

Sharing MSD Data across the rescue chain

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Presentation outline

- Issue #1: Interoperability among PSAPs
 - The concept of “Incident form”
 - The proposed standard: CAP
- Issue #2: Interaction with TPSPs
 - EN-16102 and beyond
 - CAP for TPSPs



Interoperability among PSAPs



- Emergency call to 112
- Call taker qualifies the call and locates the caller
- Dispatcher sends the most appropriate type of resources

The concept of “Incident form”

Incident form

Caller number

Caller location

Call qualification

Other data

Names

Notes

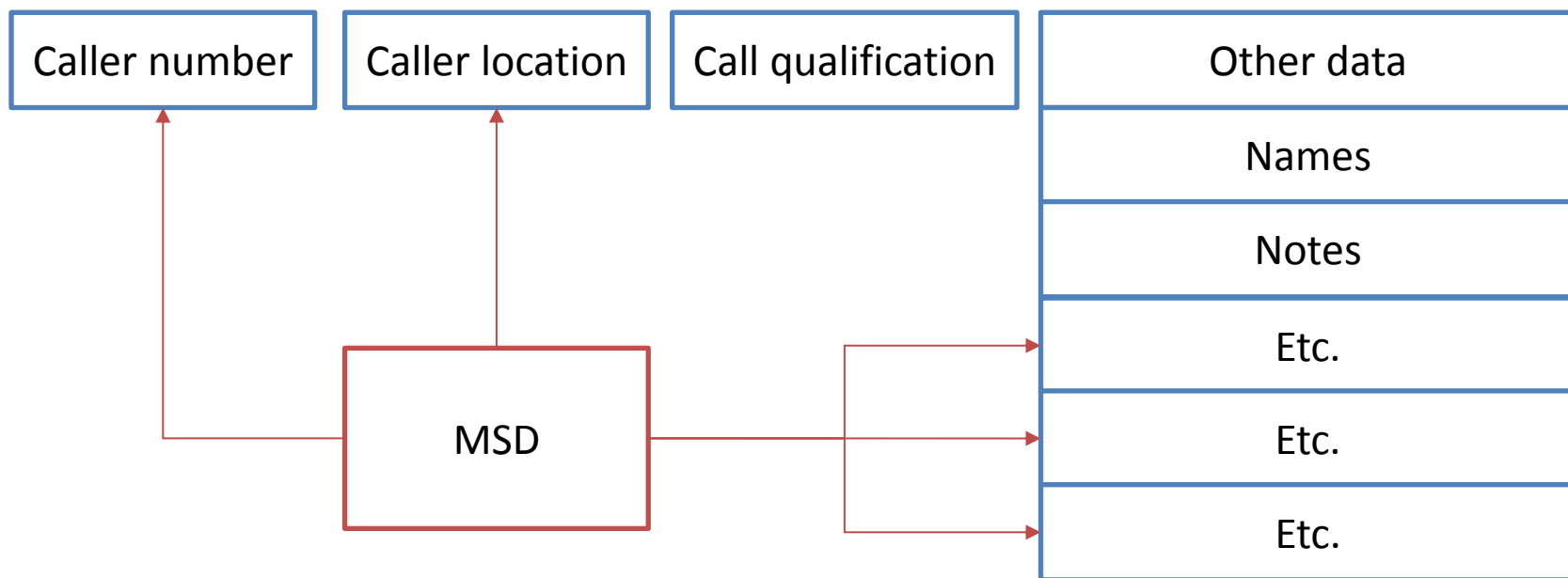
Etc.

Etc.

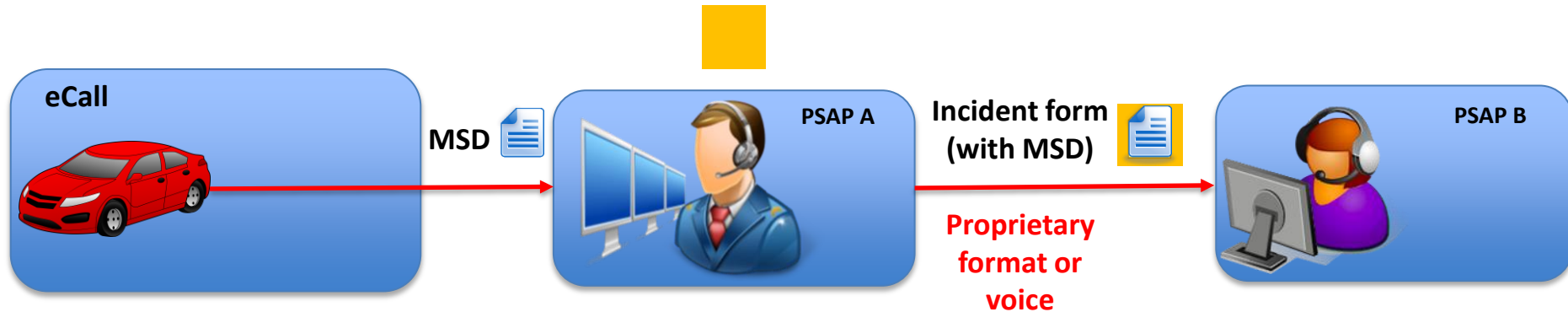
Etc.

The concept of “Incident form”

Incident form

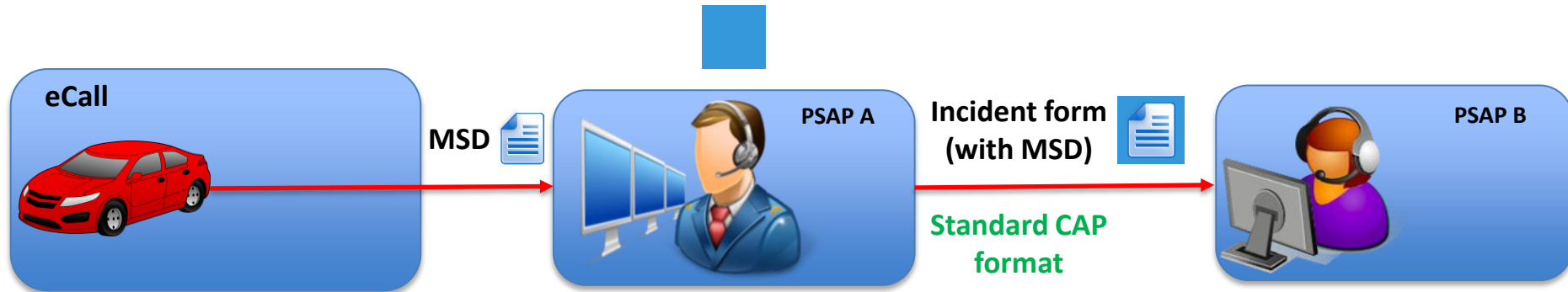


MSD-to-PSAP-to-PSAP: today



- The **MSD** is received by **PSAP A**
- Incident form is transmitted to **PSAP B**
- “Incident form” (if existing) is built using a proprietary format
 - **this prevents interoperability** in multi-PSAP cooperation environments
 - each receiving PSAP should know and interpret **many different formats**

MSD-to-PSAP-to-PSAP: tomorrow



- The **MSD** is received by **PSAP A**
- Incident form is transmitted to **PSAP B**
- Different, proprietary Incident forms are replaced by a common, standard format: **CAP**
 - **interoperability is much easier**, as only **MSD** and **CAP** knowledge is required
 - “**future-proof**” solution, thanks to the **extensibility** and **flexibility** of the **CAP** structure

Mapping and carrying MSD information with CAP: objectives and rationale

- To design a **Pan-European, flexible and extensible** “CAP profile”, for exchanging eCall related information between PSAPs, with the following principles:
 - the CAP “envelope” will contain the information to
 - (i) uniquely identify the messages
 - (ii) link updates to the original alert, and
 - (iii) specify the intended recipient(s)
 - the whole MSD content is carried as a “resource”, **base64 encoded**
 - MSD mandatory fields **mapped and carried within specific CAP fields**, to be immediately accessible even before decoding the whole MSD



Mapping and carrying MSD information within CAP: results of the analysis #1

- Mapping of mandatory MSD fields
 - **16 out of 18 can be mapped onto CAP fields**, in many cases using *alert.info.parameter* fields
 - MSD “version” and MSD “identifier” would be accessible after decoding the CAP “MSD resource”
- Mapping of optional and additional MSD fields
 - optional fields (e.g. number of passengers), if used, may be directly mapped to CAP *alert.info.parameter* fields or not, according to their relevance
 - additional data may be always left for later handling, i.e. after the CAP “MSD resource” is decoded by the PSAP



Points deserving further analysis

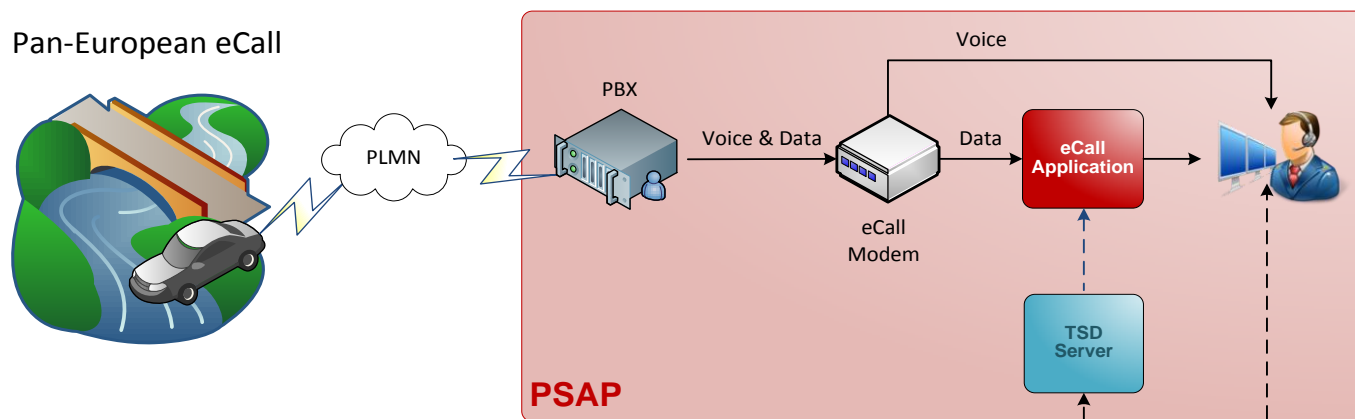
- Handling of MSD additional data coming from HGV and P2W extensions
- Definition of the exact rules for compiling mandatory CAP fields, such as:
 - *alert.info.event, alert.info.category, alert.info.urgency, alert.info.severity, alert.info.certainty*



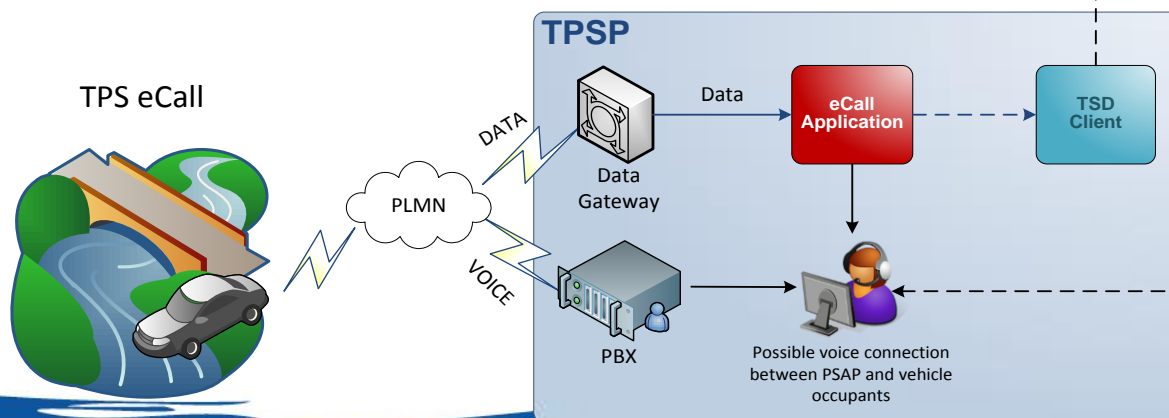
Interaction with TPSPs

- Considerations based on EN 16102

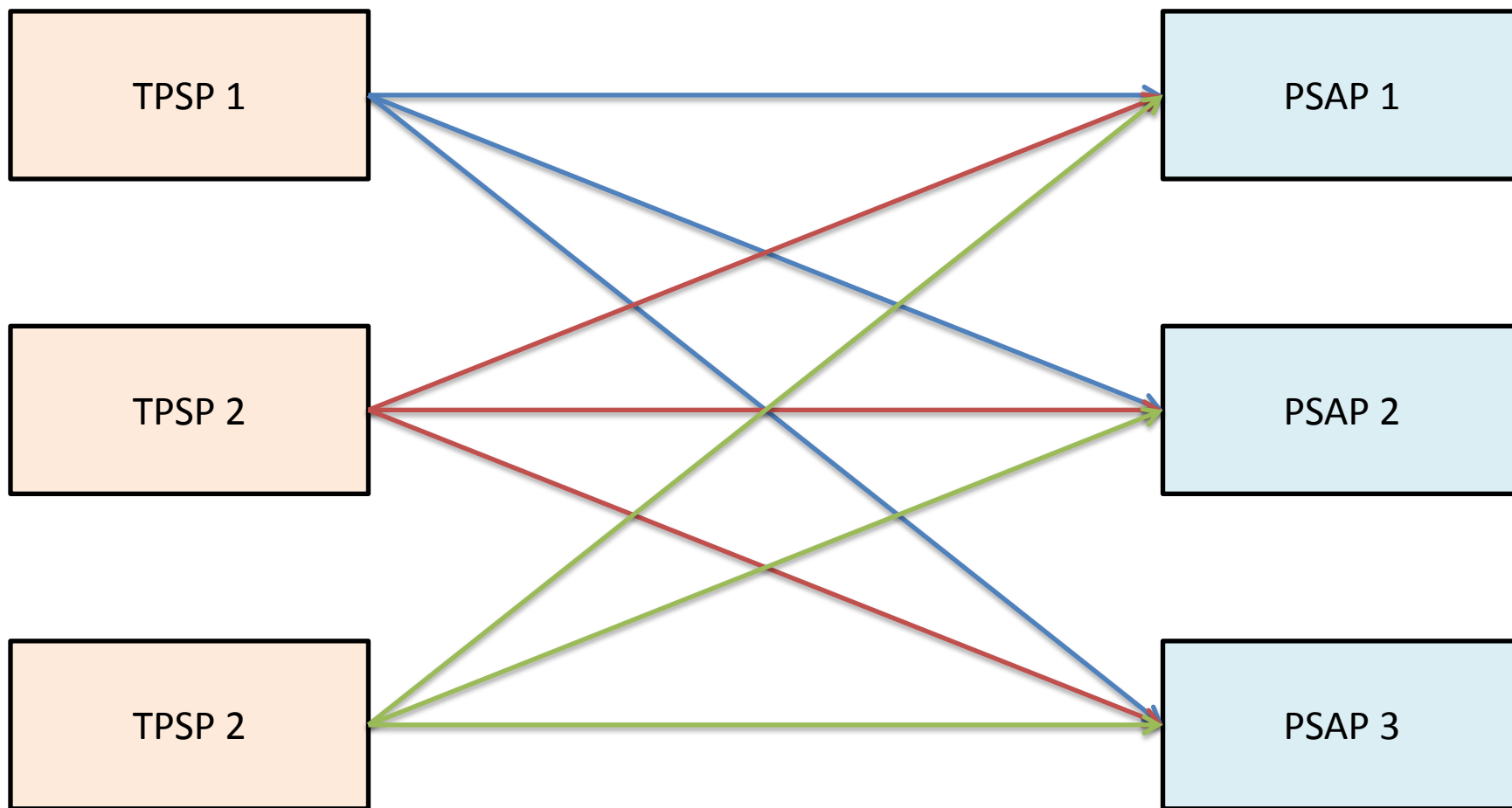
Pan-European eCall



TPS eCall

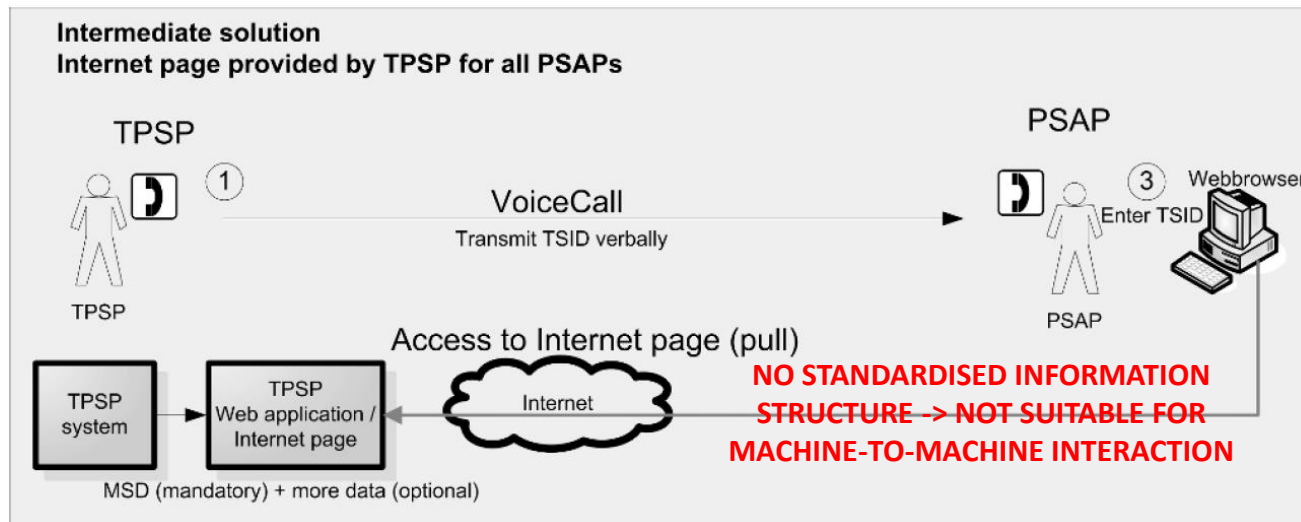


Interaction with TPSPs



EN 16102 transitional arrangement: web service pull mechanism

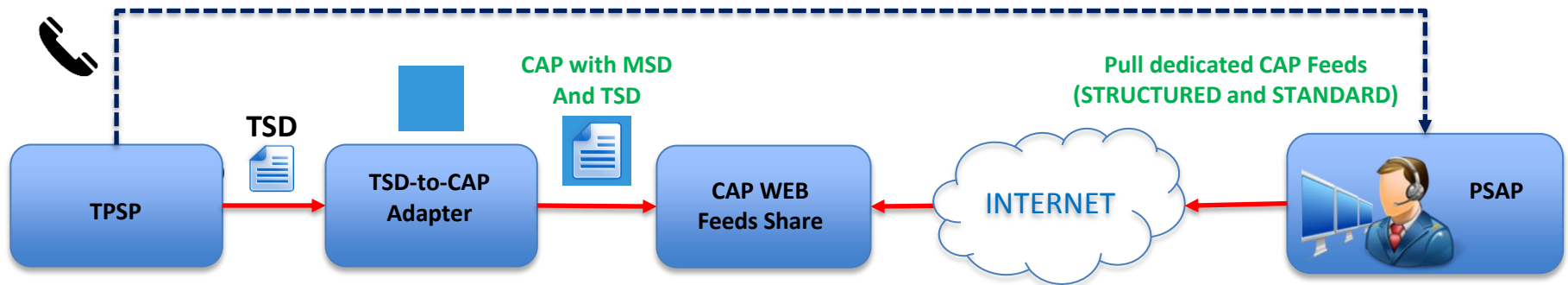
EN 16102, page 44, picture B.1



- **TSD** information (**MSD** plus optional data) is published in a web service
- Availability of new emergency data is notified to the PSAP **via voice call**
- PSAP **gets access** to the web service, using the provided login credentials



TPSP-to-PSAP TSD transfer: proposed approach



- The **TPSP system** is able to generate a TSD, including MSD and other optional data
- A **TSD-to-CAP** Adapter (part of the TPSP system or outside of it) converts TSD into a CAP, including **MSD** and **TSD** information (see previous slides)
- A **CAP Web Feed Share** (on each TPSP) will be able to:
 - identify the relevant PSAP for the emergency message, based on registered rules
 - publish the CAP messages in a structured format, in dedicated and protected Web Feeds, one for each registered PSAP authority
 - Web Feeds of CAP messages will be pulled by the PSAPs
 - Having the information in a structured format (Web Feed) and not as unstructured Web pages, will enable machine-to-machine communication and data handling

TPSP Set of Data (TSD): current reference XML representation according to EN 16102

- XML Schema Definition (XSD) of the **TSD** message
- Includes:
 - ***TPS-eCall-UID*** and ***TPS-eCall-SID*** fields
 - ***TPS callback number*** and ***Vehicle phone number*** fields
 - reference to the XSD of the enclosed ***MSD message***, according to the EN 15722
 - reference to an additional XSD, describing the way of including ***Additional Information***
- The proposed ***Additional Information*** structure for TSD contains more than 50 XML fields
 - no one of these fields is mandatory

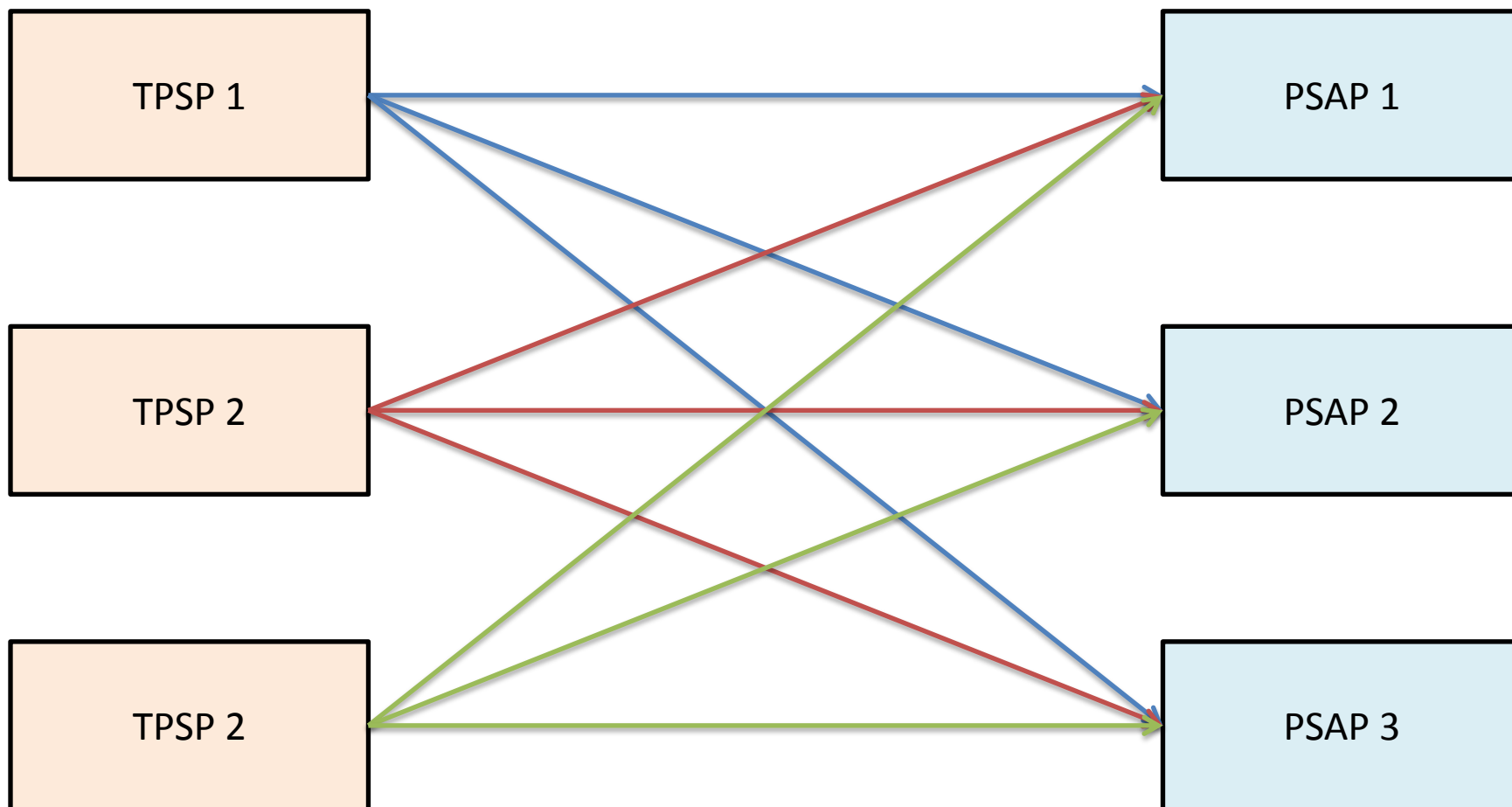


Mapping and carrying TSD information with CAP: rationale and objectives

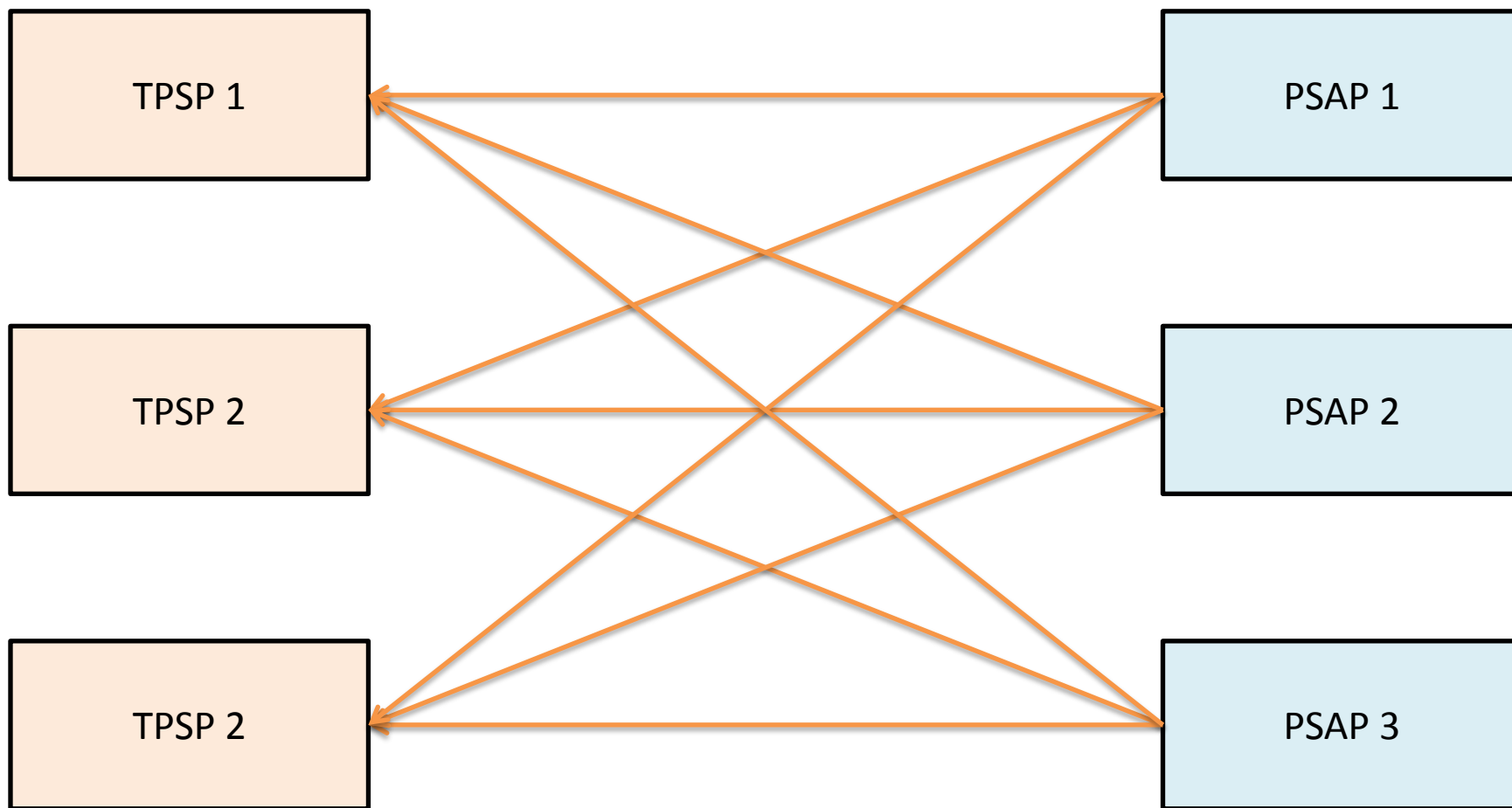
- Consider the former proposal for MSD mapping with CAP, for *PSAP-to-PSAP* communication
- Design a **Pan-European, flexible and extensible eCall “CAP profile”**, used both for *PSAP-to-PSAP* and for *TPSP-to-PSAP* communication
 - PSAPs need to understand and manage the same data format (CAP) in both cases
 - the CAP “envelope” will contain information to (i) uniquely identify the messages (ii) link updates to the original alert, and (iii) specify the intended recipient(s) for each of the different communication chains (TPSP-to-PSAP and PSAP-to-PSAP)
 - the **whole TSD message**, including the **Additional Information** (only in *TPSP-to-PSAP*) and the **whole MSD message** (also in *PSAP-to-PSAP*) are carried as CAP “resource” blocks, each of them base64 encoded
 - **most relevant MSD information** (e.g. mandatory fields), **mapped and carried within specific CAP fields**, in order to be immediately and easily accessible even before decoding the whole MSD (PSAP side)
 - **most relevant TSD information (UID, SID, Callback Number and Vehicle Phone Number)**, carried as additional CAP “parameter” blocks, to be immediately accessible (PSAP side)
 - **most relevant or common TSD Additional Information**, if identified, can be easily added as additional CAP “parameter” blocks, as well



Interaction with TPSPs



Interaction with TPSPs



Points deserving further analysis in TPSP-to-PSAP communication

- Rules / differences in compiling mandatory CAP fields, in *TPSP-to-PSAP* and *PSAP-to-PSAP* communication, such as:
 - *alert.info.event, alert.info.category, alert.info.urgency, alert.info.severity, alert.info.certainty*
- Concept for creating a registry of communicating TPSP and PSAP authorities, and for the definition of the addressing rules
 - ownerships and maintenance issues
- Missing common PSAP E164 phone database registry



TPS eCall data exchange platform



This project is funded by
the European Union

TPS eCall data exchange platform

Firefox File Edit View History Bookmarks Tools Window Help

Jixel Manager

https://manager.jixel.eu/incidents/pinned/1

JiXel Manager 15/05/2018 09:58:11 Operatore CUR112

Operatore CUR112 Online

Eventi



























Controllo / Eventi

Aggiorna automaticamente SI

Filtri

Lista di 188 su 189 Eventi ricevuti da: Centrale Unica di Risposta Varese e tutti i gruppi di appartenenza

Ricevuti Eventi Archiviati (Received)

Organizzazione proprietaria	ID Evento eCall	Data/Ora ricezione	Luogo	Coordinate	Azioni
Automobile Club Italia,	EI333332	27/04/18, 12:12 (2 settimane, 4 giorni fa)	A3 Salerno Reggio Calabria	38.303961 15.843904	 
BOSCH,	2455389	25/04/18, 18:04 (2 settimane, 6 giorni fa)	Roma RM, Italy	41.904805 12.532609	 
Automobile Club Italia,	EI333333	25/04/18, 17:13 (2 settimane, 6 giorni fa)	A3 Cosenza	39.320629 16.240376	 
BOSCH,	2455378	25/04/18, 13:06 (2 settimane, 6 giorni fa)	Roma RM, Italy	41.904805 12.532609	 
ALLIANZ GLOBAL ASSISTANCE,	A2455378	25/04/18, 11:23 (2 settimane, 6 giorni fa)	A16 - Autostrada dei due mari	40.907611 14.434308	 
ALLIANZ GLOBAL ASSISTANCE,	A123555	23/04/18, 18:37 (3 settimane, 1 giorno fa)	A30 Caserta Salerno	40.832275 14.561113	 
BOSCH,	2455378777	23/04/18, 18:37 (3 settimane, 1 giorno fa)	A56 Pozzuoli (NA)	40.840654 14.103550	 
Automobile Club Italia,	EI333330	23/04/18, 18:37 (3 settimane, 1 giorno fa)	A2 Reggio Calabria	38.191313 15.648422	 
BOSCH,	2455378998	23/04/18, 18:37 (3 settimane, 1 giorno fa)	A51 - Lambrate - Milan (MI)	45.495451 9.254978	 
Automobile Club Italia,	EI333326	23/04/18, 18:37 (3 settimane, 1 giorno fa)	A20 Furnari-Messina	38.113742 15.090917	 
ALLIANZ GLOBAL ASSISTANCE,	A123666	23/04/18, 18:37 (3 settimane, 1 giorno fa)	A14 Autostrada Adriatica(FG)	41.394474 15.703841	 
BOSCH,	2455378222	23/04/18, 18:37 (3 settimane, 1 giorno fa)	38060 Villa Lagarina (TN) Italy	45.901662 11.026418	 
Automobile Club Italia,	EI333321	23/04/18, 18:37 (3 settimane, 1 giorno fa)	E45 - 95024 Acireale (CT)	37.656832 15.149771	 



TPS eCall data exchange platform

The screenshot displays the Jixel Manager web application running in a Firefox browser. The interface includes a top navigation bar with the Jixel Manager logo, a date/time stamp (15/05/2018 09:59:55), and a user profile (Operatore CUR112). A left sidebar shows the user's status (Online) and a list of events. The main area features a map of the Milan region with various incident markers. A pop-up window titled "Eventi -- Numero di elementi: 1" provides details for a specific incident:

- Dettagli completi**
- Oggetto:** Transport incident
- Località:** A35 - 24043 Caravaggio BG
- Tipologia:** Transport accident
- Dettaglio Tipologia:** Non specificato
- Creato:** 2018-05-15T09:56:48Z
- Modificato:** 2018-05-15T09:56:48Z
- Descrizione:** Transport incident VEH_PREV_POS1: 45.511433, 9.646643 0.01 VEH_PREV_POS2: 45.511433, 9.646643 0.01 CODE 1.1: Crash



TPS eCall data exchange platform

The screenshot displays the Jixel Manager web application interface. The browser window shows the URL <https://manager.jixel.eu/incidents/received>. The application header includes the Jixel Manager logo and a date filter set to 15/05/2018. The left sidebar shows the user 'Operatore CUR112' is online, with options for 'Eventi' and 'Filtro'. The main content area displays a list of events, with the first one selected, showing detailed incident information:

- Società = ALLIANZ GLOBAL ASSISTANCE
- Contatto = Giovanni Tusa
- Recapiti contatto = 333333333
- Tipo di chiamata = Operativa
- Qualità della localizzazione = YES
- Classe del veicolo = CCCDDDTFRS
- Tipo propulsione = Diesel
- VIN = SALCA2BN0HH680924
- Attivazione chiamata = Automatic
- Targa = EM-545-DY
- Marca = LANDROVER
- Modello = LS50 2.0D AJ200 150PS 4WD 5DR
- Colore = Black
- Data/Ora = 2018-05-15T09:56:48+0200
- Coordinate lat. lon. = 45.511433 9.646643
- Indirizzo = A35 - 24043 Caravaggio BG
- Direzione di marcia = 130
- N passeggeri = 4
- N persone coinvolte = 2
- N veicoli coinvolti = 2
- Categoria emergenza = Transport accident
- Note = Transport incident
- VEH_PREV_POS1: 45.511433, 9.646643 0.01
- VEH_PREV_POS2: 45.511433, 9.646643 0.01
- CODE_L1: Crash
- Generalità = John Doe
- Recapiti telefonici = 00491512454251

Below the details, there are two buttons: 'Copia tutto e chiudi' and 'Copia coordinate e chiudi'. The bottom right of the interface shows a table with the following data:

Coordinate	Azioni
45.511433 9.646643	[Icona]



Thanks!

Contact details:

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