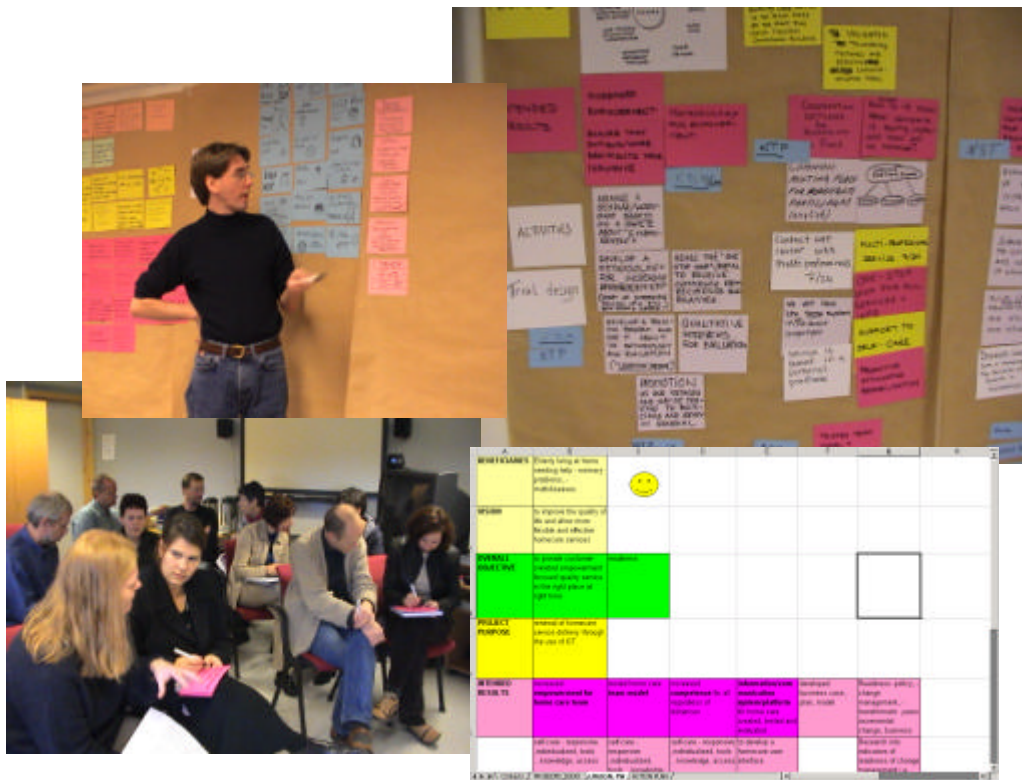




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31.5.2003

# eHealth in the Northernmost Regions of Europe





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eHealth in the Northernmost Regions of Europe	IN3-47-01
Insatsområde 2.Gränsöverskridande regional-och lokal kompetensutveckling och resursmobilisering Åtgärd 2.1.: Utbildning och forskning	Partners: Kemi-Tornio Polytechnic, Finland LUT/CDH – Centre for Distance spanning Healthcare, Sweden Norwegian Centre for Telemedicine, Norway Rovaniemi Polytechnic, Finland
Contact person: Riitta Alajärvi-Kauppi Kemi-Tornio Polytechnic International department <a href="mailto:riitta.alajarvi-kauppi@tokem.fi">riitta.alajarvi-kauppi@tokem.fi</a> +358 40 5969 334	Project time: 01.06.2002 – 31.03.2003

## 1. Background, objectives and activities

### 1.1 Background

Current social and health policies emphasise primarily home care. These aims consist of maintaining and improving the activeness of citizens (e.g elderly, chronically ill, person in rehabilitation etc.); the objective is to establish within municipalities an "open care and near services network". In order to fulfil this objective municipalities need to be able to improve co-operation between different professionals in all level and take voluntary organisations and relatives to their network. This in turns requires new ways of caring in networks, teamwork and training and use of technology.

Support to relatives is a natural and integrated part of all operational areas in the social services. The operational concept "Everyday quality of life" is based on the provision in all situations of care and support in tune with the individual's needs and abilities. Human networks are a central part of the analysis of resources and needs that forms the basis for community input.

The greatest burden is placed on the caregiver. Experiences show that patients under rehabilitation encounter several problems when they return home. They have many questions yet to be discussed and they experience anxiety with their new situation of living. The families, who take care of their relatives (patients), need many kinds of support and counselling. They need concrete knowledge of diseases, rehabilitation, care and social support and skills to understand patient etc. They need also to share their feelings about their care giving experiences with others. The demand for cooperation between various providers will increase, which in turns requires new tools for professionals, hospitals, home care givers and relatives network. In cooperation it is very important to respect the patients autonomy and activity. The developing of flexible rehabilitating service chain is based on lifelong learning, use of technology and teamwork. The follow up could be improved by the means of new technology, integration of intelligent monitoring equipment, including information transmission and interactivity.

Nowadays the cooperation between different caregivers happens often random and the information of the need of help and care doesn't come enough early to the next place where patient will be cared, in order to secure the safety of the care. It also happens, that patient gets medicines from the general hospital to care the disease no information how she will cope with disease, who will help her if she needs support. Often the patient feels herself outsider and unsafe in her care, this has an impact of that how she is motivated to care. The relatives may have same kind of feelings as patient. Besides the care information given in different places may be in inconsistency. The near network of the patient and voluntary organisations would have opportunities to support the patient. To create flexible service chains it needs know-how and equipments.





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Studies show that many patients and families have insufficient information on their illness, and express that they are unprepared to face the new and difficult situation of rehabilitation. A limited number of patients outside the hospital receive any rehabilitation services, e.g. physiotherapy, from the home care sector. Patients and their families express anxiety with their new situation. Re-hospitalisation is frequent.

A question here is also if empowerment of individuals can meet the new demands from society, during the phase of paradigm shift from disease management to patient centered management.

A challenge is the decrease of resources – financial and personal. This is a dilemma especially on the sparse populated northern areas where distances are long and population is decreasing and getting older. A lot of promises has been put into eHealth as a regime to provide qualitative services on reduced costs. Local and regional authorities and regions have raised eHealth among the spearhead issues.

This eHealth pre-project has been set up in order to increase the cooperation and networking of actors on the northernmost regions in Europe. There has been cooperation between the actors locally in Finland, Sweden and Norway (health care professionals, educators, researches and industry) but a common cooperation has been occasional, not advantageous long-term networking.

The proposal has been initiated and constructed in several workshops during the year 2001. The actors met in Luleå (EU-Canada cooperation workshop), Kemi and Rovaniemi during the summer/autumn and in a workshop in Muonio (all partners participating) in October 2001. eHealth is one of the main activities with all the actors in this project.

## 1.2 Objectives

The aim of the project is to find and define a common research- and development topic in home care/rehabilitation in the North Calotte region. After the project is finished there will be a healthcare development network (eHealth in home care/rehabilitation) in the North Calotte region consisting of companies, educational and research institutions and public sector organizations having also links to the European level. A common vision and understanding on development of eHealth in home care/rehabilitation in the North Calotte will be found as well as a plan for a North Calotte wide research and development project together with an exploitation plan for project results.

The overall objective of the project is to evaluate, improve and develop eHealth services in the home care setting in the North Calotte region.

The aim of the study is to find and define a common development topic in home care/rehabilitation in the North Calotte region.

The cross border cooperation on the eHealth sector will enliven the eHealth/IT industries and thereby it also increases the functionality of the North Calotte region, develops the infrastructure and special know-how and strengthens the regional identity. As an integrated network the Nordic actors are also more interesting and complementary to each other cooperators also for the EU level cooperation.

## 1.3 Planned results

The project has four main results:

- ❑ Healthcare development network (eHealth in home care/rehabilitation) in the North Calotte region - companies, educational and research institutions and public sector established,
- ❑ A common vision and understanding on development of eHealth in home care/rehabilitation in the North Calotte defined,





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- North Calotte -wide research and development project plan on eHealth in home care/rehabilitation sector written, and
- Exploitation plan of results of the r&d project for the companies, educational and research institutions and public sector outlined.

The final target group of the project is people who need care at home. The care teams (family, relatives, home care professionals, doctors) are the secondary target group.

## 1.4 Planned activities and implementation

The project had been planned to achieve the results by following activities:

### 1. Setting up eHealth networks

Compilation of a network of eHealth organizations on the home care and rehabilitation sector. The existing network will be complemented with eHealth companies, education and research institutions and public sector organizations. Networking will be done on three levels:

- National networks
- North Calotte network (Finland, Sweden and Norway)
- Links to European actors

The network will serve as a working platform for creating cooperation on the sector, for research and development work, exchange of experiences and finding and presenting best practices. Networking on European level will also prepare the way for participating European wide EU framework programs (5<sup>th</sup> and 6<sup>th</sup> Framework).

#### *Task 1.1 Arranging of three national workshops (Norway, Sweden, Finland)*

Activities taken during the project: Three national and one transnational workshop were arranged during the project time. The common theme for the workshops was: "How to develop homecare".

The Finnish workshop was arranged in Kemi 18.9.2002. There were 17 participants from Kemi-Tornio Polytechnic, Rovaniemi Polytechnic, Ranua municipality, Simo municipality, Kemi municipality, Tornio municipality, Länsi-Pohja district hospital and Dementia Accosiation in Lapland.

The workshop was facilitated by Eero Pekkarinen, and the working method GOPP – Goal Oriented Project Planning - was applied. As a result of the workshop a logical framework with problems on the area of homecare in the north, ideas for improvement of homecare and development plan was put together with the group. The complete results of the workshop are presented in Appendix 1 (in Finnish).

The Swedish workshop was arranged in Boden 16.10.2002 and the participants came from several faculties of Luleå University, CDH, Medcon, County council of Norrbotten, Luleå municipality and Webwitches. There were totally 26 participants in the workshop. As in the previous workshop in Finland, this workshop was also facilitated by Eero Pekkarinen, and the working method GOPP – Goal Oriented Project Planning - was applied. The complete results of the workshop are presented in Appendix 2.

The Norwegian workshop was arranged in Tromsø 27.9.2002. There were 17 participants and they came from Norwegian Centre for Telemedicine (NST), Tromsø municipality, the University of Tromsø,



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Maximite AS, Telenor FoU and Bjørnebye consulting. The above described GOPP method and facilitator were used. The complete results of the workshop are presented in Appendix 3.

*Task 1.2: Common appearance of the northern network towards European eHealth actors (dissemination of the results, mutual exploitation in development work)*

The pre-project and the northern network have been presented in a eHealth workshops in Ottawa, Canada March 2003 and in workshops in Brussels June 2002 and June 2003 for EU Canada Initiative actors and EU commission officers (DG Information Society, DG External Relations). The members are working on applications for the 6<sup>th</sup> Framework programme and EU-Canada co-operation.

## 2. Common vision and understanding

There are activities going on the home care/eHealth sector on the region. An overall picture of the actors, projects and results of the earlier work is though missing. Also information on activities on EU level is needed. New research and development projects should be addressed so that they try to solve the most topic problems and serve the most important issues on the region. The projects should also be addressed so that the capabilities of the recent and future technologies will be taken advantage of, and also the results of the earlier research and development work. The assumption is that the problems in the northern sparsely populated areas and very similar societies are about the same and the solutions would be similar as well.

*Task 2.1 Problem analysis and development needs of home care and rehabilitation in the North Calotte area*

Finland:

There were five different areas with problems and needs for development, that came up

- Rehabilitation
  - Rehabilitation at home
  - Tools for rehabilitation at home
- Co-operation
  - Multiprofessional teams don't work properly yet
  - How to develop the seamless cooperation between all actors in homecare
- Information
  - Information flow between actors in homecare
  - The chain between various administrations, e.g. health centres, hospitals, municipality
- Personnel
  - Lack of time
  - Exhaustion
- Security issues
  - Lacking security network
  - Control equipment at home

Sweden:

- Organisation
  - "Too many cooks in the soup"
  - Three organisations for healthcare, rehabilitation, research and education
- Education
  - Uneducated and inexperienced personnel
  - Hard to find educated personnel





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- ❑ Care recipients/users
  - Improve opportunity for consultations at home
  - Trust and safety
- ❑ Personnel/working environment
  - Lack of personnel
  - Does everyone want to be home?
- ❑ Distance/home
  - It is difficult to adapt homes to good ergonomics
  - Obstacles to home care for children with functional disability
- ❑ Communication and information
  - Lack of communication between various administrations, e.g. health centres, hospitals, municipality
  - Problem of getting the right information to the right place at the right time

Norway:

- ❑ Care recipients/users
  - Loneliness
  - Complicated problems
- ❑ Organisation
  - Organisation development and ICT development
  - Quality issues
- ❑ Personell
  - Recruitment
  - Competence
- ❑ Communication and information
  - Lack of communication
  - Lack of ICT based communication systems
- ❑ Economy
  - Priorities
  - Economy cut down

It became quite obvious, that the situation in the three participating regions doesn't vary a lot. The same problems came up one after one, based on long distances, decreasing resources and problems with information and communication.

### *Task 2.2 Survey on current situation:*

Information on projects, as well as experiences acquired from them, and organizations focusing on eHealth in home care/rehabilitation sector (North Calotte, Europe).

Activities taken during the project: a list of projects going on on the research area "home care" and eHealth was collected with basic information about the projects. The list includes nationally and by EU funds financed projects.

### *Task 2.3 Choose of the common development area*

Activities taken during the project:

For getting an overall picture of the situation in the northernmost regions in Europe, a common transnational workshop was arranged in Ylläsjärvi 4. - 5.12.2002. There were 19 participants from all

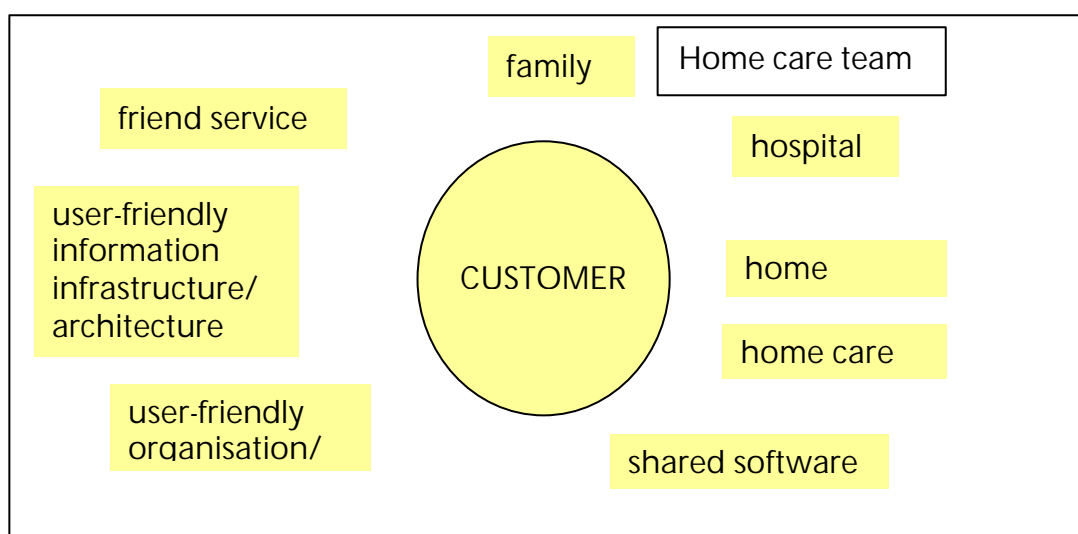


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the three countries and the participating organisations were: Kemi-Tornio Polytechnic, Mawell Ltd, Rovaniemi Polytechnic, Länsi-Pohja District Hospital from Finland, Tromsø municipality, Norwegian Centre for Telemedicine, Finnmark College and Telenor FoU from Norway and Luleå municipality, Piteå Bya foruma, CDH and Luleå University from Sweden. In the workshop the results from the previous three national workshops were presented and a common logical framework for development work was set up. Once again the problem areas in home healthcare were mapped and ranked after the importance for the target group. One of the results was also an action plan for the rest time of the pre-project. The complete results of the workshop are presented in Appendix 4.

The common development area can be described in a picture:



The main beneficiaries of the development work are elderly people living at home and needing help, having memory problems and multi diseases. By this development work we want to develop and test methods across the northern regions, to improve the quality of life for elderly people and allow more flexible and effective homecare services. The development also aims to bring together public organisations and business initiatives so as to contribute to more effective use of resources in home healthcare.

### 3. Research and development project

The third activity is to create operational and financial preconditions and models for the international project/projects.

Content of an international project will be specified based on the surveys and workshops. Consortium, responsibilities, and financing will be determined.



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### *The research and development project plan*

An initiative for a research and development project was prepared based on the need analysis and workshops carried through during the pre-project.

#### Overall objective

The objectives of this project are to develop and test methods using ICT (especially mobile solutions) across the northern regions, to improve the quality of life for elderly people and allow more flexible and effective homecare services. The project also aims to bring together public organisations and business initiatives so as to contribute to more effective use of resources in home healthcare.

In this project we will enable ubiquitous management for home healthcare patients and assist home care professionals in coping with patient's needs in remote regions. This means bringing together the regional requirements and business initiatives to measurably improve communication and service provision safely in home care using ICT. Sharing experiences of the common and different challenges and developing technological solutions and methodologies across the northern regions will contribute to more effective use of the resources in the home care system; so as to make the services accessible at the right time in the right place. One of the goals is also to provide increased empowerment for citizen's relatives and other people around the citizen.

#### Project purpose

The purpose of the project is to provide customer-oriented empowerment-focused quality service provision in the right place at the right time which includes competence-building and empowerment.

#### Intended results

Increased empowerment for home care team (patient, relatives, care givers, professionals)

- A methodology for empowering all actors in home care (customer, caregiver, administrator) on technical, medical and personal levels.
- A comprehensive document that recommends methods for improving overall effectiveness and quality of the activities in home care, that is transferable in different situations.

Increased competence for all regardless of distances

- Report on the current state of education in home care.
- Recommendations/work plan for improving home care education.
- Course for trainers of home care.

Information/communication system/platform for home care created, tested and evaluated

- Different access to information at different levels for different groups of the Care Team (patient, caregivers/professionals, relatives, friends).
- Interactive generic platform.
- Information on a patient's health and security status.
- Access to reliable resources of knowledge (for professors, patients, relatives etc.).
- Patient network (people who have similar diseases).







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- Access to up-to-date information.

Tested homecare team model which can also be used after the project

Activities/work packages

WP	Description
1	Methodology for empowerment
2	Competence Building
3	Information and Communication in Home Healthcare
4	Project management

Timetable 2003 – 2006 (36 months)

Budget -1,5 M€

Participating organisations (partners or sub-contractors)

Kemi-Tornio Polytechnic	Finland
Rovaniemi Polytechnic	Finland
Lapland University	Finland
Mawell Ltd	Finland
IST International Security Technology Ltd	Finland
Tracker Ltd	Finland
Länsi-Pohjan keskussairaala	Finland
Municipalities in Lapland	Finland
Centre for Distance-Spanning Healthcare	Sweden
Luleå University of Technology	Sweden
Luleå Municipality	Sweden
Mäkitalo Research Centre	Sweden
Kiruna municipality	Sweden
Norwegian Centre of Telemedicine	Norway
Telenor AS	Norway

An Interreg funding application was delivered 17.3.2003. Some changes had to be done to the project plan due to the budgetary limits (timetable, partners).

#### 4. Working up an exploitation plan

To ensure the scope and quality of the project an exploitation plan will be set up during the pre-proposal phase. The plan will be written for the participating companies, education and research organizations as well as for the other (public) organizations participating the project.

The results of this pre-project will be exploited via research and development projects on inter regional Interreg III A area), European and international level. One possibility is to develop the ideas horisontally on Northern Dimension zone from North-Western Russia to Canada.

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## 2. Project implementation and budget/financing

The activities of the project were wider than expected in the project financing plan and the quantity of own financing (mostly working time) was bigger than planned. The budget was planned as follows. (Sweden, Finland, Norway)

Kostnadslag	2002	2003	200	200	TOTALT
Projektpersonal	20000				20000
Extern personal					
Förvaltningskostnader	1000				1000
Material/expenser					
Investeringar					
Resekostnader	9000				9000
<b>Sammanlagt</b>	30000				30000
Avgår norska kostnader	10000				10000
Avgår ryska kostnader					
Avgår projektintäkter					
Avgår andra icke EU-berättigade					
Summa EU-stödberättigat	20000				20000

The costs are as follows (Sweden, Finland and Norway), preliminary:

Kostnadslag	1.6.2002-31.3.2003			TOTALT
	Finland	Sweden	Norway	
Projektpersonal	5 558,70	5 444,66	9 500,00	20 503,36
Extern personal	1 925,34	3 114,06		5 039,40
Förvaltningskostnader	273,18	1 752,08	352,00	2 377,26
Material/expenser	35,08	238,62		273,70
Investeringar				
Resekostnader	2 413,38	1 606,53	4 770,00	8 789,91
<b>Sammanlagt</b>	10 205,68	12 155,95	14 622,00	36 983,63

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### 3. Evaluation of the project implementation

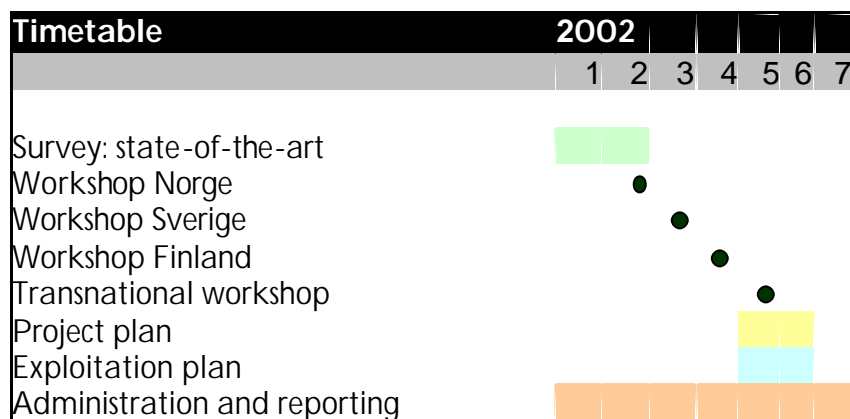
The project results were achieved and activities were taken as planned. The only change was postponing the project time due to administrative issues. It caused that we were not able to apply financing for a EU r&d project from the 5<sup>th</sup> Framework programme or from the first call of the 6<sup>th</sup> Framework programme.

There were not major problems with implementation of the project. The collaboration with the project partners went well. Costs became though higher than in the budget, but the limitations came from the financiers. (Budget maximum 30 000 euro).

### 4. Project organisation

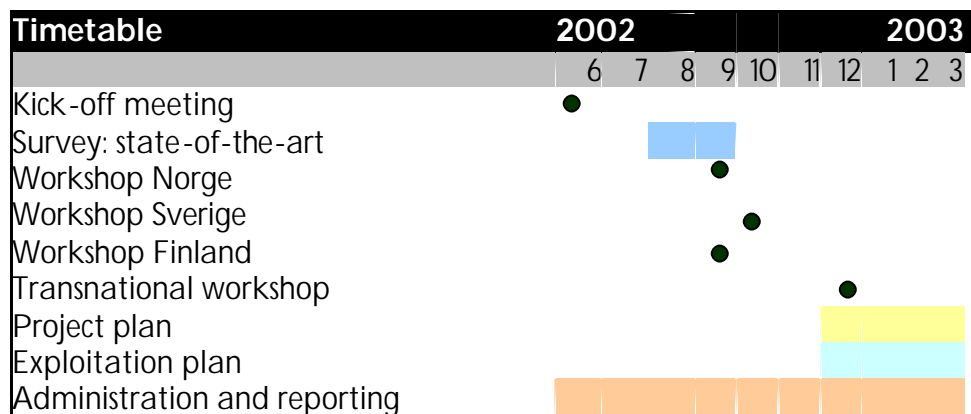
#### 4.1 Timetable

The original timetable for the project was as stated in table beneath



As the financing decision from the Interreg secretary came later than planned, the actual project start was postponed to the autumn 2002.

The project actualised as follows in the table:



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## 4.2 Project organisation

Kemi-Tornio Polytechnic, Riitta Alajärvi-Kauppi, coordinated the project. The main projectgroup members were Eero Pekkarinen (KTP), Kaisa Holma (KTP), Anne Luoma (KTP), Siri Björvig (NST), Tove Sörensen (NST), Kjersti Engeseth (NST), Lars Wikman (LUT/CDH), Anders Granström (LUT/CDH), Tony Scully (LUT/CDH) and Anne Kokko (RAMK).

### Meetings:

12. - 13.6.2002	Muonio Kick-off
17.9.2002	audioconference
17.10.2002	Luleå
29.11.2002	audioconference
20.1.2003	audioconference
17.2.2003	videoconference
25. - 26.2.2003	Tornio

## 5. Exploitation of the project results

The project findings establish a basement for continuing cooperation on the homecare sector in the northern regions of Europe. The next step will be actualising an inter regional development project on home care settings based on the needs and development issues found during the pre-project. Funding will be applied from Interreg III A programme.

As homecare and eHealth are an emerging issue also globally, the development will be widened to European level by starting preparing a research and development project for the 6<sup>th</sup> Framework programme.

Side of this project has started a small-scale co-operation project with Canadian eHealth actors. Results of this eHealth pre-project have been presented in three EU Canada e-Health workshops in Brussels (June 2002, June 2003) and Ottawa (March 2003). According to the results from the EU-Canada project, the homecare needs in Canada are quite similar to the Nordic ones. Co-operation with Canadian actors will be continued if funding will be found.

The network created in this pre-project and involving all important actors in the northernmost regions of Europe, is a valuable instrument in the future development work.