**3GPP TSG- Meeting #**

**, , - (revision of S6-254106)**

**Source: Airbus**

**Title: Updated solution#1: Functional architecture**

**Spec: 3GPP TR 23.700-37 V0.3.0**

**Agenda item: 9.1**

**Document for: Approval**

**Contact: Jukka Vialen (**[**jukka.vialen@airbus.com**](mailto:jukka.vialen@airbus.com)**)**

**1. Introduction**

This contribution proposes an update to solution#1 – functional architecture.

**2. Reason for Change**

Solution#1 in TR 23.700-37v0.3.0 is not complete and contains several Editor’s notes.

Furthermore, abbreviation ‘DM’ is changed to ‘DiMo’. In the context of mobile communications, DM is already well known and widely used abbreviation for “Device Management”.

**3. Proposal**

It is proposed to agree the following changes to 3GPP TR 23.700-37 V0.3.0.

\* \* \* First Change \* \* \* \*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.280: "Common functional architecture to support mission critical services; Stage 2".

[3] 3GPP TS 23.379: "Functional architecture and information flows to support Mission Critical Push To Talk (MCPTT); Stage 2".

[4] 3GPP TS 23.281: "Functional architecture and information flows to support Mission Critical Video (MCVideo); Stage 2".

[5] 3GPP TS 23.282: "Functional architecture and information flows to support Mission Critical Data (MCData); Stage 2".

[6] 3GPP TS 23.283: " Mission Critical Communication Interworking with Land Mobile Radio Systems; Stage 2".

[7] 3GPP TS 23.289: "Mission Critical services over 5G System; Stage 2".

[8] 3GPP TS 22.280: "Mission Critical Services Common Requirements (MCCoRe); Stage 1".

[x] 3GPP TS 23.002: “Network architecture”.

[y] 3GPP TS 23.468: “Group Communication System Enablers for LTE (GCSE\_LTE); Stage 2".

[z] 3GPP TS 33.180: "Security of the Mission Critical (MC) service".

\* \* \* Second Change \* \* \* \*

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

DiMo Discreet Monitoring

\* \* \* Third Change \* \* \* \*

## 6.1 Solution 1 (for KI#1): Functional architecture

### 6.1.1 Description

#### 6.1.1.1 General

This solution re-uses functionality of the Recording feature as much as feasible. New functional entities “Discreet monitoring server” and “Discreet monitoring client” are added, as well as several new reference points. All new configuration parameters are mimicking those already existing for the Recording feature.

#### 6.1.1.2 Functional model and reference points

##### 6.1.1.2.1 Functional model

Functional model of MC system including discreet monitoring functionality is shown in figure 6.1.1.2.1-1. Note that this figure shows only a single MC system, interconnection aspects are not (yet) included.



Figure 6.1.1.2.1-1: Functional model of MC system including discreet monitoring functionality

NOTE 1: The functional architecture is only describing the required functionality for discreet monitoring. How this functionality is implemented is out of the scope of this document. E.g. discreet monitoring client may be implemented as add-on functionality to the MC service clients and discreet monitoringD server may be implemented as add-on functionality to the recording server.

NOTE 2: The dashed lines between discreet monitoring client and other clients in an MC service UE are only for illustration purposes. They will not be included into the normative TS.

In Figure 6.1.1.2.1-3, the “*Functional model for signalling control plane”(ref: figure 7.3.1.2-2 in 3GPP TS 23.280 [2])*, is amended with discreet monitoring server.



Figure 6.1.1.2.1-3: Functional model for signalling controlling plane amended with discreet monitoring server

##### 6.1.1.2.2 Functional entity description – discreet monitoring server

The discreet monitoring server is a functional entity that receives communications metadata and media of discreet monitoring target users and target groups, from MC service servers. When media from MC service servers is received in e2ee format, the discreet monitoring server is capable of deciphering the media. The discreet monitoring server forwards the media, using secure DM-1 reference point, to the authorized discreet monitoring clients who have subscribed to receive the target user/group communications.

The target users and groups for discreet monitoring are set in the MC service user profile configuration data (A.3) and in the group configuration data (A.4). This can be done by an authorized discreet monitoring client utilizing the CSC-4 reference point (user profile configuration data) and CSC-2 reference point (group configuration data).

##### 6.1.1.2.3 Functional entity description – discreet monitoring client

The discreet monitoring client is a functional entity that acts as the application user agent, providing discreet monitoring services for an authorized user. The discreet monitoring client includes the following sub-functions:

- Discreet monitoring user service authorization with the discreet monitoring server.

Editor's note: A reference to 3GPP TS 33.180 [z] shall be included to the previous bullet after SA3 has added discreet monitoring to the MC user service authorization concept.- Setting or modifying target users and target groups for discreet monitoring. This can be done by interacting with the configuration management server via configuration management client (utilizing CSC-4) and with the group management server via group management client (utilizing CSC-2).

- Subscribing and unsubscribing to the discreet monitoring server for receiving communications media and metadata of target users and/or target groups.- Receiving the target users/groups MCPTT communications media and metadata from the discreet monitoring server and providing them to the MC user.

- Receiving the target users/groups MCVideo communications media and metadata from the discreet monitoring server and providing it to the MC user.

##### - Receiving the target users/groups MCData communications media and metadata from the discreet monitoring server and providing it to the MC user. 6.1.1.2.4 Reference point DiMo-1 (between the discreet monitoring client and server)

The DiMo-1 reference point is used for discreet monitoring management operations and for transmitting target users’/groups’ communication media and metadata from the discreet monitoring server to the discreet monitoring client.

The DiMo-1 reference point shall use:

* the SIP-1 and SIP-2 reference points for transport and routing of SIP signalling,
* the HTTP-1 and HTTP-2 reference points for transport and routing of HTTP signalling,
* SGi reference point (3GPP TS 23.002 [x]) for transport of unicast media from the MCPTT and MCVideo servers and floor control/transmission control signalling from the floor control/transmission control servers (NOTE 1), and
* MB2-U interface (3GPP TS 23.468 [y]) for transport of multicast media from the MCPTT and MCVideo servers and floor control/transmission control signalling from the floor control/transmission control servers (NOTE 2).

Editor's note: Reference points for MCData are TBD.

NOTE 1: This refers to MCPTT-7 and MCPTT-4 in 3GPP TS 23.379[3] and MCVideo-7 and MCVideo-4 in 3GPP TS23.281 [4].

NOTE 2: This refers to MCPTT-8 and MCPTT-9 in 3GPP TS 23.379[3] and MCVideo-8 and MCVideo-9 in 3GPP TS23.281 [4].

##### 6.1.1.2.5 Reference point DiMo-2 (between the discreet monitoring server and KMS)

The DiMo-2 reference point, which exists between discreet monitoring server and key management server, provides a means for the key management server to provide security related information (e.g. encryption keys) to the discreet monitoring server.

The DiMo-2 reference point shall use the HTTP-1 and HTTP-2 reference points for transport and routing of security related information to the discreet monitoring server.

Editor's note: Whether DiMo-2 is equal to REC-2 is FFS.

##### 6.1.1.2.6 Reference point DiMo-3 (between the discreet monitoring server and MC service servers)

The DiMo-3 reference point, which exists between discreet monitoring server and MC service servers, is used for transmitting metadata and media of the communication sessions of target users and target groups from the MC service servers to the discreet monitoring server.

The DiMo-3 reference point shall use the SIP-2 reference point for transport and routing of signalling and communication sessions related metadata. If an MC service server and a discreet monitoring server are served by different SIP cores, then the DiMo-3 reference point shall also use the SIP-3 reference point for transport and routing of signalling and communication sessions related metadata.

Editor's note: The protocols used in DiMo-3 are FFS. Target is to utilize the results of the Recording feature study (FS\_MCLOG\_Ph2) as much as possible, but whether DiMo-3 is equal to REC-4 is FFS.

##### 6.1.1.2.7 Reference point DiMo-4 (between the discreet monitoring server and GMS)

The DiMo-4 reference point, which exists between discreet monitoring server and group management server, is used by the discreet monitoring server to obtain information related to discreet monitoring target groups, including the group related key material.

##### Editor's note: Whether DiMo-4 is equal to REC-5 is FFS. 6.1.1.2.8 Reference point DiMo-5 (between the discreet monitoring server and CMS)

The DiMo-5 reference point, which exists between discreet monitoring server and configuration management server, is used by the discreet monitoring server to obtain user profiles (and updated user profile data) of the authorized discreet monitoring service users.

Editor's note: Whether the discreet monitoring server needs also information of the discreet monitoring targets (users/groups) is FFS.

The DiMo-5 reference point shall use HTTP-1 and HTTP-2 reference points for transport and routing of non-subscription/notification related signalling. The DiMo-5 reference point shall use SIP-2 and SIP-3 reference points for transport and routing of subscription/notification related signalling. The SIP-3 reference point is used when the discreet monitoring server and the configuration management server are served by different SIP cores.

#### 6.1.1.3 Configurations

Configuration parameters for discreet monitoring include:

- discreet monitoring user (authorized user) profile:

i. Authorizations for Discreet Monitoring of users and groups – the *“Recording admin and/or replay service user profile configuration data (on-network)” – Table A.11-1 in 3GPP TS 23.280 [2]* – can be used as a starting point. If we end up with only one discreet monitoring client (i.e. no separate ‘admin’ and ‘replay’ clients like for the recording), the number of parameters will be smaller.

- Target users/groups for discreet monitoring:

i. For groups, new parameters shall be added to Table A.4 in 3GPP TS 23.280 [2] (Group configuration data) – “Group is a target for discreet monitoring” and “discreet monitoring server address”.

ii. For individual users, similar parameters to the MCPTT, MCData and MCVideo user profiles as already exists for Recording i.e. “User is a target for discreet monitoring” and “discreet monitoring server address”.

Editor's note: It is FFS how these parameters can be hidden from the target users and other unauthorized users. KI#u and related solution(s) may impact this clause.

#### 6.1.1.4 Procedures

For configurations, the existing procedures can be used (just like for the Recording feature).

Procedures in the new reference points will mainly mimic those for Recording, but these need to be studied in more detail.

Procedures between discreet monitoring client and discreet monitoring server are also FFS. A secure interface is required, can use same security mechanisms as any MC client-server interface --> SA3.

MC service UE internal procedures between discreet monitoring client and other clients (see figure above) are implementation specific and out of scope of 3GPP.

### 6.1.2 Impacts on existing functional entities and reference points

See figures above.

### 6.1.3 Solution evaluation

Editor's note: The contents of this clause are FFS.

\* \* \* End of changes \* \* \* \*