



PROJECT PROFILE

Improving long-term healthcare & wellbeing

Through networked services at home and on the move

As healthcare costs continue to spiral, NUADU addresses the technical challenges of providing networked healthcare and well-being services to people at home and on the move. The objective is to offer both improved quality of life to citizens and more cost effective and efficient solutions for service providers.

The social and financial costs of healthcare are steadily increasing in the Western world. Our societies are aging and, as a consequence, the incidence of long term, serious illnesses is expected to increase. And current lifestyles of children and younger adults are creating the potential for large scale, chronic health problems – notably obesity, diabetes and cardiovascular diseases. These trends put the costs and effectiveness of traditional healthcare systems in the spotlight with the emphasis on improved cost effectiveness, greater service efficiency and prevention of ill health.

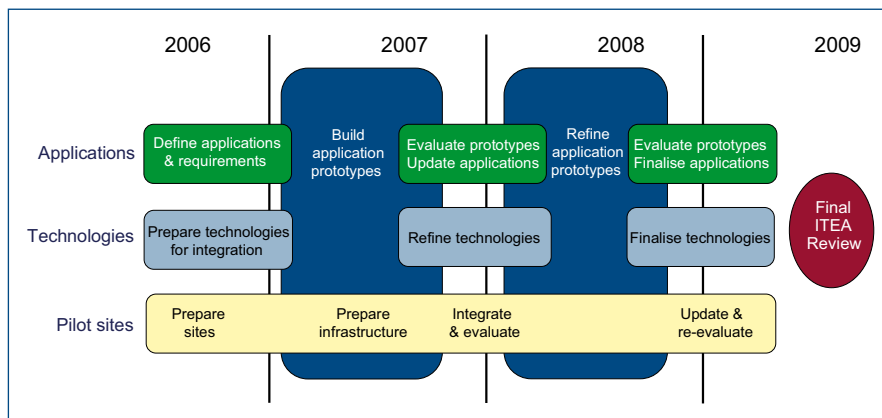
Usage-centred strategy
NUADU will focus on selected healthcare and wellbeing

applications according to the interests of the consortium partners. The applications will be developed by applying a *usage-centred design strategy*. This will include considering the *value chain* in each case and the associated business models.

The applications and enabling technologies will be integrated into working prototypes and evaluated under realistic circumstances at various pilot sites by end users. Two major iterations are foreseen as indicated in the figure below outlining the workflow.

Applications of interest include:

- Lifestyle monitoring to enable independent living for elderly and handicapped people – France, Italy, Netherlands and Spain;
- Weight management, activity monitoring and healthy eating – Netherlands, Italy and Spain;
- Heart-attack management and cardiovascular system monitoring – Belgium, Italy and Spain;
- Managing work-related stress – Finland.



Workflow overview

NUADU (ITEA 05003)

Partners

- Afetco
- Alcatel-Lucent
- Atos Origin Italia
- CEA/List
- Coronaria
- FIOH
- Firstbeat Technologies
- HUT / HEMA
- Institut National des Télécommunications
- IST
- ITACA
- MEDeTIC
- Nokia
- Philips
- Streamvision
- Suomen Terveystalo
- Telvent
- Universidad Politécnica de Madrid
- Università del Sannio
- VTT Technical Research Centre of Finland

Countries involved

- Finland
- France
- Italy
- The Netherlands
- Spain

Project start

April 2006

Project end

March 2009

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It is expected that pilot sites will be located in each country involved: Belgium, Finland, France, Italy, Netherlands and Spain.

Focus on critical technologies

NUADU will focus on selected technologies that are critical to the successful deployment of the applications. The main areas of interest are:

- Sensor and actuator networks;** these will include:
 - Body area network and sensor data processing over wireless links;
 - Computer vision based monitoring of people and environmental activity;
 - Sensor and actuator network interoperability; and
 - Interaction concepts for manual data entry and appropriate user feedback.
- Mobile and home hubs;** this will cover:
 - Mobile and stationary gateways that link sensors networks to services;
 - Middleware architectures that cater for secure data protocols and formats; and
 - User-system interaction.
- Services platform;** this will involve:
 - Modular and scalable service elements such as databases, billing, authorisation and authentication;

- Catalogue of service templates to support rapid service initiation; and
- Service provision environments.

Mid- and longer-term solutions

NUADU will target mid- (less than three years) as well as longer-term solutions (five to eight years). The emphasis will be on demonstrating solutions for the mid term and documenting possible approaches for the longer term.

Major results are expected to include:

- Reports on the stakeholder roles within the value chains for the selected applications as defined in the work packages;
- A portal-based web services framework to enable the rapid implementation of back-end information services that provide for resource-aware service delivery, dependable service discovery and interoperable protocols;
- Data-exchange protocols and formats that ensure easy data exchange between devices, patients/consumers, and professionals;
- Evaluation reports based on applications use at the pilot sites; and
- Prototype applications demonstrated at the pilot sites.

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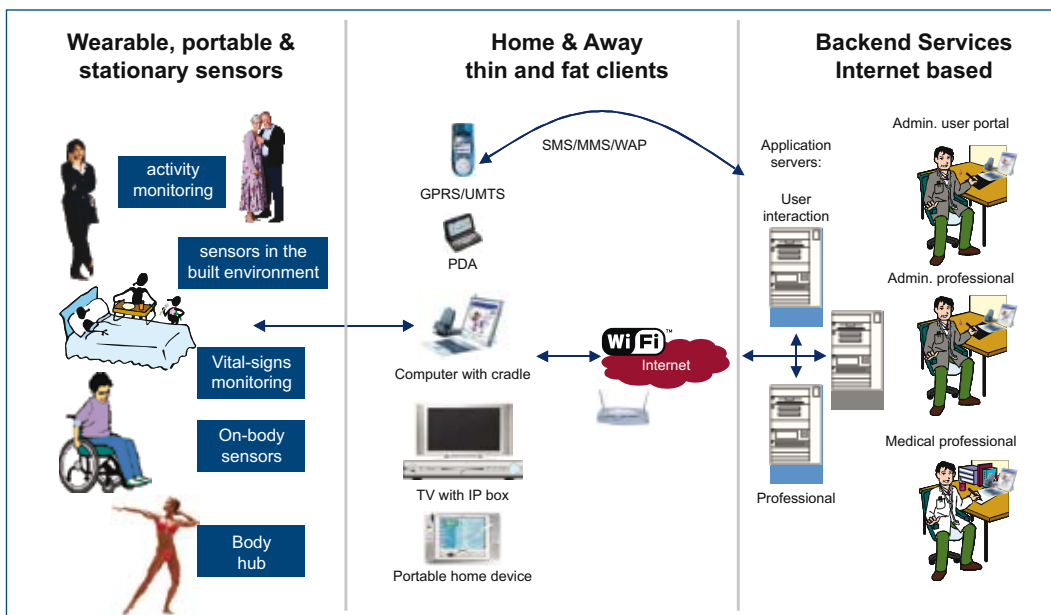
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ITEA-labelled projects build crucial middleware and prepare standards, laying the foundations for the next generation of products, systems, appliances and services. Our projects are industry-driven initiatives, involving complementary R&D from at least two companies in two countries. Our programme is open to partners from large industrial companies, small and medium-sized enterprises (SMEs) as well as public research institutes and universities.



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The NUADU framework - 'end-to-end' systems for healthcare and wellbeing services