

# CHIRON

*Cyclic and person-centric Health management: Integrated approach for hOme, mobile and clinical eNvironments*



## EXECUTIVE summary

CHIRON intends to combine state-of-the-art ICT technologies and innovative solutions into an integrated framework designed for an effective and person-centric health management along the complete care cycle. It will provide powerful supporting ICT tools by ensuring that patients and medical doctors remain the protagonists of the healthcare process designed around them.

## CONTRIBUTION to SRA

CHIRON will promote a continuum of care where personal healthcare solutions and hospital procedures cooperate in a harmonised and synergic approach. The aim is to shift from 'health care' to 'health management' i.e. from 'how to treat patients' to 'how to keep people healthy'. It will have a beneficial impact in terms of expenditure on healthcare and will enhance the quality of life of the patients and their families. Furthermore, interoperability and integration of the subsystems along with seamless management of multi-source data will support the creation and the growth of a horizontally structured market based on this continuum of care.

## MARKET INNOVATION & impact

The growing number of elderly people and the consequent rise of the number of patients suffering from chronic diseases represent a huge opportunity for the e-health devices / solutions / services market. CHIRON will contribute to the establishment of the enabling conditions for successful deployment and exploitation of e-health in Europe and for its integration into the clinical workflow by addressing some of the main constraints of the e-health market. The project will provide an open reference architecture and will assess the proposed solutions in all the aspects. These include technological innovation, usability, integration, constraints, applicability of the business models and, above all, the 'medical' value of the proposed solutions. The project will provide vendors with the information needed to build devices and services that are interoperable and user-centred (sensors, home networks, health computer platforms, 3D and virtual reality solutions and contents).

## RELEVANCE & CONTRIBUTIONS to Call 2009 Objectives

CHIRON will:

- > address and harmonise the needs of all the three main beneficiaries of the healthcare process: the citizens using the services, the medical professionals and the whole community.
- > position the citizens at the core of the whole healthcare cycle by considering them as 'persons' with specificities and identities and will empower them to manage their own health.
- > shift the boundaries of healthcare by fostering a seamless integration of clinical, home and mobile settings in a continuum-of-care concept.
- > speed up the move from treatment of acute episodes to prevention.
- > provide the physicians with extensive support for medical treatment management, timely decisions and appropriate actions in both the clinical and home environments.

More specifically CHIRON intends to:

- design – according to this integrated approach – a reference architecture for personal healthcare ensuring the interoperability between heterogeneous devices and services, reliable and secure patient data management and seamless integration with the clinical workflow.
- develop sophisticated solutions for complex data analysis, feature extraction and knowledge management.
- introduce beyond-state-of-the-art solutions in various specific parts of the system.
- provide new, advanced tools for real-time processing, computer-aided analysis and accurate visualisation of medical images.

The result of the research will be assessed in relation to their technical and clinical aspects and from a socio-economic perspective.

## R&D INNOVATION and technical excellence

The CHIRON project will provide a number of key results each demonstrating breakthrough innovation in its relevant technological field. The technological solutions of the new personal health system will be fully integrated into the conventional hospital-based healthcare system. The advanced solution proposed by CHIRON represents a solid contribution in the direction of an optimal compromise. Furthermore CHIRON promises to progress beyond state-of-the-art in several disciplines such as:

- > Healthcare architecture (multiparametric monitoring, Integration of heterogeneous devices / embedded systems, flexibility and QoS)
- > Sensor nodes with enhanced capabilities and innovative energy-harvesting techniques complemented with an effective power management strategy
- > New methods and algorithms for the measurement of biological parameters
- > Novel solution for enhancing data security and privacy
- > Advanced solutions for the analysis and the visualisation of medical images (advanced post-processing techniques to get quantitative information from medical images; methods for automated extraction of features and computer-aided detection of suspicious regions; innovative solutions of high dynamic range displays for enhanced visualisation of the images).

## PROJECT partners



[www.artemis.eu](http://www.artemis.eu)



### PROJECT COORDINATOR

Silvio Bonfiglio

### INSTITUTION

BARCO

### EMAIL

[Silvio.Bonfiglio@barco.com](mailto:Silvio.Bonfiglio@barco.com)

### WEBSITE

[www.chiron-project.eu](http://www.chiron-project.eu)

### START

March 2010

### DURATION

45 months

### TOTAL INVESTMENT

€18.1 M

### PARTICIPATING ORGANISATIONS

27

### NUMBER OF COUNTRIES

8