

**Common Alerting Protocol
Canadian Profile
(CAPCP)**

Record of Amendments

Version	Date	Author(s)	Amendment(s)
1.1	March 18 2008		Editorial changes and the addition of 'Strongly recommending the use the < instruction>' were suggested by Public Safety Canada Corrections to the event code list were suggested by Environment Canada.
1.1	May 8 2008		Editorial changes and the

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Introduction

The Vision

The creation of the Common Alerting Protocol (CAP) is proving to be a tremendous development in the field of public alerting. It offers us the hope that one day soon, and when seconds count, public officials can issue an alert message once, using a single method and protocol, and have it delivered to the public through various supporting communications media. Additionally, it offers us hope that the public will be able to tap into a stream or database of alerts, and receive those of interest or relevance, by location, event type, severity, source, etc. This is a vast improvement over the current practice of having to create a separate alert message for each communications medium, system or technology.

The Challenge

We have come to realize that there is much more to implementing CAP than simply stating we will do so. We had to answer basic questions, such as: How do we identify locations? What is our common terminology for identifying events? How do we handle our two first languages? How can we make it possible for a unilingual person to issue a bilingual message? With this in mind, many Canadian public alerting stakeholders have come to appreciate the need for a CAP Canadian Profile (CAPCP).

A CAP Canadian Profile

This document offers Canadian public alerting stakeholders the *CAP Canadian Profile Version 1.0, for the Common Alerting Protocol Version 1.1* for use in Canada. The profile began as a proposal submitted by the Province of New Brunswick Emergency Measures Organization, working in collaboration with Doug Allport of the Allport Group. It has since had the benefit of input from a diverse stakeholder base, including CAP's author and OASIS standard editor, Art Botterrell, and the CAP Working Group chaired by Industry Canada.

The CAP Canadian Profile outlines a requirement and how to define locations, a common terminology for events, and the handling of our two first languages. It also provides stakeholders with solutions to challenges encountered by the early adopters of CAP. It is fully compliant with OASIS CAP v1.1.

Executive Summary

Purpose of this Document

This document provides Canadian public alerting stakeholders with a draft *Canadian Profile* (hereinafter referred to as the *Profile* or *CAPCP*) for the *Common Alerting Protocol* (hereinafter referred to as *CAP*).

Reference Standard

This Profile pertains to the OASIS Standard Version 1.1 for the Common Alerting Protocol (CAP). The standard is available at:

<http://www.oasis-open.org/committees/download.php/14759/emergency-CAPv1.1.pdf>.

Purpose of the Canadian Profile

The Profile has been developed for the issuance of public alerts for all hazards, for all levels of urgency, by all government departments, and by all levels of government, for distribution and redistribution through a myriad of communications media. We recognize that there are other uses for CAP in Canada which may not follow this Profile.

The Profile defines requirements in addition to those imposed by the OASIS standard, and provides a list of elements for which specific attributes or suggested practices are being offered.

The Profile makes it possible for originators to issue alerts for distribution in languages other than their own, with confidence that the content and intent satisfy recognized needs.

The CAP Canadian Profile is fully compliant with OASIS CAP v1.1.

Requirements of the Canadian Profile

This document is structured in such a way that additional requirements are presented first, followed by the attributes and practices associated with specific elements. A table of OASIS requirements for each element is included, with the addition of a column specific to the Canadian Profile. The document also includes an event list and sample alert messages.

Additional Requirements

This section of the report identifies Profile requirements, which are in addition to those defined by the OASIS standard CAP version 1.1. They include:

- Limited use and specific requirements associated with multiple <info> segments (also known as <info> blocks)
- Limited use and specific requirements associated with multiple <area> segments
- Required use of <language>
- Required use of <geocode>
- Required use of <eventcode>
- Use of <expires>
- Use of <senderName>
- Use of <instruction>
- Redefined <severity>

1. **info> segments**

The OASIS CAP standard allows for the use of multiple <info> segments per <alert>, but only provides for a single message identifier per <alert>. Further, CAP allows for updates and cancellations of <alerts>. The challenge is what is to be concluded when faced with an update or cancellation of only one of a multiple of <info> segments, if each <info> segment were to refer to a different event. To avoid any potential confusion, the Canadian profile limits each CAP <alert> to a single <info> segment except for the purpose of providing alerts in additional languages. The only difference between multiple <info> segments is to be the value in <language>, and the language used in the descriptive fields. They will pertain to the same event type.

Under ideal conditions, an alert issued in two or more languages will be issued in all languages simultaneously. In cases where translation is not simultaneous, the alert message may be issued immediately in the original language and then followed by an updated alert message which includes the original message plus an additional <info> segment for each language translation. It is expected that the use of standardized message composition and previously translated CAP element terminology will facilitate the translation of alert messages into official languages and other languages as needed.

An updated alert message is to contain the entire alert and not just the updated portion (IE when updating an <info> segment, the other <info> segments for other languages are to be included). Further a <parameter> is to be added to indicate

which <info> segments have been updated. The <parameter> <valuename> of “Update” is to have value of “same” or “revised”.

2. <area>

The OASIS CAP standard allows for more than one <area> segment per <info> segment, and therefore more than one <AreaDesc>. To maximize effectiveness to the public, the Canadian Profile strongly encourages, where possible, the use of only one <area> block per <info> block. Additionally, where multiple <area> blocks are used, consolidation of <area> blocks into as few <area> blocks as possible is also strongly recommended.

NOTE: In cases of multiple <area> blocks, each <area> block will differ by their <AreaDesc> value and recognized <geocode> value(s). The relationship between these two tags is therefore understood without additional parameterization. This maintains the integrity of International CAP-XML messages within the Canadian System.

3. Required use of <language>

In CAP, the absence of a <language> value results in US English being assumed by default. As this does not support either official language, the profile requires that <language> be completed by alert message originators to ensure an appropriate value is used. The language value is important for message distributors.

4. Required use of a nationally recognized <geocode>

A primary objective of public alerting is to be able to target alerts to the affected community/ area(s). To achieve this, the profile requires the use of a geolocation code (<geocode>). To simplify technical solutions, the <geocode> must come from a list that all stakeholders recognize and must also provide standard references across languages. The Statistic Canada Geographical Standard Classification (SGC) has been identified as the <geocode> list to be used.

The Standard Geographical Classification (SGC) is Statistics Canada's official classification of geographic areas in Canada. The SGC provides unique numeric codes for three types of geographic areas: provinces and territories, census divisions (counties, regional municipalities), and census subdivisions (municipalities). Further information on SGC is available at <http://www.statcan.ca/english/Subjects/Standard/sgc/2006/2006-sgc-index.htm#1>

The profile strongly recommends that every alert include a recognized location name. This is the text readable form used primarily for comprehension by the public. The profile recommends using the SGC corresponding location name for <location>.

In addition to the SGC codes, the use of a Geospatial file is encouraged , especially when the area of an alert does not match the geo-political areas identified.

It should be noted that other geolocation codes may be used in addition to the SGC codes.

Details regarding <geocode> values can be found in the element value section.

5. Required use of nationally recognized <eventCode>

CAP requires <event>. <eventCode> is the machine-readable format.

CAP requires <Urgency>, <Severity> and <Certainty>. It is the <Urgency>, <Severity> and <Certainty> levels associated with a particular <event code> which determine whether an alert will warrant the use a public alerting system (PAS). For this reason the profile requires <eventCode>.

A preliminary list of event codes has been developed. Only some of these events have the potential to escalate to a level which would warrant the use of a PAS. The minimum Urgency/Severity/Certainty (USC) levels needed to trigger a PAS are being developed and will be maintained by federal, provincial and territorial government subject matter experts. This list will be available to radio and television broadcasters and broadcaster distributor undertakings.

Details regarding <eventCode> use can be found in the element value section. A complete list of event codes and corresponding event names can be found later in this document.

6. Strongly recommended use of <expires>

Broadcasters, and others, make the point that they must know the duration of an event so that they can determine the duration of their support for it. Others make the point that it may not be practical to always include a duration, and that we should therefore not require it.

At this time, it is strongly recommended that originator include a value for <expires>.

7. Strongly recommended use of <senderName>

The public wants to know who issued the alert, and <senderName> is the CAP element serving this purpose. Including a <senderName> value allows for the inclusion of the issuing agency's name in an automated standard message.

8. Strongly recommended use of <instruction>

The public may need to know what actions to take in order to stay out of harms way, and <instruction> is the CAP element serving this purpose. Including a <instruction> value allows for the inclusion of <instruction> that could be included in an automated standard message.

9. Redefined <severity>

The definition for the "Minor" value of <severity> is missing the words "to no", and should read "Minimal to no threat to life or property." It is not the intent to limit the use of CAP to only events which have a threat to life and property.

CAP Element Attributes

This section provides details for CAP Profile recommendations associated with specific CAP elements. Only elements with specific requirements are included in this section. Most of the content found in this section is also included in the CAP element table to follow.

1. <alert>

Limited to a single <info> segment or to multiple <info> segments where each <info> segment differs from one another only by the language of the values.

2. <sender>

Must be traceable to an agency, and will preferably be easily read and understood.

3. <code>

To help systems recognize that the alert message is compliant with the Profile, CAPCPv1.1 may be used.

4. **<references>**

The entire reference trail is to be included, and not just the last reference. For example, an update issued to add a language references the original message. A later update to the area would reference both the update and the original message.

To accommodate multiple-event scenarios, an alert message may include a reference to an alert message previously issued by another authority. One example may be a transportation alert issued by a provincial transportation authority which references a severe weather alert previously issued by Environment Canada. In this case, the second alert would have a unique identifier and likely have a different event name.

5. **<info>**

Limit of one <info> per <alert>, except where additional <info> segments differ from one another in content language and <language> value.

When the <msgType> is an “Update”, and one but not all <info> segments are being updated or added, a <parameter> <valuenam> of “Update” with a value of “Same” or “Revised” is to be included.

6. **<language>**

Required. English messages are to be identified as Canadian English, and French messages as Canadian French.

7. **<category>**

Corresponding values for each event are provided in the event list, but we note that we are not proposing forced association.

8. **<event>**

The value of <event> must come from the approved event list and match the value found in <eventCode>.

There is a limit of one value only.

Events may be supported with a <parameter> value, identified by <valueName> “CDNeventREF”. For example, School Bus may be supported with the name or number of the bus(es). Food Supply may be supported with the words Nut Allergy.

The profile event list does not include the words Warning, Watch, Statement or Advisory, as these are urgency and severity ratings, better suited to the specific CAP elements <urgency>, <certainty>, and <severity>. Further, we have not included action items, such as evacuate and shelter in place, because again, they are better suited to specific CAP elements, and inconsistent with an event list.

The event and event code lists are evergreen lists.

9. **<severity>**

As noted earlier in this report, the description of “Minor” is to include the words “to no”, and read “Minimal to no threat to life or property.” The next iteration of the OASIS standard is expected to include this correction.

10. **<eventCode>**

The profile requires the use of <event code>. Event codes must come from the recognized event list. There is a limit of one <eventCode> per alert message.

The <valueName> referring to the nationally recognized event code will be “CDNevent”.

The Canadian <eventcode> format is 4 to 12 characters, is not case-sensitive, and has no spaces allowed. Note that the <eventCode> format is intentionally different from the US EAS SAME.

11. **<expires>**

It is strongly recommended that this element be completed by alert-message originators.

12. **<senderName>**

It is strongly recommended that this field be completed by alert-message originators.

13. <headline>

Recommend headline includes text associated with <event>, text associated with <geocode> value(s), the word “to” followed by value for <expires>. Example: Tornado Alert, Ottawa, to 10:00 PM

14. <instruction>

It is strongly recommended that <instruction> be completed by alert-message originators.

15. <parameter>

“CDNeventRef” is the <valueName> to be used for values associated with events. See <event>.

“Update” is the <valueName> to be used for values associated with alert update. See <info>.

16. <area>

To maximize effectiveness to the public, the Canadian Profile encourages, where possible, the use of one <area> block per <info> block. Additionally, where multiple <area> blocks are used, consolidation of <area> blocks into as few <area> blocks as possible is recommended. Where there is more than one <info> segment per <alert>, (i.e. one info segment per language) the corresponding <area> element(s) values found in each <info> segment are to differ only in the translated value associated with <areaDesc>.

NOTE: In cases of multiple <area> blocks, each <area> block will differ by its <Area Desc> value and recognized <geocode> value(s). The relationship between these two tags is therefore understood without additional parameterization. This maintains the integrity of International CAP-XML messages within the Canadian System.

With <geocode> now a required element, <area> must be as well.

17. **<geocode>**

The profile requires <geocode>. At least one nationally recognized <geocode> value is to be included in each <alert>.

Recognized geo-codes are based on Statistics Canada Standard Geographical Classification (SGC) Provincial Codes, Census Sub-Divisions (CSD), and Census Divisions (CD). Further information on SGC is available at <http://www.statcan.ca/english/Subjects/Standard/sgc/2006/2006-sgc-index.htm#1>

<valueName> of “SGC” is to be used to identify SGC codes.

Geocode may also include a <valueName> of “postalCode”, with a value of postal codes. Format of Postal Code will be either three or six alphanumeric characters, with no space between characters three and four if all six characters are used.

CAP/CAPCP Element Table

First 4 columns come from OASIS V1.1 Standard.

Element Name	Context. Class. Attribute. Representation	Definition and (Optionality)	Notes or Value Domain	Canadian CAP Public Alerting Profile Requirements
"alert" Element and Sub-elements				
Alert	cap. alert. group	The container for all component parts of the alert message (REQUIRED)	(1) Surrounds CAP alert message sub-elements (2) MUST include the xmlns attribute referencing the CAP URN as the namespace, e.g.: <pre><cap:alert xmlns:cap="urn:oasis:names:tc:emergency:cap:1.1"> [sub-elements] </cap:alert></pre> (3) In addition to the specified sub-elements, MAY contain one or more <info> blocks.	(1) Limit one <info> segment per alert, except where additional <info> segments have a different value for <language>.
identifier	cap. alert. identifier	The identifier of the alert message (REQUIRED)	(1) A number or string uniquely identifying this message, assigned by the sender (2) MUST NOT include spaces, commas or restricted characters (< and &)	
Sender	cap. alert. sender. identifier	The identifier of the sender of the alert message (REQUIRED)	(1) Identifies the originator of this alert. Guaranteed by assigner to be unique globally; e.g., may be based	(1) Must be traceable to the message originator.

			<p>on an Internet domain name</p> <p>(2) MUST NOT include spaces, commas or restricted characters (< and &)</p>	
Sent	cap. alert. sent. time	The time and date of the origination of the alert message (REQUIRED)	<p>(1) The date and time is represented in [dateTime] format (e. g., "2002-05-24T16:49:00-07:00" for 24 May 2002 at 16: 49 PDT).</p> <p>(2) Alphabetic time-zone designators such as "Z" MUST NOT be used. The time-zone for UTC MUST be represented as "-00:00" or "+00:00.</p>	
Status	cap. alert. status. code	The code denoting the appropriate handling of the alert message (REQUIRED)	<p>Code Values:</p> <p>"Actual" - Actionable by all targeted recipients</p> <p>"Exercise"- Actionable only by designated exercise participants; exercise identifier should appear in <note></p> <p>"System" - For messages that support alert network internal functions.</p> <p>"Test" - Technical testing only, all recipients disregard</p> <p>"Draft" – A preliminary template or draft, not actionable in its current form.</p>	
msgType	cap. alert. type. code	The code denoting the nature of the alert message (REQUIRED)	<p>Code Values:</p> <p>"Alert" - Initial information requiring attention by targeted recipients</p> <p>"Update" - Updates and supersedes the earlier message(s) identified in</p>	

			<p><references> "Cancel" - Cancels the earlier message(s) identified in <references> "Ack" - Acknowledges receipt and acceptance of the message(s) identified in <references> "Error" indicates rejection of the message(s) identified in <references>; explanation SHOULD appear in <note></p>	
source	cap. alert. source. identifier	The text identifying the source of the alert message (OPTIONAL)	The particular source of this alert; e.g., an operator or a specific device.	
scope	cap. alert. scope. code	The code denoting the intended distribution of the alert message (REQUIRED)	Code Values: "Public" - For general dissemination to unrestricted audiences "Restricted" - For dissemination only to users with a known operational requirement (see <restriction>, below) "Private" - For dissemination only to specified addresses (see <address>, below)	
Restriction	cap. alert. restriction. text	The text describing the rule for limiting distribution of the restricted alert message (conditional)	Used when <scope> value is "Restricted"	
Addresses	cap. alert. addresses.	The group listing of intended	(1) Used when <scope> value is "Private"	

	group	recipients of the private alert message (conditional)	(2) Each recipient SHALL be identified by an identifier or an address (3) Multiple space-delimited addresses MAY be included. Addresses including white space MUST be enclosed in double-quotes.	
code	cap. alert. code	The code denoting the special handling of the alert message (OPTIONAL)	(1) Any user-defined flag or special code used to flag the alert message for special handling. (2) Multiple instances MAY occur within a single <info> block.	Recommended to indicate originator assured compliancy with Canadian profile. "CAPCPv1.1" denotes the Canadian CAP profile
note	cap. alert. note. text	The text describing the purpose or significance of the alert message (OPTIONAL)	(1) The message note is primarily intended for use with Cancel and Error alert message types.	
references	cap. alert. references. group	The group listing identifying earlier message(s) referenced by the alert message (OPTIONAL)	(1) The extended message identifier(s) (in the form <i>sender, identifier, sent</i>) of an earlier CAP message or messages referenced by this one. (2) If multiple messages are referenced, they SHALL be separated by white space.	(1) To include the entire update trail, and not just the most recent update.
Incidents	cap. alert. incidents. group	The group listing naming the referent incident(s) of	(1) Used to collate multiple messages referring to different aspects of the same incident	

		the alert message (OPTIONAL)	(2) If multiple incident identifiers are referenced, they SHALL be separated by whitespace. Incident names including whitespace SHALL be surrounded by double-quotes	
"info" Element and Sub-elements				
Info	cap. alertInfo. info. group	The container for all component parts of the info sub-element of the alert message (OPTIONAL)	(1) Multiple occurrences are permitted within a single <alert>. If targeting of multiple "info" blocks in the same language overlaps, information in later blocks may expand but may not override the corresponding values in earlier ones. Each set of "info" blocks containing the same language identifier SHALL be treated as a separate sequence. (2) In addition to the specified sub-elements, MAY contain one or more <resource> blocks and/or one or more <area> blocks.	(1) Limit of one <info> per <alert>, except where each <info> differs by the value for <language>, and language used in some values.
Language	cap. alertInfo. language. code	The code denoting the language of the info sub-element of the alert message (OPTIONAL)	(1) Code Values: Natural language identifier per [RFC 3066] . (2) If not present, an implicit default value of "en-US" SHALL be assumed.	(1) Required

			(3) A null value in this element SHALL be considered equivalent to “en-US.”	
Category	cap. alertInfo. category. code	The code denoting the category of the subject event of the alert message (REQUIRED)	<p>(1) Code Values: “Geo” - Geophysical (incl. landslide) “Met” - Meteorological (incl. flood) “Safety” - General emergency and public safety “Security” - Law enforcement, military, homeland and local/private security “Rescue” - Rescue and recovery “Fire” - Fire suppression and rescue “Health” - Medical and public health “Env” - Pollution and other environmental “Transport” - Public and private transportation “Infra” - Utility, telecommunication, other non-transport infrastructure “CBRNE” – Chemical, Biological, Radiological, Nuclear or High-Yield Explosive threat or attack “Other” - Other events</p> <p>(2) Multiple instances MAY occur within a single <info> block.</p>	(1) Suggested use provided in event list table.
Event	cap. alertInfo. event. text	The text denoting the type of the subject event of the alert message (REQUIRED)		<p>(1) One value only. (2) Value must come from nationally recognized event code list. (3) May be supported with a <parameter> value, identified with a <valueName> of “CDNeventREF”.</p>

responseType	cap. alertInfo. responseT ype. code	The code denoting the type of action recommended for the target audience. (OPTIONAL)	(1) Code Values: “Shelter” – Take shelter in place or per <instruction> “Evacuate” – Relocate as instructed in the <instruction> “Prepare” – Make preparations as per the <instruction> “Execute” – Execute a pre-planned activity identified in <instruction> “Monitor” – Attend to information sources as described in <instruction> “Assess” – Evaluate the information in this message. (This value SHOULD NOT be used in public warning applications.) “None” – No action recommended (2) Multiple instances MAY occur within a single <info> block.	(1) English values defined by OASIS are standard; however, supporting text in French can be found in PACPCv1.1.
Urgency	cap. alertInfo. urgency. code	The code denoting the urgency of the subject event of the alert message (REQUIRED)	(1) The “urgency”, “severity”, and “certainty” elements collectively distinguish less emphatic from more emphatic messages. (2) Code Values: “Immediate” - Responsive action SHOULD be taken immediately “Expected” - Responsive action SHOULD be taken soon (within next hour) “Future” - Responsive action SHOULD be taken in the near future “Past” - Responsive action is no longer	(1) English values defined by OASIS are standard; however, supporting text in French is found in PACPCv1.1.

			required "Unknown" - Urgency not known	
Severity	cap. alertInfo. severity. code	The code denoting the severity of the subject event of the alert message (REQUIRED)	(1) The "urgency", "severity", and "certainty" elements collectively distinguish less emphatic from more emphatic messages. (2) Code Values: "Extreme" - Extraordinary threat to life or property "Severe" - Significant threat to life or property "Moderate" - Possible threat to life or property "Minor" - Minimal "to no" threat to life or property "Unknown" - Severity unknown	Note: Definition altered for "Minor" ("Minor" - Minimal "to no" threat to life or property) Intent is not to include non-life- threatening events. Next iteration of CAP standard is expected to be revised. (1) English values defined by OASIS are standard; however, supporting text in French is found in PACPCv1.1.
Certainty	cap. alertInfo. certainty. code	The code denoting the certainty of the subject event of the alert message (REQUIRED)	(1) The "urgency", "severity", and "certainty" elements collectively distinguish less emphatic from more emphatic messages. (2) Code Values: "Observed" – Determined to have occurred or to be ongoing. "Likely" - Likely (p > ~50%) "Possible" - Possible but not likely (p <= ~50%) "Unlikely" - Not expected to occur (p ~ 0) "Unknown" - Certainty unknown (3) For backward compatibility with CAP 1.0, the deprecated value of "Very Likely" SHOULD be treated as	(1) English values defined by OASIS are standard; however, supporting text in French is found in PACPCv1.1.

			equivalent to "Likely."	
Audience	cap. alertInfo. audience. text	The text describing the intended audience of the alert message (OPTIONAL)		
eventCode	cap. alertInfo. event. code	A system-specific code identifying the event type of the alert message (OPTIONAL)	<p>(1) Any system-specific code for event typing, in the form: <code><eventCode></code></p> <p><code><valueName>valueName</valueName></code></p> <p><code><value>value</value></code> <code></eventCode></code></p> <p>where the content of "valueName" is a user-assigned string designating the domain of the code, and the content of "value" is a string (which may represent a number) denoting the value itself (e.g., valueName="SAME" and value="CEM").</p> <p>(2) Values of "valueName" that are acronyms SHOULD be represented in all upper-case letters, with no periods (e.g., SAME, FIPS, ZIP).</p> <p>(1) Multiple instances MAY occur within a single <info> block.</p>	<p>(1) Required</p> <p>(2) <valueName> of "CDNevent", with a value from nationally recognized list, is required.</p> <p>(3) Limit of one value</p> <p>(4) English values defined by CAPCPv1.1 are to be used with all languages as CAP values.</p>
Effective	cap. alertInfo. effective. time	The effective time of the information of the alert message (OPTIONAL)	<p>(1) The date and time is represented in [dateTime] format (e.g., "2002-05-24T16:49:00-07:00" for 24 May 2002 at 16:49 PDT).</p> <p>(2) Alphabetic time-zone designators such as "Z" MUST NOT be</p>	

			used. The time-zone for UTC MUST be represented as “-00:00” or “+00:00. (3) If this item is not included, the effective time SHALL be assumed to be the same as in <sent>.	
Onset	cap. alertInfo. onset. time	The expected time of the beginning of the subject event of the alert message (OPTIONAL)	(1) The date and time is represented in [dateTime] format (e. g., “2002-05-24T16:49:00-07:00” for 24 May 2002 at 16:49 PDT). (2) Alphabetic time-zone designators such as “Z” MUST NOT be used. The time zone for UTC MUST be represented as “-00:00” or “+00:00.	
Expires	cap. alertInfo. expires. time	The expiry time of the information of the alert message (OPTIONAL)	(1) The date and time is represented in [dateTime] format (e. g., “2002-05-24T16:49:00-07:00” for 24 May 2002 at 16:49 PDT). (2) Alphabetic time-zone designators such as “Z” MUST NOT be used. The time zone for UTC MUST be represented as “-00:00” or “+00:00. (3) If this item is not provided, each recipient is free to set its own policy as to when the message is no longer in effect.	(1) STRONGLY RECOMMENDED
senderName	cap. alertInfo. sender. name	The text naming the originator of the alert message (OPTIONAL)	The human-readable name of the agency or authority issuing this alert.	(1) STRONGLY RECOMMENDED (2) To be the full name of the agency issuing the alert.
Headline	cap.	The text	A brief human-readable	

	alertInfo. headline. text	headline of the alert message (OPTIONAL)	headline. Note that some displays (for example, short messaging service devices) may only present this headline; it SHOULD be made as direct and actionable as possible while remaining short. 160 characters MAY be a useful target limit for headline length.	
Description	cap. alertInfo. description. text	The text describing the subject event of the alert message (OPTIONAL)	An extended human- readable description of the hazard or event that occasioned this message.	
Instruction	cap. alertInfo. instruction. text	The text describing the recommended action to be taken by recipients of the alert message (OPTIONAL)	An extended human- readable instruction to targeted recipients. (If different instructions are intended for different recipients, they should be represented by the use of multiple <info> blocks.)	STRONGLY RECOMMENDED
web	cap alertInfo. information .identifier	The identifier of the hyperlink associating additional information with the alert message (OPTIONAL)	A full, absolute URI for an HTML page or other text resource with additional or reference information regarding this alert	
Contact	cap. alertInfo. contact. text	The text describing the contact for follow-up and confirmation of the alert message (OPTIONAL)		
Parameter	cap. alertInfo.	A system- specific	(1) Any system-specific datum, in the form:	(1) "CDNeventRef" the <valueName> to be used

	parameter. group	additional parameter associated with the alert message (OPTIONAL)	<pre><parameter></pre> <pre><valueName>valueName</valueName></pre> <pre><value>value</value></pre> <pre></parameter></pre> <p>where the content of "valueName" is a user-assigned string designating the domain of the code, and the content of "value" is a string (which may represent a number) denoting the value itself (e.g., valueName="SAME" and value="CIV".)</p> <p>(2) Values of "valueName" that are acronyms SHOULD be represented in all upper-case letters, with no periods (e.g., SAME, FIPS, ZIP).</p> <p>(3) Multiple instances MAY occur within a single <info> block.</p>	for values associated with events. (2) "Update" the <valueName> to be used with updates.
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"resource" Element and Sub-elements

resource	cap alertInfoResource. resource. group	The container for all component parts of the resource sub-element of the info sub-element of the alert element (OPTIONAL)	(1) Refers to an additional file with supplemental information related to this <info> element; e.g., an image or audio file (2) Multiple occurrences MAY occur within a single <info> block	
resourceDesc	cap. alertInfoResource. resourceDesc. text	The text describing the type and content of the resource file (REQUIRED)	The human-readable text describing the content and kind of the resource file, such as "map" or "photo".	

contentType	cap. alertInfoRe source. contentType. identifier	The identifier of the MIME content type and sub-type describing the resource file (OPTIONAL)	MIME content type and sub-type as described in [RFC 2046]. (As of this document, the current IANA registered MIME types are listed at http://www.iana.org/ass ignments/media-types/)	
Size	cap. alertInfoRe source. size. integer	The integer indicating the size of the resource file (OPTIONAL)	Approximate size of the resource file in bytes.	
Uri	cap. alertInfoRe source. uri. identifier	The identifier of the hyperlink for the resource file (OPTIONAL)	A full absolute URI, typically a Uniform Resource Locator that can be used to retrieve the resource over the Internet OR a relative URI to name the content of a <derefUri> element if one is present in this resource block.	
derefUri	cap alertInfoRe source. derefUri. data	The base-64 encoded data content of the resource file (CONDITION AL)	(1) MAY be used either with or instead of the <uri> element in messages transmitted over one-way (e.g., broadcast) data links where retrieval of a resource via a URI is not feasible. (2) Clients intended for use with one-way data links MUST support this element. (3) This element MUST NOT be used unless the sender is certain that all direct clients are capable of processing it. (4) If messages including this element are forwarded onto a two-way network, the forwarder MUST strip the <derefUri> element	

			and SHOULD extract the file contents and provide a <uri> link to a retrievable version of the file. (5) Providers of one-way data links MAY enforce additional restrictions on the use of this element, including message-size limits and restrictions regarding file types.	
Digest	cap. alertInfoRe source. digest. code	The code representing the digital digest ("hash") computed from the resource file (OPTIONAL)	Calculated using the Secure Hash Algorithm (SHA-1) per [FIPS 180-2]	
"area" Element and Sub-elements				
Area	cap. alertInfoAr ea. area. group	The container for all component parts of the area sub-element of the info sub-element of the alert message (OPTIONAL)	(1) Multiple occurrences permitted, in which case the target area for the <info> block is the union of all the included <area> blocks. (2) MAY contain one or more instances of <polygon>, <circle> or <geocode>. If multiple <polygon>, <circle> or <geocode> elements are included, the area described by this <area> is the union of those represented by the included elements.	(1) REQUIRED (2) To maximize effectiveness to the public, the Canadian Profile encourages the use, where possible, of one <area> block per <info> block. Additionally, where multiple <area> blocks are used, consolidation of <area> blocks into as few <area> blocks as possible is also encouraged. In both the case of both single and multiple <area> blocks, each <Area Desc> will have one value and will be in the language of the <info> block. (3) Must include a recognized <geocode> value.
AreaDesc	cap. alertInfoAr ea.	The text describing the affected	A text description of the affected area.	

	area. text	area of the alert message (REQUIRED)		
Polygon	cap. alertInfoAr ea. polygon. group	The paired values of points defining a polygon that delineate the affected area of the alert message (OPTIONAL)	(1) Code Values: The geographic polygon is represented by a white- space-delimited list of [WGS 84] coordinate pairs. (See WGS-84 Note at end of this section.) (2) The first and last pairs of coordinates MUST be the same. (3) See Coordinate Precision Note at end of this section. (4) Multiple instances MAY occur within an <area>.	
Circle	cap. alertInfoAr ea. circle. group	The paired values of a point and radius delineating the affected area of the alert message (OPTIONAL)	(1) Code Values: The circular area is represented by a central point given as a [WGS- 84] coordinate pair, followed by a space character and a radius value in kilometres. (See WGS- 84 Note at end of this section.) (2) See Coordinate Precision Note at end of this section. (3) Multiple instances MAY occur within an <area>.	
Geocode	cap. alertInfoAr ea. geocode. code	The geographic code delineating the affected area of the alert message (OPTIONAL)	(1) Any geographically based code to describe message target area: <parameter> <valueName>valueN ame</valueName> <value>value</val ue> </parameter> where the content of "valueName" is a user- assigned string	(1) At least one SGC value is REQUIRED. (2) Recognized geo-codes are based on Statistics Canada Standard Geographical Classification (SGC) Census Sub-Division (CSD), Census Division (CD), and Provincial codes. (3) Other codes may also be included, including

			<p>designating the domain of the code, and the content of "value" is a string (which may represent a number) denoting the value itself (e.g., valueName = "SAME" and value = "006113").</p> <p>(2) Values of "valueName" that are acronyms SHOULD be represented in all upper-case letters, with no periods (e.g., SAME, FIPS, ZIP).</p> <p>(3) Multiple instances MAY occur within a single <info> block.</p> <p>(4) This element is primarily for compatibility with other systems. Use of this element presumes knowledge of the coding system on the part of recipients; therefore, for interoperability, it SHOULD be used in concert with an equivalent description in the more universally understood <polygon> and <circle> forms whenever possible.</p>	<p><valueName> "postalCode" with three or six alphanumeric character Postal Codes, with no space between characters three and four if all six characters are used.</p>
altitude	cap. alertInfoArea. altitude. quantity	The specific or minimum altitude of the affected area of the alert message (OPTIONAL)	<p>(1) If used with the <ceiling> element, this value is the lower limit of a range. Otherwise, this value specifies a specific altitude.</p> <p>(2) The altitude measure is in feet above mean sea level per the [WGS- 84] datum.</p>	
ceiling	cap. alertInfoArea. ceiling. quantity	The maximum altitude of the affected area of the alert	<p>(1) MUST NOT be used, except in combination with the <altitude> element</p> <p>(2) The ceiling</p>	

		message (conditional)	measurement is in feet above mean sea level per the [WGS- 84] datum.	
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Event Code Table

Event codes and event code lists are evergreen.

Tier I, Tier II: Event codes have been identified in columns Tier I and Tier II. A CAPCP message will include only one event from either the Tier I or Tier II column.

The Event Code column is the machine-readable form of the event list.

The CAP Category Value column is the general category, under which the event falls.

Broadcasters have asked for a list of the events which have the potential to escalate to a level which would warrant the interruption of a radio or television broadcast in order to immediately carry the alert message to the public. Such a list will be available to broadcasters and broadcast distribution undertakings

TIER I EVENTS¹ (includes associated Tier II events)	TIER II EVENTS (Included in Tier I event associated with it)	EVENT CODE³ (4 to 12 chars., lower- camel- hump style)	APPLICABLE CAP CATEGORY VALUE
Administration		admin	Other
Air Quality		airQuality	Env, Health, Met, Transport
Animal Health		animalHealth	Health
"	Animal Disease	animalDiseas	Health
"	Animal Feed	animalFeed	Health
Aviation		aviation	Transport
"	Notice to Airmen	notam	Transport
"	Airspace Closure	airspaceClos	Transport
	Airport Closure	airportClose	Transport
"	Aircraft Crash	aircraftCras	Transport
Civil		civil	Security
"	Civil Emergency	civilEmerg	Security

TIER I EVENTS ¹ (includes associated Tier II events)	TIER II EVENTS (Included in Tier I event associated with it)	EVENT CODE ³ (4 to 12 chars., lower- camel- hump style)	APPLICABLE CAP CATEGORY VALUE
"	Public Event	civilEvent	Security
Criminal Activity		crime	Security
"	Dangerous Person	DangerPerson	Security
"	Home Crime	homeCrime	Security
"	Industrial Crime	industCrime	Security
"	Retail Crime	retailCrime	Security
"	Terrorism	terrorism	Security
"	Vehicle Crime	vehicleCrime	Security
Dangerous Animal		AnimalDang	Security
Fire		Fire	Fire
"	Wildfire	wildFire	Fire
"	Industrial	industryFire	Fire
"	Urban	urbanFire	Fire
"	Forest Fire	forestFire	Fire
Flood		flood	Met
"	Storm Surge	stormSurge	Met, ???
	High Water Level	highWater	Met
"	Overland Flow Flood	overflow	???
"	Flash Flood	flashFlood	???
"	Dam Overflow	damOverflow	???
Geological		geological	Geo
"	Avalanche	avalanche	Geo
"	Earthquake	earthquake	Geo
"	Landslide	landslide	Geo
"	Magnetic Storm	magnetStorm	Geo
"	Tsunami	tsunami	Met,Geo
"	Volcano	volcano	Geo

TIER I EVENTS ¹ (includes associated Tier II events)	TIER II EVENTS (Included in Tier I event associated with it)	EVENT CODE ³ (4 to 12 chars., lower-camel-hump style)	APPLICABLE CAP CATEGORY VALUE
“	Meteorological	meteor	Geo
Hazardous Materials		hazmat	CBRNE
“	Chemical Hazard	chemical	CBRNE
“	Biological Hazard	biological	CBRNE
“	Radiological Hazard	radiological	CBRNE
“	Explosive Hazard	explosive	CBRNE
“			
Health		health	Health
“	Ambulance	ambulance	Health
“	Blood supply	bloodSupply	Health
“	Drinking Water	drinkingWate	Health
“	Food & Drug Supply	foodSupply	Health
“	Hospital	hospital	Health
“	Infectious Disease	infectious	Health
Ice		Ice	Met
“	Ice Pressure	icePressure	Met
“	Rapid Closing of Coastal Leads	rpdCloseLead	Met
“	Special Ice	spclIce	Met
Marine		marine	Met, Transport
“	Freezing Spray	freezngSpray	Met
“	Gale Wind	galeWind	Met
“	Hurricane	HurricFrcWnd	Met

TIER I EVENTS ¹ (includes associated Tier II events)	TIER II EVENTS (Included in Tier I event associated with it)	EVENT CODE ³ (4 to 12 chars., lower-camel-hump style)	APPLICABLE CAP CATEGORY VALUE
	Force Wind		
"	Marine Security	marineSecure	Transport
	Special Marine	spclMarine	Met
"	Squall	squall	Met
"	Storm Force Wind	stormFrcWnd	Met
"	Strong Wind	strongWind	Met
"	Waterspout	waterspout	Met
Other Non-Urgent Alerts		other	Other
Other Urgent Alerts		otherUrgent	Other
Preparedness Reminders	Emergency Preparedness Reminder	reminder	Safety
Product Safety		product	Safety
Public Services		publicServic	Infra
"	School Bus	schoolBus	Infra
"	School Closure	schoolClose	Infra
"	School Lockdown	schoolLock	Infra
"	Service or Facility	facility	Infra
"	Transit	transit	Infra
Railway		railway	Transport
"	Train Accident	train	Transport
Rescue		rescue	Rescue
"	AMBER Alert	amber	Rescue
"	Missing Person	missingPer	Rescue
Roadway		road	Transport

TIER I EVENTS ¹ (includes associated Tier II events)	TIER II EVENTS (Included in Tier I event associated with it)	EVENT CODE ³ (4 to 12 chars., lower-camel-hump style)	APPLICABLE CAP CATEGORY VALUE
"	Roadway Closure or Delay	roadClose	Transport
"	Hazardous Road Conditions	rdCondition	Transport
"	Traffic Report	traffic	Transport
"	Roadway Usage Condition	roadUsage	Transport
"	Motor Vehicle Accident	accident	Transport
Storm		storm	Met
"	Blizzard	blizzard	Met
"	Blowing Snow	blowingSnow	Met
"	Dust Storm	dustStorm	Met
"	Freezing Drizzle	freezeDrzl	Met
"	Freezing Rain	freezeRain	Met
"	Hurricane	hurricane	Met
"	Rainfall	rainfall	Met
"	Thunderstorm	thunderstorm	Met
"	Snowfall	snowfall	Met
"	Snow Squall	snowSquall	Met
"	Tornado	tornado	Met
"	Tropical Storm	tropStorm	Met
"	Winter Storm	winterStorm	Met
"	Weather	weather	Met
Temperature		temperature	Met
"	Arctic Outflow	arcticOut	Met
"	Cold Wave	coldWave	Met

TIER I EVENTS ¹ (includes associated Tier II events)	TIER II EVENTS (Included in Tier I event associated with it)	EVENT CODE ³ (4 to 12 chars., lower- camel- hump style)	APPLICABLE CAP CATEGORY VALUE
"	Flash Freeze	flashFreeze	Met
"	Frost	frost	Met
"	Heat Wave	heatWave	Met
"	High Heat and Humidity	heatHumidity	Met
"	Wind Chill	windchill	Met
Test Message		testMessage	Other
Utility		utility	Infra
"	Cable Service	cable	Infra
"	Diesel Supply	diesel	Infra
"	Electricity Supply	electric	Infra
"	Gasoline Supply	gasoline	Infra
"	Heating Oil Supply	heatingOil	Infra
"	Internet Service	internet	Infra
"	Natural Gas Supply	naturalGas	Infra
"	Satellite Service	satellite	Infra
"	Sewer System	sewer	Infra
"	Telephone Service	telephone	Infra
"	911 Service Inoperative	911Service	Infra
"	Waste Management	waste	Infra
"	Water Supply	water	Infra
Wind		wind	Met

CAP Structural Template - Canadian Profile

The following template illustrates the structure of CAP, with the required elements of OASIS and the Canadian Profile highlighted.

```
<alert>
  <identifier></identifier>
  <sender></sender>
  <sent></sent>
  <status></status>
  <msgType></msgType>
  <source></source>
  <scope></scope>
  <restriction></restriction>
  <addresses></addresses>
  <code></code>
  <note></note>
  <references></references>
  <incidents></incidents>
  <info>
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    <category></category>
    <event></event>
    <responseType></responseType>
    <urgency></urgency>
    <severity></severity>
    <certainty></certainty>
    <audience></audience>
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      <value></value>
    </eventCode>
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    <onset></onset>
    <expires></expires>
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    <description></description>
    <instruction></instruction>
    <web></web>
    <contact></contact>
    <parameter></parameter>
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      <mimeType></mimeType>
      <size></size>
      <uri></uri>
      <derefUri></derefUri>
      <digest></digest>
    </resource>
  </info>
  <area>
    <areaDesc></areaDesc>
  </area>
</alert>
```

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<circle></circle>
<geocode>
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  <value> </value>
</geocode>
<altitude></altitude>
<ceiling></ceiling>
</area>
</info>
</alert>
```

The following graphic shows the proposed Canadian Profile in respect of the current CAP v1.1 standard,

