ANYWHERE: EnhANcing emergencY management and response to extreme WeatHER and climate Events

Work Package 4

-Task 4.1 progresses-

Task lead: UNS task contributors: AIRBUS, HYDS, DAPP, CIMA, SINTEF

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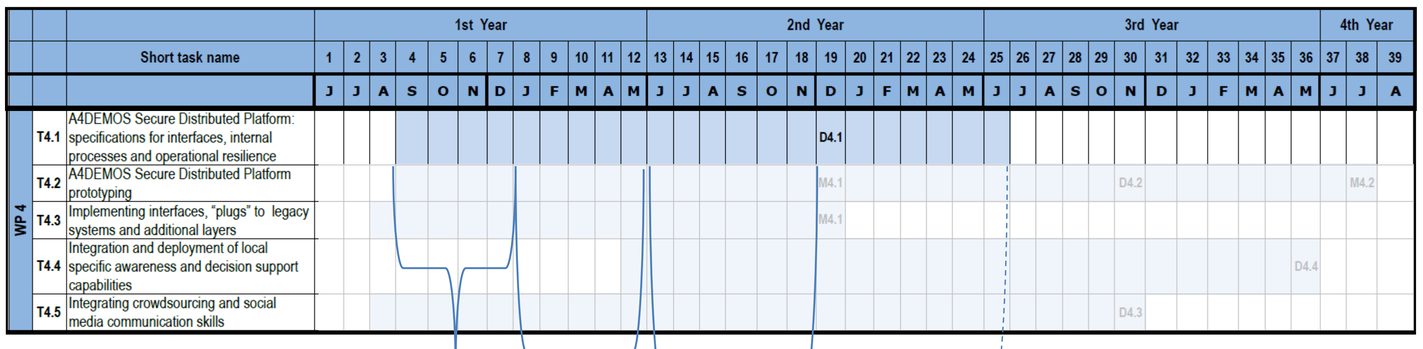
Task 4.1 A4DEMOS Secure Distributed Platform: specifications for interfaces, internal processes and operational resilience

Started: Sept. 2016 (duration 22 months)

Aims of this task

i. Provide specifications for A4DEMOS interfaces, internal processes and tools that are to be developed in the other tasks.
ii. Elaborate an Operational Resilience Index (ORI) to be displayed within the platform integrating these various sources of information, in order to support the decision process and tools handling, bringing extra added value.

T4.1 Actions, chronogram & progresses



1. Elaboration of a Matrix to collect relevant information on data used by the different pilots to perform a first diagnosis on available information and existing systems (M04 to M07)

2. Collection from the Pilots leaders and aggregation of the Pilots sites input (M08 to M12)

3. Analyse phase and reporting (M10 to M19)

4. Iteration and cross checking (M19 to M25)

Task 4.1 A4DEMOS Secure Distributed Platform: specifications for interfaces, internal processes and operational resilience (T Leader **UNS**, Contributors: AIRBUS, HYDS, DAPP, CIMA, SINTEF): **M04- M25.**

The focus of this task will be to provide specifications for the interfaces, processes and tools that are to be developed in the other tasks. In a first step (M04 to M16), a **practical generic platform for the internal processes analysis and modelling will be developed** in order to address the diversity of the various Information Systems according to their maturity and to identified the gaps that have to be covered by the ANYWHERE platform. The approach will **provide a standardized methodology** that will be implemented in each demo site and will allow **optimizing the customization actions** needed for the distributed platform. The ANYWHERE platform will integrate and ensure interoperability of existing systems by **unifying the Information Systems exchanges and interfaces and proposing specific adaptations for each demo site, with simple interfaces**. Therefore in a second step, as a **"consolidating interface layer"**, an **operational resilience index** will be elaborated and displayed within the platform integrating these various sources of information, in order to **support the decision process and tools handling** bringing extra added value. The index will be elaborated following the methodology developed for the Flood Resilience Index (Cf. FP7 CORFU project http://www.corfu7.eu) and adapted to the specific context of ANYWHERE and covering multi hazards. The approach is based on a functional analysis combining an assessment of the vulnerability and to the damages evaluation. The index will allow to synthetize the current situation on the site (through the integration of diverse data sources) and to provide an estimation of the operational resilience. The development of the operational resilience index taking into account the information available in the platform, will be integrated in D4.1 and will be implemented on the pilot sites before the start of the demonstration period (**M25**).

A reverse engineering approach based on crossing bottom-up approach based on pilots sites' information & top-down analysis is performed to describe the high-level functionalities and overall design of A4DEMOS. The crossing of these approaches and the multiplication of different use cases description (for each pilots) allows both: (i) high level functionalities specifications and (ii) standardization of the customization methodology as presented below.

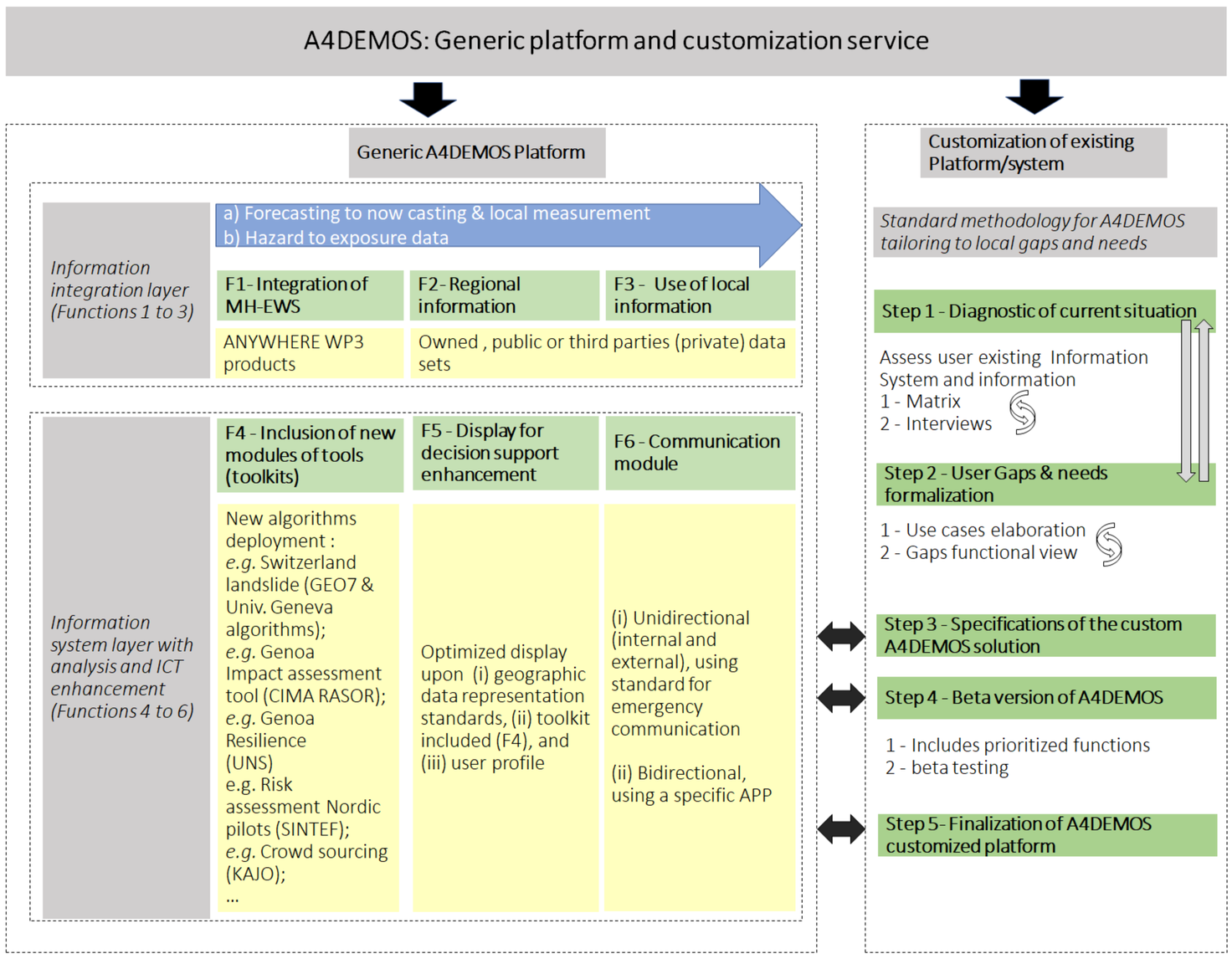
A4DEMOS is defined as a distributed generic platform coupled with a service of customisation to include specifically functionalities fitting to local on-site problematics and needs, according to a standard methodology.

T4.1 High-level functionalities specification & overall design of A4DEMOS platform and standard customisation service

Information integration layer	**F1- Integration of MH-EWS**	The functionalities F1 to F3 correspond to the data to be used by End User and by A4DEMOS second layer to provide an analysis for the high impact climatic event crisis management. From F1 to F3, the input data is becoming more localized in terms of spatial scale, and tends to go respectively from prevision/prevention type to a more exposure/vulnerability type of information. In other words, from F1 to F3, nature of the information is shifting from forecasting to now casting and to local measurements. Note that some of the regional information might be provided/included in the MH-EWS products.
	F2- Regional information	
	F3- Use of local information	
Information System Layer with analysis and ICT enhancement	**F4- Inclusion of new modules of tools (toolkits)**	This functionality encompasses the different modules of tool which will provide extra information/analysis for the assessment of the risk and impacts.
	F5- Display for decision support enhancement	This functionality regroups the displays in terms of: standardisation of the representations for inclusion of the other functions and in terms of option s for prioritisation of the visualisation (depending on profile or nature of hazard).
	F6- Communication module	This function regroups the ruling for the communication: internal/external & uni/multidirectional and the SOP of communication.

A4DEMOS product can be considered as providing two complementary aspects.

- A generic platform. The platform is composed of an information integration layer and a layer which encompasses specific functionalities helping decision support in emergency management.
- A customized version of the generic platform. The customize A4DEMOS platform is a service which specifically integrates characteristics of a given site/end user expressed need. Gaps and needs are identified through a methodology set to be standardized. Objective is to get the most of the A4DEMOS efficient support for "clients/end-users" within the framework of the generic platform.
- In parallel, the conceptualisation of the Operational Resilience Index as part of the second aim of the task 4.1 has started.



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