

Status Report for WI to TSG

Work Item Name: Introduction of Multimedia Broadcast/Multicast Service (MBMS) in RAN

SOURCE: Rapporteur, Nokia, Juho Pirskanen **TSG:** RAN **WG:** 2

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Ref. to WI sheet: RAN_Work_Items.doc

Progress Report since the last TSG (for all involved WGs):

RAN1

After the RAN#25, the MBMS discussion RAN1 took place in RAN1 #38bis meeting in Seoul, Korea and RAN1 #39 in Tokyo Japan. The agreements in RAN1 during these meetings are following:

- No support for mixture of simultaneous soft and selective combining
- UE capability including mandatory support of soft combining
- Remove the 20 ms TTI from UE soft combining capability definitions
- CRs for Stage-3 specifications

RAN2

Since RAN#25, MBMS discussions in RAN2 took place in RAN2 #44 in Sophia Antipolis France and in RAN2 #45 in Tokyo Japan, where parallel sessions with E-DCH were organised.

During RAN2 discussion in RAN2 #44 following agreements were found for Stage-2:

- Session repetition and session ID:
 - UE may ignore counting of MBMS service session which it has already received correctly
 - In case of ptm transmission the UE may ignore the transmission of the session that it has already received correctly
 - In case of ptp transmission the UE may reject the ptp RB setup for MBMS service session that it has already received correctly
- Service prioritisation of different MBMS services and non MBMS services:
 - Prioritisation between different MBMS services are handled in AS, based on NAS prioritisation decision. (Which MBMS service is selected to be received if UE is not able to receive all activated services being transmitted simultaneously)
 - Prioritisation between MBMS and UE dedicated non-MBMS services is handled in NAS level. If NAS decides to prioritise MBMS services over non MBMS service the NAS may initiate NAS signalling to release non-MBMS service that prevents the reception of MBMS service.

These agreements are captured in CR#6 for TS25.346

- Soft combining introduced to FDD mode:
 - L1-combining schedule indicating time moments when soft combining is possible between S-CCPCH of the neighbouring cell and selected cell is transmitted on MCCH
 - Can be used when Node-Bs are synchronized inside UE's soft combining reception window, and the data fields of the soft combined S-CCPCHs are identical during soft combining moments
- MSCH introduced to the specifications for UEs power saving purposes
 - Indicates when specific MBMS service is being transmitted on the S-CCPCH
 - Utilises UM-RLC
- The mapping of the MCCH, MSCH and MTCH is always to be done in specific FACH in S-CCPCH

These agreements are captured in CR#7 for TS25.346

In RAN2#45 a review of Stage-3 CR to introduce MBMS in the stage-3 were held. During that review CRs with comments were approved to following specifications:

- TS25.304
- TS25.321 except the final agreement on MAC headers which was postponed to email approval
- TS25.322 except the SDU out of sequence delivery for MCCH which was postponed to email approval
- TS25.331, ASN.1 message coding part postponed for email approval

All CRs under email approval were approved.

RAN3

Since RAN#23, MBMS discussions in RAN3 took place in RAN2 #44 in Sophia Antipolis France and in RAN2 #45 in Tokyo Japan

where corrections were agreed to TS25.346 on following topics.

- Session start procedure
- UE linking/de-linking procedure.

Also addition of these new procedures were agreed to TS25.346:

- URA Linking/de-linking
- Information Exchange procedure in Iur

These agreements are captured in CR#8 for TS25.346

It was also agreed that:

MICH Indicators are transmitted to Node B via NBAP protocol

This agreement will be captured in the NBAP MBMS introduction CR.

Also agreements were found during the RANAP&RNSAP drafting sessions, which have been directly captured into the respective MBMS introduction CRs

MBMS introduction CRs to RAN3 specifications were placed under final email checking and approved.

It was also agreed that required modifications to TR 25.931 are made for TSG RAN#27.

List of Completed elements (for complex work items):

- TSG SA1: Stage-1, TS-22.146
- TSG SA1: Stage-1, TS-22.246
- TSG SA2: Stage-2, TS 23.246
- TSG RAN2: Stage-2, TS25.346

- TSG RAN1: Stage-3
 - TS25.211
 - TS25.212
 - TS25.214
- TSG RAN2: Stage-3
 - TS25.304
 - TS25.321
 - TS25.322
 - TS25.331
- TSG RAN3: Stage-3
 - TS25.401
 - TS25.402
 - TS25.410
 - TS25.413
 - TS25.420
 - TS25.423
 - TS25.430
 - TS25.433

List of open issues:

RAN2

- Function to disperse UEs after session stop. A LS to SA1 and SA2 was sent to clarify expected scenario [2].

- Possible performance improvement by reusing the static context in PDCP upon cell reselection where PDPC entity in the network is not shared between cells
- Necessary CRs for TS25.301 and TS25.302

RAN1&2

- Finalise the CR for MBMS UE capabilities to TS25.306

However, it is expected that these issues can be sorted out with CRs after closing the work item.

Estimates of the level of completion (when possible):

It can be concluded that the level of completion of WI is 100%.

WI completion date review resulting from the discussion at the working group:

TSG RAN #26

References to WG's internal documentation and/or TRs:

- [1] R1-041284 Reply LS to question on the impact of L1 limitations on MBMS (R2-042216) and Reply LS to MBMS UE capability and Multiplexing options for MBMS (R2-042276)
- [2] R2-042705 LS on NAS signalling load at MBMS Session Start/Stop