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(version 6 - April 16th/17th, 2012)

SMART CARING RURAL COMMUNITIES

or

smartC4RE

e-inclusion, e-health and healthy/active ageing in
a rural setting - a transnational approach

the sixth version of a (draft) project proposal in the framework of the (future) **Interreg VB North Sea Region Programme 2014 - 2020** (under development) of the European Regional Development Fund ERDF, the European Social Fund ESF and the European Agricultural Fund for Rural Development EAFRD.

based on **Europe 2020, a strategy for smart, sustainable and inclusive growth** (March 2010) as well as on the **Digital Agenda for Europe** (May 2010) and with a geographical focus on the North Sea Region (Belgium, The Netherlands, Germany, Denmark, Sweden, Norway and the United Kingdom)

The European Commission has identified e-health as well as active and healthy ageing as major societal challenges common to all European countries, and an area which presents considerable potential for Europe to lead the world in providing innovative responses to this challenge.

Jan Walburg/April 16th/17th, 2012

document based on discussions with - amongst others - Simon Simonsen (Vejen Kommune, DK), Gijs van Hesteren (Kabelnoord, Dokkum, NL) and Anja Paap (Nijfinster, Leeuwarden, NL).

potential project beneficiaries: Vejen Kommune, Vejen, DK (public)
 Kabelnoord, Dokkum, NL (public/private)
 Innovatie Huis Lauwersdelta, Buitenpost, NL (private)

general project management/ Bureau Walburg, Assen, NL (Jan Walburg - preparation phase, partner search,
 project director: application and implementation phase)

financial management: Helder Management (Jaap de Jong - preparation and implementation phase),
 Leeuwarden, NL

EU policy documents:

- * **Europe 2020, a strategy for smart, sustainable and inclusive growth** (March 2010);
- * **Digital Agenda for Europe** - one of the seven flagships in **Europe 2020** - especially Pillar 7 ICT for Social Challenges (May 2010);
- * **European Innovation Partnership on Active and Healthy Ageing** EIP AHA (November 2011);
- * **Strategic Guidelines of the EU Rural Development Policy 2007 - 2013** (2006/144/EC and later programmes);
- * (proposals for) regulations regarding ERDF (COM(2011) 614 final), ERDF and European Territorial Cooperation (COM(2011) 611 final/2, ESF (COM(2011) 607 final/2) and other relevant European policy documents;
- * Commission Staff Working Document **Elements for a Common Strategic Framework 2014 to 2020** (SWD (2012) 61 final) dated March 14th, 2012.

European Year for **Active Ageing**
 and **Solidarity between Generations 2012**



rationale

The European population is ageing rapidly, but living longer does not necessarily mean living a healthier, more active and independent life:

- * the number of Europeans over 65 will almost double in the next 50 years from 85 million in 2008 to 151 million in 2060, and the number of over 80's will almost triple (source EIP);
- * life expectancy will continue to increase, yet unhealthy life years make up around 20% of a person's life (source: EIP)
- * ageing Europe is putting immense pressure on healthcare systems which already account for around 9% of EU Gross Domestic Product (source EU);
- * tele-health - if used correctly - can deliver a 20% reduction in emergency admissions, 14% reduction in bed days, an 8% reduction in tariff costs and an incredible 45% reduction in mortality rates (source: Department of Health, UK, December 2011)

Information and Communication Technologies (ICT) are already essential in supporting daily life in today's and tomorrow's (digital) society. They are used everywhere now and play an important role in the delivery of better, more efficient and more cost-effective health care services. This role will grow stronger and stronger in the next decade(s).

However, innovation in active and healthy ageing, as well as e-health in whatever form, faces numerous, and sometimes very different obstacles, particularly the lack of involvement of the end users, lack of standards, or rigidity of care systems to change. New approaches are needed, and innovation – in all its forms - as well as digital technologies can play a key role in rethinking and changing the way we design, organise, finance, and deliver health, home and social care services and empower elderly people and patients.

The future North Sea Region project *Smart Caring Rural Communities - in a rural setting* is explicitly building on one of the three priorities from **Europe 2020**:

Smart growth: developing an economy based on knowledge and innovation

'Smart growth means strengthening knowledge and innovation as drivers of our future growth. This requires improving the quality of our education, strengthening our research performance, promoting innovation and knowledge transfer throughout the Union, making full use of information and communication technologies and ensuring that innovative ideas can be turned into new products and services that create growth, quality jobs and help address European and global societal challenges. But, to succeed, this must be combined with entrepreneurship, finance, and a focus on user needs and market opportunities.' (COM (2010) 2020 final, dated March 3rd, 2010).

The **Digital Agenda for Europe** - the second basis for the project - states in Pillar VII - ICT for Social Challenges: *'Digital technologies have enormous potential to benefit our everyday lives and tackle social challenges. The Digital Agenda focuses on ICTs capability to reduce energy consumption, support ageing citizens' lives, revolutionises health services and deliver better public services. ICTs can also drive forward the digitisation of Europe's cultural heritage providing online access for all.'*

The **European Innovation Partnership on Active and Healthy Ageing** - the third basis for the project - *'will pursue a triple win for Europe:*

1. *enabling EU citizens to lead healthy, active and independent lives while ageing;*
2. *improving the sustainability and efficiency of social and health care systems;*
3. *boosting and improving the competitiveness of the markets for innovative products and services, responding to the ageing challenge at both EU and global level, thus creating new opportunities for businesses.'*

The Commission Staff Working Document **Elements for a Common Strategic Framework 2014 to 2020** (SWD (2012) 61 final), dated March 14th, 2012, formulates for the European Regional Development Fund ERDF under Thematic Objectives 2 the key action:

'ICT applications that contribute to meeting future societal challenges and opportunities such as eHealth, ageing population, (...) education, e-Inclusion, (...), eGovernment, integrated ICT solutions for 'smart cities', consumer information and empowerment'

central aim of *Smart Caring Rural Communities*

How to deliver a valuable and transferable, transnational contribution to the maintaining and reinforcing of a reachable, accessible and affordable social, home and health care (prevention, cure, aftercare, rehabilitation) in rural areas in the North Sea Region, especially in times of national austerity policy and programmes. The overall target is - focused and flexibel - to enable EU citizens to lead healthy, active and independent lives while ageing. The promotion, introduction and counselled use of digital technologies for end-users is explicitly an essential component of the project *Smart Caring Rural Communities*.

It's all about greater and more cost-effective choices of individuals in when, where and how they receive care.

To reach this central aim, the project will set up a partnership/alliance based on a co-operation between public authorities/municipalities, the private sector and research and educational institutes (triple helix). This international alliance will have to build on and to benefit from a transnational exchange and sharing of experiences, knowledge and expertise.

major questions:

- what needs/wishes do citizens in rural and regional areas have in future regarding their social, home and health care;
- what will be the role of the public sector, e.g. municipalities, in future social, home and health care in rural and regional areas;
- what will be the role of the market: how can SMEs and corporate enterprises contribute to a good implementation and acceptance of social, home and health care in rural and regional areas;
- how can digital technologies contribute to a cost-effective and efficient social, home and health care in rural and regional areas.

A lot of ICT-based applications or digital technologies are already available in the field of social, home and health care. Nevertheless their introduction is often restricted or delayed by cultural, organisational, financial, legal and even religious barriers. Important is now to investigate and explore - in an international and European partnership/alliance - how to combat and - if possible - to eliminate those barriers and how to embed already existing digital technologies into:

1. the social and health care organisation in regional and rural areas;
2. the acceptance by the end users/patients/citizens

The key words are:

- digital technologies (including serious gaming);
- prevention and rehabilitation
- cure and care at a distance;
- connecting patients to technology;
- connecting care to fun & entertainment;
- patient empowerment: self monitoring and self diagnosis;
- travel and waiting time reduction/no travel care any more;
- cost-effectiveness of social, home and health care

three major themes/three workpackages

Between other subjects, three major, interconnected themes can be clearly distinguished in the field of modern social, home and health care:

1. regions, (smaller) regional hospitals and how to provide more and better health cure and care by using digital technologies as well as how to safeguard - at the same time - their continued existence in rural and regional areas;

2. the (future) role and responsibilities of municipalities in modern home, social and aftercare - especially concerning prevention and rehabilitation - and their (future) relation to their (ageing) citizens
3. citizens/patients and the role of their GP's and other care providers in modern home, social and aftercare: e.g. (self-) monitoring and (self-) diagnosis at a distance, e.g. using targeted apps.

In the first six months the project beneficiaries will do a desk research to find the starting point which relates best to the needs of the end users.

Each of the three themes mentioned above will be the main subject of a workpackage within the project *Smart Caring Rural Communities*. On project level the results and output of this three workpackages will be integrated into a more general approach (see also below the **Rural Power Pack for ICT-enabled care services**).

ad1)

This concerns the future of smaller, regional hospitals in rural areas and how sophisticated digital technologies and - especially - how their smart and clever embedding into the hospital and health care and care organisation might - now and in the future - ensure a good, reliable and cost-effective health care in more sparsely populated areas.

At the same time, the introduction and cost-effective use of digital technologies will provide a stronger and more solid base for continued existence of regional hospitals in rural and regional areas.

Part of the work package could be the search for a social business case where all costs and assets are monetised and interconnected
[addition by GvH]

If for instance a reliable and accessible health care and cure system is not guaranteed, this will probably be a decisive reason for people not to move to those areas, or even to leave the area and live in more urban regions where the necessary care and cure is available.

point of attention: sophisticated ambulances
attitude and commitment of hospital management [GvH]

ad2)

After the re-organisation of health care in Denmark a few years ago, the role of the municipalities is changing in regard to social, home and health care (prevention, cure, aftercare and rehabilitation).

In The Netherlands the implementation of the Wet Maatschappelijke Ondersteuning (WMO, 2007) is a task of the municipalities. Care and cure tasks have been transferred from national to local government. The rules within the WMO are changing in the next years and the Dutch municipalities have to look for new solutions how to adhere to the WMO in the best possible and most cost-effective way.

A transnational project as *Smart Caring Rural Communities* with specific pilot activities might offer a good opportunity to learn from experiences in other North Sea countries in this field.

ad3)

to be inserted

remark

Below we need some appealing practice examples/pilot activities of e-health, e-inclusion and healthy and active ageing applications/services which are promising to be tested and tried out at different locations, at the same time and under comparable situations in the participating countries to enable the desired transnational exchange of experience, knowledge and expertise.

The final selection has to be done by the (potential) project beneficiaries. The list below is only a list with some possible examples to stimulate the imagination, but not exhaustive and - of course - open for changes.

some practical examples/potential pilot activities WP1 (focus: hospitals)

1. *Care Companion* - University Medical Centre, Maastricht, NL

Care Companion is a digital system for patients with breast cancer (and their next of kin) which enables them - in their homes - to consult all personal medical information made available by their doctors. Patients receive online information about their personal treatment, for instance: chemotherapy, ablation with primary reconstruction, hormone therapy and the necessary follow-up. Next to each issue they find the relevant information. The system shows their personal details and special circumstances, such as their diagnosis, symptoms of their tumor, but also the names of their doctors and specialists. The diary and the calendar are functionalities which transform *Care Companion* into an integral care system.

Other hospitals are invited by the UMC Maastricht to join this initiative.

2. Tele-intensive care (Tele-IC) - Onze Lieve Vrouw Gasthuis, Amsterdam, NL

Tele-intensive care offers by audio-video connections and an advanced electronic patient file expertise of an intensive care specialist to IC units of (regional) hospitals that cannot offer this expertise 24/7, e.g. during evening and night shifts or during the weekends. It offers patients an improvement of the care quality.

3. A doctor's website to inform his patients - Frank Bosch - chair of the Nederlandse Internisten Vereniging (Dutch Internist Society)

Mr Frank Bosch, internist, set up a website (www.fhbosch.nl) for his patients with information about the hospital Rijnstate at Arnhem, NL (from outpatients' clinic to intensive care unit), about medical treatments, but also about him as a person. He also offers his patients the facility to receive their laboratory results over the internet. In his experience the website brings him closer to his patients. 'I am really their doctor now!' is one of his statements.

some practical examples/potential pilot activities WP2 (focus: social and home care)

1. online control of distribution of medicins

Patients in the early phase of Parkinsons' disease or Alzheimer disease have to take their medicine 3 or 4 times a day at fixed times. Due to their illness it is very difficult for them to remember the correct times. To ensure that they take their medicine, they are, therefore, visited 3 or 4 times a day by a community nurse. This is - of course - a very timeconsuming and expensive activity. In the eastern part of The Netherlands a special medicine dispenser has been developed that warns the patient by a sound that it is time to take his medicine. As soon as the patient opens the dispenser and takes his medicine out of the blister pack, the machine informs a central contact platform, that the medicine has been taken in time. This gives - of course - no absolute security, but with a disciplined and stable patient it is rather cost-effective.

2. physical exercise for ageing citizens using (interactive) TV (idea supplied by Gijs van Hesteren, Dokkum and Harlingen, NL) and its monitoring

Each morning at a fixed time a group of elderly citizens start their daily physical excersises to stay healthy and to make their bodies stronger. By TV connections they are linked by sound and on television to each other and to their (aerobics) instructor who tells them what exercises they should take and how to do them.

The results and progress are being monitored individually and these results with nice graphics are accessible via a password protected part of the exercise website.

Doing exercises alone or as a duo requires a great deal of personal discipline. Doing these exercises in a group, at a fixed time, at home and with professional coaching gives better guarantees that these are actually done in a safe way and are monitored properly.

This approach could be combined with the BASIS wrist-worn device: a personal health dashboard. The dashboard displays the information collected by the device, including calories burned, steps taken, and hours slept, which it also rolls into a number of 'points' for an overall index number (out of 100). The device uses five different sensors to collect data about the user's activity, environment, and how his body responds to those activities. The data is then uploaded to a cloud service where it is analyzed and 'then told to me in everyday language — things that I could understand — about how to live better,' a spokesman said. At the top of the dashboard are four big data points for calories burned, steps taken, hours slept, and overall points. Each of these includes a simple bar graph to show how close to the goal the user is at that time. Underneath those numbers is a bar graph of heart rate readings taken by the device throughout the day. Beneath that bar graph is a timeline of discreet events and activities that the device automatically detected — physical activity, sleep, etc. Those events include specific calories burned for that amount of time, too.

See also a short video at: http://www.youtube.com/watch?v=DalD8m_ZS-s&feature=youtu.be

3. elderly friendly alarm handling and monitoring service (idea supplied by Simon Simonsen, Vejen, DK)

Langeland Kommune, an island municipality in the Region Syddanmark (DK), participated in an international European project DREAMING - project partners from 7 European countries in the framework of ICT/PSP - that focused on an elderly friendly alarm handling and monitoring service. The goal for DREAMING cannot be realised by technology alone, but only in a framework of non-technology based services which are essential for supporting the autonomy of elderly people (e.g. visits by community nurses and social workers, psychological support, delivery of hot meals and shopping, special transportations for people with limited mobility, house cleaning, etc.). For more detailed information: www.dreaming-project.org. The elderly friendly alarm handling and monitoring service is open for greater inter-organisational learning.

4. care at a distance - Municipality of Dongeradeel, NL

Connection of the digital home care, financed by health insurance, with welfare oriented and municipality funded living at home independently, assisted by ICT. A pilot project is being formulated at the moment. Stakeholders are the Municipality of Dongeradeel, home care institution Thuiszorg Het Friese Land, regional hospital Sionsberg, educational institute ROC Friese Poort, Nijfinster BV, Kabelnoord and NHL University

some practical examples/potential pilot activities WP3 (focus: GP's and other care providers)

1. Zelf meten (is ook Weten)/Self monitoring for GP patients - Willem H.A. Bettink, GP at Oudenbosch, NL

Stable patients answer via e-consult a number of medical and health questions and send in a number of measure results/values (e.g.: blood pressure, weight). A special trained GP assistant evaluates the answers and results, and decides - in consultation with the responsible GP - about the follow-up. Already more than 5,000 persons visited and consulted this website. See also:

2. Self diagnosis for GP patients - Co Nijman, GP emeritus, NL

Self diagnosis for patients with back problems, knee complaints, hip complaints, hand and wrist problems using an online questionnaire. Questionnaire is available in Dutch, English and German. See also: www.dokter.pro

3. GP Surgery hours on Twitter - Erik Jansen, GP at Nijmegen, NL

People who Twitter have now the possibility to ask questions about their health on @tweetspreekuur. They receive a direct answer via Twitter, are advised to consult their own GP or to dial an emergency phone number. If callers want privacy, they receive a special inlog code for the tweet website: tweet.webspreekuur.nl.

4. FaceTalk: your virtual doctor's office

For a growing number of patients it has become increasingly challenging to have their doctor or health professional on location due to reduced mobility or lack of time. The solution to this challenge is FaceTalk. With just a few clicks you can open your own virtual doctor's office and create your virtual clinic. See: www.facetalk.nl/en/.

Existing video-care solutions are often complex, insufficiently secure or require (expensive) extra equipment. FaceTalk is developed together with patients, doctors and caregivers. Simple, safe and affordable. FaceTalk users only need a computer or tablet (with built-in webcam). There's no software to install or learn, all you need is an active internet connection.

Research shows that only a third of what is discussed during the consultation will be remembered by the patient. For that reason FaceTalk also has the possibility to record current and review past consultations.

FaceTalk is an innovation of the project by [Radboud Reshape](#) & Innovation Center, Nijmegen, NL. REshape is a program set up by the [Radboud University Nijmegen Medical Centre](#). Their aim is to fire up and grow a movement of people who believe the next decennium should be the era of the rising of self-empowered patients, in where the medical sector will embrace the patient, their family and informal care into the healthcare team: 'Patient as Partner' as they like to call it in Nijmegen.

The approach of FaceTalk can be combined with existing systems for home monitoring of measurement values (www.zydacron.com) regarding e.g.: hypertension, diabetes, COPD (Chronic Obstructive Pulmonary Diseases - diseases related to the lungs). The values are evaluated by the patient's own GP, specialist/consultant or a special qualified assistant under his or her supervision and communicated with the patient via a high definition video connection. The added value is that the patient immediately knows the actual results and the evaluation of his doctor. It is not necessary to come to the doctor's office several times for very short treatments and it saves, therefore, a lot of travel costs and time.

step 1

In the comfort of his home, the patient monitors e.g. his blood pressure on a regular basis or instructed by his doctor. This can also be done during a video session with his care team.

step 2

The measurement results are transferred via an interface to a special box from where they are transmitted via internet into the database of the responsible doctor.

step 3

Only authorized personnel have access to the patient's measurement data, which are always up to date.

5. Telemedicine for GPs and internist - Dokkum and Ameland, NL

The general practitioners Maters and Jacobs on the Dutch island of Ameland are connected by audio and video with an internist on the regional hospital Sionsberg at Dokkum. The contact with the outpatients is enabled via an interactive video connection. It saves the patients unnecessary and timeconsuming trips across the Wadden Sea. The doctors are able to exchange their findings easily and on a regular basis.

transnational partnership

In the planned international partnership, the project partners - who encounter in their regions (on a daily basis) more or less mutually comparable healthcare barriers as indicated above - will join up transnationally to counter these problems - in a rural setting - by bridging the gap between the availability of innovative (ICT) facilities and their (personalised) use being made by the end users as well as by care and health organisations - connecting patients to technology.

Up front, the project partners will agree upon and start a (limited) number of the same transnational pilot care services at each of the project locations in order to get acquainted with cultural-historical, social, religious, legal, organisational and financial barriers to introduce innovative ICT and web- and knowledge-based facilities/applications in each of the participating countries. They will also discuss - building on their joint commitment - how to collaborate further on making technology work for the healthcare sector.

remark

In the past, project partners in EU/Interreg projects started rather often very diverse and varied pilot activities with sometimes not more than a loose connection with the central aim on project level. In this new project the transnational approach should be improved and strengthened from the preparatory phase on, and all selected pilot activities at the different project locations should contribute in some way or another to the central aim in a clear and transparent way.

Rural Power Pack for ICT-enabled care and health services

The above advocated approach will finally result in a mutual and transnational modus operandi on the *introduction* of ICT-enabled cure, care and health services based on a transnational exchange of knowledge, experience and expertise, in other countries in Europe²⁷, in other regions, in other cities and towns, also after the project's lifetime.

The **Rural Power Pack on e-health** will also make recommendations how to involve local, regional and national authorities/governments to support the deployment of integrated sophisticated care and health services in a political way.

(scientific) advisory panel

To gain optimal results and outcomes, the partnership should be supported by a (scientific) Advisory Panel with (scientific) members from universities, expert groups and organised interest groups as well as individual experts from the participating countries to safeguard the (scientific) standards of the project and to prevent that the transnational approach and quality will erode during the project's lifetime.

At the University of Groningen, NL, Faculty of Spatial Sciences (Department of Rural Geography), healthy ageing and e-health is a faculty spearhead. Responsible professor: prof. dr. D. (Dirk) Strijker. Other experts from universities/colleges in the participating countries are also potential candidates for the (scientific) advisory panel.

A trendwatcher like Marcel Bullinga (Sint Pancras, NL) could be a member of the (scientific) advisory panel to keep the advisory board and the transnational partnership informed and updated about the latest trends in modern society. Marcel invites everybody to join the Future Cloud:
<http://www.futurecheck.com/quiz>.

lead beneficiary

The choice for the leadpartner or lead beneficiary who is responsible for the entire project as regards contents, finance and organisation can be made in a later phase when more information is available and more details regarding contents, finance, co-financing, project beneficiaries and project organisation are known.

general project management

A professional, capable and stable general project management that is responsible for the overall project as regards contents, organisation, (international) co-ordination, administration and financial management in all phases, is essential for the success of an European project. A clear division of the specific tasks and responsibilities between the lead beneficiary and the general project management has to be made in a early phase to avoid misunderstandings in a later phase. It is strongly advised to lay this agreement between lead beneficiary and the general project management down in a mandate, signed by both parties.

financial management

The partnership should make a financial agreement *in an early stage* of the preparation period. This agreement has to be understood by the project partners into some detail to avoid misunderstandings about the project budget, budget for each of the project partners, spending targets, handling of project supporting costs (shared costs) on project level and other financial procedures.

The total budget of the project and the split-out over the project partners has to be discussed in a later phase when the content-wise approach and the (number of) project partners are known.

potential project partners

some considerations and proposal for partner search

According to information made available by Ms Neelie Kroes, European Commission's Vice-President for the Digital Agenda, Scotland has already deployed telecare and telehealth to more than 40,000 citizens and invested approximately EUR 20 million in the period 2006 - 2010. The Scottish government is investing about EUR 12 million more in eHealth as well as in superfast broadband (via Twitter on February 10th, 2012).

A Scottish project partner is, therefore, in my view, a *conditio sine qua non* to learn from their experiences, knowledge and expertise. The Shetland Islands or the Orkney Islands, being very rural areas, might be good candidates.

Off the continent in the North Sea Region, other islands/island groups and the adjacent mainland might be interested in joining, because they encounter more or less the same problems and most of them are hosts for large numbers of holiday makers in the summer period:

- * the Wadden island of Ameland and/or the Wadden island of Schiermonnikoog (NL) and the region north-eastern Fryslân, all in the field of activity of co-initiator Kabelnoord at Dokkum, NL;
- * one or two Wadden islands of Ostfriesland, e.g. Juist or Norderney and (a part of) the region Ostfriesland (FRG);
- * one or two Wadden islands of Nordfriesland, e.g. Amrum, Föhr or Pellworm and the Landkreis Nordfriesland (FRG);
- * one or two Wadden islands of Jutland (DK), e.g. Mandø or Fanø and the region Southern Denmark with Vejen Kommune (DK);
- * an island off the Swedish western coast, e.g. Orust or Tjörn and the Region of Västra Götaland;
- * one or two archipelagos off the Norwegian coast with a region on the adjacent mainland;

* unfortunately Belgium has no islands. Perhaps the Province of West Flanders (Brugge) or the Province of East Flanders (Ghent) might be interested in participation

This project proposal focusses on public authorities to be project partners, but also universities, colleges for vocational education and entrepreneurs, etc. can be project partners in an Interreg North Sea Region Programme, as part of the European regional Development Fund (ERDF).