

Towards an Interplanetary Alert Network

Clean up your CAP

Filtered Alert Hub Workshop, Hong Kong Observatory, 2018



Sahana
Foundation

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WMO Registered Authorities



Zapier
webhook
polling tool
tells us when
there's a new
change in the
WMO
Register of
Alerting
Authorities
database

Data for each country

The image shows a map interface with a data popup window. The popup contains the following information:

- OID:** 2.49.0.0.90.0
- Country:** Solomon Islands
- ISO 3166:** SB SLB 90
- Issuing Organization:** Solomon Islands Meteorological Service
- Organization Abbreviation:**
- Organization Logo:**
- Forecasts URL:** <http://www.worldweather.org/035/m035.htm>
- Hazard Categories:** Met
- Authorization Basis:**
- Alerting Area (NWSE):**
- CAP Feed URL(s):**
- Feed Status:**
- Feed Official:**
- Feed Language:**
- Author Name:**
- Author Email:**
- Directory Source:**

The map background shows the Pacific region with several red location pins. Labels on the map include "Philippine Sea", "Philippines", "Panay", "Negros", "Mindanao", "an Island", "ebes Sea", "Indonesia", "Arafura Sea", "Solomon Sea", and "Timor Sea". A small inset map of Hawaii is visible in the top right corner, with labels for "Honolulu", "HAWAII", and "Hilo". The interface also includes a "Map" / "Satellite" toggle, a person icon, and zoom controls (+/-).

GRAB - the Sahana Aggregator

@ cap.sahana.io

Globally Relayed Alerts and Bulletins (GRAB)

Severe Weather Statement issued November 01 at 12:22AM CDT until November 01 at 4:00AM CDT by NWS Lake Charles

Actual alert for Cameron.

- Alert

Issued by: NWS Lake Charles (Southeast Texas and Southwest Louisiana)

Issued on: 2018-11-01 05:22:00

[Full Alert](#)

Tornado Warning issued November 01 at 12:22AM CDT until November 01 at 12:45AM CDT by NWS Lake Charles

Actual alert for Calcasieu; Cameron.

- Alert

Issued by: NWS Lake Charles (Southeast Texas and Southwest Louisiana)



Zoom in to view spatial distribution of alerts



Click on icon to view summary of the alert

There are multiple records at this location:

Info Gempa kekuatan:5.7 SR, 19-Oct-18 12:55:11 WIB, (28 km Tenggara SARMI-PAPUA)
::BMKG -- Informasi sementara, Earthquake mag:5.7, 19-Oct-18 05:55:11 UTC, (28 km
SouthEast SARMI-PAPUA) ::BMKG -- PRELIMINARY REPORT (Alert)
Info Gempa kekuatan:5.7 SR, 19-Oct-18 12:55:11 WIB, (28 km Tenggara SARMI-PAPUA)
::BMKG -- Informasi sementara, Earthquake mag:5.7, 19-Oct-18 05:55:11 UTC, (28 km
SouthEast SARMI-PAPUA) ::BMKG -- PRELIMINARY REPORT (Alert)

Zoom In



Individual human readable alerts and XML views

	Event Type	Message Type	Sent	Headline	Sender's name
Open View Profile View CAP File Delete	-	Alert	2018-11-01 13:22:00	Severe Weather Statement issued November 01 at 12:22AM CDT until November 0...	NWS Lake Charles (Southeast Texas and Southwest Louisiana)
Open View Profile View CAP File Delete	-	Alert	2018-11-01 13:21:00	Severe Thunderstorm Warning issued November 01 at 12:21AM CDT until Novembe...	NWS Shreveport (Shreveport)



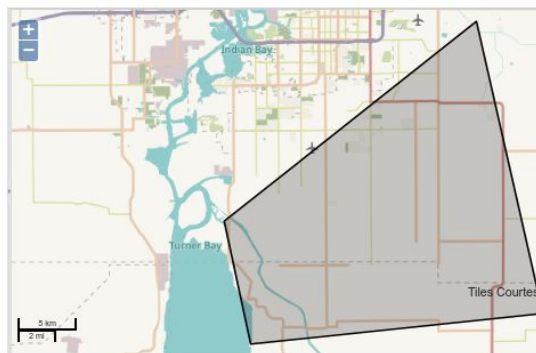
MESSAGE ID :: NOAA-NWS-ALERTS-LA125AC75C0128.SevereWeatherStatement.125AC75C94D0LA.LCHSVSLCH.43497a110cc322a2e566ad49000bd9c4

SOURCE :: None@http://127.0.0.1:8000

HEADLINE :: Severe Weather Statement issued November 01 at 12:22AM CDT until November 01 at 4:00AM CDT by NWS Lake Charles

AREA :: Cameron

DESCRIPTION :: ...A TORNADO WARNING REMAINS IN EFFECT UNTIL 1245 AM CDT FOR NORTHERN CAMERON AND SOUTHEASTERN CALCASIEU PARISHES... At 1222 AM CDT, a severe thunderstorm capable of producing a tornado was located near Grand Lake, moving east at 30 mph. HAZARD...Tornado. SOURCE...Radar indicated rotation. IMPACT...Flying debris will be dangerous to those caught without shelter. Mobile homes will be damaged or destroyed. Damage to roofs, windows, and vehicles will occur. Tree damage is likely. This dangerous storm will be near... Lake Charles Regional Airport around 1225 AM CDT. Holmwood around 1240 AM CDT. TORNADO...RADAR INDICATED HAIL...0.00IN



```

<alert xmlns="urn:oasis:names:tc:emergency:cap:1.2">
  <identifier>
    NOAA-NWS-ALERTS-LA125AC75C0128.SevereWeatherStatement.125AC75C94D0LA.LCHSVSLCH.43497a110cc322a2e566ad49000bd9c4
  </identifier>
  <sender>w-nws.webmaster@noaa.gov</sender>
  <sent>2018-11-01T05:22:00+00:00</sent>
  <status>Actual</status>
  <msgType>Alert</msgType>
  <source>None@http://127.0.0.1:8000</source>
  <scope>Public</scope>
  <note>
    Alert for Cameron (Louisiana) Issued by the National Weather Service
  </note>
  <info>
    <language>en-US</language>
    <category>Met</category>
    <event>Severe Weather Statement</event>
    <urgency>Immediate</urgency>
    <severity>Severe</severity>
    <certainty>Observed</certainty>
    <effective>2018-11-01T03:00:00+00:00</effective>
    <onset>2018-11-01T03:00:00+00:00</onset>
    <expires>2018-11-01T09:00:00+00:00</expires>
  </info>
  <senderName>
    NWS Lake Charles (Southeast Texas and Southwest Louisiana)
  </senderName>
  <headline>
    Severe Weather Statement issued November 01 at 12:22AM CDT
  </headline>
</alert>
    
```

INSTRUCTIONS :: TAKE COVER NOW! Move to an interior room on the lowest floor of a sturdy building. Avoid windows. If you are outdoors, in a mobile home, or in a vehicle, move to the closest substantial shelter and protect yourself from flying debris.

ALERT QUALIFIERS

Sender ID :: w-nws.webmaster@noaa.gov
 Sent Date/Time :: 2018-11-01 13:22:00
 Message Status :: Actual - actionable by all targeted recipients
 Message Type :: Alert
 Scope :: Public
 Note :: Alert for Cameron (Louisiana) Issued by the National Weather Service

INFORMATION EVENT :: -

Category :: Met - Meteorological (inc. flood)
 Urgency :: Immediate - Response action should be taken immediately
 Severity :: Severe - Significant threat to life or property
 Certainty :: Observed: determined to have occurred or to be ongoing
 Effective Date :: 2018-11-01 11:00:00
 Onset Date :: 2018-11-01 11:00:00
 Expiry Date :: 2018-11-01 17:00:00

Information URL :: <https://alerts.weather.gov/cap/wwacapget.php?>

Filter and export options

Sender: Alaska Volcano Observatory, U. S. Geological Survey, NATIONAL WEATHER SERVICE SACRAMENTO CA

Event Type: No options available

Scope: Select

Message Type: Update

[Clear Filter](#) [Saved Filters](#)

Filter options to create your own CAP dataset

Export the dataset as JASON, CSV, RSS, PDF, or CAP (XML)

Show 25 entries

Export as:     

	Event Type	Message Type	Sent	Headline
Open View Profile	-	Update	2018-11-01 04:25:36	AVO Daily Update 20181031_1225 - Semisopochnoi Volcano - Update - Alert Lev...
Open View Profile	-	Update	2018-11-01 04:25:36	AVO Daily Update 20181031_1225 - Veniaminof Volcano - Update - Alert Level:...

Characteristics of Public Alert Systems

Relatively deep problem-clusters for public alerting generally:

1. Identity and reputation/credibility
2. Authenticated replication and reliable accessibility
3. Elimination of single points of failure

WMO Filtered Alert Hub and Register of Alerting Authorities are addressing these in a very limited scope with limited actors.

How can we “include” others, minus the exclusivity/bureaucracy?

Thinking futuristic and IOTs

What happens when IOTs become a forewarning mechanisms?

The problems:

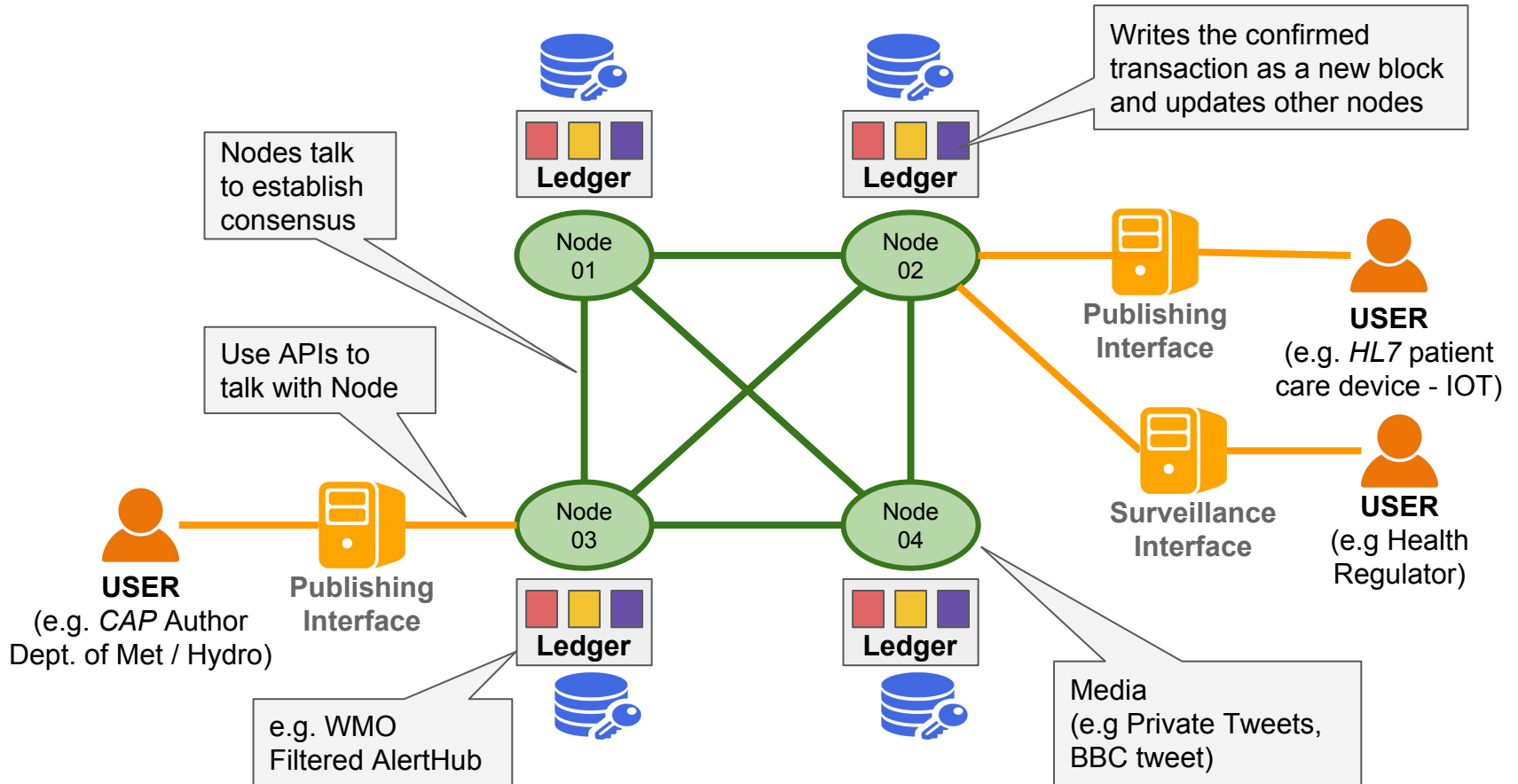
- 1) IoT is facing a systemic issue of scaling but without sufficient device **IDENTITY**, **SECURITY**, or **INTEROPERABILITY** in mind;
- 2) a world of device data being collected from billions of devices raises information security and privacy concerns for individuals/corporations/governments;
- 3) the **world is turning towards open-data initiatives** but there is a lack of a uniform approach;
- 4) blockchain technology and IoT offers a new world of promise, but **no-one is 100% clear** on how it will offer benefits.

- Credits: <https://www.chainofthings.com/>

Why did we look towards Blockchains?

- ❑ “Authentication without Aggregation” - Inspiration largely by Wade Witmer Deputy Director, IPAWS, FEMA
- ❑ “Intuition was blockchain technology might be a way to implement” - Art Botterell
- ❑ Primary tasks of an alerting system are:
 - ❑ Reliable attribution of messages
 - ❑ Attributing them to their authors
 - ❑ Reliable message integrity
 - ❑ All of which appear to come in the blockchain concept
- ❑ Also allows us to transcend our current mass-media paradigms of
 - ❑ few-to-many alerting; to also begin to address many-to-few and many-to-many applications
 - ❑ Most of these are now the domain of emergency telephone number systems in much of the world.

The mesh of blockchains



Blockchain concepts with Alerting in mind

→ Business Blockchain Network

- ◆ anyone participating in the network publishing and consuming (incl. relaying/sharing) alerts
- ◆ Example: what we might call the AleN (or the Alert ~~business~~ Network)

→ Decentralized network

- ◆ Peer-to-Peer network of computers publishing and consuming alerts
- ◆ Example: WMO Filtered AlertHub (CAP), Social Media streams, Community-based Alerting

→ Asset

- ◆ **Alert messages (or risk information)**
- ◆ Example: each CAP message (payload) is an asset (i.e. trading messages)

→ Participants

- ◆ Publishers and Subscribers (incl. relay/render entities)
- ◆ Example: Met / Hydro (publisher), Google Public Alerts (relay), Gov Officials (subscribers)

→ Transactions

- ◆ Publisher - create, update, or delete and Subscriber - read or acknowledge messages
- ◆ Example: Met / Hydro update a CAP message and Gov Official acknowledges receipt

Blockchain concepts w.r.t Alerting

→ Distributed ledger

- ◆ Immutable collection of message transactions
- ◆ Example: WMO Filtered Alerhub maintain who issued what warning when, why, and where

→ Catalog the current State

- ◆ What is the current state of the messages and participants
- ◆ Example: message has expired (`cap.info.expire < today`)

→ Chain code

- ◆ Business rules; i.e. encapsulated logic and policies
- ◆ Example: Subscriber type X can read asset Message type Y

→ Consensus

- ◆ Mechanism for validating the messages; must be defined and implemented
- ◆ Example: use a voting method (thumbs up/down); check against WMO Register of Authorities

→ Non-permissioned-networks (Non-governmental)

- ◆ Anonymous or un-official publishers
- ◆ Example: citizen tweeting a forest fire

Chaining the alert blocks and immutability

Block 01

ID:840.3.1, Event: air quality, Type: Alert

Unique signature



2eca

Block 02

ID: 608.0.1, Event: Flash Flood, Type: Alert

ID: 608.0.2, Event: tropical cyclone, Type: Update

2eca

Unique signature



2c81

Block 03

ID:554.4.1, Event: Forest Fire, Type: Alert

ID: 554.1.1, Event: Volcanic eruption, Type: Update

ID: 554.4.2, Event: Forest Fire, Type: Update

2c81

Unique signature



oa7c

Violating immutability

Block 01

ID:840.3.1, Event: air quality, Type: Update

Unique signature



Block 02

ID: 608.0.1, Event: Flash Flood, Type: Alert

ID: 608.0.2, Event: tropical cyclone, Type: Update

2eca

Unique signature



Block 03

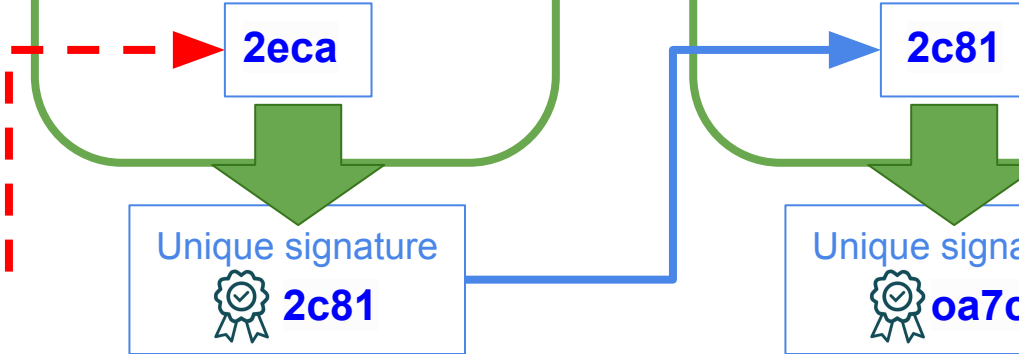
ID:554.4.1, Event: Forest Fire, Type: Alert

ID: 554.1.1, Event: Volcanic eruption, Type: Update

ID: 554.4.2, Event: Forest Fire, Type: Update

2c81

Unique signature



The recommended way, with messaging

Block 01

*ID:840.3.1, Event: air quality, Type: **Alert***

Block 03

ID:554.4.1, Event: Forest Fire, Type: Alert

ID: 554.1.1, Event: Volcanic eruption, Type: Update

ID: 554.4.2, Event: Forest Fire, Type: Update, Ref: 554.4.2

Block 04

*ID:840.3.2, Event: air quality, Type: **Update**, Ref: 840.3.1*

Block 02

2c81

oa7c

Unique signature



2eca

Unique signature



oa7c

Unique signature

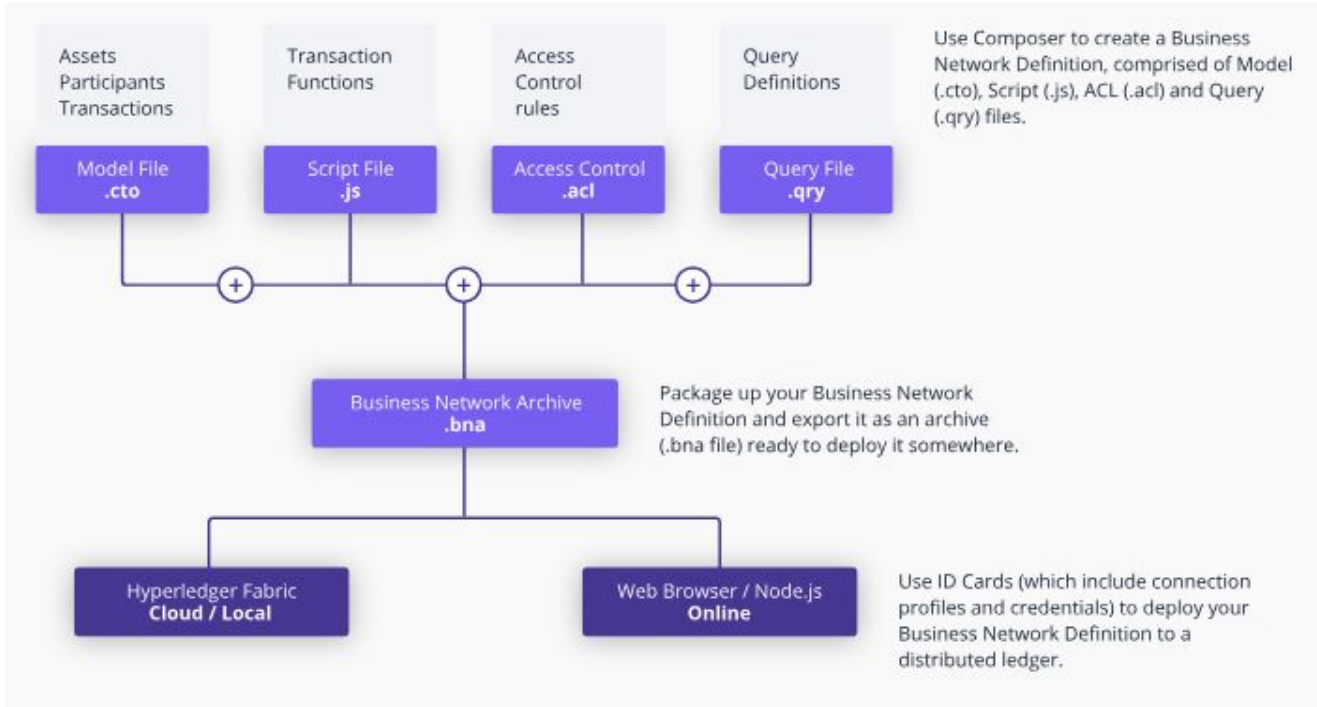


doc9

Questions to ask are

1. Can blockchain-based alerting “front end” take the place of our current generation of alert aggregators?
 - a. Full nodes on the mesh to serve as read-only sources to drive traditional mass dissemination systems
 - b. From a local view they’d seem just like current-gen aggregators
 - c. Create a globally accessible yet independent identity regime might lower barriers to other inherently-transnational dissemination systems
 - d. Encourage adoption of modern alerting practice in less technically affluent parts of the world
2. Would the propagation of alert message transactions over the major blockchain platforms be speedy?
 - a. identified as a priority for further development (e.g. scaling horizontally with ‘Kafka’)
 - b. might stipulate having a “fast enough” blockchain in the near future

Hyperledger Fabric & Composer



Participant

`Publisher` `Subscriber`

Asset

`Message`

Transaction

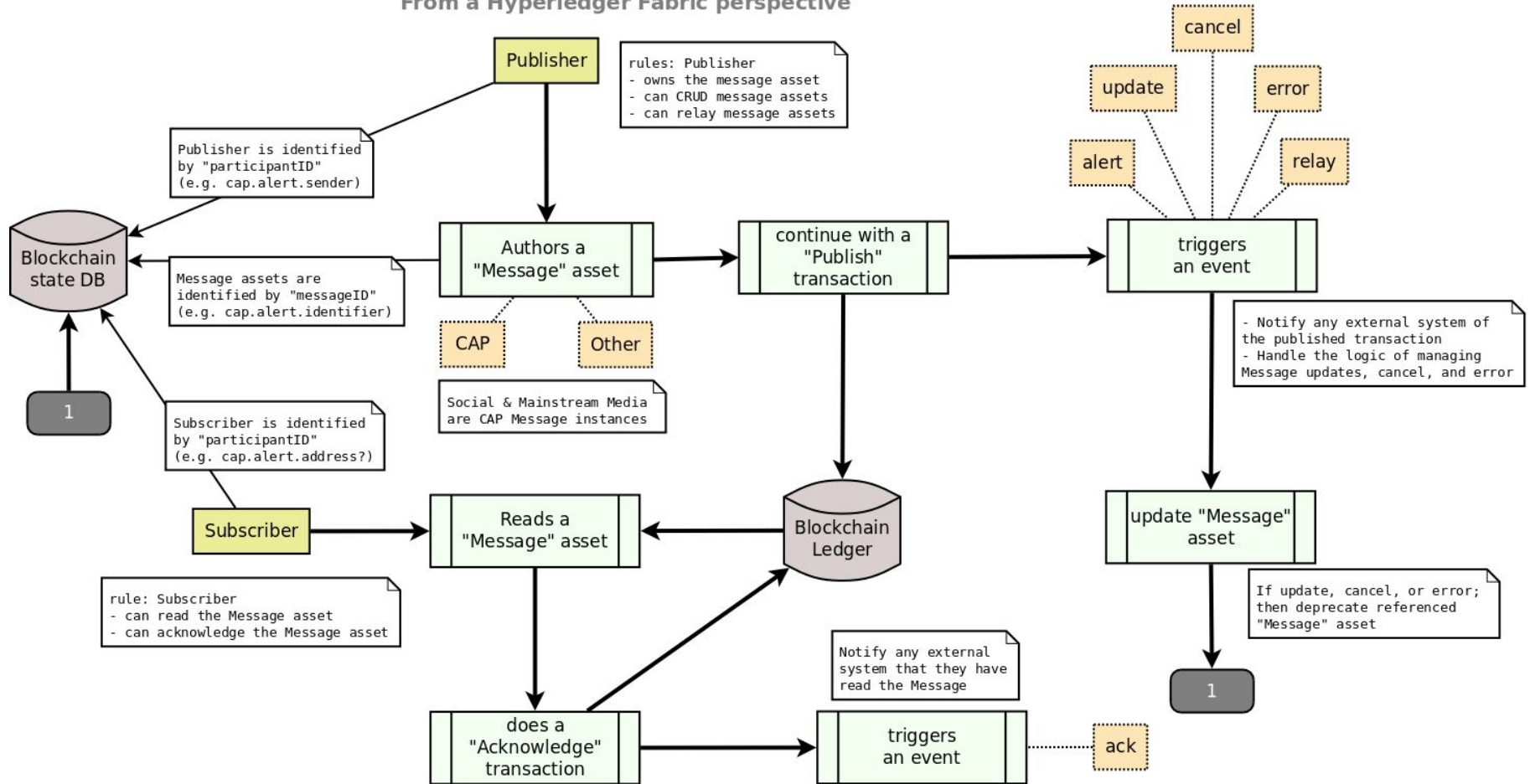
`Author` `Publish`
`Acknowledge`

Event

`Alert` `Update` `Error`
`Cancel` `Ack` `Relay`

Alert Network (AleN) Process Flow and Model

From a Hyperledger Fabric perspective



Thoughts after the Hyperledger exercise

First: “Can Blockchain technology foster a decentralized, immutable, and authenticated alert network?”

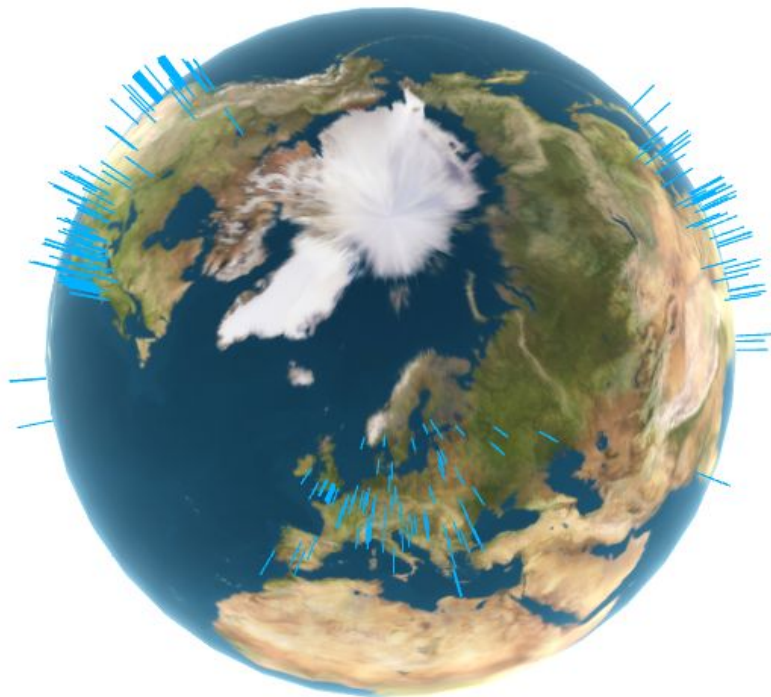
- Yes - but it may seem overly complex for simple messaging; although it provides the indexing and parsing mechanisms.
- NO - because the standard Composer constructs don't match our paradigm well; e.g. creating a new Asset (message) for alert, update, error, cancel, doesn't sound right?

Second attempt: “Can hash trees and cryptography, alone, foster a decentralized, immutable, and authenticated alert network?”

- Yes/No - we stumbled upon IPFS;
 - It can address the decentralized and immutable aspects
 - but not the authentication; i.e. need to build a consensus layer (smart contracts)
 - Moreover, **we require a mechanism to index and parse for presentation**

Interplanetary File System (IPFS)

<http://localhost:5001/ipfs/QmQLXHs7K98JNQdWrBB2cQLJahPhmupbDjRuH1b9ibmwVa/>



⌵

CONNECTED TO 571 PEERS

[QmNRSBnfjE6PMZ5AfnLccWpMjX2LtRFYedxQ2UqQxvozfV](#)
/ip4/138.68.1.93/tcp/4001

[QmNW9d3fZhi9X8cSAshk5PTAuURSzw9Ks4dx627VWeJZfi](#)
/ip4/209.237.115.13/tcp/4001

[QmNWfqFFpT684Ncn5iJAmi17VtpR2uU3uNQCKuogkgB3o7](#)
/ip4/167.99.225.70/tcp/4001

[QmNX9nSos8sRFvqGTwdEme6LQ8R1eJ8EuFgW32F9jip2Pb](#)
/ip4/130.211.198.23/tcp/4001

Peer ID `QmNe5CK9EWEZYttiJNJ4gaGuHLsjNbjHbj9MdM6XAJR9es`

Location Unknown

Agent Version `go-ipfs/0.4.14/`

Protocol Version `ipfs/0.1.0`

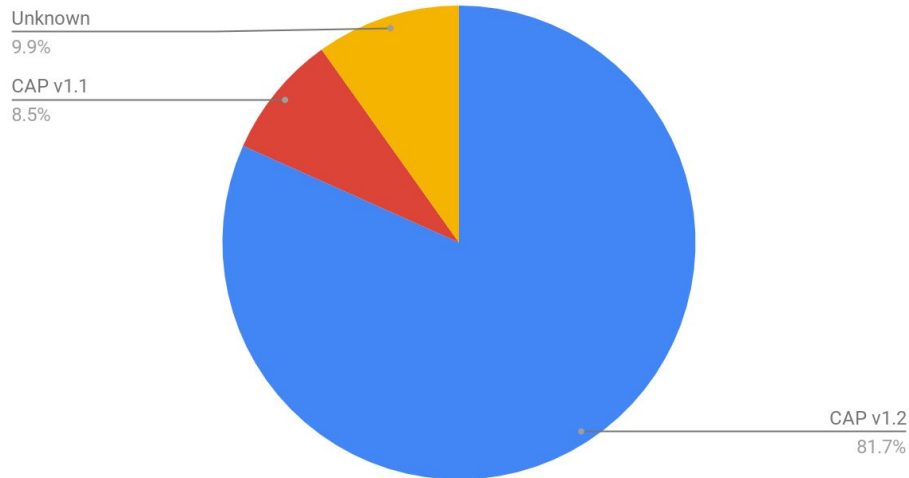
Public Key

`CAASpgIwggEiMA0GCSqGSIB3DQEBAQUAA4IBDwAwggEKAoIBAQDD4GPdseL1KGF`

CAP V1.1 vs V1.2

- ❑ There's only minor difference between CAP 1.1 and CAP 1.2
 - ❑ XML structure and elements are the same
 - ❑ Difference is in a few index values; e.g. ResponseType
- ❑ Safest remedy was to create another XSLT specific to CAP 1.1 but COSTLY
- ❑ What happens when the next version comes along?

Distribution of CAP version in Feeds



More the 50% of the feeds are from Meteoalarm

Atom link type = CAP+XML

Section 2.3.1.2 specifically mentions the need to label type = application/cap+xml; in this doc:

<http://docs.oasis-open.org/emergency-adopt/cap-feeds/v1.0/cap-feeds-v1.0.html>

```
<?xml version = '1.0' encoding = 'UTF-8' standalone = 'yes'?>
<feed xmlns="http://www.w3.org/2005/Atom">
<id>http://www.pagasa.dost.gov.ph/</id>
<title>PAGASA CAP FEED</title>
<updated>2018-11-01T05:08:40+08:00</updated>
<entry>
  <id>c0762af0-c672-47f8-ac4c-2888425f9355</id>
  <title>GFA #8 (Final) - Region 3 (Central Luzon)</title>
  <updated>2018-11-01T05:08:40+08:00</updated>
  <author><name>PAGASA DOST</name></author>
  <link type="application/cap+xml"
href="https://publicalert.pagasa.dost.gov.ph/output/gfa/c0762af0-c672-47f
8-ac4c-2888425f9355.cap"/>
</entry>
```



Validation Errors

identifier: Cannot be empty and Must not include spaces, commas, or restricted characters (< and &).

Every value has a end of line (\n) character at the beginning and end

```
<identifier>
NOAA-NWS-ALERTS-MN125AAFF1B50.FlashFloodWatch.125AAB0BE4
C0MN.FSDFFAFSD.832f4e02ae3ea20c1e028509da48aa62
</identifier>
<sender>
w-nws.webmaster@noaa.gov
</sender>
<sent>
2018-06-26T03:41:04+00:00
</sent>
```

Source: NOAA Weather Services
<https://alerts.weather.gov/cap/wwacapget.php?x=MN125AAFF1B50.FlashFloodWatch.125AAB0BE4C0MN.FSDFFAFSD.832f4e02ae3ea20c1e028509da48aa62>

Google CAP Validator

```
5 ERROR | CAP
Invalid <identifier> "
NOAA-NWS-ALERTS-
MN125AAFF1B50.FlashFloodWatch.125AAB0BE4C0MN.FSDFFAFSD.832f4e02ae3ea20c1e028509da48aa62
". Must not include spaces, commas, or restricted characters (< and &).

8 ERROR | CAP
Invalid <sender> "
w-nws.webmaster@noaa.gov
". Must not include spaces, commas, or restricted characters (< and &).

14 ERROR | CAP
cvc-enumeration-valid: Value '
Actual
' is not facet-valid with respect to enumeration [Actual, Exercise, System, Test, Draft]. It must be a value from the
enumeration.

17 ERROR | CAP
cvc-enumeration-valid: Value '
Alert
' is not facet-valid with respect to enumeration [Alert, Update, Cancel, Ack, Error]. It must be a value from the
enumeration.

28 ERROR | CAP
cvc-enumeration-valid: Value '
Public
' is not facet-valid with respect to enumeration [Public, Restricted, Private]. It must be a value from the
enumeration.

26 ERROR | CAP
Invalid <references>: "
". Must be a non-empty, space-separated list of sender,identifier,sent triplets.

29 ERROR | CAP
cvc-enumeration-valid: Value '
Met
' is not facet-valid with respect to enumeration [Geo, Met, Safety, Security, Rescue, Fire, Health, Env, Transport,
Infra, CBRNE, Other]. It must be a value from the enumeration.

34 ERROR | CAP
cvc-enumeration-valid: Value '
' is not facet-valid with respect to enumeration [Immediate, Expected, Future, Past, Unknown]. It must be a value
from the enumeration.

36 ERROR | CAP
cvc-enumeration-valid: Value '
' is not facet-valid with respect to enumeration [Extreme, Severe, Moderate, Minor, Unknown]. It must be a value
from the enumeration.

38 ERROR | CAP
cvc-enumeration-valid: Value '
' is not facet-valid with respect to enumeration [Observed, Likely, Possible, Unlikely, Unknown]. It must be a value
from the enumeration.

75 ERROR | CAP
Elements are not in the correct sequence order. One of ("urn:oasis:names:tc:emergency:cap:1.1":parameter,
"urn:oasis:names:tc:emergency:cap:1.1":resource, "urn:oasis:names:tc:emergency:cap:1.1":area) expected instead
of "effective".

75 ERROR | CAP
Invalid <effective>: "". Must be formatted like "2002-05-24T16:49:00-07:00".

77 ERROR | CAP
Invalid <expires>: "". Must be formatted like "2002-05-24T16:49:00-07:00".

89 ERROR | CAP
Invalid <polygon>: "
". Expect a minimum of four [WGS 84] coordinates like: "12.3,-4.2 12.3,-4.3 12.4,-4.3 12.3,-4.2", where the first and
last coordinates are equal.
```

Message expiration

Shouldn't the recipient determine expiration; i.e.
expire < now()

Example:

<https://alerts.weather.gov/cap/wwacapget.php?x=NC125ABC38281C.FlashFloodWatch.125ABC7375C0NC.GSPFFAGSP.47559968ec3a2d08871c02fb9650cb7e>

<note>This alert has expired</note>

<effective> </effective>

<expires> </expires>

Message: NOAA-NWS-ALERTS-NC125ABC38281C.FlashFloodWatch.
from w-nws.webmaster@noaa.gov
Sent: 03:28 GMT on 11-02-2018
Effective: on --
Expires: on --

Event:
Alert:
This alert has expired

Instructions:
Target Area: ■

Language codes

- zh-tw should be **zh-TW**
 - IANA Subtag Registry (<http://www.iana.org/assignments/language-subtag-registry/language-subtag-registry>)
 - Type: region: TW; Tag: zh-Han-TW; Description: Taiwan Chinese in traditional
- ES-419 Spanish appropriate for the Latin America and Caribbean region
 - Has ITU-D document mis quoted the ISO 639-2 as the language, where the standard represents the 2 letter code for the region (not language) ?



https://alerts.ncdr.nat.gov.tw/Capstorage/WRA/2018/Flood/WRA_FloodWarn_201806221350.cap

```
<alert
xmlns="urn:oasis:names:tc:emergency:
cap:1.2">
  <identifier>WRA_FloodWarn_201806
221350</identifier>

  <info>
    <language>zh-tw</language>
    <category>Met</category>
    <event>淹水</event>
```

Source: https://www.itu.int/dms_pub/itu-d/opb/stg/D-STG-SG02.22-2010-PDF-E.pdf

Language translation



Meteorological warnings: **Brasil**



Warning of: Chuvas Intensas. Severity level: **Perigo Potencial**

Event: Chuvas Intensas

Start: 23/10/2018 23h30min

End: 24/10/2018 18h0min

Institution: *Instituto Nacional de Meteorologia*

Potential Risks:

INMET publica aviso iniciando em: 23/10/2018 13:30. Chuva entre 20 e 30 mm/h ou até 50 mm/dia, ventos intensos (40-60 Km/h). Baixo risco de corte de energia elétrica, queda de galhos de árvores, alagamentos e de descargas elétricas.

Instructions:

- **Em caso de rajadas de vento: (não se abrigue debaixo de árvores, pois há leve risco de queda e descargas elétricas e não estacione veículos próximos a torres de transmissão e placas de propaganda).**
- **Evite usar aparelhos eletrônicos ligados à tomada.**
- **Obtenha mais informações junto à Defesa Civil (telefone 199) e ao Corpo de Bombeiros (telefone 193).**

Cities:

Abadia De Goiás - GO (5200050), Abadiânia - GO (5200100), Acorizal - MT (5100102), Acreúna - GO (5200134), Adelândia - GO (5200159), Água Boa - MT (5100201), Água Fria De Goiás - GO (5200175), Água Limpa - GO (5200209), Águas Lindas De Goiás - GO (5200258), Alexânia - GO (5200308), Aloândia - GO (52... [see more](#))

Affected area:

Aviso para as áreas: Distrito Federal, Sudoeste Rondonense, Alto Madeira, Centrossul Mato-Grossense, Nordeste Mato-Grossense, Norte Mato-Grossense, Sudeste Mato-Grossense, Sudoeste Mato-Grossense, Centro Goiano, Leste Goiano, Sul Goiano, Norte Goiano, Noroeste Goiano, Sudeste Rondonense

<http://alert-as.inmet.gov.br/cv/emergencia/cap/8320?lang=en>

```
<alert
xmlns="urn:oasis:names:tc:emergency:cap:1.2"
><identifier>urn:oid:2.49.0.0.76.0.2018.7134.1
</identifier>
<sender>info.aviso@inmet.gov.br</sender>
```

```
<info>
  <language>pt-BR</language>
```

Using an internal
lookup translator and
not <info> blocks for
English & Spanish

Chrome translation works a lot better

Warning: Heavy Rain . Degree of Severity: **Potential Hazard**

Event: Heavy Rain

Start: 10/23/2018 23h30min

End: 10/24/2018 6:03 PM

Institution: *Instituto Nacional de Meteorologia*

Potential Risks:

INMET publishes notice beginning on: 10/23/2018 1:30 PM. Rain between 20 and 30 mm / h or up to 50 mm / day, intense winds (40-60 km / h). Low risk of electric power cuts, falling tree branches, flooding and electrical discharges.

Instructions:

- *In case of gusts of wind: (do not take shelter under trees as there is a slight risk of fall and electric shocks and do not park vehicles near transmission towers and advertising signs).*
- *Avoid using electronic devices connected to the power outlet.*
- *Get more information from the Civil Defense (telephone 199) and the Fire Department (telephone 193).*

Counties:

Goiania - GO (5200050), Abadiânia - GO (5200100), Acorizal - MT (5100102), Acreúna - GO (5200134), Adelândia - GO (5200159), Água Boa - MT (5100201), Água Fria De Goiás - GO (5200175), Agua Limpa - GO (5200209), Águas Lindas De Goiás - GO (5200258), Alexânia - GO (5200308), Aloândia - GO (52 ...

[see more](#)

Affected Area:

Notice for the areas: Federal District, Southwest Rondonense, Alto Madeira, Centrossul Mato-Grossense, Northeast Mato-Grossense, North Mato-Grossense, Southeast Mato-Grossense, Southwest Mato-Grossense, Centro Goiano, East Goiano, South Goiano, Norte Goiano , Northwest Goiania, Southeast Rondonense

Its an indication that machine translation might work with presenting the data in English to assist with the required classification we desire.

Web URL

```
<alert xmlns="urn:oasis:names:tc:emergency:cap:1.2">
```

```
<identifier>2.49.0.0.528.0.NL.181031224826.2_FX_HVH</identifier>
```

```
<info>
```

```
<language>ne-NL</language>
```

```
<event>Moderate Wind warning</event>
```

```
<web>http://meteoalarm.eu/ne_NL/0/0/NL802-Hoek van Holland.html</web>
```

CORRECT: `http://meteoalarm.eu/ne_NL/0/0/NL802-Hoek%20van%20Holland.html`

24 ERROR | CAP

Invalid <web>: "http://meteoalarm.eu/ne_NL/0/0/NL802-Hoek van Holland.html". Must be a full absolute URI.

46 WARNING | CAP

Text in <event> appears in multiple <info> blocks but each specifies a different <language> field. Human-readable content in an <info> should be written in the same language as specified in the <language> field.

57 ERROR | CAP

Invalid <web>: "http://meteoalarm.eu/ne_NL/0/0/NL802-Hoek van Holland.html". Must be a full absolute URI.

403 Forbidden: Access is denied

http://capcp2.naad-adna.pelmorex.com/2018-06-24/2018_06_24T15_05_26_00_00lurn_oid_2.49.0.1.124.3160145913.2018.xml

2018-06-24 23:24:23 S3LOG ERROR: HTTP 403: <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">

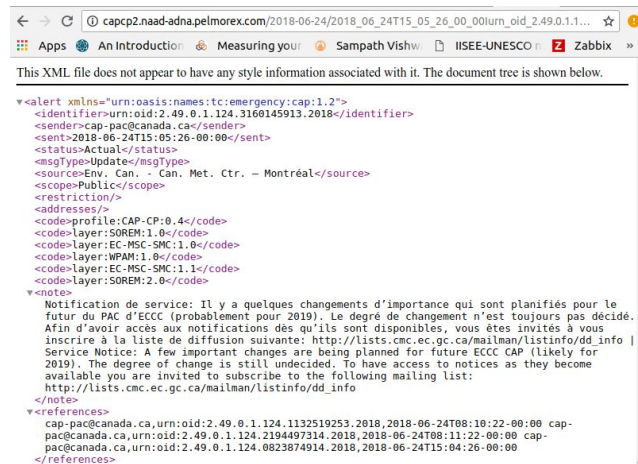
```
<html xmlns="http://www.w3.org/1999/xhtml">
```

```
<head>
```

```
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/>
```

```
<title>403 - Forbidden: Access is denied.</title>
```

Visible in browser



```
This XML file does not appear to have any style information associated with it. The document tree is shown below.
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/>
  </head>
  <title>403 - Forbidden: Access is denied.</title>
  </html>
```

Abbreviated SenderName

```
<language>id</language>  
<category>Geo</category>  
<event>Gempabumi</event>  
<urgency>Past</urgency>  
<severity>Unknown</severity>  
<certainty>Observed</certainty>  
<onset>2018-05-12T12:57:56+07:00</onset>  
<expires>2018-05-19T22:57:56+07:00</expires>  
<senderName>BMKG</senderName>
```



SenderName
should be human
readable and
comprehensible

Conclusions

- 1) The CAP standard offers a basis for evaluating the cleanliness of Interplanetary Alert Network (AleN) messages for a reliable indexing
- 2) There's a need to study non-governmental alert originators (CBO scientific or other) for a richer AleN
- 3) WMO Filtered Alert Hub is a good start towards fostering a futuristic Alert Network for authentication without aggregation
 - a) The WMO Filtered Alert Hub might consider a consensus mechanism to vote in/out or comment on currently syndicated alerts
 - b) That may help Clean up the CAP?
 - c) Cleaner filtering of messages; e.g. towards a global Event Type list