



N4C FINAL CONFERENCE

Future Internet Learning from Experience

Access the recordings of the N4C Final Conference at:

Morning session:

<https://connect.sunet.se/p42386054/>

Afternoon session:

<https://connect.sunet.se/p67738589/>

Exclusive for the Conference - Vint Cerf comments the N4C results:

http://www.4shared.com/video/E-R4I_1Q/N4C_Cerf_video.html

Access the Digital Diary from winter tests with reindeer tracking:

www.tannakab.blogspot.com

Executive Summary

N4C final conference concluding three years' work was arranged as an on-line conference. Participants were meeting up all over the world to listen to presentation of N4C results and to get expert comments from Vint Cerf, Patrik Fältström, Yngve Sundblad, António Dias de Figueiredo, Kurt Aagaard Nielsen, Avri Doria, Michael Gurstein and Ewa Gunnarsson to mention a few.

The N4C project attracts lots of interest. More than 160 persons had downloaded program and other presentations before the conference. In the peak during the conference day, 50 users where logged in and took part on line. As one user can represent either a person or a group using conference facilities this implies about 70 remote participants. In Luleå 30 persons had met up at the event including representatives for the Sámi organizations including the Swedish Sámi Parliament, the Swedish ministry of Agriculture and other prominent guests. Totally, counting both remote and on location participation more than 100 persons took part in the conference during the day.

The conference is the closure of three years' work but also the starting point for further research and development and, for further presentation of the research results in scientific papers and other media.



Networking for Communications Challenged Communities:
Architecture, Test Beds and Innovative Alliances
Contract no: 223994

D9.7

N4C Final Conference



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THE COVER PAGE PHOTOS

The majority of the photos on the cover page were taken on location in Luleå during the N4C final Conference 14 April 2011, or during the seminars held at Luleå University of Technology (LTU) as associated events to the Final Conference 13th – 15th April 2011.

Starting from top left:

- LTU PhD students John Näslund and Samo Grasic with Conference Chair Dr. Maria Udén
 - Dr. Vinton G. Cerf, Honorary Doctor at Luleå University of Technology and Universidad Politécnica de Madrid. Note: This picture is taken from <http://apusa.us/father-of-internet-11893/>
 - In the front row counted from left: Dr. Caroline Wamala, LTU/SPIDER, Dr. Maria Udén, LTU, Professor emeritus Yngve Sundblad, The Royal Institute of Technology in Stockholm, Professor Kurt Aagaard Nielsen, Roskilde University, Professor Ewa Gunnarsson, LTU. Second row from left: Avri Doria, Independent Consultant, USA, Dr. Malin Lindberg, LTU, Elwyn Davies, Folly Consulting Ltd., Barbro Fransson, Power Lake AB.
 - Counted from the camera: Dr. Malin Lindberg, LTU, Dr. Caroline Wamala, LTU/SPIDER, Ms. Avri Doria, Independent Consultant, USA, Dr. Jennie Olofsson, LTU, Mr. Fritz-Åke Kuoljok, Sirges Sámi Village
 - Small pictures: LTU student Josef Tallenhed, chat editor during the conference; Dr. Stephen Farrell, Trinity College Dublin (picture from an earlier N4C meeting)
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| | |
|---|----|
| INTRODUCTION TO THE N4C FINAL CONFERENCE REPORT | 1 |
| THE ORGANIZATION OF THE CONFERENCE..... | 2 |
| THE INVITATION..... | 2 |
| INVITATION WITH PROGRAMME, INFORMATION ABOUT SPEAKERS, CONFERENCE AND SESSION CHAIRS AND OTHER DETAILS | 3 |
| ASSOCIATED EVENTS AT LULEÅ UNVIERSITY OF TECHNOLOGY..... | 10 |
| DISSEMINATION ASPECTS OF THE CONFERENCE AND SUMMARY OF THE PROCEDURE..... | 13 |
| | |
| APPENDIX: CONFERENCE POSTERS | |

INTRODUCTION TO THE N4C FINAL CONFERENCE REPORT

A main ambition while planning for the final conference of the FP7 project N4C was to reach a wide audience of stake holders and interested parties. Therefore, we initially searched for a suitable as well as major conference and venue where we could arrange a side event or perhaps workshop to share the project experiences. This proved to be difficult. The larger conferences that could fit with the ambition to reach wide selections of audiences generally run in the fall/early winter season while N4C ends in April. Thus, we concluded that an internet based conference would be the reasonable option.

A conference concluding a project has several goals. One is to gather the group that has worked together, for a last opportunity to share experiences, ideas and results. It can be noted that an internet based conference using an easily accessed platform, generally allows more staff working with each partner to take part. Additionally, the project participants want to showcase their results to as many as possible and particularly among their respective target groups. Finally, a given aim is to bring up themes for further discussion, which have appeared as relevant in light of the project. This is not exactly the same as holding forth project results. It can also be a matter of opening up for questions or lines of thought that have arisen in the course of the project time.

The theme for the N4C final conference was Future Internet Learning from Experience. This title, with the acronym FILE relates to the initiative Future Internet Research and Experimentation, FIRE which is the initiative that N4C has been a part of during its three years as an FP7 project. Some of the experiences represented in the conference can shortly be commented on here.

First, while focused on producing new solutions for the future internet, the N4C group has had among its advisors people that were originally vital contributors to the design of the internet operations as we know them today. As shown in their conference presentations, these distinguished persons find that we cannot in the present rely on achievements of the past. Secondly, ambitions regarding knowledge society inclusion are included in the N4C scope. Thanks to some other contacts in the group, for this conference we were fortunate to engage European pioneers in participative design and action research. They represent a well established tradition of using interactive methods and sociological thinking in technology development and knowledge society processes. An argument from their part is that for an inclusive and sustainable future internet, participative development processes are necessary (a robust internet, one may say). Mixing this way of working with established high-tech routines is anything but easy.

This report starts with the conference invitation and program, including presentations of the speakers and other people involved in the planning and execution of the conference. Thereafter, some associated events that were held at Luleå University of Technology in connection to the conference, are briefly described. Finally, details about the dissemination reached through the conference are presented in quantitative as well as qualitative terms.

An appendix to this report includes the posters that were produced for the conference by the different N4C teams. All posters are also available via www.n4c.eu and the wiki http://wiki.n4c.eu/wiki/index.php/Posters_Index . The information about the conference can be reached via the N4C web page www.n4c.eu and some of the most interesting links are also presented on the cover page of this report.

THE ORGANIZATION OF THE CONFERENCE

Responsible partner for the N4C Final Conference was Luleå University of Technology with N4C project manager Dr. Maria Udén as conference chair and Dr. Caroline Wamala as co-chair, while Samo Grasic and John Näslund prepared the technical platform and educated all partners in its use. Paulo Freitas at Instituto Pedro Nunes (IPN), Coimbra, was responsible for organising the participation of a key note speaker from Portugal, the organization of the wiki based poster session and the video which was shown during the conference lunch break. An internet based conference has one particular risk in that malfunction in local servers or systems can interrupt the sessions. However, as the internet is also distributed in its organization, roles can be taken over from one partner by another, would such local interruptions occur. IPN and the N4C's Slovenian partner MEIS were prepared to take over the chair function if LTU had faced technical difficulties. These partners put in extra efforts to gain a thorough understanding of the conference plan as well as the technical platform.

As leader for the N4C Dissemination work package Barbro Fransson, PLAB, provided advice and guidance in all aspects of planning, dissemination, strategic distribution of invitations, dissemination on the web site www.n4c.eu and the numerous details that require attention in this type of event.

The members of the conference scientific committee were Professor Ewa Gunnarsson, LTU, Dr. Michael Gurstein, Editor in Chief of The Journal of Community Informatics, and Dr. Anders Lindgren, Swedish Institute of Computer Science. Professor Gunnarsson primarily took part in securing the conference planning procedure and the development of the conference theme, while Dr. Gurstein and Dr. Lindgren made a focused and highly appreciated input in reviewing the conference posters.

THE INVITATION

When preparing the invitation we took into account the importance of providing as much background information on the project as possible without having too much text at the same time. Therefore we sought to highlight the important phrases in red, to attract the reader's attention. Similarly the choice of blue font is in line with the N4C colour logo and would likely attract the reader's attention.

The invitation document follows below.



N4C FINAL CONFERENCE

Future Internet Learning from Experience

The N4C Final Conference – an internet event open for your online participation from home, travel or office

Date: 14 April 2011 at 10:00–14:00 and 16.00–20:00 CET
Platform: Adobe® Acrobat® Connect™ Pro Meeting

Access the conference at:
<https://connect.sunet.se/n4c/>

See posters from all N4C Partners at:
http://wiki.n4c.eu/wiki/index.php/Posters_Index



ABOUT N4C

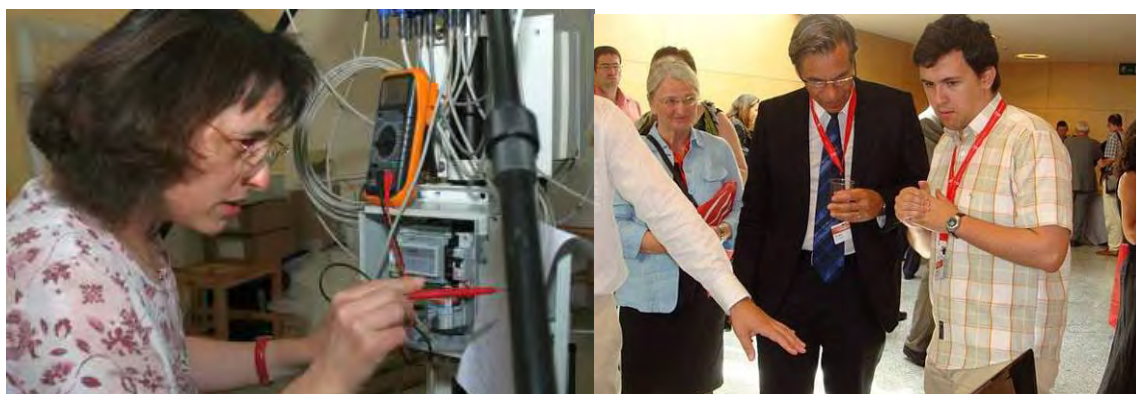
The Networking for Communications Challenged Communities (N4C) project is funded from **May 2008 to April 2011** from the Future Internet Research and Experimentation (**FIRE**) initiative in the European Union Seventh Framework Programme. The consortium consists of twelve partners in eight European countries. Together the partners have been looking at ways to extend Internet access to remote regions that do not have reliable and affordable network access today. There are many locations in the world that are not within reach, or at least not within affordable reach, of the optical fibres, copper cables, radio waves or even satellite links that make up the physical infrastructure of the world's networks. Currently, being unable to reach this physical infrastructure precludes a user from accessing any of the Internet's services. Our take on this challenge has been to use novel technologies to exploit new communication opportunities.

A key role in N4C is played by the emerging **Delay and Disruption Tolerant Networking (DTN) technology**. Another key factor which has been researched in N4C is the **air-interface technologies** for the purposes of remote and communications challenged areas.

A central means for our strategy has been to set up test beds in two communications challenged areas in Europe, where the Consortium has had the opportunity to put the research and development results to trial in real life tests and networking experimentation. The **test beds** have been situated in:

- **Swedish Lapland**
- **Kočevje in Slovenia**
- **Galway, Ireland (SmartBay)**

The Consortium members are: Luleå tekniska universitet, Sweden (Coordinator); Albentia Systems, S.A. and Universidad Politécnica de Madrid in Spain; Intel Performance Learning Solutions Ltd. and Trinity College Dublin in Ireland; Northern Research Institute Tromsø AS, Norway; ITTI Ltd., Poland; Instituto Pedro Nunes, Portugal; MEIS storitve za okolje d.o.o., Slovenia; Power Lake AB and Tannak AB, Sweden; Folly Consulting Ltd., U.K



14 April 2011 10:00–14:00 and 16.00–20:00 CET

Programme outline – Updated versions posted at www.n4c.eu
Future Internet Learning from Experience (FILE)

| | |
|---|--|
| Introductory notes | Ewa Gunnarsson Professor, Luleå University of Technology, Sweden Avri Doria Independent consultant based in USA, and Professor at LTU |
| Keynote Speakers | Antonio Dias de Figueiredo Independant Consultant, Portugal Patrik Fältström Distinguished Consulting Engineer, CISCO, Sweden Kurt Aagaard Nielsen Professor, Roskilde University, Denmark |
| From N4C | The conference theme refers to two aspects of the N4C work. One aspect is the experimental character of N4C, and the field tests in remote locations in Europe. We have combined this approach with more established methods, to gain experience and feedback to our technical designs, but also as means to evaluate and rethink taken for granted methodologies. Secondly, N4C is one among a tradition of projects including socio-economical goals in technical development. From the architecture to details such as the development of applications prototypes, we have aimed at being useful for communications challenged communities in particular. These aspects will be portrayed in the N4C presentations directly from Partners' locations , and through the chat we invite your questions and your ideas in respect to the conference theme and the session themes. |
| Video Launch | A highlight is the launch of a video with Dr. Vinton G. Cerf . Dr. Cerf was one of the main discussants during the preparatory and proposal writing stages of the application to the EU FP7 call. In the video he will communicate his view on the N4C progress and results |
| Scientific Committee | Professor Ewa Gunnarsson , representing the organizer, with N4C Technical Advisory Board members Dr. Anders Lindgren , Swedish Institute of Computer Science (SICS) and Dr. Michael Gurstein , Editor in Chief of The Journal of Community Informatics |
| Posters | Posters are available via the N4C home page www.n4c.eu and the N4C wiki http://wiki.n4c.eu/wiki/index.php/Posters_Index |
| Your participation | The conference link will be provided to you by e-mail, from where you will be able to follow the presentations and discussions. The technical platform allows Your participation through chat. Comments and questions are forwarded to the speakers and the Chat editor will periodically summarize the chat |
| For enquiry www.n4c.eu | Questions? Please contact the conference chair Dr. Maria Udén at: maria.uden@ltu.se or Dr. Caroline Wamala at: caroline.wamala@ltu.se |

| 14 TH APRIL N4C FINAL CONFERENCE 2011 | | | | |
|--|--|----------------------------|---|------------------------------|
| Start CET | Theme | Speaker | Topic | Chair/editor |
| 10.00 | Meeting opens | Maria Udén | Welcome | |
| 10.15 | Access and participation: The knowledge society context | Ewa Gunnarsson | Knowledge processes in N4C - introductory note | Maria Udén & Caroline Wamala |
| 10.30 | | Patrik Fältström | Internet access is needed for participation in the 21st century society - therefore we need several technology options | |
| 11.00 | | Kurt Aagaard Nielsen | Action Research for sustainable development: why sustainable innovations need participation: and democratic innovations | |
| 11.30 | Discussion/chat w. Yngve Sundblad chair, Josef Tallenhed chat editor | | | |
| 12.00 | Technology & innovation for communications challenged communities | Avri Doria | Why use DTN for Communications Challenged Communities? Introduction and forward view | Michael Nilsson |
| 12.30 | | Sigurd Sjursen | Making applications for communications challenged communities | |
| 13.00 | | Santiago Zazo Bello | Air-interface technologies - progress in N4C and beyond | |
| 13.30 | Discussion/chat w. Yngve Sundblad chair, Josef Tallenhed chat editor | | | |
| 14.00 | Lunch Break <i>with project presentations rolling</i> | | | |
| 16.00 | Implementation in society and economy | António Dias de Figueiredo | Socio-technical sustainability – the appropriation of technology in society | António Cunha |
| 16.30 | | Paulo Freitas | System integration - autonomous platform preparing for autonomous implementation | |
| 17.00 | | Barbro Fransson | Exploitation of results in cases where the commercial interest is limited | |
| 17.30 | Discussion/chat w. Yngve Sundblad chair, Josef Tallenhed chat editor | | | |
| 18.00 | The legacy of N4C | Vinton G. Cerf | Video with comments on the occasion | Maria Udén & Caroline Wamala |
| 18.30 | | Marija Zlata Božnar | Results from combining high-tech and Living Labs methods | |
| 19.00 | | Stephen Farrell | Delay Tolerant Networking - impact in standards and research community | |
| 19.30 | Discussion/chat w. Yngve Sundblad chair, Josef Tallenhed chat editor | | | |
| 20.00 | Closing of the conference | | | M. Udén |



ABOUT THE INTRODUCTORY NOTE AND KEY NOTE SPEAKERS

Ewa Gunnarsson Chair of the Division Gender and Innovation at LTU represents the conference organizer and contributes with her unique experience from gender mainstreaming in knowledge organizations. Since the early 1980's Professor Gunnarsson is a recognised pioneer for using interactive methodology for ICT development.

Vinton G. Cerf is known as the "Founding Father of the Internet". With Robert Kahn he co-designed the TCP/IP protocols and the basic Internet architecture. Dr. Cerf founded and led the Internet Society and later, as Chair of ICANN and in other positions he has continued being an essential contributor to the internet's global development.

Avri Doria With merits from ICANN and known as spokesperson for the civil society in the Working Group on Internet Governance and later in the Internet Governance Forum, Avri Doria combines technical and governance expertise. Visiting at LTU in 2002 she launched the architecture idea which started the process presently represented by N4C.

Antonio Dias de Figueiredo is a renowned expert on IT in Learning & Education and the Socio-Technical Sustainability of Business, Innovation, Education, and IT. Former Professor of Informatics and Information Systems, University of Coimbra and Chair of PROMETEUS, he has developed advanced initiatives with UNESCO, NATO, and OECD.

Patrik Fältström Distinguished Consulting Engineer, CISCO, is globally known for his work on the Internationalized Domain Names (IDN) and other measures where technical design is made to facilitate cultural diversity and equal access. In his native country he is known as one of the people that realized the core national infra structure for the internet.

Kurt Aagaard Nielsen represents expertise in the field of democracy, participation, and knowledge society development strategies. A sociologist by training, Dr. Aagaard Nielsen is presently a Professor at Environmental, Social and Spatial Change at Roskilde University. His recent publications include 'A New Agenda for Sustainability' from 2010.

ABOUT THE N4C SPEAKERS AND THEIR HOME ORGANIZATIONS

Sigurd Sjursen represents the Norwegian N4C partner **Norut** and has been the leader of the Work Package “Pervasive applications”. Norut’s ICT department does net-centric research in the fields of seamless networking, networked multimedia, mobile applications, and related fields. In 2001 NORUT was appointed ESA Expert Support Laboratory by the European Space Agency.

Santiago Zazo Bello is a professor at **Universidad Politécnica de Madrid** and has been the leader of the N4C Work Package “Air-interface technologies”. This has involved the definition and design of the air interfaces suitable for the established requirements for a set of different scenarios of communications challenged communities, from point to point broadband communications to wireless sensor network links.

Paulo Freitas represents the Coimbra based Portuguese partner **Instituto Pedro Nunes** which is the lead partner of the Work Package “System Integration”. IPN has six laboratories and works closely with the University of Coimbra, and its Faculty of Sciences and Technology. The Laboratory of Automation and Systems (LAS) – has been the main laboratory involved in N4C.

Barbro Fransson is the owner of Swedish partner **Power Lake AB**. She has been the leader of the Work Package “Dissemination”. Besides leading the development of the N4C dissemination strategy, and the N4C graphic design, Barbro Fransson has worked with the issues of business plans for the N4C products and in particular paid attention to the situation in communications challenged communities and to the open-source concepts.

Marija Zlata Božnar is PhD in Electrical Engineering and together with Primož Mlakar she is owner of the Slovenian partner **MEIS d.o.o.** Dr. Božnar has lead the N4C Work Package “Tests and validation in two remote test beds”. Besides leading the test bed development MEIS has contributed with software programming and expert knowledge in design of automatic environmental measuring systems.

Stephen Farrell represents **Trinity College Dublin**. Dr. Farrell is a distinguished and well known actor in standards development for DTN. As leader of two Work Packages, “Software for DTN and opportunistic networking” and “Specialized hardware for DTN networking” he has worked closely with N4C’s second Irish partner **Intel Performance Learning Solutions**. One of their results is a “village router” for setting up DTN networks in communications challenged communities. and a spin-off is the company Tolerant Networks Ltd.. <http://www.tolerantnetworks.com/>

The coordinator Luleå University of Technology wishes to thank the above mentioned partners, the speakers and their colleagues for their high quality and inspired work in N4C, and also direct the same gratitude to **Albentia Systems SA, ITTI Ltd., Tannak AB** and **Folly Consulting Ltd.** and their staff. Special thanks to **Elwyn Davies** at Folly Consulting for editing and organizing the poster session.

See presentations of the N4C partners at <http://www.n4c.eu/Partners.php>

See also the conference POSTERS prepared by all partners at:

http://wiki.n4c.eu/wiki/index.php/Posters_Index

About the Conference and Session Chairs

Conference Chair: The N4C Project is coordinated by Luleå University of Technology in Sweden, and Dr **Maria Udén** as the project leader, has a long history with developing the N4C project. Dr Udén is a researcher in the area of gender studies and engineering science, with a focus on applied engineering and sustainable development.

Discussion chair: **Yngve Sundblad** is Professor emeritus in Computer Science, at the Royal Institute of Technology in Stockholm. Professor Sundblad is a pioneer both in the sense that he was one of the leading persons to first bring the internet to Sweden and, in terms of including end users in research and development.

Session Chair: **Michael Nilsson** is general business manager at Centre of Distance-spanning Technology. CDT is a known actor in the Living Labs movement and was involved in the staging of the N4C project. Mr Nilsson is currently the coordinator of the FP7 support action FIREBALL <http://www.fireball4smartcities.eu>

Session Chair: **António Cunha** is the vice director of Laboratory of Automatics and Systems at the Instituto Pedro Nunes. He has led the N4C System Integration work package. He has the vision of extending results from European research to Portuguese speaking developing regions in Africa and South America.

Conference co-chair: Dr **Caroline Wamala** shares her time between Luleå University of Technology and the Swedish Program for ICT in Developing Regions (Spider). She gives particular attention to gender and the influence of the cultural environment on technology adoption and use.

Chat editor: **Josef Tallenhd** is a 21-year old who has studied TV-production at Luleå University of Technology for two years. Josef says about himself: On my spare time I play and record both Hip-Hop- and Pop music. My dreams and goals are to become a talented songwriter and producer.

A heartfelt welcome to the N4C final conference!

Questions? Please contact maria.uden@ltu.se or caroline.wamala@ltu.se



ASSOCIATED EVENTS AT LULEÅ UNIVERSITY OF TECHNOLOGY

The following pages describe the two days of critical analysis and future research oriented events that were organized at Luleå University of Technology in association to the Final Conference.

These events will have effect in coming scientific dissemination and has created platforms for further development of research orientation in the interface between high-tech and knowledge society discourses.

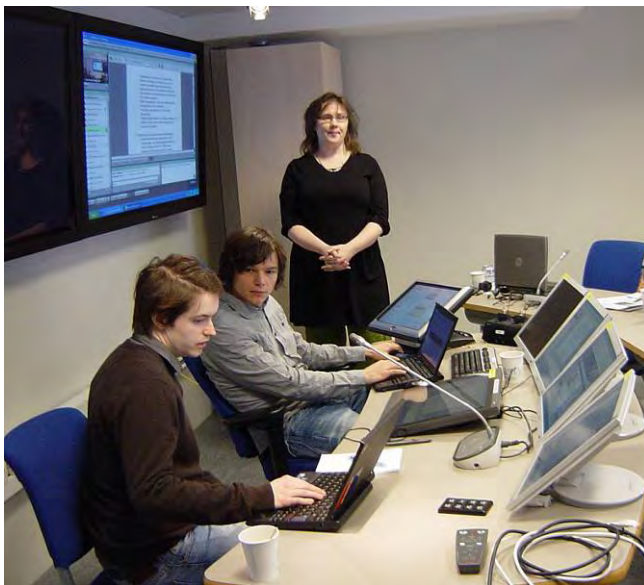
13 April 2011 13:00–16:30

Future Internet Learning from Experience
Associated events at Luleå University of Technology

13 April Scientific Dissemination preparations seminar

During the N4C project **Samo Grasic** and **John Näslund** have been working with central activities in the project. These have included participation of the further development a routing protocol (PRoPHET), the preparation of its implementation and network set ups for communications challenged areas, and; the development of end-user applications and user interfaces (so-called GUI). They have carried out more than six individual sequences of system integration and execution of real life tests in extreme remote areas in Swedish Lapland, including combining the technical set-up and operations with end-user interaction, with on-site observations, research diaries, interviews and questionnaires.

As N4C ends, Samo and John will continue their positions at Luleå University of Technology (LTU) with developing their experiences and material to scientific dissemination in their coming PhD theses. On 13th April their respective work and further plans were discussed with “opponents” and a seminar audience from LTU. The advice from the “opponents” or discussants is used in the strategies for the completion of the theses. The opponent/discussant of Samo Grasic was **Dr. Mohammed Aminu Sanda**, a visiting researcher at LTU, from **University of Ghana Business School** where he teaches among other subjects Strategic Management in engineering. The opponent/discussant of John Näslund was **Dr. Rupesh Kumar**, Department of Civil, Environmental and Natural Resources Engineering, LTU. Dr. Kumar is an entrepreneur who thinks “outside the box” and combines European and Indian practices. <http://www.ltu.se/press/d2958/1.66575?l=en>



From left: John Näslund and Samo Grasic were Responsible for the technical platform during the N4C Final Conference. Also: Dr. Maria Udén



Dr. Mohammed Aminu Sanda



Dr. Rupesh Kumar

15 April 09.30–12:00 CET

Future Internet Learning from Experience
Associated events at Luleå University of Technology

15 April Post conference reflections seminar

A conference is an intense experience where many themes and ideas are brought up. In order to reflect further on the results presented and discussions opened in the N4C Final Conference, a post conference reflections seminar was arranged on 15th April 9.30 to 12.00. The seminar started with a presentation by **Professor emeritus Yngve Sundblad** from the **Royal Institute of Technology** in Stockholm. Professor Sundblad has the experience both from the very early days when the internet was first implemented in Scandinavia and Sweden and, from interactive technology development with end users participating in the design and construction processes of ICT tools and systems. Also Professor **Kurt Aagaard Nielsen** participated in the reflection seminar and he continued on the thread started during his speech at the conference the day before. The main part of the seminar participants were from the Department of Business Administration, Technology and Social Sciences, with Professor Ewa Gunnarsson as presenter and Dr. Maria Udén as Chair of the seminar. The seminar was informal and of working seminar type, with the aim of opening for critical discussions on methodology and important features of communications development. One theme that emerged was the creation of teams and consortiums where both laymen and experts are participating. What motivates different actors? How are shared visions and mutual learning best promoted? What expectations do different actors have on each other? Examples were given from N4C as well as several projects where Professors Sundblad, Aagaard Nielsen and Gunnarsson have been participants and coordinators, for instance **interLiving 2000-2003** funded by EU's program "Disappearing Computer" and **Democracy and nature protection** financed by the Danish Friluftsrådet.



From left: Dr. Maria Udén, Professor Yngve Sundblad, Professor Kurt Aagaard Nielsen. Photo from the N4C Final Conference Future Internet Learning from Experience

Dissemination aspects of the conference and summary of the procedure

The dissemination aspects of the N4C concluding conference Future Internet Learning from Experience can be outlined in three different levels.

1. The first level concerns participation in the organization of the conference and in carrying it out
2. The second level can be referred to conference participation
3. The third level is interest which is paid to the conference material after the conference, and how this is linked to interest in the project and its result. To display this effect, statistics from the N4C web site are showed last in this report. The week end after the conference the number of visitors was 160 and a week after the statistics showed 198 visitors on "Final Conference", 69 on "Program" and 35 who opened the page with details about the speakers

Luleå University of Technology (LTU) was responsible for the conference. To reach a wider engagement in this final dissemination event, partners Instituto Pedro Nunes (IPN) and MEIS where asked to participate in the arrangements and accepted. IPN organized the participation of one of the keynote speakers from location in Coimbra, Portugal, as well as the Poster submission and also created the video that was displayed during the conference lunch break. MEIS where engaged to act as a risk eliminator that is to take over certain responsibility would the LTU internet server malfunction or other unforeseen events limit the coordinator's capacity for shorter or longer time.

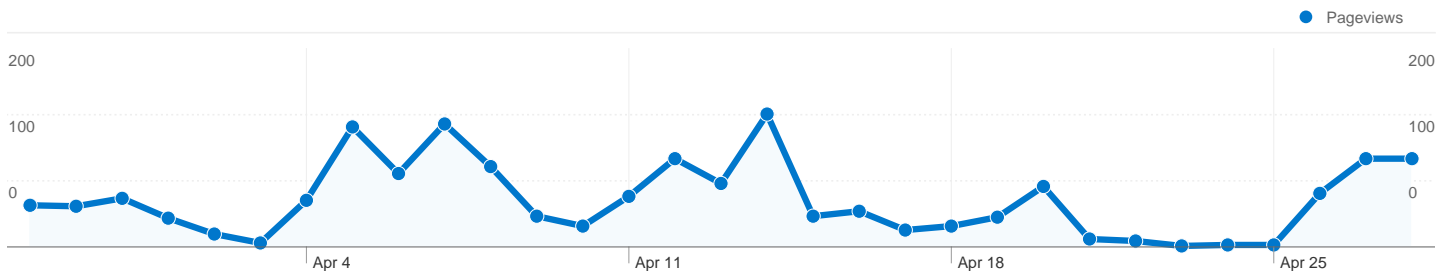
Furthermore, a dissemination effect is probable to be reached via the invited speakers and chairs for the conference as well as invited participants for the side events at LTU. This report lists senior and influential persons as well as younger and up-and-coming persons who through the conference learned about N4C and FP7. For instance, the dissemination in this respect has reached **African** scholars via Dr. Mohammed Aminu Sanda, who shares his time between LTU and the University of Ghana and, via Dr. Caroline Wamala from Uganda, who has recently received her PhD at LTU and is now moving to work with SPIDER, the Swedish Program for ICT in Developing Regions. Likewise, though Dr. Kumar is a Swedish resident he keeps close contacts with **Indian** universities, industry, media and government bodies.

Presenting numbers at large: In the peak during the conference day, 50 users where logged in and took part on line including from **U.S.A.** As one user can represent either a person or a group using conference facilities this implies about 70 remote participants. Several N4C partners had arranged joint participation for their staff. In Luleå 30 persons had met up at the event. Totally, counting both remote and on location participation **more than 100 persons** took part in the conference during the day. With regards to conference participation the major effect is probable to be reached via the large number of participants who could take part over the internet. However, it is especially encouraging to note the participation on site in Luleå by key stake holders and targeted audiences, Dr. Stefan Källman from the **Swedish Ministry of Agriculture** and Ms. Lena Nordlund representing the **Swedish Sámi Parliament**. Dr. Källman is a Swedish official in the **Arctic Council's Sustainable Development Working Group**. Ms. Nordlund represented personally the Chair of the Assembly, Mr. Stefan Mikaelsson who had planned to participate but was in last minute called to a meeting with the European Commission in Brussels. Also, Mr. Fritz-Åke Kuoljok who was the local field test manager for LTU in the Lapland tests participated in the full conference event from 13-15 April. Mr. Kuoljok who is a reindeer herder in Sirges Sámi Village was for several years the regional editor for the Arctic, for the **Indigenous Portal**, an internet portal that is an outcome of the World Summit on the Information Society.

Preparations for the N4C final Conference begun in December 2010 with email exchanges with Key Note Speakers such as **Vint Cerf** and **Patrik Fältström** confirming their participation in the conference. Befitting the theme, of the conference, Future Internet Learning from Experience, the decision to host this event through Adobe Connect, signalled the growing reliability towards having adequate access to the Internet but also the wide possibilities the technology provides in terms of geographical reach. As such one of the thought processes behind this decision was to also allow for world wide participation, where as aptly noted in the invitation that was widely distributed, "all you need is a laptop/computer, a webcam and microphone to take part in the conference". The European Commission and other major authorities and companies were represented, among those who registered for the conference and asked questions regarding its documentation.

Indeed the wide representation of participants from Europe, North America, South America and Africa, was symbolic of not only N4C having a far reaching legacy but the pervasiveness of the Internet. And yet, majority of the participants that succeeded in taking part in the conference proceedings were predominantly from Europe, one can realise this through the fact that Luleå University of Technology in Northern Sweden hosted the event, but one also cant help but recognise that the efforts of the European Commission to improve Internet access and connectivity in the continent can be seen to bare fruit. This same event further illustrated the wide gaps in the world of people with access to Internet and those without, for even though four continents were present, the more connected regions in the world represented majority of the participants. From the European delegates the countries identified from the participants that registered for the conference, included **Sweden, Germany, Poland, Slovenia, United Kingdom, Ireland, Portugal, Spain, Denmark, Finland, Belgium, Italy, the Netherlands and Norway**. North America was represented by participants from **Canada, the United States of America** and **Trinidad & Tobago**. The African representatives connected from **South Africa**, and the South American presence was noted from **Peru**. As it was possible to log in and participate in the conference using a pseudonym or for instance first name only, the list of geographical representation may be incomplete. However, it gives a picture of the outreach. It need be noted that the hour of the conference made it inconvenient for major Asian regions.

Besides sending out email invitations to emailing lists, the conference proceedings and web links could also be accessed through the N4C home page. Several other participants joined the conference through this link, and it was not possible to discern where they were participating from, but the Google Analytics table provided in this document, illustrates a high interest in the conference prior to and after the conference indicating that N4C has garnered a significant following. The system being developed in the project is of interest to the entire world, with the promise of connecting some of the remotest, challenged, sparsely populated regions in the world. Noteworthy therefore from this brief summary is that even though participation from four continents and several countries is a success in itself for the conference, a significant proportion of the world, that may have wanted to join in the proceedings was unable to do so due to lack of connectivity. This is a continuing issue, and N4C has begun to address some of ways in which this gap can be bridged. During the Conference the highest registration of attendance during the day indicated 49 participants. The Chat Editor took note of questions and comments coming from the participants throughout the conference and each attendee could also digitally raise their hand to pose questions via audio. This document provides an overview of the conference proceedings of April 14th, 2011. The reader will also note the conference recordings provided on the cover page of this document. These links have been distributed and will continue to be distributed for further dissemination also after the project ends. This is a testimony to the legacy of the N4C project as spreading beyond the European borders to include other parts of the world.



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| 1,462 % of Site Total: 100.00% | 1,118 % of Site Total: 100.00% | 00:01:02 Site Avg: 00:01:02 (0.00%) | 50.81% Site Avg: 50.81% (0.00%) | 33.79% Site Avg: 33.79% (0.00%) | \$0.00 Site Avg: \$0.00 (0.00%) | |
| Page | Pageviews | Unique Pageviews | Avg. Time on Page | Bounce Rate | % Exit | \$ Index |
| / | 392 | 333 | 00:01:04 | 47.99% | 45.66% | \$0.00 |
| /Final-Conference.php | 198 | 113 | 00:01:14 | 37.50% | 30.81% | \$0.00 |
| /Download.php | 86 | 61 | 00:01:11 | 83.33% | 33.72% | \$0.00 |
| /index.php | 73 | 51 | 00:00:26 | 20.00% | 32.88% | \$0.00 |
| /Programme.php | 69 | 56 | 00:01:40 | 68.75% | 47.83% | \$0.00 |
| /Video.php | 68 | 54 | 00:00:58 | 91.30% | 47.06% | \$0.00 |
| /Home.php | 56 | 43 | 00:01:42 | 22.22% | 19.64% | \$0.00 |
| /Applications.php | 44 | 34 | 00:00:16 | 0.00% | 4.55% | \$0.00 |
| /Test-Bed.php | 39 | 31 | 00:00:05 | 0.00% | 2.56% | \$0.00 |
| /N4Cproject.php | 38 | 36 | 00:01:05 | 43.75% | 34.21% | \$0.00 |
| /Ny-sida.php | 35 | 28 | 00:00:37 | 100.00% | 25.71% | \$0.00 |
| /Summer2008.php | 23 | 12 | 00:01:04 | 50.00% | 34.78% | \$0.00 |
| /SvenskaSE.php | 20 | 11 | 00:01:19 | 0.00% | 20.00% | \$0.00 |
| /N4CNews.php | 18 | 14 | 00:00:49 | 0.00% | 5.56% | \$0.00 |
| /TCD.php | 18 | 13 | 00:00:29 | 58.33% | 66.67% | \$0.00 |
| /Ny-sida-2.php | 17 | 16 | 00:01:17 | 0.00% | 23.53% | \$0.00 |
| /Partners.php | 15 | 12 | 00:00:07 | 100.00% | 20.00% | \$0.00 |
| /Login.php | 14 | 8 | 00:01:26 | 66.67% | 14.29% | \$0.00 |
| /FollyConsultingLtd.php | 12 | 11 | 00:04:49 | 81.82% | 83.33% | \$0.00 |
| /N4CNewsletterissue1.php | 11 | 5 | 00:01:12 | 0.00% | 18.18% | \$0.00 |
| /Winter2009.php | 11 | 8 | 00:00:21 | 0.00% | 9.09% | \$0.00 |