



LINKS

Strengthening links between technologies and society
for European disaster resilience

Links Final Event: Integrating Social Media and Crowdsourcing into Disaster Risk Management

Panel 3: Engaging the crowd: Integrating 'crowdsourcing' into DRM



Save the Children®

1-1-2 PUBLIC SAFETY ANSWERING POINTS: HUBS FOR CROWDSOURCING DATA AND CITIZEN ENGAGEMENT TECHNOLOGY

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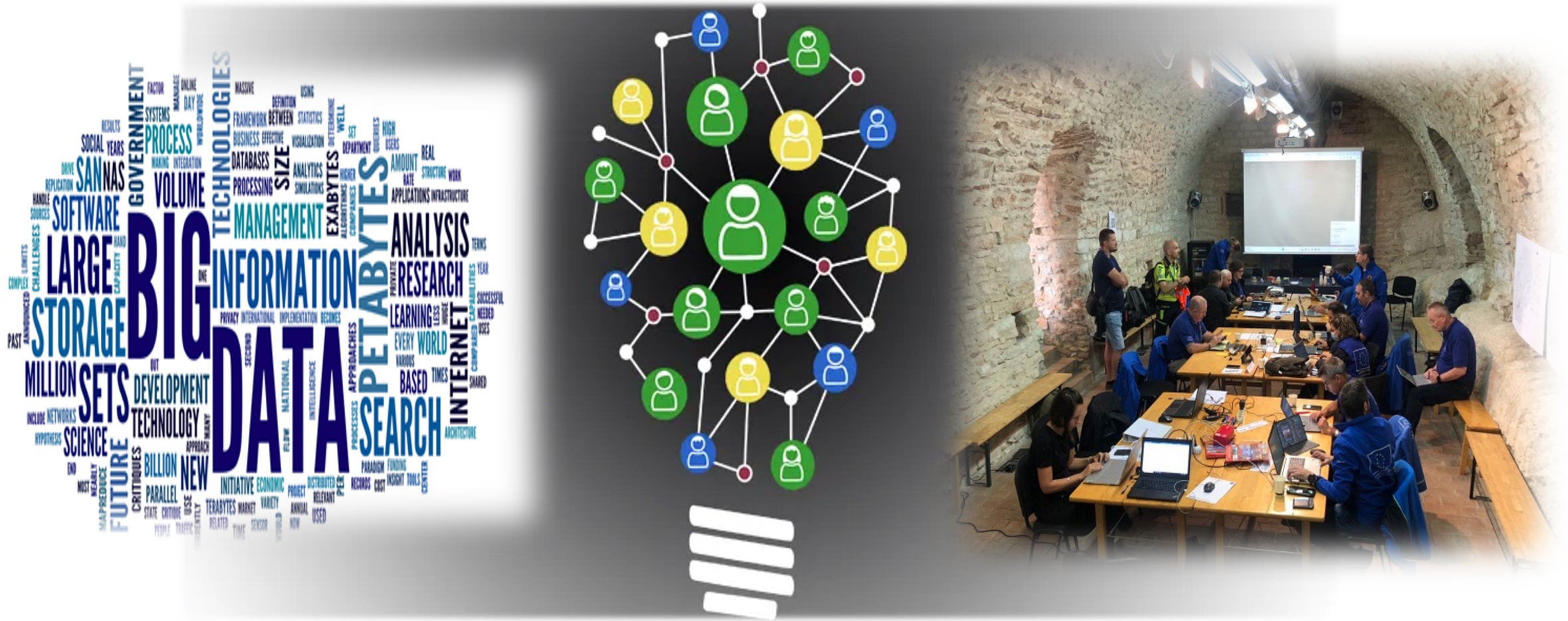
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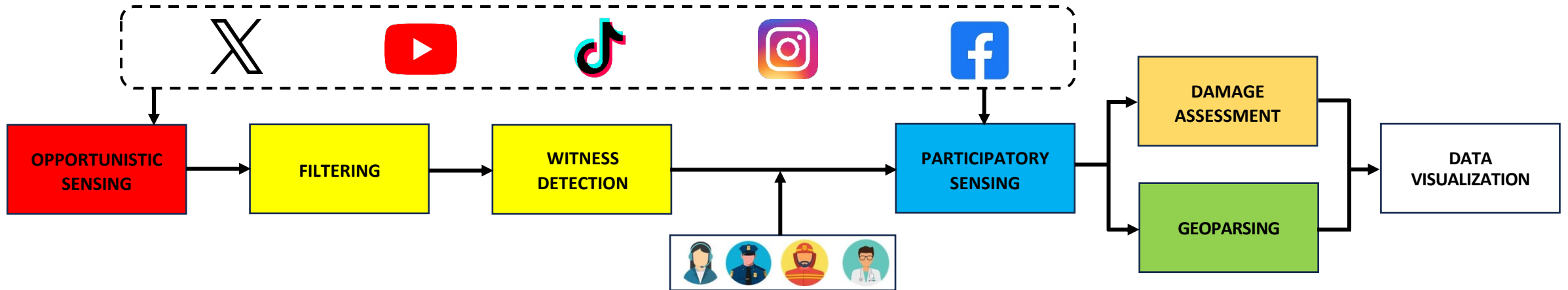
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BIG DATA, CROWDSOURCING AND EMERGENCY MANAGEMENT

The synergy of technology and collective intelligence is reshaping the landscape of emergency management.



SOCIAL MEDIA DATA MANAGEMENT: CHALLENGES AND POSSIBLE SOLUTIONS



(Source: Adapted from Avvenuti et al., 2020)

SOCIAL MEDIA AND CROWDSOURCING TECHNOLOGIES LIBRARY: AN ONGOING PROCESS

Habig et al.

A Consolidated Understanding of DCT

A Consolidated Understanding of Disaster Community Technologies

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(Source: <https://links-project.eu/index.php/social-media-and-crowdsourcing-technology-library/>)



Technologies
Social Media and Crowdsourcing Library

Results: 73

Name

Agorapulse

Free & Paid

ArcGIS

Used by practitioners

Artificial Intelligence for Disaster Response

Free

Awario

Blog2Social

Free & Paid

Brandwatch

Launch Year

Provider

Pricing

User Interface Languages

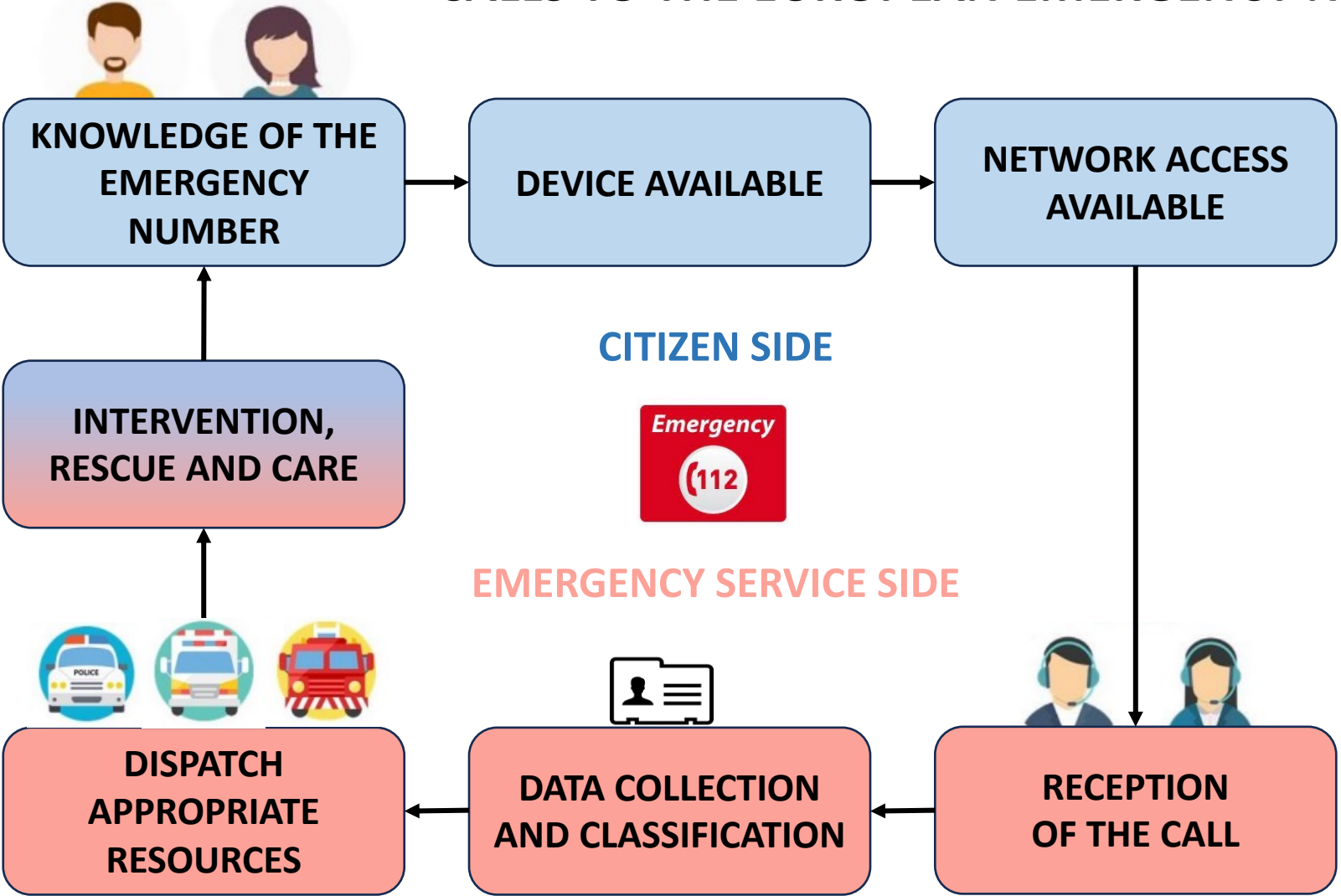
Supported Platforms

Crisis Communication Matrix

Disaster Management Phase

Functions

A «NEW» CATEGORY OF CROWD-SOURCED DATA: CALLS TO THE EUROPEAN EMERGENCY NUMBER 112



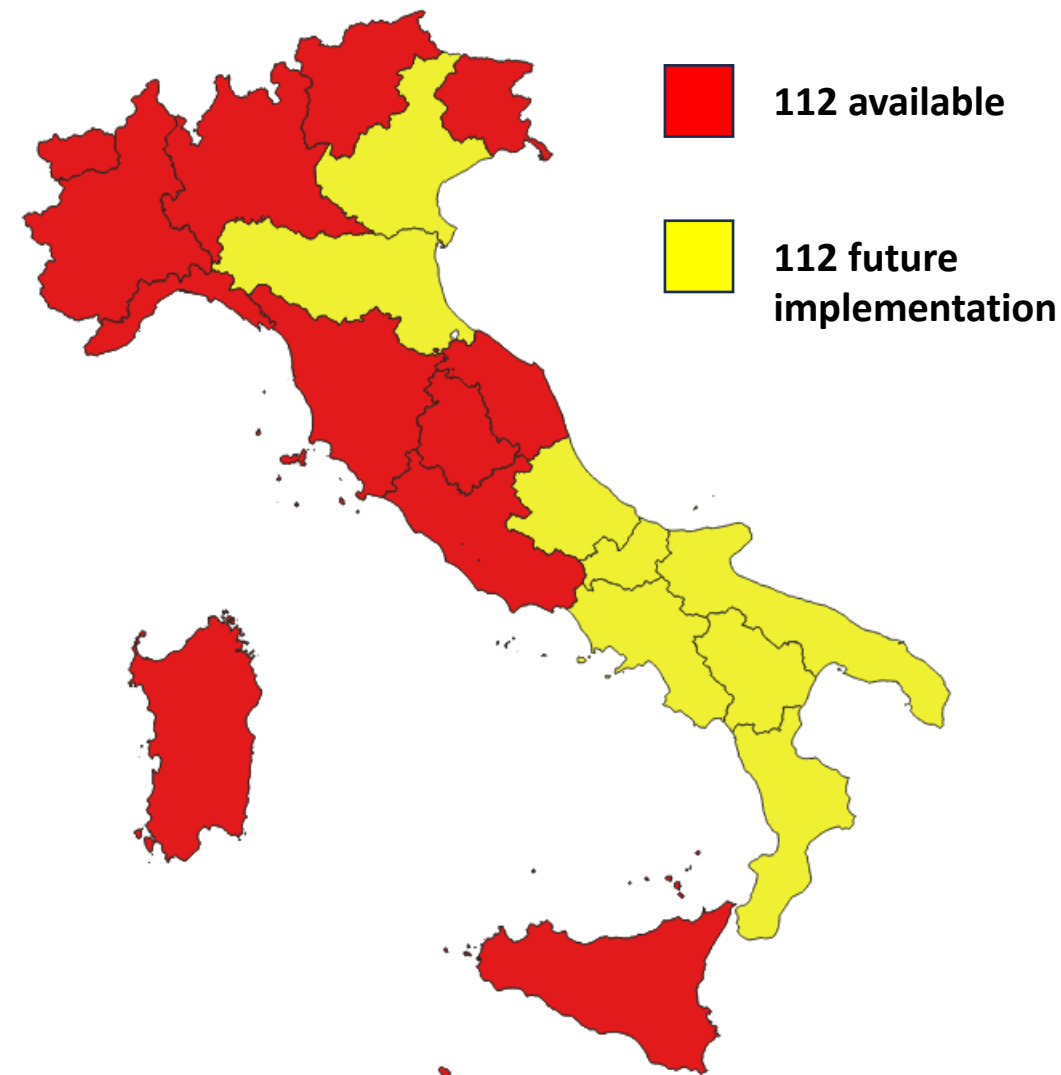
CALL HANDLING MODELS

- 1: Emergency response organization (EROs) call-taking and dispatching (France, Germany)
- 2: 2 stages - filtering PSAP1, resource dispatching PSAP2 (Ireland)
- 3: 2 stages - data gathering PSAP1, resource dispatching PSAP2 (Italy)
- 4: Hybrid model 1-3 (Spain)
- 5: Civilian call-taking and dispatching (Finland)

IMPLEMENTATION STATUS OF THE EUROPEAN EMERGENCY NUMBER 112 IN EUROPE AND ITALY



(Source: Adapted from Public Safety Answering Points Global Edition by EENA, 2022)



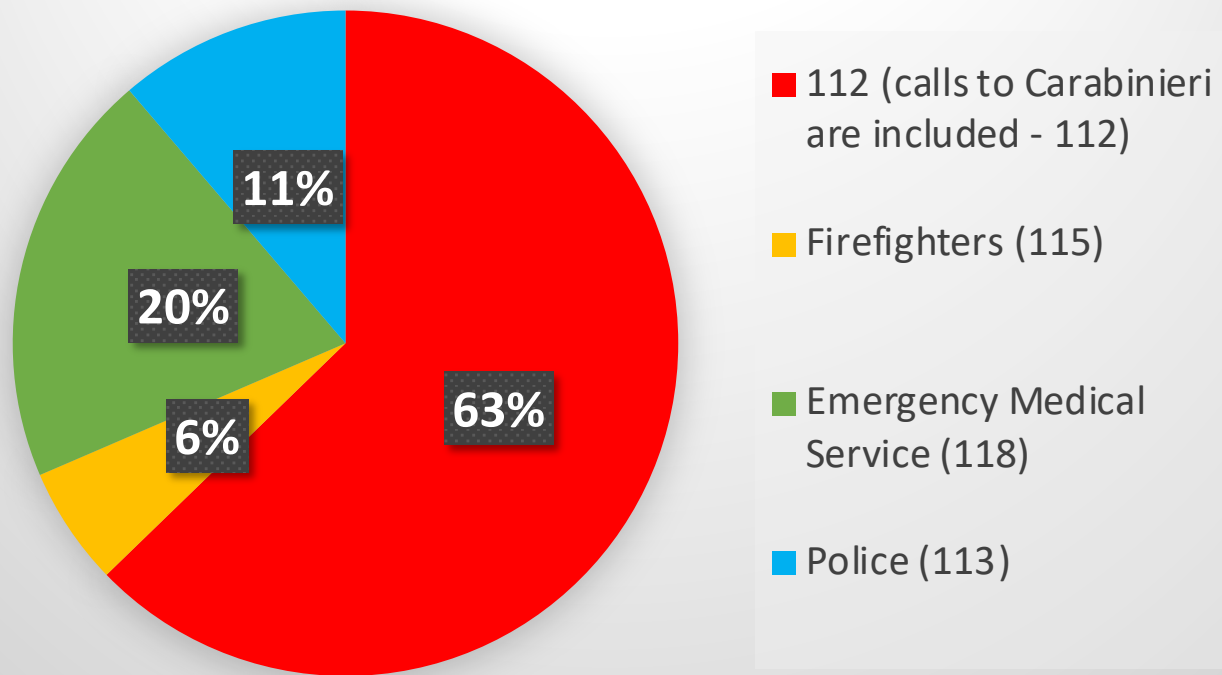
(Source: GIS elaboration based on data from «Migration to 112 in Italy» by EENA, 2023)

112 EMERGENCY CALLS IN NUMBERS

Emergency calls in Italy*

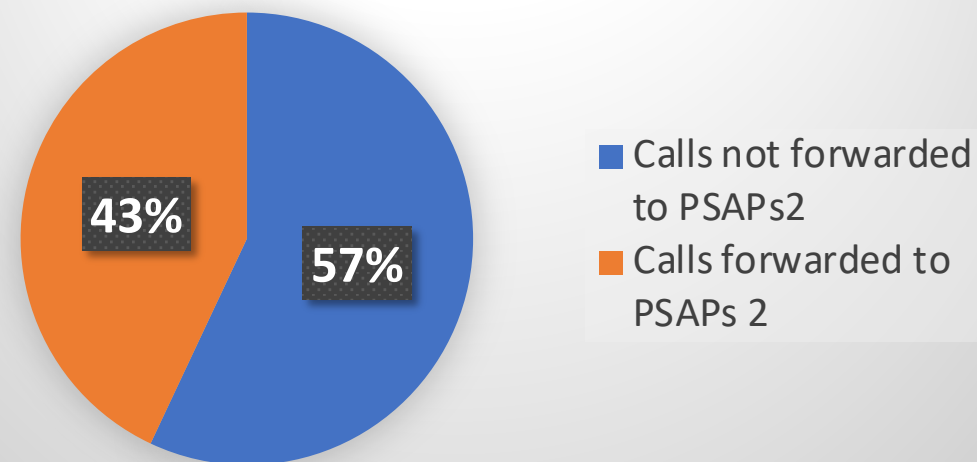
Total: 10,695,397

(Source: elaboration based on European Emergency Number Association data)



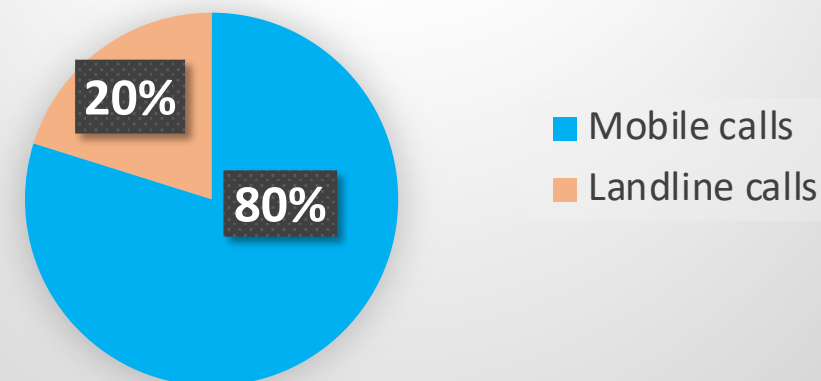
Percentage of filtered calls

(Source: elaboration based on EENA data)



Percentage of call types

(Source: elaboration based on EENA data)

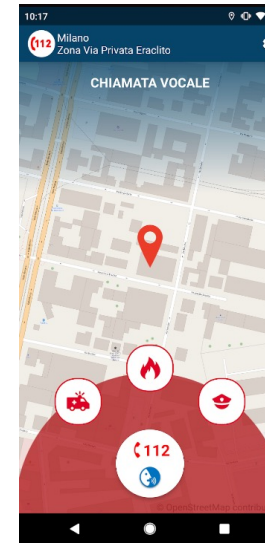


*data refers only to Model 3 Regions in 2019: approximately 26 million citizens out 59.73 million inhabitants

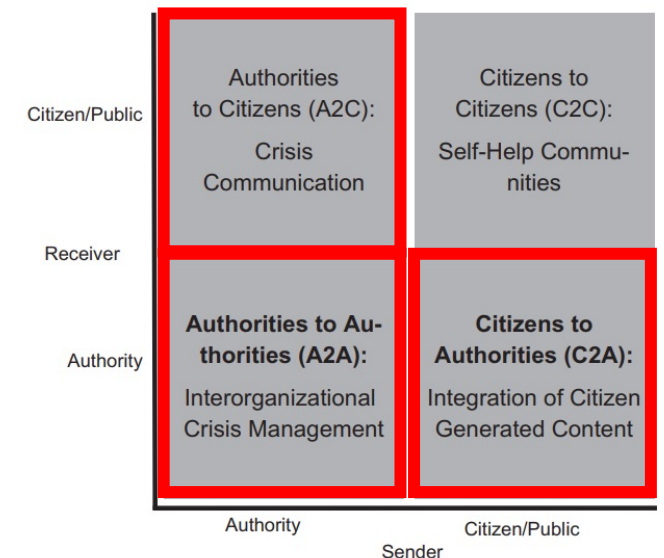
data are related to the region implementing the 2 stage model: Valle d'Aosta, Piemonte; Liguria; Lombardia, Friuli Venezia Giulia, Provincia Autonoma di Trento, Provincia Autonoma di Bolzano, Provincia di Roma, Sicilia

112 FIRST-LEVEL PSAPs AS A CROWDSOURCING TECHNOLOGIES LIBRARY CANDIDATES 1/2

- **LAUNCH YEAR:** 91/396/CEE, July 29, 1991 on the introduction of a single European emergency call number, Italian Public Administration reform, August 4, 2015: Regional implementation;
- **TECHNOLOGY PROVIDERS:** Beta80, Bosch, Colloquia, Dell, Engineering, Europe Assistance, Eurostreet, Fujitsu, GeG, IMA, ISED, Leonardo, On Star, Regola, Stratus Technology, TIM, UnipolSAI, Viasat, Vodafone Automotive;
- **PRICING:** 112 must be reachable free of charge from both landlines and mobile phones.
The costs refer to the implementation of the system and the use of information infrastructure;
- **USER INTERFACE LANGUAGES:** Multilingual;
- **SUPPORTED PLATFORMS:** Mobile/Fixed Telephone Networks, official app 112 Where Are U;
- **CRISIS COMMUNICATION MATRIX:**
C2A; A2A; A2C;
- **DISASTER MANAGEMENT PHASE:** Response



(Source: Adapted from Reuter et al., 2018)



112 FIRST-LEVEL PSAPs AS A CROWDSOURCING TECHNOLOGIES LIBRARY CANDIDATES 2/2

SEARCH & MONITOR / REPORT

- CALLER GEOLOCATION AND IDENTIFICATION, FILTERING, SORTING AND SEARCHING;
- EVENT DETECTION, MONITORING, NOTIFICATION AND VISUALIZATION

INTEROPERABILITY

- DATA EXPORT: METADATA IN XML;
- API SUPPORT: CED INTERFORZE;
- COMMON COMMUNICATION NETWORK: «VPN DELL'EMERGENZA»;
- THIRD PARTY TOOL INTEGRATION

FUNCTIONS



META

- PSAPs ADHERES TO THE GDPR FOR THE PROCESSING OF PERSONAL DATA;
- HISTORICAL DATA ACCESS

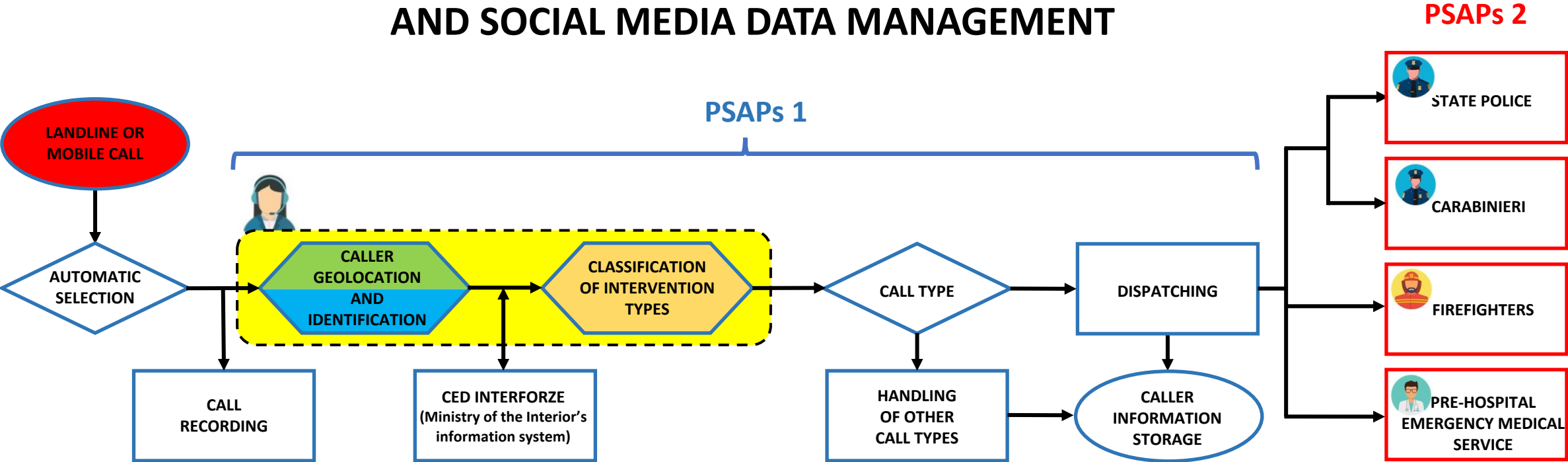
REAL-TIME ANALYSIS

- IMAGE AND VIDEO ANALYSIS;
- SENTIMENT ANALYSIS;
- TEXT ANALYSIS:
RTT USED BY DEAF PEOPLE;
- TOPIC ANALYSIS:
CLASSIFICATION OF INTERVENTION

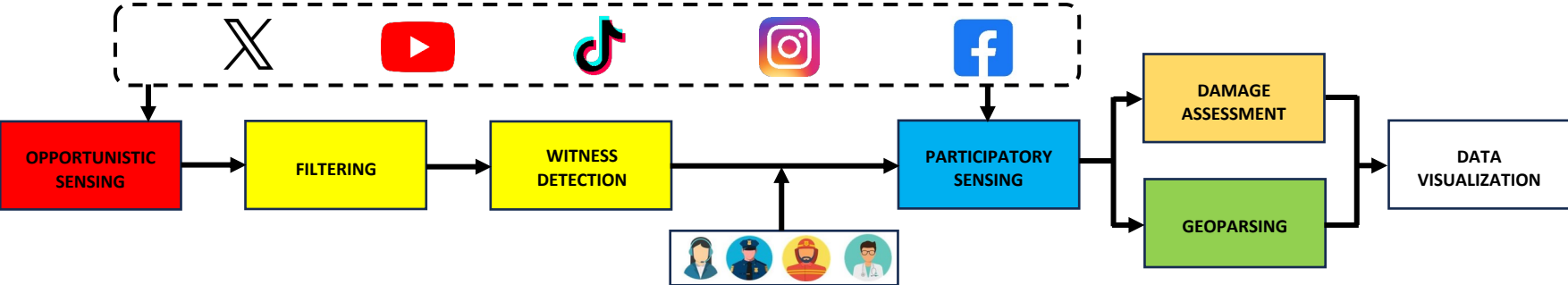
METRICS

- BUSINESS INTELLIGENCE SYSTEM;
- KEY PERFORMANCE INDICATORS;
- QUALITY CERTIFICATIONS:
ISO 9000, ISO 9001, ISO 45001

COMPARISON BETWEEN 112 EMERGENCY CALLS HANDLING AND SOCIAL MEDIA DATA MANAGEMENT



(Source: Adapted from European Emergency Number Association, 2023)



CONCLUSION AND FUTURE DIRECTIONS



112 emergency calls is a **new form of crowd-sourced data**;



112 PSAPs enable **effective crowd-sourced data management**;



112 service engages the crowd: **the citizen is an emergency actor**;



112 emergency call handling service chain ensures **accessibility for all people**.



- Testing the potentials of emergency calls;
- Demonstrating the value of the information layer produced by first-level PSAPs.




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