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Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

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1 Scope

This document specifies the identity management and authentication protocols needed to support Mission Critical Services (MCSs). Identity management applies only to on-network operation.

MCSs are services that require preferential handling compared to normal telecommunication services, e.g. in support of police or fire brigade.

MCSs can be used for public safety applications and also for general commercial applications (e.g., utility companies and railways).

This document is applicable to User Equipment (UE) supporting the identity management client functionality, and to application servers supporting the identity management server functionality.

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] Void.

[3] 3GPP TS 22.179: "Mission Critical Push To Talk (MCPTT) over LTE".

[4] IETF RFC 2616: "Hypertext Transfer Protocol -- HTTP/1.1".

[5] IETF RFC 6749: "The OAuth 2.0 Authorization Framework".

[6] "OpenID Connect Core 1.0 incorporating errata set 1".

[7] W3C.REC-html401-19991224: "HTML 4.01 Specification”.

[8] 3GPP TS 23.379: "Functional architecture and information flows to support mission critical communication services".

[9] Void.

[10] IETF RFC 2818: "HTTP Over TLS".

[11] 3GPP TS 24.483: "Mission Critical Services (MCS) Management Object (MO)".

[12] 3GPP TS 24.379: "Mission Critical Push To Talk (MCPTT) call control Protocol specification".

[13] 3GPP TS 23.228: "IP Multimedia Subsystem (IMS); Stage 2".

[14] IETF RFC 6750: "The OAuth 2.0 Authorization Framework: Bearer Token Usage".

[15] 3GPP TS 24.109: "Bootstrapping interface (Ub) and network application function interface (Ua); Protocol details".

[16] 3GPP TS 23.280: "Common functional architecture to support mission critical services; Stage 2".

[17] 3GPP TS 33.180: "Security of the Mission Critical Service".

[18] draft-ietf-oauth-token-exchange-07: "OAuth 2.0 Token Exchange".

Editor's Note: The above document cannot be formally referenced until it is published as an RFC.

[19] IETF RFC 7523: "JSON Web Token (JWT) Profile for OAuth 2.0 Client Authentication and Authorization Grants".

[20] IETF RFC 7159: "The JavaScript Object Notation (JSON) Data Interchange Format".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

IdM client id: The client_id as specified in 3GPP TS 33.179 [2] which is used to identify the IdM client to the IdM server.

Authorisation endpoint: An identity management server protocol endpoint used by the identity management client to obtain an authorisation grant, as specified in IETF RFC 6749 [5].

Token endpoint: An identity management server protocol endpoint used by the identity management client to exchange an authorisation grant for an access token, as specified in IETF RFC 6749 [5].

MC UE: A UE that is used to host one or more MC service clients.

For the purposes of the present document, the following terms and definitions given in 3GPP TS 22.179 [3] apply:

MCPTT UE

For the purposes of the present document, the following terms and definitions given in 3GPP TS 23.379 [8] apply:

MCPTT group ID
MCPTT ID

For the purposes of the present document, the following terms and definitions given in 3GPP TS 23.228 [13] apply:

Public service identity

For the purposes of the present document, the following terms and definitions given in 3GPP TS 23.280 [16] apply:

MC service
MC service client
MC service group
MC service ID
MC service user
MC user

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP 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 3GPP TR 21.905 [1].

HTTP	Hypertext Transfer Protocol
IdM	Identity Management
LTE	Long Term Evolution
MCData	Mission Critical Data
MC ID	Mission Critical User Identity
MCPTT	Mission Critical Push To Talk

MCVideo	Mission Critical Video
OIDC	OpenID Connect
TLS	Transport Layer Security
UE	User Equipment

4 General

4.1 Identity management

The Identity Management functional model for MC services is shown in figure 4.1-1 below and consists of the identity management server located in the common services core and the identity management client located in the MC UE. The IdM server and the IdM client in the MC UE establish the foundation for MC services user authentication and user authorisation.

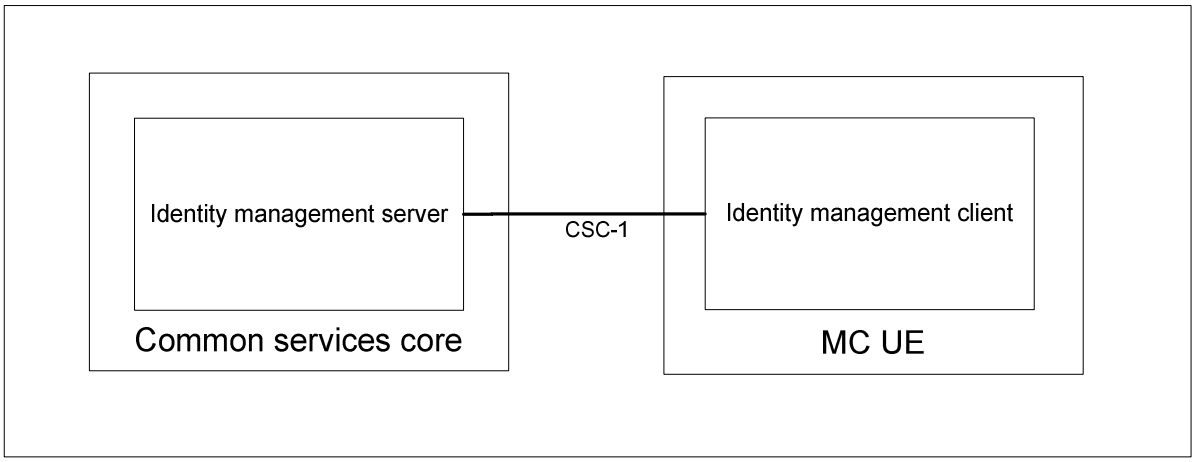

Figure 4.1-1: Functional model for MC services identity management

The CSC-1 reference point, between the IdM client in the UE and the Identity Management server, provides the interface for user authentication. CSC-1 supports OpenID Connect Core 1.0 [6] and IETF RFC 6749 [5].

The OpenID Connect profile for MC services is implemented as described in 3GPP TS 33.180 [17]. The MC services user authentication, the MC services user authorisation, the OpenID Connect Core 1.0 [6] and the OpenID Connect profile described in 3GPP TS 33.180 [17] for MC services forms the basis of the MC services identity management architecture.

Subclause 6.3 describes the procedures for the MC services user authentication. OIDC is flexible with respect to the user authentication mechanism used. As 3GPP TS 33.180 [17] has indicated that username and password authentication is mandatory to support, that mechanism is included in subclause 6.3, although other mechanisms are possible.

When the MC services user is authenticated, the procedure will provide an id token, an access token and a refresh token, which are all described in 3GPP TS 33.180 [17]. The access token is scoped to the services the MC services user is authorised for, e.g., group management services, key management services and MC services. The access token will be utilized for MCPTT service authorisation, MCData service authorisation and MCVideo service authorisation as documented in 3GPP TS 24.379 [12], 3GPP TS 24.282 [24282] and 3GPP TS 24.281 [24281] respectively.

5 Entities

5.1 Identity management client

The identity management client acts as the application user agent for MC ID transactions. It interacts with the identity management server. The identity management client:

- shall support identity management registration to the identity management server;

- shall support the MC services user authentication framework as specified in 3GPP TS 33.180 [17];
- shall support a username and password method of authentication as specified in 3GPP TS 33.180 [17]; and
- may support additional methods of authentication.

5.2 Identity management server

The identity management server is a functional entity that is capable of authenticating the MC ID. It contains the knowledge and means to do authentication by verifying the credentials supplied by the user. The identity management server:

- shall support identity management registration of the identity management client;
- shall support the MC services user authentication framework as specified in 3GPP TS 33.180 [17];
- shall support a username and password method of authentication as specified in 3GPP TS 33.180 [17]; and
- may support additional methods of authentication.

5.3 MC service client

The MC service client shall interact with the IdM client as specified in subclause 6.2:

- to trigger initiation of the user authentication procedure; and
- to receive the credentials obtained from the IdM server.

5.4 HTTP proxy

The HTTP proxy acts as the proxy for all hypertext transactions between the HTTP client and the HTTP server. The HTTP proxy terminates the TLS session with the HTTP client of the MC UE in order to allow the HTTP client to establish a single TLS session for hypertext transactions with multiple HTTP servers as specified in 3GPP TS 23.280 [16].

NOTE: The HTTP proxy is in the same trust domain as the HTTP servers that are located within a MC service provider's network.

6 Authentication procedures

6.1 General

6.2 Identity management client procedures

6.2.1 User authentication

Upon an indication from the MC service client to initiate MC service user authentication, the IdM client shall perform the user authentication procedure according to 3GPP TS 33.180 [17] with the following clarifications:

1) shall establish a TLS tunnel to the authorisation endpoint of the IdM server as specified in 3GPP TS 33.180 [17] using the configured URL of the authorisation endpoint of the IdM server as specified in the "/<x>/OnNetwork/AppServerInfo/IDMSAuthEndpoint" leaf node defined in 3GPP TS 24.483 [11] and the clarifications in annex A;

2) shall generate an OIDC Authentication Request message as specified in the OpenID Connect 1.0 [6] and IETF RFC 6749 [5] with the following clarifications:

a) shall generate an HTTP GET request method according to IETF RFC 2616 [4];

b) shall include the configured parameter IdM client id as the client_id parameter specified in 3GPP TS 33.180 [17] in the query component of the authorization endpoint's URI using the "application/x-www-form-urlencoded" format as specified in W3C.REC-html401-19991224 [7]; and

NOTE 1: The configuration of client_id is specified in 3GPP TS 24.483 [11].

c) shall include the remaining required parameters as specified in 3GPP TS 33.180 [17] in the query component of the authorization endpoint's URI using the "application/x-www-form-urlencoded" format as specified in W3C.REC-html401-19991224 [7]; and

3) shall send the HTTP GET request method towards the IdM server.

NOTE 2: The OpenID Connect 1.0 [6] specification allows for an alternative mechanism for sending the OIDC Authentication request message using an HTTP POST request method which can be used in place of steps 1, 2, and 3 above.

Upon receipt of an HTTP 200 (OK) response from the IdM server, the IdM client:

1) shall prompt the MC service user for their username and password;

NOTE 3: Other types of authentication are supported and are not defined by the OIDC specifications. 3GPP TS 33.180 [17] has defined username and password as a mandatory authentication method to be supported, hence a procedure to realize that method is included here.

2) shall generate an HTTP POST request method containing the MC service user's username and password; and

3) shall send the HTTP POST request method towards the IdM server.

Upon receipt of an OIDC Authentication Response message, the IdM client:

1) shall establish a TLS tunnel to the token endpoint of the IdM server as specified in 3GPP TS 33.180 [17] using the configured URL of the token endpoint of the IdM server as specified in the "/<x>/OnNetwork/AppServerInfo/IDMSTokenEndpoint" leaf node defined in 3GPP TS 24.483 [11] and the clarifications in annex A;

2) shall generate an OIDC Token Request message as specified in OpenID Connect 1.0 [6] and IETF RFC 6749 [5] with the following clarifications:

a) shall generate an HTTP POST request method according to IETF RFC 2616 [4]; and

b) shall include the grant_type parameter set to a value of "authorization_code" and the other required parameters in the entity body of the HTTP POST request method using the using the "application/x-www-form-urlencoded" format as specified in 3GPP TS 33.180 [17]; and

3) shall send the HTTP POST request method towards the IdM server.

Upon receipt of an OIDC Token Response message, the IdM client:

1) shall validate the id_token, access_token and refresh token in the received OIDC Token Response message as specified in the OpenID Connect 1.0 [6] specification; and

2) shall provide the id_token and access_token in the received OIDC Token Response message to the MC service client.

NOTE 4: The method in which the IdM client provides the id_token and access_token to the MC service client is implementation specific.

The MC UE may repeat the entire procedure in this subclause as needed to obtain the necessary authorisation tokens for the MC service clients, depending on the scope parameter in the Authentication Request message as specified in 3GPP TS 33.180 [17].

6.2.2 Token exchange procedure

Upon an indication from the MC service client to acquire a security token for authentication of the MC service user with a partner IdM server, the IdM client:

1) shall establish a TLS tunnel to the token endpoint of the home IdM server as specified in 3GPP TS 33.180 [33180] using the configured URL of the token endpoint of the IdM server as specified in the "/<x>/OnNetwork/AppServerInfo/IDMSTokenEndpoint" leaf node of the MCS UE initial configuration MO defined in 3GPP TS 24.483 [11] and the clarifications in annex A;

2) shall generate a Token Exchange Request message as specified in 3GPP TS 33.180 [33180] and draft-ietf-oauth-token-exchange [18] with the following clarifications:

   a) shall generate an HTTP POST request method according to IETF RFC 2616 [4];

   b) shall include the following parameters in the in the entity body of the HTTP POST request method using the "application/x-www-form-urlencoded" format as specified in W3C.REC-html401-19991224 [7]:

      i) the grant_type parameter set to a value of "urn:ietf:params:oauth:grant-type:token-exchange" as specified in subclause B.6.2 of 3GPP TS 33.180 [33180]; and

      ii) the other required parameters as specified in subclause B.6.2 of 3GPP TS 33.180 [33180]; and

3) shall send the HTTP POST request method towards the IdM server.

Editor's Note: As per TS 33.180, the security token to be obtained is supposed to be usable for only one specific partner system. At present, there is no data element in the Token Exchange Request that identifies a specific targeted partner IdM server.

6.2.3 Token request to a partner system IdM server

Upon an indication from the MC service client to acquire an access token from a partner IdM server to authorise the MC service user to access the resources of a partner system, the IdM client:

1) shall obtain a valid security token appropriate for inclusion in a Token Request message to be sent to the targeted partner IdM server by the procedures specified in subclause 6.2.2 if the IdM client has not already done so; and

2) shall generate a Token Request message as specified in the OpenID Connect 1.0 [6] and IETF RFC 6749 [5] with the following clarifications:

   a) shall establish a TLS tunnel to the configured URL of the token endpoint of the partner system IdM server as specified in the MC service user profile MO with the following clarifications:

      i) for MCPTT, use the token endpoint defined in the "/<x>/<x>/OnNetwork/GroupServerInfo/IDMSTokenEndpointList/<x>/Entry/IDMSTokenID" leaf node as defined in the MCPTT service user profile MO 3GPP TS 24.483 [11];

      ii) for MCData, use the token endpoint defined in the "/<x>/<x>/OnNetwork/MCDataGroupList/<x>/Entry/IdMSTokenEndPointList/<x>/IdMSTokenEndPoint" leaf node as defined in the MCData service user profile MO 3GPP TS 24.483 [11]; and

      iii) for MCVideo, use the token endpoint defined in the "/<x>/<x>/OnNetwork/MCVideoGroupList/<x>/Entry/IdMSTokenEndPointList/<x>/IdMSTokenEndPoint" leaf node as defined in the MCVideo service user profile MO 3GPP TS 24.483 [11];

NOTE 1: The specific IDM token endpoint can be found by finding the server information for a particular MC service group.

NOTE 2: The specific IDM token endpoint can also be found in the respective MC service user profile document (see 3GPP TS 24.483 [11]) in the parameters corresponding to those identified in steps i), ii) and iii) above.

   b) shall generate an HTTP POST request method according to IETF RFC 2616 [4] including in the entity body the following parameters using the "application/x-www-form-urlencoded" format as specified in W3C.REC-html401-19991224 [7]:

i) the grant_type parameter set to value of "urn:ietf:params:oauth:grant-type:jwt-bearer" as specified in subclause B.6.4 of 3GPP TS 33.180 [33180] and IETF RFC [19]; and

ii) all other required parameters specified in subclause B.6.4 of 3GPP TS 33.180 [33180]; and

c) shall send the HTTP POST request method towards the token endpoint of the partner system IdM server.

6.3 Identity management server procedures

6.3.1 User authentication

Upon receipt of an OIDC Authentication Request message as specified in the OpenID Connect 1.0 [6] and IETF RFC 6749 [5] via a secure TLS tunnel between the identity management client and the authorisation endpoint of the IdM server, the IdM server:

1) shall validate the received OIDC Authentication Request message as specified in the OpenID Connect 1.0 [6] and IETF RFC 6749 [5];

2) shall generate an HTTP 200 (OK) response according to IETF RFC 2616 [4] including form data to prompt the MC service user for their username and password credentials; and

NOTE 1: The username will be the MC service user's MC ID.

3) shall send the HTTP 200 (OK) response towards the IdM client.

Upon receipt of an HTTP POST request method from the IdM client containing the MC service user's username and password, the IdM server authenticates the MC service user and:

NOTE 2: Other methods of authentication can be used by the MC service provider and are not defined by the OIDC specifications. 3GPP TS 33.180 [17] has defined username and password as a mandatory authentication method to be supported for MC services, hence a procedure to realize that method is included here.

1) shall generate an OIDC Authentication Response message as specified in OpenID Connect 1.0 [6] and IETF RFC 6749 [5] with the following clarifications:

a) shall generate an HTTP 302 (FOUND) response according to IETF RFC 2616 [4]; and

b) shall include the required parameters including the authorization_code as specified in 3GPP TS 33.180 [17] in the query component of the redirection URI contained in the Location header field of the HTTP FOUND request method using the "application/x-www-form-urlencoded" format as specified in W3C.REC-html401-19991224 [7]; and

2) shall send the HTTP 302 (FOUND) response towards the IdM client.

Upon receipt of an OIDC Token Request message via a secure TLS tunnel established between the identity management client and the token endpoint of the IdM server, the IdM server:

1) shall validate the OIDC Token Request message and if valid shall generate an OIDC Token Response message as specified in OpenID Connect 1.0 [6] and IETF RFC 6749 [5] with the following clarifications:

a) shall generate an HTTP 200 (OK) response according to IETF RFC 2616 [4];

b) shall based on the received MC ID obtained from the received user authentication credentials, determine the MC service ID of the MC service user;

c) shall include an id_token, access_token and refresh_token and MC service ID as specified in 3GPP TS 33.180 [17]; and

d) shall include the other required parameters as specified in OpenID Connect 1.0 [6] and IETF RFC 6749 [5]; and

2) shall send the HTTP 200 (OK) response towards the IdM client.

6.3.2 Token exchange procedure

Upon receipt of an Token Exchange Request message as specified in draft-ietf-oauth-token-exchange [18] via a secure TLS tunnel between the identity management client and the token endpoint of the IdM server, the IdM server:

1) shall validate the received Token Exchange Request message as specified in draft-ietf-oauth-token-exchange [18];

2) shall generate a Token Exchange Response message as specified in draft-ietf-oauth-token-exchange [18] and IETF RFC 6749 [5] with the following clarifications:

   a) shall generate an HTTP 200 (OK) response to the received Token Exchange Request message according to IETF RFC 2616 [4]; and

   b) include the parameters specified in subclause B.6.3 of 3GPP TS 33.180 [33180] serialized into a JavaScript Object Notation (JSON) structure as specified in draft-ietf-oauth-token-exchange [18] and IETF RFC 7159 [20]; and

3) shall send the HTTP 200 (OK) response towards the IdM client.

6.3.3 Token request from an IdM client to a partner system

Upon receipt of an OIDC Token Request message via a secure TLS tunnel established between the identity management client and the token endpoint of the IdM server, the IdM server:

1) shall validate the Token Request message and the included access token and if valid shall generate a Token Response message as specified in OpenID Connect 1.0 [6] and IETF RFC 6749 [5] with the following clarifications:

NOTE: The access token referred to in step 1) is the security token provided by the home IdM server by the procedures of subclause 6.3.2.

   a) shall generate an HTTP 200 (OK) response according to IETF RFC 2616 [4];

   b) shall include an id_token, access_token and refresh_token and MCPTT ID as specified in 3GPP TS 33.180 [33180]; and

   c) shall include the other required parameters as specified in OpenID Connect 1.0 [6] and IETF RFC 6749 [5]; and

2) shall send the HTTP 200 (OK) response towards the IdM client.

7 Inter/intra domain interface security

Inter/intra domain interface security shall be provided as specified in 3GPP TS 33.180 [17];

Annex A (normative): HTTP entities

A.1 Scope

This annex describes the functionality expected from the HTTP entities (i.e. the HTTP client, the HTTP proxy and the HTTP server) defined by 3GPP TS 23.280 [16] and 3GPP TS 33.179 [2].

A.2 Procedures

A.2.1 HTTP client

A.2.1.1 General

The HTTP client in the UE shall support the client role defined in IETF RFC 2616 [4].

A.2.1.2 HTTP client in UE

The HTTP client in the UE shall support the client role defined in IETF RFC 2818 [10].

The HTTP client in the UE shall support transport layer security (TLS) as specified in 3GPP TS 33.180 [17].

The HTTP client in the UE is configured with the following parameters:

1) a home HTTP proxy FQDN;
2) a home HTTP proxy port;
3) a TLS tunnel authentication method. The TLS tunnel authentication method parameter is set to one of the following:
   a) one-way authentication of the HTTP proxy based on the server certificate;
   b) mutual authentication based on certificates; and
   c) mutual authentication based on pre-shared key;

   as specified in 3GPP TS 33.180 [17];
4) if the TLS tunnel authentication method is the mutual authentication based on certificates:
   a) TLS tunnel authentication X.509 certificate; and
5) if the TLS tunnel authentication method is the mutual authentication based on pre-shared key;
   a) TLS tunnel authentication pre-shared key.

The HTTP client in the UE shall establish a TCP connection towards the home HTTP proxy FQDN and the home HTTP proxy port, unless the specific TCP connection is to be used for the IdM client to IdM server procedures described in subclause 6.2 and subclause 6.3 in the present document, in which case the HTTP client shall establish a TCP connection towards the IdM server.

The HTTP client in the UE shall establish a TLS tunnel via the TCP connection as specified in 3GPP TS 33.180 [17]. When establishing the TLS tunnel, the HTTP client in the UE shall act as a TLS client and the UE shall perform the TLS tunnel authentication using the TLS authentication method indicated by the TLS tunnel authentication method parameter according to 3GPP TS 33.180 [17]. The UE shall use the configured TLS tunnel authentication X.509 certificate and the configured TLS tunnel authentication pre-shared key when applicable for the used TLS

authentication method. In order to prevent man-in-the-middle attacks, the HTTP client in the UE shall check the home HTTP proxy FQDN against the server's identity as presented in the received server's certificate message if the TCP connection terminates on the HTTP proxy. The HTTP client in the UE shall not check the portion of dereferenced HTTP URL against the server's identity as presented in the received server's certificate message if the TCP connection terminates on the HTTP proxy, but shall do so if the TCP connection terminates on the IdM server.

NOTE: The TLS tunnel can be terminated in the HTTP proxy (rather than in the HTTP server providing the dereferenced HTTP URL).

The HTTP client in the UE shall send and receive all HTTP messages via the TLS tunnel.

If the HTTP client in the UE has an access token of the "bearer" token type as specified in IETF RFC 6750 [14], the HTTP client in the UE shall include an Authorization header field with the "Bearer" authentication scheme as specified in IETF RFC 6750 [14] in HTTP requests.

A.2.1.3 HTTP client in network entity

The HTTP client in the network entity is configured with the following parameters:

1) a home HTTP proxy FQDN; and

2) a home HTTP proxy port.

The HTTP client in the network entity shall send and receive all HTTP messages via the home HTTP proxy.

The HTTP client in the network entity shall insert an X-3GPP-Asserted-Identity header field as specified in 3GPP TS 24.109 [15] in the HTTP request and shall set X-3GPP-Asserted-Identity header field to the identity of the HTTP client in the network entity. The identity of the HTTP client in the network entity can be a public service identity, an MC service group ID, or an MC service ID.

A.2.2 HTTP proxy

A.2.2.1 General

The HTTP proxy shall support proxy role of IETF RFC 2616 [4].

A.2.2.2 HTTP request method from HTTP client in UE

The HTTP proxy shall support the server role of IETF RFC 2616 [4], and IETF RFC 2818 [10].

The HTTP proxy shall support transport layer security (TLS) as specified in 3GPP TS 33.180 [17].

The HTTP proxy is configured with the following HTTP proxy parameters:

1) an FQDN of an HTTP proxy for UEs; and

2) a TCP port of an HTTP proxy for UEs.

The HTTP proxy shall support establishing TCP connections on the FQDN of HTTP proxy for UEs and the TCP port of HTTP proxy for UEs. The HTTP proxy shall support establishing a TLS tunnel via each such TCP connection as specified in 3GPP TS 33.180 [17]. When establishing the TLS tunnel, the HTTP proxy shall act as TLS server.

Upon reception of an HTTP request method via a TLS tunnel:

1) if the HTTP request method contains an X-3GPP-Asserted-Identity header field as specified in 3GPP TS 24.109 [15], the HTTP proxy shall reject the HTTP request method with an HTTP 403 (Forbidden) response and do not continue with rest of the steps;

2) if the HTTP request method contains a Request-URI identifying a resource in a partner's MC serviceprovider, the HTTP proxy shall forward the HTTP request method according to the Request-URI; and

3) if an HTTP request method contains a Request-URI identifying a resource in own MC service provider, the HTTP proxy shall act as reverse proxy for the HTTP request method and shall forward the HTTP request method according to the MCPTT provider policy.

A.2.2.3 HTTP request method from HTTP client in network entity within trust domain

The HTTP proxy is configured with the following parameters:

1) a FQDN of an HTTP proxy for trusted entities; and

2) a TCP port of an HTTP proxy for trusted entities.

Upon receiving an HTTP request method via a TCP connection established on the FQDN of HTTP proxy for UEs and the TCP port of HTTP proxy for UEs, if the TCP connection is between network elements within trusted domain as specified in 3GPP TS 33.180 [17]:

1) if the HTTP request method contains a Request-URI identifying a resource in a partner's MC service provider, the HTTP proxy shall forward the HTTP request method according to the Request-URI; and

2) if an HTTP request method contains Request-URI identifying a resource in own MC service provider, the HTTP proxy shall act as reverse proxy for the HTTP request method and shall forward the HTTP request method according to MC service provider policy.

A.2.3 HTTP server

The HTTP server shall support the server role of IETF RFC 2616 [4].

Upon reception of an HTTP request:

1) if the received HTTP request does not contain an Authorization header field with the "Bearer" authentication scheme and a bearer access token as specified in IETF RFC 6750 [14] and the received HTTP request does not contain an X-3GPP-Asserted-Identity header field as specified in 3GPP TS 24.109 [15], the HTTP server shall reject the request with HTTP 403 (Forbidden) response;

2) if the received HTTP request contains an Authorization header field with the "Bearer" authentication scheme and a bearer access token as specified in IETF RFC 6750 [14];

   a) the HTTP server shall validate the bearer access token as specified in IETF RFC 6750 [14]; and

   b) the HTTP server shall consider the MC service ID derived from the bearer access token as the identity of the sender of the HTTP request; and

3) if the received HTTP request does not contain an Authorization header field with the "Bearer" authentication scheme and a bearer access token as specified in IETF RFC 6750 [14] and the received HTTP request contains an X-3GPP-Asserted-Identity header field as specified in 3GPP TS 24.109 [15], the HTTP server shall consider the URI in the X-3GPP-Asserted-Identity header field as the identity of the sender of the HTTP request.

Annex B (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
2015-07					Initial proposal to CT1#92-bis	-	0.0.0
2015-08					Contains the following agreed P-CRs from CT1#92-bis: C1ah-150013, C1ah-150033 Minor alignments by the rapporteur.	0.0.0	0.1.0
2015-09					Updated to include specification number after CT#69 allocation.	0.1.0	0.1.1
2016-02					Contains the following agreed P-CRs from CT1-on MCPTT: C1ah-160030, C1ah-160105, C1ah-160103, C1ah-160088	0.1.1	0.2.0
2016-02					Contains the following agreed P-CRs from CT1#96: C1-161040, C1-161222, C1-161228, C1-161229, C1-161260, C1-161300, C1-161301, C1-161388	0.2.0	0.3.0
2016-03	CT-71	CP-160055			Version 1.0.0 created for presentation for information and approval	0.3.0	1.0.0
2016-03	CT-71				Version 13.0.0 created after approval	1.0.0	13.0.0
2016-03	CT-71				Minor editorial changes by TS rapporteur	13.0.0	13.0.1
2016-06	CT-72	CP-160322	0001	1	Corrections for HTTP server authenticating HTTP client	13.0.1	13.1.0
2016-06	CT-72	CP-160322	0002		User authentication procedure corrections	13.0.1	13.1.0
2016-06	CT-72	CP-160322	0003		Correction of IdM client to IdM server interface	13.0.1	13.1.0
2016-12	CT#74				Change of spec number from 24.382 to 24.482 with wider scope and changed title	24.382 13.1.0	24.482 13.1.1

Change history							
Date	**Meeting**	**TDoc**	**CR**	**Rev**	**Cat**	**Subject/Comment**	**New version**
2016-12	CT-74	CP-160733	0005		F	Identity Management endpoint correction (this was a CR to 24.382)	13.2.0
2017-03	CT-75	CP-170053	0002		F	Scope TS naming adaptation for R13 24.482	13.3.0
2017-03	CT-75	CP-170127	0001		F	Modifying references in TS 24.482 to cater for rel-14 Stage 2 and Stage 3 mission critical restructure	14.0.0
2017-06	CT-76	CP-171114	0003	1	B	Updating subclause 4.1 for multi MC service applicability	14.1.0
2017-06	CT-76	CP-171114	0004	1	B	Security stage 2 reference change, additional definitions and abbreviations for R14 IdM	14.1.0
2017-06	CT-76	CP-171114	0005	1	B	Updated Entities subclauses for IdM	14.1.0
2017-06	CT-76	CP-171114	0006	1	B	Updated client procedures for IdM	14.1.0
2017-06	CT-76	CP-171114	0007	2	B	Updated server procedures for IdM	14.1.0
2017-06	CT-76	CP-171114	0008	1	B	Updated clause 7 and Annex A for IdM	14.1.0
2017-06	CT-76	CP-171114	0009	2	B	Addition of token exchange procedures	14.1.0

History

Document history		
V14.0.0	April 2017	Publication
V14.1.0	July 2017	Publication