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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

Infrastructure of audiovisual services – Supplementary services for multimedia

Transport of geographic information in ITU-T H.323 systems

Recommendation ITU-T H.460.25

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Recommendation ITU-T H.460.25

Transport of geographic information in ITU-T H.323 systems

Summary

Recommendation ITU-T H.460.25 defines a means of transmitting geographic information between two ITU-T H.323 entities. Geographic information may be either coordinate-based (i.e., longitude, latitude, and altitude) or civic addresses (e.g., country, city, and street address).

History

Edition	Recommendation	Approval	Study Group
1.0	ITU-T H.460.25	2010-09-13	16

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure, e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at http://www.itu.int/ITU-T/ipr/.

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Transport of geographic information in ITU-T H.323 systems

1 Scope

This Recommendation defines a means of transmitting geographic information between two ITU-T H.323 entities. Geographic information may be either coordinate-based (i.e., longitude, latitude, and altitude) or civic addresses (e.g., country, city, and street address). How an endpoint gets the coordinate or civic address information is not within the scope of this Recommendation.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ITU-T H.225.0] Recommendation ITU-T H.225.0 (2009), *Call signalling protocols and media stream packetization for packet-based multimedia communication systems*.

[ITU-T H.323] Recommendation ITU-T H.323 (2009), *Packet-based multimedia communications systems*.

[IETF RFC 4119] IETF RFC 4119 (2005), *A Presence-based GEOPRIV Location Object Format*.

[IETF RFC 5139] IETF RFC 5139 (2008), *Revised Civic Location Format for Presence Information Data Format Location Object (PIDF-LO)*.

[IETF RFC 5491] IETF RFC 5491 (2009), *GEOPRIV Presence Information Data Format Location Object (PIDF-LO) Usage Clarification, Considerations, and Recommendations*.

3 Definitions

None.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations:

ACF Admissions Confirm

ARQ Admissions Request

GCF Gatekeeper Confirm

GEF Generic Extensibility Framework

GPS Global Positioning System

GRJ Gatekeeper Reject

GRQ Gatekeeper Request

LCF Location Confirm

LRQ Location Request

PIDF-LO Presence Information Data Format Location Object

RAS Registration, Admission, and Status

RCF Registration Confirm

RRQ Registration Request

5 Conventions

None.

6 General considerations

Users of [ITU-T H.323] multimedia communication systems might require transmission of geographic information to the called party or vice versa, or between an endpoint and its gatekeeper or any other ITU-T H.323 entity in the network. It might be used, as an example, by emergency personnel responding to a distress call or might be exchanged between friends in a social setting. The uses of geographic information are several and are not defined or constrained by this Recommendation.

In some instances, a calling or called party may wish not to provide geographic information to the other party or may wish to limit or restrict the use of that information. Such restrictions are taken care of by using the screening/presentation indicators. Transmission of geographic information to another entity is optional, and the user should be given some control over when geographic information is conveyed. A device may advertise support for sending and receiving geographic information, but may choose not to transmit that information.

A device may support the transmission of coordinate-based information, civic address information, or both.

A gatekeeper may provide an endpoint with geographic information via the RAS protocol. How the gatekeeper learns the user location information is outside the scope of this Recommendation. If the gatekeeper does not provide the endpoint with its geographic information, or if the endpoint prefers to override the information provided by the gatekeeper, the endpoint may use geographic information learned through user input, GPS input, or other sources.

7 Capability advertisement

Endpoints capable of transmitting or receiving geographic information shall advertise that capability in the featureSet.supportedFeatures or supportedFeatures field of appropriate messages defined in [ITU-T H.225.0], following the rules defined in clause 7.9 of [ITU-T H.323], ("Generic Extensibility Framework") and shall use this identifier when transmitting geographic information via the genericData parameter.

Calling endpoint shall advertise this capability as a supported feature in call signalling messages, when needed or desired to transmit and/or receive the geographic information to/from called endpoint, respectively. Called endpoints that are capable of supporting geographic information shall advertise this capability in the response messages using the featureSet.supportedFeatures field.

The geographic information capability is indicated with the feature identifier shown in Table 1.

Table 1 – Geographic Information feature

Feature name:	Geographic Information
Feature description:	This feature allows an ITU-T H.323 entity to transmit and/or receive geographic information to and/or from another ITU-T H.323 entity.
Feature identifier type:	Standard
Feature identifier value:	25

Parameters associated with the advertisement of this capability are specified in the following clause. In consideration of backward compatibility with further revisions to this Recommendation, the recipient shall ignore any parameters received other than those specified in this Recommendation.

8 Encoding geographic information

When transmitting geographic information, the ITU-T H.323 entity shall include the information in a genericData SEQUENCE in any of the messages discussed in clauses 7, 8 and 9. The geographic information shall be encoded as per Tables 2 to 6. More than one location information element can be sent in a PIDF-LO. The guidelines to be followed when creating a PIDF-LO with multiple location information are the same as those specified in [IETF RFC 5491].

If an entity wishes to revoke the previously transmitted geographic information, it shall send a message containing the Location parameter having an absent content field.

Table 2 – Location

Parameter name:	Location
Parameter description:	Indicates the geographic location in the form of an XML-defined PIDF-LO object, [IETF RFC 4119] and [IETF RFC 5139].
Parameter identifier type:	Standard
Parameter identifier value:	1
Parameter type:	raw
Parameter cardinality:	One or more.

When the call is routed through an ITU-T H.323 entity (e.g., a gatekeeper that routes call signalling), the ITU-T H.323 entity may provide a screening service that indicates whether the location details were provided by the user or the intermediate ITU-T H.323 entities along the signalling path and whether the location was screened by an ITU-T H.323 entity.

Presentation indicator allows the ITU-T H.323 entity to restrict or allow the presentation of the Location parameter to the other entity in a call.

Table 3 – Screening Indicator

Parameter name:	Screening Indicator
Parameter description:	Indicates whether the location details were provided by the user or by the intermediate ITU-T H.323 entity and whether the location was screened by the entity.
Parameter identifier type:	Standard
Parameter identifier value:	2
Parameter type:	number8
Parameter cardinality:	Once for every location parameter.

Table 4 – Screening Indicator values

Value	Meaning
0	*userProvidedNotScreened*: Location info was provided by the user and has not been screened by any ITU-T H.323 entity.
1	*userProvidedVerifiedAndPassed*: Location info was provided by the user or by a remote network, it has been screened by an ITU-T H.323 entity and passed verification.
2	*userProvidedVerifiedAndFailed*: Location info was provided by the user or by a remote network, but an ITU-T H.323 entity has determined that the information is incorrect.
3	*networkProvided*: Location info was provided by an ITU-T H.323 entity.

Table 5 – Presentation Indicator

Parameter name:	Presentation Indicator
Parameter description:	Indicates whether presentation of the Location should be allowed or restricted.
Parameter identifier type:	Standard
Parameter identifier value:	3
Parameter type:	number8
Parameter cardinality:	Once for every location parameter.

Table 6 – Presentation Indicator values

Value	Meaning
0	PresentationAllowed
1	PresentationRestricted

9 Provision of geographic information by a gatekeeper

A gatekeeper may provide geographic information to an endpoint that has advertised support for this Recommendation by including the Location parameter in the RCF message. A gatekeeper may include the user's geographic location information in the LRQ message. The gatekeeper may also provide the called entity's geographic information in the LCF. A gatekeeper that receives the location information in the LCF should provide the same in the ACF response to the user. A gatekeeper that resolves the called endpoint location by itself may include the geographic location in ACF.

The endpoint may accept and use the provided geographic information, or it may override it using the geographic information it has learned through other sources, such as user input, GPS, or other input sources. The alternative input sources are outside the scope of this Recommendation.

10 Provision of geographic information by an endpoint

An endpoint willing to provide its location information to the gatekeeper, which may then be shared with remote entities via an LRQ/LCF exchange, may include the geographic details in the RRQ message. An endpoint may also advertise its location in the GRQ in order to allow the gatekeeper to use that information as a basis for deciding to respond with a GCF or GRJ. The gatekeeper shall not retain or use location information received in a GRQ for purposes outside of gatekeeper discovery. Since an endpoint, such as a gateway, may be used by any number of users at different locations, the endpoint may use the ARQ to indicate a different geographic location representative of a particular calling user. The location information received in the ARQ can also be used by the gatekeeper for location-based authorization.

If a gatekeeper receives location information in any other RAS message, it shall ignore the same.

11 Transmission of geographic information between endpoints

When transmitting geographic information via the [ITU-T H.225.0] call signalling channel, the Location parameter may be transmitted in SETUP, ALERTING, CONNECT, PROGESS, FACILITY or NOTIFY messages. NOTIFY shall be used when the endpoint does not send any other call signalling message that could contain the location information.

When an endpoint sends its location information in response to the SETUP message, it shall do so in the first message it sends in response to the SETUP message. An endpoint that does not recognize the location details that it receives shall ignore the same. Location information may be transmitted during call transfer, diversion, etc.

Endpoint that receives the location information in any of the call signalling messages other than SETUP, CALL PROCEEDING, ALERTING, CONNECT, PROGRESS, FACILITY, and NOTIFY shall ignore the provided location information.

Geographic information should not be transmitted repeatedly, though endpoints may wish to transmit new geographic information in the event that the endpoint's location has changed during the course of communication with a remote endpoint. New geographic information shall replace any previously received geographic information. Transmission of geographic information may be automatic or on-demand from the user. The decision as to when to transmit geographic information is outside the scope of this Recommendation.

An endpoint may receive its geographic information details from either the gatekeeper or from other sources of input. Alternative sources of input to endpoints are out of scope of this Recommendation.

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