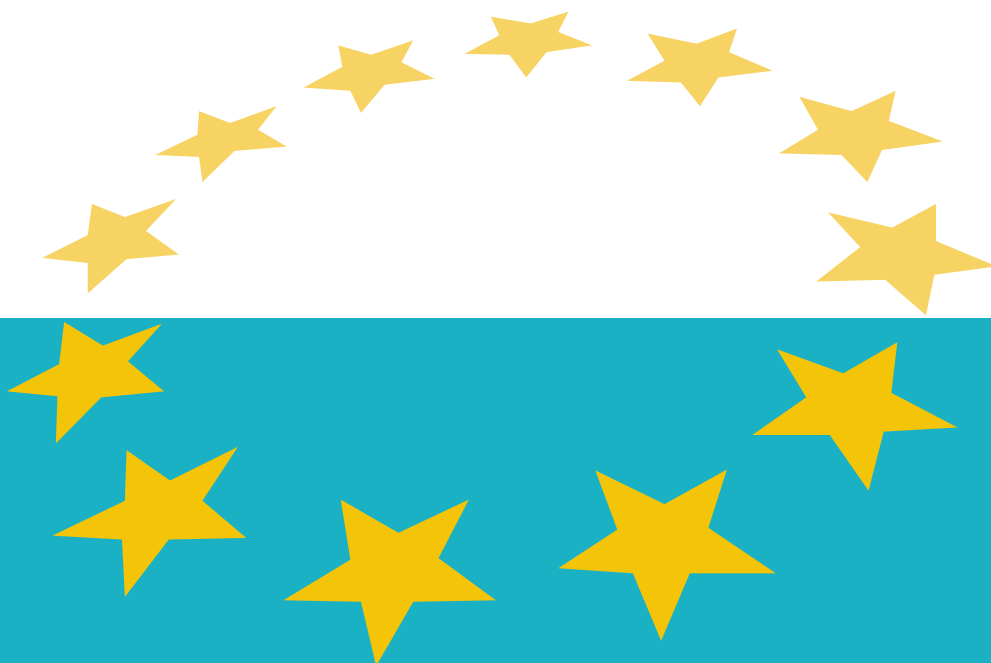


**Draft version**

20. december 2006



# **EU'S 7. RAMMEPROGRAM**

Overblik og muligheder for projekter inden for sundhedsIT



**sundhedsITnet**

NETVÆRK FOR IT-BASEREDE SUNDHEDSYDELSE

Draft

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# 1. Indledning

SundhedsITnet - netværket for it-baserede sundhedsydelse - sætter i 2007 fokus på EU's 7. rammeprogram for forskning og teknologisk udvikling.

Det gør vi fordi programmet åbner perspektiver og store muligheder for både nationalt og internationalt samarbejde mellem virksomheder, sundhedsudbydere og forskere med interesse for sundhedsIT og udvikling af it-baserede sundhedsydelse

SundhedsITnet er som netværk netop sat i verden for at *matchmake* mellem virksomheder, sundhedsudbydere og forskere for herigennem at skabe et fælles grundlag for forskning og udvikling af it-baserede sundhedsydelse.

Ansøgningsprocesser tager tid, særligt EU-ansøgninger. Derfor handler det om at blive tunet ind på mulighederne i tide, så man kan finde samarbejdspartnere i god tid inden deadline for ansøgningen.

Derfor håber vi også på at høre fra netværkets medlemmer og andre EU-ansøgningsinteresserede, så vi kan tage initiativ til at bringe jer sammen i løbet af foråret til netværkets matchmaking arrangementer.

Vi har med tilladelse fra Videnskabsministeriets Eurocenter genbrugt deres overordnede beskrivelse af rammeprogrammet. Faggruppeleder i sundhedsITnet, Professor Morten Kyng fra Center for Pervasive Healthacare på Aarhus Universitet, har desuden bidraget til at pege på de 'Challenges', der er særligt relevante at fokus på set i et sundhedsIT perspektiv.

Det er vigtigt at pointere, at denne rapport *ikke* er den endelige udgave fra os, men en 'draft version', der har til formål - så tidligt som muligt - at vise, hvilke overordnede muligheder, der ligger i rammeprogrammet og hvordan teksten ser ud pt.

EU vil i løbet af af de kommende uger komme med endelige udgave af de dokumenter, der ledsager de deadlines for calls, der samtidig bliver meldt ud. Disse EU-dokumenter kan også indeholde sidste minuts justeringer i forhold til fokusområder.

Umiddelbart herefter vil sundhedsITnet udgive en tilsvarende endelig udgave af denne rapport i trykt form. Den bliver gratis for netværkets medlemmer og kan købes af andre interesserede.

God læselyst!

*Venlig hilsen*

*sundhedsITnet  
sekretariatet*

## 2. Overblik > indsigt > matchmaking

Hensigten med denne rapport er at informere om mulighederne i EU's 7. rammeprogram på et let og overskuelig måde - og samtidig fokusere på de programmer og puljer, der er særligt relevante for aktører med interesse for sundhedsIT.

Det skulle gerne give mulighed for at hjælpe med at samle aktører og organisationer i interessegrupper i forhold til de forskellige muligheder og fokusområder, der er inden for sundhedsIT.

Vi opfordrer derfor netværkets medlemmer og andre interesserede til at kontakte sekretariatet i sundhedsITnet, hvis I har ambitioner om at ansøge og ønske at finde samarbejdspartnere til en ansøgning.

### Matchmakingmøder

SundhedsITnet vil - som opfølgning på rapporten - afholde to matchmakingmøder, sandsynligvis i løbet af februar 2007 i henholdsvis Østdanmark og Vestdanmark. Her vil det være muligt at finde partnere til projekter under EU's 7. rammeprogram.

Her vil der også blive mulighed for at få yderlige oplysninger om rammeprogrammet og møde virksomheder, sundhedsudbydere og forskere med erfaring i deltagelse i EU-forskningsprojekter – men også andre med mod på at kaste sig ud i et EU-forskningsprojekt for første gang!

Det er ikke fastlagt, hvornår vi afholder disse matchmakingmøder, da det afhænger af jeres interesse og tilbagemeldinger samt af, hvornår de endelige deadlines og dokumenter fra EU foreligger.

Vi vil naturligvis løbende informere om netværkets publikationer og aktiviteter på netværkets hjemmeside [www.sundhedsIT.net](http://www.sundhedsIT.net), så hold øje med siden. Det er også muligt at tilmelde sig vores e-nyhedsbrev gratis via hjemmesiden, hvor vi vil formidle de relevante annonceringer (calls) fra EU.

### 3. Hvorfor deltage i EU's 7. rammeprogram?

Der er flere gode grunde til at deltage i 7. rammeprogram.

Her er nogle af dem, ifølge Videnskabsministeriets Eurocenter:

1. Medfinansiering af virksomheders og forskningsinstitutioners udgifter til forsknings- og udviklingsprojekter
2. Adgang til ny viden, kompetencer, teknologi, udstyr og anlæg
3. Øget indtjening, når projektresultaterne anvendes kommercielt
4. Opbygning af et internationalt netværk kan give adgang til nye markeder og nye forsknings- og udviklingsprojekter
5. Kvalitetsstempling af forskningen kan åbne døre til nye samarbejdspartnere og finansieringskilder
6. Synlighed og status på området kan resultere i en bedre markedsposition
7. Bedre interkulturel viden og forståelse via samarbejdet med forskellige lande og sektorer.

## 4. EU's 7. rammeprogram – et overblik

### Indledning

Forskning, innovation og udvikling i verdensklasse er et af hovedpunkterne på den europæiske dagsorden. EU har afsat 50,5 milliarder euro til det nye forskningsbudget. Milliarderne skal formidles gennem EU's 7. rammeprogram for forskning og teknologisk udvikling i årene 2007-2013.

Det store satsningsområde i rammeprogrammet er særprogrammet COOPERATION, der omfatter ti forskellige forskningsområder. Områderne spænder vidt fra sundhed og bioteknologi over informations- og nanoteknologi til socioøkonomi og humaniora.

Særlige tiltag for højteknologiske firmaer, stipendier til individuelle forskere og støtte til store forskningsnetværk med mange aktører, er et udpluk af mulighederne i oplægget til det næste rammeprogram.

### De fem særprogrammer i 7. rammeprogram

Forskningsprogrammet består af fem særprogrammer. Langt størstedelen af budgettet er fordelt på de fire særprogrammer, COOPERATION, IDEAS, PEOPLE og CAPACITIES. Det femte særprogram er Det Fælles Forskningscenter (Joint Research Center, JRC).

Budgettet for 7. rammeprogram på i alt 50,5 milliarder euro (cirka 380 milliarder kroner) forventes fordelt som følgende:

COOPERATION:	32,365
IDEAS:	7,46
PEOPLE:	4,72
CAPACITIES:	4,21
Fælles Forskningscenter (ikke-nuklear):	1,75
<i>I alt milliarder euro:</i>	<i>50,52</i>

En detaljeret budgetoversigt findes på EU's hjemmeside: [http://cordis.europa.eu/fp7/budget\\_en.html](http://cordis.europa.eu/fp7/budget_en.html)

Denne rapport fokus er på COOPERATION, som vi vurderer, er mest relevant for de fleste af sundhedsITnets medlemmer. Under COOPERATION er der desuden ti udvalgte forskningstemaer, som EU blandt andet satser på.

- **Sundhed**
- Fødevarer, landbrug og bioteknologi
- **Informations- og kommunikationsteknologi**
- Nanovidenskab og -teknologi, materialer og nye produktionsteknologier
- Energi
- Miljø inkl. klima
- Transport inkl. luftfart
- Samfundsvidenskab og humaniora
- Rumfart
- Sikkerhed

## Andre elementer i det 7. rammeprogram

### De små firmaer i det store rammeprogram

Kommissionen lægger stor vægt på, at deltagelsen fra små og mellemstore virksomheder (SMV'er) bliver høj. I det 6. rammeprogram var der to programmer specifikt rettet imod SMV'er, CRAFT og Collective Research. Begge ventes videreført i det 7. rammeprogram med mindre justeringer. Budgettet forventes at blive forøget kraftigt til cirka 1,3 milliarder euro. Derudover er midler til SMV'ernes deltagelse i rammeprogrammet, i programmet for konkurrenceevne og innovation (CIP).

### Lettere administration

Det skal fremover være lettere at søge forskningsmidler fra EU, og det skal være mindre bureaukratisk at have en EU-kontrakt. Ambitionen er at lade eksterne aktører administrere dele af 7. rammeprogram. Især tilstræbes det, at funktioner, der består af mange små delopgaver, blive outsourcet.

### Andre muligheder i EU's 7. rammeprogram

Som i 6. rammeprogram tilskynder Kommissionen til etablering af teknologiske platforme. Her sætter repræsentanter fra industrien, forskningsverdenen, myndigheder m.m sig sammen og bidrager aktivt til formulering af EU's forskningspolitiske dagsorden. De teknologiske platforme er åbne for nye medlemmer.

### Læs mere om EU's 7. rammeprogram

Følg udviklingen på [Europa-Kommissionens website Cordis](#).

Yderligere oplysninger fås hos EuroCenter på telefon 7220 2900 eller e-mail [ec@eurocenter.info](mailto:ec@eurocenter.info)

## 5. SundhedsIT – udvalgte 'challenges' og 'objectives'

### 5.1 Baggrund

Der er to temaer indenfor COOPERATION, der skal fremhæves i forbindelse med sundhedsIT, nemlig hhv. **Sundhed** og **Informations- og kommunikationsteknologier (ICT)**.

**Informations- og kommunikationsteknologier (ICT)** er det største af de 10 temaer med et budget på 9.110 milliarder euro, der forventes fordelt til følgende emner:

- Informations- og kommunikationsteknologisøjler
- Integration af teknologier
- Applikationsforskning
- Fremtidige og fremspirende teknologier.

**Sundhed** har et budget på 6.050 milliarder euro og forventes fordelt til følgende emner:

- Bioteknologi, generiske værktøjer og teknologier til gavn for human sundhed
- Oversætte forskningsresultater til gavn for menneskets sundhed
- Optimere sundhedstilbud til Europas borgere.

Det mest relevante program ift. at etablere nye konsortier inden for 'it og sundhed' er ICT-programmet under COOPERATION. Sundheds-programmet forventer i højere grad at rette sig mod "sundhedssiden", hvor det desuden er påkrævet, at man bliver tilknyttet eksisterende konsortier, der ledes af "medical organizations".

### 5.2 Informations- og kommunikationsteknologi (ICT) - udvalgte Challenges

En beskrivelse af ICT-programmet og udkastet til *ICT Work Program 2007-08 (draft)* findes her: <http://cordis.europa.eu/fp7/ict/>

ICT-arbejdsprogrammet 2007-08 definerer de prioriteringer som vil blive benyttet til at evaluere de ansøgninger, der vil komme ind på baggrund af ansøgningsrunderne (calls) i 2007.

Den første annoncering (call) inden for ICT programmet forventes at komme d. 22. december 2006 og lukker d. 23. april 2007.

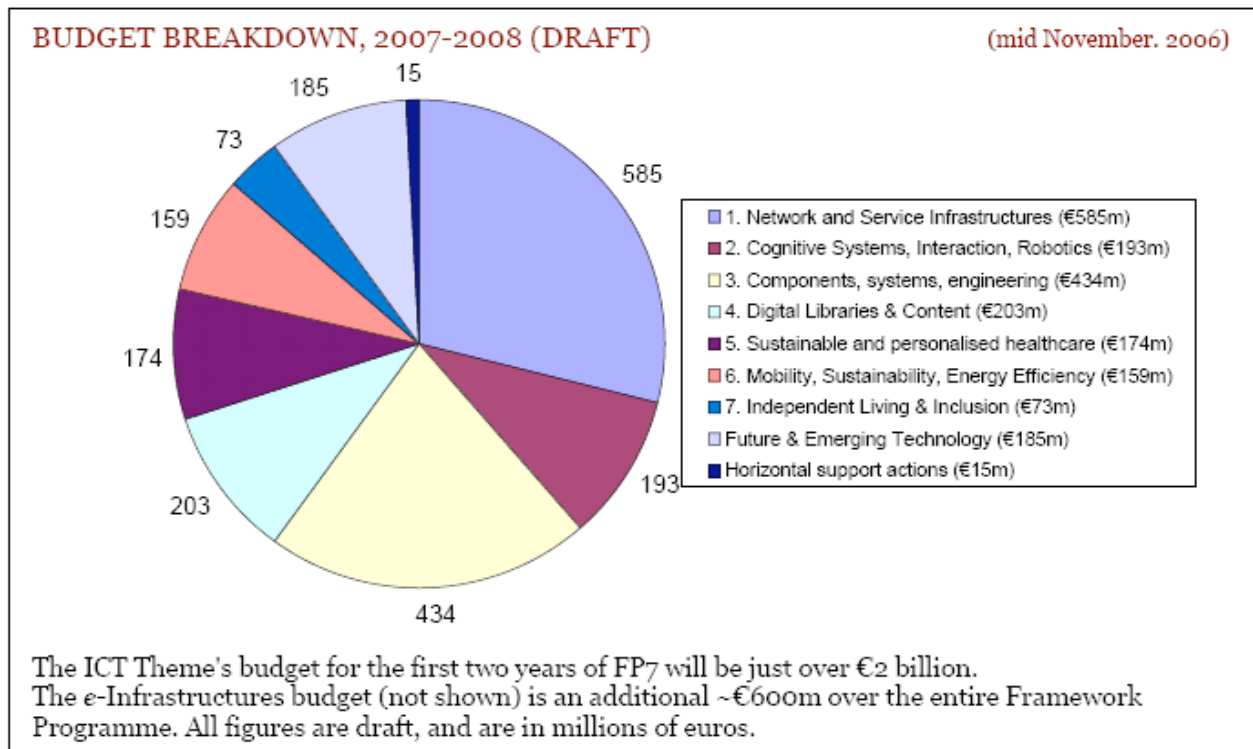
For sundhedsITnets medlemmer kan især følgende områder af ICT-programmet være særligt interessante:

*3.5 Challenge 5: Towards sustainable and personalised healthcare (se side XX i denne rapport)*

*3.7 Challenge 7: ICT for Independent Living and Inclusion (se side XX i denne rapport)*

Det forventes at de kommende annonceringer (calls) vil knytte sig til disse challenges, men den specifikke ordlyd kendes endnu ikke.

Følgende figur viser det forventede budget for hele ICT-programmet og herunder midlerne tildelt hhv. Challenge 5 og 7 (hhv. lilla og blå på figuren):



Kilde: "ICT in FP7 At a Glance" side 2, European Commission, november, 2006.

### 5.3 ICT – Objectives under Challenge 5 og 7

Beskrivelserne af Challenge 5 og Challenge 7 og de forskellige *objectives* under de to Challenges er hentet i sin fulde ordlyd fra udkastet til [ICT Work Program 2007-08](#). Når ICT Work Program kommer i sin endelige udgave, vil vi oversætte dele heraf, hvis der er ønske om det fra medlemmerne.

## Challenge 5 – introduction and objectives

### Towards sustainable and personalised healthcare

Europe is facing the challenge of delivering quality healthcare to all its citizens, at affordable cost. Prolonged medical care for the ageing society, the costs of managing chronic diseases, and the increasing demand by citizens for best quality healthcare are major factors. Healthcare expenditure in Europe is already significant (8.5% of the GDP on average) and rising faster than the economic growth itself<sup>1</sup>. The emerging situation calls for a change in the way healthcare is delivered and the way medical knowledge is managed and transferred to clinical practice. ICT are key to implement these changes in this information intensive domain.

ICT may offer useful capability to improve illness prevention and safety of care, facilitate active participation of patients and enable personalisation of care that open new opportunities in health and disease management. The new capabilities of modelling, simulation and biomedical imaging, combined with knowledge about diseases that ranges from molecular to organ and system levels, give rise to a new generation of predictive medicine. This will bring radical improvements to the quality and efficiency of our healthcare systems. In this challenge support will go to highly interdisciplinary research aiming at:

- Improved productivity of healthcare systems<sup>2</sup> by facilitating patient care at the point of need, health information processing and quicker transfer of knowledge to clinical practice.
- Continuous and more personalised care solutions, addressing the informed and responsible participation of patients and their informal carers (family/friends) in care processes, and responding to the needs of elderly people.
- Savings in lives and resources by focusing on prevention and prediction rather than on costly medical interventions after symptoms and diseases have developed.
- Higher patient safety by optimising medical interventions and preventing errors by helping to optimise medical interventions and to prevent errors.
- Leadership of the eHealth and medical imaging/devices industry that is well rooted in Europe, and attracting back to Europe research activities of the pharmaceutical industry.

All activities will address user needs, personal data security, confidentiality, privacy as well as the reimbursement scheme and legal framework for using new systems. Validation should include quantitative indicators of the added value and potential impact of the proposed applications. The integration in healthcare processes and the interoperability of eHealth systems should be part of the design and validation of the proposed solution. Solutions for chronic disease management will address the needs of many citizens (notably the elderly) for better health, well-being and mobility therefore contributing directly to the priority of achieving an **Inclusive European Information Society** as set in the strategic framework, **i2010 – European Information Society 2010**<sup>3</sup>.

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<sup>1</sup> Health at a Glance: OECD Indicators 2005.

<sup>2</sup> It is estimated that redundancy and inefficiency account for 25-40% of the \$3.3 trillion spent worldwide on healthcare every year (“The no-computer virus”, Economist, 28 April 2005).

<sup>3</sup> See COM COM(2005) 229 final : “i2010 – A European Information Society for growth and employment”

## Personal Health Systems for Monitoring and Point-of-Care diagnostics

Objective ICT-2007.5.1

### Target outcome:

a) **Personalised Monitoring:** Innovative systems and services aimed at health status monitoring for persons at risk or with chronic health conditions, including those associated with ageing<sup>4</sup>. Solutions will be based on wearable or portable/mobile ICT systems, which empower citizens to participate in healthcare processes and facilitate remote monitoring and care at preferred environments, including homes. Emphasis will be on non-invasive or minimally-invasive, multi-parametric monitoring, combined with expert feedback and care, in closed-loop systems. Multi-parametric monitoring will encompass various health parameters (e.g. vital body signs or biochemical analytes) that determine the health state of an individual, and can also include information regarding activity, location, social and environmental context. Intelligent systems will combine and correlate multi-parametric data with expert biomedical knowledge. The developed systems will be interoperable with electronic medical records and the proposed solutions will have potential for adoption in actual healthcare systems. Specific focus will be on:

1) *Chronic disease management:* Proposed solutions will have potential for integration in the healthcare process, including nursing care, primary or secondary healthcare and homecare. Intelligent closed-loop approaches will detect and assess trends and episodes, facilitate adaptive care (e.g. drug administration or new treatment regime) and promote doctor-patient interaction. This will be done, where clinically valid, remotely, anytime, anywhere, avoiding hospitalisation of patients.

2) *Preventive monitoring* for people at risk (e.g. with personal/family history related to a disease or medical episode) to identify evolving patterns/trends in health and lifestyle parameters (e.g. in immune system status, sleep, nutrition, activity), which indicate elevated risks of developing diseases or reveal episodes at early stages. Solutions will ensure the necessary involvement of healthcare professionals, facilitate personalised guidance, encourage citizen compliance or prompt for early medical intervention.

b) **Point-of-Care diagnostics:** Systems for multi-analyte screening applications at primary care level. These will be portable or handheld devices, based on e.g. microarray and Lab-on-a-Chip technologies, capable of carrying out multiple tests at e.g. genome, proteome, metabolome levels. They will be able to identify predisposition to diseases, enable early diagnosis of a disease or their recurrence, and also provide detailed information to aid treatment, such as dosage advice or indicate when an individual should not be treated by a particular drug. Systems will demonstrate significant advances in sensitivity and specificity, and also in processing, analysis and quality control of the data produced.

Particular attention will be paid to the interface with hospital and laboratory information systems and with electronic medical record systems. Projects will aim at targeted solutions that integrate all necessary technologies and components (e.g. sensors and networks, interfaces, intelligent algorithms, services over converged platforms). Wherever necessary, new technologies and components will be developed.

c) **Coordination and Support Actions** on the following three topics: (1) RTD roadmap on Personal Health Systems identifying emerging technologies and potential applications, taking into account user demand, business aspects, ethical and legal considerations. (2) Reliability aspects of wireless transmission of health-related information and any needs for exclusive radio frequency bands for continuous provision of care. (3) Promotion and further recommendations for interoperability of Personal Health Systems with other eHealth systems, in the landscape of continuous care.

Expected impact:

- A valuable contribution to the stabilisation of the cost of the health delivery systems without compromising the quality and efficiency of healthcare. Improving the productivity of healthcare systems by facilitating of patient care at the point of need and through better health information

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<sup>4</sup> Specialised activities related to elderly, like integration of health and social care systems, will be coordinated with Challenge 7.

- processing. Accelerating the establishment of interoperability standards and secure and seamless communication of health data between all involved partners, including patients. .
- Reinforced leadership of the EU Personal Health Systems industry, including consumer ICT products for initial assessment, monitoring and management of the health status.
  - Higher quality care at the patient location, and resource savings by reducing hospitalisation and costly medical interventions. Better support and increased reassurance for people at risk. Facilitation of more active participation of citizens in illness prevention and care processes.

Funding schemes

a-b): CP; c): CSA

Indicative budget distribution

72 M€:

a-b): CP 70.5 M€ (IP only); c): CSA 1.5 M€ Up to one CSA of maximum 500 K€ EC funding and 1 year duration for each topic

Call:

FP7-ICT-2007-1

## Advanced ICT for Risk Assessment and Patient Safety

Objective ICT-2007.5.2

### Target outcome:

a) **Advanced computerised adverse event systems:** Identification of common patterns in safety-relevant events beyond merely reporting nosocomial infections and/or Adverse Drug Events (ADE). These alerting and management support systems must incorporate new tools for prediction, detection and monitoring of adverse events and other relevant events impacting on patient safety. The solutions should be based on innovative data mining, integration techniques of existing databases and electronic health record systems, decision support systems, intelligent medication delivery (e.g. RFID-based), and adverse event reporting systems. Emerging technologies like semantic mining and semantic information integration should be validated on multimedia databases. Each proposal will include a validation scheme leading to quantitative benefits.

b) **New risk prediction for large scale events:** Investigation of all aspects related to ICT research in new risk prediction, assessment and management tools for preparation, surveillance, support and intervention in case of large-scale adverse health events. All relevant stakeholders in Europe and worldwide will be involved. This will complement the efforts done by DG Health and Consumer Protection's Health Emergency Operations Facility (HEOF) which uses a set of ICT tools to facilitate the spread of information concerning health related crisis<sup>5</sup>.

c) **Collaboration with Latin America countries:** Following previous and existing activities such as @Health project and @LIS programme (Alliance for the Information Society)<sup>6</sup>, a research project will aim at establishing collaboration between EU constituency and their Latin America counterparts in the area of patient safety. The proposal should build cooperation, transfer of technology and demonstration activities in the area of alert and decision support systems based on Electronic Health Records. The proposal should focus on the use of EU standards in this area.

### Expected impact:

- World-leading levels of patient safety with fewer medical errors and optimised medical interventions resulting in savings of lives and resources.
- Early alerts and improved management of large scale health-related crises through effective and automated risk prediction, assessment and management.
- Accelerated and wider adoption of future electronic health record systems.
- International cooperation between EU constituency and the Latin America counterpart. Uptake of EU standards in the electronic Health Records area in Latin America.

### Funding schemes

a): CP; b): CSA; c) CP

### Indicative budget distribution

30 M€:

a): CP 26 M€ of which a minimum of 9 M€ for IP and a minimum of 9 M€ for STREP

b): Up to one CSA of maximum 1 year duration and maximum EC funding of 1 M€

c) CP (STREP only): 3M€

Call

FP7-ICT-2007-1

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<sup>5</sup> See [http://ec.europa.eu/health/ph\\_threats/com/Influenza/influenza\\_level\\_en.htm](http://ec.europa.eu/health/ph_threats/com/Influenza/influenza_level_en.htm)

<sup>6</sup> See [http://ec.europa.eu/comm/europeaid/projects/alis/index\\_fr.htm](http://ec.europa.eu/comm/europeaid/projects/alis/index_fr.htm)

## Virtual Physiological Human

Objective ICT-2007.5.3

### Target outcomes:

**Patient-specific computer models for personalised and predictive healthcare** and ICT-based tools for modelling and simulation of human physiology and disease-related processes.

- a) **Patient-specific computational modelling and simulation** of organs or systems targeting specific clinical needs such as prediction of diseases, early diagnosis, disease quantification, surgery planning, treatment and training. The computational models should go beyond the state of the art of available models and be multilevel when appropriate. Projects will address one or more of the clinical application areas defined under the third bullet “Clinical applications and demonstrations”.
- b) **Data integration and new knowledge extraction:** Innovative software tools for data mining, representation, formalisation and image processing able to integrate heterogeneous multimedia information from distributed databases. These tools will be developed specifically for (1) Coupling scientific research data with clinical and large empirical databases with focus on the association of genotype-related data and phenotype-related data with specific computational models of diseases and treatments;  
(2) Automated image processing and analysis for the extraction of bio-medical parameters/markers used to assess the presence or evolution of a disease, focusing on specific organs and/or disease and demonstrating quantitative benefits in diagnosis and prognosis. Projects will address one of the clinical application areas defined under the third bullet “Clinical applications and demonstrations”.
- c) **Clinical applications and demonstration of tangible benefits of patient-specific computational models:** All projects addressing the two technical bullets above will fall into one of the following application areas: (1) Intelligent medical simulation environments for surgery training, planning and interventions; (2) Prediction of disease or early diagnosis by integrating patient specific knowledge and predispositions obtained in biomedical imaging; (3) Advanced environment for simulation and assessment of the efficacy and safety of specific drugs.  
All models will be fully verified and validated, so that they can be deployed as part of an ICT infrastructure that provides integral access to clinical users. The use of open environments and open-source software is expected to allow for future extensions of models.
- d) **Networking action** on integrating European research in the field of multilevel modelling and simulation of human anatomy and physiology. Sustainable integration will be achieved through a rather limited partnership with demonstrated scientific excellence. Jointly executed research will focus on methodological issues and mechanisms that favour sharing knowledge, multidisciplinary training programmes and reusable software tools.
- e) **Coordination and support actions** on (1) Enhancing security and privacy in VPH, in particular for patient data processed over distributed networks. The proposed solutions will address the implications of the use of genetic data, e.g. genetic predispositions, and identify the required technology developments and implementation challenges. (2) Specific International Cooperation Action on healthcare information systems based on Grid capabilities. Insight into research activities undertaken in the target countries of Latin America, Western Balkans, Mediterranean countries, aiming at optimizing the use of bio-medical data and computing resources. New opportunities for collaboration will be explored and a set of future activities identified.

### Expected impact:

- New environments for predictive, individualised, evidence based, more effective and safer healthcare. Reduced medical errors and improved patient safety through simulation of adverse

drug effects on patient models. Accelerated development of safer drugs and medical devices through in-silico environments.

- Improved semantic interoperability of biomedical information and contribution to a common health information infrastructure.
- Strengthened leadership of EU medical imaging industry contributing to attracting back to Europe the research activities of the pharmaceutical industry.
- Increased European multidisciplinary research excellence in biomedical informatics and molecular medicine by fostering closer cooperation between ICT, medical device, medical imaging, pharmaceutical and biotech companies.

#### Funding schemes

a-c): CP; d): NoE; e): CSA

Indicative budget distribution:

72 M€:

a-c): CP 62 M€ of which a minimum of 22 M€ for IP and a minimum of 22 M€ for STREP

d): Up to one NoE with a maximum EC funding of 8 M€

e): CSA 2 M€ - Up to one CSA per topic with a maximum EC funding of 1 M€

Call

FP7-ICT-2007-2

## Challenge 7 – introduction and objectives

### ICT for Independent Living and Inclusion

ICT provides a major opportunity to integrate people at risk of exclusion and empower individuals to fully participate in the knowledge society. ICT also offers important means to address the challenges associated to the ageing population such as the rise in number of people with high disability rates<sup>7</sup>, fewer family carers, and a smaller productive workforce. For many people, in particular for groups at risk of exclusion, e.g. the growing part of the population that is over 60, the complexity and lack of utility, accessibility and usability of ICT is a major barrier.

The objective is to respond to these trends by mainstreaming and radically improving the accessibility and usability of new ICT solutions. This should ensure a better adoption and acceptance of ICT by people with disabilities, functional limitations or lacking digital competences, and may have a large spill-over effect to the wider society. In addition, new opportunities offered by ICTs will be exploited to help offset the impact of the ageing population, significantly prolonging independent living, and increasing active participation in the economy and in society. Finally new ICT solutions for improving social cohesion will be explored and developed.

EU level activities under this challenge addresses essential longer term RTD in ICT for independent living and active ageing and are expected to be complemented by a major initiative based on Article 169 of the Treaty, bringing together the research programmes of Member or Associated States for large-scale trans-national collaboration on applied RTD for ‘Ambient Assisted Living’. A close coordination between these two actions will be ensured.

This challenge requires a multi-disciplinary and user-centred approach to RTD combining advanced technology research and systems level integration. Resulting solutions should meet user requirements and achieve wide acceptance.

Between 2010 and 2012, the research is expected to provide a substantial contribution towards the i2010 objective of an inclusive society and deliver ICT solutions that, in line with the 2006 Riga Ministerial declaration on Inclusion, help substantially reduce the 30% of the European population currently not using ICT. Research is also expected to provide prototypes of systemic ICT-based solutions capable of extending independence and prolonging active participation in society for the ageing population, as well as advanced solutions for other groups at risk of exclusion, notably marginalised young people. This should help create important new market opportunities for European industry and establish global leadership in inclusive ICT.

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<sup>7</sup> Age and disability are strongly correlated: 15% of the EU population has a disability; 70% of them will be over 60 by 2020.

## ICT and Ageing

### Objective ICT-2007.7.1

#### Target outcome

- a) Advanced prototypes of **systemic solutions for independent living and active ageing**, including mobility aspects and reorganization of integrated care and rehabilitation processes, leading to a **significant prolongation of personal autonomy and participation in society across prevailing age-related impairments**. The longer term multi-disciplinary work should build on and integrate progress in a number of underpinning technologies<sup>8</sup> and complement relevant work already launched under FP6. Proposals should aim to increase system efficiency and end-user acceptance by exploring usage of novel approaches such as self-learning and adapting systems, affective computing principles, models of human behaviour, human activity recognition, the flexibility of new mobile paradigms and devices, tracking technologies and sensors, ontologies for sharing of contextual information between different services and objects, 3D based multi-media interaction systems and virtual community technologies with appropriate privacy and ethical safeguards.
- b) **Open systems reference architectures, standards and platforms** enabling systems and services for independent living, smart workplaces and mobility. These should support seamless integration and plug-and play operation of sensors, devices, sub-systems and integrated care services into cost-effective, self-maintaining, reliable, privacy-respecting and trusted systems.
- c) **RTD roadmaps and socio-economic research** including recommendations on how to best address ethical and privacy questions associated to ICT and ageing.
- d) **Contribution to standards setting, and strategic international cooperation with US and Japan** ensuring global relevance and impact of European RTD and preparation of future research areas within ICT & ageing.

Proposals should have ambitious objectives at the level of a complete system and aim at breakthroughs that go well beyond the state of the art. Industrial participation is encouraged in order to promote technology transfer and strengthen the exploitation potential. Due account shall be taken of the special accessibility and usability needs of the target user group. The work shall wherever possible build on test environments allowing for early user involvement and impact analysis in the RTD process.

#### Expected impact

- Increased personal independence, prolonging active participation in society – including an ubiquitous and friendly access to public information - and integrated care processes for the ageing population.
- New markets for independent and active living products and services through a set of open standards and platforms providing seamless and reliable integration of devices and services.
- Strengthened European industrial position in ICT and Ageing technologies and services by creating a common longer-term RTD agenda including relevant standardisation efforts and ethical or privacy issues.
- Reinforced European academic and industrial knowledge base and excellence in multi-disciplinary research on ICT for independent living and active ageing.

#### Funding schemes

a): CP; b): CP (IP only); c-d): CSA

#### Indicative budget distribution

30 M€:

- CP 27 M€ of which a minimum of 12 M€ to IP and a minimum of 6 M€ to STREP;

- CSA 3 M€

Call: FP7-ICT-2007-1

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<sup>8</sup> Examples are home platforms, mobile communications, context/location aware sensors, sensor networks, sensor data collection and fusion, micro and embedded systems, advanced robotic systems.

## Accessible and Inclusive ICT

### Objective ICT-2007.7.2

#### Target outcome

a) New approaches and solutions for **deeply embedding generalised accessibility support** within future mainstream ICT-based products and services. Examples are user interfaces and content representations adaptable to people with specific needs. It includes open, plug & play accessibility architectures and standards enabling a seamless integration of personalised assistive solutions for ICT access. The research is expected to develop and demonstrate the proposed solutions in a realistic user context and strong industrial participation is envisaged to promote consensus building and facilitate exploitation.

b) New methods and tools for **computer simulation of the user interaction and computer-based validation frameworks** (e.g. immersive environments) providing support to developers of ICT-based products and services for verification and optimisation of accessibility features at all development stages.

c) **Advanced self-adaptive ICT-enabled assistive systems based on non-invasive Brain to Computer Interaction (BCI)**, possibly combined with other interaction modalities.

The multi-disciplinary research should aim to combine a critical mass of European research to integrate progress in sensor technology, self-adaptive systems and assistive technologies into effective BCI-based systems usable outside the laboratory, e.g. in a home environment. The solutions should be capable of compensating for functional impairments and augmenting the individual performance of people with disabilities, in application fields such as access to ICT-based products and services, neuro-prosthesis control and support to rehabilitation and training.

Proposals addressing sub-area b) and c) are expected to contribute to the emergence of common European implementation platforms, RTD roadmaps, dissemination and outreach activities. Industrial participation is encouraged.

d) Targeted and exploratory ICT research on innovative communication and shared creative environments aimed at **facilitating social inclusion of marginalised young people**. A limited number of small scale preparatory actions should contribute to a future research agenda. Proposals addressing this area should be supported by organisations having a track-record in research on ICT and marginalised young people.

e) In the field of accessibility: Coordination of national research activities. In the field of assistive technologies: Coordination of constituencies and development of future research agendas; international co-operation with North America and Asia; achieving a better understanding of ethical issues; market requirements, barriers and cost-benefit aspects.

#### Expected impact

- New market opportunities for European industry and promote a global leadership in inclusive ICT.
- Mainstreamed accessibility of ICT and radical improvement in accessibility of future ICT products and services<sup>9</sup> by people with disabilities and functional limitations.
- Open, standards-based and seamless interfacing of general purpose and assistive ICT and embed personalised accessibility features deep into mass-market ICT technology design.
- Facilitated development and production of accessible ICT products and services through the availability of new tools and methods to allow developers to verify and optimise accessibility at all development stages.

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<sup>9</sup> E.g. digital terrestrial and mobile television, next generation mobile handsets, web 2.0, content management systems, Digital Rights Management solutions, virtual/immersive environments, home appliances

- Wide spread practical use of BCI-based assistive technologies to demonstrate a potential quantum leap in self-learning assistive solutions. (c)
- Stronger RTD capacity through delivery of proof of concept for ICT solutions facilitating social inclusion of marginalised young people. (d)

Funding schemes

a): CP (IP only); b-c): CP (Up to one IP, STREP); d): CP (STREP only); e): CSA

Indicative budget distribution

43 M€:

- CP 40 M€ of which a minimum of 20 M€ to IP and a minimum of 8 M€ to STREP;

- CSA 3 M€

Call

FP7-ICT-2007-2

draft

## 6. Muligheder for projektformuleringsstøtte

Videnskabsministeriet har ifølge Eurocenter i dag tre puljer, der tilbyder potentielle ansøgere en økonomisk håndsrækning til at søge EU-forskningsmidler.

### **EU-forprojekter til små og mellemstore virksomheder**

Støtte til små og mellemstore virksomheders arbejde med at forberede og skrive en ansøgning til EU's 7. rammeprogram.

### **Det Strategiske Forskningsråds pulje til netværksaktiviteter i forbindelse med større EU-satsninger**

Støtte til offentlige og private aktører, der sammen vil forberede og koordinere dansk deltagelse i EU's større forskningssatsninger. Støtten går til at dække arbejdet med at etablere et netværk og skrive en eller flere ansøgninger til EU's 7. rammeprogram.

### **START-midler til offentlige forskere**

Støtte til offentlige forskeres arbejde med at forberede og skrive en ansøgning til EU's 7. rammeprogram.

Læs mere herom på [www.eurocenter.info](http://www.eurocenter.info)

SundhedsITnets sekretariat stiller sig gerne til rådighed med vejledning ifm projektansøgningen.

## 7. Mere information

EU's 7. rammeprogram: <http://cordis.europa.eu/fp7/>

ICT-programmet under 7. rammeprogram: <http://cordis.europa.eu/fp7/ict/>

Eurocenter: [www.eurocenter.info](http://www.eurocenter.info)

Sundhedsitnet: [www.sundhedsIT.net](http://www.sundhedsIT.net)

Draft

## HVORFOR DELTAGE I EU'S 7. RAMMEPROGRAM?

1. Medfinansiering af virksomheders og forskningsinstitutioners udgifter til forsknings- og udviklingsprojekter
2. Adgang til ny viden, kompetencer, teknologi, udstyr og anlæg
3. Øget indtjening, når projektresultaterne anvendes kommercielt
4. Opbygning af et internationalt netværk kan give adgang til nye markeder og nye forsknings- og udviklingsprojekter
5. Kvalitetsstempling af forskningen kan åbne døre til nye samarbejdspartnere og finansieringskilder
6. Synlighed og status på området kan resultere i en bedre markedsposition
7. Bedre interkulturel viden og forståelse via samarbejdet med forskellige lande og sektorer

### BIDRAGSYDERE:



**EuroCenter**  
Ministry of Science  
Technology and Innovation

Center for  
**Pervasive Healthcare**



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