Kleinrouweler | **Jan Willem** | **KPN** | yes |
| Döhla | **Stefan** | **Fraunhofer IIS** | yes |
| Champel | **Mary-Luc** | **XiaoMi** | yes |
| Joel | **Kim** | **Facebook** |  |
| Yee Sin | **Chan** | **Facebook** | yes |
| Hu | **James** | **AT&T** | yes |
| Lee | **Brian** | **Dolby** | yes |
| Feiten | **Bernhard** | **Deutsche Telekom** | yes |
| Yong | **He** | **InterDigital** |  |
| Tan | **Peng** | **TELUS** |  |
| GU | **XIAOJUN** | **HUAWEI** |  |
| Raulet | **Mickael** | **ATEME** |  |
| Wang | **Yufei** | **China Mobile** |  |
| Sanders | **Peter** | **one2many** |  |
| Bradbury | **Richard** | **BBC Research & Development** | yes |
| Thienot | **Cedric** | **Enensys** | yes |
| Gül | **Serhan** | **Fraunhofer HHI** |  |
| Han | **Jaeshin** | **LG Electronics** | yes |
| Yang | **Hyun-Koo** | **Samsung Electronics** | yes |
| Song | **Jaeyeon** | **Samsung Electronics** |  |
| Goldrei | **Simon** | **Apple** | yes |
| Daniel | **Jérôme** | **Orange** |  |
| Fourdeux | **Henri** | **InterDigital** | Yes |
| Dillen | **Paul** | **Philips** |  |
| Biatek | **Thibaud** | **Ateme** | yes |
| Saha | **Jayeeta** | **MCC** | yes |
| ? | **Lin** | **China Mobile** | yes |
| Zhou | **JiaJun** | **China Mobile** | yes |
| Xu | **Song** | **China Mobile** | yes |
| Feiten | **Bernhard** | **Deutsche Telekom** | yes |
| Berndtsson | **Gunilla** | **Ericsson LM** | yes |
| Yidan | **Teng** | **Huawei** | yes |
| Houdaille | **Rémy** | **InterDigital** | yes |
| Morita | **Naotaka** | **NTT** | yes |
| Ed | **O’Leary** | **Rogers** | yes |
| Choi | **Kiho** | **Samsung** | yes |
| Jun | **Kyunghun** | **Samsung** | yes |
| Budagavi | **Madhukar** | **Samsung** | yes |
| Kolan | **Prakash** | **Samsung** | yes |
| Joshi | **Rajan** | **Samsung** | yes |
| Hakju Lee | **Ryan** | **Samsung** | yes |
| Isberg | **Peter** | **Sony** | yes |
| Gibellino | **Diego** | **Telecom Italia** | yes |
| Abhishek | **Rohit** | **Tencent** | yes |
| Zhang | **Zhuoyun** | **Tencent** | yes |
| Gorley | **Paul** | **BBC** | yes |
| Gunkel | **Simon** | **KPN** | yes |
| Laaksonen | **Lasse** | **Nokia** | yes |
| Wang | **Dong** | **Oppo** | yes |
| Yip | **Eric** | **Samsung** | yes |
| Jun | **Kyunghun** | **Samsung** | yes |
| Kerdranvat | **Michel** | **Interdigital** | yes |
| Rusanovskyy | **Dmytro** | **Qualcomm** | yes |
| Rhyu | **Sungryeul** | **Samsung** | yes |
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**Annex B: Final agenda**

**Annex C - Documents status**

**C.1 Agreed documents (not presented to SA4 plenary)**

**C.2 Agreed documents (to be presented to SA4 plenary)**

**C.3 Other status than agreed documents (not to be presented to SA4 plenary)**

**C.4 Other status than agreed documents (to be presented to SA4 plenary)**

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