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Emerging technologies for the Early location of Entrapped victims under Collapsed Structures & Advanced Wearables for risk assessment and First Responders Safety in SAR operations

D6.9 Report on legacy systems and their connection to the S&R-related technical characteristics, V2

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Partners

	NATIONAL TECHNICAL UNIVERSITY OF ATHENS (NTUA) Co-ordinator	Greece
	AIDEAS OÜ (AIDEAS)	Estonia
	SOFTWARE IMAGINATION & VISION S.R.L (SIMAVI)	Romania
	MAGGIOLI SPA (MAG)	Italy
	KONNEKT-ABLE TECHNOLOGIES LIMITED (KT)	Ireland
	THALES ITAIA Italia SPA (THALIT)	Italy
	ATOS IT SOLUTIONS AND SERVICES IBERIA SL (ATOS)	Spain
	ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS (CERTH)	Greece
	UNIVERSITA DEGLI STUDI DI CAGLAIRI (UNICA)	Italy
	UKEMED GLOBAL LTD (UGL)	Cyprus

	PUBLIC SAFETY COMMUNICATION EUROPE FORUM AISBL (PSCE)	Belgium
	UNIVERSITA DEGLI STUDI DI FIRENZE (UNIFI)	Italy
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	UNIVERSITA CATTOLICA DEL SACRO CUORE (UCSC)	Italy
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	UNIVERSITEIT HASSELT (UHASSELT)	Belgium
	SPOLECZNA AKADEMIA NAUK (SAN)	Poland
	GIOUMPITEK MELETI SCHEDIASMOS YLOPOIISI KAI POLISI ERGON PLIROFORIKIS ETAIREIA PERIORISMENIS EFTHYNIS (UBITECH)	Greece
Search and Rescue End-Users		
	ELLINIKI OMADA DIASOSIS SOMATEIO (HRT)	Greece
	ENOSI PTYCHIOYCHON AXIOMATIKON YPAXIOOMATIKON PYROSVESTIR OY SOMATEIO (EPAYPS)	Greece
	JOHANNITER-UNFALL-HILFE EV (JOHAN)	Germany
	JOHANNITER OSTERREICH AUSBLIDUNG UND FORSCHUNG GEMEINNUTZIGE GMBH (JOAFG)	Austria

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	ASOCIATA CLUSTERUL ROMAN RENTRU PROTECTIE SI ECOLOGIE IN DOMENIUL MATERIALELOR CHIMICE, BIOLOGICE, RADIOLOGICE/NUCLEARE SI EXPLOZIVE (PROECO)	Romania
	SERVICIO MADRILENO DE SALUD (SERMAS)	Spain
	FUNDACIÓN PARA LA INVESTIGACIÓN E INNOVACIÓN BIOSANITARIA DE ATENCIÓN PRIMARIA (FIIBAP)	Spain
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Executive Summary

This document is the final report of T6.6 Legacy systems. D6.9 contains the final updates on the collected information, properties and characteristics, as well as taxonomy approaches of the chosen legacy systems.
EU legacy systems, such as PAGER, have been used in the project and more specifically in the use cases where the emergency was an earthquake. In addition, valuable knowledge coming from other legacy system (e.g SUMMA's medical service) were extracted, in order to design and implement COncORDE's patient management system & triage.
D6.9 lists the final legacy systems and analyze their usage during SnR Operations (Use Cases - Pilot Scenarios).

List of Abbreviations

Abbreviation	Explanation
AEPD	Agencia Española de Protección de Datos
API	Application programming interface
CECIS	Common Emergency Communication and Information System
D	Deliverable
DSS	Decision Support System
EU	European Union
ECHO	European Community Humanitarian Aid Office
GDACS	Global Disaster Alert and Coordination System
JSON	JavaScript Object Notation
LTE	Long Term Evolution
MIC	Monitoring and Information Centre
PAGER	Prompt Assessment of Global Earthquakes for Response
S&R	Search & Rescue
SOT	Strategic Operational and Tactical
SMTP	Simple Mail Transfer Protocol
UC	Use Case
USB	Universal Serial Bus

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1 Introduction

1.1 Objectives

The aim of D6.9 is to include updated information as well as any additional findings from legacy systems research.
The main focus of this deliverable is to highlight the adaptation of any legacy system provided into D6.6 and its usage during the SnR Use Cases (Operations).
In order to do this, the characteristics, properties and information related to the chosen legacy systems must be introduced and linked to the knowledge basis of the final SnR Platform.

1.2 Scope of using Legacy System in the S&R project

The scope of D6.9 "Report on legacy systems and their connection to the S&R related technical characteristics, V2", is the use of legacy data, the collection of knowledge form them and how they can be used in SnR Operations. D6.9 analyses the procedures followed in order to integrate and extract data into the SnR Final Platform from the chosen legacy system.

1.3 Relationship with other Deliverables

The current deliverable is the preliminary document addressing legacy systems and their connection to the S&R. The document provides inputs to other S&R components, therefore is linked to the following deliverables:

- D3.7 Requirements to knowledge management and SA Model V2
- D4.8 Data Aggregation V2
- D4.9 Design of SOT DSS components V2
- D4.11 Development of SOT DSS components V2
- D6.3 Presentation and analysis of the designed S&R interoperability framework
- D6.4 S&R lessons learnt mechanism
- D6.5 Establishment of technical components and legacy systems taxonomy
- D7.3 Component interface specifications for interoperability within S&R
- D7.4 Adapted S&R components and services
- D7.6 Integrated S&R platform V2
- D7.12 Architecture and Design Specifications of S&R platform V2

2 Legacy Systems Outcomes from D6.6

This chapter briefly lists the approach followed during D6.6's writing, in order to finally conclude to the final legacy systems and how they were used.
It is notable to mention, based on the scope of this current task, a first questionnaire was released to several First Responders organizations in the past (during the writing of D6.6).
The questionnaire was sent to the following **First Responders Organizations from ten countries**:

- **Australia**: Tasmania Police, Northern Territory Police, South Australia Police, VS Emergency Service, CFA, Department of Community Safety, Department of Fire and Emergency Services, Fire & Rescue NSW, QFE Services, State Fire Commission, Ambulance Victoria Group, Australian Capital Territory, SA Ambulance Service,
- **Canada**: Canadian Centre for Justice Statistics, Ambulance New Brunswick group, Ambulance New Brunswick group, BC Ambulance Service, EHS, Health PEI, Ministry of Health, Health and Community Services
- **Finland**: Finnish Rescue Services
- **France:** Police Association
- **Germany**: European Public Service Union, Arbeiter-Samariter-Bund, Falck Assistance team, German Red Cross.
- **Netherlands**: Ambulancezorg Nederland
- **New Zealand**: St John New Zealand, New Zealand Police
- **Sweden**: Falck
- **United Kingdom**: SFRS
- **United States:** NHTSA, NFPA

Unfortunately, there was no positive answer to continue with this approach (as it was mentioned in D6.6), thus the research was focused mainly on internal data from partners/End-Users and from the EU Legacy platforms which are still in use.
For the above reason, the questionnaires were also sent to the UCs' leaders of the S&R project. More specifically SUMMA 112 and EPAYPS, answered the questions and shared information about their legacy systems.

- **SUMMA 112 Medical Emergency Service**

SUMMA 112 provided details on their medical emergency service of Madrid SUMMA 112. More details on this can be found in "Table 3.1 SUMMA's responses from the questionnaire".
The main focus was in the medical records of SUMMA's medical emergency service, with the aim of using this information for guiding SnR's Triage Service.
More details on this will be shown in the following chapter.

- **EPAYPS' analog VHF Terminals**

EPAYPS response was focused in analog VHF terminals and as a result, since it is hardware, it was decided not to be used. More details can be found in "Table 3.2 EPAYPS responses from the questionnaire" in D6.6.

- **EU Legacy Platforms - Prompt Assessment of Global Earthquakes for Response (PAGER)**

Other than the above systems, EU Legacy Platforms were taken under consideration and finally chose PAGER, a platform that generates information about the impact of major earthquakes around the world, updating emergency responders, government and aid agencies, and the media of the scope of the potential disaster.
As a result, the chosen legacy systems are:

- PAGER, for earthquake emergencies,
- SUMMA's medical service (and other common serviceas), as guide for COncORDE's patient management system design and implementation

More details are provided in the next chapter.

3 Final Legacy Systems in SnR

3.1 Legacy Systems on Medical Services

The most important prerequisite of the chosen legacy systems is to have open access, in order to retrieve these features to the final platform.
SUMMAS' medical service did not allow an open access, due to sensitive patient data, however was used in a different way.
Since, there was a request from the project and the UC Operations themselves to develop a Patient Management System, all the valuable information coming from SUMMA's medical service were used, in combination with other medical sources, in order to form a common glossary for the final patient system.
The first attempts were addressed by SUMMA's medical service, more specifically on:

- Design Triage System considering an already used medical service
- Implementation of Triage and integration with SnR Platform (COncORDE)
- Follow the required protocols (e.g GDPR)

Already medical legacy systems give the opportunity to focus and implement a valid Patient System, in order to be used in the final UC scenarios.
As a result, an already medical service wasn't integrated, due to the fact that there are seven use cases in six countries (e.g Italy, France, Romania, Austria, Greece, Spain) with different designs and end-users' needs.
On the other hand, SUMMA medical service, as well as other medical services were used as an initial guide and the final Patient Management system was developed.
The collected information mainly focuses on:

- Health data of a detected patient, such as:
    - Patient ID
    - O2,
    - Temperature,
    - Eye Opening,

among other valid patient' status data.
In addition, except SUMMA's medical service valid information, every use case was used as an information source on KT's Patient System, coming from the end-users validation forms and suggestions on possible improvements on the final system.
These end-users were mainly:

- PUI France in UC5
- PROECO Romania in UC6
- EPAYPS Greece in UC4

As a result, there was enough information from already used systems (legacy systems) to enhance the functionality of its own Patient MGT system.

3.2 Common Taxonomy & Data Classification for Patient MGT system

By following the aforementioned approach in the previous chapter, all the valuable information according to SUMMAS' medical service and the other partner's suggestions were classified. Those data include the injury description and measurements, such as O2, Temperature, Breathing, Eye Opening, Motor Response, Verbal Response, Heart Rate, Skin, Pain, Respiratory Rate, Diastolic Pressure, Systolic Pressure, Right Pupil, Left Pupil, Airway, Capillary.
The taxonomy is aligned with existing centrally operated systems and databases across national, European, and International Organizations, such as SUMMA's medical service and it has been orchestrated in order to be used in all six UC countries, meaning that all the data are valid in all countries.

This system was used by the first responders and more specifically the triage runners, as well as the field commanders of COncORDE Platform, in order to:

- Collect the health status of the detected victims on the field
- Update their health status
- Inform the higher command position on the detected patients on the field and their health status
- Recommend the closest EMS Units to the victim and the nearest hospitals
- Use the health data as input for CNR's PHYSIO DSS

The final taxonomy of the system is depicted in the table below:

Table 3-1 Patient MGT Data taxonomy and its interaction with other components

Data	Operational definition	Interaction with Components
patient id	The auto-generated id of a new registered patient	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS
injury description	The triage runner can put a brief description on the health status of the patient, as well as any treatment granted to.	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS
O2	The O2 measurement of the patient.	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS
Temperature	The Temperature in Celsius of the patient.	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS
Breathing	The breathing status of the patient (normal, labored, shallow, abnormal sounds, none)	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS
Eye Opening	The conscientiousness of the patient, focused on his/hers eyes (spontaneous, to voice, to pain, none)	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS
Motor Response	This data input reveals if the patient can move. Possible selections are obey commands, localize, pain withdraw, pain flexes, pain extends, no response	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS
Verbal Response	This data input shows if the patient can answer. Possible selections are oriented, confuse, inappropriate, incomprehensible, no response	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS

Heart Rate	The measurements of the patients' heart rate in bpm	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS
Skin	The situation of the patient skin. Possible selections (Normal, Pale, Flushed, None)	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS
Pain	The number (from 0 to 4) of the patient pain	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS
Respiratory Rate	The rate of breathing situation of the patient	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS
Diastolic Pressure	The diastolic pressure of the patient in mmHG	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS
Systolic Pressure	The systolic pressure of the patient in mmHG	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS
Right/Left Pupil	The eye situation in mm	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS
Airway	The patient airway with the choices of open, blocked, none	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS
Capillary	The patient capillary with choices, such as normal, abnormal and none	COncORDE's Field Commander, SOT DSS (service 2 & 3), PHYSIO DSS

The above taxonomy was orchestrated by following common EU medical services, such as SUMMA's medical service and other, as well as suggestions for improvements coming from SnR Pilots.
The final Patient MGT System and the connected components to the above taxonomy are demonstrated in the sub-chapter below.

3.3 Final Patient MGT system

Following the taxonomy provided in the above chapter, the Patient Management System and Triage were implemented and integrated into the COncORDE Platform. The implementation was made via:

- Django Framework,
- Python,
- REST APIS

The final results are shown below and they were used by the first responders during the UC scenarios.
In an operational level, the first responders and more specifically the Triage Runners, used COncORDE's Triage in their smartphones, in order to collect and update the patient status on the field.

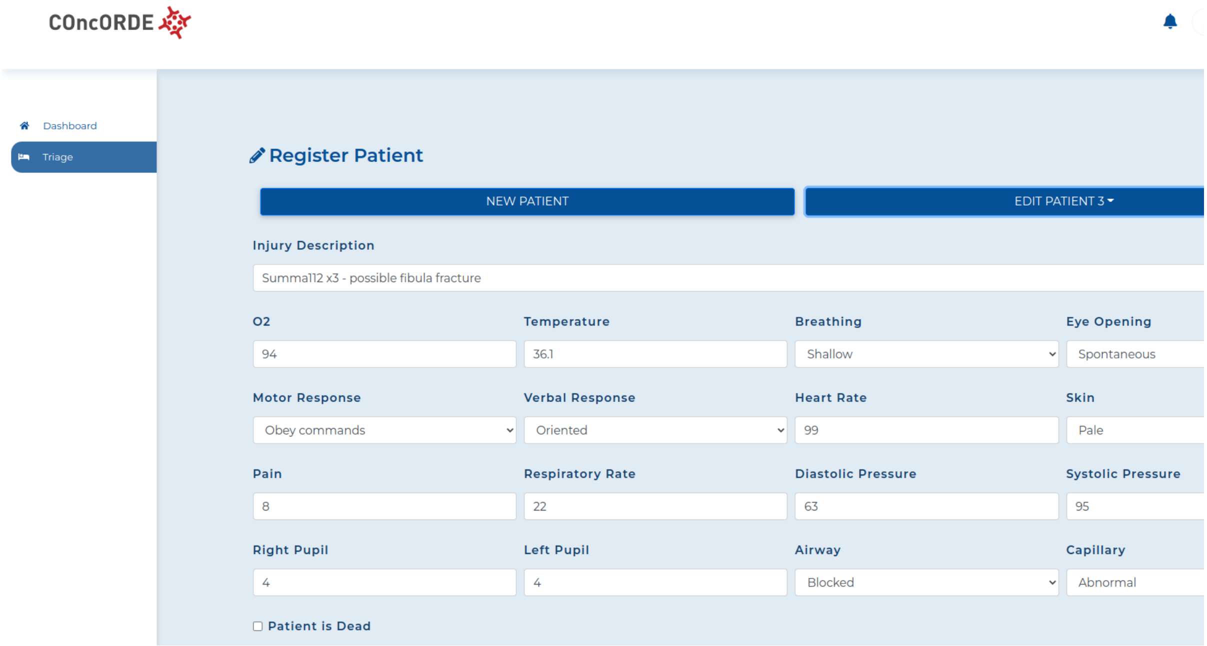

Figure 3-1 COncORDE's Triage

The above figure illustrates the fields, where the Triage Runners had to complete during the SnR Operation. These fields share a common taxonomy as the previous chapter showed.
The Triage Runner fills out the above fields with patient data, or some of them (the fields are not mandatory), in order to inform the Field Commander with the patient status. There is also an option "Patient is dead", in case a patient is dead. This option auto-completes the above fields with the aim of gaining time for the rest patients, meaning that the Triage Runner will update the form and then find another patient.
As a next step, if the Triage Runner has provided the patient status, then the Field Commander can be informed immediately, as it is shown in the following figures.

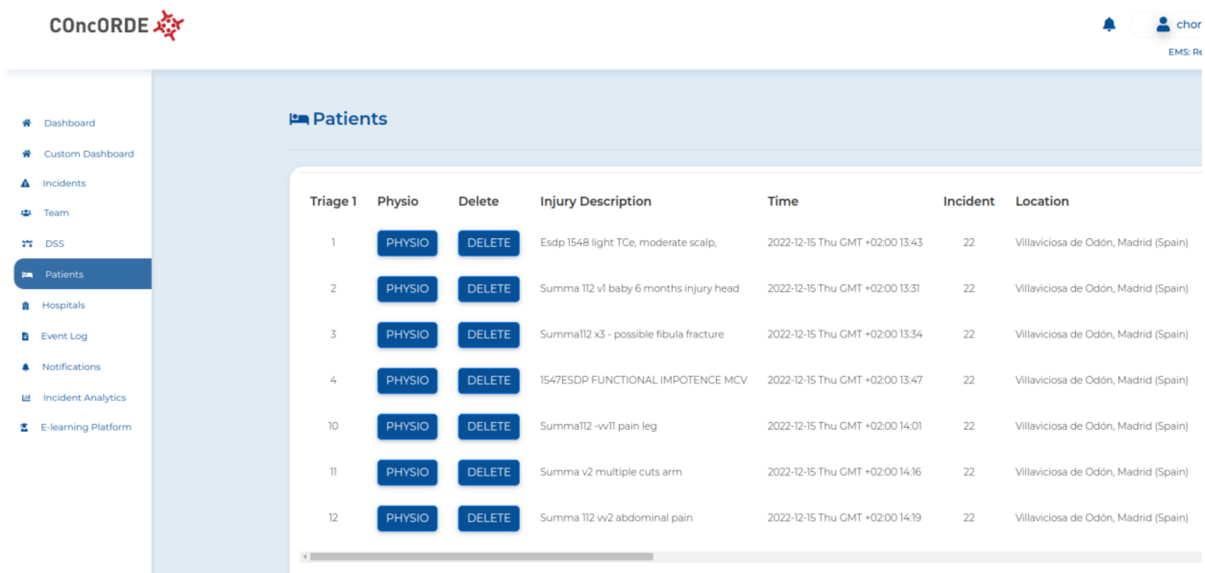

Figure 3-2 COncORDE Patient MGT - Field Commander

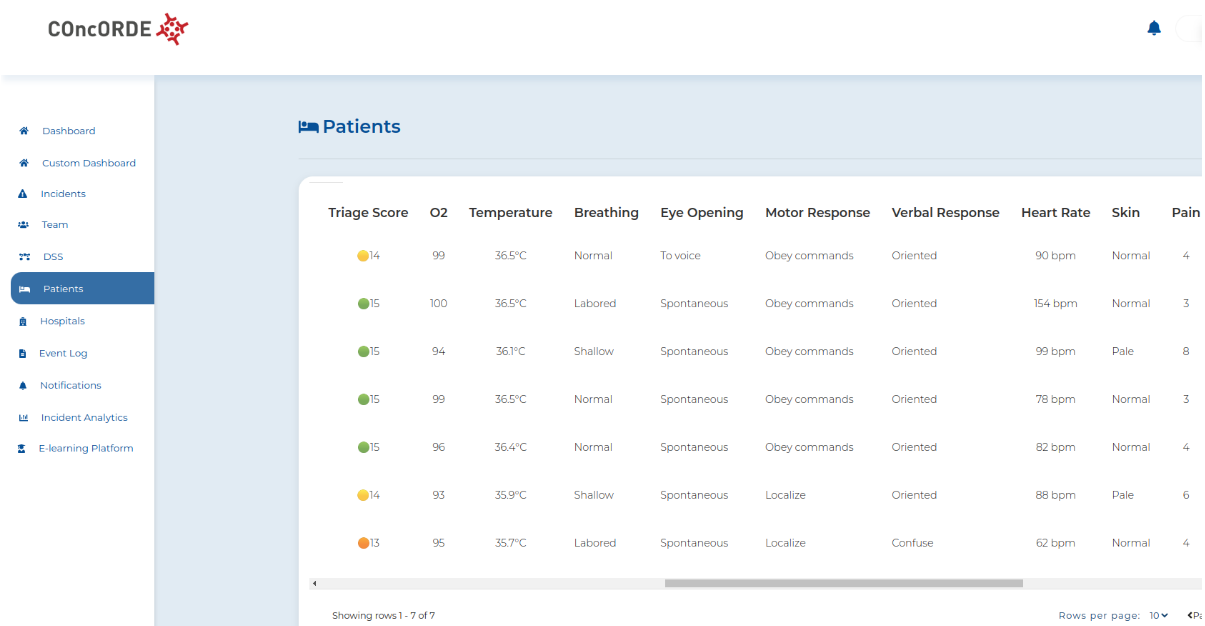

Figure 3-3 COncORDE Patient MGT - Field Commander 2

The above screen is visible in the Command Center on the field and more specifically to the Field Commander.
The depicted table shows a list with all the patient details coming from the Triage Runners. With this information, the Field Commander is able of:

- Sending more units in the field, such as medical experts, ambulances, etc.
- Notifying the closest hospitals in order to accept and treat the patients,

among others.
*More details on the operational level of COncORDE can be found in "D6.7 Training System".
The above information has been enriched with valuable fields coming from the legacy system of SUMMA and it was used in the Use Case Scenarios.
Other components except COncORDE that used the above information are:

1. PHYSIO DSS,

2. SOT DSS,
3. COncORDE's Common Incident Space

- <u>PHYSIO DSS</u>

Figure 3-4 COncORDE - Integrated PHYSIO DSS

PHYSIO DSS was integrated in the COncORDE Platform (more details on this can be found in "D7.4 Adapted Systems and Services", created by KT).
This component provides the end-user with the expected time of death of a patient. In order to provide the above information, PHYSIO DSS consumes the health status of the patients on the field. These data are the Triage Input form from the Triage Runners, shown in the previous section.
Another component using information from COncORDE's Patient MGT Service is the SOT DSS.

- <u>SOT DSS - Allocation of task to available actor on the field</u>

This service is used with the aim of sending the Triage Runners to the location of the detected victims on the field.

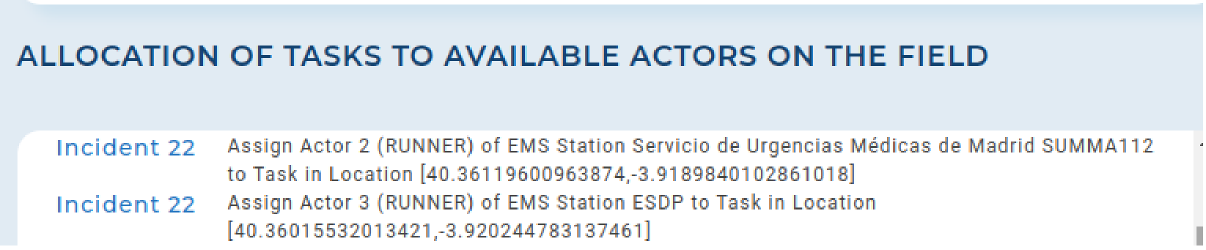

Figure 3-5 SOT DSS - Allocation of task to available actor on the field

- <u>SOT DSS - Allocation of Patients to Hospitals</u>

This service is used with the aim of transfiguring the patients to the nearest hospitals. This service suggests to the Commanders the most suitable hospital near the emergency and it requires the coordination of four COncORDE roles, meaning the Field Commander, the Triage Runner, the EMS Retrievers (paramedics) and the Hospital Commander.

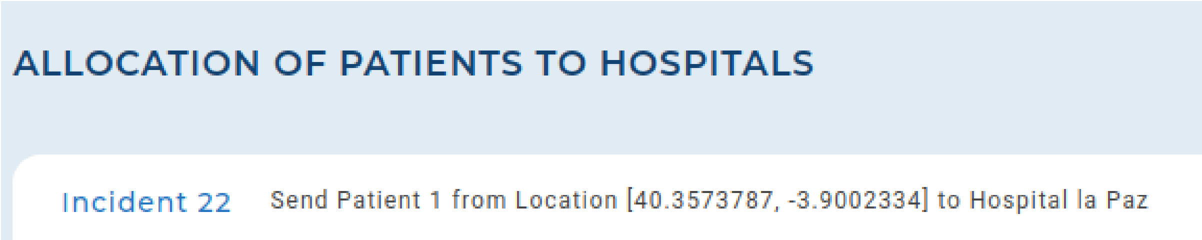

Figure 3-6 SOT DSS - Allocation of patients to hospitals

- <u>COncORDE's Common Incident Space</u>

Another component, embedded in COncORDE Platform, using input from Triage and the Patient Management Service is the Common Incident Space.
In the following map, the location of the patient (this location is auto-generated when the Triage Runner puts health data) is visible in the Field Commander's Common Incident Space.

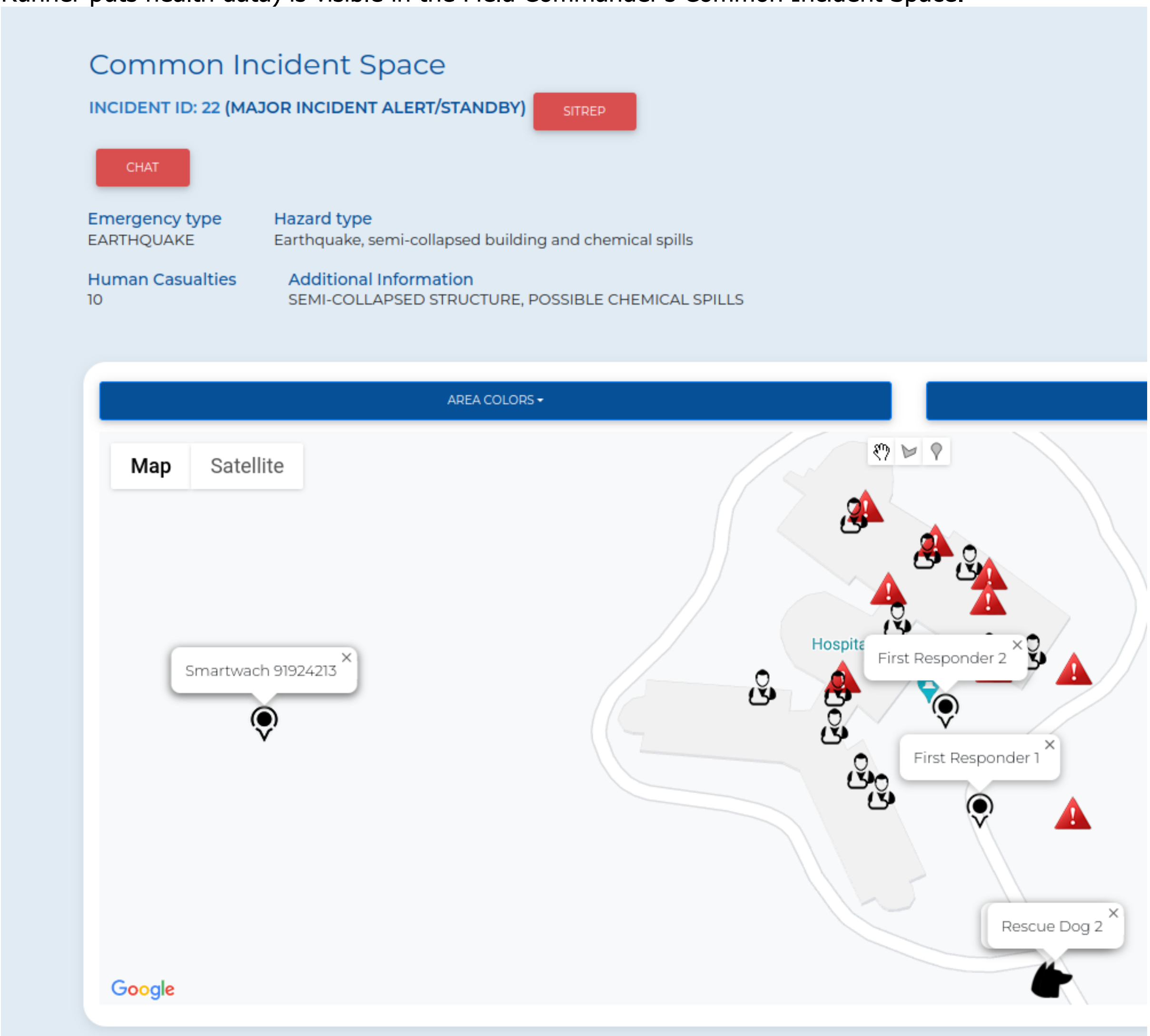

Figure 3-7 Common Incident Space - Field Commander

As a result, the Field Commander knows exactly the position of the victim and the Triage Runner and he/she can make more accurate decisions, such as provide markers with new patients (in case the responders have detect new patients) or/and send more actor to the field (as SOT DSS Service 3 suggested).

From the Triage Runner perspective, a simpler map is visible, with only the location of the patient he has to attend and assist, as the following figure shows.

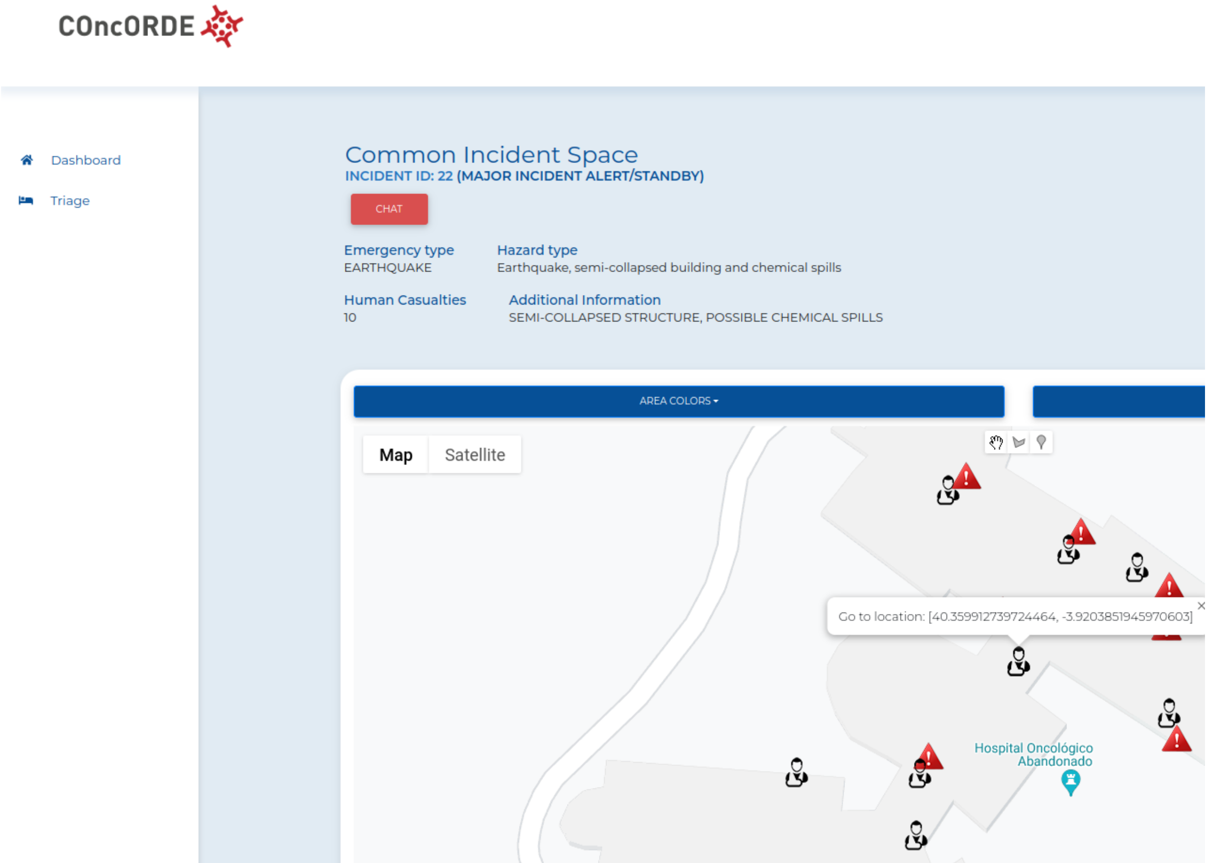

Figure 3-8 Common Incident Space - Triage Runner

A similar map is shown to other COncORDE users, such as the EMS Retrievers (paramedics).
In conclusion, knowledge from the legacy system on medical expertise was extracted, in order to form:

- COncORDE's Triage,
- COncORDE's Patient Management Service

The above were interacted with:

- PHYSIO DSS by CNR,
- SOT DSS by KT,
- COncORDE's Common Incident Space by KT

Which were used by the following first responders in SnR Use Cases:

- Field Commander,
- Triage Runner,
- EMS Retriever

4 Legacy systems on Earthquake response

4.1 EU Legacy Systems

PAGER (**P**rompt **A**ssessment of **G**lobal **E**arthquakes for **R**esponse) is a platform that generates information about the impact of major earthquakes around the world, updating emergency responders, government and aid agencies, and the media of the scope of the potential disaster [1].
The platform evaluates earthquake impacts by comparing the exposed population and fatality losses based on past earthquakes in each country or region of the world.
Earthquake alerts will also be produced based on the estimated range of fatalities and economic losses. To enhance the accuracy of the evaluation of an incident, the USGS creates the PAGER to deliver essential information including comments describing the main types of susceptible buildings in the region, exposure and deaths from previous adjacent earthquakes, and a summary of locally detailed information regarding the possible for secondary hazards, such as earthquake-induced landslides, tsunami, and liquefaction. USGS has been producing for a long time timely and accurate earthquake location and magnitude determinations.
PAGER has been selected as the EU Legacy system to be used, since it mostly fits the SnR Operational needs, due to the fact the Search and Rescue Project has three Earthquake Emergencies in:

- Use Case 1, Victims trapped under rubble (Italy),
- Use Case 3, Earthquake/heavy storms between Vienna Rail Station & Kufstein railway station heavy damages in the rail station (Cross-border pilot, Austria-Germany),
- Use Case 5, Victims trapped under rubbles (France)

As a result, the PAGER integration to COncORDE Platform had the opportunity to be tested in a pilot case scenario where earthquake has been occurred.

4.2 Common Taxonomy & Data Classification for Pager

As it was mentioned in D6.6, PAGER's API contains both historical data from past earthquake events, as well as real-time notifications.
In the UC scenarios, only historical data could be used, since the exercise was a simulation and not a real emergency.
In order to fetch the historical data from USGS's database a public API has been provided by the organization which includes historical data of previous events. Data were fetched by sending a HTTP GET request.
However, in order to achieve the above, a set of actions was followed, as it was listed in detail on D6.6.
These actions included the following steps:

- Data extraction
- Data cleansing
- Data transformation
- Data loading

The final step is the data migration. In the case of the UC pilots, the methodology followed was:

- Data retrieval considering a past earthquake emergency (the most recent earthquake incident)
- Data normalization (in case there were duplicates)

During the above phase, another procedure was followed focusing on:

- Investigation of the required data needed to be migrated.
- Legacy data retrieval from Data Lake Ecosystem
    - Creation of the appropriate objects with the necessary attributes for data mapping to the SnR platform.
- Legacy data filtering via S&R Data Model

- Filtered legacy data retrieval via WebHDFS to rest of the required components
- Final retrieval to SOT DSS Service 4

As a result, the API was called with a GET http request from different clients.
The sample below covers the time period between 01-01-1989 and 01-03-1989 (this is the same instance from D6.6):
https://earthquake.usgs.gov/fdsnws/event/1/query?format=geojson&starttime=1989-01-01&endtime=1989-03-01
The API call returns the results of the events in JSON format:


```
{
  "type": "FeatureCollection",
  "metadata": {
    "generated": 1629963506000,
    "url": "https://earthquake.usgs.gov/fdsnws/event/1/query?format=geojson&starttime=1989-01-01&endtime=1989-03-01",
    "title": "USGS Earthquakes",
    "status": 200,
    "api": "1.12.1",
    "count": 7711
  },
  "features": [
    {
      "type": "Feature",
      "properties": {
        "mag": 2.34,
        "place": "5 km NNW of Kea'au, Hawaii",
        "time": 604713388740,
        "updated": 1585692099610,
        "tz": null,
        "url": "https://earthquake.usgs.gov/earthquakes/eventpage/hv337388",
        "detail": "https://earthquake.usgs.gov/fdsnws/event/1/query?eventid=hv337388&format=geojson",
        "felt": null,
        "cdi": null,
        "mmi": null,
        "alert": null,
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        "tsunami": 0,
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        "ids": ",hv337388,",
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        "types": ",origin,phase-data,",
        "nst": 14,
        "dmin": null,
        "rms": 0.29,
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        "magType": "ml",
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        "title": "M 2.3 Quarry Blast - 5 km NNW of Kea'au, Hawaii"
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        "type": "Point",
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        ]
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      "id": "hv337388"
    },
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      "properties": {
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        "place": "42 km NNE of Taunggyi, Myanmar",
        "time": 604713360690,
        "updated": 1415321019090,
        "tz": null,
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        "detail": "https://earthquake.usgs.gov/fdsnws/event/1/query?eventid=usp0003sf1&format=geojson",
        "felt": null,
        "cdi": null,
        "mmi": null,
        "alert": null,
        "status": "reviewed",
        "tsunami": 0,
        "sig": 0,
        "net": "us",
        "code": "p0003sf1",
        "ids": ",usp0003sf1,",
        "sources": ",us,",
        "types": ",origin,phase-data,",
        "nst": null,
        "dmin": null,
        "rms": 0.5,
        "gap": null,
        "magType": null,
        "type": "earthquake",
        "title": "M ? - 42 km NNE of Taunggyi, Myanmar"
      },
      "geometry": {
        "type": "Point",
        "coordinates": [
          97.166,
          21.158,
          10
        ]
      },
```


Figure 4-1 An example of a PAGER report

The JSON contains multiple variables regarding:
- incident location,
- magnitude, the tsunami effect etc.

After the data modelling, the required notifications were stored in HDFS directories (according to the data mapping) and were sent to the rest of the components (e.g SOT DSS).
For the data encapsulation, an encapsulation layer was developed that serves as an interface and provides access from the legacy database to the python code and converts raw data to python objects.
This interface was developed in python and exposes an API that can be called from each component. It contains structured data models in an object-oriented way. It is the middleware between the legacy database and the SnR platform.
Moreover the data retrieved by PAGER API were classified according to the earthquake events data. Those data include the type, the estimation of casualties etc.
The taxonomy was aligned with existing centrally operated systems and databases across national, European, and International Organizations as it was mentioned in D6.6:

Table 4-1 Data taxonomy and its interaction with other components

Data	Operational definition	Interaction with Components
place	The location where an earthquake took place.	SOT DSS
type	Type of the event (earthquake, quarry blast, explosion)	SOT DSS
time	The time the incident took place.	SOT DSS
alert	Indicates if an alert has been triggered as a result.	SOT DSS
casualties	Estimation of casualties in the aftermath of an earthquake according to the magnitude of the event.	SOT DSS

The input of the PAGER platform, as it has already been presented in the previous chapter, and without any filtering by the data model, have common data with other components so are aligned with the final platform.
This data were filtered in order to be comply with EU standard frameworks (e.g GDCAS service interface requirements).
Moving forward, the final result response from SOT DSS service 4 is the following:

Table 4-2 Output from the SOT DSS Service 4

Estimation of Casualties

```
"Estimation of casualties": [
            [
              "There is a 7% chance for 1-10 human casualties."
            ],
            [
              "There is a 26% chance for 10-100 human casualties."]
```


4.3 Final usage of PAGER

During the Use Cases scenarios with the Earthquake emergencies, PAGER API integration with SOT DSS was tested and evaluated.
In an operational level, when the incident occurred (e.g the earthquake), the Command Center acted as follows:

- The High Commander provided all the details on the occurring incident, as the following figure demonstrates.

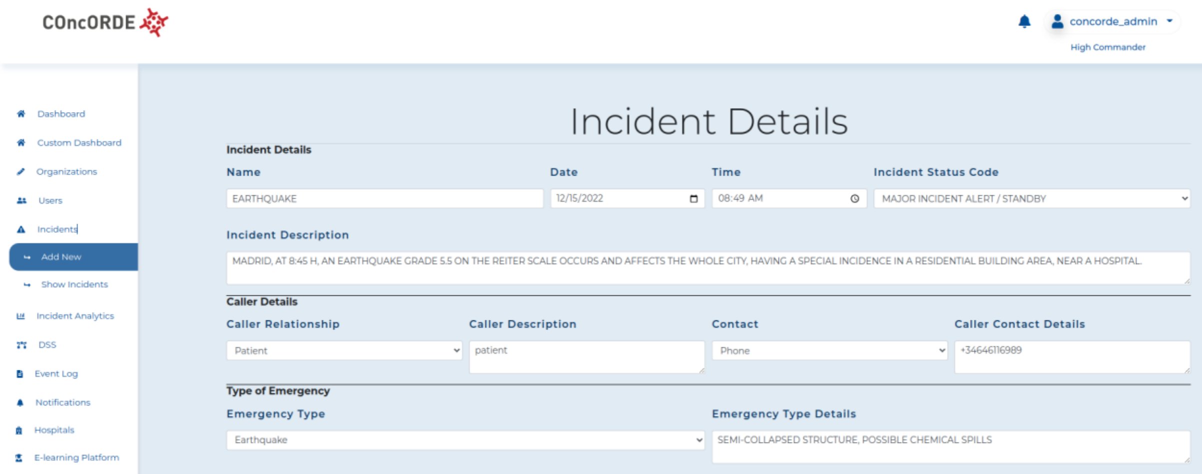

Figure 4-2 High Commander's Incident Form - COncORDE Platform

Since the High Commander fills the incident form with details on the occurring emergency and the emergency type is an Earthquake (as it was in UC1, UC3 and UC5), then a GET request is made to the PAGER API.
This GET request asks for any historical data from a past earthquake emergency occurred in the UC area. The location of the UC incident was sent to PAGER API via the COncORDE's Incident Form.
After the GET request, the methodology for the data classification is followed (described in the previous chapter), in order to finally provide a response in SOT DSS service 4 (if the criteria are met), as it is shown in the following figure.

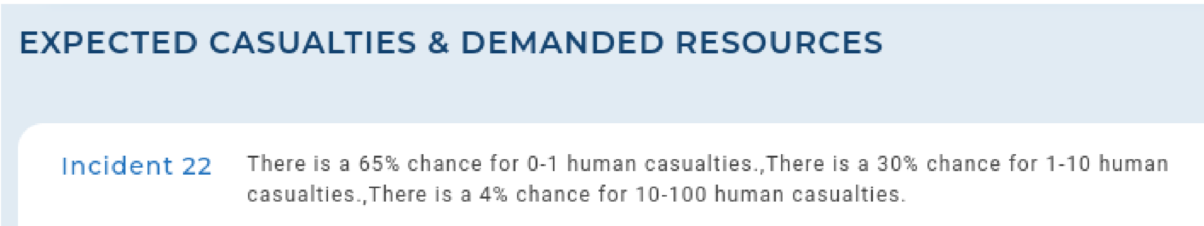

Figure 4-3 SOT DSS connection with PAGER API

The SOT DSS retrieves the legacy data from PAGER API for the area where a past earthquake was occurred, correlates the information with the real-time data provided by the High Commander and if the criteria are met, provides a probability range of the expected human.
SOT DSS Service 4 was connected with the historical data from PAGER API and it was successfully tested and evaluated in:

- Use Case 1, Victims trapped under rubble (Italy),
- Use Case 3, Earthquake/heavy storms between Vienna Rail Station & Kufstein railway station heavy damages in the rail station (Cross-border pilot, Austria-Germany),
- Use Case 5, Victims trapped under rubbles (France).

5 Conclusions

The final version of the Legacy System deliverable provided:

1. The final legacy systems selected during the SnR Operations
   - PAGER
   - Legacy systems on medical services as a guide on Triage and Patients MGT Service design and implementation
2. Methodology followed in order to be used in the Use Cases scenarios:
   - Data Classification
   - Data Taxonomy
   - REST API Calls
3. Proof of concept, coming from:

   For pager:
   - Use Case 1, Victims trapped under rubble (Italy),
   - Use Case 3, Earthquake/heavy storms between Vienna Rail Station & Kufstein railway station heavy damages in the rail station (Cross-border pilot, Austria-Germany),
   - Use Case 5: Victims trapped under rubbles (France),

   For Medical services:
   - All use cases (instances from UC7)

As a result, the SnR Platform (COncORDE) managed to be connected to one EU Legacy system and take advantage (from knowledge perspective) from other legacy systems considering the medical services and how to better deliver vital knowledge on the patient's status from the field.

Annex I: References

[1] "onePAGER Information," [Online]. Available: https://earthquake.usgs.gov/data/pager/onepager.php. [Accessed 1 2 2023].