**Source: SA4 SQ SWG Chair[[1]](#footnote-1)**

**Title: 3GPP SA4 SQ SWG report at SA4#117-e**

**Document for: Approval**

**Agenda item: 13.4**

**3GPP SA4 #117-e Speech Quality Sub-Working Group**

The SQ SWG during SA4#117-e (25 participants) was held in four telcos (1-hour time slots). The SQ SWG e-mail discussions during the meeting can be tracked here:

<https://list.etsi.org/scripts/wa.exe?A0=3GPP_TSG_SA_WG4_SQ>

**Executive summary**

The meeting handled 10 documents including 4 output documents. The meeting outcome is summarized below:

* **Incoming LS:** A reply to the incoming LS from CTIA (in S4-220183) has been agreed in S4-220287.
* **ATIAS (Terminal Audio quality performance and Test methods for Immersive Audio Services)**: No Tdoc at this meeting.
* **HaNTE (Handsets Featuring Non-Traditional Earpieces)**: A CR to 26.132 on ECRP determination has been agreed in S4-220289. Specific WI objectives that were partially addressed have been incorporated in the new WID proposal (see below). Based on this way forward, the HaNTE WI for Rel-17 is 100% completed at this meeting. A WI summary in S4-220289 has been endorsed.
* **New WID on enhanced UE testing (eUET)**: The new WID targeting Rel-18 has been further edited, to include new objectives with some left-overs from HaNTE and the specification of tools for EVS RTP payload handling. The revised WID in S4-220291 has been agreed at SQ SWG level, with only two supporting companies at this stage.
* **Potential renaming of SWB**: The EVS SWG is considering to rename itself to Audio SWG with a broader scope (e.g. architecture, media formats, codec and rendering…), and this would potentially impact the SQ SWG as SQ is also handling audio matters. This topic has been shortly discussed, and it was requested to produce a document with a proposal (e.g. charter/scope from impacted SWGs) and leave time to consider such a proposal.

**Agreed adhoc conference call post SA4#117-e:** None.

**A.I. 9.1 Opening of the session**

The SQ Chair opens the session at 16:00 CET on February 15.

**A.I. 9.2 Registration of documents**

The allocation of input Tdocs as shown in the agenda is approved (see Annex A for the latest version of the agenda).

**A.I. 9.3 Liaison Statements**

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| [**S4-220183**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_117-e/Docs/S4-220183.zip) | LS on Subject Audio Background Noise Verification | 3GPP MCC |

**Presenter:** Jan Reimes

CTIA has a specification with performance tests based on TS 26.131 and 126.132. They mainly refer to these tests. For background noise measurements for speech quality, at the time (2012-13), the subject was quite new, they used the 103 106 simulation method. We studied the validation of the background noise simulation with a survey from different labs. This did not go into TS 26.132, but CTIA took it over.

CTIA is giving samples where scores have an expected range. It is not clear where the values come from and why there is also NB, SA4 suggested values only for WB. Technically there could be several reasons why a lab could deviate from values determined a while ago. SA4 did not conduct any further experiment.

There is a request for SWG SQ to confirm that the range of the values in S4-131146 are representative of adequate labs.

**Comments / questions:**

Andre: did not participate in CTIA recently, but this contribution submitted to CTIA was brought to me, it is about lab conformance. Recall that there is a microphone at MRP to create the equivalent of a processing signal. One lab was tested and got the values in red. It is not conform to the CTIA range. The range of values is different from S4-131146. The problem is not labs, but the table with numbers. I don’t know where they got them. The 3GPP values were obtained as part of an internal work item.

Jan: only 4 speaker playback, nothing on 224, this is another aspect.

Stéphane: suggest collecting further views and then we will go offline asking a volunteer to draft a reply if this is agreeable to the group

Fabrice: when we did the study, time was spent on calibration aspects. We should make it clear about calibration. The lab in CTIA may have used a non-optimal calibration.

Andre: values in 1146 were representative of calibrated labs, I thought it was, all labs did best effort to conform, I don’t know if someone has a better recollection. I don’t know where these numbers from CTIA come from.

Stéphane: surprising to see NB in the LS text, this was not part of the 3GPP tests

Andre: the test of background noise makes no sense in NB, the background reproduction is fullband

Stéphane: when is the next CTIA meeting, to see if a reply is required at this SA4 meeting?

Jan: 9th of March

Stéphane: can we ask a volunteer to draft a reply LS?

Jan: I can volunteer if Andre does not want to take it

Andre: can work offline together

Stéphane: we can allocate a new Tdoc number of the reply LS, it will be S4-220287.

Andre: the numbers are not part of 3GPP specifications, if people want a reference, we could consider to make it more formal, may require a small WI

Stéphane: you can include this point in the offline discussion over the reflector, you might discuss including an extra objective to the WID on enhanced UE testing submitted at this meeting as an option

**Decision:** S4-220183 is replied to in S4-220287.

Mr. Jan Reimes (HEAD acoustics) is tasked to draft a reply LS. Offline drafting will be done over the SQ SWG reflector.

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| [**S4-220287**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_117-e/Docs/S4-220087.zip) | Reply LS on Audio Background Noise Verification (To: CTIA Certification Audio Working Group) | SA4 |

**Presenter:** Jan Reimes

The following draft version is presented and used for online editing:

<https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_117-e/Inbox/drafts/SQ/S4-220287%20-%20LS-out%20to%20CTIA%20on%20BGN%20verification_AS_SR.docx>

See related email discusion:

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| [Re: S4-220287 Draft LS-reply to CTIA](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_SQ;82ac789e.2202C&S=) | Andre Schevciw | Thu, 17 Feb 2022 17:40:09 +0000 |
| [Re: S4-220287 Draft LS-reply to CTIA](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_SQ;1fd35ea8.2202C&S=) | Fabrice Plante | Thu, 17 Feb 2022 08:46:38 -0800 |
| [S4-220287 Draft LS-reply to CTIA](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_SQ;e17377f9.2202C&S=) | Reimes, Jan | Thu, 17 Feb 2022 12:18:08 +0000 |

**Comments / questions:**

Andre: overlooked one main thing, scores were done only for the 4-speaker binaural system, they are not applicable for the enhanced version and TS 103 224.

(*Jan edits text online with proposals from Andre*)

Andre: CTIA refers to a Tdoc which is not a 3GPP specification, CTIA should contact ETSI.

(*Jan edits text online based on further inputs*)

Fabrice: If I remember correctly, we did this because of issues with calibration, labs had issues of variance in scores, once they did proper calibration results should be good.

Andre: setup is in ETSI, the noise field verification should be specified there.

Fabrice: could remove that there is no data from 3GPP.

(Jan includes further online suggestions)

Stéphane: can we agree on the text edited online?

**Answer: yes**

Stéphane: this agreed edited version can be produced as S4-220287 in the Inbox

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| [Re: S4-220287 Draft LS-reply to CTIA](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_SQ;81ccd150.2202C&S=) | Reimes, Jan | Fri, 18 Feb 2022 16:07:18 +0000 |

**Decision:** S4-220287 is agreed

**A.I. 9.4 CRs to Features in Release 16 and earlier, and other contributions on terminal acoustics**

No Tdoc in this A.I.

**A.I. 9.5 ATIAS (Terminal Audio quality performance and Test methods for Immersive Audio Services)**

No Tdoc in this A.I.

**A.I. 9.6 HaNTE (Handsets Featuring Non-Traditional Earpieces)**

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| [**S4-220087**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_117-e/Docs/S4-220087.zip) | Method for determining ECRP for HaNTE-devices | HEAD acoustics GmbH |

**Presenter:** Jan Reimes

Based on measurement results from the round robin test, the present document introduced a method for determining a ECRP, which is only applicable in case no manufacturer-defined MECRP is available. The method was validated and shown to work for three commercially available HaNTE-devices.

The source proposes to agree on the proposal and to include it in the upcoming (draft) CR to TS 26.132.

**Comments / questions:**

Andre: comment on the positioning of devices, in clause 5.1.1, the position of the handset positioner support pins should also be reported, wondering if a ‘shall’ should be used. One aspect is to cover on WID objective, for HaNTE there is quite a bit of variation in performance depending on how pins are mounted. This reporting should be a requirement.

Jan: agree, this was taken from the previous dCR

(*Jan changes ‘should’ to ‘shall’ in online editing*)

Fabrice: the 3 DUTs were part of the round robin or new?

Jan: they are new

Fabrice: did you check the subjective determination of ECRP? Did you try the 3 devices to have a subjective determination?

Jan: did not do it, but after seeing numbers, we could informally confirm that there are quite some loudness across shifts

Fabrice: on editorial side, suggesting to list mandatory shifts before recommended ones.

Jan: this will be adapted

(*Jan marks the list of shifts to be adapted*)

Antero: volume step is defined first, can you explain the average of frequency responses in step 5) a) ? how did you select this method?

(*Jan shows the examples with DUTs*)

Jan: in Fig. 2, the distance between the red and blue curves is determined, for each frequency band the dB values are averaged, it is not relevant whether it’s in log or linear domain as we take the minimum

Antero: some measurements would be quiet, does it affect results? You could plot the mask and select the shift that fits best the mask?

Jan: we did not use the tolerance, the mask is defined in the other specification (TS 26.131), you would select in advance the shift that would help pass the test, this option was intentionally left out

Antero: after survey, did you check if the best shift would also fit the mask?

Jan: no, not yet, but I can provide results offline

Antero: you know what is MECRP and nominal volume from the vendor?

Jan: only for DUT2, others were bought from the store

Antero: this method will find the correct position and volume step?

Jan: not sure for volume step, at least the position was confirmed

Antero: looks good

Stéphane: on behalf of Orange, is it clear from the test reporting if a lab testing only mandatory positions or all of them?

Jan: no, the number or type of shifts is not required, results can change, compared to the round robin we swapped the blue and green shifts, there is good motivation for this change. We did not check how the results change, some points may not be cancelled out

Stéphane: good to have a requirement to report the shift that were tested

Stéphane: again on behalf of Orange, can decouple the volume steps and shifts, and for example test at a given shift and then change volume. Is it possible in the proposed test procedure? The annex would allow such an approach?

Jan: with the current method to a certain point you don’t need to measure, but it is possible

(*Jan adds a note in online editing*)

Fabrice: clarification on DUT1 example (Table 4)? you average all shifts?

Jan: average included all points, do it in linear domain, if one is too low it does not contribute

Stéphane: based on the discussion, there were some edits, worth revising?

Jan: yes

Stéphane: we can allocate S4-220288?

**Decision:** S4-220087 is revised to S4-220288

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| [**S4-220157**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_117-e/Docs/S4-220157.zip) | Requirements for HaNTE | Orange |

**Presenter:** Stéphane Ragot

This Tdoc is a resubmission of S4aQ210176, it is proposed to add only NB, WB and SWG requirements for frequency responses at maximum volume. Compared to nominal volume the principle is to add a 3 dB boost in high frequencies It is left open for discussion whether this would apply to HaNTE devices only or to all devices.

**Comments / questions:**

Stéphane: for the presentation and discussion on this Tdoc, I leave my Chair hat and comment on behalf of Orange

Fabrice: 2 concerns, this is based on HaNTE devices, all tests in the round robin were done in WB, now requirements are introduced in NB and SWB, what is the data used to extrapolate? At maximum volume, if we compare to HInT where HEAD acoustics did a lot of testing, here there was no test in NB, SWB, and the number of devices was small.

Stéphane: correct that NB and SWB were not fully tested. Orange had a initial proposal to keep the same mask at maximum volume as at nominal volume. This was felt not appropriate and the proposal was later updated based on offline suggestions. The idea is to keep some freedom in existing designs, where high frequencies may be amplified for intelligibility. This is an attempt to address the issues found by Orange for some HaNTE devices at maximum volume. But this comment on limited data is fair.

Antero: I commented on this proposal in previous meetings too. I find it problematic to have requirements in 3GPP specifications that would be based on different earpieces. Consumers when they buy a device don’t know about the type of earpiece, and they should not be concerned about this. If we begin to develop this type of approach, we will create extra complexity in documents, I don’t think this is optimal, especially given how few HaNTE devices there are in the market.

Stéphane: there is a deadlock, because there is request on setting requirements for HaNTE only one one hand, and a concern if the requirements are not generic for any type of devices. The problem is that issues reported by Orange on real quality problems are not addressed.

Fabrice: There is a concern if this is extended to all devices, in the HaNTE round robin there were not many devices that could pass the mask and one had problems at high volume. I don’t know if a new tests would affect all companies. Not sure an additional test is really needed, with requirements also in NB and SWB, there is not enough data.

Stéphane: if you refer to TR 26.801, it is documented that there is a device with issues at maximum volume, this device was not included in the round robin as the selection was done by Qualcomm with other devices. I don’t think devices that resulted in maximum volume problems in the field were included.

Stéphane: back with Chair hat, I don’t see how we can reach consensus on this proposal

there were concerns expressed and no support

Any other comment?

**Answer: no**

Stéphane: This Tdoc can be noted

**Decision:** S4-220157 is noted

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| [**S4-220158**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_117-e/Docs/S4-220158.zip) | Test methods for HaNTE | Orange |

**Presenter:** Stéphane Ragot

This Tdoc is a revision of S4aQ210177, where the only extra tests are for frequency responses at maximum volume. The positioning aspects of S4-220087 are reused as such, with some comments from Orange.

**Comments / questions:**

Stéphane: for the presentation and discussion on this Tdoc, I leave again my Chair hat and comment on behalf of Orange, there is no need to repeat the discussion on tests at maximum volume, and some comments on ECRP determination were addressed in the discussion of S4-220087, so one should focus on the extra comment to add an extra shift.

Jan: the proposal to add an extra point at Ze=0, Ye= -2cm is something I would not do. There are phones with a loudspeaker on the top edge, this is a hybrid between HaNTE and non-HaNTE, if we had this extra shift this will unbalance the point distribution when we average, there could be some problems. If there is a loudspeaker at the top, it is not HaNTE, ECRP can be determined. This will lead to almost half ear leakage; it is not good to use these points.

Stéphane: not sure the loudspeaker is always so easy to identify

Antero: this document includes the text on fork position testing?

Stéphane: no extra tests outside maximum volume control is proposed as listed in affected clauses, but the summary of changes is incorrect

Stéphane: back with Chair hat, based on this discussion, this document can be noted, it had the structure of a dCR to 26.132, but there is the revision of S4-220087 in S4-220288 that will include the text on positioning, and it can be a dCR.

**Decision:** S4-220158 is noted

Stéphane: suggest discussing the next steps for Hate, see if the work item can be completed at this meeting based on the current status, I expected a CR to TR 26.801 at this meeting and it may be good to clarify this aspect, I invite the Rapporteur to moderate the discussion

Andre: if understood correctly, we can get consensus on 087 for ERCP and this represents one objective, this is stable. Everything else is not agreeable, so there is only the CR to 26.132. Still, I think we can fulfill the WI objectives.

The TS 26.801 is not a matter of copy-paste, the main thing is to document all work done in the round robin. There were issues in the obtained results, this needs to be cleaned. I don’t know if we can open a new work item for this.

Stéphane: One option could have been to schedule an adhoc call before the next SA4 meeting and ask for special powers to agree on a CR to TR 26.801, but the available weeks are too close to SA, this is not allowed. Another option may be to have an exception sheet.

Andre: Some results from the round robin should not be included, need to do cleaning, redraw plots, get proper text… Some data points in the round robin had problems and they should not be plot in the TR.

Antero: something about calibration, noise floor, a broken display…

Andre: issues with Jan has Python scripts, don’t want to put increasing burden on him

Jan: if take unfiltered data, this should be already done or?

Andre: refer to filtering of data

Jan: until next meeting it should be possible, there is also P.700 loudness results to be included for privacy tests

Andre: could declare work item 80% completed, bring CR at the next meeting?

Stéphane: suggest checking offline with Frédéric what the best approach is

Fabrice: I support closing this WI at this meeting, the text on the TR is left-over:

Stéphane: on behalf of Orange, Orange considers that the objective to address quality issues at maximum volume is not achieved, a possible compromise might be to take this part of HaNTE in a new work item, this might be proposed in the new WID (see S4-220155)

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| **S4-220288** | Method for determining ECRP for HaNTE-devices | HEAD acoustics GmbH |

**Presenter:** Jan Reimes

Fixed sentence on support pins, considering Alain’s suggestion (by email) for fork positions and adding further details. Modified Annex H according to discussion of S4-220087, with an extra detail on bandwidth for distance calculation. Alain requested (by email) to specify the ECRP determination procedure with shifts, this is equivalent, and a note may be sufficient.

See discussion:

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| [Re: S4-220288 on proposal for ECRP positioning for HaNTE](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_SQ;82d700de.2202C&S=) | Reimes, Jan | Fri, 18 Feb 2022 14:06:17 +0000 |
| [Re: S4-220288 on proposal for ECRP positioning for HaNTE](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_SQ;1a58ef62.2202C&S=) | Fabrice Plante | Thu, 17 Feb 2022 08:52:17 -0800 |
| [Re: S4-220288 on proposal for ECRP positioning for HaNTE](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_SQ;e63c595d.2202C&S=) | Alain Curti | Thu, 17 Feb 2022 15:09:14 +0000 |
| [S4-220288 on proposal for ECRP positioning for HaNTE](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_SQ;d3248de8.2202C&S=) | Reimes, Jan | Thu, 17 Feb 2022 10:43:34 +0000 |

**Comments / questions:**

(*Jan presents changes in clause 5.1.1*)

Stéphane. Reference to P.64 does not point to the latest version of P.64, this should be also changed. Any other comment?

**Answer: no**

(*Jan presents changes in Annex H*)

Stéphane: for changes in Annex H suggest discussing them one by one, any comment on first change (table defining shifts)? Any comment on extra specification of bandwidth calculation?

**Answer: no**

Stéphane: on note on alternative procedure?

Alain: I don’t think there are lots of things to change, in step 5) could change text. If people don’t have an automatic tool the current procedure can be complicated

Jan: It is not sufficient to change step 5), step 6) refers to volume control setting, I could not do the drafting of the alternative procedure

Alain: I can do it on my side and make a proposal

Stéphane: this would be a new subsection?

Alain: the principle is to describe an alternative for one position where we change volume control

Stéphane: this part is editorial, can be done offline

Andre: we need a definition of devices with non-traditional earpieces, not sure this is defined anywhere? What is the definition?

Jan: note sure ITU-T P.64 has a definition based on devices with no acoustic outlet, may use it

Andre: this is not as simple as that, Samsung pointed to some devices that have an acoustic port at the top of devices, they also fall in the category of HaNTE, even if they have an acoustic port.

Stéphane: suggest also considering this offline. This document seems to be agreeable, but there are only two editorial aspects to fix in this document, we can park it until the wrap-up session and offline editing on alternative procedure for ECRP determination, and definition of devices with non-traditional earpieces) will provide the two remaining issues. We can allocate a new Tdoc, this can be a formal CR in S4-220289 (a CR number needs to be requested) which will go into A.I. 15.2.

**Decision:** S4-220288 is revised to S4-220289

Stéphane: suggest having a general discussion on HaNTE, to see if the work item can be completed at this meeting with S4-220289, can the Rapporteur moderate this discussion?

Andre: see the WI objectives

One may understand that we have completed all objectives, most of them are on aspects to consider, we have done all of this. The TR was also to be changed if necessary. The TR is not necessary at this time, it could go to a WI like S4-220155 if we can agree on this. The content needs cleaning. With Qualcomm hat, we are in position of declaring the WI 100% complete, if needed we can ideally push some objective in the eEUt WI proposal.

Alain: There are issues on maximum volume, we appreciate if this part is not fully stopped. There were concerns that issues were for few devices, and this was verified for WB only, not NB, SWB, and there was a restriction to HaNTE devices. We encountered defects on some devices, and we propose to extend the work to all bandwidths, not restricted to HaNTE. On Andre: on max volume, there was 2 objectives of the WI, this was even identified in the study item FS\_HaNTE, and the objective was to update if necessary. In the round robin, further issues were identified, with distortion aspects and it is necessary to study non-HaNTE devices. It would be appropriate to handle this in a new WI for Qualcomm.

Stéphane: should we close HaNTE with the dCR to 26.132 on ECRP and push some objectives to a new WI in Rel-18?

Fabrice: We can close the HaNTE WI, for the CR to TR 26.801 can have a CR at the next meeting?

Stéphane: With the Rapporteur, we checked offline with the SA4 Chair, a CR to 26.801 would be Cat.B and is not allowed at the next meeting if the WI is closed at the present meeting, this was made clear.

Andre: for some objectives of the WI like out of band it is fair to say we have achieved partial completion.

Stéphane: based on this discussion, it seems we may close the HaNTE WI at this meeting with the CR to 26.132 on ECRP and we will have to see an update of S4-220155 to include some left-over objectives and changes to TR 26.801.

Fabrice: what about WI summary?

Stéphane: this was what I was about to had, we will allocate S4-220290 for a WI summary, and the Rapporteur is tasked to prepare it for the wrap-up session.

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| **S4-220289** | CR 26132-0106 Method for determining ECRP for HaNTE-devices | HEAD acoustics GmbH |

**Presenter:** Jan Reimes

See email introducing the draft version used as a basis for editing:

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| [S4-220289 CR on ECRP method / HaNTE](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_SQ;7e2bdf51.2202C&S=) | Reimes, Jan | Mon, 21 Feb 2022 09:01:34 +0000 |

**Comments / questions:**

Stéphane: not sure about ‘rev 0’ in cover page otherwise cover page is OK

Jan: rev 0 is suggested by Jayeeta

Stéphane: then keep it, the definition of UEs featuring a non-traditional earpiece in clause 5.1.1 should be introduced in clause 3.1 (definitions)

Jan: in Annex H there are now 2 subclauses for the alternative procedures, there was offline suggestions to have a paragraph on how to handle the alternatives

(*Jan edits online the definition section with online inputs from delegates and Annex H, he is tasked to implement editorial changes offline, then the online review resumes*)

Stéphane: can we agree on the CR edited online

**Answer: yes**

See version agreed online at:

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| [S4-220289 - CR on HaNTE](https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_SA_WG4_SQ;2ecbb852.2202C&S=) | Reimes, Jan | Mon, 21 Feb 2022 16:57:47 +0000 |

**Decision:** S4-220289 is agreed

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| **S4-220290** | WI Summary for HaNTE | Qualcomm, Inc. (Rapporteur) |

**Presenter:** Andre Schevciw

See draft version at:

<https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_117-e/Inbox/drafts/SQ/DRAFT_S4-220290%20WI_summary_HaNTE.doc>

**Comments / questions:**

Stéphane: in clause 2, the term ‘(HaNTE)’ should be removed, it does not match the corresponding text

Andre: will do

Stéphane: any other comment? The WI summary looks good, there could have been more background on FS\_HaNTE and TR 26.801, if the group is OK with the present text, let’s endorse it?

**Answer: yes**

**Answer: yes**

**Decision:** S4-220290 is endorsed

**A.I. 9.7 New Work / New Work Items and Study Items**

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| [**S4-220155**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_117-e/Docs/S4-220155.zip) | New WID on Enhancements to UE Testing | Orange, HEAD acoustics GmbH |

**Presenter:** Jan Reimes

This is a new proposal fixing gaps (SWB frequency responses, more data for jitter buffer performance, RTP payload issues to be addressed in a new specification).

The work item has the following objectives:

* Update clause 7.4 (“Sensitivity/frequency characteristics”) of TS 26.131 to define missing SWB frequency masks and review related test methods in TS 26.132.
* Update clauses 5.15, 6.14, 7.14, 8.14 ("Jitter buffer management behavior") of TS 26.131 and clauses 7.13, 8.18, 9.13, 10.13 ("Test conditions") of TS 26.132 for jitter buffer management.
* Develop a new specification to verify correct implementations of the RTP payload format for 3GPP codecs, based on a radio simulator, using the UE electrical interface tests.

**Comments / questions:**

Stefan D: thanks for this WI proposal, on 3rd aspects, for EVS codecs in last set of CRs there was some support for RTP payloads, expect to do more?

Stéphane: taking Orange hat, the proposal is more functional tests with potential no bitstream decoding. Orange has some proprietary tests, but this would benefit the industry if this were more available, for open market devices. The part on RTP decoding should at least be added in the justification as background information and we are not against extending the scope to include such aspects. If I am not mistaken a specification that has some functional tests is TS 11 in GMSA, but this is not doing this.

Fabrice: The contribution from FhG helped finding issues, this PCAP decoding is very useful, it may be necessary to make it more official than a contribution.

The two go together, we can let people test, this implies a tool is proposed

Stéphane: could modify the WID, feel free to propose edits

Stéphane: the proposed tool allows to do tests on you own, whether you make it official or not, it is good to understand if we need to work further on those tools or if an informative Tdoc is good enough. If there is interest, we can work on that again. Otherwise, we are fine with the WID.

**Decision:** S4-220155 is revised to S4-220291

|  |  |  |
| --- | --- | --- |
| **S4-220291** | New WID on Enhancements to UE Testing | Orange, HEAD acoustics GmbH |

**Presenter:** Stéphane Ragot

Updates are available in the following draft:

<https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_117-e/Inbox/drafts/SQ/S4-220155%20New%20WID%20on%20Enhancements%20to%20UE%20Testing_r01.docx>

**Comments / questions:**

Fabrice: concerning objective 4, can we state, ‘define if necessary’?

Alain: I am not sure it is necessary to have lots of handsets with a problem at maximum volume

Fabrice: not sure it necessary to define a new test because a handset already fails lots of tests

Alain: there are not lots of handsets with the maximum volume problem, but when you have such a handset it is really an issue

Fabrice: what happened in HaNTE is quite good, but it does not mean by default we should decide to define a requirement

Stéphane: in any case the specification of new test requires consensus from the group, whether there is such a wording ‘if necessary’ or not, this is a fair request from Fabrice, any concern to add this?

(*Stéphane adds the wording ‘if necessary’ online*)

Stéphane: any other comment? There are currently just two supporting companies, this is not sufficient to go for agreement at SA4 closing plenary to later launch the work. If there are no more comments, can we agree on this document with the online edits?

**Answer: yes**

**Decision:** S4-220291 is agreed

**A.I. 9.8 Any other business**

Stéphane: for those who attended the EVS SWG slot before the SQ SWG wrap-up, you are aware that the EVS SWG has discussed a potential renaming.

The EVS SWG is considering renaming itself to Audio SWG with a broader scope (e.g., architecture, media formats, codec and rendering…), and this would potentially impact the SQ SWG as SQ is also handling audio matters. A potential way forward that was shared to the SWG would be to merge EVS and SQ into an Audio SWG with two separate tracks and (co-)chairs, where the current scope of SQ would be preserved as a separate track.

Any view?

Andre: audio SWB would be broader, there are 3 aspects: 1) quality aspects with terminal testing, but this also includes things like the level of signals at the network port, 2) codec development, 3) any other aspect such as rendering or system architecture

I don’t want to confound things, it is not just a name change, it has broader implications, if we can have a proposal or contributions

Fabrice: I am concerned by the proposition, the idea is to create a new group, but if there are separate tracks, why not keep 2 groups? One is SQ, the other is bigger.

Stéphane: at this stage, the topic is not for decision. It is good to have this preliminary discussion and the topic will certainly be brought again at the SA4 closing plenary.

**A.I. 9.9 Close of the session**

The meeting was closed at 17:03 on February 21.

**Annex A – Meeting agenda**

**Source: SA4 SQ SWG Chair[[2]](#footnote-2)**

**Title: Meeting agenda (SQ SWG during SA4#117-e)**

**Document for: Information**

**Agenda item: 9.2**

|  |  |  |
| --- | --- | --- |
| 9 | Speech Quality (SQ) SWG |  |
| 9.1 | Opening of the session |  |
| 9.2 | Registration of documents |  |
| 9.3 | Liaison Statements | LS from CTIA183rLS reply287a A.I. 5.3 |
| 9.4 | CRs to Features in Release 16 and earlier, and other contributions on terminal acoustics |  |
| 9.5 | ATIAS (Terminal Audio quality performance and Test methods for Immersive Audio Services) |  |
| 9.6 | HaNTE (Handsets Featuring Non-Traditional Earpieces) | ECRP for HaNTE (HEAD acoustics)087->288->289a (CR 26132-0106) A.I. 15.2dCR 26.131 (Orange)157ndCR 26.132 (Orange)158nWI summary290endorsed A.I. 15.2 |
| 9.7 | New Work / New Work Items and Study Items | Enhanced UE testing (Orange, HEAD acoustics)155->291a A.I. 19 |
| 9.8 | Any Other Business | Renaming of SWG |
| 9.9 | Close of the session |  |

**Legend for Tdocs:**

* **Color: not-yet processed**, **processed**, **late**, **~~withdrawn~~**, **moved to a different A.I.**, **under email agreement**
* a agreed, app approved, n noted, pa partially agreed, np not pursued, pp postponed

**Annex B – List of participants (table filled in online by delegates)**

|  |
| --- |
| Apple - Fabrice Plante |
| China Mobile – Song Xu |
| Dolby – Brian Lee |
| Dolby – Stefan Bruhn |
| Ericsson – Tomas Toftgård |
| ETSI MCC – Jayeeta Saha |
| Fraunhofer IIS – Markus Multrus |
| Fraunhofer IIS – Stefan Döhla |
| HEAD acoustics – Jan Reimes |
| Huawei – Huan-Yu Su |
| Huawei Technologies – Antero Tossavainen |
| Interdigital – Loic Fontaine |
| NOKIA – Anssi Rämö |
| NOKIA – Lasse Laaksonen |
| NTT – Takehiro Moriya |
| OPPO – Dong Wang |
| OPPO – Minjie Xie |
| Orange – Alain Curti |
| Orange – Stéphane Ragot |
| Panasonic – Hiroyuki Ehara |
| Philips – Marek Szczerba |
| Qualcomm – Andre Schevciw |
| Qualcomm – Imre Varga |
| Samsung - Jang Hyosun |
| Xiaomi - Wang Bin |

**Annex C - Documents status**

**C.1 Agreed documents (to be presented to SA4 plenary)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Tdoc | Title | Source(s) | Agenda Item(s) | Status |
| **S4-220287** | Reply LS on Audio Background Noise Verification (To: CTIA Certification Audio Working Group) | SA4 | 5.3, 9.3 | Agreed |
| **S4-220289** | CR 26132-0106 Method for determining ECRP for HaNTE-devices | HEAD acoustics GmbH | 9.6, 15.2 | Agreed |
| **S4-220291** | New WID on Enhancements to UE Testing | Orange, HEAD acoustics GmbH | 9.7, 15.2 | Agreed |

**C.2 Agreed documents (not be presented to SA4 plenary)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Tdoc | Title | Source(s) | Agenda Item(s) | Status |
|  |  |  |  |  |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Tdoc | Title | Source(s) | Agenda Item(s) | Status |
| [**S4-220087**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_117-e/Docs/S4-220087.zip) | Method for determining ECRP for HaNTE-devices | HEAD acoustics GmbH | 9.6 | Revised |
| [**S4-220155**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_117-e/Docs/S4-220155.zip) | New WID on Enhancements to UE Testing | Orange, HEAD acoustics GmbH | 9.7 | Revised |
| [**S4-220157**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_117-e/Docs/S4-220157.zip) | Requirements for HaNTE | Orange | 9.6 | Noted |
| [**S4-220158**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_117-e/Docs/S4-220158.zip) | Test methods for HaNTE | Orange | 9.6 | Noted |
| [**S4-220183**](https://www.3gpp.org/ftp/TSG_SA/WG4_CODEC/TSGS4_117-e/Docs/S4-220183.zip) | LS on Subject Audio Background Noise Verification | 3GPP MCC | 5.3, 9.3 | Replied to |
| **S4-220288** | Method for determining ECRP for HaNTE-devices | HEAD acoustics GmbH | 9.6 | Revised |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Tdoc | Title | Source(s) | Agenda Item(s) | Status |
| **S4-220290** | WI Summary for HaNTE | Qualcomm, Inc. (Rapporteur) | 9.6, 15.2 | Endorsed |

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