



## N4C and Arctic Action ICT Workshop

# Test beds for Rural Communities and Arctic Conditions

Tromsø 28 January 2010



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## Test beds for Rural Communities and Arctic Conditions

*A **testbed** is a platform for experimentation of large development projects. Testbeds allow for rigorous, transparent and replicable testing of scientific theories, computational tools, and other new technologies. (Wikipedia)*

The workshop **Testbeds for Rural Communities and Arctic Conditions** is a joint arrangement between the EU FP7 ICT project “Networking for Communications Challenged Communities”, N4C and the Arctic Council Sustainable Development Working Group project Arctic Action ICT.

The research theme in N4C is to provide Internet access to areas without any infrastructure for data communication. An important part of the project is to establish two testbeds, i.e. locations in the field with a platform and people for testing of experimental technology.

EU FP7 supports creation of testbeds and ‘Living Labs’ as part of the research policy. The good news is that testbeds also can create business and innovation in local communities.

This workshop will look at the concept of testbeds in a broad perspective. We will get an overview of the EU initiative for ‘Living Labs’ and testbeds. Then we will present some existing and potential testbeds, with a focus on rural areas in the northern regions. Can test beds in the Arctic be integrated in the community level so that Arctic competence, via these testbeds, influences the future technical development and gain job and SME opportunities?

The idea of the workshop is to combine impressions, analysis and experience from the participants and raise awareness about the potential that lies in taking a proactive approach to creation of testbeds in our northern regions.

Both technical, community and, business model topics will be covered.

### Practical Information

**Time:** 28<sup>th</sup> January 2010 , start at 09:00 and end at 16:00

Participation, including lunch and refreshments, is free of charge. Lunch is served at 12:00

**Venue:** Tromsø Science Park (Forskningsparken i Tromsø)

**Registration:**

Please contact Sigurd Sjursen, Norut Tromsø, e-mail [Sigurd.Sjursen@norut.no](mailto:Sigurd.Sjursen@norut.no) or telephone +47 905 35 709

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**See next page for the program outline.**

## Program outline

Theme	Speaker
Welcome by hosts and organizers	Director Ivan C. Burkow, Northern Research Institute (Norut) Dr. Maria Uden, Luleå University of Technology (LTU)
The European Living Lab movement – an overview	Annika Sällström, Centre for Distance-Spanning Technology, LTU
Case study: Test bed for small scale energy production in a rural community	Director Håvard Ås-Hansen, Dyrøy Energi AS
The Indigenous Portal and working with ICT from indigenous perspective – report from a meeting in UN, New York	Fritz-Åke Kuoljok, LTU
The N4C test plans summer 2010 and their value from technical research point of view	Dr. Stephen Farrell, Trinity College Dublin
The Barrow Science Consortium – What do we do, how does it work?	Dr. Richard Beck, University of Cincinnati and USA contact for Arctic Action ICT
A gender analysis from a Swedish - Russian project on local development in rural areas in the Archangelsk region	Natalia N. Kukarenko, Norut
Business models for rural communities and Arctic conditions	Barbro Fransson, Power Lake AB, leader for the business development and dissemination in N4C
Creating and testing APRS (Automatic Position Reporting System) - technology for GPS tracking and messaging (via radio and Internet) in areas without infrastructure	Dr. Øyvind Hanssen, University of Tromsø, (and a devoted radio amateur)
Discussion: What can people in rural communities and Arctic conditions gain from developing ICT test beds, and how should we go about doing it?	Discussion facilitator Dr. Maria Udén

## Arctic Action ICT and N4C

Even if generic technologies such as TCP/IP have formed the powerful core, the conditions for building and establishing Information and Communication Technologies differ throughout the world. The Arctic conditions challenge ICT state-of-the art both in terms of software, hardware, business models, infra structure and regulations. Arctic Action is an initiative to develop solutions for Arctic populations, especially the rural populations that cannot benefit from technology effectively developed for urban conditions, and for demanding tasks in unsettled areas such as mobile outdoor work e.g. reindeer herding, and climate monitoring.

Arctic Action is an initiative to develop solutions for Arctic populations, especially the rural populations. Arctic Action ICT is coordinated by Luleå University of Technology, Sweden. The

activity is organized as research and development in N4C, and exchange of ideas between the N4C environment and research and development in U.S.A/Alaska with contact person Richard Beck. The coordinator is Luleå University of Technology in Sweden, Dr. Maria Udén. The present set of Arctic Action will be able to present technical developments of interest for Arctic populations, publicly accessible through the N4C wiki. However, throughout the Arctic there are a number of initiatives to develop, test and implement both technical and business model solutions. Arctic Action could play a supporting role if developed to a platform for exchange of ideas and experiences. The workshop is one step to develop the idea.

The N4C project aims to foster eInclusion by extending access to the Internet to people, businesses and authorities. Starting in May 2008, N4C, is a 36 month research project in the Seventh Framework Programme ([www.cordis.lu/fp7](http://www.cordis.lu/fp7)). The project designs and experiments with ICT architecture, infrastructure and applications in field trials and builds two test beds. N4C jointly studies the problem of making available broadband communication for areas that today lack coverage and further to development of Delay Tolerant Network (DTN) for such areas. N4C develops two test beds to study possible techniques and usage; one located in Swedish Lapland the other in the mountain area of Slovenia. Some of the aims of the N4C project are to test its use for tracking reindeer, for the use by hikers in the fells, and to gain meteorological and environmental data.

Through N4C, two organizations in Arctic Council member states participate in Arctic Action. It is Luleå University of Technology, located in Luleå, Sweden and, Northern Research Institute Tromsø AS located in Tromsø, Norway. Additionally, via the Technical Advisory Board there is presence in N4C from USA and Canada. These are personal appointments of Dr. Vinton G. Cerf, Mr. Kevin Fall and Dr. Michael Gurstein.

Document history		
Status	Date	Author
Final version	2010-01-20	Maria Udén, Sigurd Sjursen
Second draft	2010-01-14	Maria Udén, Sigurd Sjursen
First draft	2009-11-12	Maria Udén

Dissemination level	
	Level
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