



“NOVEL INTEGRATED SOLUTION OF OPERATING A FLEET OF DRONES WITH MULTIPLE SYNCHRONIZED MISSIONS FOR DISASTER RESPONSES”

ResponDrone

D9.1 Operational process and system maps

Project Deliverable Report

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| Glossary of terms and abbreviations used | |
|--|---|
| Abbreviation / Term | Description |
| C&C | Command and Control System |
| CMC | Crisis Management Council |
| COPI | On site Command |
| EKAB | National Centers for Emergency Care |
| EMS | Emergency Management Service |
| GIS | Geographic Information System |
| GRIP | Coordinated Regional Incident-Management Procedure |
| HCFDC | Haut Comité Français pour la Défense Civile |
| HFC | Home Front Command |
| LCMS | Dutch Nationwide Crisis Management System |
| MES | Ministry of Emergency Situations of the Republic of Armenia |
| NEMA | National Emergency Management Authority of Israel |
| RCM | Greece- Region of Central Macedonia |
| SFRS | State Fire and Rescue Service of Latvia |
| SIS2B | Fire Fighter Department of Corsica |
| SMS | Short Message Service |
| VRH | Safety Region Haaglanden |

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1. Executive Summary

The goal of this Deliverable is to describe the process flow and emergency response operational process maps within ResponDrone's first responders. This will allow for the assessment of the potential integration of the ResponDrone platform into these processes.

The Operational Process and System Maps Report presents the results of the following research items:

- Analysis of the interviews conducted with the project's end-users from M2-M8 in the framework of WP15. The interviews have been conducted according to the three emergency management stages: a) Preparation; b) Assessment and Coordination; c) Response and Recovery.
- Analysis of the results of the End-user Stakeholder Mapping done from M2-M8 in the framework of WP15. Mapping identified all relevant actors playing a role in first response activities, as well as their relations and dependencies.
- Development of operational process flow and system maps for ResponDrone end-users that represent a unified emergency response process and end-user organizations' emergency management system structure.

The developed operational process maps are based on the following standard categories:

- Source/Input
 - Intake
 - Dispatch/Triage
 - Field Assessment
 - Operation
 - Investigation/Report
- Development of narratives that explain what the end-user organizations do and how they do it and their main differences from the standard process based on the analyzed data.

2. Introduction

To develop the deliverable and the report, the research team has studied thoroughly the interviews that had been conducted with the project end-user organizations as well as the results of the Stakeholder Mapping done in the framework of WP15.

Our major goal was to come up with process flow and emergency response operational process maps that will represent the system structure and which will be based on the standard emergency operation stages. The process maps should include the activities of personnel, the role of technology, procedures, human and contextual factors. The maps should give a comprehensive and integrated big-picture understanding of how processes fit together. This will form the basis for further analysis, allowing for assessment and simulation of the process of first response to a large-scale disaster, as well as how the ResponDrone platform could be integrated, deployed and operated in these processes.

Since processes can be mapped at varying degrees of detail, besides the diagram-based process maps, the report includes narratives for each end-user organization that provide details for a more high-fidelity information flow/process mapping, and which present individual organization-specific emergency management practices, concepts, and particularities within the generalized process flow.

As the field studies were conducted in 2019, the research team requested end-user organizations to provide updated feedback on the draft process maps to verify the accuracy of the data included in them.

The document has been structured as follows:

- a) **Methodology** that details the methods for developing a unified process flow and system maps;
- b) **Results** that present each step in the process of mapping of all aspects of the end-user organizations' emergency response processes based on a six-stage format envisioned during the draft stage;
- c) **Discussion** which follows the Results section and which present an individual accounting of each end-user organizations specific variants within the generalized process flow; and
- d) **Annexes**.

3. Method and Results

The methodology for development of system and process maps began in T15.4 - Field studies: Observe the As-Is - with the collection of data from end-users. End-user interview data was reported upon and then analysed for general similarities. These similarities allowed for the development of a generalised process flow upon which process mapping could take place. The following sections will discuss the methodology and its development followed by a section discussing the results of applying each end-user case to the generic process flow form.

3.1 Methodology

Development of a unified process flow and system maps for end-users was based on data collected from end-users during T15.4. The content and results of these interviews is available for review in the Report on Field Studies, D15.2. These interviews detail the overall process flow for each end-user organization including activities of personnel, procedures, human, and other contextual factors.

3.1.1 Draft Process Flow and Review

By comparing the end-user responses detailed in the report, an overall response process flow was generated. The process flow included six stages: Source/Input, Intake, Dispatch, Field Assessment, Operation, and Investigation & Report. Establishing a generic outline of events in each organization's process was important for several reasons. The first was to provide a framework on which organizations with varying context and legal frameworks could be compared to one another. With a generic framework in place, the resulting processes identified in each interview could be mapped onto that framework. As the overall template was similar, the similarities and differences between organizations could easily be identified on the finalized process maps.

The process flow was then applied to a basic table to create a draft document on which the interview data could be detailed in the context of the developed framework. Each organization's process including the required process flow details was applied to the draft template.

A major outcome of this step was to identify missing information in each organization's process map. While interviews were quite thorough, comparison of the resulting documents identified missing information quite clearly. A secondary survey was distributed along with a draft copy of the process flow maps to each organization for review. The resulting information was then integrated into the draft so that it could be translated into a formalized process flow document.

3.1.2 Formalized Process Flow and Process System Maps

With draft documents complete, the mostly textual information in each draft could be synthesized into concrete process maps using standardized process diagram symbology. Important contextual information such as technology involved was added below each stage in the process flow as tabular information. Possible tables considered in each document include technology involved, personnel involved, timing considerations, and a table with more general notes, if necessary.

Diagrams.net, an open-source application for creating process flow documents was utilized to create the individual documents and allow for collaboration between team members without the need for extra software or file conversion. Each document is formatted for size A3 during development and can be easily converted to PDF or other format as needed.

Once each draft was converted to the final format, it was then reviewed, and its elements standardized so that the documents are easily comparable. The documents are also easy to edit and can be updated throughout the project as needed to suit changes to a given organization's process flow in the future.

The final formatted documents were then distributed to each partner for consideration and adjustment as needed.

3.2 Results

3.2.1 General Result

The six-stage format envisioned during the draft stage provided an effective framework for documenting each organization's process flow and allowed for the mapping of all aspects of their emergency response process. A template was created on which each end user's process flow was document. This template, which includes all generic steps, can be found in the Appendix, section 6.1. Each stage in this process will be discussed in this general results section. This general results discussion will be followed by an individual accounting of each end-user organization's specific variants within the generalized process flow.

3.2.1.1 Source/Input

All organizations detailed a Source/Input stage with varying inputs from both active and passive monitoring. The classic and most ubiquitous input event were emergency telephone numbers used by citizens. These phone and system inputs had slight variations where an organization's country-context had multiple numbers at a national and regional level. Additional inputs fell into a few distinct categories:

- Integration with monitoring systems including hydrometeorological and geologic stations
- Direct reports from private companies for industrial incidents
- Direct reports from other government entities
- Social Media reporting and monitoring (passive and active)

3.2.1.2 Intake

These Source/Input and Intake were separated due to the decision-making variations that existed once an incident is reported. Most organizations employed a distinct input stage where the information from a call was fed into a centralized system. Typically, this system is an extension of the organization's broader command and control system (C&C).

There are two notable variations in this stage. The first is that some organizations include a verification step before creating a ticket in their management or C&C system. The second is the escalation of an event via alerting senior leadership and/or other departments based on initial source severity.

3.2.1.3 Dispatch

Dispatch, or the sending of initial response units to a given incident, showed significant variation between organizations. This is explained by the different types of end-users interviewed as well as their local context. For example, some organizations dispatched a specific first responder type based on the intake information. Others sent one type regardless of call type and others sent all available units.

The largest difference between teams in the Dispatch stage relates to incident escalation. In some cases, the decision to escalate an incident's classification to various levels of incident type is made during dispatch, but more commonly this happens during Field Assessment. Most typically, incidents are classified as small, medium, and large incidents as opposed to simple first responder calls. This escalation triggers various processes including the formation of crisis management groups or the involvement of other agencies in the response process. While the Dispatch stage is the earliest that escalation occurs, it also occurs during the Field Assessment and Operation stages, as well. Individual process flows demonstrate the decision-making process for escalation as well as the next steps that an escalation triggers.

3.2.1.4 Field Assessment

Field Assessment represents the first physical response to an incident in the field. Typically, this involves various first responders from relevant agencies who assess the situation prior to carrying out rescue or life-saving operations. This stage is also the most common step where an incident is escalated.

Incident escalation can result in a number of outcomes, but most typically it involves the creation or involvement of a formalized crisis management group. This group often consists of local municipality representatives with knowledge of local context. It also includes members from various first responder agencies and regional or national government.

Field assessment is also the first stage at which drones are deployed by any of the organizations.

3.2.1.5 Operation

Operation includes all life-saving and related response activities. This is often where drones are used in current processes. Use of drones was most typical in site survey and documentation as opposed to life-saving activities. This stage was also the most similar between the various organizations.

3.2.1.6 Investigation and Report

While the Investigation and Report stage was not initially described by end-users, some organizations did refer to it. A follow up survey performed during research confirmed that each end-user organization included an investigation and review stage for major incidents. Included in these were often drone captured images and models.

3.2.1.7 Technologies Used

While the technology specific to each end-user organization is somewhat unique, many organizations use similar technologies during the response process that are worth listing in this section.

- Incident database – a local and/or cloud database which includes a data card for each incident recorded by the organization.
- Command and Control System: a system for facilitating organization of operations in the field. Often includes a connection to an incident database.
- GIS System – A local GIS database of information to provide a geospatial data component. This is not used in the majority of end-users, but was present in some.
- Radios – Hand held or vehicle based radio systems for communication

- LTE Cellular Station – Some end-users either currently or will imminently employ LTE broadcasting stations for local communication during an event.
- Satellite Communication – Used as a backup by some end-users to replace radios when necessary.
- Integrated Alert Systems – These systems either feed direct SMS alerts to citizens or physical alert systems such as sirens. Typically, they are tied into a broader C&C system.
- Geo-Positioning System for Vehicles – A GPS device attached to response vehicles for location purposes.
- Drones – Drones are used by various end-users for survey and documentation purposes.

3.2.2 End-user Process Flow Variants and Discussion

The process flow documents include all relevant information and processes for each partner. This section of the document reports any relevant details and variations unique to the partner.

3.2.2.1 Armenia – MES - Ministry of Emergency Situations

Discussion

MES's source inputs are rather diverse as the ministry's operations centre is fully integrated with and can receive inputs from both a phone system as well as various government agencies such as the Seismic Service, Police, and others.

MES's Intake stage was also well described and follows a typical intake, verify and dispatch model. There is a variant during the intake stage that major incidents are reported to the Head of the Rescue Service. This is separate from forming a crisis committee and is merely an informational step. Additionally, the call centre operator performing the incident intake will ask a series of specific questions for situational awareness purposes to prepare the dispatched first responders. In all cases, an incident entry is recorded in the C&C system.

MES has specific policy-based dispatch rules for each incident. The call centre operator must decide to dispatch personnel within 1 minute and whether to send an automated SMS or Warning System message within 10 minutes of an incident being reported.

During the Dispatch stage, members of the ministry and crisis management organization will decide the level of the emergency as local, regional, or national.

For local emergencies, the closest troops are dispatched. For regional incidents, control of the situation is transferred to the regional governor. Similarly, for national incidents, control is transferred to a National Committee formed when the incident is reported. For both Regional and National incidents, all available units are dispatched to the area. Field Assessment also allows for escalation of an incident to the regional or national level.

The Operation phase for MES includes general life-saving activities and search and rescue. MES also currently takes photos of incidents and stores them with the incident entry in the C&C system. This entry is also expanded upon to create an incident report for major emergency incidents during the Report phase.

Technology Involved

Technologically, MES uses several of the technologies mentioned in the previous section. The Crisis Management Centres at both the national and regional level utilize a C&C system for incident tracking. In the field, first responders use handheld radios for communication. All vehicles are tracked via GPS with their position reported back to the C&C system.

Personnel Involved

For personnel, there are several possible stakeholders involved in the process both directly within MES or from adjacent groups. In addition to call centre operators and first responders, it was specifically mentioned that local governors, Psychological Assistance Services representatives, and National Security Service representatives can also be involved. For national incidents, a Disaster Committee is formed that includes two representatives from each of Armenia's government ministries.

3.2.2.2. Greece - RCM - Region of Central Macedonia

Discussion

RCM's source inputs are comparatively limited; typically, it is a telephone call from Fire services or other local authority and seldom - from a citizen affected by the disaster.

Its Intake stage is characterized by a generally typical sequence of actions, such as receiving information, verifying it as legitimate, and entering the case for appropriate information only. Draft notes are kept by the staff on duty, and then the information is transferred into an official registration document. Each civil protection authority, however, has its own procedures for collecting, disseminating, and registering information concerning emergency situations.

Cerberus software of Central Macedonia is a central point where many different users can find useful information.

Computers, laptops, and physical archives are used to store the incoming information about the emergency. Information is then archived (e.g. administrative documents, documents concerning the disasters by categories, etc.).

At the Intake stage, the roles involved are civil protection employees with administrative duties, heads of the departments, and the administrative staff.

At the Dispatch stage, based on the initial assessment of the situation, first responders are dispatched, and priorities for actions are specified. They assess the situation and ask for more help if needed. Engineers, technical staff, regional and national authorities (depending on the level of emergency), representatives of the Department of Transportation Infrastructure or the Department of Environmental Infrastructure are in the affected area. There is an attempt to more concretely identify the level of disaster, photos are taken and draft estimations of the general impact are made.

The information is communicated primarily unofficially, frequently through telephone calls, email, or even instant messages. However, official meetings usually take place where each authority presents and shares the relevant information with others. Radio and mobile phones are used.

Field Assessment also allows for escalation of an incident to the regional or national level.

The Operation phase for RCM includes general life-saving activities, search and rescue, and monitoring. Photos and videos are produced, and GIS may be used. The draft assessment report is also being produced.

Technology Involved

Technologically, RCM uses several of the technologies mentioned in the previous section. There is a specific software registering the main disasters called Cerberus for incident tracking. In the field, first responders use handheld radios for communication and mobile phones.

Personnel Involved

For personnel, regional or local fire service is dispatched for almost all kinds of accidents. There is a Regional or local division of EKAB/National Centers for

Emergency Care - emergency relief to the population, and Edomak, The Volunteer Rescue and Disaster Response Team, a regional civil society organisation active in the fields of rescue of people in danger, forest protection, firefighting, disaster response in general (earthquakes, snowfalls, floods, fires, etc.). In case of forest fires, forest services are involved and in the case of earthquakes, municipal or regional authorities will be involved.

3.2.2.3 Greece - RWM - Region of Western Macedonia

Discussion

The source inputs in RWM are quite diverse. Information about an emergency is typically received through the police or fire brigade or via the unified emergency number 112 that operates in the new national civil protection center. Alerts for forest fires, floods, and extreme weather conditions are also received from national meteorological services which use a general warning system based on sensors, radars, satellites.

RWM's Intake stage is overall a typical intake, verify and dispatch. The alerts go to the Civil Protection General Secretariat in Athens and then are transferred to all regional and local civil protection authorities. The 112 operational center is located within the new building of the Civil Protection General Secretariat.

The general public is normally alerted or notified about an emergency by television, radio, Internet and newspapers, and text messages.

However, there are no automatic procedures that send the requests to the most suitable entity. The calls can be taken by the civil protection authorities, by the police, fire brigades and are being registered in those entities separately. Fax and sometimes mobile phones are mentioned as the means of communicating the alerts to the civil protection authorities.

During the Dispatch stage, fire brigades are dispatched for almost all cases of disasters.

At the Field Assessment stage, the fire brigade assesses the situation, identifies the level of emergency, and calls for more help if needed. Civil Protection supports Fire Brigades and facilitates their requests.

During the Operations stage, search and rescue activities are performed by fire brigades. Depending on the severity of the emergency, Civil Protection General Secretariat can also be alerted, as well as the local or regional civil protection

people. Volunteer organizations that are certified by the General Secretariat of Civil Protection and trained by fire brigades can be mobilized as well.

Technology Involved

Technologically, there seems to be no unified system or platform for incident tracking where every relevant agency can have the same operational picture to be able to coordinate actions with the other involved agencies. Every agency uses its own platform.

Communication is done by fax and mobile phones; there is also a GPS system and communication system in the trucks and vehicles, so the position of the different rescue teams can generally be identified and tracked. Airplanes and helicopters are used. The end-user reported no use of drones.

Personnel Involved

Personnel mainly includes fire brigades that respond to almost every type of emergency, the Civil Protection General Secretariat supports by communicating with the municipalities and by mobilizing private companies, local or regional civil protection authorities, and volunteer organizations. The end-user reports that all 13 Greek Regions will have a regional operational center by 2023.

3.2.2.4 Bulgaria - RAV - Regional Administration Varna

Discussion

RAV follows many of the standard processes laid out in the template. Its source inputs are diverse as information is received from national and regional rescue numbers - 112 (national) and 668 (regional). Also, alerts come from river level monitoring stations and floods monitoring systems, Maritime Administration, and Port Authorities.

Its Intake stage follows a typical intake where information is gathered through the mentioned sources, although there is no software-based registration system. The means of communication at the Intake stage is the telephone.

At the Dispatch stage normally local level Police troops are dispatched who at the Field Assessment stage observe the situation and do initial severity assessment based on which either more help or other types of first responders are requested (fire rescue services, etc.). Disaster classification is done and if the emergency surpasses a certain level, emergency management Shtab (local term for

emergency management committee) is created. The means of communication is a mix of mobile phone and land line telephones.

Technology Involved

Technologically, in the interview RAV mentions using mainly phones. The firefighters do not have drones. The Ministry of Interior has Drones and firefighters can ask to use them during the crisis. Until now the Ministry of Interior used drones to fight against criminals, or refugee-related operations but not for disasters. The Ministry of Interior also uses helicopters.

Personnel Involved

For personnel, the main stakeholders are the call center operators, the Police/first responders, relevant EMS and agencies, such as the Ministry of Interior, Ministry of Environment and Waters, Naval Academy, Maritime Administration, Regional Governors, Health Authorities, in certain cases the Governor's office and if needed the Crisis Shtab.

*3.2.2.5 France - HCFDC - Haut Comité Français pour la Défense Civile
and SIS2B - Fire Fighter Department of Corsica*

Discussion

The input sources of the end-user organization are very diverse: information about disasters, climatic or other emergencies is received through the call center (112 for every type of emergency) and most of the calls are made through mobile phones. Other sources of information are the Meteorological Center, Emergency Management Services, Law Enforcement authorities, Health Service, Ministry of Ecology, and many other partners. Information on events is received by internet/social media as well.

From a communication and coordination perspective, the described Intake stage is quite comprehensive. At the National Center for Emergency Response, there are rooms for communication and coordination of emergency management such as the Call Center, Center for Anticipating Events, where all information for prediction, forecasting of events is gathered. There is also a room for interagency meetings for Big Scale Operations.

At the Intake stage the information is verified through incoming calls, GIS - which contains information regarding a particular area (critical points, lands, the forest, etc.) - the operating system, and through the national fleet and helicopters in case of big disasters.

The Préfecture, which is the main public administration body responsible for crisis management and is leading all emergency services, has similar interactive rooms interoperable between the headquarters of the firefighters and the room in the Préfecture with the same participants.

The end-user reported that an upcoming project will introduce within the next 5 years an interagency system, having more automatic systems capability for the firefighters, as well as for EMS, more digital interoperable tools that will allow, inter alia, to transfer calls to another platform.

At the Dispatch stage, fragmented operational framework policy in force implies that the scalability of human and technical resources is done depending on the initially identified level of disaster.

Most cases are handled by the firefighters' department. Depending on the level of emergency and the need, coordination centers in each of the seven zones of metropolitan areas, support the firefighters. The interdepartmental support between firefighters' departments, police, and gendarmerie for any kind of emergency is done by the Prefect.

The Field Assessment stage is technologically well equipped, as there are many tools available at the local level as well, such as planes, helicopters, or drones. In case of big disasters, the national airplane fleet is used. The use of this fleet is activated by the coordination centers after the department has issued a request.

The Operation phase includes general life-saving activities and search and rescue. Photos/videos of incidents and other relevant information are stored with the relevant incident entry in the C&C system.

After an incident has been concluded, an investigation takes place to determine the ignition point of the fire as well as the overall cause of the fire (accident, arson, natural event). Depending on the type of disaster, this investigation could be performed by law enforcement. In cases of fire, it is performed by the end user organization. A secondary outcome of this is to find persons responsible, if applicable. Additionally, an analysis of the operation including the positive and negative outcomes is performed. Three reports are generated from this process, a cause of disaster report, a law enforcement report, and a feedback report.

Technology Involved

Technologically, HCFDC and SIS2B use a variety of solutions. Most of the firefighter departments have GIS systems and, in many cases, live streaming is also available.

In Corsica all vehicles have GPS but not all fire departments vehicles are geo-located.

The law enforcement and the Gendarmerie have positioning devices. Some fire departments and fire trucks also have those devices installed.

Police and fire rescue services use a radio system called PMR. The gendarmerie uses a network called Shared National Radio Infrastructure. It's an encrypted radio network with information-sharing capabilities, but it's not developed for processing large amounts of data and is used mainly for voice transmission (conference call, for example).

Emergency Management related departments use their own systems which are independent and heterogeneous, making integration difficult. In addition, the Police and the Gendarmerie have their own systems, and can't share the information contained in their system outside their departments.

On the national level, there is currently an information logging system for each department, which can be shared at a national level. When the department enters the information, the information is seen by the coordination center and at the national level as well. This system is called Synergy, and it can handle only textual information, no other media. This information is shared with the department (Fire and Rescue Departmental Services), with the fire departments, and the department of the Prefect. The Gendarmerie, however, does not use this system. The police and the Gendarmerie enter information into this system at the level of Prefect, not at the level of operation center.

The end-user reports a new Interoperable System Reform NEXSIS, which is going to introduce a single system for all departments and which will be managed by the Ministry of Interior. The system will also introduce new features for the geolocation of the call.

At the time the interview was conducted, the regulation in place forbade the use of drones for surveillance in a full-time regime. The end-user also reported that they do not have drones. A few fire departments in France have drones, but they are tactical drones intended for very short sight to see behind the building or above.

Personnel Involved

In regard to personnel, there are several possible stakeholders involved in the process both directly within HCFDC and SIS2B or from other relevant groups. In

addition, to call center operators, first responders, coordination center staff, and law enforcement responders, it was specifically mentioned that the Prefect, acting on the interagency level, is the head of the organization of operations in its territory, and is the main crisis manager of the system. For national-level incidents, it is the Ministry of Interior which is involved, and in case of a major crisis the Prime Minister's office can also be involved.

3.2.2.6 Netherlands - VRH - Safety Region Haaglanden

Discussion

Safety Region Haaglanden (VRH) follows the standard processes laid out in the template. Its source inputs are the 25 call centers that the Netherlands has, all of which can be reached at the unified number 112. The emergency services include police units, fire departments, and ambulances.

The Intake stage follows a standard Intake -> Front Office -> Back Office -> Dispatch model. In case of major types of emergencies, there is a Calamities Coordinator who is leading the command and control and who coordinates the involvement of the police, fire department, ambulance care, etc.

During the Dispatch stage, Responders are dispatched to the emergency site and conduct an assessment of the scale of the emergency. Cases are normally classified into small, medium and big disasters. Depending on the scale, various responders can be involved. Typically, police and medical services are always on the scene. For big disasters, the city mayor is also involved.

During the Operation stage, first responders are deployed who assess the situation and perform general life-saving activities and search and rescue. Multidisciplinary coordination is done on the site that includes On-site command (CoPI) and the Leader of CoPI.

If the situation impacts multiple municipalities, or is regional or nationwide it generally requires multidisciplinary and administrative coordination which is done by the mayor and involvement of a special GRIP 3 Policy Team. In some cases, the military can be involved as well.

Technology Involved

Technology-wise, there is an LCMS, which is a Dutch nationwide crisis management system used to maintain and share a common operational picture supporting large-scale crisis management collaboration. It can be accessed by the fire department, police, health care, and public-care services. The system can

exchange information with call centers; it is not integrated but a patch can be made when required.

For communication, walkie-talkie and radio are used. The system has 2 lines of communication: local, which covers 200-300 meters, and nation-wide. The end-user reported a solution-being implemented at the time the interview was conducted - that will allow dispatching the information through more telecommunications masts than at that moment.

Drones are used mainly for assessing the situation and collecting information on the scale. They are not used as communication channels.

Personnel Involved

For personnel, there are several possible stakeholders involved in the process.

During the Operation stage, the operational team of multidisciplinary tactic control involves the operational leader (head of operations), commander's emergency services, and action centers (commander, supporting officers). Strategic support to the Mayor is provided by emergency services advisors, the local public prosecutor, and an operational leader (at distance/video conference).

When several municipalities are affected, the GRIP 3 Policy team is formed, a Regional Policy Team is formed where strategic support to the Safety Region Chairman is provided by mayors of the involved communities, the chief public prosecutor, and the Chairman of the Water Board Council.

Within all levels of coordination, the functions are a) crisis communications done by environmental analysts and communication advisors; b) information management by information managers, calamities coordinator at the emergency call center, plotters, information officers within the action centers, and LCMS; c) resource management.

3.2.2.7 Israel - NEMA -National Emergency Management Authority

Discussion

Israel's National Emergency Management Authority (NEMA) had a unique event source structure not seen in other interviews. In addition to the standard call center event or first responder reported origination, it additionally receives issues from Social Media including Facebook and WhatsApp. The interviewees also noted that in the coming years, this active reporting of incidents from social media will be automated to scanning social media channels for possible events.

Similar to other organizations, NEMA receives the initial report of an incident and then verifies the incident if possible before creating a data card entry in their C & C system during the Intake stage. During the Dispatch stage, however, a decision must be made whether or not the case will be transferred to the Home Front Command (HFC). For small events, NEMA dispatches first responders, but for larger events the case is transferred to the HFC.

Upon first responder arrival and the Field Assessment stage, the event is again evaluated and classified into a small, medium, or large event. In the case that the event is categorized as medium or large scale, incident management is turned over to the HFC. An additional important technological component during the Field Assessment and Operations phases is the use of secured LTE communications in the event vicinity as an augmentation to hand held radios.

During the Operations phase, first responders perform typical lifesaving activities and search and rescue. As a part of this stage, drones are employed to survey the area and collect photos.

Technology Involved

NEMA uses a C & C system to track and store data on various events, even if those events are passed on to the HFC. Once first responders have been dispatched, they set up LTE communications in the area. Radios are also used for communication during this stage. During the Operations phase, drones are used to survey and take photos.

Personnel Involved

For personnel, the main stakeholders mentioned specifically are call centre operators and dispatched first responders. There is also a link with the Home Front Command and its related staff during medium and large scale events.

3.2.2.8 Latvia - SFRS - State Fire and Rescue Service of Latvia

Discussion

Latvia's State Fire and Rescue Service (SFRS) receives incidents from a call center as well as through direct reports from private companies, such as factories or warehouses that store hazardous materials. During the Intake stage, each case is verified as legitimate or not. Only cases deemed legitimate are entered into the C & C system.

First responders are dispatched directly by SFRS after a case has been deemed legitimate. If necessary, the Region Chief is notified for events that are classified over a certain size.

During the Field Assessment stage, the level of disaster is identified by first responders arriving on the scene. They determine whether a Crisis Management Council (CMC) is needed. The CMC consists of representatives from firefighters, EMS, police, municipality representatives, and representatives from relevant government agencies if needed. If formed, the CMC will establish a situation center along with local cell coverage that is set up during the succeeding Operations phase.

The Operations phase consists of life-saving activities and search and rescue typical to such an agency. Drones are typically used during this phase for survey and photography purposes. For large scale events, the CMC must decide whether a State of Emergency should be declared.

Technology Involved

SFRS uses a C & C system to track and store data on various events. During the Operations phase, drones can be used in a limited scope. Additionally, local cell coverage is set up if needed.

Personnel Involved

For personnel, the main stakeholders mentioned specifically are call centre operators and dispatched first responders. If a CMC is needed, stakeholders from various rescue services outside of SFRS including police and EMS will be included. Also included in the CMC are representatives from the local municipality and regional government which can provide insight on the local context of the disaster. In certain cases, representatives from relevant government agencies such as environmental experts will also be included in the CMC.

4. Next Steps

The project team will continue to work with the end-user panel. It will address any changes or modifications that might arise at later stages.

5. References

RESPONDRONE (2019). D15.2. Report on Field Studies.

RESPONDRONE (2021). D 9.1, Annex 1– End User Process Maps.

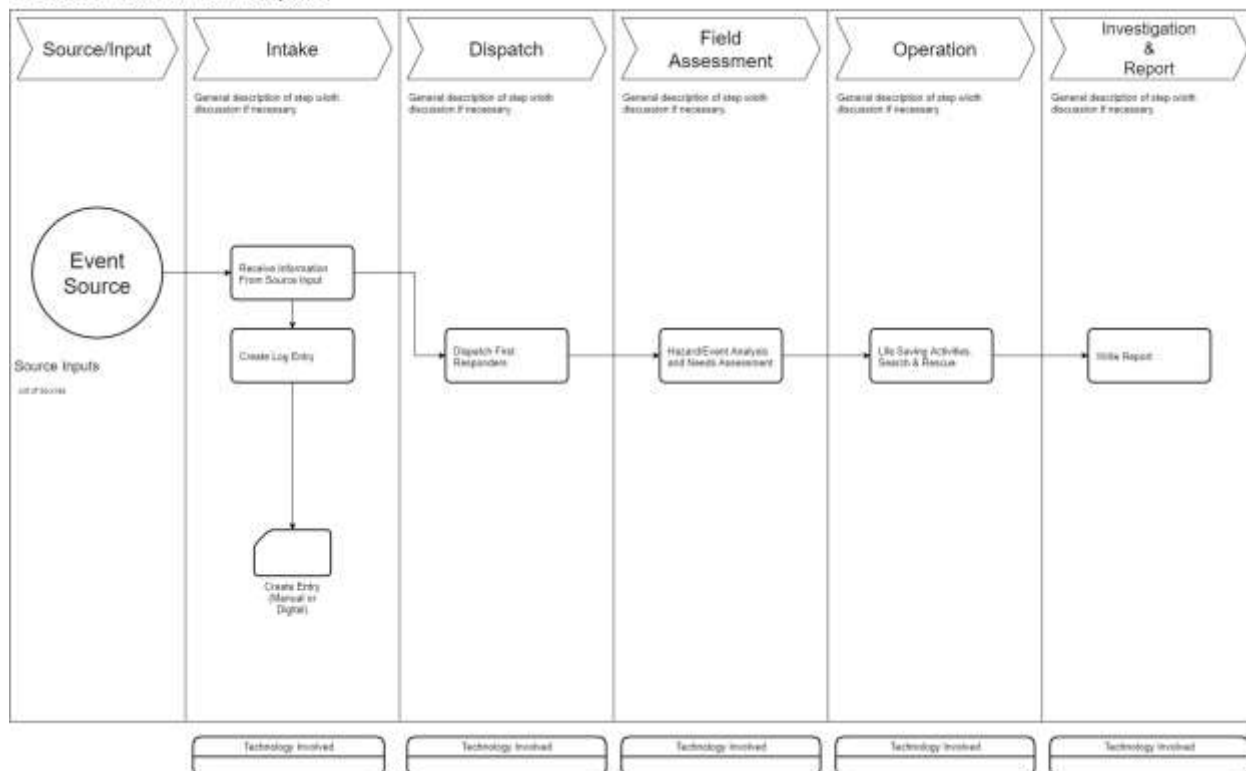
6. Annexes

Annex 1– End-user Process Maps

A high resolution JPEG image of each process flow, including the initial template, is included in this appendix. Editable diagrams and fixed PDFs will be made available on request.

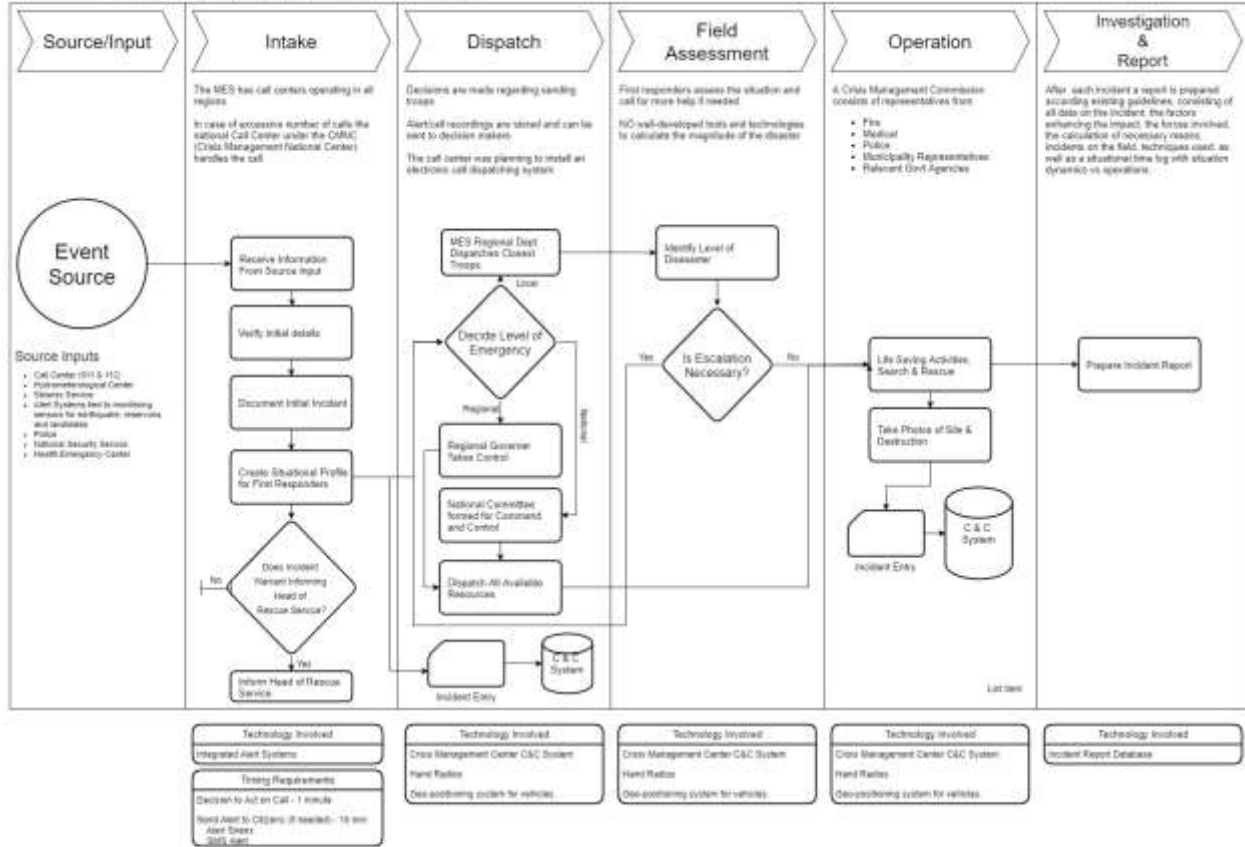
6.1 End User Process Flow Template

End User Process Flow Template



6.2 Armenia - MES - Ministry of Emergency Situations

Armenia - MES - Ministry of Emergency Situations

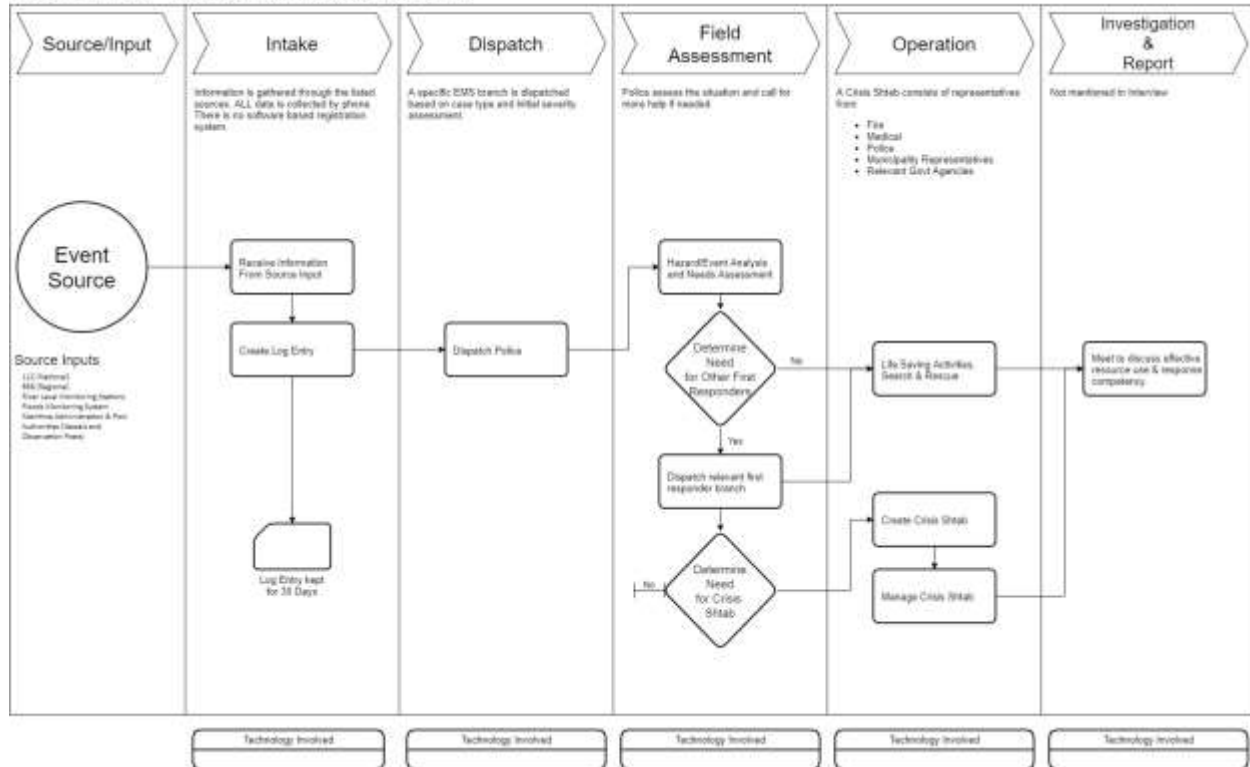


Ministry of Emergency Situations (MES) - Armenia



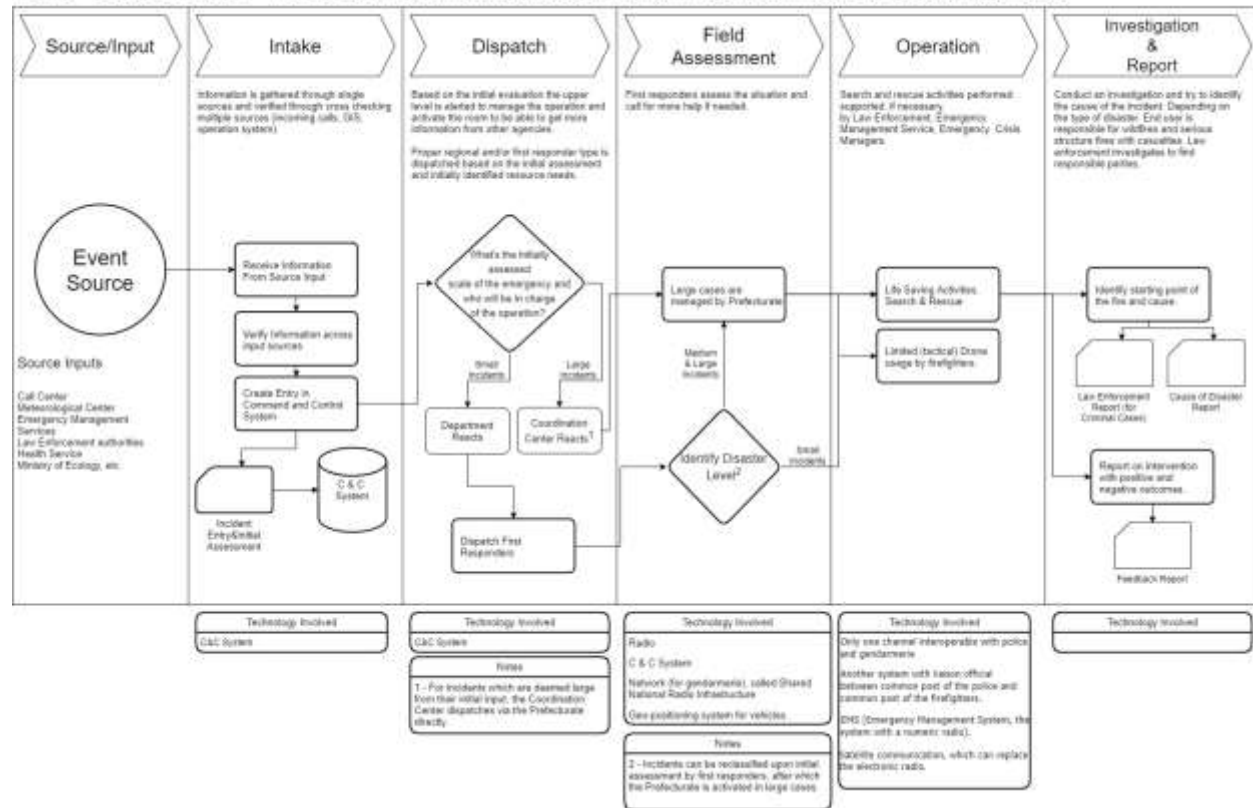
6.3 Bulgaria - RAV - Regional Administration of Varna

Bulgaria - RAV - Regional Administration of Varna



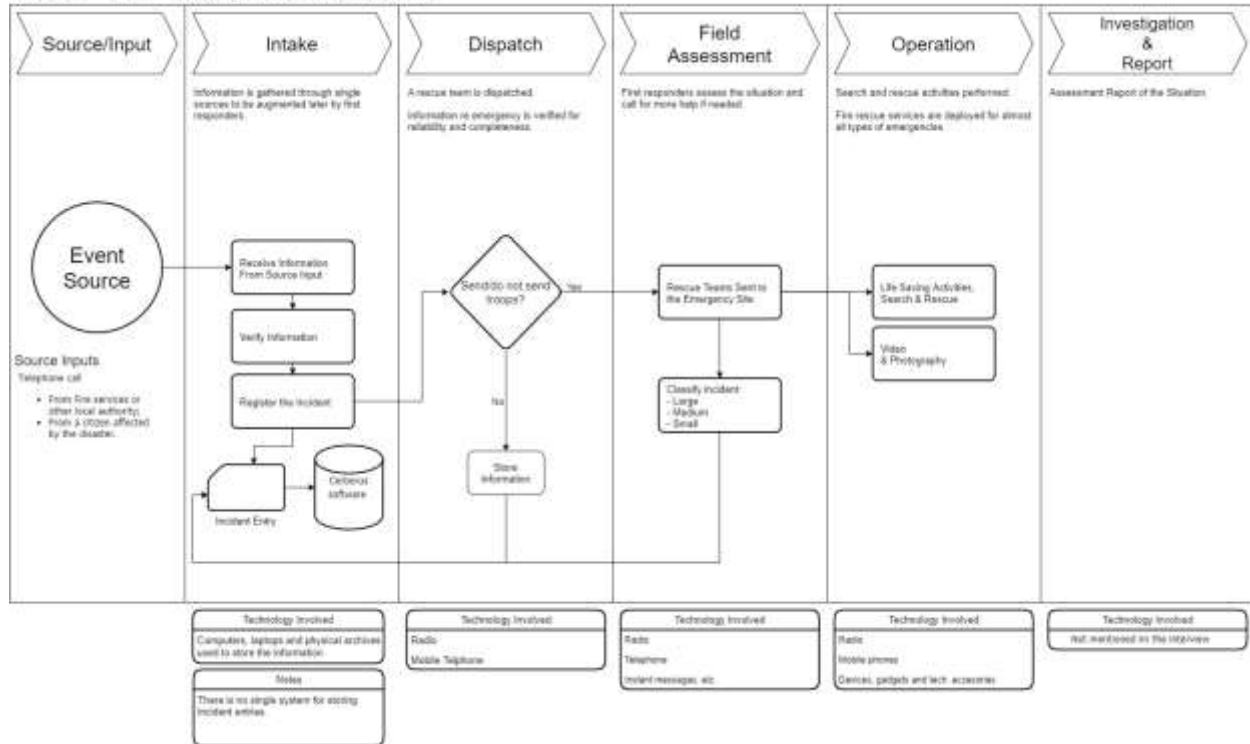
6.4 France - SIS2B & HCFRN- Fire Fighter Department of Corsica and High French Committee for National Resilience

France - SIS2B & HCFRN - Fire Fighter Department of Corsica and High French Committee for National Resilience



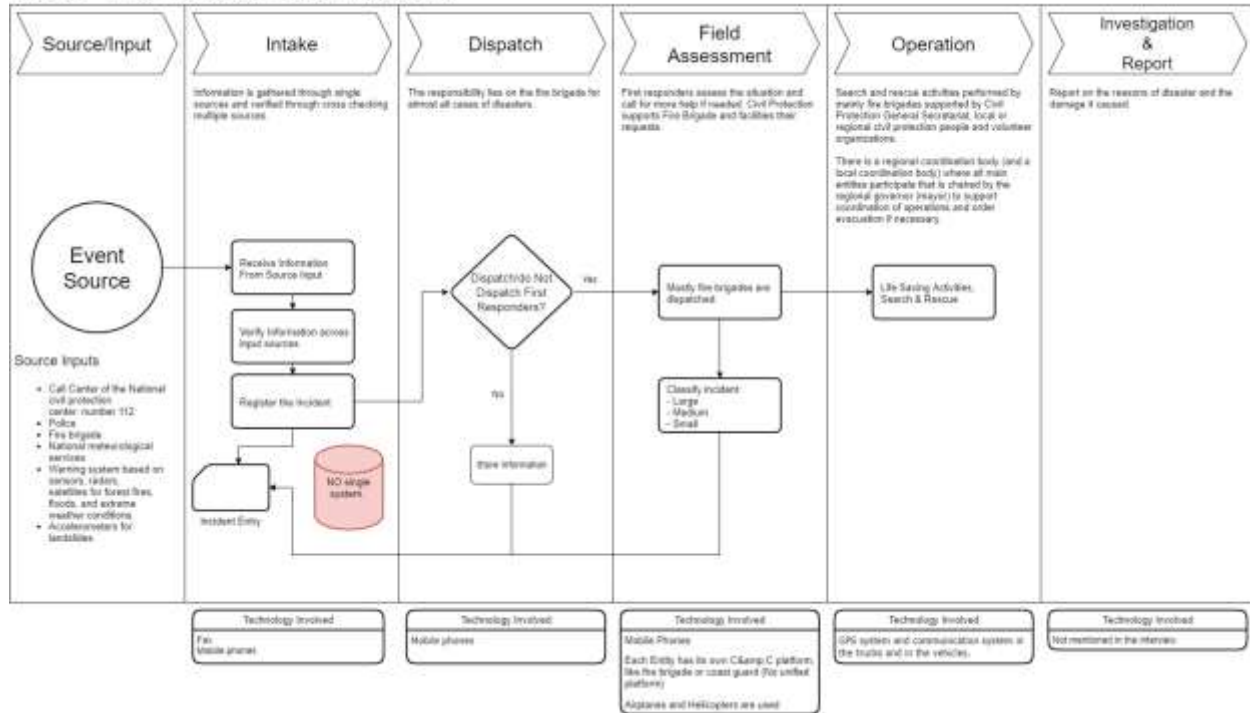
6.5 Greece - RCM - Regional of Central Macedonia

Greece - RCM - Region of Central Macedonia



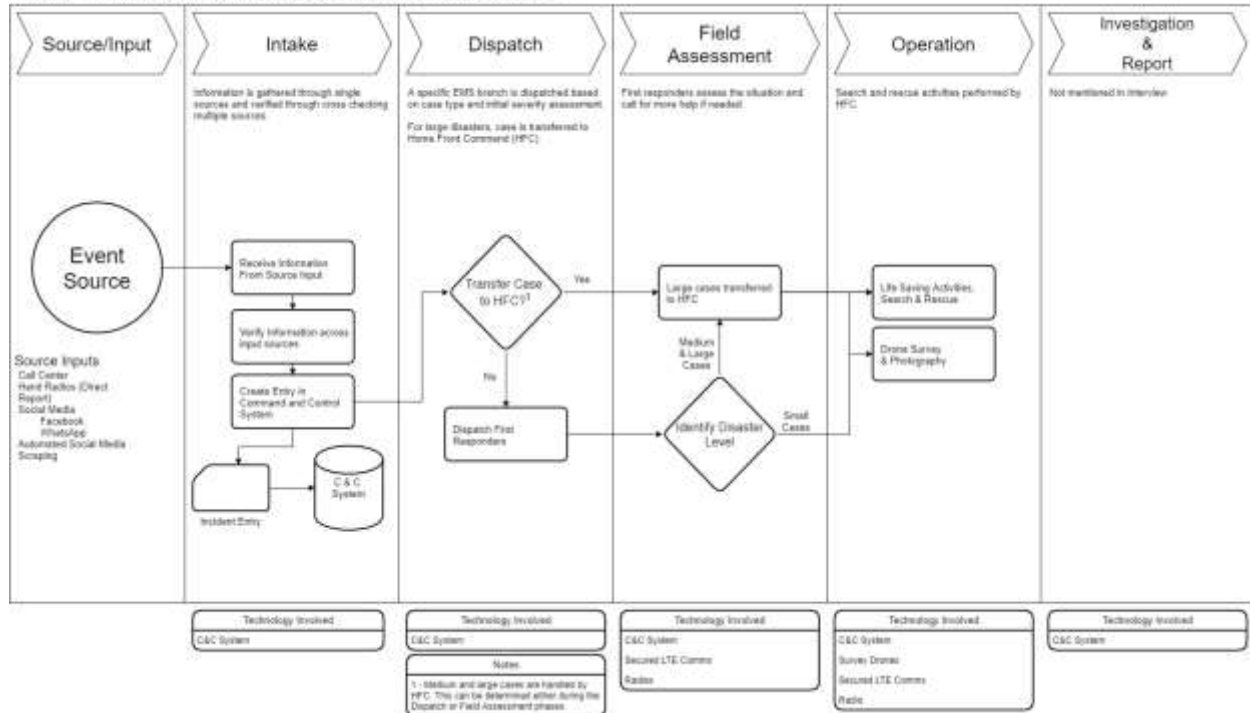
6.6 Greece - RWM - Region of Western Macedonia

Greece - RWM - Region of Western Macedonia



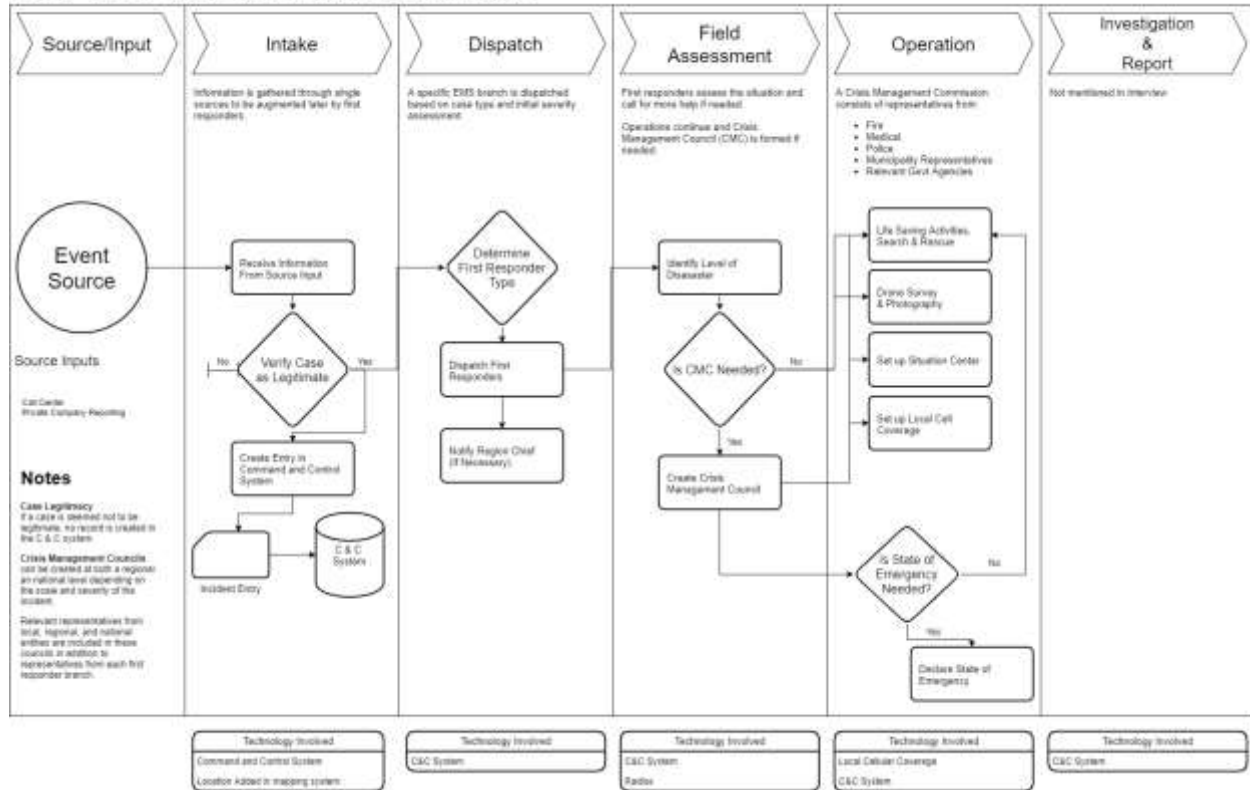
6.7 Israel - NEMA - National Emergency Management Authority (NEMA)

Israel - NEMA -National Emergency Management Authority



6.8 Latvia - SFRS - State Fire and Rescue Service of Latvia

Latvia - SFRS - State Fire and Rescue Service of Latvia



6.9 Netherlands - VRH - Safety Region Haaglanden

Netherlands - VRH - Safety Region Haaglanden

