

25.02.09

## Deliverable DS5.2.1,2: Service Report 2



Deliverable DS5.2.1,2

Contractual Date: 31/08/08

Actual Date: 25/02/09

Contract Number: 511082

Instrument type: Integrated Infrastructure Initiative (I3)

Activity: SA5

Work Item: WI2

Nature of Deliverable: R

Dissemination Level: PU

Lead Partner: CARNet

Document Code: GN2-09-049

Authors: Miroslav Milinovic (CARNet/Srce), Dubravko Penezic (CARNet/Srce), Ole Frenndved Hansen (Nordunet/UNI-C), Paul Dekkers (SURFnet), Ian Thomson (Dante), and SA5 group

### Abstract

This Deliverable is the second service report of the European eduroam service. It contains service information for the period March 2008 through August 2008.

# Table of Contents

0	Executive Summary	1
1	Introduction	2
2	eduroam Infrastructure status	3
	2.1.1 eduroam confederation service status	3
	2.1.2 Connected federations	4
	2.1.3 Traffic information	10
3	eduroam Policy Implementation	13
4	eduroam Supporting Infrastructure	15
5	Events	16
6	Conclusions	17
7	References	18
8	Acronyms	19

# Table of Figures

Figure 2.1: Cumulative, monthly traffic	10
---	----

## Table of Tables

Table 2.1: ETLRS in-service performance figures	3
Table 2.2: In-service metrics from the monitoring service	4
Table 2.3: NRENs/NROs connected to the ETLRSs	5
Table 2.4: FLRS data acquired using server monitoring scenario	7
Table 2.5: Federation/realm data acquired using infrastructure monitoring scenario	8
Table 2.6: Availability of demographic information	9
Table 2.7: Number of successful authN requests for period May – August 2008 (both ETLRSs)	12
Table 3.1: NRENs/NROs policy signing status	14

## 0 Executive Summary

eduroam is a secure international roaming service for members of the European eduroam confederation (a confederation of autonomous roaming services). The European eduroam confederation is based on a set of defined organisational and technical requirements that each member of the confederation must agree to (by signing the eduroam policy GN2-07-328 "European eduroam confederation policy" [GN2-07-328]) and follow.

As part of GEANT2, the European eduroam service is managed by the National Research and Educational Network Policy Committee (NREN PC), which delegates the supervision of the European eduroam service to the SA5 group. In turn, SA5's eduroam Operational Team (OT) carries out the day-to-day operations of eduroam, and runs the eduroam confederation service.

The eduroam service has been in operation since September 2007, with institutions formally joining the confederation from January 2008.

This Deliverable provides information on the operation of eduroam in the period March 2008 through August 2008. It is the second of three such reports.

This Deliverable is richer and more detailed than [DS5.2.1,1], and includes information on such things as server in-service time and consumer usage. However, as the tools are being perfected and more data collected from the NRENs/NROs, future reports will provide even more information than what is included here.

Project:	GN2
Deliverable Number:	DS5.2.1,2
Date of Issue:	25/02/09
EC Contract No.:	511082
Document Code:	GN2-09-049

# 1 Introduction

This report provides information on the deployment and usage of the European eduroam service during the period March 2008 through August 2008.

The eduroam service (please see GN2-07-327v2, DS5.1.1 “eduroam Service Definition and Implementation Plan” [DS5.1.1] for a full definition) is made up of:

- Technology infrastructure: This is based on a distributed set of Authentication, Authorisation, and Accounting (AAA) servers. The current configuration uses RADIUS as the AAA protocol, and is implemented as a hierarchy of RADIUS servers.
- Supporting infrastructure, which include:
  - Monitoring and diagnostics facilities (monitoring service).
  - eduroam Web site.
  - eduroam database.
  - Trouble ticketing system (TTS).
  - Mailing lists.

Full and functional implementation of all service elements is vital for providing a reliable service. This report illustrates how well the different elements performed over the relevant period, providing also the detailed information on eduroam usage.

The service implementation plan [DS5.1.1] envisaged that the full service will be in regular operation from the end of August 2008, and so this report also gives information on service deployment.

This document is organised as follows:

- Section 2 contains information about the eduroam infrastructure status.
- Section 3 deals with eduroam policy implementation
- Section 4 provides information on deployment and maintenance of the supporting services.

Project:	GN2
Deliverable Number:	DS5.2.1,2
Date of Issue:	25/02/09
EC Contract No.:	511082
Document Code:	GN2-09-049

## 2 eduroam Infrastructure status

The eduroam infrastructure includes:

- The European RADIUS hierarchy:
  - European Top Level RADIUS Servers (ETLRS servers).
  - Federation Level RADIUS Servers (FLRS servers).
  - Identity Provider (IdP) and Service Provider (SP) RADIUS servers.
- Network access elements at SP's site.

This report focuses on the confederation part of the infrastructure (the ETLRS servers and their connectivity with European FLRSs).

The integration of the RadSec protocol into the eduroam infrastructure has been successfully tested and further deployment plans were discussed (see GN2-08-143, DS5.4.1 "Report on RadSec Integration"). Both ETLRSs were made RadSec capable [DS5.4.1].

### 2.1.1 eduroam confederation service status

The European eduroam service has two European top level RADIUS servers (ETLRS):

- ETLRS1 (IP address 192.87.106.34), maintained by SURFnet.
- ETRLRS2 (IP address 130.225.242.109), maintained by UNI-C.

Data on the "in-service time" of each ETLRS is shown in Table 2.1: :

Month	ETLRS1 in-service time (%)	ETLRS2 in-service time (%)
March 2008	100%	99,73%
April 2008	100%	100%
May 2008	100%	100%
June 2008	100%	100%
July 2008	100%	99,73%
August 2008	100%	100%

Table 2.1: ETLRS in-service performance figures

Project:	GN2
Deliverable Number:	DS5.2.1,2
Date of Issue:	25/02/09
EC Contract No.:	511082
Document Code:	GN2-09-049

The eduroam monitoring service [DS.5.3.1] was put into production on 01 August 2008. Therefore, the in-service time “seen” from the monitoring service’s perspective can now be examined (see Table 2.2). Note that these figures illustrate the “ETLRS health” as seen from the perspective of the monitoring service and therefore include other possible problems (for example network failures). Therefore, it is expected that the in-service time is the same or lower than measured at the ETLRS site. Also, it is important to take the frequency of monitoring tests into account (the monitoring probe tests the ETLRS once per hour).

server ID	month	OK	Possible problem	Wrong response	No response
ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%

Table 2.2: In-service metrics from the monitoring service

As explained in [DS5.3.1], the monitoring service recognises four different statuses, depending on the data acquired by the monitoring probe:

- **OK:** Percentage of the time the server was registered by the monitoring service as running OK
- **Possible Problems:** Percentage of the time the server was registered by the monitoring service as running with possible problems. This means that at a given time the monitoring probe did not receive all expected responses. Note that this is just an indication of possible problems in operations.
- **Wrong Response:** Percentage of the time the server was registered by the monitoring service as sending wrong responses. This means that at a given time the monitoring probe received only wrong responses. Note that this is strong indication of problems in operations.
- **No Response:** Percentage of the time the server was registered by the monitoring service as sending no responses. That means that at a given time the monitoring probe received no responses. Note that this is strong indication of the server being unreachable from the monitoring probe.

### 2.1.2 Connected federations

As of 01 September 2008, 33 NREns/NROs were connected to the ETLRSs. Table 2.3 provides detailed information on these connections.

Project:	GN2
Deliverable Number:	DS5.2.1,2
Date of Issue:	25/02/09
EC Contract No.:	511082
Document Code:	GN2-09-049

Country	Domain	NREN/NRO
Austria	at	ACOnet
Belgium	be	BELNET
Bulgaria	bg	BREN
Croatia	hr	CARNet/Srce
Cyprus	cy	CYNET
Czech Republic	cz	CESNET
Denmark	dk	Nordunet/UNI-C
Estonia	ee	EENet
Finland	fi	Nordunet/FUNET
France	fr	RENATER/CRU
Germany	de	DFN
Greece	gr	GRNET
Hungary	hu	HUNGARNET
Iceland	is	Nordunet/RHnet
Ireland	ie	HEAnet
Israel	il	IUCC
Italy	it	GARR
Latvia	lv	Sigmanet/LANET
Lithuania	lt	LITNET/KTU
Luxembourg	lu	RESTENA
Malta	mt	U.Malta
Netherlands	nl	SURFnet
Norway	no	Nordunet/UNINET
Poland	pl	PIONIER/U.Torun
Portugal	pt	FCCN
Romania	ro	RoEduNet
Slovakia	sk	SANET
Slovenia	si	ARNES
Spain	es	RedIRIS
Sweden	se	Nordunet/SUNET
Switzerland	ch	SWITCH
Turkey	tr	ULAKBIM
United Kingdom	uk	JANET

Table 2.3: NRENS/NROs connected to the ETLRSs

ETLRSs also provided interconnection for the eduroam service in the APAN region and in Canada (.ca), thereby providing European roamers with the ability to use the eduroam service in Canada and the APAN countries that support eduroam service.

The eduroam monitoring service [DS.5.3.1] has been in production since 01 August 2008. Because of this, the in-service time for FLRSs (i.e. national roaming services) can be examined from the monitoring service's perspective. These figures illustrate the "federation's health" as seen from the perspective of the monitoring service and therefore include other possible problems like network failures. Thus, it is expected that the in-service time is the same or lower than that measured at the FLRS's site. It is also important to take the frequency of monitoring tests into account (the monitoring probe tests the FLRSs once per hour). Furthermore

Project:	GN2
Deliverable Number:	DS5.2.1,2
Date of Issue:	25/02/09
EC Contract No.:	511082
Document Code:	GN2-09-049

misconfigured FLRSs might lead to false alerts from the monitoring service. Finally, data is provided for only 29 federations that are currently actively tested.

Table 2.4 shows the “FLRSs’ health” (i.e. data acquired using server monitoring scenario [DS5.3.1])

Realm	server ID	Month	OK	Possible problem	Wrong response	No response
at	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
at	FLRS 2	2008-08	100,00%	0,00%	0,00%	0,00%
be	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
be	FLRS 2	2008-08	100,00%	0,00%	0,00%	0,00%
bg	FLRS 1	2008-08	0,00%	0,00%	0,00%	100,00%
bg	FLRS 2	2008-08	0,00%	0,00%	0,00%	100,00%
ch	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
ch	FLRS 2	2008-08	100,00%	0,00%	0,00%	0,00%
cy	FLRS 1	2008-08	0,00%	0,00%	8,39%	91,61%
cz	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
de	FLRS 1	2008-08	99,87%	0,00%	0,13%	0,00%
dk	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
dk	FLRS 2	2008-08	100,00%	0,00%	0,00%	0,00%
es	FLRS 1	2008-08	13,31%	82,81%	1,59%	2,28%
es	FLRS 2	2008-08	14,77%	0,00%	0,00%	85,23%
fi	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
fr	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
gr	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
hr	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
hr	FLRS 2	2008-08	100,00%	0,00%	0,00%	0,00%
hr	FLRS 3	2008-08	100,00%	0,00%	0,00%	0,00%
hr	FLRS 4	2008-08	100,00%	0,00%	0,00%	0,00%
hr	FLRS 5	2008-08	100,00%	0,00%	0,00%	0,00%
hu	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
hu	FLRS 2	2008-08	100,00%	0,00%	0,00%	0,00%
ie	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
ie	FLRS 2	2008-08	100,00%	0,00%	0,00%	0,00%
il	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
it	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
lt	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
lt	FLRS 2	2008-08	100,00%	0,00%	0,00%	0,00%
lu	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
lu	FLRS 2	2008-08	100,00%	0,00%	0,00%	0,00%
nl	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
nl	FLRS 2	2008-08	100,00%	0,00%	0,00%	0,00%
no	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
no	FLRS 2	2008-08	100,00%	0,00%	0,00%	0,00%
pl	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
pt	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
pt	FLRS 2	2008-08	100,00%	0,00%	0,00%	0,00%
ro	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%

Project:	GN2
Deliverable Number:	DS5.2.1,2
Date of Issue:	25/02/09
EC Contract No.:	511082
Document Code:	GN2-09-049

Realm	server ID	Month	OK	Possible problem	Wrong response	No response
ro	FLRS 2	2008-08	100,00%	0,00%	0,00%	0,00%
se	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
se	FLRS 2	2008-08	100,00%	0,00%	0,00%	0,00%
si	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
sk	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
sk	FLRS 2	2008-08	100,00%	0,00%	0,00%	0,00%
tr	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
uk	FLRS 1	2008-08	100,00%	0,00%	0,00%	0,00%
uk	FLRS 2	2008-08	100,00%	0,00%	0,00%	0,00%
uk	FLRS 3	2008-08	99,87%	0,00%	0,00%	0,13%

Table 2.4: FLRS data acquired using server monitoring scenario

Table 2.5 shows information on federations' (realms') health (i.e. data acquired using infrastructure monitoring scenario [DS5.3.1]). In this case the health of the infrastructure has been tested (i.e. the path between ETLRSs and respective federation has been examined).

Realm	tested via	Month	OK	Possible problem	Wrong response	No response
at	ETLRS1 (nl)	2008-08	99,87%	0,00%	0,13%	0,00%
at	ETLRS2 (dk)	2008-08	99,87%	0,00%	0,13%	0,00%
be	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
be	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
bg	ETLRS1 (nl)	2008-08	0,00%	0,00%	0,00%	100,00%
bg	ETLRS2 (dk)	2008-08	0,00%	0,00%	0,00%	100,00%
ch	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
ch	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
cy	ETLRS1 (nl)	2008-08	0,00%	0,00%	8,11%	91,89%
cy	ETLRS2 (dk)	2008-08	0,00%	0,00%	7,84%	92,16%
cz	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
cz	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
de	ETLRS1 (nl)	2008-08	99,60%	0,00%	0,13%	0,27%
de	ETLRS2 (dk)	2008-08	99,60%	0,00%	0,13%	0,27%
dk	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
dk	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
es	ETLRS1 (nl)	2008-08	13,71%	82,68%	1,33%	2,28%
es	ETLRS2 (dk)	2008-08	13,71%	1,13%	0,00%	85,16%
fi	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
fi	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
fr	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
fr	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
gr	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
gr	ETLRS2 (dk)	2008-08	99,73%	0,13%	0,00%	0,13%
hr	ETLRS1 (nl)	2008-08	99,87%	0,13%	0,00%	0,00%
hr	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
hu	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
hu	ETLRS2 (dk)	2008-08	99,33%	0,67%	0,00%	0,00%

Realm	tested via	Month	OK	Possible problem	Wrong response	No response
ie	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
ie	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
il	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
il	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
it	ETLRS1 (nl)	2008-08	0,00%	0,00%	100,00%	0,00%
it	ETLRS2 (dk)	2008-08	0,00%	0,00%	100,00%	0,00%
lt	ETLRS1 (nl)	2008-08	10,32%	89,68%	0,00%	0,00%
lt	ETLRS2 (dk)	2008-08	86,69%	13,31%	0,00%	0,00%
lu	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
lu	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
nl	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
nl	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
no	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
no	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
pl	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
pl	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
pt	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
pt	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
ro	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
ro	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
se	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
se	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
si	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
si	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
sk	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
sk	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
tr	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
tr	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%
uk	ETLRS1 (nl)	2008-08	100,00%	0,00%	0,00%	0,00%
uk	ETLRS2 (dk)	2008-08	100,00%	0,00%	0,00%	0,00%

Table 2.5: Federation/realms data acquired using infrastructure monitoring scenario

As explained in [DS5.3.1], the monitoring service recognises four different statuses depending on the data acquired by the monitoring probe:

- **OK:** Percentage of the time the server/realms was registered by the monitoring service as running OK.
- **Possible Problems:** Percentage of the time the server/realms was registered by the monitoring service as running with possible problems. This means that at a given time the monitoring probe did not receive all expected responses. Note that this is just an indication of possible problems in operations.
- **Wrong Response:** Percentage of the time the server/realms was registered by the monitoring service as sending wrong responses. That means that at a given time the monitoring probe received only wrong responses. Note that this is strong indication of problems in operations.
- **No Response:** Percentage of the time the server/realms was registered by the monitoring service as sending no responses. That means that at a given time the monitoring probe received no responses. Note that this is strong indication of server being unreachable from the monitoring probe.

Project:	GN2
Deliverable Number:	DS5.2.1,2
Date of Issue:	25/02/09
EC Contract No.:	511082
Document Code:	GN2-09-049

Discrepancies between figures on respective FLRSs (Table 2.4) and federation health (Table 2.5) are expected because of the different monitoring scenarios used [DS5.3.1]. Data presented in Table 2.5 is closer to the end user's experience. Note that a misconfigured FLRS can cause an error recorded by the monitoring service although the FLRS itself is working.

Because of the lack of available information, demographic data related to the national roaming services cannot be provided until the next service report. This is indicated in Table 2.6.

Country	Domain	NREN/NRO	Federation (realm) info	Info on SPs/IdPs	Federation: demographic info	Federation: usage info	Institution (SP): usage info
Austria	at	ACOnet	No	No	No	No	No
Belgium	be	BELNET	No	No	No	No	No
Bulgaria	bg	BREN	No	No	No	No	No
Croatia	hr	CARNet/Srce	Yes	Yes	Yes	Yes	No
Cyprus	cy	CYNET	No	No	No	No	No
Czech Republic	cz	CESNET	Yes	Yes	Yes	Yes	Yes
Denmark	dk	Nordunet/UNI-C	No	No	No	No	No
Estonia	ee	EENet	No	No	No	No	No
Finland	fi	Nordunet/FUNET	No	No	No	No	No
France	fr	RENATER/CRU	Yes	Yes	Yes	No	No
Germany	de	DFN	No	No	No	No	No
Greece	gr	GRNET	No	No	No	No	No
Hungary	hu	HUNGARNET	No	No	No	No	No
Iceland	is	Nordunet/RHnet	No	No	No	No	No
Ireland	ie	HEAnet	Yes	Yes	Yes	Yes	Yes
Israel	il	IUCC	No	No	No	No	No
Italy	it	GARR	No	No	No	No	No
Latvia	lv	Sigmanet/LANET	No	No	No	No	No
Lithuania	lt	LITNET/KTU	No	No	No	No	No
Luxembourg	lu	RESTENA	Yes	Yes	Yes	Yes	Yes
Malta	mt	U.Malta	No	No	No	No	No
Netherlands	nl	SURFnet	Yes	Yes	No	No	No
Norway	no	Nordunet/UNINET	Yes	No	No	No	No
Poland	pl	PIONIER/U.Torun	No	No	No	No	No
Portugal	pt	FCCN	Yes	Yes	Yes	No	No
Romania	ro	RoEduNet	No	No	No	No	No
Slovakia	sk	SANET	No	No	Yes	Yes	No
Slovenia	si	ARNES	No	No	No	No	No
Spain	es	RedIRIS	Yes	Yes	Yes	No	No
Sweden	se	Nordunet/SUNET	No	No	No	No	No
Switzerland	ch	SWITCH	Yes	Yes	Yes	Yes	Yes
Turkey	tr	ULAKBIM	Yes	Yes	Yes	Yes	Yes
United Kingdom	uk	JANET	Yes	Yes	Yes	No	No

Table 2.6: Availability of demographic information

Project:	GN2
Deliverable Number:	DS5.2.1,2
Date of Issue:	25/02/09
EC Contract No.:	511082
Document Code:	GN2-09-049

The columns in Table 2.6 provide information about the data availability in the eduroam database, as follows:

- **Federation (realm) info:** Basic data on the member federation (NRO)
- **Info on SPs/IdPs:** Data on individual SPs and IdPs (includes data on eduroam service locations)
- **Federation: demographic info:** Basic data on federation's size (number of SPs, IdPs, end users, ...)
- **Federation: usage info:** Basic data on service usage at the federation level
- **Institution (SP): usage info:** Basic data on service usage per SP inside a federation.

### 2.1.3 Traffic information

Due to technological constraints, it is not possible to provide the exact number of individual roaming users per day. Instead, the number of authentication requests handled by the ETRLSs is provided, starting from April 2008 for ETRLS2 and from May 2008 for ETRLS1.

Figure 2.1: provides information about cumulative, monthly traffic.

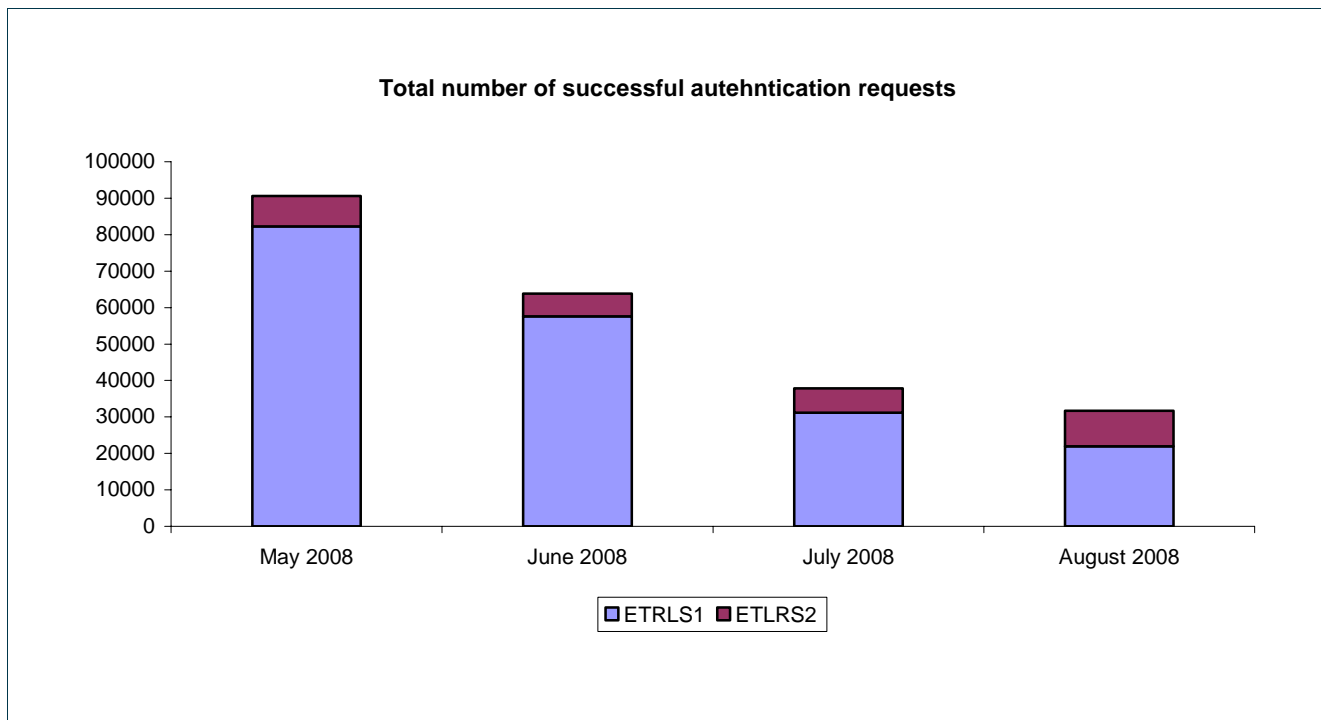


Figure 2.1: Cumulative, monthly traffic

Table 2.7 shows the number of successful authentications per federation performed via ETRLSs in the period May through August 2008. It is clear that not all connected federations are represented. Table 2.7 indicates that the roaming users came from 33 countries (28 from the European confederation), and 31 countries ("RadSec" + 29 countries from European confederation) were visited and provided service. Column marked with "RadSec" cumulatively represents countries in which RadSec is used on the SP side (e.g. Netherlands (.nl)).

It should be noted that Table 2.7 also provides information on roaming outside the European confederation, and on roamers coming from APAN and Canada (these figures are presented in lighter colour).

It has to be emphasised that no conclusion on the number of users, or even user sessions, can be drawn from these numbers. This is because the numbers show only the “successful authentication traffic”. For example, a user can, due to working habits, deliberately set-up their computer or SP’s equipment to initiate a number of successful authentication messages, while another user may only initiate one successful authentication message. Nevertheless it is expected, over time, that administrators will find those misconfigured devices and fix or disable them. Also, the more mature 802.1X implementations get, the fewer problems will be apparent.

In cooperation with Joint Research Activity 5 (JRA5), further methods of providing traffic information are under investigation. This includes the possible use of the RADIUS attributes *Calling-Station-ID* (CSI) and *Chargeable-User-Identity* (CUI) and better handling of RadSec traffic.

Project:	GN2
Deliverable Number:	DS5.2.1,2
Date of Issue:	25/02/09
EC Contract No.:	511082
Document Code:	GN2-09-049

AuthNcount	incountry	AT	AU	BE	CH	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IL	IS	IT	LT	LU	MT	NO	PL	PT	RadSec	RO	SE	SI	SK	TR	UK	Total				
userfrom																																					
at		33	47	2	220	144	32			285	22	39	113		11			10	49		1		47	62	100		33	32		404	68	1754					
au			84								8				2			9								14						1579	1696				
be		34			62	38				61	262	73											194	94	98		12					300	1228				
ca											9															19						20	48				
ch	3	12	145			828	58			90	1			1		10					1		81		93		238				24	1585					
cz	515	60	1180	1		1017	764	2	575	55	1802			2	27						10	165	3	1551	54		881	837	109		156	9766					
de	4204	325	113	26	151	877			1828	26	586				42	6		1	1		62	59	8	176	289	14	363	22		821	10000						
dk	65	65	236		40	322				8	1	214				13		5					240	8	130		129	3		303	1782						
ee			66			1	105			1										17					34		69				1	294					
es	755	1668	750	232	8060	4687	681	9		51	1062	2		10	86						85	18	314	34	3085	1867	701	64		9368	33702						
fi			373							35																							486				
fr	298		133	2	39	631	118			211								1	83			4		10	5		127			142	1804						
gr			65			38				15															22								140				
hk	83																					18					12	5			73	191					
hr	54		670		1	594	4																71		8		848	64	8			2322					
hu	32		10	1		160																				6						209					
ie			118			47	33			27																							236				
il	9																				2												9				
it		34	140	13		84	12			89																3			15			16	429				
jp			5																						6	11		67					1	90			
lt			66			3	142			2																							1	240			
lu		5	637	6		156				348		948												3	76	4		30321	13			31	32562				
nl	227	212	1348	43		198	423			1130		41							14					10	226	3		391	97			350	4880				
no	188	290	513		10	143	245			111	3	17														18		245				72	1855				
pl	133	1	620		1213	464	656			1844		20598	147													2		200	220	183		267	26907				
pt	314	253	4142	869	1278	5121	2245	4	21183	637	1211	352	16	10												2	161		198	200		3687	24	996	169	5599	53810
ro	23					32				94																								261			
se	224		51	28		2	58			26		60																						178	2377		
si	289	115	411	13	123	235	141			248	291	441		215	7																			2454	15047		
sk					278																														278		
tr						119																													144		
tw										2																								1	3		
uk	403	4341	227	17	38	1572	769			7367		559			262	67	1	8	14	3		5	826		570	156		581	74				17860				
Total		7819	7448	12150	1253	11513	16604	7395	15	35486	1356	27755	614	234	457	182	1	34	409	27	774	29	8884	226	9999	12831	38	36501	1578	154	404	21825	223995				

Table 2.7: Number of successful authN requests for period May – August 2008 (both ETLRSs)

Project: GN2  
 Deliverable Number: DS5.2.1,2  
 Date of Issue: 25/02/09  
 EC Contract No.: 511082  
 Document Code: GN2-09-049

### 3 eduroam Policy Implementation

GN2-07-327v2:, DS5.1.1 “eduroam Service Definition and Implementation Plan” was published (together with the European eduroam Policy GN2-07-328: “European eduroam Confederation Policy”) in January 2008. Therefore, the Policy signing process only started in the second part of January.

Table 3.1 provides a list of the NRENs/NROs that had signed the Policy by the end of August 2008. The column *www.eduroam.<tld>* indicates whether national eduroam website (as requested by the Policy) is provided.

Country	Domain	NREN/NRO	Policy	www.eduroam.<tld>
Austria	at	ACOnet	signed	Yes
Belgium	be	BELNET	signed	Yes
Bulgaria	bg	BREN	signed	No
Croatia	hr	CARNet/Srce	signed	Yes
Cyprus	cy	CYNET	NOT signed	<a href="http://www.eduroam.ac.cy">www.eduroam.ac.cy</a>
Czech Republic	cz	CESNET	signed	Yes
Denmark	dk	Nordunet/UNI-C	signed	Yes
Estonia	ee	EENet	signed	No
Finland	fi	Nordunet/FUNET	signed	Yes
France	fr	RENATER/CRU	signed	Yes
Germany	de	DFN	signed	Yes
Greece	gr	GRNET	signed	Yes
Hungary	hu	HUNGARNET	signed	Yes
Iceland	is	Nordunet/RHnet	signed	Yes
Ireland	ie	HEAnet	signed	Yes
Israel	il	IUCC	signed	No
Italy	it	GARR	signed	Yes
Latvia	lv	Sigmanet/LANET	signed	Yes
Lithuania	lt	LITNET/KTU	NOT signed	Yes
Luxembourg	lu	RESTENA	signed	Yes
Malta	mt	U.Malta	NOT signed	No
Netherlands	nl	SURFnet	signed	Yes
Norway	no	Nordunet/UNINET	signed	Yes
Poland	pl	PIONIER/U.Torun	signed	Yes
Portugal	pt	FCCN	signed	Yes

Country	Domain	NREN/NRO	Policy	www.eduroam.<tld>
Romania	ro	RoEduNet	signed	Yes
Slovakia	sk	SANET	signed	Yes
Slovenia	si	ARNES	signed	Yes
Spain	es	RedIRIS	signed	Yes
Sweden	se	Nordunet/SUNET	signed	Yes
Switzerland	ch	SWITCH	signed	Yes
Turkey	tr	ULAKBIM	signed	<a href="http://www.eduroam.org.tr">www.eduroam.org.tr</a>
United Kingdom	uk	JANET	Lol	<a href="http://www.eduroam.org.uk">www.eduroam.org.uk</a>

Table 3.1: NRENs/NROs policy signing status

## 4 eduroam Supporting Infrastructure

The eduroam service definition document [DS5.1.1] envisaged the deployment of several supporting services to provide a real and useful service to the GEANT2 community. These supporting services include:

- Monitoring and diagnostics facilities (monitoring service).
- eduroam Web site,
- eduroam database,
- Trouble ticketing system (TTS).
- Mailing lists.

The implementation plan [DS5.1.1] also envisaged that all of the supporting elements would be in place by the end of August 2008.

The monitoring service and eduroam database have been put into production. The monitoring service officially started on 01 August 2008.

The database population process started in mid-April and was planned to finish at the end of August. The delay was due to the fact that the majority of NRENS/NROs provided data slower than initially planned, mainly due to problems with data collection inside their own federations.

On-line information on the monitoring service is available at <http://monitor.eduroam.org>, and on the database at <http://monitor.eduroam.org/database>. Those web sites also provide access to monitoring data and the content of the eduroam database.

Based on the database content, a user-oriented map (based on Google maps technology) with all SPs registered in the eduroam database was produced. It should be noted that because of the lack of data in the eduroam database, this map should be considered a prototype. The map is available at <http://monitor.eduroam.org/gmap.php>.

The TTS system, based on eduGAIN protected OTRS software, has been put in place by the team from Srce. It is available at <https://monitor.eduroam.org/otrs/customer.pl> (Note that it is planned to change this address to <http://tts.eduroam.org>).

The eduroam web site (<http://www.eduroam.org>) was regularly maintained and updated by TERENA. Further plans include the set-up of internal wiki pages (also protected by eduGAIN) to be used by SA5 group.

Project:	GN2
Deliverable Number:	DS5.2.1,2
Date of Issue:	25/02/09
EC Contract No.:	511082
Document Code:	GN2-09-049

## 5 Events

During the period March 2008 through August 2008, SA5 had three videoconference meetings and a one-day, face to face meeting in Berlin in June.

The main aim of these meetings was to discuss implementation of the service support elements.

SA5 actively participated in GN2/NA8 training efforts. Group members participated in the preparation and delivery of eduroam training course held in Amsterdam in June (see [TRAINING]).

## 6 Conclusions

The data acquisition on eduroam performance has been started, and the first detailed results are provided in this report. The final reports will contain even more quantitative information on eduroam service performance.

The main conclusions that can be drawn from the data presented here are:

- eduroam confederation infrastructure has proved to be reliable.
- All of the service support elements were put into production on time. Still, more time will be needed to see all benefits of those services. Active participation of all member NRENs/NROs is essential here.
- The process of members signing the eduroam policy showed good results. 29 out of 33 members signed the policy and one of the members signed the Letter of Intention.
- Communication between members of the Service Activity group has been very successful, supported by the mail lists and by face-to-face meetings.

## 7 References

[GN2-07-328]	GN2-07-328 “European eduroam confederation policy”
[DS5.1.1]	GN2-07-327v2:, DS5.1.1 “eduroam Service Definition and Implementation Plan”
[DS5.2.1,1]	<a href="#">GN2-09-022: DS5.2.1,1 - Service Report 1</a>
[DS5.3.1]	GN2-09-008v2 : DS5.3.1 - Report on Introduction of Monitoring System and Diagnostic Tools
[DS5.4.1]	GN2-08-143, DS5.4.1 “Report on RadSec Integration”
[TRAINING]	<a href="http://www.terena.org/news/fullstory.php?news_id=2299">http://www.terena.org/news/fullstory.php?news_id=2299</a>

## 8 Acronyms

AAA	Authentication, Authorisation, and Accounting
EAP	Extensible Authentication Protocol
eduGAIN	GÉANT Authorisation Infrastructure for the research and education community
ETLRS	European Top Level RADIUS Server
FLRS	Federation Level RADIUS Server
IdP	Identity Provider
IPv6	Internet Protocol Version 6
NRO	National Roaming Operator
OT	Operational Team
SA5	Service Activity 5
SP	Service Provider
TLRS	Top Level RADIUS Server
TTLS	Tunnelled Transport Layer Security
TTS	Trouble Ticketing System