About ACTIVAGE

ACTIVAGE is a European Multi Centric Large Scale Pilot on Smart Living Environments. The main objective is to build the first European IoT ecosystem across 9 Deployment Sites (DS) in seven European countries, reusing and scaling up underlying open and proprietary IoT platforms, technologies and standards, and integrating new interfaces needed to provide interoperability across these heterogeneous platforms, that will enable the deployment and operation at large scale of Active & Healthy Ageing IoT based solutions and services, supporting and extending the independent living of older adults in their living environments, and responding to real needs of caregivers, service providers and public authorities.

The project will deliver the ACTIVAGE IoT Ecosystem Suite (AIOTES), a set of Techniques, Tools and Methodologies for interoperability at different layers between heterogeneous IoT Platforms and an Open Framework for providing Semantic Interoperability of IoT Platforms for AHA, addressing trustworthiness, privacy, data protection and security. User-demand driven interoperable IoT-enabled Active & Healthy Ageing solutions will be deployed on top of the AIOTES in every DS, enhancing and scaling up existing services, for the promotion of independent living, the mitigation of frailty, and preservation of quality of life and autonomy. ACTIVAGE will assess the socio-economic impact, the benefits of IoT-based smart living environments in the quality of life and autonomy, and in the sustainability of the health and social care systems, demonstrating the seamless capacity of integration and interoperability of the IoT ecosystem, and validating new business, financial and organizational models for care delivery, ensuring the sustainability after the project end, and disseminating these results to a worldwide audience. The consortium comprises industries, research centres, SMEs, service providers, public authorities encompassing the whole value chain in every Deployment Site.

ACTIVAGE vision

The vision of ACTIVAGE is to be the global world-wide reference for providing the evidence that standard-secure-intraoperative IoT ecosystems enable new business models and cost-effective solutions for Active and Healthy Ageing, contributing to the sustainability of the health and care systems, the competitiveness of the European industry through innovation, and the improvement of the quality of life and autonomy of older adults in the form of independent living.

ACTIVAGE vision is to ignite and catalyse the strategic decisions of:

a) health and social care policy makers to invest public and private money in scaling up aha services to the whole population of demanding societies.

b) service providers to adopt new proved cost-effective business models that reduce costs to payers and increase benefits to providers and citizen, making the global health and social care systems more sustainable while reaching broader segments of users.

c) senior citizen and their families to be involved in the co-creation, adoption and demand of new aha services that makes their life better, safer and autonomous.

d) technology industry to innovate on IoT, wearables and sensor technologies, support standards for interoperability, to ignite a global health and wellbeing market growth.

e) SME`s and entrepreneurs to create innovative solutions and technologies in a growing demanding market.

f) private and public financial and business development services to fund innovation ecosystems around ACTIVAGE deployment sites and elsewhere, fuel innovation and competitiveness.

ACTIVAGE objectives

ACTIVAGE ultimate goal is to create the evidence and to be the reference driver of this virtuous circle of the Active and Healthy Ageing market growth that will increase the demand by payers, providers and users, and will intensify the offer of solutions by the industry, SMEs and financial services.

O1. To deliver the ACTIVAGE IoT Ecosystem Suite (AIOTES), a set of techniques, tools and methodologies **for interoperability at different layers between heterogeneous existing IoT Platforms** and an Open Framework for providing **Semantic Interoperability of IoT Platforms for AHA**, addressing trustworthiness, privacy, data protection and security.

O2. To set up a European Multi Centric Large Scale Pilot distributed across nine interconnected Deployment Sites of seven European countries constituting the whole operational and evaluation space, in order **to build local IoT ecosystems on top of legacy open or proprietary IoT platforms** , encompassing all stakeholders in the AHA value chain and highlighting seamless services connectivity support while users are moving in their living environments.

O3. To set a common Reference Evaluation Framework implementing the GLOCAL approach able to complement Global and LOCAL reference features and requirements. The evaluation framework will allow the assessment of interoperable IoT-enabled Active & Healthy Ageing solutions enhancing and scaling up current existing services on every Deployment Site, **for the promotion of independent living, the mitigation of frailty, preservation of quality of life and autonomy of older adults in smart living environments.** The objective is to create significant evidence and value of the benefit produced on all these aspects, **for the sustainability of the H&SCS, and for validating new business, financial and organizational models for care delivery**, both in a local/national and European scope.

O4. To provide a co-creation framework that enables the **identification, measurement, understanding and prediction of the demands and needs of IoT ecosystem on AHA users**: older adults, caregivers, health and social care professionals and providers, assessing their needs, preferences and perceptions regarding user acceptance, trust, confidentiality, privacy, data protection and safety. The goal of this objective is to raise and identify some unknown key success factors related also to deployment and scaling up

activities.

O5. To set up and operationalize a communication and dissemination program that allows **worldwide outreach of project activities and achievements**, to make ACTIVAGE a global reference framework of evidence-based values of IoT for AHA.

Project Structure

WP1 - Project Coordination, IPR and Ethics Management

- To keep the project schedule and to guarantee the execution of the work plan and the achievement of the project goals in time and within budget.
- To coordinate the technological, scientific and innovative orientation of the ACTIVAGE project,
- To guarantee high-quality standards at all levels,
- To ensure that the ACTIVAGE project maintains its relevance towards the objectives of the program,
- To manage IPR and Ethics issues.

WP2 - User Requirements

The aim of this WP is to coordinate across Deployment Sites, to share a common definition of the uses cases, user needs and scenarios in order to be able to give requirement for the AIOTES development and enable common evaluation base on shared criteria, while each DS will adapt its deployment to local needs and organizational specificity. A User Centred Design (UCD) methodology (Human Centred Design process for interactive systems (ISO 9241-210) will be used in order to places the users (elderly, patients, families, caregivers (informal and professional) and in general the whole community) at the centre of the ACTIVAGE AIOTES design, implementation and evaluation process (WP9 DS). Create a preliminary guideline for the adoption of ACTIVAGE solutions in other Pilots

WP3 - ACTIVAGE Secure Interoperability Layer

The current work package aims at building the backbone of the ACTIVAGE Interoperability layer that will allow interconnecting heterogeneous IoT devices, European platforms and smart living services within a common ecosystem of solutions. The ultimate goal is to provide to application developers, integrators, service providers a common framework to build interoperable smart living apps and services that can be deployed, extended and replicated at deployment sites across Europe. Security and privacy will have a dedicated attention within this work package, as they are particularly important in the smart living domain and especially for applications with healthcare orientation. The main outcomes of the Work package are:

WP4 - ACTIVAGE Application support Tools and Services Layer

- To provide to the ACTIVAGE developers and technology integrators a set of tools and functionalities that support the development and the deployment of new services and applications within the AIOTES (WP5)
- To improve the reusability, interoperability and sharing of ACTIVAGE cross pilot IOT services/applications,
- To provide innovative features and Advanced Analytics tools that will allow the in depth understanding of the data collected from ACTIVAGE deployment sites (WP9), and also help developers optimize their services/applications.
- Provide all the necessary tools for the creation of services/applications from users with minimum technical training.

WP5 - ACTIVAGE IoT Ecosystem Suite Integration

This work package will integrate the technologies developed in WP3 through WP4, in order to generate ACTIVAGE IoT Ecosystem Suite (AIoTES). The produced suite will be tested and validated in a controlled (e.g. testbeds or living labs) and in realistic environments, before its large scale deployment within the selected sites (WP9). The main objectives of the WP can be summarised in the following key components:

WP6 - Socio-economic impact assessment and evaluation

- Propose the overall framework for evidence gathering and data interpretation across the different sites and for the ACTIVAGE LSP as a single pilot networked action.
- Govern the continuous evaluation process by providing guidance, coordination and support to the specific evaluation tasks in WP9 (Task 9.3).
- Coordinate and consolidate the different methodologies, KPI and ACTIVAGE Evidence Open Data Base collection tools that are aggregated under the GLOCAL framework and align the data collection phase in an efficient way and minimizing the effects for the end users.
- Implement and ACTIVAGE Evidence Open Data Base and its views LSD DASHBOARD and AHA-Advisor for the aggregated management of the data collection phase.

- Coordinate with the ethical, privacy, data management plan and legal aspects managed in WP1, in order to make sure that the data gathering phase follows the appropriate ethical and legal processes to preserve end users' dignity.
- Periodically evaluate and assess the impact of the IoT solutions by analysing the aggregated data and by publishing interim reports. The final evaluation will be reported in the White Book.
- Propose changes and adaptations to overall ACTIVAGE evaluation framework for the scope of use cases, IoT and related services applied for Ageing well and extending elderly independence.

WP7 - Outreach & Ecosystem Enlargement

- Define the legal environment and requirements for the creation and management of the ACTIVAGE ecosystem
- Define the scope of the open calls
- Define and select the missing components and platforms for the deployment sites included in the proposal
- Define and select new deployment sites covering the methodology and innovation path of the proposal
- Define cross-deployment sites platforms and components
- Specify the governance model for the ACTIVAGE ecosystem in order to achieve sustainability after the end of the project

WP8 - Impact, exploitation, dissemination and standardization

The current task is aiming to maximize the impact of the project in the IoT and AHA fields and evaluate the actual impact achieved across the innovation tracks and socio-economic environment, based on four actions key objectives:

- To raise public awareness of project developments among key user groups, scientific community and general public;
- To facilitate sharing of knowledge inside the Consortium and across the scheduled DSs
- To develop a business plan for the project outcomes for the AIOTES integrated platforms and for the different DSs
- To manage Intellectual Property Rights and protect any project outcomes that can lead to commercially viable products
- To support Standardization and concentration activities through and based on the interoperability components of AIOTES
- To convey actions of collaboration with standard development organizations and IoT initiatives.

WP9 - LSP Deployment sites definition, execution and coordination

The goal of the WP9 is to execute the Large Scale Pilot activities in the different deployment sites by establishing and consolidating the local IoT ecosystems for ageing well. This WP will operate the Use Cases under load and constraints conditions targeted to a large amount of heterogeneous devices and systems and large amount of real users. In detail, this WP will:

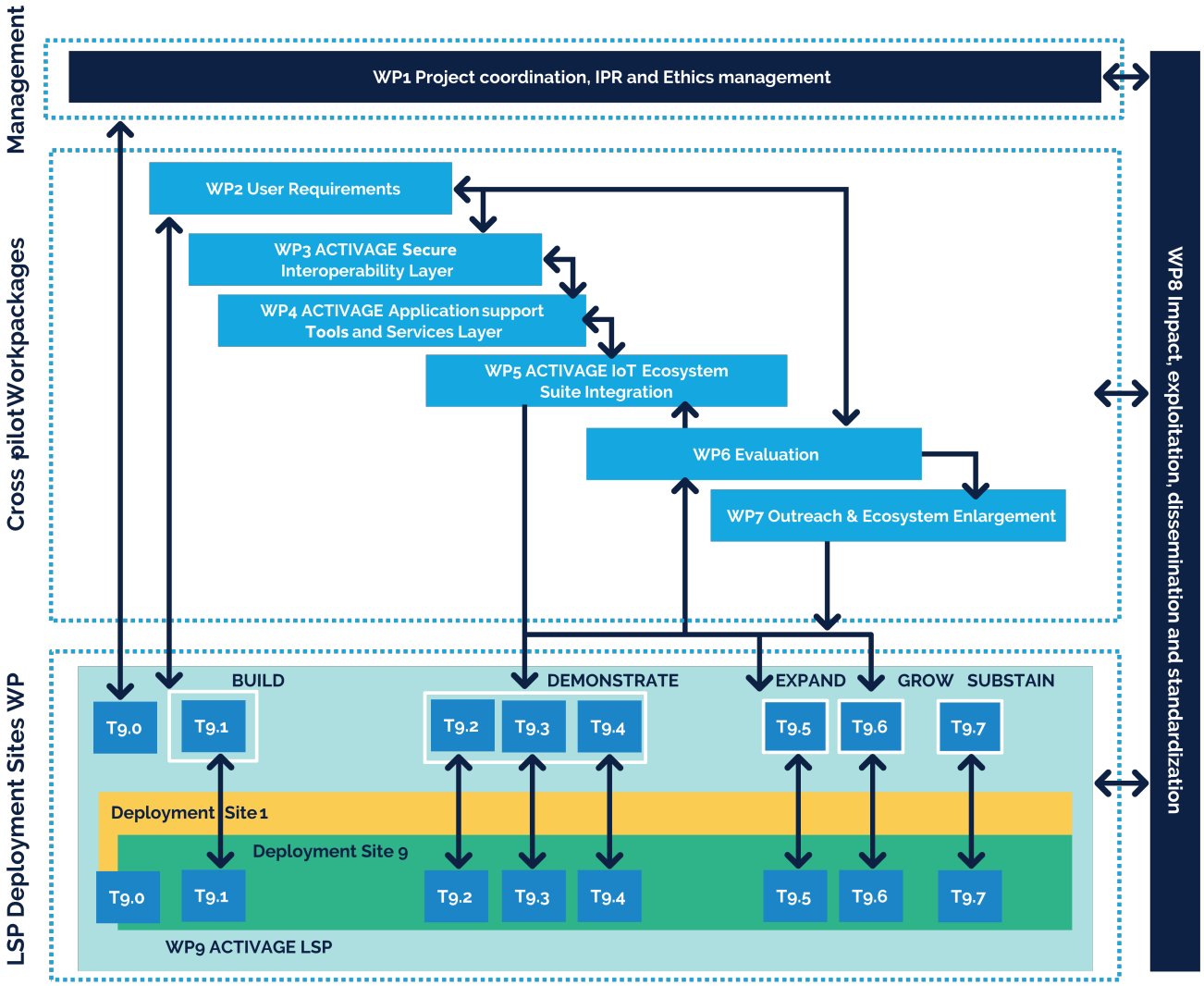
- Ensure ACTIVAGE requirements and guidelines for Smart Living Environments for Ageing Well, as defined in WP2, are correctly deployed in all sites in a coordinated way.
- Implement the common socio-economical evaluation framework in close coordination with WP6.
- Deploy the appropriate measurement tools to capture the local KPI: ACTIVAGE Evidence Open Data Base.
- Do the necessary changes to the IoT solutions in order to be compatible with the interoperability framework and software artefacts created in WP3, 4, and 5.
- Deploy use cases coming from other Deployment Sites and from new interoperable solutions introduced by the open call mechanism (WP7) in order to "Grow" the local innovation ecosystems.
- Prepare and cure the aggregated data collection for publication of the evidence of the benefits of IoT for ageing well (input to WP6).
- To define the sustainability plan, maximization of local impact, and local intensive dissemination and future continuation of service provision to elderly people and their care networks.

WP10 - Ethics requirements

The objective is to ensure compliance with the 'ethics requirements' set out in this work package:

a) Templates of the informed consent forms and information sheet must be submitted on request. The applicant should describe appropriate procedures concerning the handling of incidental findings.

b) Detailed information must be provided on the procedures that will be implemented for data collection, storage, protection, retention and destruction and confirmation that they comply with national and EU legislation. Templates of the informed consent forms and information sheet must be submitted.



Contact

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Interesting links

- LSP Programme
- AIOTI
- EIP on AHA
- AAL Programme
- CORAL
- OASC
- Eurocarers
- IOT-EPI
- HORIZON
- ECHAlliance
- EU e-Health
- Age Platform Europe
- ETSI
- U4IoT
- IN LIFE