**Source: IVAS Co-Rapporteur[[1]](#footnote-1)**

**Title: IVAS Permanent document IVAS-2: IVAS Project Plan, v.0.2.1**

**Agenda Item: 7.5**

# **1. Introduction**

This document presents the high-level project plan for the Immersive Voice and Audio Service (IVAS) codec development within 3GPP SA4. This document will be updated as necessary.

# **2. Schedule of IVAS development**

Altogether 13 companies indicated interest to submit a candidate in the IVAS project originally. There was a deadline at the SA4#115e meeting for IVAS proponents to reconfirm their interest to submit a candidate in IVAS standardization. The companies that have reconfirmed their interest to submit an IVAS codec candidate by the deadline are as follows: Dolby, Ericsson, Fraunhofer IIS, Huawei, Nokia, NTT, Orange, Panasonic, Philips, Qualcomm, VoiceAge (total 11). Also, the working assumption was declared that there will be one single joint candidate (resulting from public collaboration).

We can conclude that, on this way, the overall number of candidates is greatly reduced and likely fits into the selection testing. While qualification phase was originally planned on the basis of having 13 candidates, as a consequence of Public Collaboration, no qualification phase is likely needed with the great benefit of shortening the timeline to arrive at the IVAS codec standard.

Public Collaboration, as a key component of the updated IVAS standardization process, implies a new timeline starting in January 2020; hence older activities were put in shaded print. At the occasion of the recent update, older activities were put in shaded print.

Editor’s Note: Following the working assumption included in IVAS-6, there will be required to sign a Funding Agreement to be a proponent of a candidate codec. This FA commits the proponent to support the selection and characterization tests financially.

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| **Month** | **Meeting / date** | **Activity** |
| Sept-2017 | SA#77 (13 - 15 Sept 2017) | **Launch of IVAS standardization.** |
| Oct-2017 | SA4#95 (9 - 13 Oct 2017) | **Agreement of stable initial version of IVAS Codec Development Overview (IVAS-1)**  **Agreement of stable initial version of IVAS Project Plan (IVAS-2)**  Start work of preparing IVAS permanent documents:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4) |
| Nov-2017 | SA4#96 (13-17 Nov 2017) | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4) |
| Jan-2018 | 19 Jan 2018 23:59 CET | **Indication of interest to submit a candidate** by email sent over the 3GPP SA4 Reflector. It is a necessary condition for participation to indicate interest to participate. Organizations will not be allowed to participate if no indication is made. |
| Feb-2018 | SA4#97 (5-9 Feb 2018) | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4) |
| Apr-2018 | SA4#98 (9 - 13 Apr 2018) | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4)  Progress on LoI for selection. |
| Jul-2018 | SA4#99 (9 - 13 Jul 2018) | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4)  Progress on LoI for selection. |
| Oct-2018 | SA4#100 (15 - 19 Oct 2018) | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4)  Progress on LoI for selection. |
| Nov-2018 | SA4#101 (19 – 23 Nov 2018) | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4)  Progress on LoI for selection. |
| Jan-2019 | SA4#102 (28 Jan – 1 Feb 2019) | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4)  Progress on LoI for selection. |
| 19 February 2019  14:00 – 16:00 CET  Host: Fraunhofer | EVS SWG Call on IVAS-4  (Tdoc submission deadline 18 February 2019 14:00 CET) | Progress IVAS-4 |
| Apr-2019 | SA4#103 (8 – 12 Apr 2019) | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4)  Progress on LoI for selection. |
| Jul-2019 | SA4#104 (1 – 5 Jul 2019) | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4) |
| Aug-2019 | SA4#105 (12 – 16 Aug 2019) | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4) |
| Sept-2019 | EVS SWG call(s) | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4) |
| Oct-2019 | EVS SWG meeting (20 October 2019) and SA4#106 (21 – 25 Oct 2019) | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4) |
| Nov-Dec-2019 | EVS SWG call(s) | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4) |
| Jan-2020 | SA4#107 (20-24 January 2020) | Discussion on standardization process for IVAS to resolve the deadlock |
| Apr-2020 | SA4#108e (6-9 April 2020) | Report on off-line discussions on an updated standardization process |
| May-2020 | SA4#109e (25-29 May 2020) | Discussion on details of the updated standardization process |
| June-2020 | EVS SWG call | Discussion on details of the updated standardization process |
| Aug-2020 | SA4#110e | Discussion on details of the updated standardization process |
| Nov-2020 | SA4#111e | Discussion on details of the updated standardization process |
| Feb-2021 | SA4#112e | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4) |
| Apr-2021 | SA4#113e | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4) |
| May-2021 | SA4#114e | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4) |
| Aug-2021 | SA4#115e | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4)  Progress selection phase documents   * Selection LoI * Selection Rules (IVAS-5b) * Selection Deliverables (IVAS-6b)          Selection Processing Plan (IVAS-7b)         Selection Test Plan (IVAS-8b) |
| Nov-2021 | SA4#116e | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4) |
| Feb-2022 | SA4#117e | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4) |
| Apr-2022 | SA4#118e | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4) |
| May-2022 | SA4#119/e | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4)  Initial funding parties:  May 13 (Friday): ETSI shall receive the signed Funding Agreement (FA) to be a proponent company of the single joint candidate codec, following the working assumption.  Signing the FA commits the signee to support the selection and characterization tests financially and it is required for submission of the candidate codec.  The first payment is due after signing the FA, as indicated in the FA.  Further signing parties:  Upon availability of signature. ETSI shall receive the signed Funding Agreement (FA) to be a proponent company of the single joint candidate codec, following the working assumption.  Signing the FA commits the signee to support the selection and characterization tests financially and it is required for submission of the candidate codec.  The first payment is due after signing the FA, as indicated in the FA. |
| Aug-2022 | SA4#120/e | Progress on IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4)  Progress selection phase documents   * Selection Rules (IVAS-5) * Selection Deliverables (IVAS-6)          Selection Processing Plan (IVAS-7a)         Selection Test Plan (IVAS-8a) |
| Nov-2022 | SA4#121/e | Finalization of IVAS permanent documents including:           Performance Requirements (IVAS-3)           Design Constraints (IVAS-4)  Progress selection phase documents   * Selection Rules (IVAS-5) * Selection Deliverables (IVAS-6)          Selection Processing Plan (IVAS-7a)         Selection Test Plan (IVAS-8a) |
| Feb-2023 | SA4#122/e | Progress selection phase documents   * Selection Rules (IVAS-5) * Selection Deliverables (IVAS-6)          Selection Processing Plan (IVAS-7a)         Selection Test Plan (IVAS-8a) |
| March-2023 |  | Further signing parties: deadline that ETSI shall receive the signed Funding Agreement (FA) to be a proponent company of the single joint candidate codec at the latest by 3rd March 2023 (Friday). This deadline is under the assumption that the signee complies with 45 days invoice period. |
| April-2023 | SA4#123/e | Progress selection phase documents   * Selection Rules (IVAS-5) * Selection Deliverables (IVAS-6)          Selection Processing Plan (IVAS-7a)         Selection Test Plan (IVAS-8a) |
| May-2023 | SA4#124/e | Finalization of selection phase documents   * Selection Rules (IVAS-5) * Selection Deliverables (IVAS-6)          Selection Processing Plan (IVAS-7a)         Selection Test Plan (IVAS-8a)  Funding Agreement (FA): the total funding payment including the second payments are received by May X (exact date TBD). Note that ETSI MCC will ensure to send out second invoices in time, as indicated in the FA. |
| June-2023 |  | **Candidate submission for selection testing (exact date tbd)** |
| Aug-2023 | SA4#125/e | **IVAS codec selection** |
| Nov-2023 | SA4#126/e | Tbd |

*Editor’s Note: details of characterization and verifications phases tbd.*

# **4. Revision history**

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| **Date** | **Meeting** | **Subject/Comment** | **Old** | **New** |
| 2017-10-13 | SA4#95 | Agreement of stable initial version of Project Plan (IVAS-2) |  | 0.0.1 |
| 2019-02-01 | SA4#102 | Update to end date of Dec-2020 |  | 0.0.5 |
| 2019-07-05 | SA4#104 | Update for qualification phase |  | 0.0.6 |
| 2020-11-11 | SA4#111e | Update with updated standardization process |  | 0.1.0 |
| 2021-11-10 | SA4#116e | Updated timeline |  | 0.2.0 |

1. Imre Varga, Qualcomm Inc.; email: ivarga@qti.qualcomm.com [↑](#footnote-ref-1)