

# FLOOD-serv Project: Piloting of Public Emergency and Awareness Services ICT Platform

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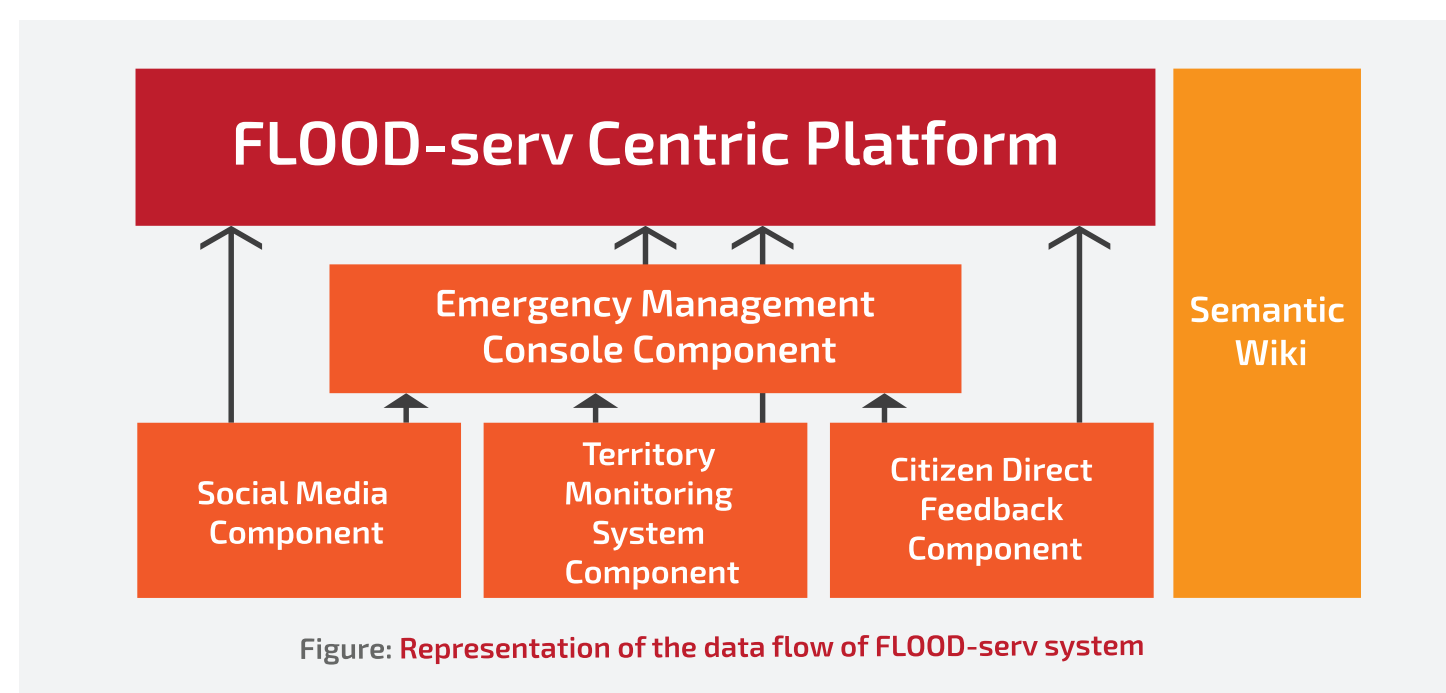
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## Background

- Climate changes increasingly contribute to extreme weather conditions such as droughts, hyper hurricanes or floods, all of them representing a growing threat for humans, environment and economies over the globe.
- Flooding cannot be wholly prevented. Further factors like socio economic development, urbanisation, land cover change, vulnerability of people in risk area but also lack of dedicated ICT-infrastructure contribute to the magnitude and frequency of floods.
- Many regions suffer from lack of risk information for planners, population and most of all, for decision makers.

## Rationale

- Risk reduction in large international basins can only be achieved through transnational, interdisciplinary and stakeholder oriented approaches within the framework of a joint transnational research project. The overall objective of FLOOD-serv is to develop and to provide a pro-active and personalised citizen-centric public service application that will enhance the involvement of the citizen and will harness the collaborative power of ICT networks (networks of people, of knowledge, of sensors) to raise awareness on flood risks and to enable collective risk mitigation solutions and response actions.
- Integrated solution capable of generating awareness data in all flood phases is required: Preparedness, Flood-emergency response and Flood-recovery.

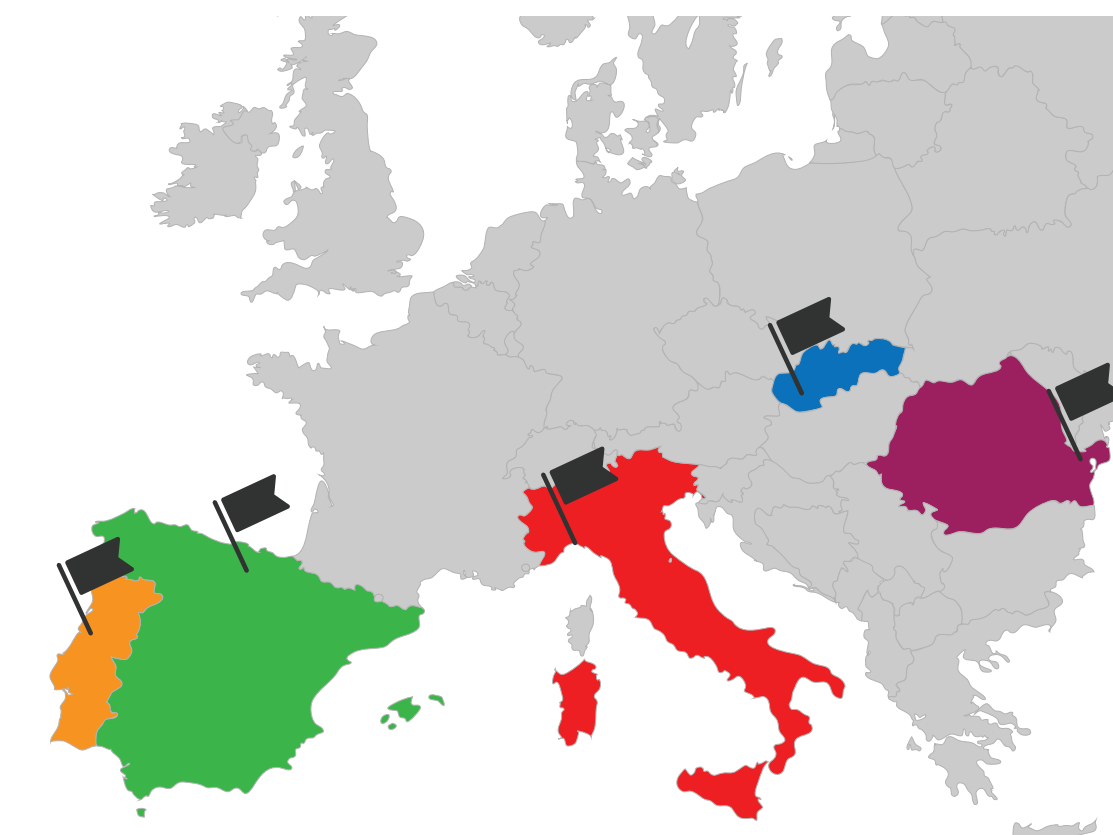


## System Architecture

- Integrated approach to include all stakeholders by two way communication via: Mobile, Web and Social media
- Five R&D prototypes integrated in one platform (see Figure). In addition, a portal implemented for a central access point to the functionalities www.floodserv.eu

### Pilots

- Genova (Italy)
- Danube Delta (Romania)
- Bilbao (Spain)
- Bratislava (Slovakia)
- Ave Valley Region (Portugal)



## Methods

- The pilot phase of FLOOD-serv aimed to demonstrate that the system is ready for wide-scale implementation and to identify any problems that might affect a full-scale roll-out.
- Five European flood-risk pilot municipalities in Italy, Spain, Portugal, Romania and Slovakia with both urban and rural character were involved in project to generate spectrum of requirements. Pilots link citizens, public authorities and relevant stakeholders to experience how FLOOD-serv enables actions through innovation to reduce the adverse effects of a flood.
- Three piloting phases took place during September-October 2018, January-February 2019 and April-May 2019.
- Respective pilot municipalities took different approaches in testing the platform (collective - individual, supervised - individual, target group specific – combined etc.)
- Different work instruments were used to support piloting:
  - Consent forms
  - Templates for reporting test results

- General questionnaire for the internet use and attitudes
- End of testing session questionnaire

## Results

- Perceived usefulness of the system varied by pilot city, but the system was overall perceived useful (Table 1). Tulcea and Genova evaluated the platform as very useful, with EMC and CDF app leading the statistics.<sup>1</sup>

Table 1 Average Perceived Usefulness by Pilot City and Component

| Component | Bilbao  |    | Bratislava |     | CMVNF   |    | Genova  |    | Tulcea  |     |
|-----------|---------|----|------------|-----|---------|----|---------|----|---------|-----|
|           | Average | N  | Average    | N   | Average | N  | Average | N  | Average | N   |
| CDF       | NC      | NC | 2.70       | 205 | 3.00    | 15 | NA      | NA | 3.29    | 230 |
| CDF app   | NC      | NC | 2.13       | 34  | 4.00    | 4  | 2.64    | 37 | NA      | NA  |
| EMC       | 2.33    | 7  | 2.00       | 6   | 4.00    | 4  | NC      | NC | 3.61    | 159 |
| Portal    | 2.00    | 20 | 2.82       | 307 | 2.90    | 84 | 3.32    | 83 | 3.30    | 231 |
| SMC       | NC      | NC | NC         | NC  | 3.00    | 3  | NC      | NC | NA      | NA  |
| SW        | 1.60    | 16 | 2.74       | 301 | 2.60    | 13 | 3.24    | 55 | 3.29    | 204 |

- Perceived ease of use of the system varied by pilot city and by component (Table 2). Components EMC and Portal reached the highest weighted ease-of-use score in testing sessions.<sup>2</sup>

Table 2 Average Perceived Ease of Use by Pilot City and Component

| Component | Bilbao  |    | Bratislava |     | CMVNF   |    | Genova  |    | Tulcea  |    |
|-----------|---------|----|------------|-----|---------|----|---------|----|---------|----|
|           | Average | N  | Average    | N   | Average | N  | Average | N  | Average | N  |
| CDF       | NC      | NC | 2.74       | 78  | 2.40    | 5  | NA      | NA | 3.27    | 70 |
| CDF app   | NC      | NC | 1.88       | 16  | 4.00    | 1  | 3.50    | 10 | NA      | NA |
| EMC       | 3.00    | 3  | 3.00       | 3   | 3.00    | 1  | NC      | NC | 3.32    | 44 |
| Portal    | 2.50    | 10 | 2.91       | 109 | 3.00    | 29 | 3.68    | 25 | 3.29    | 70 |
| SMC       | NC      | NC | NC         | NC  | 2.00    | 1  | NC      | NC | NA      | NA |
| SW        | 1.90    | 10 | 2.84       | 111 | 2.40    | 5  | 3.71    | 17 | 3.24    | 62 |

## Conclusions

- Piloting revealed importance of training process i.e. how to use the system, how to perform testing when done by citizen testers.
- FLOOD-serv system is fit-for-purpose and perceived useful by users, but still needs improvements for usability.

<sup>1,2</sup> Data from 3b cycle are not included in the result tables

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