



Adopting CAP on nation-wide rescue services Lesson learnt by the Italian case

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Italian National Fire Corps (CNVVF)



Ministry of Interior

Italian National Fire Corps



National Control Room

18 Regional Directorates

100 Provincial HQ

>700 Fire Stations

> 35.000 Firefighters



Italian National Fire Corps (CNVVF)



- Fire protection rules
- Fire safety controls on high fire risk buildings (> 100.000/year)
- Controls on “Seveso” plants (> 300)
- Fire safety controls on radioactive substances storage buildings
- Fire safety controls on Cultural Heritage buildings



- 16 Canadair CL 415
- AB 412
- 2 Piaggio P180
- Sikorsky
- Erickson S64F
- UAVs
- Divers stations
- Floods rescue
- Harbors Fire service



3 central training centers



CNVVF interoperability policy: CAP adoption



Standard Interoperabilità Comunicazioni in Emergenza

115 Numero d'emergenza  Italia.gov.it  MINISTERO DELL'INTERNO

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Dipartimento dei Vigili del Fuoco, del Soccorso Pubblico e della Difesa Civile

CORPO NAZIONALE DEI VIGILI DEL FUOCO

Emergenza e soccorso Prevenzione e sicurezza Difesa civile Formazione

Organizzazione

Corpo nazionale



 Version

Organigramma

Attività istituzionale

Lavora con noi

Siti web VV.F.

Uffici sul territorio

Amministrazione Trasparente

Sel in: [Home](#) > [Standard di interoperabilità delle comunicazioni in emergenza](#)

Decreto 23 maggio 2011

È stato pubblicato nella Gazzetta Ufficiale n. 142 del 21 giugno 2011 Il decreto che definisce il profilo del protocollo CAP del Corpo Nazionale dei Vigili del Fuoco. Con questo decreto "Approvazione del profilo del protocollo per la trasmissione dei dati al fine della cooperazione applicativa con i servizi di emergenza di cui al decreto 17 giugno 2008" il Dipartimento dei Vigili del Fuoco del soccorso pubblico e della difesa civile ha adottato il "Profilo CAP Vigili del Fuoco". Grazie alle dettagliate specifiche contenute nel "Profilo CAP Vigili del Fuoco" e modalità preferenziali di trasmissione", pubblicato nella sezione apposita del sito, tutti gli Enti che operano nel soccorso potranno autonomamente dotarsi di strumenti per lo scambio di dati informatici con le sale operative dei Vigili del Fuoco che rispettino gli standard prescritti. Il decreto ha lo scopo di presentare la tabella di validazione dei messaggi di allerta CAP ricevuti e inviati dai sistemi di Sala Operativa del Corpo Nazionale dei Vigili del Fuoco da/a Enti concorrenti nelle attività di soccorso e assistenza al cittadino, qualora siano in vigore convenzioni bilaterali conformi al modello approvato dal Ministero dell'Interno, Dipartimento dei Vigili del Fuoco, del Soccorso Pubblico e della Difesa Civile. La tabella riporta il comportamento dei sistemi di Sala Operativa del Corpo Nazionale dei Vigili del Fuoco nei casi di non conformità dei messaggi, siano essi messaggi di allerta CAP aderenti al "Profilo CAP Vigili del Fuoco" o meno.

Le nuove prescrizioni e requisiti del "Profilo CAP Vigili del Fuoco" non contraddicono i requisiti richiesti dallo standard CAP. I messaggi di allerta conformi al "Profilo CAP Vigili del Fuoco" sono tutti e sempre conformi allo standard CAP. Il Corpo

Allegati

-  [Decreto CAP n. 71 del 23-05-2011](#)
-  [Profilo Italiano VVF CAP e FEED](#)
-  [Decreto 17 giugno 2008](#)

Adopting CAP on nation-wide rescue services

The *Fabbrica di San Pietro* was the name of the 'general contractor' which built Saint Peter cathedral over 120 years and still maintain it today.

For this reason in Rome we say:

È come la *Fabbrica di San Pietro* ...

It is like the *Saint Peter construction site* ...

To refer to a never ending commitment.



© Fabbrica di San Pietro in Vaticano

Adopting CAP on nation-wide rescue services

What is it like to adopt CAP on nation-wide services?

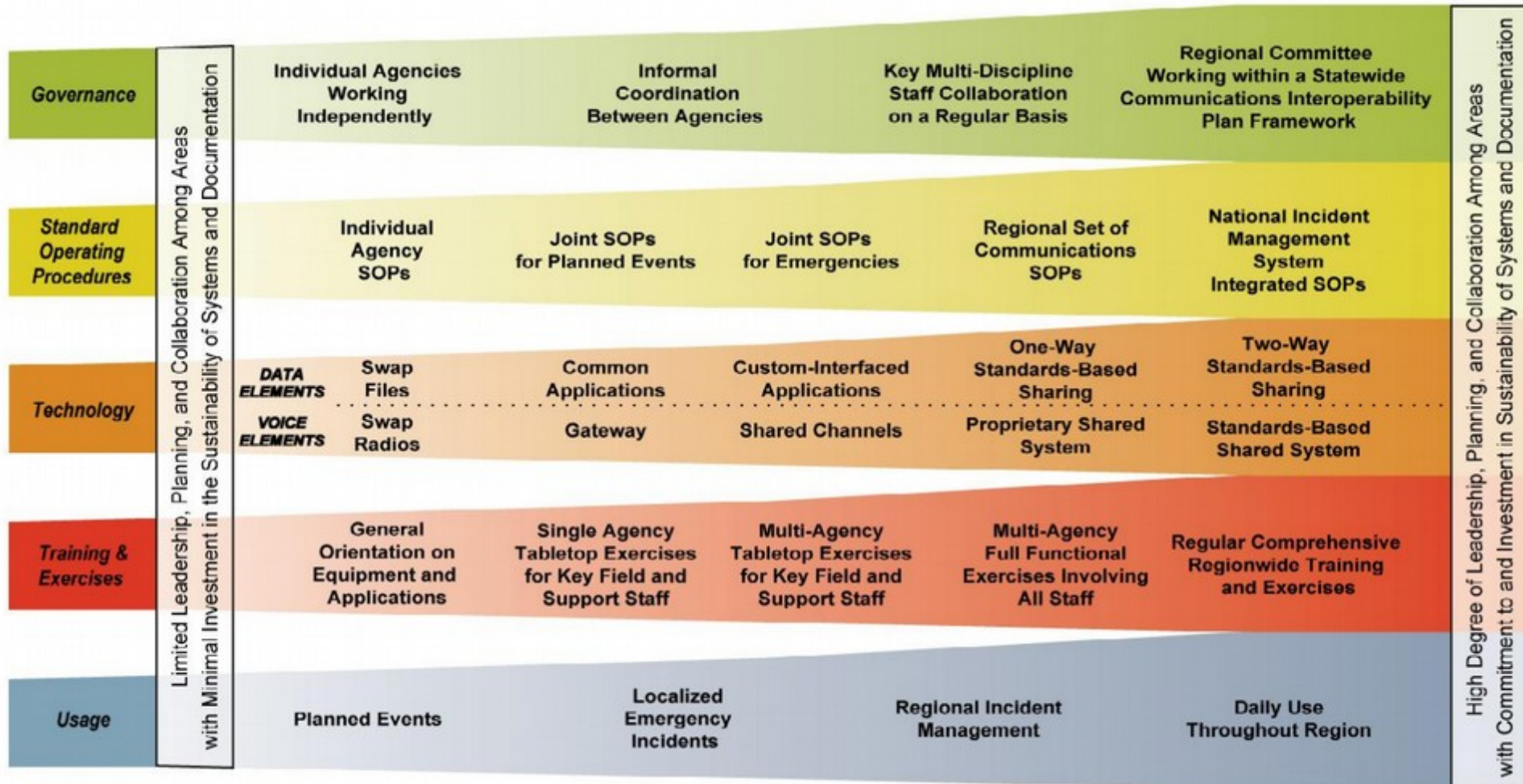
It is like a 'Fabbrica di San Pietro'...

A never-ending commitment:

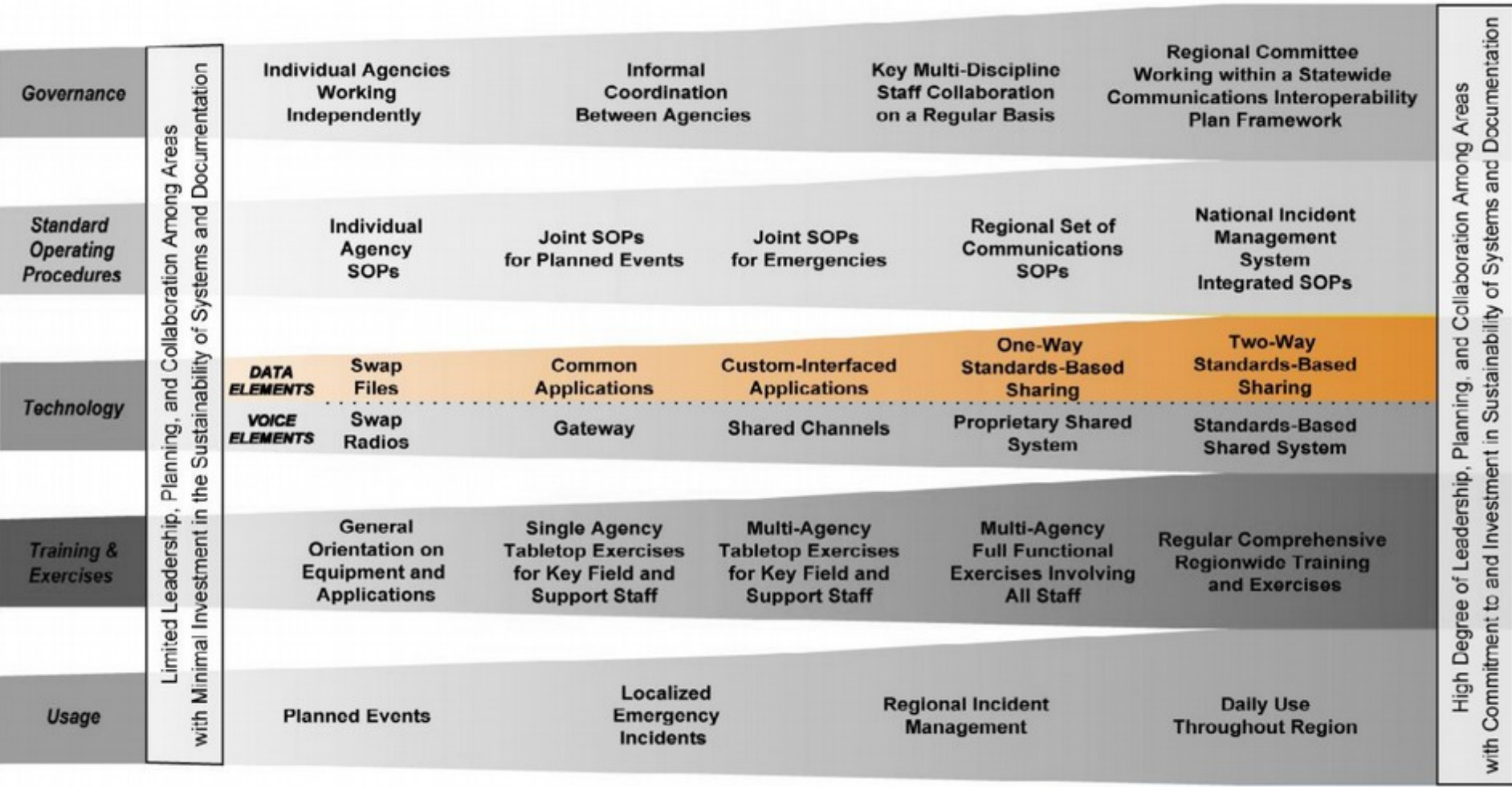
We keep improving and adapting our interoperability system continuously

To offer the widest possible range of option to satisfy current and new needs

U.S. DHS interoperability continuum



Focussing on data interoperability



Data sharing

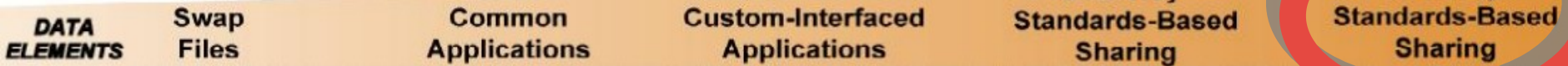


The Italian National Fire Corps share operational data with several other Organisations, in different ways, which can be classified into one of the stages reported above.

Each data sharing is based on a formal agreement and often raises issues which call for specific activities to speed up further deployments.

We will now present some of them

Data sharing with:



Regione Puglia

No formal agreement, but thanks to an EU R&D project, we exchanged letters. Now we are carrying out extensive **tests** to implement two-way CAP sharing through ATOM Feeds (ongoing)



Related activities:

- Improved ATOM-Feed Retriever (more robust vs. format and system errors) – Implementation ongoing
- End-to-end ATOM-Feed validator (to optimise operational validation procedure) - Implementation planned
- New RSS-Feed Publisher – Implementation approved (within 1y)
- New RSS-Feed Retriever – Implementation approved (within 1y)

Data sharing with:

DATA
ELEMENTS

Swap
Files

Common
Applications

Custom-Interfaced
Applications

One-Way
Standards-Based
Sharing

Two-Way
Standards-Based
Sharing

Comune di Venezia (Venice Municipality)

Formal agreement signed on 2 September 2011

Private CAP+ATOM-Feed published by CNVVF for Comune Venezia

System of Comune di Venezia still under development, in the meantime they access to our web application CAP-ITEM

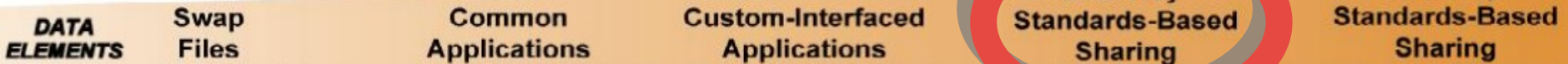
Operational data regarding incidents and activities concerning:

- Floods
- Fires and explosions
- Gas leakages
- Civil Protection emergencies

to improve operational cooperation in civil protection incidents



Data sharing with:



Carabinieri (National Police)

Formal agreement finalised, to be signed

Private CAP push on dedicate WS by CNVVF to Carabinieri

Operational data regarding incidents and activities regarding:

- Forest Fires (some 9,000 CAP per day in summer season)
- to allow investigation activities on crimes against environment



Related activities:

Improved outbound WS (more robust vs. system errors with buffer to ensure operational continuity)

- Service ready for operational test

Data sharing with:



Consorzio Bonifica Veneto Orientale (Drainage Authority)

Formal agreement signed on 15 June 2016

Access to our web application CAP-ITEM to access CAP-based data addressed to Consorzio Bonifica Veneto Orientale



Operational data regarding incidents and activities regarding:

- Floods
- Extreme weather

to limit flooding and improve water management anticipating pumps and sluices activation in the subject area

Data sharing for:



Earthquakes Amatrice (fall 2016) & Ischia (summer 2017)

Forest fires (summer 2017)

Fast activation of massive CAP-based data exchange with dedicated Control Centres to improve National coordination (182,500 more operations over 7 months) and to prepare accounting reports

Related activities:

- New version of the web application CAP-ITEM: implementing EU-JRC maps, more secure, robust and flexible – available
- Improved SW and system architecture to cope with increased needs



Data sharing with:



Earth Observation Satellite Images Applications Lab (EOSIAL) - University of Rome



Formal agreement signed on 12 April 2017

Public CAP sent by EOSIAL to CNVVF regarding hotspots detected through MSG sat each 5/15 minutes

The smaller detected hotspot will correspond to fire raging over an area of 1-2 hectares within a pixel 4Km-wide

Fire of such size will sure be known to CNVVF, but the purpose of the service will be strategic:

obtain quantitative assessment of energy released by large fires to improve assignment of priority and assets

Data sharing with:



Earth Observation Satellite Images Applications Lab (EOSIAL) - University of Rome



Step #1:

- FTP upload to our folder of EUMETSAT FIR CAP hotspots - no related radiance/energy released - ongoing

to ascertain algorithm accuracy and prepare further steps

Related activities:

- Service to retrieve CAP by FTP folder & push them to inbound CNVVF WS – implementation approved (within 6m)
- Service to split single multi-point CAP FIR msg into several CAP msg basing on jurisdiction areas (within 6m)

Data sharing with:



Earth Observation Satellite Images Applications Lab (EOSIAL) - University of Rome



Step #2:

- FTP upload to CNVVF folder of HSSigri CAP hotspots - with their associated radiance/energy – implementation approved (within 1y) to couple with known outdoor fires to set resources' priority

Related activities:

Service to:

- select fire alerts to be associated with HSSigri hotspots polygons
- integrate HSSigri energy into related fire alert

Data sharing with:



Earth Observation Satellite Images Applications Lab (EOSIAL) - University of Rome

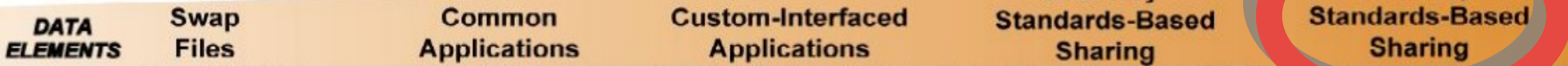


Step #3:

- HSSigri Public CAP+ATOM-Feed by EOSIAL – implementation approved (within 1y)

to be openly published by EOSIAL

Data sharing with:



Joint Research Centre of the European Commission

Formal agreement signed on 17 May 2017

JRC provides Field Reporting Tool – FRT Server and App for firemen to collect geo-referenced data from the field (e.g., PoI, photo, traces)

CNVVF provides massive emergency management data as filtered CAP msg to JRC to study possible cluster strategies regarding large emergencies (excluding minor ones), *aiming at delivering well-tailored data flow for the Italian National and EU Civil Protection services*



Related activities:

- format FRT data flow as CAP alerts to inbound CNVVF WS – implementation approved (within 1y)
- study of clustering/filtering strategies for massive CAP-based data

Data sharing with:

DATA ELEMENTS	Swap Files	Common Applications	Custom-Interfaced Applications	One-Way Standards-Based Sharing	Two-Way Standards-Based Sharing
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Comune di Rimini (Municipal Civil Protection)

Consorzio Bonifica Piave (Drainage Authority)

Prefettura-UTG Arezzo (Prefecture)

Regione Sicilia (Regional Forest Guard)

Regione Toscana (Regional Civil Protection)

Ongoing meetings and/or exchange of letters of intent, no formal agreement in force

Related activities:

New ATOM-Feed Retriever + Datastore validator

- to speed-up validation tests for new agreements
- improved management (inbound+outbound) of public CAP alerts

Data sharing with:

DATA ELEMENTS	Swap Files	Common Applications	Custom-Interfaced Applications	One-Way Standards-Based Sharing	Two-Way Standards-Based Sharing
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Dipartimento Protezione Civile (National Civil Protection)

No formal agreement in force.

Common interest to improve management of flash floods.

- We obtained access to the National Civil Protection Dept. web-based SW DEWETRA (displaying real-time raw and aggregated weather data from Nation-wide sensor networks)
- We provide well-tailored aggregated data to the National Civil Protection Dept. as soon as ready with apt cluster strategies

Related activities:

- study of possible matching between real-time data concerning flash floods and weather sensors readings *to improve assignment of priority and assets*



Data sharing with:

DATA ELEMENTS	Swap Files	Common Applications	Custom-Interfaced Applications	One-Way Standards-Based Sharing	Two-Way Standards-Based Sharing
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Ministero dei Beni Culturali (Cultural Heritage Authority)

No formal agreement in force.

Common interest to improve protection of cultural heritage in the framework of the EU R&D project STORM.



- Ministero dei Beni Culturali (MIBAC) gives access to Cultural Heritage geo-referenced lists to us
- We notify MIBAC of any emergency-related activity which could impact CHs

Related activities:

- study of possible coupling between real-time emergency alerts and Cultural Heritage lists *to improve CH protection*

