A Demonstration of 4D Digital Avatar Infrastructure for Access of Complete Patient Information

Project acronym: MyHealthAvatar

Deliverable No. 10.1
External project website

Grant agreement no: 600929

Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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ABSTRACT:
This deliverable describes the public website of the MyHealthAvatar project (http://www.myhealthavatar.eu) which has been developed in the context of the dissemination activities of the project.

KEYWORD LIST:
MyHealthAvatar, website, dissemination activity

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[1] **R**=Report, **P**=Prototype, **D**=Demonstrator, **O**=Other

[2] **PU**=Public, **PP**=Restricted to other programme participants (including the Commission Services), **RE**=Restricted to a group specified by the consortium (including the Commission Services), **CO**=Confidential, only for members of the consortium (including the Commission Services)

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5.0	08/06/13	Final	Reviewer -> Fay Misichroni, ICCS

List of contributors
   − All MyHealthAvatar Partners

Contents

1 Executive Summary

Owing to the highly fragmented health systems in European countries, gaining access to a consistent record of individual citizens that involves cross-border activities is very difficult. MyHealthAvatar is a proof of concept for the digital representation of patient health status. It is designed as a lifetime companion for individual citizens that facilitates the collection of, and access to, long-term health-status information. This is extremely valuable for clinical decisions and offers a promising approach to acquire population data to support clinical research, leading to strengthened multidisciplinary research excellence in supporting innovative medical care.

MyHealthAvatar is built on the latest ICT technology with an aim of engaging public interest to achieve its targeted outcomes. In addition to data access, it is also an interface to access integrative models and analysis tools, utilizing resources already created by the VPH community. Overall, it contributes to individualized disease prediction and prevention and supports healthy lifestyles and independent living. It exerts a major influence on the reshaping of future healthcare in the handling of increased life expectancy and the ageing population in Europe. This complies with the priority and strategy of FP7 ICT for healthcare, and constitutes a preparatory action aiming at the grand challenge on a "Digital Patient", which is currently the subject of a roadmap in the VPH community.

MyHealthAvatar places a special emphasis on engaging the public. It has huge implications to the society both socially and economically. A personal avatar can potentially change the way we think, communicate and search for information. Meanwhile, the acceptance of the avatars by the public opens opportunities for many industrial sectors, leading to the reinforced leadership of European industry.

The present deliverable describes the MyHealthAvatar project public website, which has been developed to fulfil part of the dissemination activities of the project. This public website will thus serve as the first information point regarding the objectives, approaches, progress and results obtained through the MyHealthAvatar project. The public website can be reached via the URL http://www.myhealthavatar.eu .

MyHealthAvatar public website

1.1 Purpose of this document

The present deliverable describes the MyHealthAvatar project public website, which has been developed to fulfil part of the dissemination activities of the project. This public website will thus serve as the first information point regarding the objectives, approaches, progress and results obtained through the MyHealthAvatar project.
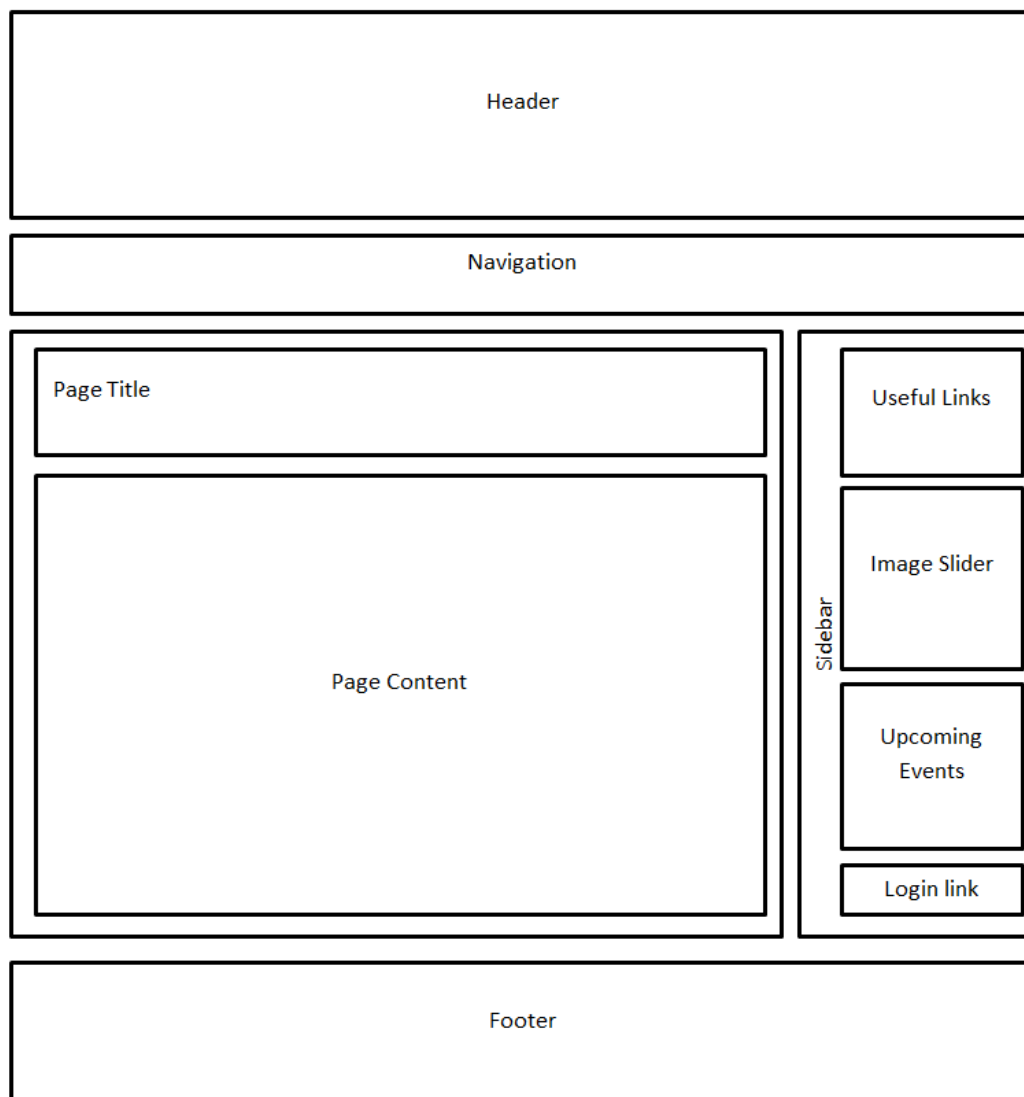
The public website can be reached via the URL

http://www.myhealthavatar.eu

Upgrades and extensions are foreseen during the project.

1.2 Layout

The layout of the website is displayed in the following figure:

1.3 Header

The header of the website is a combination of the project logo with a banner.

1.4 Footer

The Footer of the website contains:

- "This research project receives funding from the European Commission's Seventh Framework Programme (activity ICT (FP7-ICT-2011-9)), Grant agreement no: 600929. "

- The EU logo.

- The FP7 logo.

- "Copyright © 2013 MyHealthAvatar project partners | All Rights Reserved"

1.5 Sidebar

The Sidebar of the website is positioned in the right side. It contains:

- Useful links, e.g. a link to a survey ("MyHealthAvatar Survey!"), a link to the management website ("Member Area!"), a link to the facebook page of the project.

- An image slider, showing the logos of the partners participating in the project.

- A list of the upcoming events.

- A login link to the administrative part of the website.

1.6 Navigation

The navigation menu contains the following topics:

- Home: This page is the entry page of the website (Appendix 1). It contains:
  - an image combining a timeline with a "word cloud", which represents the project concept,
  - the logo of each partner.
- Project: This menu includes the following information:
  - In Brief => see Appendix 2
  - Concept => see Appendix 3
  - Benefits => see Appendix 4
  - Innovation => see Appendix 5
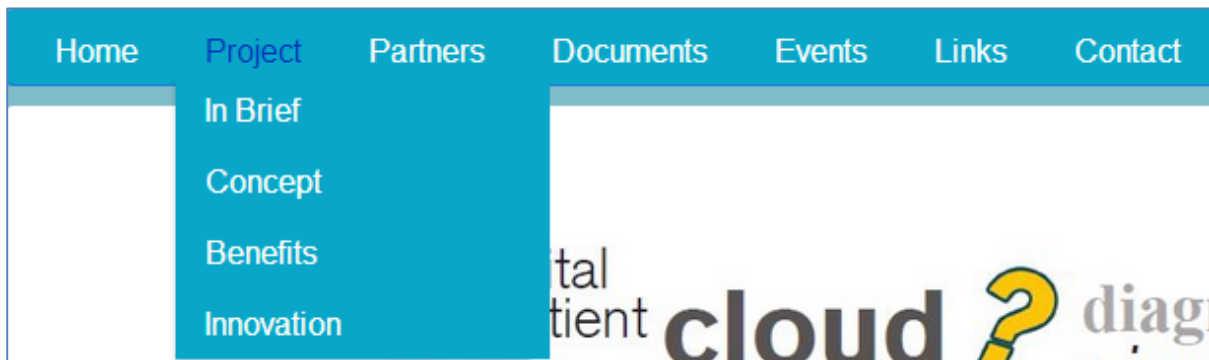
- Partners: The following partners participate in MyHealthAvatar
  - BED (University of Bedfordshire) => see Appendix 6
  - FORTH (Foundation for Research and Technology) => see Appendix 7
  - USAAR (Saarland University) => see Appendix 8
  - ICCS (Institute of Communication and Computer Systems) => see Appendix 9
  - LUH (Leibniz Universität Hannover) => see Appendix 10
  - ASTRID (Astrid Research Kft.) => see Appendix 11
  - ANSMART (AnSmart Ltd) => see Appendix 12
  - TEI-C (Technological Educational Institute of Crete) => see Appendix 13
  - LIN (University of Lincoln) => see Appendix 14
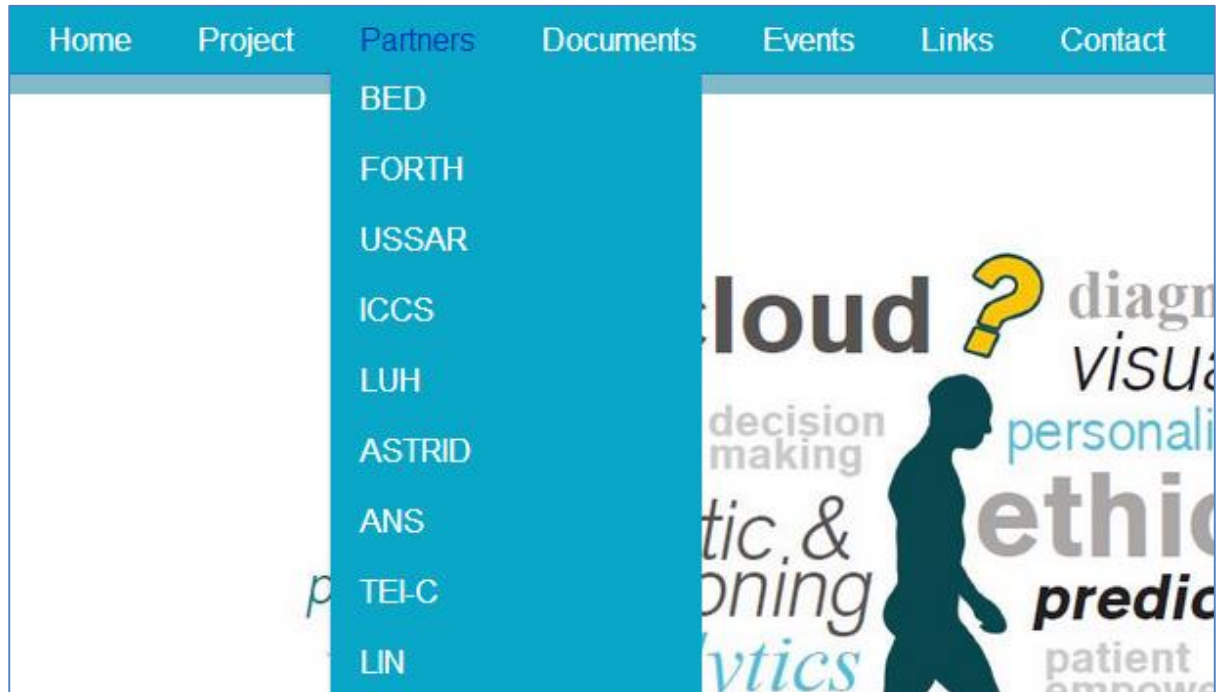
- Documents: This is the place where useful documents/electronic material will be published, e.g. the public deliverables of the project, the project logo, the project flyer etc.

- Events: This page contains the project events and any other relevant events (workshops, conferences etc.) => see Appendix 15

- Links: This page contains interesting links to e.g. other related EU project etc. => Appendix 16

- Contact: This page contains the contact information of the Coordinator => see Appendix 17

1.7 Implementation and hosting

The website is implemented using the open-source content management system WordPress (http://wordpress.org/). Wordpress is based on PHP and MySQL.

The website is designed by ICCS and it will be hosted, for the following three years, in the servers of National Technical University of Athens (NTUA). (ICCS is associated with the School of Electrical and Computer Engineering of the NTUA).

Appendix 1 – Home

Appendix 2 – Project => In Brief

Project Summary

Owing to the highly fragmented health systems in European countries, gaining access to a consistent record of individual citizens that involves cross-border activities is very difficult. MyHealthAvatar is a proof of concept for the digital representation of patient health status. It is designed as a lifetime companion for individual citizens that facilitates the collection of, and access to, long-term health-status information. This is extremely valuable for clinical decisions and offers a promising approach to acquire population data to support clinical research, leading to strengthened multidisciplinary research excellence in supporting innovative medical care.

MyHealthAvatar is built on the latest ICT technology with an aim of engaging public interest to achieve its targeted outcomes. In addition to data access, it is also an interface to access integrative models and analysis tools, utilizing resources already created by the VPH community. Overall, it contributes to individualized disease prediction and prevention and supports healthy lifestyles and independent living. It exerts a major influence on the reshaping of future healthcare in the handling of increased life expectancy and the ageing population in Europe. This complies with the priority and strategy of FP7 ICT for healthcare, and constitutes a preparatory action aiming at the grand challenge on a "Digital Patient", which is currently the subject of a roadmap in the VPH community.

MyHealthAvatar places a special emphasis on engaging the public. It has huge implications to the society both socially and economically. A personal avatar can potentially change the way we think, communicate and search for information. Meanwhile, the acceptance of the avatars by the public opens opportunities for many industrial sectors, leading to the reinforced leadership of European industry.

Duration
36 months
Start date
March 2013

Total Cost

3,364,588.00 €

Project Funding (EU Funding)

2,447,000.00 €

Full Title

A Demonstration of 4D Digital Avatar Infrastructure for Access of Complete Patient Information

Programme

7th Framework Programme of European Commission – ICT (FP7-ICT-2011-9)

Project Identifier

600929

Appendix 3 – Project => Concept

What is MyHealthAvatar?

MyHealthAvatar is a solution that offers access, collection and sharing of long term and consistent personal health status data through an integrated digital representation of an in silico environment, which helps to deliver clinical analysis, prediction, prevention and treatment tailored to the individual citizen.

The MyHealthAvatar project is a research and demonstration action, through which the feasibility of an innovative representation of the health status of citizens for future healthcare – 4D MyHealthAvatar, is studied. A 4D avatar is a unique interface that allows data access, collection, sharing and analysis by utilizing modern ICT technology, overcoming the shortcomings of the existing resources in Europe, which is highly fragmented. It will become the citizen's lifelong companion, providing long-term and consistent health status information of the individual citizen along a timeline representing the citizen's life, starting from birth. Data sharing is encouraged, which potentially provides to an extensive collection of population data and offer extremely valuable support to clinical research. The avatar is equipped with a toolbox to facilitate clinical data analysis and knowledge discovery.

As a proof of concept, the project is building a test system, featuring the following properties:

- Information collection and access.
  The 4D avatar functions as an interface to support the collection of, and access to, the complete medical information relating to individual citizen's health status, gathered from different sources, including medical data, documents, lifestyle and other personal information, represented along a timeline. Also, it is an interface to access integrated predictive computer simulation models which foresee the growth of the disease and the effect of treatment.
  The system has:

  o Internal data repositories to store individual data for the avatars
  o An internal model repository to store models commonly used by all the avatars.
  o Links to external sources, such as hospitals' Electronic Health Records (EHRs) and other data and model repositories.

A range of modern ICT techniques facilitates the data collection and information access, including:

- o Information extraction from the web and data collection using mobile apps;
- o Semantics and linked data to support the data/model searching and reasoning.

- Data management and sharing, which is controlled by the individual citizens. They decide how the data is shared by stakeholders. MyHealthAvatar is a tool that allows highly self-motivated data management and user-centred data collection, supported by the necessary data integrity measures. The citizens have full rights to share their own data. For example, the avatar data can be shared with physicians for clinical treatment, with research organisations to support clinical research, or with other individual patients on a volunteer basis. These are supported by the underlying ICT architecture, which have adequate measures to ensure data reliability and integrity.

- Information analysis using an integrated ICT toolbox, which is a vehicle by which medical professionals can augment their clinical knowledge with heterogeneous information from the avatar for clinical decision making and knowledge exploration.
  It offers significant assistance to doctors by:
  - o displaying related information in a body-centric view around the avatar.
  - o allowing simulation via access to the model repositories, supported by the computing resource that is provided by the architecture.
  - o performing visually assisted data analysis (i.e. visual analytics) to extract clinically meaningful information from the heterogeneous data of individual/shared avatars, such as the patterns of symptoms, experience of treatments, medicines, self care guidelines, risk factors etc..

The consortium strongly believes that healthcare should not only care for patients but also look after the health and wellbeing of citizens. It needs to be applied to healthy people by maintenance of a healthy lifestyle and the notification of early symptoms. Hence, MyHealthAvatar targets both healthy citizens and patients.

Appendix 4 – Project => Benefits

Benefits

By integrating digital health information access at a global scale, MyHealthAvatar will meet many common demands from the VPH community and from the highly diverse European healthcare systems. The most explicit benefits that match the initiative of VPH include:

o **Personalised**

The avatar is a highly individualised metaphor. The information accessible from the avatar is a life-long record of the individual citizen that offers an useful input to doctors and helps them to carry out personalised healthcare for individuals and groups (women, children, etc);

o **Predictive**

The integrated ICT toolbox of the avatar system offers the power of predictive diagnosis and treatment through access to the predictive models and data analysis tools. The use of these tools shows the quantified progress of the patient and promotes a better modulation of treatment and a faster recovery. These improve the reliability, repeatability and timeliness of medical decisions and interventions.

o **Integrative**

The integrated ICT toolboxes allow access to a set of integrative models, data analysis tools and a comprehensive collection of datasets to support clinical decisions. The integrative approach allows the clinicians to take into account multiple aspects that are influential to health, addressing the complexities in diagnosis, prognosis and treatment selection from the rising number of patients with multiple morbidities.

o **Affordable**

MyHealthAvatar features the adaptation of a range of latest ICT technology with the aim of improving the effectiveness of the systems and enhancing patient engagement. This provides a new dimension in healthcare and enhances the sustainability of healthcare systems for dealing with challenges such as the increasingly ageing population in Europe.

As a result of this ageing of the population, healthcare and associated social welfare costs are growing exponentially and they will soon become unsustainable unless we change the

way in which people are supported. In many cases, there is a need to shift medical care from institutions to the home environment. To this end, ICT tools are being proposed and studied to reform the traditional ways in which medical data are recorded, tested and analyzed, without in any way reducing its quality. MyHealthAvatar will make it possible to set up new interactions between doctors and patients to maintain the quality and intensity of treatment at a more sustainable cost.

MyHealthAvatar can be viewed as a personal bag carried by individual citizens throughout their lifetime. It is a companion that continually follows the citizen and empowers them to look after their own health records. This fits well into the recent trend of developing patient-centred healthcare systems.

MyHealthAvatar can also help resolve some legal and ethical issues in data sharing. Information and data sharing between different institutions across Europe is a huge challenge involving extremely complicated legal and ethical problems. To this end, it is much easier to let individual citizens manage their own data and to determine how and where it is exposed and shared for clinical and other purposes. Therefore, MyHealthAvatar strikes a good balance between the individual and society conflict.

MyHealthAvatar supports an infrastructure to maximise the yield of biomedical research expenditure through integrated models and data. It supplies healthcare providers with ICT capacity in terms of integrating the patient information into a coherent entity, which subsequently offers medical professionals and researchers an interface for the access of a large set of patient information through the sharing of the avatar data, and for blending information with extreme heterogeneity, including those from different data sources, different models, organ systems, space-time scales and modalities. Notably, MyHealthAvatar takes advantage of recent ICT advances in the integration of simulation models, semantic and data reasoning and visual analytics technology within a cloud-based architecture in order to target effective information collection, access, analysis and new knowledge discovery.

Appendix 5 – Project => Innovation

An innovative approach

MyHealthAvatar consortium regards the promotion of public (i.e. clinicians and citizens) engagement as the key to the success. We believe that the public involvement can only been promoted if they receive tangible benefits through the use of the avatars. These tangible benefits include allowing data collection with minimal user efforts; providing useful toolkits for clinical supports, etc.

Fortunately, modern ICT technology offers the capacity to achieve these benefits. Indeed, today's ICT technology such as Internet, visual analytics and mobile phones that facilitate distance communication, information access, analysis and sharing is expected to play a substantial role in future healthcare. Within the context of MyHealthAvatar, the latest ICT is used to promote user participation by providing the means of highly automatic data collection and by offering useful prediction and analysis tools.

To this end, the main contribution of MyHealthAvatar can be summarized as follows:

o **A citizen centred avatar that promotes self-engagement of citizens**

MyHealthAvatar is designed as a life time companion of citizens rather than as just a patient avatar. The data accessible through the avatar interface is in a more comprehensive context beyond the scope of clinical data – it includes a life time collection of patient life style and other environmental data in addition to the clinical data. Such a completed life record adds extremely useful values to clinical assessments and decision making.

MyHealthAvatar increases patient empowerment. It is motivated by the growing attention of the self-engagement of patients and the availability of modern ICT in the promotion of clinical information gathering and exchange. In fact, there is a growing attention on the self engagement of patients in the future healthcare. Patients are expected to play more significant roles in the future of healthcare.

- o **Innovative ICT to support data collection, search and reasoning**

  Data collection is one of the keys to the success of the avatar. Since this requires active involvement of the patients, the input of the data needs to be as much effortless as possible. To this end, MyHealthAvatar utilises the latest ICT technology for data gathering and information searching. Mobile phone techniques are also used to collect the data from patients.

  In fact, the web is a huge source of information. Making use of this information source supports the enrichment of the data collection. The Internet resource is an effective means of engaging users in terms of attracting their input. MyHealthAvatar employs the latest techniques in web information extraction (IE or WI) for information gathering from social network and other websites in a semi-automated way. In particular, we mainly focus on information extraction from the social media as a novel way for data collection. Exponentially increased amount of valuable information is buried in social networks nowadays owing to their ever growing popularity. Connecting to the social network is also an ideal way to engage users who are willing to provide their information through the networks. Due to the constant user engagement, the information extracted from the social network is often more completed and up to date.

- o **Useful toolbox to support clinical analysis**

  MyHealthAvatar also features a toolbox, which benefits the clinicians and patients by allowing the integration of clinical knowledge with visual data analysis tools and computer simulations for the prediction of diseases growth and treatments and for clinical knowledge discovery.

- o **ICT infrastructure to support data access, management, sharing and security**

  MyHealthAvatar is supported by modern ICT architecture to allow data management, sharing and data security. A cloud architecture provides the benefit from the latest ICT technology in terms of providing secured data storage and access and powerful computing capability.

  Also, a solution for a local cloud for avatar is being studied, which makes use of computing facilitates within the model/data hosting organizations to support data analysis for the avatars without the need to transfer the data remotely.

- o **Close work involving patients**

The project involves patients and evaluate the tools in a spiral way to optimize the tools according to the needs of patients. MyHealthAvatar has legal and ethical framework that people can trust. They do know what happens with their data.

Appendix 6 – Partners => BED

University of Bedfordshire

The University of Bedfordshire,formed in August 2006 from an amalgamation of the University of Luton and the Bedford campus of De Montfort University, now has 25,000 students.

The Department of Computer Science & Technology comprises 40 academic staff and is responsible for the delivery of 20 awards. The Department regularly enrols over 500 postgraduate students on its taught Masters degrees and it has more than 50 PhD students. The Department has a strong record of international collaboration, in both research and in teaching, where it has collaborative agreements with universities in many countries. The research lab currently contains researchers of 13 different nationalities.

The Centre for Computer Graphics and Visualisation (CCGV) has undertaken research in computer graphics, computer animation and visualisation for over 20 years. It specialises in developing visualisation solutions to real-world problems and has been particularly active in the area of medical applications. It has extensive knowledge and experience of GPU algorithms through research. It has been involved in over 25 internationally funded projects (including projects in FPs4,5,6,7) over the last 14 years.

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Photos

Appendix 7 – Partners => FORTH

Foundation for Research and Technology

The Foundation for Research and Technology – Hellas (FORTH) is one of the largest research centres of Greece. The research and technological focus of the foundation is centred on selected areas of great scientific, social, and economic interest. Its high quality research results as well as its valuable socioeconomic contribution, make FORTH one of the top research centres internationally.

The Institute of Computer Science (ICS) – through its Computational Medicine Laboratory – is involved in PM4PM. The Institute of Computer Science, (ICS) was formed in 1983 and it has broad on-going R&D efforts including information systems, image processing and pattern recognition; computer vision; sensor technologies; digital communications; network management; computer architectures; humancomputer interaction and biomedical informatics. ICS-FORTH maintains close links with industry and has played a major role in the development of the Science and Technology Park of Crete (STEP-C). The ICS-FORTH group involved in the current proposal is the Computational MEdicine Laboratory which is an active participant in national and international standardisation activities.

It has recently been involved in several projects and initiatives related to this project, e.g. ACGT (FP6), ContraCancrum, P-Medicine, INTEGRATE, EURECA and Tumor (all as a coordinator in FP7). In these projects FORTH/CML has acted as a key technology provider focusing on architectures, semantic inter-operability, mark-up languages and implementation of tools for predictive, multi-scale models.

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1. http://www.ics.forth.gr/index-gr.html

Photos

Appendix 8 – Partners => USAAR

Saarland University

At the Faculty of Medicine (University Hospital), located in Homburg/Saarland more than 1800 people are studying medicine. There are 36 hospitals or institutions treating more than 54.000 inpatients and nearly 190.000 outpatients each year. The clinical participant from Saarland University is the department of Paediatric Oncology and Haematology that is responsible for the care of patients in the Saarland and the surrounding area. The research focus of the Department of Paediatric Oncology and Haematology is nephroblastoma and brain tumours (clinical trials and basic research in cooperation with different institutes) and brain tumour.

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1. http://www.uni-saarland.de/campus/fakultaeten/professuren/medizin-bereich-klinische-medizin/paediatrie/professuren-fr-215-paediatrie/graf.html
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Photos

Appendix 9 – Partners => ICCS

Institute of Communication and Computer Systems

The Institute of Communication and Computer Systems (ICCS) is an academic research body affiliated to the National Technical University of Athens (NTUA). It is the research host of the School of Electrical and Computer Engineering of NTUA. It has participated in and coordinated numerous large scale research and development projects funded by the European Commission in both FP6 and FP7 frameworks.

In Silico Oncology Group (ISOG), Laboratory of Microwaves and Fibre Optics, ICCS-NTUA is a world leader in the field of the emergent discipline of in silico oncology. Several novel, clinically driven and clinically oriented simulation models have been developed, tested and disseminated by the In Silico Oncology Group. ISOG has founded the workshop series "International Advanced Research Workshops on In Silico Oncology". It has also led several actions/workpackages related to in silico oncology in the following EC funded projects: ACGT (Advancing Clinicogenomic Trials on Cancer), ContraCancrum, TUMOR(transatlantic), p-medicine as well as in other international and intercontinental research initiatives. ICCS-NTUA (G. Stamatakos) in collaboration with Massachusetts General Hospital/ Harvard Medical School (T. Deisboeck) co-organized scientifically the First Transatlantic (EU-US) Workshop on Multiscale Cancer Modeling (ICT 2008, Brussels 2008). The latter was co-funded by EC and the National Cancer Institute (NCI), US. A multi-author, transatlantic CRC textbook partly based on the workshop lectures was published in 2010/2011.

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Photos

Appendix 10 – Partners => LUH

Leibniz Universität Hannover

LUH participates in MyHealthAvatar through the Institute of Legal Informatics (IRI) which is the oldest establishment dedicated to scientific research on legal problems of Information and Communication Technologies nationwide.

IRI undertakes research and education activities in information technology law covering the full spectrum of the discipline.

The Institute's research includes the requirements, applications and consequences of computer usage both in the legal system and in practice. A multitude of structural and specific questions in numerous fields are investigated empirically and on an interdisciplinary basis.

Topics have included information systems in personnel, telecommunication, data protection law, international data traffic, medical data protection law, medical data in the health insurances and electronic registration.

IRIs focus will lie on identifying and creating the data protection framework for MyHealthAvatar by providing its legal and ethical expertise and experience in the fields of data protection and ethics.

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1. http://www.iri.uni-hannover.de/home.en.html

Key Publications

Books:

- Benno Barnitzke/Marcelo Corrales/Nikolaus Forgó,
Aspectos legales de la computación en la nube [Legal Aspects of Cloud Computing],
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- Nikolaus Forgó/Regine Kollek/Marian Arning/Tina Krügel/Imme Petersen,
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Photos

Appendix 11 – Partners => ASTRID

Astrid Research Kft.

Astrid Research is one of the leading medical/bioinformatics companies in Central Eastern Europe. It is a knowledge-based research SME in which medical doctors, molecular biologists, software engineers, chemists and mathematicians work in close cooperation in multidisciplinary teams. Astrid's main focus is on creating software and hardware solutions to support research activities in life sciences. Astrid began research in medical image processing in 2007, its first project being the automated detection of melanoma malignum on digital images. During this time several software applications were developed supporting telemedicine, patient compliance and therapy adjustment.

Later that year, as the personalized medicine era started to enter, the company put greater effort into high throughput data analysis and biostatistics. Astrid's strong points are genomic bioinformatics, automated phenotyping and data analysis of high throughput technologies (e.g. microarray, NGS, chromatography), processing and evaluation of data from different data sources (e.g. data from lab experiments, clinical data, image processing), data mining and biostatistics.

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1. www.astridbio.com

Key Publications

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Photos

Appendix 12 – Partners => ANS

AnSmart Ltd

AnSmart Ltd. is engaged in developing advanced computer intelligent techniques in computer vision, image processing and machine learning for commercial market. It is a research driven SME, which provides intelligent computing solutions to enable customers to have easy access, management, analysis and visualisation of data. The software applications are highly customizable to modern hand-held devices, such as mobile phones, tablets, and PCs. The company has dedicated a research and development team consisting of PhD experts, who have substantial knowledge in artificial intelligent, machine learning and medical image analysis.

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Key Publications

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Appendix 13 – Partners => TEI-C

Technological Educational Institute of Crete

The Technological Educational Institute of Crete was founded in 1983. It is a higher educational institute with full University status. It now comprises the Schools of Applied Technology, Health & Welfare Services, Management & Economics and Agricultural Technology. In addition, there are departments of general sciences, foreign languages, and physical education. With a permanent teaching staff of 200 and approximately 10,000 students, TEI is a thriving academic institution.

The Department of Applied Informatics and Multimedia was established in 2000 within the Faculty of Applied Technologies of the Technological Education Institution of Crete. Today, the Department has grown into a fully operational educational and research unit with more than 2,500 undergraduate students and a number of postgraduate and PhD students. In parallel to its educational goals, the Department operates a number of Research and Development laboratories. Amongst those research laboratories is the Biomedical informatics and eHealth technologies lab, focusing on the innovative application of mainstream computer science methods, tools and technologies in the domain of translational medicine, bioinformatics and eHealth and the Interactive Software Technologies & System Engineering Laboratory, which focuses on a range of technological areas with an emphasis on Human Computer Interaction, Visual querying mechanisms, Computer Supported Collaborative Work, and Virtual Organization Informatics.

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1. http://www.teicrete.gr/tei/el/index.php

Key Publications

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Appendix 14 – Partners => LIN

University of Lincoln

University of Lincoln is a research based university with quality teaching and excellent research. The school of computer science at University of Lincoln provides a range of expertise in Computing Technologies and Information Systems, including specialists in computer vision and image engineering, medical imaging for cancer diagnosis and treatment, robotics and autonomous systems, social computing, games computing, cultural computing and business computing. The school scored highly in the UK Research Assessment Exercise (RAE 2008) with 85% of its outputs ranked at international quality or better with 15% ranked world-leading.

The Laboratory of Vision Engineering, at School of Computer Science, has been active in the area of medical imaging, including the development of new medical imaging devices and systems, as well as the exploration of advanced computing technology to detect and understand cancerous growths in various human organs from multi- modality images. The centre has an excellent track record in both publications and external grants, including the recent reward of a major £1.6m Wellcome Grant to develop dosimetry and imaging for proton therapy (pravda).

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Key Publications

- X.Ye, H.Roth, G. Slabaugh, X.Yang, M, Hung, J.McQuillan, D.Hawkes, S.Halligan,

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IEEE Transactions on Biomedical Engineering, Vol 57, No 7, pp 1810-1820, 2009

Photos

Appendix 15 – Events

The agenda view

The monthly view

Appendix 16 – Links

CHIC	**CHIC – Computational Horizons In Cancer (CHIC)** Developing Meta- and Hyper-Multiscale Models and Repositories for In Silico Oncology.
p medicine personalized	**p-medicine – From data sharing and integration via VPH models to personalized medicine** Between ACGT (Advancing Clinico Genomic Trials on Cancer), ContraCancrum and p-medicine a close interaction will take place, as several of the partners are also enrolled in these three European funded projects.
TUMOR	**TUMOR** is a 3-year collaborative project co-funded under the 7th Framework programme of the European Community. The project aims at implementing a EU cancer model/data repository, and developing/providing specific tools and methods for the collection, curation, validation and customization of existing EU and US cancer models, by linking the most significant relevant EU VPH projects on cancer modelling (ContraCancrum, ACGT), and the US project (CViT).
ContraCancrum	**ContraCancrum – Clinically Oriented Translational Cancer Multilevel Modelling** Between ACGT, ContraCancrum (Clinically Oriented Translational Cancer Multilevel Modelling) and p-medicine a close interaction will take place, as several of the partners are also enrolled in these three European funded projects.
Virtual Physiological Human network of excellence	**Virtual Physiological Human-Network of Excellence** VPH is designed to foster, harmonise and integrate pan-European research in the field of patient-specific computer models for personalised and predictive healthcare and ICT-based tools for modelling and simulation of human physiology and disease-related processes.
eureca	**EURECA** The goal of EURECA (Enabling information re-Use by linking clinical REsearch and Care) is to enable seamless, secure, scalable and consistent linkage of healthcare information residing in electronic health record (EHR) systems with information in clinical research information systems, such as clinical trials.
RESPECT	**RESPECT** Rules,Expectations & Security through Privacy – Enhanced Convinient Technologies.
CONTRACT CONSENT IN A TRIAL & CARE ENVIRONMENT	**CONTRACT** **CONTRACT** seeks to understand the way the European Data Protection Directive and the Clinical Trials Directive have had and continue to have an impact on the success of translational research.
Ponte	**PONTE** Efficient Patient Recruitment for Innovative Clinical Trials of Existing Drugs to other Indications **PONTE** is a European project standing for Efficient Patient Recruitment for Innovative Clinical Trials of Existing Drugs to other Indications. PONTE provides a platform following a Service Oriented Architecture (SOA) approach that offers intelligent automatic identification of individuals eligible to participate in clinical trials (concerning their safety and clinical trial efficacy).

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