ATIS-0700012.v002

ATIS Implementation Guidelines for
CMAS Supplemental Information Retrieval
Revision 2

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ATIS-0700012.v002, *ATIS Implementation Guidelines for CMAS Supplemental Information Retrieval Revision 2*

Is an American National Standard developed by the **Wireless Technologies and Systems Committee (WTSC)**.

ATIS-0700012.v002

ATIS Standard on

ATIS Implementation Guidelines for CMAS Supplemental Information Retrieval Revision 2

Alliance for Telecommunications Industry Solutions

Approved September 2015

Abstract

This standard defines a mechanism for a CMSP Gateway to retrieve optional supplemental information from the Federal Alert Gateway for CMAS Alert or Update messages.

Foreword

The Alliance for Telecommunication Industry Solutions (ATIS) serves the public through improved understanding between providers, customers, and manufacturers. The Wireless Technologies and Systems Committee (WTSC) develops and recommends standards and technical reports related to wireless and/or mobile services and systems, including service descriptions and wireless technologies. WTSC develops and recommends positions on related subjects under consideration in other North American, regional, and international standards bodies.

The mandatory requirements are designated by the word SHALL and recommendations by the word SHOULD. Where both a mandatory requirement and a recommendation are specified for the same criterion, the recommendation represents a goal currently identifiable as having distinct compatibility or performance advantages. The word MAY denotes an optional capability that could augment the standard. The standard is fully functional without the incorporation of this optional capability.

Suggestions for improvement of this document are welcome. They should be sent to the Alliance for Telecommunications Industry Solutions, WTSC, 1200 G Street NW, Suite 500, Washington, DC 20005.

At the time of consensus on this document, WTSC, which was responsible for its development, had the following leadership:

M. Younge WTSC Chair (T-Mobile)
D. Zelmer WTSC Vice-Chair (AT&T)
P. Musgrove WTSC SN Chair (AT&T)
G. Schumacher WTSC SN Vice-Chair (Sprint)
D. Sennett Technical Editor (AT&T)

The Systems and Network (SN) Subcommittee was responsible for the development of this document.

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1 Scope, Purpose, & Application

1.1 Scope

The scope of this standard is to provide implementation guidelines for the support of a Commercial Mobile Alert System (CMAS) supplemental information retrieval mechanism.

1.2 Purpose

This standard defines a mechanism for a CMSP Gateway to retrieve optional supplemental information from the Federal Alert Gateway for CMAS Alert or Update messages. The mechanisms used for this retrieval are defined in the CAP Retrieval Process specified in the Joint ATIS-TIA J-STD-101, *CMAS Federal Alert Gateway to CMSP Gateway Interface Specification* [Ref 1].

1.3 Application

While English-only CMAS messages are required per the FCC *First Report and Order* [Ref 2], the WARN Act [Ref 3] states that commercial mobile service providers who elect to transmit emergency alerts may transmit in languages in addition to English to the extent practical and feasible. To support this WARN Act option, the CMAS Supplemental Information Retrieval shall have the capability to retrieve CMAS message text in Spanish.

A CMSP is responsible for defining its own policies for the retrieval and transmission of CMAS messages in languages other than English. This CMSP policy includes whether to transmit the CMAS message in languages other than English and which geographic areas (e.g., regions) to transmit in languages other than English.

2 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this ATIS Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this ATIS Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

[Ref 1] J-STD-101, *Joint ATIS/TIA CMAS Alert Gateway to CMSP Gateway Interface Specification*; October, 2009 including J-STD-101.a, *Supplement A to J-STD-101, Joint ATIS/TIA CMAS Alert Gateway to CMSP Gateway Interface Specification*, August 2011 and including J-STD-101.b, *Supplement B to J-STD-101, Joint ATIS/TIA CMAS Alert Gateway to CMSP Gateway Interface Specification*, December 2012.[1]

[Ref 2] FCC 08-99, *Federal Communications Commission First Report and Order In the Matter of The Commercial Mobile Alert System*; April 9, 2008.[2]

[Ref 3] WARN Act, *Security and Accountability For Every Port Act of 2006 (SAFE Port Act)*, Pub.L. 109-347, *Title VI-Commercial Mobile Service Alerts (WARN Act).*[3]

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[1] This document is available from the Alliance for Telecommunications Industry Solutions (ATIS) < https://www.atis.org/docstore/product.aspx?id=24919 >.

[2] This document is available from the Federal Communications Commission. < http://www.fcc.gov/ >.

3   Definitions, Acronyms, & Abbreviations

3.1   Definitions

For a list of common communications terms and definitions, please visit the *ATIS Telecom Glossary*, which is located at < http://www.atis.org/glossary >.

3.2   Acronyms & Abbreviations

ATIS	Alliance for Telecommunications Industry Solutions
CAP	Common Alerting Protocol
CMAC	Commercial Mobile Alert for C Interface
CMAM	Commercial Mobile Alert Message
CMAS	Commercial Mobile Alert System
CMSP	Commercial Mobile Service Provider
FCC	Federal Communications Commission
HTTP	Hypertext Transfer Protocol
TIA	Telecommunications Industry Association
URI	Uniform Resource Identifier
URL	Universal Resource Locator
WARN	Warning, Alert, & Response Network
XML	eXtensible Markup Language

4   CMAS Supplemental Information Retrieval Process

When a CMAS Alert, Update, or Cancel message is generated by the Federal Alert Gateway, the CMAC message that is delivered to the CMSP Gateway across the Reference Point "C" interface contains the Uniform Resource Identifier (URI) for the location of the original CAP message in the CMAC_cap_alert_uri element of the CMAC_Alert_Attributes segment [Ref 1].   The CMSP Gateway may retrieve the original CAP message (Alert, Update, or Cancel) that triggered a particular CMAC message (Alert, Update, or Cancel). CAP message retrieval is not performed using the CMAC protocol. The CMSP Gateway will use the HTTP GET method with the CMAC_cap_alert_uri provided in the CMAC message to retrieve the CAP message. The HTTP GET method will contain a Host request_header, whose value is the host part of the CMAC_cap_alert_uri. The HTTP GET method may also contain Connection and If_Unmodified_Since request headers. An example of the CMAC_cap_alert_uri is < http://cmas_alert_gateway.gov/CMAM1056 >, where CMAM1056 is the identifier for the associated CMAC message.

The retrieval of CMAS Supplemental Information is an optional CMSP Gateway capability using the CAP retrieval process, where the URI is provided in the <CMAC_note> element. An example of the URI provided in CMAC_note for CMAS Supplemental Information/Spanish is as follows:

> <http://cmas_alert_gateway.gov/CMSPInterface/Spanish?cmacmsgnumber= 00001056>

The CMAC_message_number element present in the CMAS Supplemental Information retrieved from the Federal Alert Gateway shall be used within the CMSP Gateway to validate that the retrieved CMAS Supplemental Information in fact corresponds to the associated CMAC (CMAC_Alert or CMAC_Update) message received from the Federal Alert Gateway.   If the CMAC_message_number present in the retrieved CMAS Supplemental Information does not match CMAC_message_number received in the CMAC message, then the CMAC message

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[3] This document is available from the U.S. Government Printing Office < http://www.gpo.gov/ >

shall still be processed as normal message (CMAC_Alert or CMAC_Update) and the handling of CMAS Supplemental Information retrieval shall be continued according to the CMSP policies.

4.1 CMAS Supplemental Information Retrieval Requirements

The following are the requirements for CMAS supplemental information retrieval, if CMAS supplemental information is available:

1. Within the Unites States and it territories, each CMAS Alert or CMAS Update message may have alert text in Spanish language in addition to the alert text in English language. When such a Spanish language alert text is associated with a CMAS Alert or CMAS Update message, for each CMAC_Alert or CMAC_Update message generated by the Federal Alert Gateway, the Federal Alert Gateway shall provide a corresponding alert text in Spanish language that will not exceed 150 characters. This presence of Spanish version of the CMAS alert text shall available via an URI provided within a CMAC_note entry to the English version CMAC_Alert or CMAC_Update message. The CMAC_note shall start with the word "SPANISH" to indicate the presence of Spanish language text and an URI address which the CMSP Gateway has to supply to the Federal Alert Gateway to retrieve the Spanish language text: i.e., SPANISH <URI where the Spanish language text is stored>.

    NOTE: Alert messages in Spanish may be transmitted without supporting accented characters (including the tilde).

    NOTE: In most cases the alert text in Spanish language takes more text characters than the equivalent alert text in English language. See Annex A for some examples.

2. If there is no associated Spanish version of the CMAS Alert or CMAS Update, then the corresponding CMAC_note entry shall be absent in the CMAC_Alert or CMAC_Update message generated by the Federal Alert Gateway and the CMSP Gateway shall not treat the lack of Spanish as an error condition.

3. All parameters of the original Alert or Update message contained in the CMAC_Alert_Info and CMAC_Alert_Area segments – including category, event code, priority, severity, urgency, expiration time, and alert area – are identical for the alert information transmitted in Spanish and are therefore not provided in the supplemental information.

4. If a CMSP chooses to transmit a CMAS alert message in Spanish language, a Cancel message of the CMAC_Alert or CMAC_Update message shall apply to the Spanish language version of the message as well, and the CMSP Gateway shall cancel the Spanish language version of the message accordingly. If a CMAC_Alert message has a CMAC_note indicating the presence of an associated Spanish language text, the CMAC_Update may or may not have CMAC_note. In other words, the CMAS update message may or may not have an associated Spanish language text. This is not a typical case, but it can happen.

4.2 CMAS Supplemental Information Retrieval Concepts

As described in clause 4.1, the CMAS Supplemental Information Retrieval method is used by the CMSP Gateway to retrieve the alert text in Spanish language from the Federal Alert Gateway. The Federal Alert Gateway would indicate the presence of an associated alert text in Spanish language in the CMAC message that it sends to the CMSP Gateway for the CMAC Alert (or CMAC Update) within the CMAC_note field along with a pointer (in the form of an URI) to the address where the Spanish alert text is stored. If no associated Spanish alert text is present, then the associated CMAC_note would be absent in the CMAC_Alert (or CMAC_Update message).

Annex B illustrates this concept in the form of a process flow diagram.

5 CMAS Supplemental Information Retrieval Process Call Flow

5.1 CMAC Alert or Update Message with Supplemental Information Retrieval

The following call flow is an example of a CMSP Gateway retrieving CMAS Supplemental Information upon receipt of a CMAC_Alert or CMAC_Update message. This flow is based on the call flows for a CMAS Alert or CMAS Update message described in the Joint ATIS-TIA J-STD-101, *CMAS Federal Alert Gateway to CMSP Gateway Interface Specification* [Ref 1].
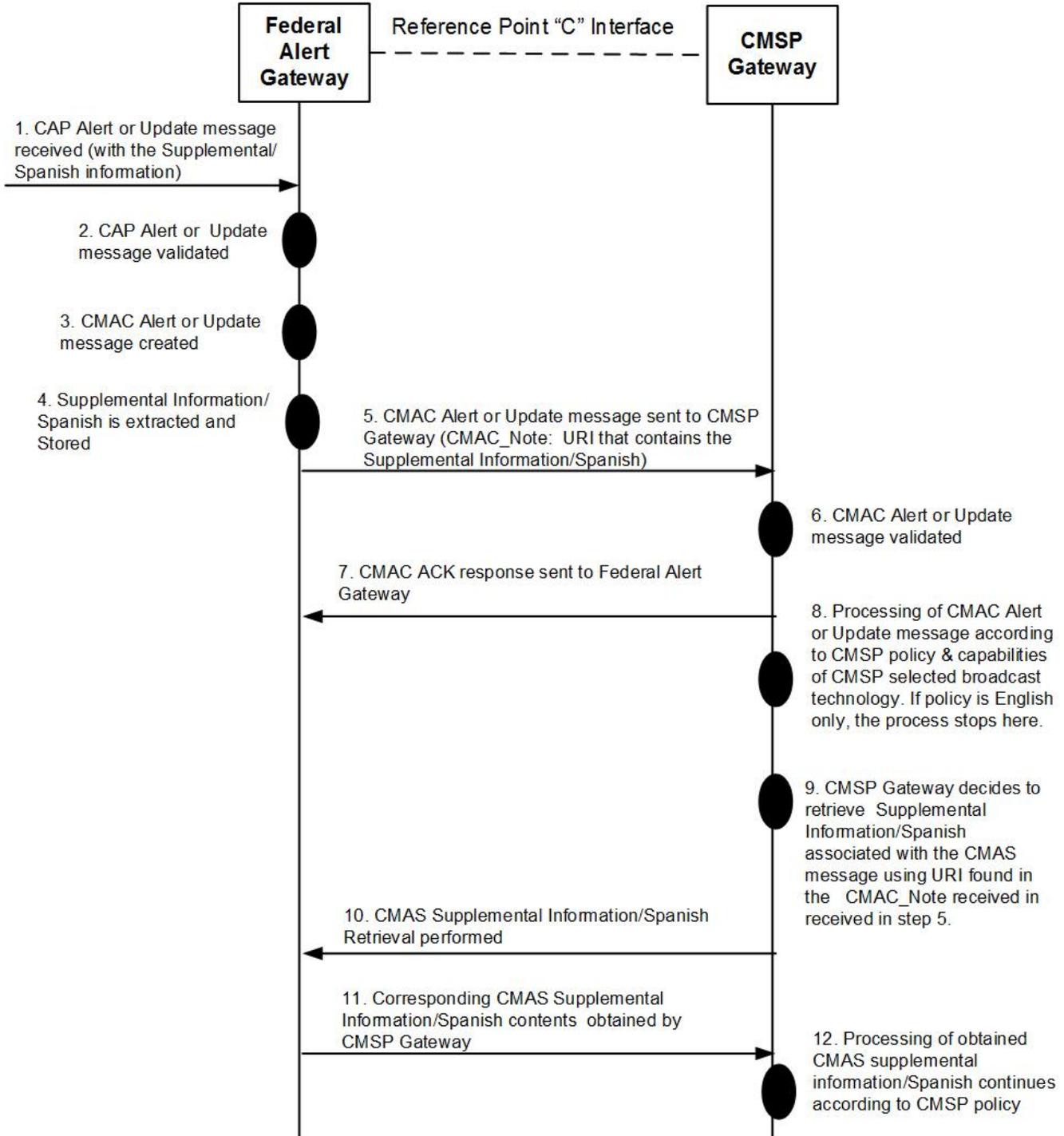
Figure 5.1 – CMAS Supplemental Information Retrieval Process Call Flow

The CMAC_note is included in the CMAC_Alert or CMAC_Update message (see J-STD-101 [Ref 1]) at step 5 of the flow. The following is an example of XML code that contains this CMAC_note:

```
<CMAC_note>SPANISH
http://10.12.130.148/CMSPInterface/Spanish?cmacmsgnumber=12345678</cmac_note>
```

5.2 CMAC Alert or Update Message with No Supplemental Information Retrieved

The following call flow is an example of no CMAS Supplemental Information available to the CMSP Gateway upon receipt of a CMAC_Alert or CMAC_Update message. This will occur when no Spanish language text is available. The steps shown in this call flow are identical to the steps shown in the call flows for a CMAS Alert or CMAS Update message described in the Joint ATIS-TIA J-STD-101, *CMAS Federal Alert Gateway to CMSP Gateway Interface Specification* [Ref 1], and are shown here for completeness only.
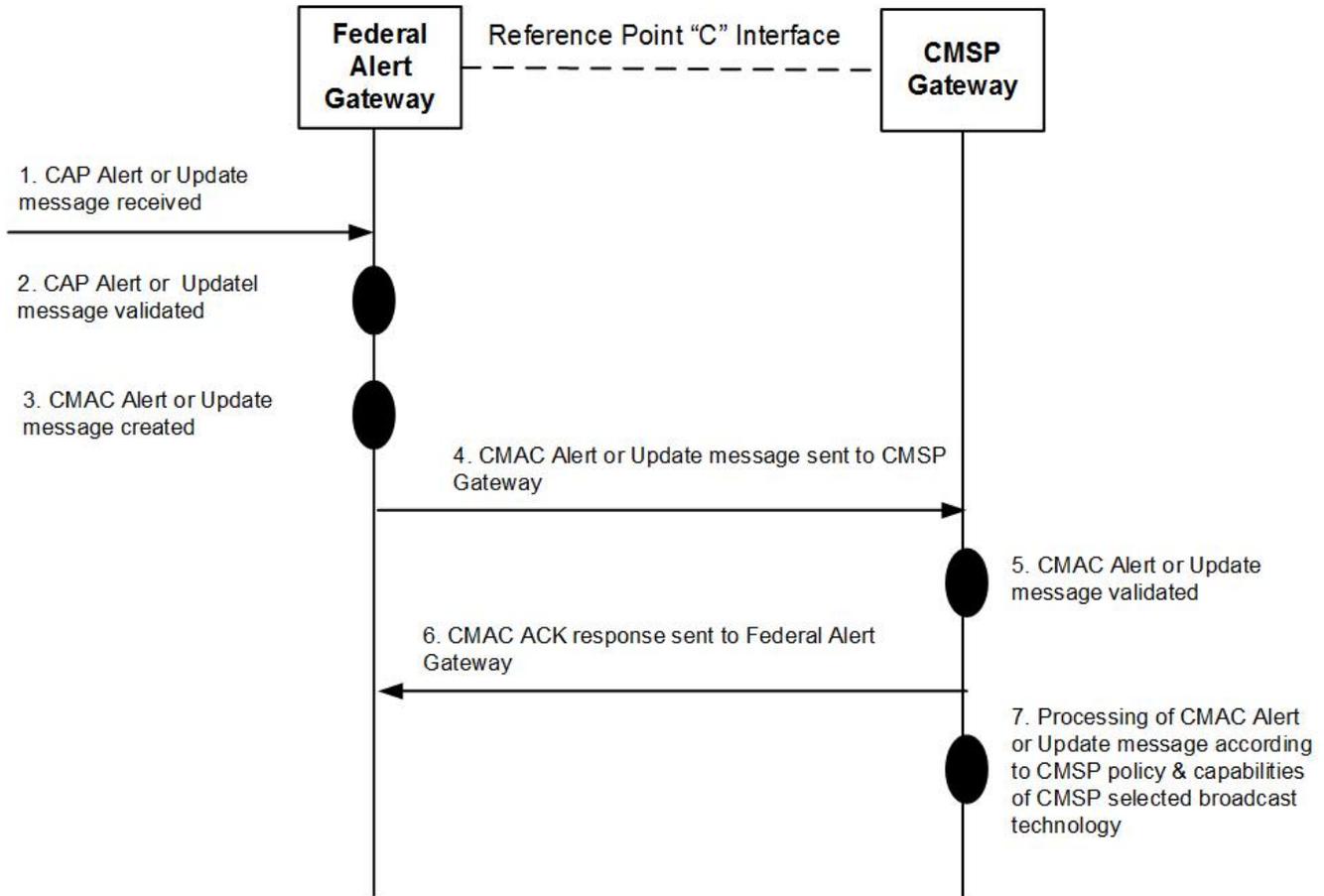

Figure 5.2 – CMAS Supplemental Information Retrieval Process Call Flow – No Spanish Available

Note that there is no CMAC_note included in the CMAC message and hence, the CMSP Gateway does attempt to retrieve the Supplemental Information/Spanish from the Federal Alert Gateway even if the CMSP policy supports the CMAS alert broadcasts in Spanish language text.

6 XML Schemas

6.1 XML Schema for CMAS Supplemental Information

The following provides the XML schema for the supplemental information storage:

```
<?xml version = "1.0" encoding = "UTF-8"?>
<schema xmlns = "http://www.w3.org/2001/XMLSchema"
   targetNamespace = "cmas:1.0"
   xmlns:cmac = "cmas:1.0"
   xmlns:xs = "http://www.w3.org/2001/XMLSchema"
   elementFormDefault = "qualified"
   attributeFormDefault = "unqualified">
     <element name = "CMAC_Supplemental_Information">
      <annotation>
         <documentation>CMAS Supplemental Information (version 1.0)</documentation>
      </annotation>
   <complexType>
    <sequence>
        <element name = "CMAC_message_number">
           <simpleType>
              <restriction base = "hexBinary">
                 <length value = "4" fixed = "true"/>
              </restriction>
           </simpleType>
        </element>
        <element name = "CMAC_supplemental_text_language">
           <simpleType>
              <restriction base = "string">
                 <enumeration value = "English"/>
                 <enumeration value = "Spanish"/>
              </restriction>
           </simpleType>
        </element>
        <element name = "CMAC_supplemental_text_alert_message_length" type = "integer"/>
        <element name = "CMAC_supplmental_text_alert_message" type = "string"/>
    </sequence>
   </complexType>
  </schema>
```

6.2 Example to Show to XML Schema for CMAS Supplemental Information/Spanish

This sub-clause gives an example of XML schema usage for CMAS Supplemental Information/Spanish retrieval with the Spanish language text being available at the Federal Alert Gateway.

```
<?xml version = "1.0" encoding = "UTF-8"?>
<CMAS_Supplemental_Information xmlns = "urn:xxx:xxx:xx:xxx:CMAS:1.0"
   <CMAC_message_number>00001056</CMAC_message_number>
   <CMAC_supplemental_text_language>Spanish</CMAC_supplemental_text_language>
   <CMAC_supplemental_text_alert_message_length>97
      </CMAC_supplemental_text_alert_message_length>
   <CMAC_supplemental_text_alert_message>Advertencia de seguridad Publica Esta area es
afectada hasta 3:00pm EDT Evacucion inmediata NYPD</CMAC_supplemental_text_alert_message>
</CMAS_Supplemental_Information>
```

Annex A: Generation of Spanish Language CMAS Messages

(informative)

Spanish language text is always composed by the alert originator and it should be noted that in most cases the Spanish version requires more characters than the English version.

As an example: "Public Safety Warning This area is affected until 3:00pm EDT Evacuate Now NYPD". In English, this requires 78 characters.

The Spanish equivalent is: "Advertencia de seguridad pública Esta área es afectada hasta 3:00pm EDT Evacuación inmediata NYPD". In Spanish, this requires 97 characters.

The following is an example of a longest presumed Spanish language CMAS message:

Aviso de las autoridades de la ley Esta área es afectada hasta 12:00AM PDT Compruebe nedios de noticias para información NYPD

This message requires 125 characters.

NOTE: The corresponding English message requires 79 characters and is: "Law Enforcement Warning in this area until 12:00AM PDT Monitor Radio or TV NYPD".

Annex B: Spanish Language Support Process Flow

(informative)

This informative Annex describes the process flow involved in the handling of CMAS alert broadcast in Spanish language text. As such this annex focuses on the interaction between the Federal Alert Gateway and the CMSP Gateway.

A CAP message arriving at the Federal Alert Gateway always has the alert text in English language and may optionally have the alert text in Spanish language. The Federal Alert Gateway always includes only the alert text in English in the CMAC message that it sends to the CMSP Gateway. If the CMSP supports the broadcast of CMAS alert in Spanish, then the CMSP Gateway would retrieve the Spanish language alert text from the Federal Alert Gateway using the CAP Retrieval mechanism.

However, since not all CMAS alerts may have associated Spanish text, the Federal Alert Gateway has the capability to indicate to the CMSP Gateway that the CMAS alert has an associated Spanish language alert text.

The Federal Alert Gateway and CMSP Gateway operate using the following concept:

- If the incoming CAP message carries the alert text in Spanish, the Federal Alert Gateway extracts the Spanish text from the CAP message and stores internally at a database.

- Federal Alert Gateway includes a CMAC_note in the CMAC message sent to the CMSP Gateway. The CMAC_note will have "SPANISH" followed by the address where the Spanish text was stored in the form an URI. The use of "SPANISH" will tell the CMSP Gateway that the CMAS alert has an associated Spanish alert text stored at the URI.

- If the CMSP policy supports the Spanish language CMAS alert broadcast, and if the CMAC_note indicating the presence of Spanish language alert text with the URI is included in the CMAC message, then the CMSP Gateway uses the CAP retrieval mechanism to retrieve the Spanish language alert text from the Federal Alert Gateway. The CMSP Gateway uses the URI that it had received from the Federal Alert Gateway to fetch the Spanish language alert text.

- Even if the operator policy supports the Spanish language CMAS alert broadcast, if there is no CMAC_note that indicates the presence of Spanish language text and containing the URI where the Spanish language text is stored in the CMAC message, the CMSP Gateway would broadcast CMAS alert only in English language. In other words, there will not be any retrieval for Spanish language text.

- If for some reason, the Federal Alert Gateway fails to find the Spanish text, then it would return an HTTP error message to the CMSP Gateway.

Note that with this new concept, the case of Federal Alert Gateway not finding the Spanish text can only happen due to some abnormal situations. The CMSP Gateway would attempt to retrieve the Spanish text only if the Federal Alert Gateway had supplied the URI where the Spanish text was stored.

The Figure B.1 below illustrates the process flow within the Federal Alert Gateway and the CMSP Gateway along with the interaction between the two:
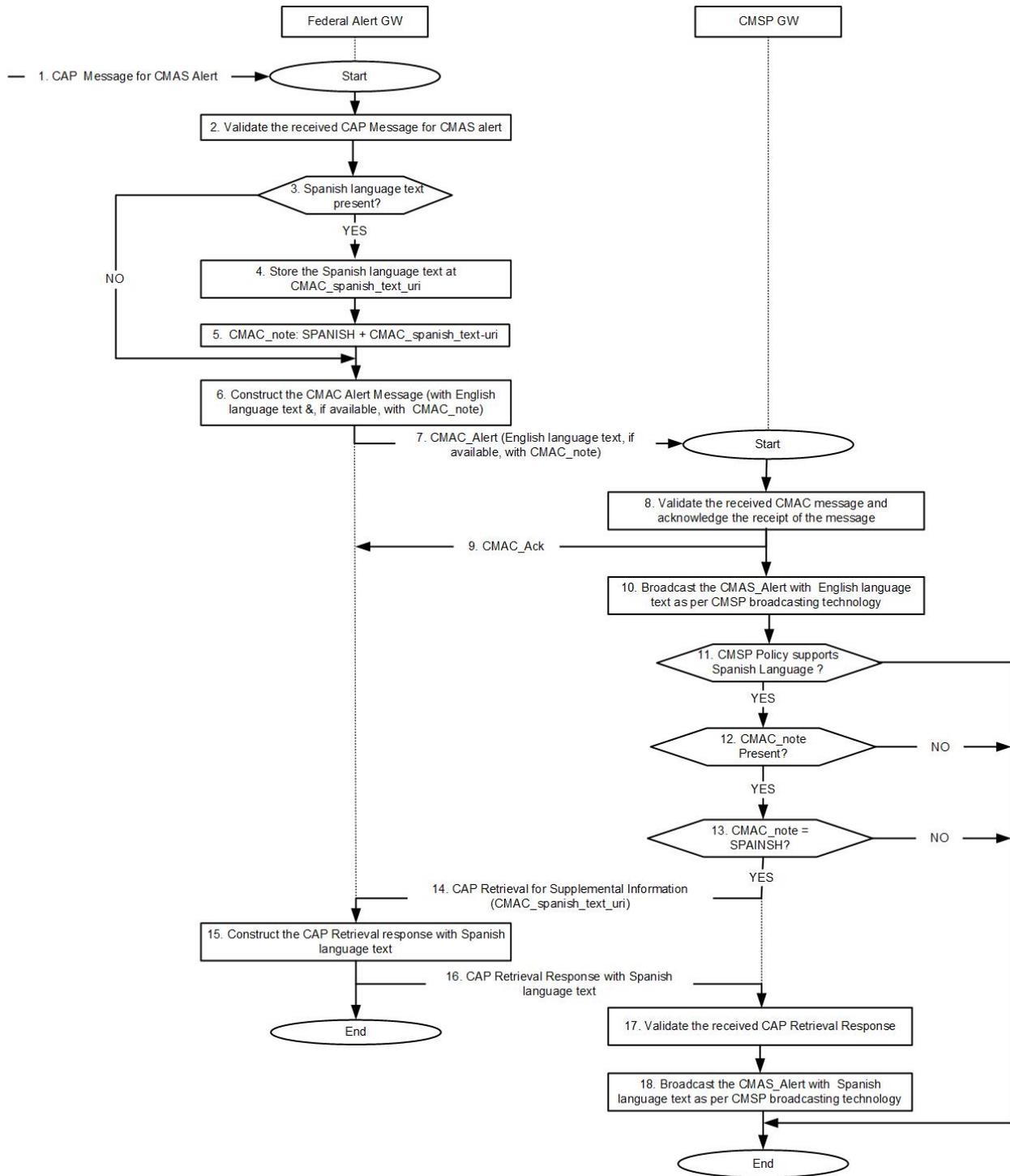
Figure B.1 – Process Flow in the Federal Alert Gateway and the CMSP Gateway

Description of the steps:

The following steps are for Federal Alert Gateway

1. A CAP message for a CMAS alert arrives at the Federal Alert Gateway.

2. Federal Alert Gateway validates the received message and continues if everything is good. This illustration assumes everything is good.

3. Federal Alert Gateway examines the received CAP message to check whether it carries any alert text in Spanish. If it does not, then the process continues at step 6. If it carries the Spanish language alert text, the process continues according to the next step.

4. Federal Alert Gateway stores that message at a location, referred in this illustration as CMAC_spanish_text_uri.

5. Federal Alert Gateway constructs a CMAC_note that indicates that Spanish text is present (using SPANISH) along with the URI.

6. Irrespective of whether the CAP message carries the alert text in Spanish or not, the Federal Alert Gateway constructs a CMAC message with alert text in English. It includes the CMAC_note if the process has gone through step 4 and 5 above. The Federal Alert Gateway may also include the CMAC message identifier within the CMAC_note.

7. Federal Alert Gateway sends the CMAC message to the CMSP Gateway.

The following steps are for CMSP Gateway

8. CMSP Gateway receives and validates the CMAC message and continues as shown below if everything is good. This illustration assumes everything is good.

9. CMSP Gateway sends an acknowledgement to the Federal Gateway to indicate that the CMAC message was received and validated successfully.

10. CMSP Gateway broadcasts the CMAS alert in English using the broadcasting methods to the radio access technologies supported by the CMSP.

11. If the CMSP policy is such that the CMSP does not support the Spanish language alert broadcast, then the CMSP process ends. On the other hand, if the CMSP policy does support the broadcast of alert in Spanish language, then process continues to the next step.

12. CMSP Gateway checks the received CMAC message to see whether it included a CMAC_note. If the CMAC_note is not included, then it means that no Spanish language alert can be associated with the CMAS alert message and CMSP process ends. On the other hand, if the CMAC_note is included, then process continues to the next step.

13. CMSP Gateway checks to see whether the CMAC_note indicates the presence of Spanish language alert text at the Federal Alert Gateway with an URI. If the CMAC_note does not indicate the presence of Spanish language alert text, then the CMSP process ends. If the CMAC_note indicates the presence of Spanish language alert text, but if there is no URI, then the Spanish language alert text cannot be retrieved, and hence the CMSP process ends. On the other hand, if the CMAC_note indicates the presence of Spanish language alert text and an URI, then process continues to the next step.

14. CMSP Gateway sends an HTTP: GET message with the URI it received in the CMAC message in step 7.

The following steps are for Federal Alert Gateway

15. Federal Alert Gateway constructs the CAP retrieval response with the Spanish language text stored at the URI indicated in the HTTP GET message. If for some reason the Federal Alert Gateway is unable to return the Spanish language text, then an HTTP error message is returned to the CMSP Gateway (and the process ends). If the Federal Alert Gateway is successful in returning the Spanish language text (as it should be, normally), then process continues to the next step.

16. Federal Alert Gateway sends an HTTP: 200 OK that includes the Spanish language alert text using the XML schema defined in clause 6.1. The Federal Alert Gateway process ends here.

The following steps are for CMSP Gateway

17. The CMSP Gateway receives the HTTP: 200 OK, validates the contained Spanish language text. This illustration assumes the validation is successful.

18. CMSP Gateway broadcasts the CMAS alert in Spanish using the broadcasting methods suitable to the radio access technologies supported by the CMSP.

Even though the process flow uses the CMAC_Alert as an example, the same process flow is used when an original CMAS alert message is updated.

However, it can so happen (not normal, but still can happen) that the initial CMAS alert has an associated Spanish language alert text but not the updated CMAS alert. In this case, the CMSP Gateway would stop the broadcast of original alerts of both languages and continue the broadcast with the updated alert only in English. In the same way, the original CMAS alert may just have the alert in English and the updated CMAS alert may have alert in English and Spanish. The CMSP Gateway is able to broadcast the updated alerts in both languages.

When an Alert is cancelled by the alert originator, only one CMAC_Cancel message is sent from the Federal Alert Gateway to the CMSP Gateway and the CMSP Gateway would stop the broadcast of alerts of both languages.