31st TF -Mobility and Network Middleware Meeting  
15th October 2013, Malaga, Spain  
The meeting was hosted by the University of Malaga

Table of Contents

1. Welcome and Apologies ........................................................................................................ 2
2. Approval of Agenda and Futures Discussion ........................................................................... 2
3. Minutes of Last Meeting and Update of Action List ............................................................. 3
   - Minutes .................................................................................................................................. 3
   - Actions from Previous Meetings ........................................................................................... 3
4. Updates from Work-item Leaders .......................................................................................... 3
   - 4G Update .............................................................................................................................. 3
   - Using Trusted Execution Environments in Two-Factor Authentication ......................... 4
   - eduroam Update .................................................................................................................... 4
   - Scalable 2factor Authentication ......................................................................................... 5
5. Community Updates .............................................................................................................. 5
   - Certificate-based, disruption-tolerant, roaming architecture ............................................ 5
   - Informal demo of eduroam light AP. .................................................................................. 5
   - Mobile Network Code for the NREN Community .............................................................. 6
6. Date of Next Meeting, AOB and Close .................................................................................. 6
1. Welcome and Apologies

Klaas Wierenga welcomed attendees to the 31st meeting of TF-MNM and invited participants to introduce themselves. A list of attendees can be found at: https://www.terena.org/events/details.php?event_id=2647.

2. Approval of Agenda and Futures Discussion

Klaas invited participants to focus on the future of TF-MNM during the meeting. The task force has been through various guises over the years as eduroam has grown to full service delivery and other work areas have been proposed. The TERNA TEC has asked for further clarity on the focus for TF-MNM over the upcoming years. Some possible areas include:

- Research activity on eduroam (which is not now included within the GEANT programme). Suggested by Klaas Wierenga.
- Non-wifi networks (4G etc.). Suggested by Klaas Wierenga.
- A global forum for eduroam outside of GEANT. General discussion point.
- Privacy, in the light of NSA revelations. Suggested by Klaas Wierenga.
- Mobile devices and on boarding in campuses / CAT tool. Suggested by Tom Barton.
- Network workflows / SDN. Suggested by Tom Barton.
- eduroam ready certification. Suggested by Philippe Hanset.
- Dynamic discovery across borders: how to we clearly understand what is happening in other countries? Suggested by Philippe Hanset.
- Conference support, who handles the set-up / cookbook, how do we support coordination, what experiences have people had with hotel chain xx? Suggested by Philippe Hanset.
- More work on monitoring in terms of availability and standard approaches. Suggested by Tom Myren.
- Relationship with service offerings such as eduroam companion, particularly service levels around the tools. Suggested by Philippe Hanset.

This in turn could lead to a move of other topic areas to TF-EMC2. We should also look towards more outputs, such as developing white papers as part of the task force work.

Klaas confirmed that the TF-EMC2 and TF-MNM meetings would continue to be hosted together – particularly to support the work with open space sessions. Roland Hedburg also suggested that the minutes of the meeting were not the most effective way to communicate outputs from the meeting. Nicole Harris confirmed this was consistent with feedback from other TF’s and would be explored further.

It would be useful to ensure that TF-MNM gets feedback on the results of the Open Call and projects that are relevant to the task force.

**ACTION 20131015-01** Ask Stefan Winter and others to give an update on the open call results relevant to TF-MNM.
A possible model to consider having a model where TF-MNM has a focused session as an "eduroam forum" in the morning with a more generalised session in the afternoon.

**ACTION 20131015-02** Klaas Wierenga and Nicole Harris to explore the structure of TF-MNM to include an "eduroam forum" and to address proposed topic areas.

Philippe Hanset asked if other people had experienced problems with the eduroam companion "surveillance mode" in terms of number of Aps that can be reported in one day. None of the other participants had significant experience with updating but few had reported any significant numbers in one day.

### 3. Minutes of Last Meeting and Update of Action List

- **Minutes**

The minutes were accepted as an accurate record of the meeting.

- **Actions from Previous Meetings**

<table>
<thead>
<tr>
<th>Reference</th>
<th>Who</th>
<th>Action</th>
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</thead>
<tbody>
<tr>
<td>29-02</td>
<td>Roland van Rijswijk Diej</td>
<td>Ensure the DANE and federations topic is update.</td>
<td>Closed – action complete.</td>
</tr>
<tr>
<td>29-03</td>
<td>Paul Dekkers</td>
<td>Investigate Wireless Broadband Alliance (WBA) participation /membership by Surfnet.</td>
<td>Ongoing – there is a meeting in Beijing in November 2013. Paul and Stefan are exploring options.</td>
</tr>
<tr>
<td>30-01</td>
<td>Paul Dekkers</td>
<td>Clarify the Layar refresh period of monitoring location data.</td>
<td>Closed – action complete.</td>
</tr>
</tbody>
</table>

Paul Dekkers asked participants to discuss what might happen if money was available to attend WBA. It is unlikely that we would be able to have significant impact, but we could have influence if we were seen to represent the whole community – i.e. as an eduroam representative. It would be sensible to focus in on core areas of the agenda where we might have something significant to contribute. Klaas suggested hotspot 2.0 as a sensible topic to address. Attendance would need to be on an ongoing basis to encourage community acceptance.

**ACTION 20131015-03** Paul Dekkers and Stefan Winter to discuss a strategy for WBA attendance and share with the TF-MNM list.

### 4. Updates from Work-item Leaders

- **4G Update.**
Paul Dekkers gave a brief update on 4G activities at Surfnet, in the Netherlands (NL) and on work with commercial partners. NL operators aim for nationwide coverage of 4G. In other countries this is mostly focused on cities plus specific rural areas. No other countries in the room were working towards full national coverage. With 4G being designed specifically for data and having a much more simple design, it brings different challenges in terms of latency. Paul has carried out a series of field tests, with mobile video conferencing being significantly better than previous experiences.

One of the problems experienced by users at the moment has been session issues when a user is on a mobile device and moves from 3G to wireless. Skype has implemented support for this, meaning users can move fairly seamlessly if they move off a wireless network but other clients are not performing as well.

A big problem at the moment is that as 4G is providing such as efficient service, users are quickly burning through their data allowance. Another issue with Paul’s testing is that uptake of 4G is still at a growth stage.

Surfnet are experimenting with a virtual APN for all users (edu.nl) over 3G / 4G. Philippe asked if Surfnet had explored a deal with KPN to allow all KPN customers to roam on campus. Klaas explained the restrictions of the European funding model, which makes this approach difficult. A natural extension to this would be to consider EU roaming APN.

- Using Trusted Execution Environments in Two-Factor Authentication.

Roland van Rijswijk-Deij presented on the recent work of his research group. Trusted Execution Environments allow applications to execute isolated from and unhindered by others, with secure storage and some sort of attestation process for the application. This needs to be coupled with secure provisioning and a trusted path for data input. Roland van Rijswijk-Deij is working on a privacy-friendly smartcard to support this process as part of a research group.

Having a separate card is seen as impractical in environments where users typically carry a phone around with them. Some attempts have been made to look at 2-factor authentication using apps (e.g. Tiqr), but there are potential security risks here. Roland is looking in to other options to fulfil the ‘thing you have’ requirement for tokens. Some options are Intel IPT (but this is a very closed development environment) and ARM TrustZone. Roland’s research group have been looking at the user interface issues of these approaches and this has revealed problems with the Intel IPT approach (no trusted input path and user display issues) but there are some clear opportunities with the ARM TrustZone approach.

- eduroam Update.

Miro Milinovic gave a brief update on eduroam progress. Core areas to note are:

- Figures continue to show steady growth.
- Looking to update monitor.eduroam.org.
- Worth continuing the discussion around f-ticks and implications.
- Implications of mobile hotspot 2.0 on eduroam.
- RADSEC / dynamic discovery progress is slow.
Miro is progressing his work on the eduroam probe using a Raspberry Pi as reported at the last meeting of the task force.

- **Scalable 2factor Authentication.**

Joost van Dijk gave an overview of recent Surfnet developments in 2factor authentication. Surfnet are exploring a business model around 2factor authentication as a service with the aim and reduce cost per use cases and to make it independent of IdP support (not currently well supported in SAML software). This will be done through a self-service interface, which in turn links a 'step-up' to an IdP. The user can choose to self-register a token, which creates a unique code. The user takes this code to an RA where they are verified. The source-code has been made available on github: [www.github.com/SURFnet/suaas-ra](http://www.github.com/SURFnet/suaas-ra). A demo can be found at: [http://suaas-ra.surfnet.nl/start](http://suaas-ra.surfnet.nl/start).

Tom Barton raised the issue that the workflow was very similar to the process of adding assurance to an identity. Where this is being added to the 2factor in the Surfnet example, this could be extrapolated out at the first step when thinking about assurance.

There is some complexity between Authentication Context and LOA within current usage. There is an attribute for LOA within the current eduperson specification but SAML suggests to pass as Authentication Context.

5. **Community Updates**

- **Certificate-based, disruption-tolerant, roaming architecture.**

Hideaki Goto. As part of a disaster recovery review the Japanese have looked at the weaknesses in the current eduroam system and as such are looking a disruption-tolerant eduroam as an add-on service. This would be tolerant of temporary failures. GakuNin have a centralized eduroam IdP providing three types of account depending on the needs of the user. This relies on delegation (DEAS).

These issues are very current given the earthquakes and tsunami experienced in Japan. On the ground support in terms of communication was needed during these disasters and this has lead to the development of a disaster-tolerant public wifi to support aid staff and for emergency shelters. This was based on eduroam technology and openflow.

Portable DTN access points have been implemented equipped with wifi access points, back-up batteries, storage, GPS and a local web server. They behave as normal public wifi when all is well but turn in to data repositories during disaster events. A disaster event changes the very nature of risk management – it is more important the people are connected than worrying about abuse.

- **Informal demo of eduroam light AP.**

Tomi Salmi described a project in Finland to create a consumer level access point modified for eduroam to provide an easy way to bring eduroam anywhere. The device chosen was a cheap
box in Finland (60 euros plus VAT). The aim was to have plug and play eduroam connectivity in temporary locations. The device is connected to the eduroam RADIUS hierarchy via the eduroam Finnish national root server. It aims to privde public IPv4 and IPv6 addresses for end users.

Two core problem areas are:

- Dealing with users roaming between access points in an effective way.
- Ensuring quality of access for users consistent with eduroam ‘brand’.

It would need to be appropriate for the situation – i.e. small meeting room set-ups rather than large conferences.

- Mobile Network Code for the NREN Community.

Paul Dekkers presented a proposal for NRENS to act as Mobile Virtual Network Operators (MVNOs). This would require roaming agreements to be put in place. This would also address vendor lock-in – at the moment SIM cards must be changed when the NREN moves provider. A core issue here is the IMSI codes on SIM cards. There would need to changes to make this work in the NREN environment.

The overall idea would be that when travelling, the local operator sees the international mobile network card and associates the user with the local NREN. The user would effectively have an international SIM card; deals with MNOs would need to be brokered for this to work effectively.

The business model around this would need consideration in terms of procurement and how this was sold back to the user (SIM purchase).

To apply for an international MNC for R&E, the ITU would need to be convinced. This needs to come from NRENs / the link with the commission we already have. This would need a work item under an existing or new umbrella (TF-MNM? NRENUM?). A possible supporting area would be the ERASMUS global student mobility agenda.

**ACTION 20131015-04** Paul Dekkers to talk to Diego Lopez to get a commercial viewpoint on the Mobile Network Code proposal.

6. **Date of Next Meeting, AOB and Close**

The date of the next meeting will be set following the TF-EMC2 meeting. Notes from the Open Space meeting on 16th October 2013 can be found on the TERENA wiki at: https://confluence.terena.org/display/EMC2/Malaga+Open+Space+-++16+October+2013.

**Action List**

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<td>Study ID</td>
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