

Simplified NIF for GN4 Input

Purpose: This NIF form is to be used for the submission of New Ideas suggested for inclusion in the GN4 Phase1 and beyond proposals. Budget estimates, information about objectives, impact, benefits, etc. as well as scope must all be supplied.

Submit to: pmo@GÉANT.net by January 31st, 2014 with the subject label starting: GN4Input

Overview

Project Name:	4G WLAN offload	Project Proposer:	Gunnar Bøe, UNINETT
Project Type: GN4 Phase1 or longer term	Phase 1 and longer term	Estimated Project Costs (best effort!)	
Duration proposed	Run in two phases: First phase (one year) should be a pre-study and a second phase (if accepted) should implement/test solutions proposed in pre-study	Manpower in person-months also identifying specific expertise required	6 person-month Expertise in wireless and mobile networks required.
Deliverables proposed (If any can be defined at this stage)	Prestudy report	Hardware and equipment:	None
Milestones proposed (If any can be defined at this stage)		Other costs	Travels: 10 kEuro (meetings with operator(s) and Surfnets).

1 Background and Reasoning

Provide background information and the context of the project. Explain the reason for the project. What do you want to be different? What do you hope to improve? Why is the project needed? This should be the reason for the project, not the solution.

Several mobile operators are now deploying 4G mobile networks, however it is expected that there will not be enough capacity in terms of available frequencies in the mobile networks to carry all the expected data traffic. IEEE Communications has published several papers on this issue, one of the latest in October 2013 (<http://ieeexplore.ieee.org/xpl/articleDetails.jsp?reload=true&arnumber=6589288>)

The NRENs have, through their partners/member organisations, extensive WLAN coverage which might make it attractive for mobile operators to develop partnerships and solutions that will benefit both parties.

2 Objectives, Impact and Benefits

Provide one or more bullet points to briefly describe the primary objective(s) of the project in terms of the desired outcomes. This should be expressed in the form: 'To ensure...'; 'To implement...'; 'To service...'; 'To improve...'; 'To innovate...'; 'To optimize...'; 'To save...'; etc. For each objective mention the benefits to identified stakeholders (e.g. end-users, NRENs, large international research projects, industrial research partners, high level education, etc.) should be mentioned. A description of the expected overall impact must also be provided.

- Always have mobile network access with the best possible capacity and quality for as low cost as possible
The trend is to provide more and more lectures and other educational material online and access to research services online.

The benefits are:
 - 1) Ideally there should be no difference for NREN/university customers whether they are on a mobile network or a WLAN. Specifically; they should have access to the same services.
 - 2) Given limitation on capacity in particular, for the mobile network it might be an option for NRENs and mobile operators to exchange traffic and hence reduce the cost for the NRENs for mobile data traffic.

3 Scope

Describe the areas expected to be covered or impacted by the proposed activity, such as organisational areas, systems, processes, resources.. i.e. what is 'in scope'. This is not a list of what will be done but identifying the services, areas or what, will be affected.

Also please enumerate specific items which although they could perhaps be related are intentionally not addressed by your proposal ("Out of Scope").

3.1 In Scope

- A proposal for how a seamless integration of 4G and WLAN can be achieved for NRENs including authentication using existing the eduroam RADIUS hierarchy.
- A proposal for how traffic offload from 4G to WLAN in NREN context (eduroam) can be achieved
- Proposals for financial models for traffic exchange

3.2 Out of Scope

- First phase (GN4 Y1): Actual implementation is out of scope

4 General Information

Outline any potential issues, risks, dependencies, assumptions, constraints and limitations or any other points that may be useful to help assess the proposal.

- This work should build on the work already done in Surfnet and UNINETT.
- Issues related to mobile operators:
 - In Norway we have seen different degrees of maturity at the operators in terms of awareness on these issues. The major operator is however interested in working with these issues.
- UNINETT would like to do this project in co-operation with Surfnet, but there has not been time to work out the details. Man-hour need may change accordingly.