**3GPP TSG-CT WG1 Meeting #148 *draft3*C1-242846**

**Changsha, China, 15 - 19 April 2024 (*was C1-242175*)**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **24.281** | **CR** | **0251** | **rev** | **1** | **Current version:** | **18.5.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network |  | Core Network | **x** |

|  |
| --- |
|  |
| ***Title:***  | Location information request with location filter |
|  |  |
| ***Source to WG:*** | AT&T |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | enh4MCPTT |  | ***Date:*** | 2024-04-04 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-18 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | When a first responder requests location information reports from other MC users, it is very desirable to be able to specify that (s)he should get reports only from users that are within the same jurisdiction, or within the public safety incident area, or in relative proximity. This CR adds enables this functionality. |
|  |  |
| ***Summary of change:*** | The proposed capability enables MC Video client to request and receive location information reports only from MCVideo clients located inside or outside a fixed, pre-specified geographic area. As described in TS 23.032, the geographical area can be polygonal or circular. If both the requesting and requested MCVideo client are inside a circular area of known radius R, the distance between the two MCVideo clients will be less than 2R, thus allowing the requesting MCVideo client to get location reports only from MCVideo users in its proximity (i.e., within a known distance). 1. The requesting user specifies the area of interest based on which sending location reports should be subject to location filtering.
2. The participating servers, using the location information of requested users under their control, determine if the filtering criteria is met and send (or not) location information reports to the requesting user.

In addition, errors in reference numbers, editorials and punctuation are fixed, in the sections already impacted by the enhancements. |
|  |  |
| ***Consequences if not approved:*** | Excessive signalling and processing as potentially many remote or out of incident area or out of jurisdiction UEs send their information to the requesting UE. This missing capability would make using the location package unattractive and non-optimal. |
|  |  |
| ***Clauses affected:*** | 18.2.3.2, 18.2.3.3, 18.3.3.2, F.3.2, F.3.3 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **x** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

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

#### 18.2.3.2 Location information request from authorized MCVideo client

Upon receiving a SIP MESSAGE containing a location information request from an MCVideo client, the participating MCVideo function:

1) if unable to process the request due to a lack of resources or if a risk of congestion exists, may reject the SIP MESSAGE request with a SIP 500 (Server Internal Error) response, may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [15] and shall skip the rest of the steps;

2) shall determine the MCVideo ID of the requesting user from public user identity in the P-Asserted-Identity header field of the SIP MESSAGE request;

NOTE 1: The MCVideo ID of the requesting user is bound to the public user identity at the time of service authorisation, as documented in clause 7.3.

3) if the participating MCVideo function cannot find a binding between the public user identity and an MCVideo ID or if the validity period of an existing binding has expired, then the participating MCVideo function shall reject the SIP MESSAGE request with a SIP 404 (Not Found) response with the warning text set to "141 user unknown to the participating function" in a Warning header field as specified in clause 4.4, and shall not continue with any of the remaining steps;

4) if the incoming SIP MESSAGE request does not contain an application/resource-lists+xml MIME body, shall reject the SIP MESSAGE request with a SIP 403 (Forbidden) response including warning text set to "aaa Invalid location request target client list " in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

5) shall check if the MC user is authorized to send a location information request and if the MC user is not authorized, reject the SIP MESSAGE request with a SIP 403 (Forbidden) response including a warning text set to "bbb user not authorized to request location information" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

NOTE 2: How the participating function determine if the MC user is authorized to send location information request is out of scope of the current specification.

6) shall generate and send a SIP 200 OK response to the SIP MESSAGE request according to 3GPP TS 24.229 [11]; and

7) for each requested MCVideo client identified by the "uri" attribute of each <entry> element of a <list> element of the <resource-lists> element of an application/resource-lists+xml MIME body shall perform the following:

a) if the requested MCVideo client location information is not managed by the current participating function, determine the public service identity of the participating MCVideo function serving the requested MCVideo client location information and send a copy of the received SIP MESSAGE request with the following modifications; or

NOTE 3: How to determine the public service identity of the participating function is out of scope of the current specification.

i) set the Request-URI to the public service identity of the participating MCVideo function handling the requested MC user location information;

ii) update the application/resource-lists+xml MIME body to only include the requested MC user;

iii) send the SIP MESSAGE request as specified to 3GPP TS 24.229 [11]; and

iv) skip the remaining steps in this procedure; and

b) if the requested MCVideo client location information is managed by the current participating MCVideo function, perform the following:

i) evaluate if the requested MC user has authorized providing the requested MC user's location information to requesting MC user, and if the authorization is not successful, silently ignore the request and not continue with the remaining steps in this sub clause for this requested MCVideo client;

NOTE 4: How the requested MCVideo client authorizes sharing of location information with the requesting MC user is out of scope of the current specification.

ii) if the participating MCVideo function does not have any location information stored about the requested MCVideo client or if the "refresh" attribute is set to "true" in the <Request> element in the application/vnd.3gpp.mcvideo-location-info+xml MIME body, then the participating MCVideo function shall request an immediate update of the location information from the requested MCVideo client by sending a location information request according to clause 18.2.3.1, wait for the location information report from the MCVideo client for an implementation dependent period of time, and when received, store/update the reported location information.

iii) if the participating MCVideo function have location information stored but the information is older than an implementation dependent value, then the participating MCVideo function shall request an immediate update of the location information from the requested MCVideo client by sending a location information request according to clause 18.2.3.1, wait for the location information report from the MCVideo client for an implementation dependent period of time, and, when received, store/update the reported location information.

iv) if the <Request> element in the application/vnd.3gpp.mcvideo-location-info+xml MIME body in the received SIP MESSAGE contains a <LocationFilter> element of its <anyExt> element of "location‑info", then the participating MCVideo function:

A) if the <AreaIn> sub-element of the <LocationFilter> element of the <anyExt> element of "location‑info" is set to "true" and the requested MCVideo client is outside the geographical area identified by the TriggerId content of the <AreaIdentifier> sub-element of the <LocationFilter> element of the <anyExt> element of "location‑info", skip the remaining steps in this procedure; or

B) if the <AreaIn> sub-element of the <LocationFilter> element of the <anyExt> element of "location‑info" is set to "false" and the requested MCVideo client is inside the geographical area identified by the TriggerId content of the <AreaIdentifier> sub-element of the <LocationFilter> element of the <anyExt> element of "location‑info", skip the remaining steps in this procedure; andv) generate an outgoing SIP MESSAGE request in accordance with 3GPP TS 24.229 [11] and IETF RFC 3428 [17], according to the following.

A) set the Request-URI of the SIP MESSAGE to the public user identity bound to the MCVideo ID of the requesting user;

B) include an application/vnd.3gpp.mcvideo-location-info+xml MIME body and in the <location-info> root element include a <Report> element and include the <ReportID> attribute set to the value of the <RequestID> attribute in the received request;

C) in the application/vnd.3gpp.mcvideo-location-info+xml MIME body include current location information of the requested MCVideo client in the <CurrentLocation> element in the <Report> element;

NOTE 5: The type of location information reported (e.g. cell id, geographical coordinates) is based on location information configuration and implementation.

D) in the application/vnd.3gpp.mcvideo-location-info+xml MIME body include the MCVideo ID of the requested MCVideo client in the <mcvideo-reporting-uri> element in the <Report> element; and

E) send the SIP MESSAGE request as specified in 3GPP TS 24.229 [11].

#### 18.2.3.3 Location information request from another MCVideo server

Upon receiving a SIP MESSAGE containing a location information request from an another MCVideo server, the participating MCVideo function:

1) if unable to process the request due to a lack of resources or if a risk of congestion exists, may reject the SIP MESSAGE request with a SIP 500 (Server Internal Error) response, may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [15] and shall skip the rest of the steps;

2) shall determine the MCVideo ID of the requesting user from public user identity in the P-Asserted-Identity header field of the SIP MESSAGE request;

NOTE 1: The MCVideo ID of the requesting user is bound to the public user identity at the time of service authorisation, as documented in clause 7.3.

3) shall generate and send a SIP 200 OK response to the SIP MESSAGE request according to 3GPP TS 24.229 [11]; and

4) for each requested MCVideo client identified by the "uri" attribute of each <entry> element of a <list> element of the <resource-lists> element of an application/resource-lists+xml MIME body shall perform the following:

i) evaluate if the requested MC user has authorized providing the requested MC user's location information to requesting MC user, and if the authorization is not successful, silently ignore the request and not continue with the remaining steps in this sub clause for this requested MCVideo client; and

NOTE 2: How the requested MCVideo client authorizes sharing of location information with the requesting MC user is out of scope of the current specification.

ii) if the participating MCVideo function does not have any location information stored about the requested MCVideo client or if the "refresh" attribute is set to true in the <Request> element in the application/vnd.3gpp.mcvideo-location-info+xml MIME body then the participating MCVideo function shall request an immediate update of the location information from the requested MCVideo client by sending a location information request according to clause 18.2.3.1, wait for the location information report from the MCVideo client for an implementation dependent period of time, and, when received, store/update the reported location information.

iii) if the participating MCVideo function have location information stored but the information is older than an implementation dependent value then the participating MCVideo function shall request an immediate update of the location information from the requested MCVideo client by sending a location information request according to clause 18.2.3.1, wait for the location information report from the MCVideo client for an implementation dependent period of time, and, when received, store/update the reported location information.

iv) if the <Request> element in the application/vnd.3gpp.mcvideo-location-info+xml MIME body in the received SIP MESSAGE contains a <LocationFilter> element of its <anyExt> element of "location‑info", then the participating MCVideo function:

A) if the <AreaIn> sub-element of the <LocationFilter> element of the <anyExt> element of "location‑info" is set to "true" and the requested MCVideo client is outside the geographical area identified by the TriggerId content of the <AreaIdentifier> sub-element of the <LocationFilter> element of the <anyExt> element of "location‑info", skip the remaining steps in this procedure; or

B) if the <AreaIn> sub-element of the <LocationFilter> element of the <anyExt> element of "location‑info" is set to "false" and the requested MCVideo client is inside the geographical area identified by the TriggerId content of the <AreaIdentifier> sub-element of the <LocationFilter> element of the <anyExt> element of "location‑info", skip the remaining steps in this procedure; andv) generate an outgoing SIP MESSAGE request in accordance with 3GPP TS 24.229 [11] and IETF RFC 3428 [17], according to the following:

A) set the Request-URI of the SIP MESSAGE to the public service identity of the participating MCVideo function associated to the requesting MCVideo user;

B) include an application/vnd.3gpp.mcvideo-location-info+xml MIME body and in the <location-info> root element include a <Report> element and include the <ReportID> attribute set to the value of the <RequestID> attribute in the received request;

C) in the application/vnd.3gpp.mcvideo-location-info+xml MIME body include current location information of the requested MCVideo client in the <CurrentLocation> element in the <Report> element;

NOTE 3: The type of location information reported (e.g. cell id, geographical coordinates) is based on location information configuration and implementation.

D) in the application/vnd.3gpp.mcvideo-location-info+xml MIME body include the MCVideo ID of the requested MCVideo client in the <mcvideo-reporting-uri> element in the <Report> element; and

E) send the SIP MESSAGE request as specified in 3GPP TS 24.229 [11].

\* \* \* \* Next Change \* \* \* \*

#### 18.3.3.2 Location information request from authorized MCVideo client

If a MC user needs to request the location information for one or several MCVideo clients the MCVideo client shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [11] and IETF RFC 3428 [17].

1) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcvideo" (coded as specified in 3GPP TS 24.229 [11]), in a P-Preferred-Service header field according to IETF RFC 6050 [14] in the SIP MESSAGE request;

2) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcvideo" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [20];

3) may include a P-Preferred-Identity header field in the SIP MESSAGE request containing a public user identity as specified in 3GPP TS 24.229 [11];

4) shall set the Request-URI to the public service identity identifying the participating MCVideo function serving the MCVideo user;

5) shall include in the "uri" attribute of each <entry> element of a <list> element of the <resource-lists> element of an application/resource-lists+xml MIME body set to the MCVideo ID of the requested MCVideo users for which location information is being requested, according to rules and procedures of IETF RFC 5366 [37];

6) shall include an application/vnd.3gpp.mcvideo-location-info+xml MIME body with a <Request> element identified with the <RequestId> attribute contained in the <location-info> root element;

NOTE: The value of the <RequestId> attribute is returned in the corresponding <ReportId> attribute in order to correlate the request and the reports.7) may include the "refresh" attribute set to "true" in the <Request> element in the application/vnd.3gpp.mcvideo-location-info+xml MIME body;

8) may include a <LocationFilter> element of the <anyExt> element of "location‑info" together with the <Request> element in the application/vnd.3gpp.mcvideo-location-info+xml MIME body, with the sub-elements of the <LocationFilter> element of the <anyExt> element of "location‑info" set as follows:

i) the sub-element <AreaIdentifier> set to the TriggerId associated to the specific geographical area; and

ii) the <AreaIn> sub-element set to "true", for restricting the request to the requested MCVideo user being inside the geographical area, or to "false", for restricting the request to the requested MCVideo user being outside the geographical area; and

9) shall send the SIP MESSAGE request as specified in 3GPP TS 24.229 [11].

\* \* \* \* Next Change \* \* \* \*

## F.3.2 XML schema

<?xml version="1.0" encoding="UTF-8"?>

<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:mcvideoloc="urn:3gpp:ns:mcvideoLocationInfo:1.0" targetNamespace="urn:3gpp:ns:mcvideoLocationInfo:1.0" elementFormDefault="qualified" attributeFormDefault="unqualified"

xmlns:xenc="http://www.w3.org/2001/04/xmlenc#">

 <xs:import namespace="http://www.w3.org/2001/04/xmlenc#"/>

 <xs:element name="location-info" id="loc">

 <xs:annotation>

 <xs:documentation>Root element, contains all information related to location configuration, location request and location reporting for the MCVideo service</xs:documentation>

 </xs:annotation>

 <xs:complexType>

 <xs:choice>

 <xs:element name="Configuration" type="mcvideoloc:tConfigurationType"/>

 <xs:element name="Request" type="mcvideoloc:tRequestType"/>

 <xs:element name="Report" type="mcvideoloc:tReportType"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:choice>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 </xs:element>

 <xs:complexType name="tConfigurationType">

 <xs:sequence>

 <xs:element name="NonEmergencyLocationInformation" type="mcvideoloc:tRequestedLocationType" minOccurs="0"/>

 <xs:element name="EmergencyLocationInformation" type="mcvideoloc:tRequestedLocationType" minOccurs="0"/>

 <xs:element name="TriggeringCriteria" type="mcvideoloc:TriggeringCriteriaType"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:attribute name="ConfigScope">

 <xs:simpleType>

 <xs:restriction base="xs:string">

 <xs:enumeration value="Full"/>

 <xs:enumeration value="Update"/>

 </xs:restriction>

 </xs:simpleType>

 </xs:attribute>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="tLocationFilterType">

 <xs:sequence>

 <xs:element name="AreaIdentifier" type="xs:string"/>

 <xs:element name="AreaIn" type="xs:boolean"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="tRequestType">

 <xs:complexContent>

 <xs:extension base="mcvideoloc:tEmptyType">

 <xs:attribute name="RequestId" type="xs:string" use="required"/>

 <xs:attribute name="refresh" type="xs:boolean" use="optional"/>

 </xs:extension>

 </xs:complexContent>

 <!-- xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/ -->

 <!-- xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/ -->

 </xs:complexType>

 <!—Add a new element, conceptually to the "tRequestType" -->

 <xs:element name="LocationFilter" type="mcvideoloc:tLocationFilterType"/>

 <xs:complexType name="tReportType">

 <xs:sequence>

 <xs:element name="TriggerId" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="mcvideo-reporting-uri" type="xs:anyURI" minOccurs="0"/>

 <xs:element name="CurrentLocation" type="mcvideoloc:tCurrentLocationType"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:attribute name="ReportID" type="xs:string" use="optional"/>

 <xs:attribute name="ReportType" use="required">

 <xs:simpleType>

 <xs:restriction base="xs:string">

 <xs:enumeration value="Emergency"/>

 <xs:enumeration value="NonEmergency"/>

 </xs:restriction>

 </xs:simpleType>

 </xs:attribute>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <!-- BearingAndSpeed includes current azimuth, horizontal and vertical velocities, with speed uncertainties, defined and encoded per TS 23.032 section 8.15 -->

 <xs:complexType name="tBearingAndSpeedType">

 <xs:sequence>

 <xs:element name="BearingAndSpeed" type="mcvideoloc:BearingAndSpeedFormat"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:simpleType name="BearingAndSpeedFormat">

 <xs:restriction base="xs:string">

 <xs:pattern value="^[A-Fa-f0-9]{14}$"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:complexType name="TriggeringCriteriaType">

 <xs:sequence>

 <xs:element name="CellChange" type="mcvideoloc:tCellChange" minOccurs="0"/>

 <xs:element name="TrackingAreaChange" type="mcvideoloc:tTrackingAreaChangeType" minOccurs="0"/>

 <xs:element name="PlmnChange" type="mcvideoloc:tPlmnChangeType" minOccurs="0"/>

 <xs:element name="MbmsSaChange" type="mcvideoloc:tMbmsSaChangeType" minOccurs="0"/>

 <xs:element name="MbsfnAreaChange" type="mcvideoloc:tMbsfnAreaChangeType" minOccurs="0"/>

 <xs:element name="PeriodicReport" type="mcvideoloc:tIntegerAttributeType" minOccurs="0"/>

 <xs:element name="TravelledDistance" type="mcvideoloc:tIntegerAttributeType" minOccurs="0"/>

 <xs:element name="McvideoSignallingEvent" type="mcvideoloc:tSignallingEventType" minOccurs="0"/>

 <xs:element name="GeographicalAreaChange" type="mcvideoloc:tGeographicalAreaChange"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <!-- anyExt elements for "TriggeringCriteriaType" including 5G MBS Frequency Selection Area -->

 <xs:element name="RatTypeChange" type="mcvideoloc:tRatTypeChange"/>

 <xs:element name="5GMbsfsaAreaChange" type="mcvideoloc:t5GMbsfsaAreaChangeType"/>

 <xs:element name="5GTrackingAreaChange" type="mcvideoloc:t5GTrackingAreaChangeType"/>

 <xs:element name="AddaptiveTrigger" type="mcvideoloc:tAdaptiveTriggerType"/>

 <!-- For adaptive behavior based on time & distance combination & the 5G RRC state of the UE -->

 <xs:complexType name="tAdaptiveTriggerType">

 <xs:sequence>

 <xs:element name="MinPeriod" type="mcvideoloc:tIntegerAttributeType" minOccurs="0"/>

 <xs:element name="MinDistance" type="xs:positiveInteger" minOccurs="0"/>

 <xs:element name="PersistencePeriod" type="mcvideoloc:tIntegerAttributeType" minOccurs="0"/>

 <xs:element name="AdditionalTime" type="xs:positiveInteger" minOccurs="0"/>

 <xs:element name="RRC\_INACTIVE\_MinPeriod" type="mcvideoloc:tIntegerAttributeType" minOccurs="0"/>

 <xs:element name="RRC\_INACTIVE\_MinDistance" type="mcvideoloc:tIntegerAttributeType" minOccurs="0"/>

 <xs:element name=" RRC\_INACTIVE\_PersistencePeriod" type="mcvideoloc:tIntegerAttributeType" minOccurs="0"/>

 <xs:element name="RRC\_INACTIVE\_AdditionalTime" type="mcvideoloc:tIntegerAttributeType" minOccurs="0"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:attribute name="TriggerId" type="xs:string" use="required"/>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="tCellChange">

 <xs:sequence>

 <xs:element name="AnyCellChange" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

 <xs:element name="EnterSpecificCell" type="mcvideoloc:tSpecificCellType" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="ExitSpecificCell" type="mcvideoloc:tSpecificCellType" minOccurs="0" maxOccurs="unbounded"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <!-- anyExt elements for "tCellChange" -->

 <xs:element name="EnterSpecificNRCell" type="mcvideoloc:tSpecificNRCellType"/>

 <xs:element name="ExitSpecificNRCell" type="mcvideoloc:tSpecificNRCellType"/>

 <xs:complexType name="tEmptyType"/>

 <xs:simpleType name="tEcgi">

 <xs:restriction base="xs:string">

 <xs:pattern value="\d{3}\d{3}[0-1]{28}"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:simpleType name="tNcgi">

 <xs:restriction base="xs:string">

 <xs:pattern value="\d{3}\d{3}[0-1]{36}"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:complexType name="tSpecificCellType">

 <xs:simpleContent>

 <xs:extension base="mcvideoloc:tEcgi">

 <xs:attribute name="TriggerId" type="xs:string" use="required"/>

 </xs:extension>

 </xs:simpleContent>

 </xs:complexType>

 <xs:complexType name="tSpecificNRCellType">

 <xs:simpleContent>

 <xs:extension base="mcvideoloc:tNcgi">

 <xs:attribute name="TriggerId" type="xs:string" use="required"/>

 </xs:extension>

 </xs:simpleContent>

 </xs:complexType>

 <xs:complexType name="tEmptyTypeAttribute">

 <xs:complexContent>

 <xs:extension base="mcvideoloc:tEmptyType">

 <xs:attribute name="TriggerId" type="xs:string" use="required"/>

 </xs:extension>

 </xs:complexContent>

 </xs:complexType>

 <xs:complexType name="tTrackingAreaChangeType">

 <xs:sequence>

 <xs:element name="AnyTrackingAreaChange" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

 <xs:element name="EnterSpecificTrackingArea" type="mcvideoloc:tTrackingAreaIdentity" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="ExitSpecificTrackingArea" type="mcvideoloc:tTrackingAreaIdentity" minOccurs="0" maxOccurs="unbounded"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="t5GTrackingAreaChangeType">

 <xs:sequence>

 <xs:element name="Any5GTrackingAreaChange" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

 <xs:element name="EnterSpecific5GTrackingArea" type="mcvideoloc:t5GTrackingAreaIdentity" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="ExitSpecific5GTrackingArea" type="mcvideoloc:t5GTrackingAreaIdentity" minOccurs="0" maxOccurs="unbounded"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:simpleType name="tTrackingAreaIdentityFormat">

 <xs:restriction base="xs:string">

 <xs:pattern value="\d{3}\d{3}[0-1]{16}"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:complexType name="tTrackingAreaIdentity">

 <xs:simpleContent>

 <xs:extension base="mcvideoloc:tTrackingAreaIdentityFormat">

 <xs:attribute name="TriggerId" type="xs:string" use="required"/>

 </xs:extension>

 </xs:simpleContent>

 </xs:complexType>

 <xs:simpleType name="t5GTrackingAreaIdentityFormat">

 <xs:restriction base="xs:string">

 <xs:pattern value="(^[A-Fa-f0-9]{4}$)|(^[A-Fa-f0-9]{6}$)"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:complexType name="t5GTrackingAreaIdentity">

 <xs:simpleContent>

 <xs:extension base="mcvideoloc:t5GTrackingAreaIdentityFormat">

 <xs:attribute name="TriggerId" type="xs:string" use="required"/>

 </xs:extension>

 </xs:simpleContent>

 </xs:complexType>

 <xs:complexType name="tPlmnChangeType">

 <xs:sequence>

 <xs:element name="AnyPlmnChange" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

 <xs:element name="EnterSpecificPlmn" type="mcvideoloc:tPlmnIdentity" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="ExitSpecificPlmn" type="mcvideoloc:tPlmnIdentity" minOccurs="0" maxOccurs="unbounded"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:simpleType name="tPlmnIdentityFormat">

 <xs:restriction base="xs:string">

 <xs:pattern value="\d{3}\d{3}"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:complexType name="tPlmnIdentity">

 <xs:simpleContent>

 <xs:extension base="mcvideoloc:tPlmnIdentityFormat">

 <xs:attribute name="TriggerId" type="xs:string" use="required"/>

 </xs:extension>

 </xs:simpleContent>

 </xs:complexType>

 <xs:complexType name="t5GMbsfsaAreaChangeType">

 <xs:sequence>

 <xs:element name="EnterSpecific5GMbsfsaArea" type="mcvideoloc:t5GMbsfsaAreaIdentity" minOccurs="0"/>

 <xs:element name="ExitSpecific5GMbsfsaArea" type="mcvideoloc:t5GMbsfsaAreaIdentity" minOccurs="0"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="tMbmsSaChangeType">

 <xs:sequence>

 <xs:element name="AnyMbmsSaChange" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

 <xs:element name="EnterSpecificMbmsSa" type="mcvideoloc:tMbmsSaIdentity" minOccurs="0"/>

 <xs:element name="ExitSpecificMbmsSa" type="mcvideoloc:tMbmsSaIdentity" minOccurs="0"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:simpleType name="tMbmsSaIdentityFormat">

 <xs:restriction base="xs:integer">

 <xs:minInclusive value="0"/>

 <xs:maxInclusive value="65535"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:complexType name="tMbmsSaIdentity">

 <xs:simpleContent>

 <xs:extension base="mcvideoloc:tMbmsSaIdentityFormat">

 <xs:attribute name="TriggerId" type="xs:string" use="required"/>

 </xs:extension>

 </xs:simpleContent>

 </xs:complexType>

 <xs:complexType name="tMbsfnAreaChangeType">

 <xs:sequence>

 <xs:element name="EnterSpecificMbsfnArea" type="mcvideoloc:tMbsfnAreaIdentity" minOccurs="0"/>

 <xs:element name="ExitSpecificMbsfnArea" type="mcvideoloc:tMbsfnAreaIdentity" minOccurs="0"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:simpleType name="tMbsfnAreaIdentityFormat">

 <xs:restriction base="xs:integer">

 <xs:minInclusive value="0"/>

 <xs:maxInclusive value="255"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:simpleType name="t5GMbsfsaAreaIdentityFormat">

 <xs:restriction base="xs:string">

 <xs:pattern value="^[A-Fa-f0-9]{6}$"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:complexType name="tMbsfnAreaIdentity">

 <xs:simpleContent>

 <xs:extension base="mcvideoloc:tMbsfnAreaIdentityFormat">

 <xs:attribute name="TriggerId" type="xs:string" use="required"/>

 </xs:extension>

 </xs:simpleContent>

 </xs:complexType>

 <xs:complexType name="t5GMbsfsaAreaIdentity">

 <xs:simpleContent>

 <xs:extension base="mcvideoloc:t5GMbsfsaAreaIdentityFormat">

 <xs:attribute name="TriggerId" type="xs:string" use="required"/>

 </xs:extension>

 </xs:simpleContent>

 </xs:complexType>

 <xs:complexType name="tIntegerAttributeType">

 <xs:simpleContent>

 <xs:extension base="xs:integer">

 <xs:attribute name="TriggerId" type="xs:string" use="required"/>

 </xs:extension>

 </xs:simpleContent>

 </xs:complexType>

 <xs:complexType name="tTravelledDistanceType">

 <xs:sequence>

 <xs:element name="TravelledDistance" type="xs:positiveInteger"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="tSignallingEventType">

 <xs:sequence>

 <xs:element name="InitialLogOn" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

 <xs:element name="GroupCallNonEmergency" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

 <xs:element name="PrivateCallNonEmergency" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

 <xs:element name="LocationConfigurationReceived" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <!-- anyExt elements for "tSignallingEventType" -->

 <xs:element name="FunctionalAliasActivation" type="mcvideoloc:tEmptyTypeAttribute"/>

 <xs:element name="FunctionalAliasDeactivation" type="mcvideoloc:tEmptyTypeAttribute"/>

 <xs:complexType name="tEmergencyEventType">

 <xs:sequence>

 <xs:element name="GroupCallEmergency" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

 <xs:element name="GroupCallImminentPeril" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

 <xs:element name="PrivateCallEmergency" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

 <xs:element name="InitiateEmergencyAlert" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="tRequestedLocationType">

 <xs:sequence>

 <xs:element name="ServingEcgi" type="mcvideoloc:tEmptyType" minOccurs="0"/>

 <xs:element name="NeighbouringEcgi" type="mcvideoloc:tEmptyType" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="MbmsSaId" type="mcvideoloc:tEmptyType" minOccurs="0"/>

 <xs:element name="MbsfnArea" type="mcvideoloc:tEmptyType" minOccurs="0"/>

 <xs:element name="GeographicalCoordinate" type="mcvideoloc:tEmptyType" minOccurs="0"/>

 <xs:element name="minimumIntervalLength" type="xs:positiveInteger"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <!-- anyExt elements for "tRequestedLocationType" -->

 <xs:element name="ServingNcgi" type="mcvideoloc:tEmptyType"/>

 <xs:element name="NeighbouringNcgi" type="mcvideoloc:tEmptyType"/>

 <xs:element name="5GMbsfsaArea" type="mcvideoloc:tEmptyType"/>

 <xs:element name="R\_BearingAndSpeed" type="mcvideoloc:tEmptyType"/>

 <xs:complexType name="tCurrentLocationType">

 <xs:sequence>

 <xs:element name="CurrentServingEcgi" type="mcvideoloc:tLocationType" minOccurs="0"/>

 <xs:element name="NeighbouringEcgi" type="mcvideoloc:tLocationType" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="MbmsSaId" type="mcvideoloc:tLocationType" minOccurs="0"/>

 <xs:element name="MbsfnArea" type="mcvideoloc:tLocationType" minOccurs="0"/>

 <xs:element name="CurrentCoordinate" type="mcvideoloc:tPointCoordinate" minOccurs="0"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <!-- anyExt elements for "tCurrentLocationType" -->

 <xs:element name="CurrentServingNcgi" type="mcvideoloc:tLocationType"/>

 <xs:element name="CL\_NeighbouringNcgi" type="mcvideoloc:tLocationType"/>

 <xs:element name="CL\_5GMbsfsaArea" type="mcvideoloc:tLocationType"/>

 <xs:element name="CL\_BearingAndSpeed" type="mcvideoloc:tBearingAndSpeedType"/>

 <xs:element name="locTimestamp" type="xs:dateTime"/>

 <xs:element name="InterRatType" type="mcvideoloc:tInterRatType"/>

 <xs:simpleType name="tInterRatType">

 <xs:restriction base="xs:string">

 <xs:enumeration value="5G-MBS-to-LTE-MBMS"/>

 <xs:enumeration value="5G-MBS-to-LTE-unicast"/>

 <xs:enumeration value="LTE-MBMS-to-5G-MBS"/>

 <xs:enumeration value="LTE-MBMS-to-5G-unicast"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:simpleType name="protectionType">

 <xs:restriction base="xs:string">

 <xs:enumeration value="Normal"/>

 <xs:enumeration value="Encrypted"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:complexType name="tLocationType">

 <xs:choice minOccurs="1" maxOccurs="1">

 <xs:element name="Ecgi" type="mcvideoloc:tEcgi" minOccurs="0"/>

 <xs:element name="SaId" type="mcvideoloc:tMbmsSaIdentity" minOccurs="0"/>

 <xs:element name="MbsfnAreaId" type="mcvideoloc:tMbsfnAreaIdentity" minOccurs="0"/>

 <xs:any namespace="##other" processContents="lax"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:choice>

 <xs:attribute name="type" type="mcvideoloc:protectionType"/>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="tGeographicalAreaChange">

 <xs:sequence>

 <xs:element name="AnyAreaChange" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

 <xs:element name="EnterSpecificArea" type="mcvideoloc:tSpecificAreaType" minOccurs="0"/>

 <xs:element name="ExitSpecificArea" type="mcvideoloc:tSpecificAreaType" minOccurs="0"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="tSpecificAreaType">

 <xs:sequence>

 <xs:element name="GeographicalArea" type="mcvideoloc:tGeographicalAreaDef"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:attribute name="TriggerId" type="xs:string" use="required"/>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="tRatTypeChange">

 <xs:sequence>

 <xs:element name="AnyRatTypeChange" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="tPointCoordinate">

 <xs:sequence>

 <xs:element name="longitude" type="mcvideoloc:tCoordinateType"/>

 <xs:element name="latitude" type="mcvideoloc:tCoordinateType"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <!-- anyExt elements for "tPointCoordinate" -->

 <xs:element name="altitude" type="mcvideoloc:tCoordinateType2Bytes"/>

 <xs:element name="horizontalaccuracy" type="mcvideoloc:tCoordinateType1Byte"/>

 <xs:element name="verticalaccuracy" type="mcvideoloc:tCoordinateType1Byte"/>

 <xs:complexType name="tCoordinateType">

 <xs:choice minOccurs="1" maxOccurs="1">

 <xs:element name="threebytes" type="mcvideoloc:tThreeByteType" minOccurs="0"/>

 <xs:any namespace="##other" processContents="lax"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:choice>

 <xs:attribute name="type" type="mcvideoloc:protectionType"/>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="tCoordinateType2Bytes">

 <xs:choice minOccurs="1" maxOccurs="1">

 <xs:element name="twobytes" type="mcvideoloc:tTwoByteType" minOccurs="0"/>

 <xs:any namespace="##other" processContents="lax"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:choice>

 <xs:attribute name="type" type="mcvideoloc:protectionType"/>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="tCoordinateType1Byte">

 <xs:choice minOccurs="1" maxOccurs="1">

 <xs:element name="onebyteunsignedhalfrange" type="mcvideoloc:tOneByteUnsignedHalfRangeType" minOccurs="0"/>

 <xs:any namespace="##other" processContents="lax"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:choice>

 <xs:attribute name="type" type="mcvideoloc:protectionType"/>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:simpleType name="tThreeByteType">

 <xs:restriction base="xs:integer">

 <xs:minInclusive value="0"/>

 <xs:maxInclusive value="16777215"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:simpleType name="tTwoByteType">

 <xs:restriction base="xs:integer">

 <xs:minInclusive value="-32768"/>

 <xs:maxInclusive value="32767"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:simpleType name="tOneByteUnsignedHalfRangeType">

 <xs:restriction base="xs:integer">

 <xs:minInclusive value="0"/>

 <xs:maxInclusive value="127"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:complexType name="tGeographicalAreaDef">

 <xs:sequence>

 <xs:element name="PolygonArea" type="mcvideoloc:tPolygonAreaType" minOccurs="0"/>

 <xs:element name="EllipsoidArcArea" type="mcvideoloc:tEllipsoidArcType" minOccurs="0"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

<!-- anyExt elements for "tGeographicalAreaDef: optional borders widths in meters" -->

 <xs:element name="InnerBorderWidth" type="mcvideoloc:tOneByteUnsignedHalfRangeType"/>

 <xs:element name="OuterBorderWidth" type="mcvideoloc:tOneByteUnsignedHalfRangeType"/>

 <xs:complexType name="tPolygonAreaType">

 <xs:sequence>

 <xs:element name="Corner" type="mcvideoloc:tPointCoordinate" minOccurs="3" maxOccurs="15"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="tEllipsoidArcType">

 <xs:sequence>

 <xs:element name="Center" type="mcvideoloc:tPointCoordinate"/>

 <xs:element name="Radius" type="xs:nonNegativeInteger"/>

 <xs:element name="OffsetAngle" type="xs:unsignedByte"/>

 <xs:element name="IncludedAngle" type="xs:unsignedByte"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="anyExtType">

 <xs:sequence>

 <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 </xs:sequence>

 </xs:complexType>

 <!-- anyEXT elements for the Configuration element – begin -->

 <xs:element name="EmergencyTriggeringCriteria" type="mcvideoloc:TriggeringCriteriaType"/>

 <!-- anyEXT elements for the Configuration element – end -->

</xs:schema>

## F.3.3 Semantic

The <location-info> element is the root element of the XML document. The <location-info> element contains the <Configuration>, <Request> and <Report> sub-elements, of which only one can be present.

<Configuration> element has a <ConfigScope> attribute that can assume the values "Full" and "Update". The value "Full" means that the Configuration> element contains the full location configuration which replaces any previous location configuration. The value "Update" means that the location configuration is in addition to any previous location configuration. To remove configuration elements a "Full" configuration is needed. The <Configuration> element contains the following child elements:

1) <NonEmergencyLocationInformation>, an optional element that specifies the location information requested in non-emergency situations. The <NonEmergencyLocationInformation> has the sub-elements:

a) <ServingEcgi>, an optional element specifying that the serving E-UTRAN Cell Global Identity (ECGI) needs to be reported;

b) <NeighbouringEcgi>, an optional element that can occur multiple times, specifying that neighbouring ECGIs need to be reported;

c) <MbmsSaId>, an optional element specifying that the serving MBMS Service Area Id needs to be reported;

d) <MbsfnArea>, an optional element specifying that the MBSFN area Id needs to be reported;

e) <GeographicalCoordinate>, an optional element specifying that the geographical coordinate specified in clause 6.1 in 3GPP TS 23.032 [39] needs to be reported;

f) <minimumIntervalLength>, a mandatory element specifying the minimum time the MCVideo client needs to wait between sending location reports. The value is given in seconds;

g) <ServingNcgi>, an optional element of the <anyExt> element specifying that the serving NR Cell Global Identity (NCGI) needs to be reported;

h) <NeighbouringNcgi>, an optional element of the <anyExt> element that can occur multiple times, specifying that neighbouring NCGIs need to be reported;

i) <5GMbsfsaArea>, an optional element of the <anyExt> element specifying that the 5G MBS Frequency Selection Area Id needs to be reported; and

j) <R\_BearingAndSpeed>, an optional element of the <anyExt> element specifying that the BearingAndSpeed needs to be reported;

2) <EmergencyLocationInformation>, an optional element that specifies the location information requested in emergency situations. The <EmergencyLocationInformation> has the sub-elements:

a) <ServingEcgi>, an optional element specifying that the serving ECGI needs to be reported;

b) <NeighbouringEcgi>, an optional element that can occur multiple times, specifying that neighbouring ECGIs need to be reported;

c) <MbmsSaId>, an optional element specifying that the serving MBMS Service Area Id needs to be reported;

d) <MbsfnArea>, an optional element specifying that the MBSFN area Id needs to be reported;

e) <GeographicalCoordinate>, an optional element specifying that the geographical coordinate specified in clause 6.1 in 3GPP TS 23.032 [39] needs to be reported;

f) <minimumIntervalLength>, a mandatory element specifying the minimum time the MCVideo client needs to wait between sending location reports. The value is given in seconds;

g) <ServingNcgi>, an optional element of the <anyExt> element specifying that the serving NCGI needs to be reported;

h) <NeighbouringNcgi>, an optional element of the <anyExt> element that can occur multiple times, specifying that neighbouring NCGIs need to be reported;

i) <5GMbsfsaArea>, an optional element of the <anyExt> element specifying that the 5G MBS Frequency Selection Area Id needs to be reported; and

j) <R\_BearingAndSpeed>, an optional element of the <anyExt> element specifying that the BearingAndSpeed needs to be reported;

3) <TriggeringCriteria>, a mandatory element specifying the triggers for the MCVideo client to perform reporting in non‑emergency status. The <TriggeringCriteria> element contains the following sub-elements:

a) <CellChange>, an optional element specifying what cell changes trigger location reporting. Consists of the following sub-elements:

I) <AnyCellChange>, an optional element. The presence of this element specifies that any cell change is a trigger. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

II) <EnterSpecificCell>, an optional element specifying an ECGI, which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;and

III) <ExitSpecificCell>, an optional element specifying an ECGI, which, when, exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

b) <TrackingAreaChange>, an optional element specifying what tracking area changes trigger location reporting. Consists of the following sub-elements:

I) <AnyTrackingAreaChange>, an optional element. The presence of this element specifies that any tracking area change is a trigger. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

II) <EnterSpecificTrackingArea>, an optional element specifying a Tracking Area Id, which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

III) <ExitSpecificTrackingArea>, an optional element specifying a Tracking Area Id, which, when exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

IV) <EnterSpecificNRCell>, an optional element of the <anyExt> element, specifying an NCGI, which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string; and

V) <ExitSpecificNRCell>, an optional element of the <anyExt> element, specifying an NCGI, which, when exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

c) <PlmnChange>, an optional element specifying what PLMN changes trigger location reporting. Consists of the following sub-elements:

I) <AnyPlmnChange>, an optional element. The presence of this element specifies that any PLMN change is a trigger. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

II) <EnterSpecificPlmn>, an optional element specifying a PLMN Id, which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string; and

III) <ExitSpecificPlmn>, an optional element specifying a PLMN Id, which, when exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

d) <MbmsSaChange>, an optional element specifying what MBMS changes trigger location reporting. Consists of the following sub-elements:

I) <AnyMbmsSaChange>, an optional element. The presence of this element specifies that any MBMS SA change is a trigger. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

II) <EnterSpecificMbmsSa>, an optional element specifying an MBMS Service Area Id, which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string; and

III) <ExitSpecificMbmsSa>, an optional element specifying an MBMS Service Area Id, which, when exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

e) <MbsfnAreaChange>, an optional element specifying what MBSFN changes trigger location reporting. Consists of the following sub-elements:

I) <AnyMbsfnAreaChange>, an optional element. The presence of this element specifies that any MBSFN area change is a trigger. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

II) <EnterSpecificMbsfnArea>, an optional element specifying an MBSFN area, which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string; and

III) <ExitSpecificMbsfnArea>, an optional element specifying an MBSFN area, which, when exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

f) <PeriodicReport>, an optional element specifying that periodic location reports shall be sent. The value in seconds specifies the reporting interval. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

g) <TravelledDistance>, an optional element specifying that the travelled distance shall trigger a report. The value in metres specified the travelled distance. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

h) <McvideoSignallingEvent>, an optional element specifying what signalling events triggers a location report. The <McvideoSignallingEvent> element has the following sub-elements:

I) <InitialLogOn>, an optional element specifying that an initial log on triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

II) <GroupCallNonEmergency>, an optional element specifying that a non-emergency group call triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

III) <PrivateCallNonEmergency>, an optional element specifying that a non-emergency private call triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

IV) <LocationConfigurationReceived>, an optional element specifying that a received location configuration triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string; and

V) <anyExt>, an optional element containing:

A) an optional <FunctionalAliasActivation> element specifying that a Functional Alias activation triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string; and

B) an optional element <FunctionalAliasDeactivation> specifying that a Functional Alias deactivation triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

i) <GeographicalAreaChange>, an optional element specifying what geographical are changes trigger location reporting. Consists of the following sub-elements:

I) <AnyAreaChange>, an optional element. The presence of this element specifies that any geographical area change is a trigger. Contains a mandatory <TriggerId> attribute that shall be set to a unique string. At least one <GeographicalArea> element with its sub-elements, as defined in the <EnterSpecificArea> element, has to be contained within this trigger or within a different active trigger;

II) <EnterSpecificArea>, an optional element specifying a geographical area, which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string. The <EnterSpecificArea> element has the following sub-elements:

A) <GeographicalArea>, an optional element containing the following sub-elements:

x1) <PolygonArea>, an optional element specifying the area as a polygon specified in clause 5.2 in 3GPP TS 23.032 [39];

x2) <EllipsoidArcArea>, an optional element specifying the area as an Ellipsoid Arc specified in clause 5.7 in 3GPP TS 23.032 [39];

x3) <InnerBorderWidth>, an optional element specifying the width of a band of terrain delimited by an imaginary fence running parallel to the defined contour of the area on the inside, and which, if present and not set to 0, indicates that the area entering trigger will fire if the fence, rather than the defined contour of the area, is crossed due to inward motion, thus avoiding spurious firings of the entering trigger in case of rapid zig-zagging close to the defined contour line of the area; and

x4) <OuterBorderWidth>, an optional element specifying the width of a band of terrain delimited by an imaginary fence running parallel to the defined contour of the area on the outside, and which, if present and not set to 0, indicates that the area exiting trigger will fire if the fence, rather than the defined contour of the area, is crossed due to outward motion, thus avoiding spurious firings of the exiting trigger in case of rapid zig-zagging close to the defined contour line of the area; and

III) <ExitSpecificArea>, an optional element specifying a geographical area, which, when exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string and a <GeographicalArea> element with its sub-elements, as defined in the <EnterSpecificArea> element;

j) <RatTypeChange>, an optional element specifying what inter-RAT changes trigger location reporting. Consists of the following sub-elements:

I) <AnyRatTypeChange>, an optional element. The presence of this element specifies that the inter-system RAT changes is a trigger. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

k) <5GMbsfsaAreaChange>, an optional element of the <anyExt> element specifying what 5G MBSFA changes trigger location reporting. Consists of the following sub-elements:

I) <Any5GMbsfsaAreaChange>, an optional element of the <anyExt> element. The presence of this element specifies that any 5G MBSFSA change is a trigger. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

II) <EnterSpecific5GMbsfsaArea>, an optional element specifying a 5G MBSFSA which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string; and

III) <ExitSpecific5GMbsfsaArea>, an optional element specifying a 5G MBSFSA, which, when exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

l) <5GTrackingAreaChange>, an optional element of the <anyExt> element specifying what 5G tracking area changes trigger location reporting. Consists of the following sub-elements:

I) <Any5GTrackingAreaChange>, an optional element. The presence of this element specifies that any 5G tracking area change is a trigger. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

II) <EnterSpecific5GTrackingArea>, an optional element specifying a 5G Tracking Area Id, which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string; and

III) <ExitSpecific5GTrackingArea>, an optional element specifying a 5G Tracking Area Id which, when exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string; and

m) <AdaptiveTrigger>, an optional element of the <anyExt> element specifying parameters controlling adaptive combined time and distance triggering. In addition to a mandatory <TriggerId> attribute that shall be set to a unique string, the following sub-elements may be included:

I) <MinPeriod>, an optional element specified as a positive or 0 integer number of seconds and defaulting at 0, if not present. This element specifies the minimum wait period between consecutive location reports, irrespective of changes in the distance between the current location and the location of the most recent sending of a location report;

II) <MinDistance>, an optional element specified as a strictly positive integer number of meters and defaulting at infinity, if not present. This element is used in the decision of sending a location report based on travelled distance, and specifies the minimum required distance, between the current location and the location of the most recent sending of a location report;

III) <PersistencePeriod>, an optional element specified as a positive or 0 integer number of seconds and defaulting at 0, if not present. This element specifies the time between the moment when the MCVideo client detected that the distance between the current location and the location of the most recent sending of a location report exceeded <MinDistance> and the moment when the MCVideo client will check again that the updated current location is still farther away by at least <MinDistance> from the location of the mentioned sending of the location report. If the check is positive, a location report based on travelled distance will be sent;

IV) <AdditionalTime>, an optional element, specified as a strictly positive integer number of seconds and defaulting at 1. If a location report is not sent based on the travelled distance, the MCVideo client will send a location report after <MinPeriod> + <PersistencePeriod> + <AdditionalTime> seconds after the previous location report;

NOTE 1 Taking as time origin the moment when the most recent previous location report was sent, the trigger will cause a new location report to be sent, either a travelled distance-based location report after at least <MinPeriod> + <PersistencePeriod> seconds or a time-based report after <MinPeriod> + <PersistencePeriod> + <AdditionalTime> seconds, whichever comes first. The trigger will then be reset and the time of the sending of the new location report will become the time origin for the next firing of the trigger.

V) <RRC\_INACTIVE\_MinPeriod>, an optional element with the same semantics and behaviour as described above for the corresponding parameter, but applicable when the UE receives MBS traffic in RRC\_INACTIVE state;

VI) <RRC\_INACTIVE\_MinDistance>, an optional element with the same semantics and behaviour as described above for the corresponding parameter, but applicable when the UE receives MBS traffic in RRC\_INACTIVE state;

VII) <RRC\_INACTIVE\_PersistencePeriod>, an optional element with the same semantics and behaviour as described above for the corresponding parameter, but applicable when the UE receives MBS traffic in RRC\_INACTIVE state; and

VIII) <RRC\_INACTIVE\_AdditionalTime>, an optional element with the same semantics and behaviour as described above for the corresponding parameter, but applicable when the UE receives MBS traffic in RRC\_INACTIVE state; and

4) the <anyExt> shall be included with the following element not declared in the XML schema:

a) <EmergencyTriggeringCriteria>, a mandatory element specifying the triggers for the MCVideo client to perform reporting in emergency status. The <TriggeringCriteria> element contains the following sub-elements:

I) <CellChange>, an optional element specifying what cell changes trigger location reporting. Consists of the following sub-elements:

A) <AnyCellChange>, an optional element. The presence of this element specifies that any cell change is a trigger. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

B) <EnterSpecificCell>, an optional element specifying an ECGI, which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

C) <ExitSpecificCell>, an optional element specifying an ECGI, which, when exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

 D) <EnterSpecificNRCell>, an optional element of the <anyExt> element, specifying an NCGI, which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string; and

E) <ExitSpecificNRCell>, an optional element of the <anyExt> element, specifying an NCGI, which, when exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

II) <TrackingAreaChange>, an optional element specifying what tracking area changes trigger location reporting. Consists of the following sub-elements:

A) <AnyTrackingAreaChange>, an optional element. The presence of this element specifies that any tracking area change is a trigger. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

B) <EnterSpecificTrackingArea>, an optional element specifying a Tracking Area Id, which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

C) <ExitSpecificTrackingArea>, an optional element specifying a Tracking Area Id, which, when exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

D) <EnterSpecificNRCell>, an optional element of the <anyExt> element, specifying an NCGI, which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string; and

E) <ExitSpecificNRCell>, an optional element of the <anyExt> element, specifying an NCGI, which, when exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

III) <PlmnChange>, an optional element specifying what PLMN changes trigger location reporting. Consists of the following sub-elements:

A) <AnyPlmnChange>, an optional element. The presence of this element specifies that any PLMN change is a trigger. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

B) <EnterSpecificPlmn>, an optional element specifying a PLMN Id, which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string; and

C) <ExitSpecificPlmn>, an optional element specifying a PLMN Id, which, when exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

IV) <MbmsSaChange>, an optional element specifying what MBMS changes trigger location reporting. Consists of the following sub-elements:

A) <AnyMbmsSaChange>, an optional element. The presence of this element specifies that any MBMS SA change is a trigger. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

B) <EnterSpecificMbmsSa>, an optional element specifying an MBMS Service Area Id, which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string; and

C) <ExitSpecificMbmsSa>, an optional element specifying an MBMS Service Area Id, which, when exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

V) <MbsfnAreaChange>, an optional element specifying what MBSFN changes trigger location reporting. Consists of the following sub-elements:

A) <AnyMbsfnAreaChange>, an optional element. The presence of this element specifies that any MBSFN area change is a trigger. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

B) <EnterSpecificMbsfnArea>, an optional element specifying an MBSFN area, which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string; and

C) <ExitSpecificMbsfnArea>, an optional element specifying an MBSFN area, which, when exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

VI) <PeriodicReport>, an optional element specifying that periodic location reports shall be sent. The value in seconds specifies the reporting interval. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

VII) <TravelledDistance>, an optional element specifying that the travelled distance shall trigger a report. The value in metres specified the travelled distance. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

VIII) <McvideoSignallingEvent>, an optional element specifying what signalling events triggers a location report. The <McvideoSignallingEvent> element has the following sub-elements:

A) <InitialLogOn>, an optional element specifying that an initial log on triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

B) <GroupCallNonEmergency>, an optional element specifying that a non-emergency group call triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string;

C) <PrivateCallNonEmergency>, an optional element specifying that a non-emergency private call triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string; and

D) <LocationConfigurationReceived>, an optional element specifying that a received location configuration triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string; and

IX) <GeographicalAreaChange>, an optional element specifying what geographical area changes trigger location reporting. Consists of the following sub-elements:

A) <AnyAreaChange>, an optional element. The presence of this element specifies that any geographical area change is a trigger. Contains a mandatory <TriggerId> attribute that shall be set to a unique string. At least one <GeographicalArea> element with its sub-elements, as defined in the <EnterSpecificArea> element, has to be contained within this trigger or within a different active trigger;

B) <EnterSpecificArea>, an optional element specifying a geographical area, which, when entered, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string. The <EnterSpecificArea> element contains a <GeographicalArea> element, as defined in bullet 3); and

C) <ExitSpecificArea>, an optional element specifying a geographical area, which, when exited, triggers a location report. Contains a mandatory <TriggerId> attribute that shall be set to a unique string and a <GeographicalArea> element with its sub-elements, as defined in the <EnterSpecificArea> element.

<Request> is an element with a <RequestId> attribute, with a "LocationFilter" element as an <anyExt> element of "location‑info" and with an optional "refresh" attribute. The <Request> element is used to request a location report. The "LocationFilter" element requires that only requested MCVideo clients which pass the specified filtering criteria have their location information reported to the requesting MCVideo client. The "refresh" attribute is a Boolean and requires that the location information is immediately updated. The value of the <RequestId> attribute is returned in the corresponding <ReportId> attribute in order to correlate the request and the report.

<Report> is an element used to include the location report. It contains a <ReportId> attribute and a <ReportType> attribute. The <ReportId> attribute is used to return the value in the <RequestId> attribute in the <Request> element. The <ReportType> attribute has two values "Emergency" and "NonEmergency" used to inform whether the client is sending the report in an emergency situation or not. The <Report> element contains the following sub-elements:

1) <TriggerId>, an optional element which can occur multiple times that contain the value of the <TriggerId> attribute associated with a trigger that has fired;

2) <mcvideo-reporting-uri>, an optional element which is used to identify the reporting MCVideo client, this is required when multiple location information responses for different requested MCVideo clients are sent, triggered by one single location information request; and

3) <CurrentLocation>, a mandatory element that contains the location information. The <CurrentLocation> element contains the following sub-elements:

a) <CurrentServingEcgi>, an optional element containing the ECGI of the serving cell;

b) <NeighbouringEcgi>, an optional element that can occur multiple times. It contains the ECGI of any neighbouring cell the MCVideo client can detect;

c) <MbmsSaId>, an optional element containing the MBMS Service Area Id the MCVideo client is using;

d) <MbsfnArea>, an optional element containing the MBSFN area the MCVideo is located in;

e) <CurrentCoordinate>, an optional element containing:

i) the longitude and latitude coded as in clause 6.1 in 3GPP TS 23.032 [39]; and

ii) an optional <anyExt> element containing:

A) an <altitude> element coded as in clause 6.3 in 3GPP TS 23.032 [39];

B) an optional <horizontalaccuracy> element where the <onebyteunsignedhalfrange> sub‑element is coded as in clause 6.2 in 3GPP TS 23.032 [39], which describes the uncertainty for latitude and longitude; and

C) an optional <verticalaccuracy> element where the <onebyteunsignedhalfrange> sub‑element is coded as in clause 6.4 in 3GPP TS 23.032 [39], which describes the uncertainty for altitude; and

f) <anyExt>, an optional element containing:

i) an optional <locTimestamp> element containing the date and time the location measurement was made;

ii) an optional <FunctionalAlias> element containing the functional alias status change that triggered the location measurement;

iii) an optional <InterRatType> element containing the inter-RAT change type. The <InterRatType> element set to:

A) "5G-MBS-to-LTE-MBMS" when the inter-system switching from 5G MBS session to LTE MBMS bearer;

B) "5G-MBS-to-LTE-unicast" when the inter-system switching from 5G MBS session to LTE unicast bearer;

C) "LTE-MBMS-to-5G-MBS" when the inter-system switching from LTE MBMS to 5G MBS session; or

D) "LTE-MBMS-to-5G-unicast" when the inter-system switching from LTE MBMS to 5G unicast PDU session.

iv) <CurrentServingNcgi>, an optional element containing the NCGI of the serving cell;

v) <CL\_NeighbouringNcgi>, an optional element that can occur multiple times. It contains the NCGI of any neighbouring cell the MCVideo client can detect;

vi) <CL\_5GMbsfsaArea>, an optional element containing the 5G MBSFSA the MCVideo client is located in; and

vii) <CL\_BearingAndSpeed>, an optional element consisting of a 7 byte‑long string of 14 hexadecimal digits which encode the binary content of the bearing, horizontal velocity and vertical velocity, as well as horizontal and vertical speed uncertainties of the MCVideo UE, according to clause 8.15 of 3GPP TS 23.032 [39], where the spare bits are set to 0.

The contents of the sub‑elements in the <CurrentLocation> sub-element of the <Report> element can be encrypted. The following rules are applied when any of these elements are included:

1) if confidentiality protection is not required, then:

a) the "type" attributes associated with the <CurrentServingEcgi>, <NeighbouringEcgi>, <MbmsSaId>, and <MbsfnArea> elements of the <CurrentLocation> element of the <Report> element have the value "Normal" and

i) the <Ecgi> sub-element of the <CurrentServingEcgi> element contains the unencrypted value of the ECGI of the serving cell;

ii) the <Ecgi> sub-element of the <NeighbouringEcgi> element contains the unencrypted value of the ECGI of any neighbouring cell;

iii) the <SaId> sub-element of the <MbmsSaId> element contains the unencrypted value of the MBMS Service Area Id the MCVideo client is using; and

iv) the <MbsfnAreaId> sub-element of the <MbsfnArea>, element contains the unencrypted value of the MBSFN area the MCVideo is located in;

b) the "type" attribute associated with the <CL\_BearingAndSpeed> sub-element has the value "Normal" and the value of the <CL\_BearingAndSpeed> sub-element is unencrypted;

c) the "type" attributes associated with the <CurrentServingNcgi>, <CL\_NeighbouringNcgi>, <MbmsSaId>, and <CL\_5GMbsfsaArea> elements of the <anyExt> element of the <CurrentLocation> element of the <Report> element have the value "Normal"; and

i) the <Ncgi> sub-element of the <CurrentServingNcgi> element contains the unencrypted value of the NCGI of the serving cell;

ii) the <Ncgi> sub-element of the <CL\_NeighbouringNcgi> element contains the unencrypted value of the NCGI of any neighbouring cell;

iii) the <SaId> sub-element of the <MbmsSaId> element contains the unencrypted value of the MBMS Service Area Id the MCVideo client is using; and

iv) the <5GMbsfsaAreaId> sub-element of the <CL\_5GMbsfsaArea>, element contains the unencrypted value of the 5G MBSFSA area the MCVideo client is located in; and

d) the "type" attributes associated with the <longitude>, <latitude>, <altitude>, <horizontalaccuracy>, and <verticalaccuracy> sub-elements of the <CurrentCoordinate> element have the value "Normal" and the <three-bytes> sub-elements of <longitude> and <latitude> sub-elements, the <twobytes> sub-element of the <altitude> sub-element, the <onebyteunsignedhalfrange> sub-element of the <horizontalaccuracy>, and the <onebyteunsignedhalfrange> sub-element of the <verticalaccuracy> sub-element contain the unencrypted value of longitude, latitude, altitude, horizontalaccuracy, and verticalaccuracy respectively; and

2) if confidentiality protection is required, then:

a) the "type" attributes associated with the <CurrentServingEcgi>, <NeighbouringEcgi>, <MbmsSaId>, <MbsfnArea>, <CL\_5GMbsfsaArea>, <CurrentServingNcgi>, <CL\_NeighbouringNcgi> and <CL\_BearingAndSpeed> elements have the value "Encrypted";

b) the "type" attributes associated with the <longitude>, <latitude>, <altitude>, <horizontalaccuracy>, and <verticalaccuracy> sub-elements of the <CurrentCoordinate> element have the value "Encrypted"; and

c) for each of the elements described in 2a) and sub-elements described in 2b) above, the <xenc:EncryptedData> element from the "[http://www.w3.org/2001/04/xmlenc#](http://www.w3.org/2001/04/xmlenc)" namespace is included and:

i) can have a "Type" attribute can be included with a value of "<http://www.w3.org/2001/04/xmlenc#Content>";

ii) can include an <EncryptionMethod> element with the "Algorithm" attribute set to value of "http://www.w3.org/2009/xmlenc11#aes128-gcm";

iii) can include a <KeyInfo> element with a <KeyName> element containing the base 64 encoded XPK-ID; and

iv) includes a <CipherData> element with a <CipherValue> element containing the encrypted data.

NOTE 2: When the optional attributes and elements are not included within the <xenc:EncryptedData> element, the information they contain is known to sender and the receiver by other means.

The recipient of the XML ignores any unknown element and any unknown attribute.

\* \* \* \* End of Changes \* \* \* \*