Cleo Streem®

Common Alerting Protocol Guide

Version 7.6

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About Cleo Streem and the Common Alerting Protocol (CAP)

Data interchange with Cleo Streem is based on the Common Alerting Protocol (CAP) Standard.

The CAP standard is an XML-based data structure created as a means to standardize data for critical communications. CAP is approved by the Organization for the Advancement of Structured Information Standards (OASIS) a non-profit, international consortium that oversees the development, convergence, and adoption of e-business standards. The CAP standard is used by organizations such as National Oceanic And Atmospheric Administration (NOAA) and Disaster Management Interoperability Services (DMIS) to disseminate emergency/critical information. The full CAP specification is available at *http://www.oasis-open.org/specs/index.php#capv1.1*.

Cleo Streem input data files consist of four components: Alert, Info, Resource, and Area. The Cleo Streem output data uses the Cleo Streem Reporting XML schema embedded in an EDXL Distribution Element.

Cleo Streem uses a workflow called Cleo Streem-CAP-Interface to handle XML files in the CAP format. On seeing a new CAP file, the workflow calls the Cleo Streem CAP Parser. The CAP Parser extracts information contained in the CAP file. If the information is complete and valid, the CAP Parser reformats it into a file suitable for input to the Cleo Streem API. The Cleo Streem API then uses this information to submit a job to the Cleo Streem system.

About the Cleo Streem data interface

Data interchange with Cleo Streem is based on the Common Alerting Protocol (CAP) standard. There are two data files Cleo Streem handles: the input data file and the response data file. Each of the data files has a unique structure.

About the Cleo Streem input data file

There are four main components to the data file passed as input to Cleo Streem: Alert, Info, Resource, and Area.

The Alert component is the parent component of the data file and is required. The Info component, though not required by CAP, is required for interfacing with Cleo Streem and is the main information component. The Resource component is optional and is used by Cleo Streem for message attachments. The Area component is optional and is planned for future Cleo Streem handling of geographic contact information. Following is a high-level view of the structure of the components:

```
<alert>
   <info>
      <eventCode>
         <valueName></valueName>
         <value></value>
      </eventCode>
      <resource>
      </resource>
      <area>
      </area>
   </info>
```

```
</alert>
```

Alert component

The Alert component comprises the following elements:

Element Name	Required	Notes
Identifier	Yes	Unique identifier for this message (cannot contain “<”or “&”) Cleo Streem format: `username_dateTime`
Sender	Yes	Globally unique identifier of the initiating user. Cleo Streem format: `user's email address`
Sent	Yes	Date and time message was created in dateTime format (20060130T16: 3006: 00). Timezones follow the time and are in the format, `+/-00:00`
Status	Yes	Cleo Streem acts on the data file identically regardless of the value of the Status element. CAP Standard code values are: **Actual** - Actionable by all targeted recipients **Exercise** - Actionable only by designated exercise participants; exercise identifier should appear in <note>. **System** - For messages that support alert network internal functions. **Test** - Technical testing only. all recipients disregard. **Draft** - A preliminary template or draft, not actionable in draft form.
msgType	Yes	Cleo Streem supports only "Alert". CAP standard code values are: **Alert** - Initial information requiring attention by targeted recipients.

Element Name	Required	Notes
		Update - Updates and supersedes any earlier messages identified in the <references> element. **Cancel** - Cancels any earlier messages in the <references> element. **Ack** - Acknowledges receipt and acceptance of the messages in identified in the <references> element. **Error** - Indicates rejection of the messages in identified in the <references> element; explanation should appear in <note> element.
Scope	Yes	Cleo Streem supports only "Public". CAP standard code values are: **Public** - For general dissemination to unrestricted audiences. **Restricted** - For dissemination only to users with a known operation requirement. See <restriction>. **Private** - For dissemination only to specified addresses. See <address>.

Info component

The Info component comprises the following elements:

Element Name	Required	Notes
Language	No	Language identifier per RFC3066. If not present, the implicit default value is `en-US`. Null value is also considered the default value of `en-US`. Cleo Streem supports only the default.
Category	Yes	Cleo Streem acts on the data file in the same way regardless of the value present here. • **Geo** - Geophysical (inc. landslide) • **Met** - Meteorological (inc. flood) • **Safety** - General emergency and public safety • **Security** - Law enforcement, military, homeland and local/ private security

Element Name	Required	Notes
		• **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 nontransport infrastructure • **CBRNE** – Chemical, Biological, Radiological, Nuclear or HighYield Explosive threat or attack • Other - Other events
Event	Yes	The text denoting the type of the subject event of the alert message. Cleo Streem usage: Title of Broadcast
Urgency	Yes	Cleo Streem acts on the data file in the same way regardless of the value present here. This element uses the following CAP Standard codes: • **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 required • **Unknown** - Urgency not known
Severity	Yes	Cleo Streem acts on the data file in the same way regardless of the value present here. This element uses the following CAP Standard codes: • **Extreme** - Extraordinary threat to life or property • **Severe** - Significant threat to life or property • **Moderate** - Possible threat to life or property • **Minor** - Minimal threat to life or property • **Unknown** - Severity unknown
Certainty	Yes	Cleo Streem acts on the data file in the same way regardless of the value present here. This element uses the following CAP Standard codes: • **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

Element Name	Required	Notes
eventCode	Yes (Cleo Streem)	Name-Value pairs used by Cleo Streem to denote distribution method and recipient addresses. See *eventCode detail* on page 9
Effective	Yes (Cleo Streem)	Date and time in `dateTime` format: `YYYY-MM-DDTHH:MM+/-TZ` ; where `TZ` is the time zone in the format `+/-00:00` Cleo Streem usage: Scheduled date/time
senderName	Yes (Cleo Streem)	Cleo Streem usage: user's full name
Headline	Yes (Cleo Streem)	Cleo Streem usage: subject line for nonvoice messages
Instructions	Yes (Cleo Streem)	Cleo Streem usage: `message body` or `message id` in the format `MessageID=xxx` where `xxx` is the message ID
Parameter	Yes (Cleo Streem)	ValueName/Value pairs used by Cleo Streem to denote distribution method and recipient addresses. See *parameter detail* on page 10
Expires	No	Date and time in `dateTime` format: `YYYY-MM-DDTHH:MM+/-TZ` ; where `TZ` is the time zone in the format `+/-00:00` Used by Cleo Streem to specify job expiration date and time.
scheduleStart	Yes	Time value in `HH:MM:SS AM/PM` format. For example, `05:30:00 PM` means this broadcast will not start before 5:30 PM. Note this is local time on the Streem server.
scheduleStop	Yes	Time value in `HH:MM:SS AM/PM` format. For example, `08:30:00 PM` means this broadcast will not continue past 8:30 PM. Note this is local time on the Streem server.
scheduleDays	Yes	Days filter in the 0/1 format in the order `SMTWTFS` For example, `0111110` means no broadcasts will go out on weekends.

eventCode detail

The `eventCode` elements define the distribution method and recipient addresses for the given distribution method.

This is handled in the data file by means of the `eventCode` tag and child tag pairs, `valueName` and `value`. There must be at least one `valueName/value` pair and a `valueName/value` pair for each distribution method required for the message. The valid valueName codes are listed below. The value data is a semicolon delimited list of recipient addresses in the form dictated by the distribution method set in the `valueName` element.

valueName codes	Value format
Fax	Semicolon-delimited list of fax numbers (numeric only.) Example: 1234567890;8113456732
Email	Semicolon-delimited list of email addresses.

valueName codes	Value format
	Example: him@my.org;her@this.com
Phone	Semicolon-delimited list of phone numbers (numeric only.) Example: 1234567890;8113456732
Cell	Semicolon-delimited list of cell phone numbers (numeric only.) Example: 1234567890;8113456732
SMS	Semicolon-delimited list of messaging addresses. Example: 1234567890@vtext.com
Pager	Semicolon-delimited list of pager numbers (numeric only.)
Distribution	Distribution list ID
FirstName	First name of recipient
LastName	Last name of recipient
PreMessage	Recipient-level pre-Message. If specified, this overrides the broadcast-level pre-message.
Instructions	Recipient-level instructions. If specified, this overrides the broadcast-level instructions.
AckMessage	Recipient-level ack-message. If specified, this overrides the broadcast-level ack-message.
Post-Message	Recipient-level post-Message. If specified, this overrides the broadcast-level post-message.

parameter detail

The `parameter` elements define the remaining information for a Cleo Streem broadcast.

The `parameter` valueName/value pairs are dependent on the `eventCode` elements in the data file. The following table details the valid `valueName/value` pairs for each `eventCode` `valueName`. Note that all of these elements are optional.

eventCode valueName	Parameter valueName code	Description
Fax	Resolution	Possible values: **1** - normal resolution **2** - high resolution If no value is present, `Resolution` defaults to `1`.

eventCode valueName	Parameter valueName code	Description
Fax	CoverPage	Possible values: • **None** – no cover page • **Default** – system default • **Null or blank** – uses match from `\streem\coverpages\<Company>` in the following order: 1 - `<User>.rft` 2 - `<Department>.rtf` 3 - `<Company>.rtf` Alternatively, you can use a **Resource component** for a custom per-job cover page, which takes priority over the CoverPage values except **None**: Resource component example, `<resource coverpage="true"><resourceDesc>Custom cover page</resourceDesc><uri><Coverpage.rtf></uri>` </resource>
All eventCodes	ConfirmationTo	The name of the person that will receive the confirmation.
All eventCodes	ConfirmationEmail	The email address of the person to receive the broadcast confirmation. If no value is present, then no confirmation is sent.
All eventCodes	Priority	Possible values: **1** - high priority **5** - normal priority **9** - low priority If no value is present, `Priority` defaults to `5`.
All eventCodes	BillingCode	Alphanumeric value for billing purposes.
All eventCodes	AttemptMode	Numeric value. Represents the number of the Streem Center attempt mode/scheme to be used. Default is 0. **0** - system default **1** - one attempt **2** - normal attempts **3** - extra attempts
All eventCodes	BatchID	Alphanumeric value.
All eventCodes	OffPeak	`Yes` schedules the job for `offpeak` hours defined on a per-customer basis

eventCode valueName	Parameter valueName code	Description
All eventCodes	AckMessage	An optional acknowledgment message to be played during a voice call. Example: `Will you be able to make the appointment?` **Note:** Must be specified if recipient-level ack-messages are specified.
All eventCodes	AckResponses	A semicolon-separated list of `digit-text` pairs of acceptable responses that can be entered after the acknowledgment message has been played during a voice call. Must be present if `AckMessage` has been specified. Example: `1,Yes;2,No` Optionally, an ack-digit-specific response message can also be played by adding a comma and the digit specific message. Example: `1,Yes,Play this yes message;2,No,Play this no message`
All eventCodes	PreMessage	Custom Pre-Message. A pre-message precedes the main message specified in `<instructions>`. **Note:** Must be specified if recipient-level pre-messages are specified.
All eventCodes	PostMessage	Custom Post-Message. A post-message follows the main message specified in `<instructions>`. **Note:** Must be specified if recipient-level post-messages are specified.
Distribution		Can be any of the above `parameter valueName/value` pairs, depending on the distribution methods within the distribution list.

Resource component

The `Resource` component is typically used for related information, such as remote documentation. In the case of Streem, it is used for attachments for non-voice (for example, fax and email) messages.

If a broadcast job does not require attachments, then this component can be left out entirely. The following chart details the elements that make up the Resource Component when the broadcast requires one or more attachments.

Element Name	Required	Notes
resourceDesc	Yes	Text describing the content and type of file.
Uri	Yes (Cleo Streem)	File name of the attachment. Attachment must be in the same directory as the data file.

Schedule component

The `Schedule` component is a Streem-specific extension to the CAP protocol, and is used for specifying starting and ending times and days for broadcast jobs.

If a broadcast job does not require to be schedule within a specific time/day window, then this component can be left out entirely. The following chart details the elements that make up the Schedule Component when the broadcast requires to be scheduled within a time window.

Note: The `<effective>` tag can be used if only the start time of a job needs to be controlled.

Element Name	Required	Notes
scheduleStart	Yes	Time value in `HH:MM:SS AM/PM` format. For example, `05:30:00 PM` means this broadcast will not start before 5:30 PM. Note this is local time on the Streem server.
scheduleStop	Yes	Time value in `HH:MM:SS AM/PM` format. For example, `08:30:00 PM` means this broadcast will not continue past 8:30 PM. Note this is local time on the Streem server.
scheduleDays	Yes	Days filter in the 0/1 format in the order `SMTWTFS` For example, `0111110` means no broadcasts will go out on weekends.

Schedule example

```
…
…
<schedule>
      <scheduleStart>05:30:00 PM</scheduleStart>
      <scheduleStop>08:30:00 PM</scheduleStop>
      <scheduleDays>0111110</scheduleDays>
</schedule>
…
…
```

Sample XML file

```
<?xml version="1.1" encoding="UTF-8" standalone="yes"?>
<alert xmlns="http://www.incident.com/cap/1.1">
    <identifier>mach_c8beda0f-a196-11dd-8304-b9be87d0703ci</identifier>
    <sender>username@mycompany.comii</sender>
    <sent>2006-03-14T16:50:15-08:00</sent>
    <status>Actual</status>
    <msgType>Alert</msgType>
    <scope>Public</scope>
    <info>
       <language>en-US</language>
       <category>Other</category>
       <event>Streem Center Fax</event>
       <urgency>Immediate</urgency>
       <severity>Minor</severity>
       <certainty>Possible</certainty>
       <eventCode>
          <valueName>FirstName</valueName>
          <value>Joe</value>
          <valueName>LastName</valueName>
          <value>Recipient</value>
          <valueName>Fax</valueName>
          <value>0114545821644</value>
       </eventCode>
       <effective>2006-03-14T16:50:15-08:00vi</effective>
       <senderName>John Sender</senderName>
       <headline>Streem Center Fax</headline>
       <instructions>You have received a fax from Streem Center
       </instructions>
       <parameter>
          <valueName>ConfirmationEmail</valueName>
          <value>customer@customer.com</value>
       </parameter>
       <parameter>
          <valueName>Priority</valueName>
          <value>5</value>
       </parameter>
       <parameter>
          <valueName>BillingCode</valueName>
          <value>ABS12345</value>
       </parameter>
       <resource>
          <resourceDesc>Fax Document</resourceDesc>
          <uri>c8beda0f-a196-11dd-8304-b9be87d0703c.pdf</uri>
       </resource>
    </info>
</alert>
```

About the Cleo Streem-CAP-Interface workflow

This workflow must be enabled for the entire process to work. Once enabled, it waits for a file to be dropped in the `{watch}` folder; `{watch}` is a workflow parameter and defaults to `<Streem_folder>\ftp\in`. Once a CAP file is detected in the watched folder, the workflow processes the file as follows:

- Copies the CAP file to `<Streem_folder>\temp\ScCAP`
- Invokes the Cleo Streem CAP Parser by calling `<Streem_folder>\scripts\ScCAP\ScCAP.py`
- Runs a command file that copies attachments, if any, referenced in the CAP file to `<Streem_folder>\temp\ScSubmit`
- Invokes the Cleo Streem API to submit a job that is then picked up and handled by Cleo Streem Center. In case an error is encountered during any of the above steps, the workflow sends an appropriate message to the Cleo Streem Event Monitor and quits.

Cleo Streem CAP Parser (`ScCAP.py`)

The Cleo Streem CAP Parser is the application that actually processes the CAP file, extracting Cleo Streem job data from it.

The parser takes CAP file as input and creates the following artifacts:

- A control (`.ctl`) file in the format accepted by the Cleo Streem API.
- A command (`.cmd`) file that contains commands to copy attachment files, if any, specified in the CAP file.
- A recipient (`.csv`) file that contains a list of recipients specified in the CAP file.
- A message (`.out`) file that contains the exit status number and message.

Usage

```
ScCAP.py -o output_ctl_file
         -i input_cap_file
         -d recipient_csv_file
         -c cmd_file
         -m  msg_file
```

-o *output_ctl_file*

Required. Specifies the path to the output `.ctl` file.

-i *input_cap_file*

Required. Specifies the path to the input `.xml` file

-d *recipient_csv_file*

Required. Specifies the path to the `.csv` file containing recipients

-c *cmd_file*

Required. Specifies the path to the `.cmd` file, which copies attachments.

-m *msg_file*

Optional. Specifies the path to the `.out` status message file. Default value is `%TEMP%\ScCAP.out`.

Status (`.out`) messages

The output file will always be two lines:

1. Result code

2. Message

Result code	Message
0	Success
1	Error - General
51	Error - No input XML file specified
52	Error - No output CTL file specified
53	Error - No output CMD file specified
54	Error - No output CSV file specified
99	Debug - Early exit for testing

Streem API (`ScSubmit.py`)

The Cleo Streem API processes the control and recipient files generated by the CAP Parser.

The data specified in these files is packaged as Cleo Streem job data and written to the Cleo Streem database.

Usage

```
ScSubmit.py -o output_msg_file
            [-i input_ctrl_file ]
            [-m msg_id | -l list_id]
            [-u  user_id]
```

-o *output_msg_file*

Required. Specifies the path to the .OUT status message file

-i *input_ctrl_file*

Used for normal processing/submission of a job. When you specify -i, the only other flag considered is -o.

-m *msg_id*

Used to check if the specified user has access to specified message. Cannot be used with -l option.

-l *list_id*

Used to check if the specified user has access to specified distribution list. Cannot be used with -m option.

-u *user_id*

Only required if –m or –l is specified.

Status (`.out`) messages

The output file will be two or three lines:

1. Result code
2. Message
3. Job number for the newly added job if the job was submitted successfully; that is, the job number must only be used if the message number (first line) is 0.

Result code	Message
0	Success

Result code	Message
1	Error - General
2	Error - Text destination(s) selected but the message specified is voice only
3	Error - Voice destination(s) selected but the message specified is text only
4	Error – Specified user does not have access to the specified message
5	Error - Specified user does not have access to the specified distribution list
6	Error - Specified message not found
7	Error - Specified distribution list not found
51	Error - Specified User not found
52	Error - flags '-m' and '-l' are exclusive, only one can be specified at a time
53	Error - No output CMD file specified
54	Error - invalid combination of flags specified
99	Debug - Early exit for testing