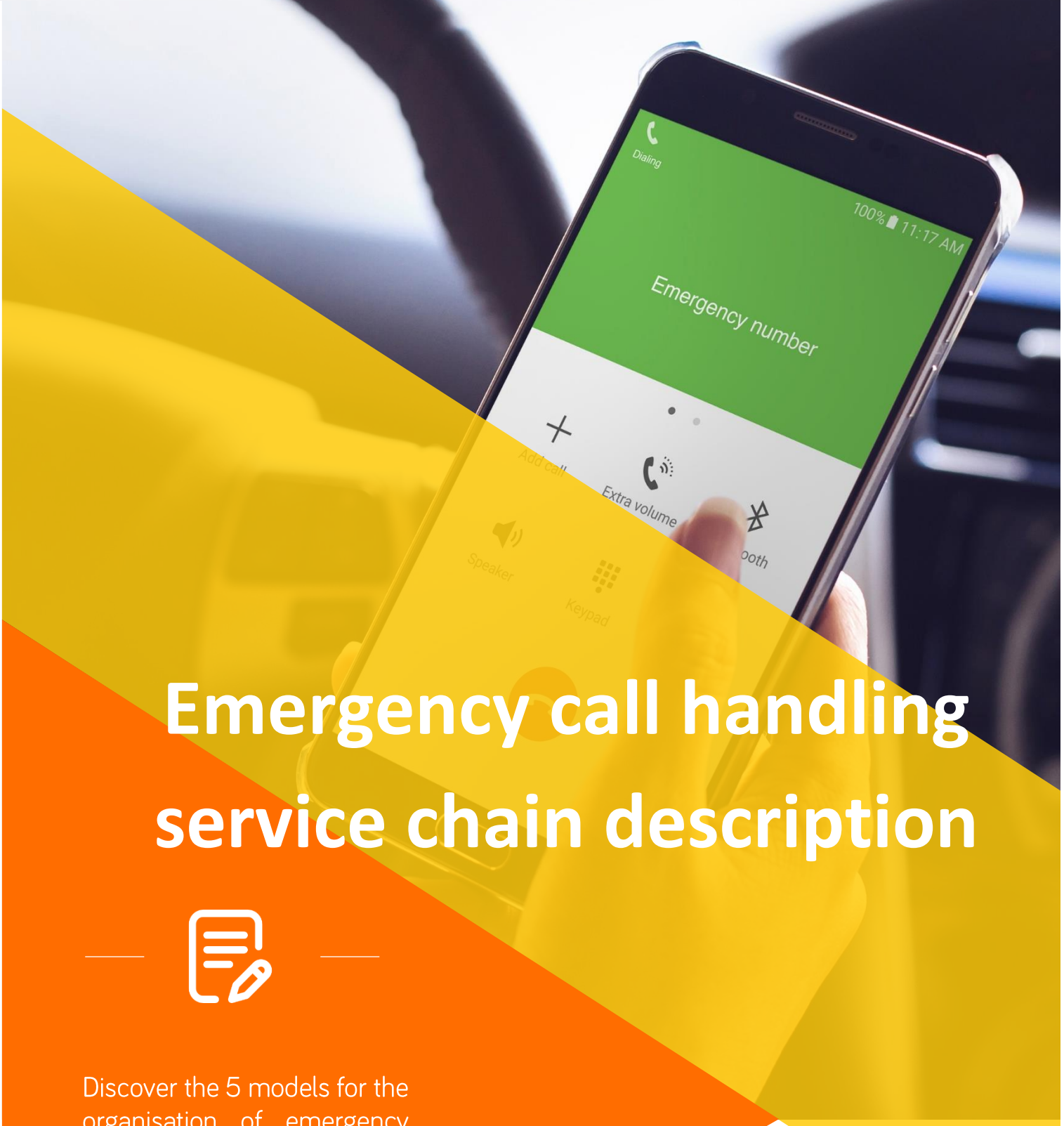

Emergency call handling service chain description

Discover the 5 models for the organisation of emergency call handling, detailing the chain of events from the emergency call to the arrival of help on scene.

eena

EUROPEAN EMERGENCY NUMBER ASSOCIATION

EMERGENCY CALL HANDLING SERVICE CHAIN DESCRIPTION

VERSION 2.0

Emergency call handling service chain description

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EXECUTIVE SUMMARY

A call to the emergency services by citizens in distress and the arrival of help at the location of the incident corresponds to a complex series of events which is analysed in the present document. To get help, the citizen in distress should first know which number to call and should have at his/her disposal a functioning telecommunication device. To get in contact with the emergency call-taker, the citizen should also have access to a network. After initialising the emergency call, the caller should reach as soon as possible an available call-taker, who will collect data about the nature of the incident, its location and, in some countries, the identity of the caller. Following that, the decision is taken to dispatch the appropriate resources as necessary.

The present document describes the models which apply to the organisation of emergency call handling. Although this organisation varies from country to country, in general, it covers specific tasks i.e. the reception of the call, the data collection (caller location, detailed data about the emergency situation and, if possible, call history data), the classification of the call, and finally the dispatch of appropriate intervention resources. These tasks may be executed in several steps and by different organisations. The main differences correspond to the number of organisations involved in the emergency call handling chain, the types of organisations in charge of the first reception of emergency calls and the tasks they fulfil and, finally, the division of the tasks in several steps. The different models of organisation are presented schematically and explained in detail.

The process for handling emergency calls differs between countries, so we created the 5 emergency call handling models. These simplify the different systems so that it's easier to understand how emergency call handling is organised across the world.

This document explores :

- **How many organisations are involved in emergency call handling?**
- **Which organisations are responsible for the first reception of calls?**
- **How are tasks divided between different professionals and organisations?**

1 | INTRODUCTION

In an emergency, the citizen must know the number to contact emergency services, and thus, be able to ask for help. The knowledge of such number is the first link of the emergency service chain. After this emergency number is dialled, emergency services have to answer the call appropriately following different steps: reception of the call, data collection, classification of the type of incident and, if needed, dispatch of the appropriate intervention resources.

There are countries where only one single emergency number is available and others that have different national, regional, or local numbers for contacting fire and rescues services, police, and emergency medical services. In Europe, 112 is available as a general emergency number in all the Member States of the European Union and in other countries.

It is worth mentioning that the intention of this document is not to give a detailed description of operational protocols but a general overview of the main stages of the handling of emergency calls and the organisation in different countries.

This document was established with the collaboration of members of the EENA Technical and Operations Committee.

2 | DEFINITIONS

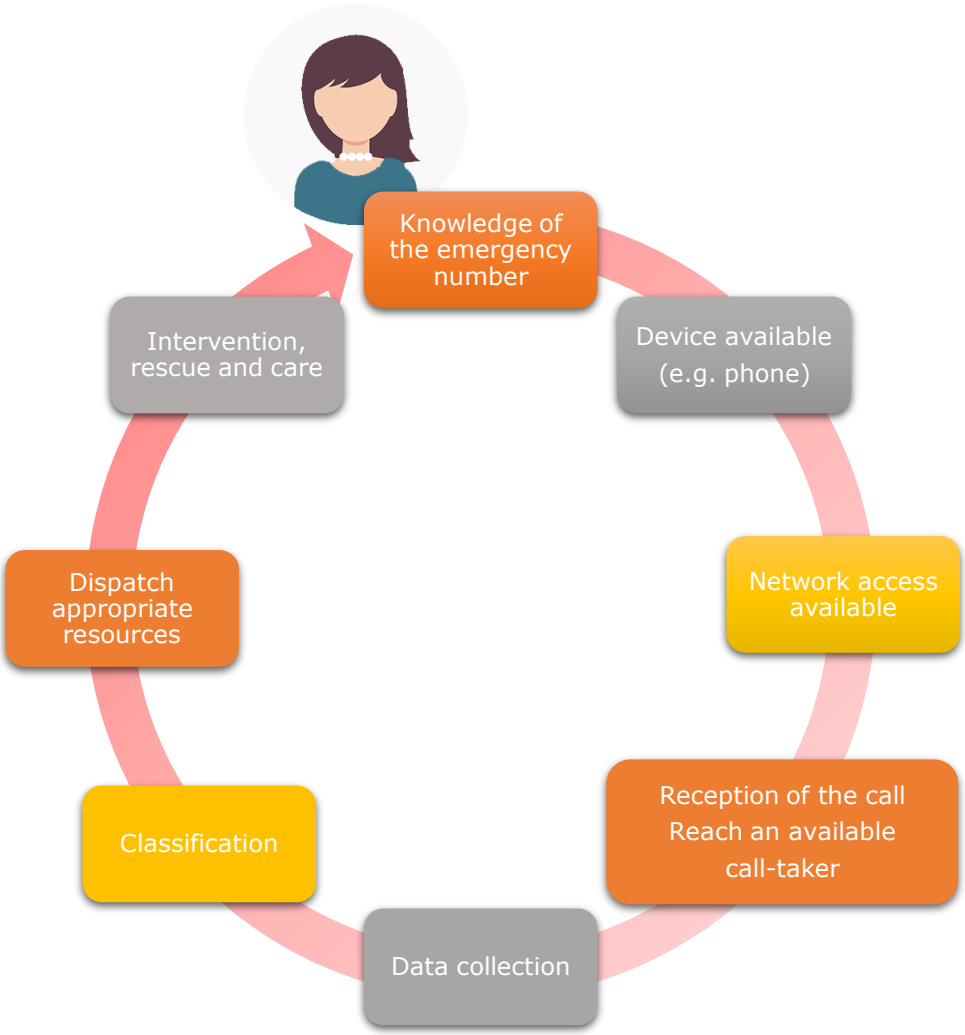
- **Emergency Response Organisation (ERO)**: organisation handling the resources of a specific emergency body, i.e. the police, fire and rescue, emergency medical services, coast guard, etc.
- **Public Safety Answering Point (PSAP):** organisation under the responsibility of a public authority or a private organisation under public mandate to be in charge of the first reception of emergency calls.
- **General emergency number**: citizens can use this number for any type of emergency e.g. 112, 911

- **ERO emergency number**: a specific number for the different emergency services, for example, one number for police, another number for emergency medical services, and another for fire and rescue services.

- **General emergency number PSAP**: organisation in charge of handling all types of emergency calls. Its responsibilities and tasks may differ from one country to another.

3 | EMERGENCY CALL HANDLING SERVICE CHAIN

A call to emergency services starts a sequence of tasks by different stakeholders taking part in the emergency service chain. However, this sequence will not be initiated if the person involved in the emergency situation is not aware of the emergency number to dial. This is the reason why every single step in the chain is crucial.



Knowledge of the emergency number
In an emergency situation, the citizen may not be in a position to search and establish the appropriate emergency number to call. This number should be previously known so it can be dialled immediately in case of need. This is the reason why education of citizens and dissemination of information about the emergency number is crucial. Knowing one single number is for sure easier than being aware of different numbers, one for each emergency response organisation.

Most people travelling abroad do not even think about the possibility of being involved in an emergency situation during their journey. This is why authorities cannot count on the travellers' own initiative to find out what number to use in case of emergency. Campaigns and dissemination efforts are needed to ensure that travellers know what emergency number to use in case of distress.

Device
The first link of the chain is to know the emergency number. Then, the citizen needs a fully functioning device which makes contact with the emergency services possible.

Network access
The device must be able to connect to a telecommunications network and be able to establish communication with emergency services.

Reach an available call-taker
Once the citizen has dialled the emergency number through an accessible network, emergency services must ensure that he or she reaches an available call-taker as soon as possible. Resources have to be optimised to guarantee a minimum waiting time.

Data collection & Classification
The first task to be achieved by emergency services is data collection. The most important pieces of information are where the caller is and what is happening. These data are decisive in establishing what resources are needed.

It is worth mentioning that it is necessary to be able to establish a permanent link to the caller. To achieve this, it is crucial that PSAPs receive caller line identification ensuring that calling back is possible.

Dispatch appropriate resources
The appropriate resources have to be mobilised depending on where the incident is and what is happening. This information must arrive to the appropriate resources.

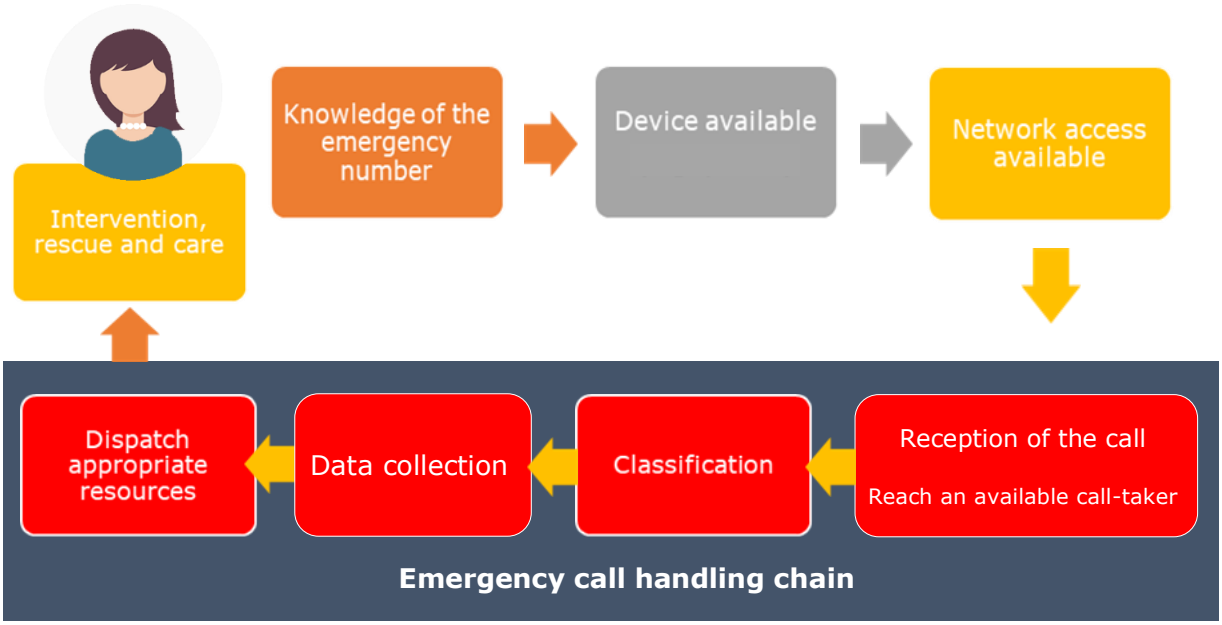
Intervention
Once the resources have been dispatched, they need to arrive to the location of the incident and assist the citizens who are involved.

4 | EMERGENCY CALL HANDLING CHAIN

The organisation of emergency calls handling varies from one country to another, but the aim and general tasks are the same. In this section the whole emergency call handling chain is described. This does not mean that all calls made to an emergency number end with the intervention of emergency services on the scene. Some calls do not need the intervention of emergency services.

The general responsibilities of the PSAPs are to ensure:

1. **Reception of the call**
2. **Data Collection:**
   - Reception of the caller location data
   - Collection of detailed data about the emergency situation
   - Call history data (if there were previous calls about the same incident)
3. **Classification of the call**
4. **Dispatch appropriate intervention resources**



The organisation responsible for each task differs from one country to another. It is also worth mentioning that tasks may be fulfilled in several steps and by several organisations. The main differences are:

- **Existence of a single emergency number or several emergency numbers**: there are countries where only one single emergency number exists (i.e. 112, 911). On the other hand, there are countries where more than 5 emergency numbers exist, usually one general emergency number co-existing with other numbers one for each emergency response organisation.

- **Number of organisations involved in the emergency calls handling chain**: there are countries where only one organisation fulfils all tasks from call reception to the

dispatch of intervention resources. In other countries, many organisations are part of the service chain, i.e. one for the reception of the emergency call and data gathering and several EROs for the dispatch of intervention resources.

- **Type of organisation in charge of first reception of emergency calls:** there are countries where a general emergency number PSAP is receiving all emergency calls. In other countries there are many emergency response organisation PSAPs receiving emergency calls placed to the specific ERO numbers.

- **Tasks fulfilled by the organisation in charge of the first reception of emergency calls:** In some countries, the organisation responsible for filtering the calls asks the caller to what ERO he or she would like to speak with and then forward the call to one specific ERO. In other countries, the organisation in charge of handling the call asks the caller what is happening and gathers detailed information.

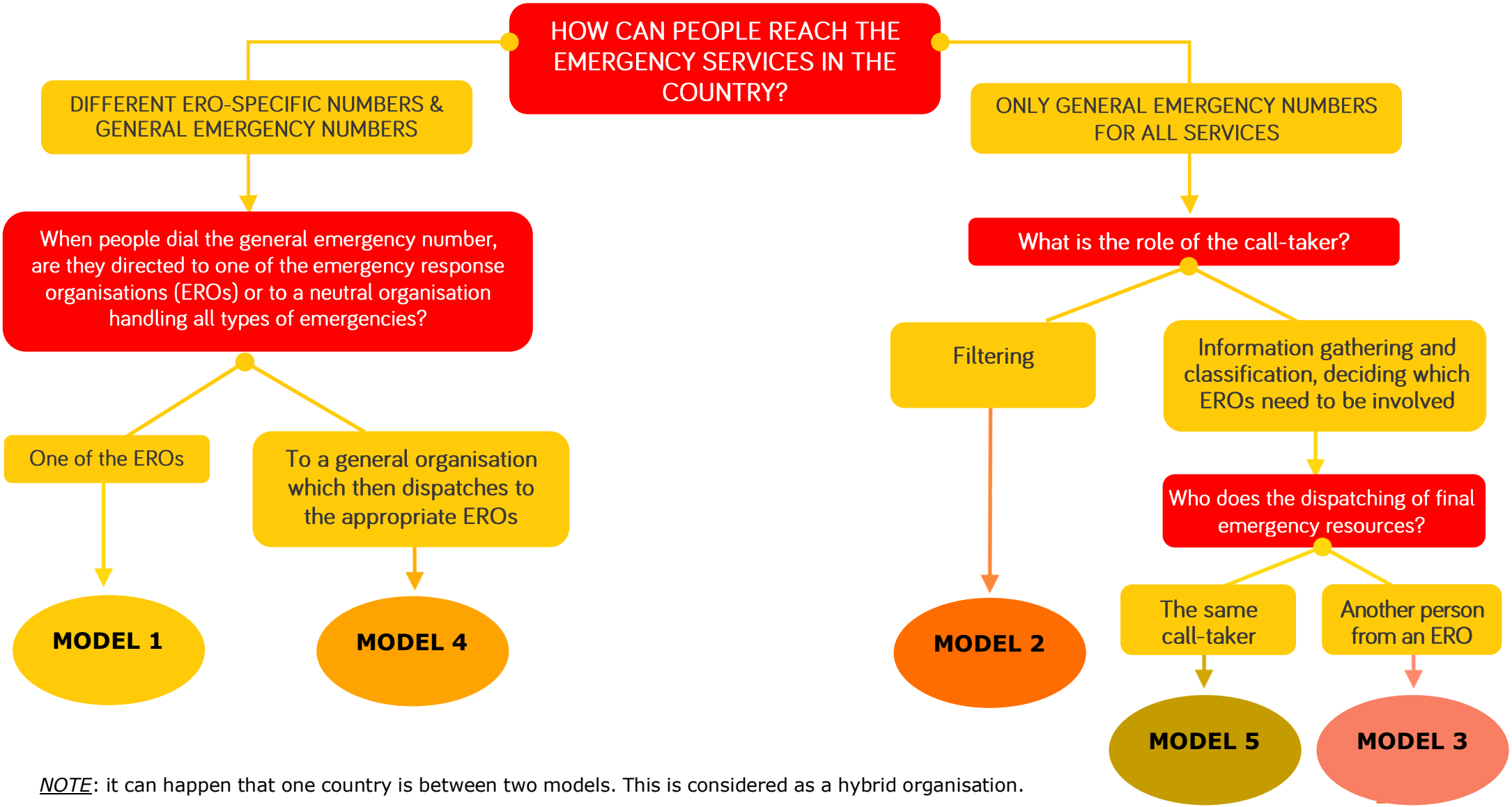
- **Division of the tasks in several steps:** In some countries, only one organisation is in charge of calls' reception, data collection, and classification and. In other countries, different organisations are responsible for the final dispatching of intervention resources.

5 | MODELS

The models have been created to provide a general overview on how countries have organised emergency call handling. They have been intentionally simplified. The models do not cover the entire call handling process but rather try to highlight the major characteristics of most common models.

Legend of icons and decision tree

To be able to decide what is the model closest to the organisation in place in one specific country, the following decision tree has been created:



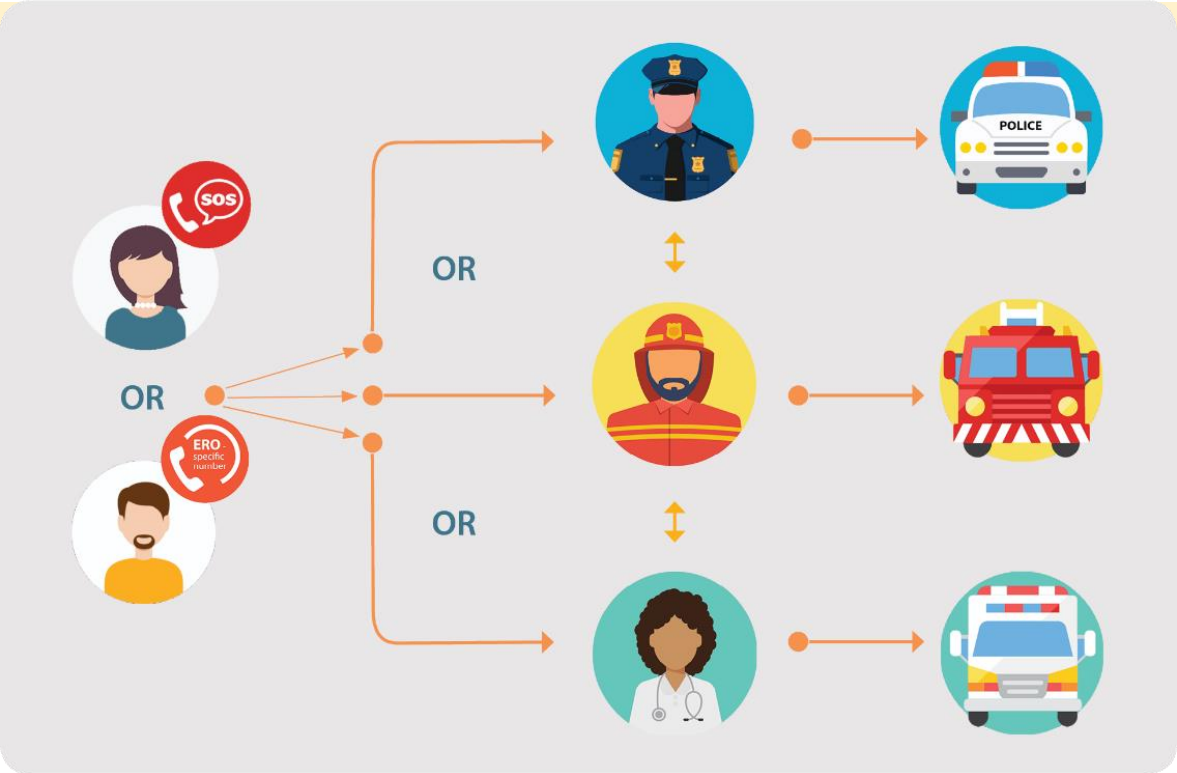
NOTE: it can happen that one country is between two models. This is considered as a hybrid organisation.

5.1. "ERO HANDLING EMERGENCY CALLS MODEL (1)

General description

Many emergency numbers co-exist in the country. Emergency calls made to the general emergency number (i.e. 112 in the European Union) are redirected to one of the emergency response organisations, e.g. police, fire and rescue, or medical emergency services.

If the intervention of a different emergency response organisation is required, the call and/or data about the emergency situation are forwarded to the most appropriate ERO.



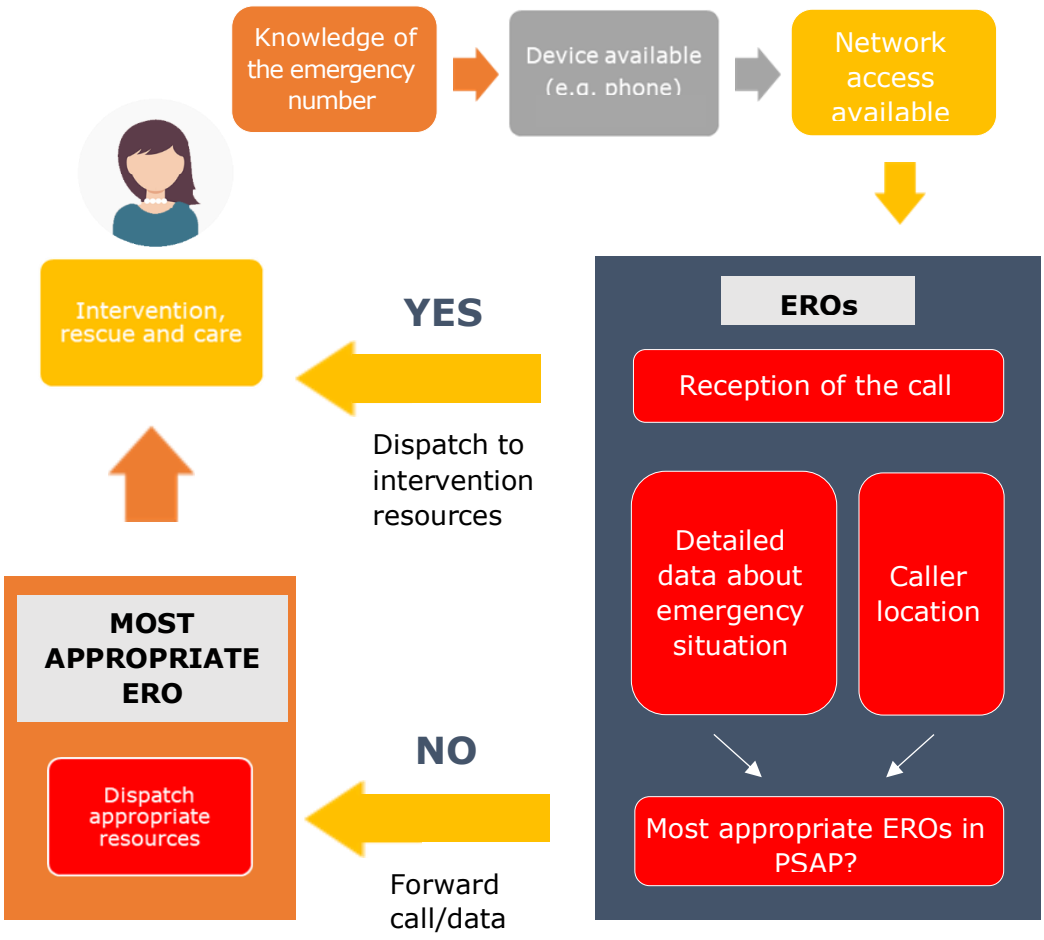
(Examples: Austria, Germany, France)

Emergency call handling chain in this model

Calls are handled by a PSAP operated by one emergency response organisation:

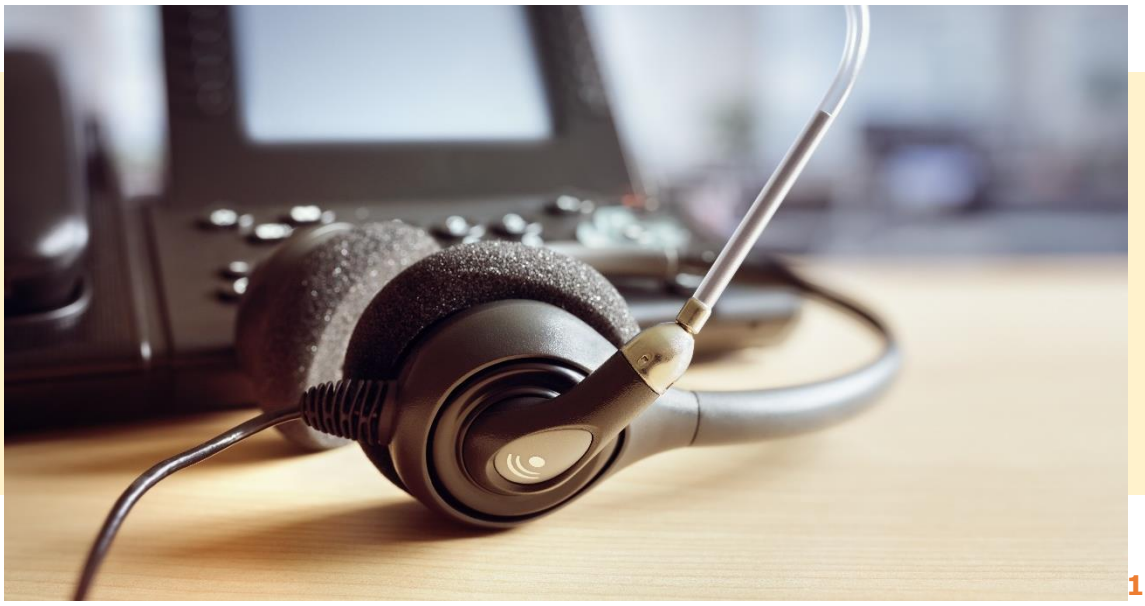
1. Reception of the call by a PSAP operated by an emergency response organisation
2. Dispatch to other emergency services (e.g. a 112 call is answered by the police but the citizen needs an ambulance): the call is forwarded by the operator
3. Dispatch of the intervention resources done by the ERO operators

Emergency call handling chain in this model



Variant of this model

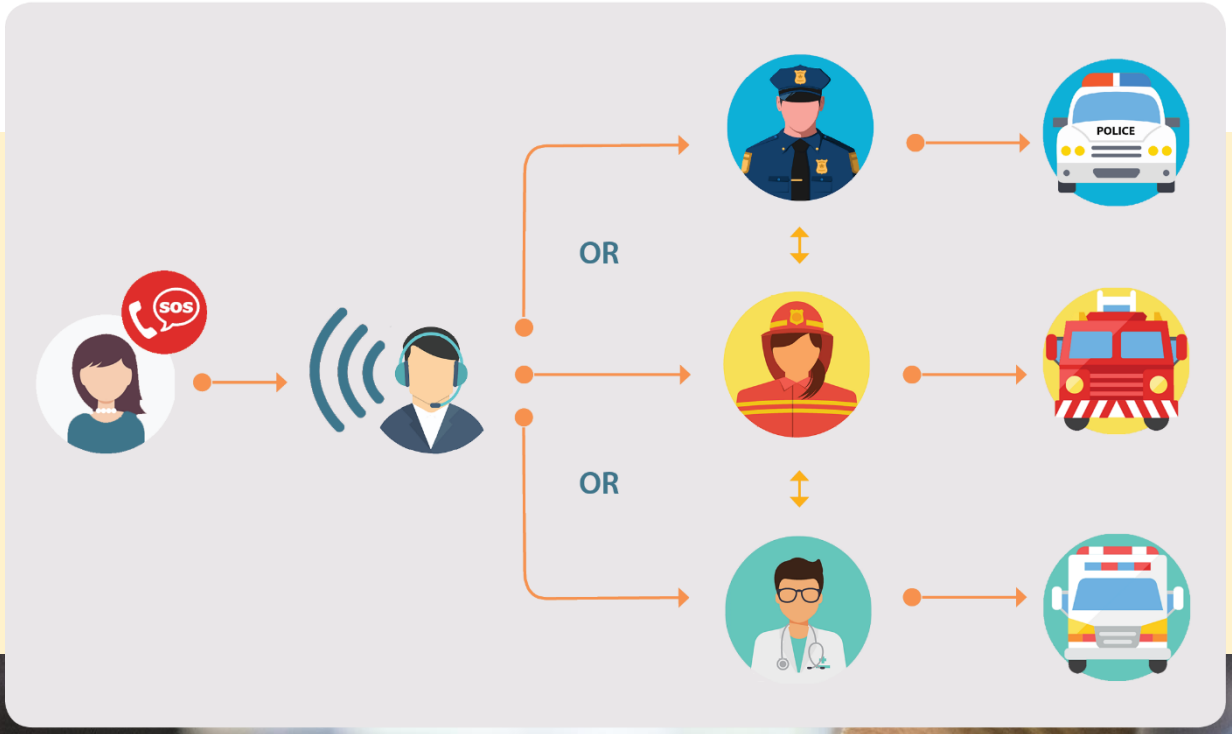
More than one emergency response organisations can be in the same location. Sharing a physical space contributes to the improvement of the coordination between emergency services. Example: Luxembourg

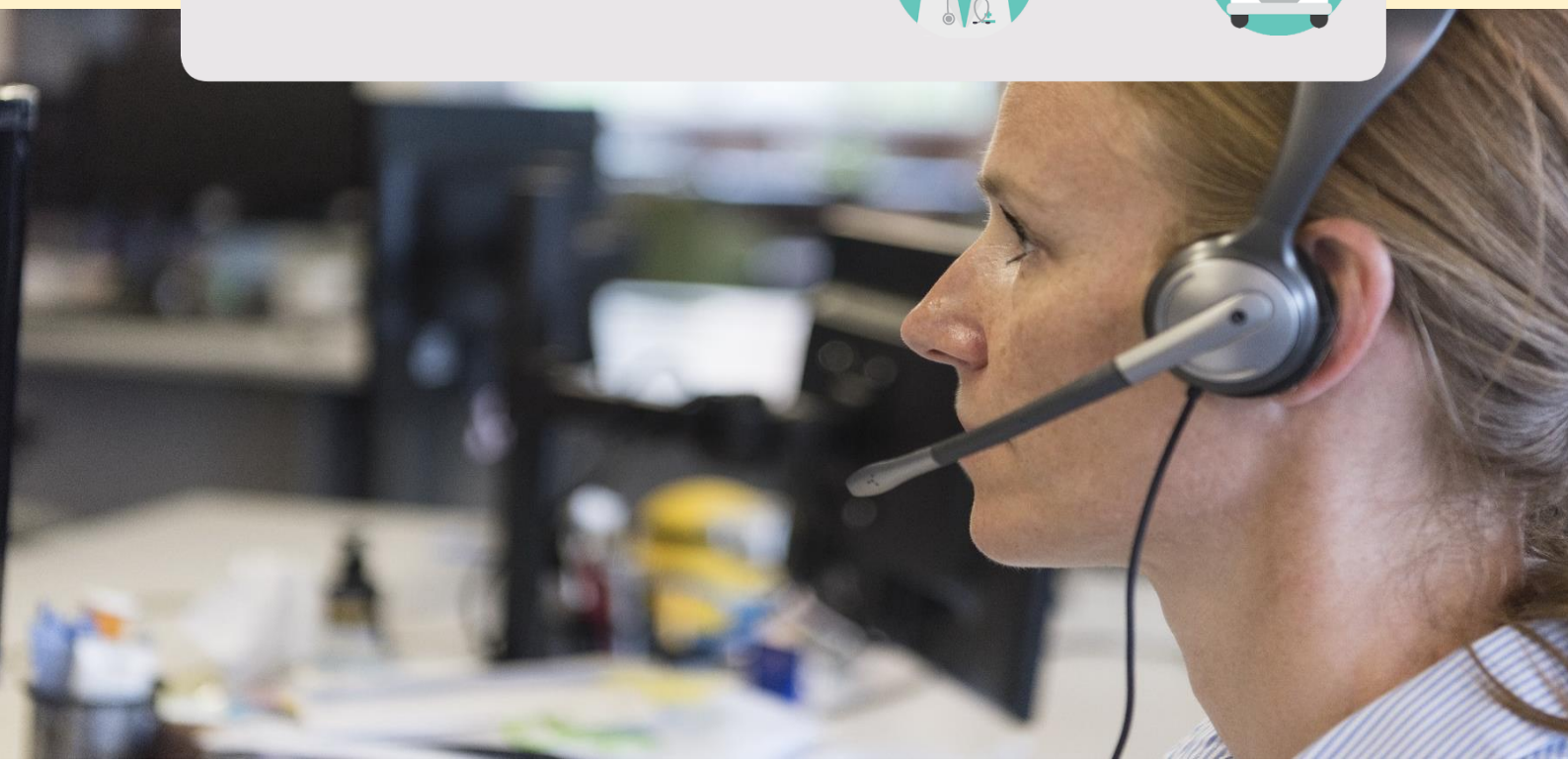


5.2 "FILTERING STAGE 1 PSAP AND RESOURCE DISPATCHING STAGE 2 PSAPS" MODEL (2)

General description

Emergency call handling is organised over two levels: there is an independent organisation in charge of the first reception of the call and then the call is forwarded to the most appropriate local emergency response organisation.

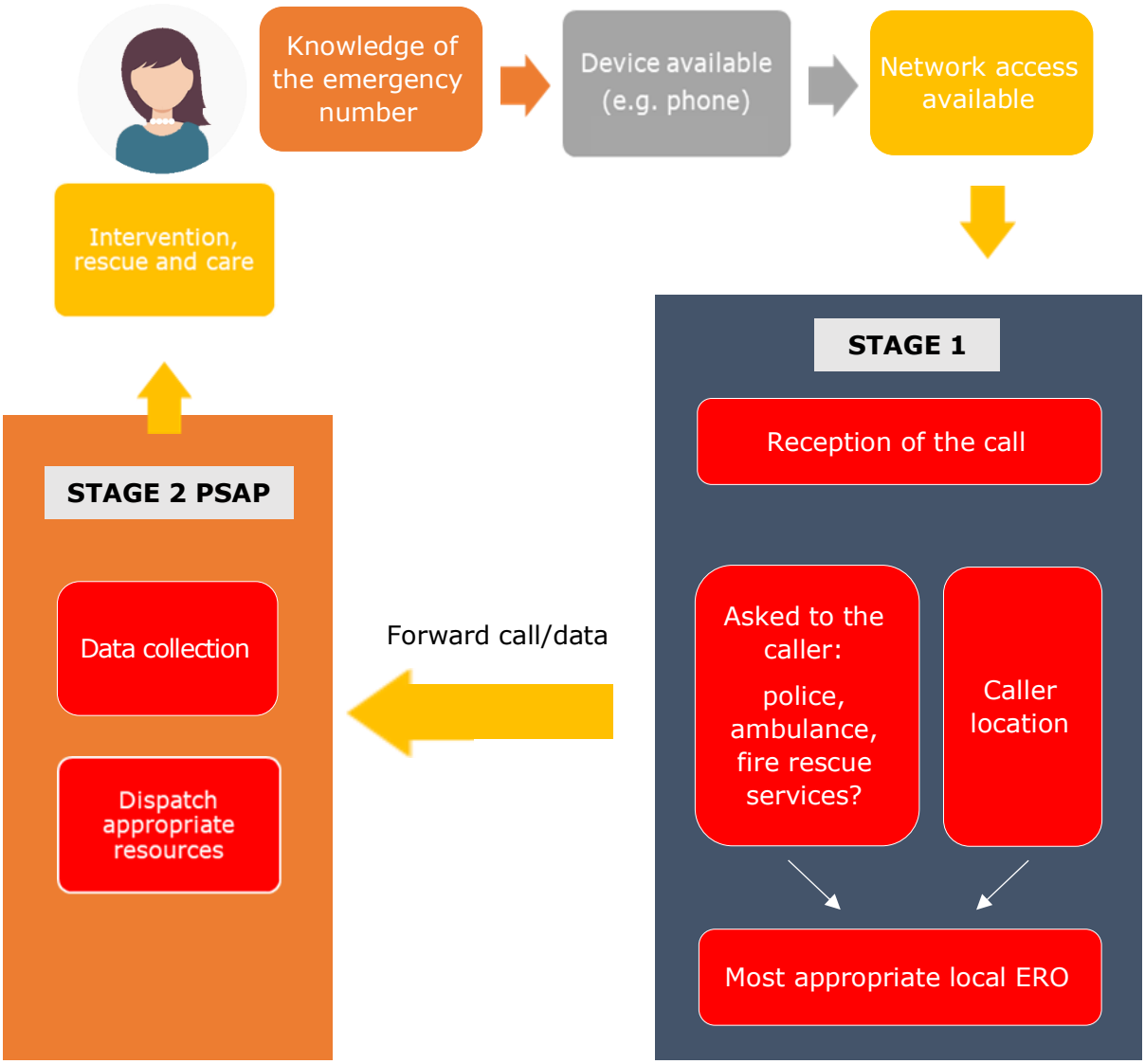




Emergency call handling chain in this model

The general emergency number calls handled by a general emergency number PSAP:

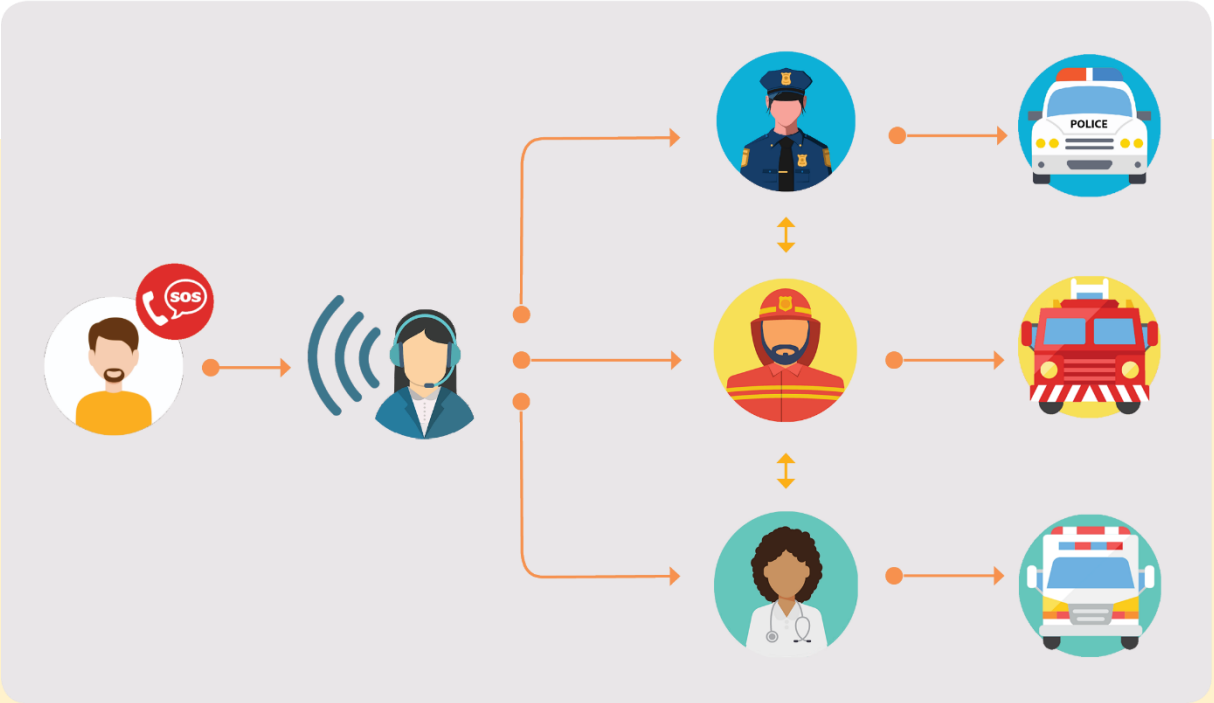
1. General emergency number (e.g. 112, 999) calls handled by civilian operators
2. Stage 1 PSAP: Filtering tasks. The call-taker locates the caller and where the emergency is. He or she asks the caller with which emergency service he/she wants to get in contact (e.g. "What do you need? police, ambulance, fire and rescue services?"). The detailed gathering of data is not done by the stage 1 call-taker.
3. Transfer to medical / fire and rescue / police services: stage 1 PSAP forwards the call to the appropriate local emergency service
4. Detailed data gathering is done by the emergency response organisation operator
5. Dispatch of the intervention resources is ensured by the emergency response organisation



(Examples: United Kingdom, Ireland)

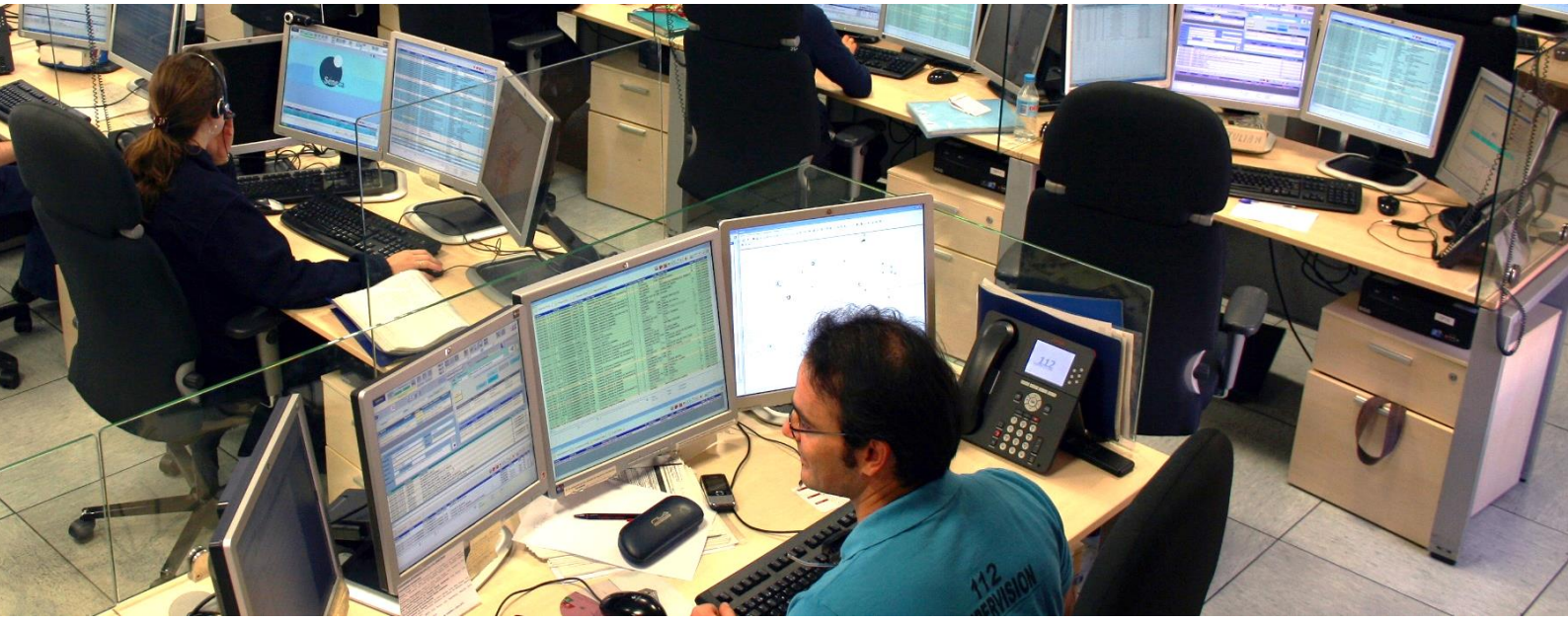
5.3 "ONLY ONE EMERGENCY NUMBER. DATA GATHERING BY STAGE 1, RESOURCE DISPATCHING BY STAGE 2" MODEL (3)

General description



(Example: Romania)

As in the previous model, the handling of emergency calls is organised in two levels. The difference between the "Filtering Stage 1 PSAP and resource dispatching stage 2 PSAP(s)" and this model is the role played by the independent organisation. In this case, the call-taker is in charge of the classification of the call and makes a parallel dispatch to the most appropriate EROs. In some cases, police, fire and rescue and medical specialists are available to support the call takers.



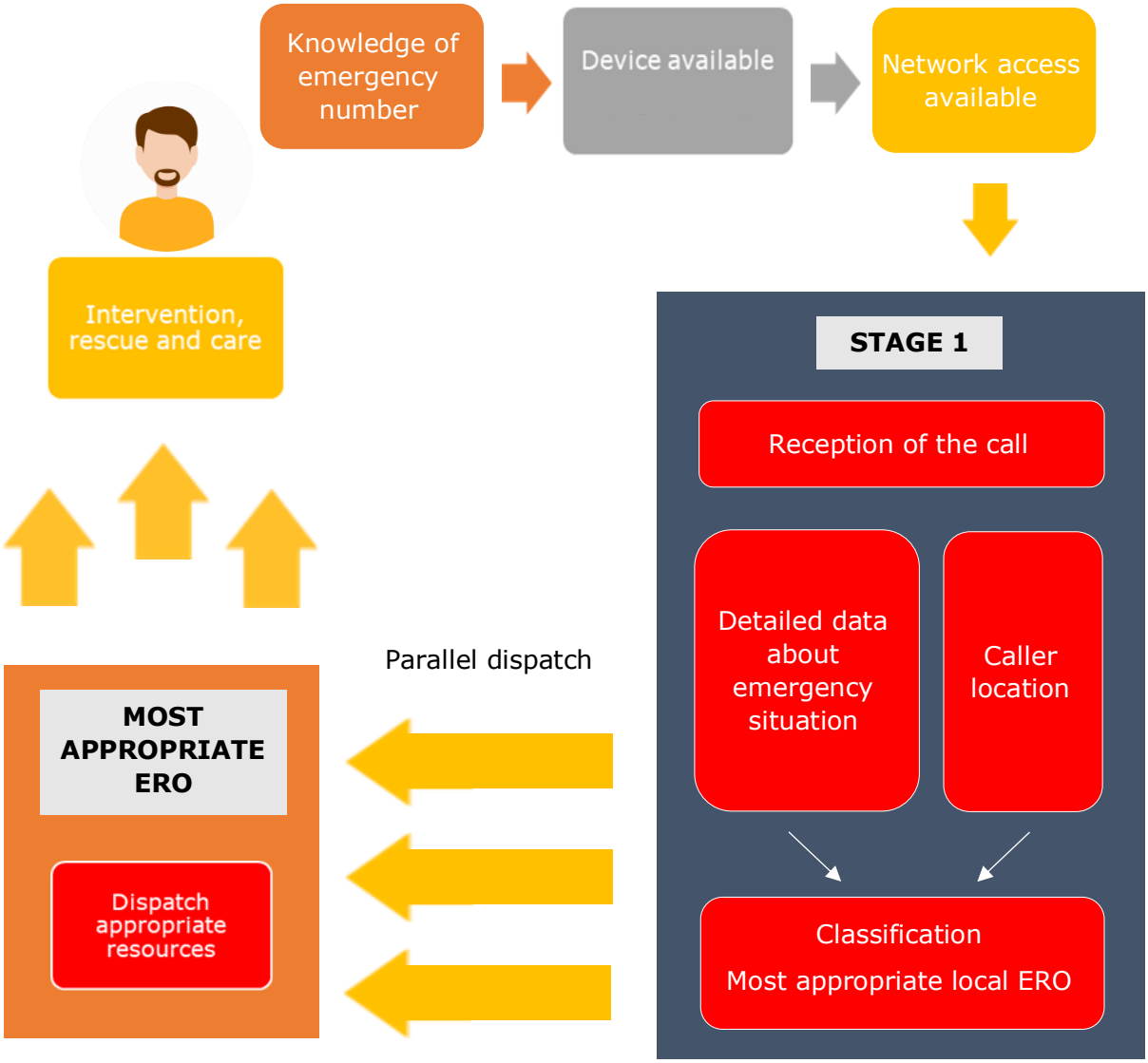
Emergency calls handling chain in this model

The general emergency number calls handled by a general emergency number PSAP:

1. Classification and data gathering done by the stage 1 PSAP call-taker: the operator asks what is happening and decides which EROs should be contacted depending on the information given by the caller. The operator gathers detailed data about the location and emergency situation of the caller.

2. Parallel dispatch to medical emergency / fire and rescue / police services if needed

3. Dispatch of the intervention resources done by emergency response organisation



5.4 "NATIONAL EMERGENCY NUMBERS ROUTED TO EROS. GENERAL EMERGENCY CALLS ROUTED TO CIVILIAN PSAP" MODEL (4)

General description

General emergency number (i.e. 112) co-exists with national numbers.
Emergency calls made to the general number are routed to civilian PSAPs, calls to national numbers are routed to EROs.

Emergency calls handling chain in this model

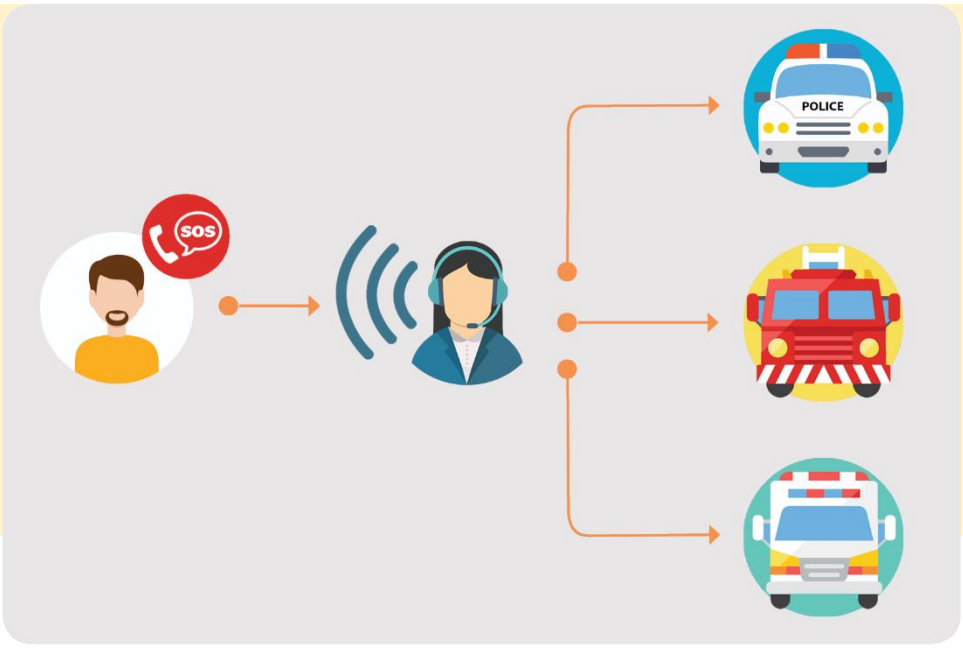
For the emergency calls made to the generalist emergency number, the emergency calls handling chain is the same as model 3.

For emergency calls made to the national specific EROs numbers, the emergency calls handling chain is the same as model 1.

(Example: Spain – some regions)

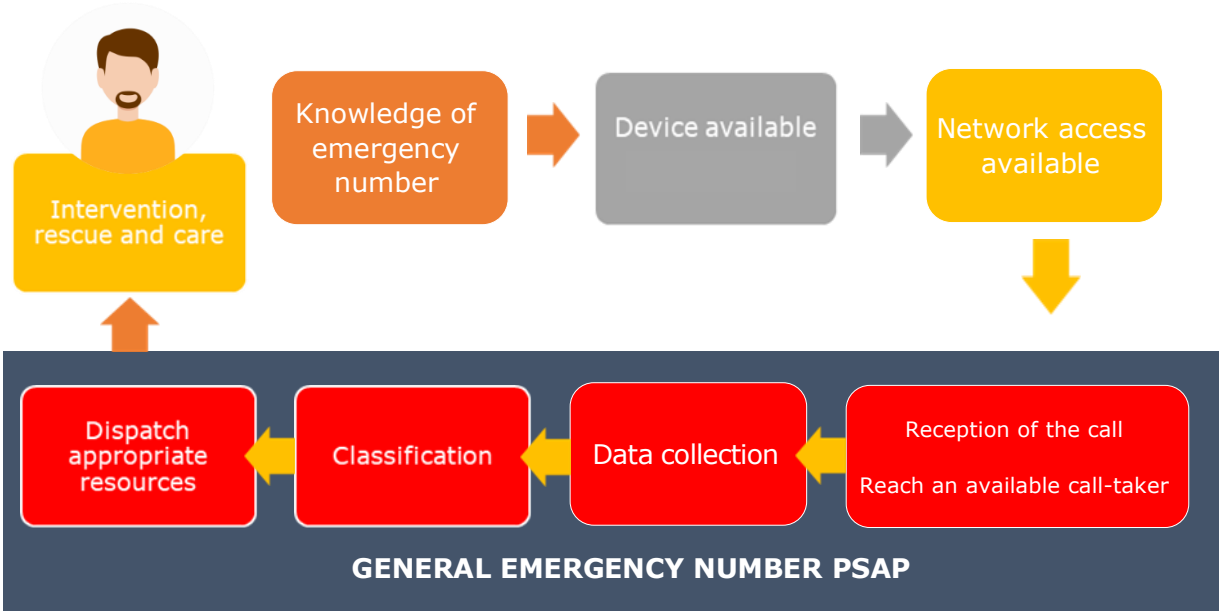
5.5 "CIVILIAN CALL-TAKING & DISPATCHING" MODEL (5)

General description



(Example: Finland)

Emergency calls made to the general emergency number (i.e. 112) are handled by civilian operators. The operators are highly trained and handle both call-taking and dispatch of intervention resources. In some cases, police, fire and rescue and medical specialists are available to support the call-takers.

Emergency call handling chain in this model

The same PSAP is in charge of all tasks: classification of calls, data collection and dispatching the intervention resources to the incident.