

# TERENA COMPENDIUM OF EUROPEAN NRENs, 2010

TSec(10)053, FINAL, 18 August 2010

**DEADLINE FOR RESPONDING: 31 SEPTEMBER 2010**

## INTRODUCTION

The 2010 TERENA Compendium questionnaire is based on the 2009 version, which has been somewhat simplified over that of previous years. Note that where numbers (e.g.: number of connected institutions by category) are too difficult to obtain for some NRENs, estimates of the approximate number are welcome as well.

### Section A: USERS / CLIENTS

**A.1** Please give an *estimate* of the proportion of the institutions in each category that are served by the NREN (the 'market share').

Type of institution	Are you allowed to serve this category of institution?		Place a tick in the column that most closely represents the proportion of each category of institution actually connected by the NREN						Comments (if any)
	YES	NO	Unknown or N/A	None or very few	less than half	about half	more than half	All or nearly all	
Universities & Other <i>ISCED 5+6</i>									
Institutes of further education <i>(ISCED 4)</i>									
Research institutes									
Secondary schools <i>(ISCED 2+3)</i>									
Primary schools <i>(ISCED 1)</i>									
Libraries, Museums, Archives, Cultural institutions									
Hospitals (other than University hospitals)									
Government departments (national, regional, local)									

**A.2 Please give an *estimate* of the number of institutions that are actually connected in each category**

Type of institution	Approximate Number of connected institutions In each category	Approximate % of this number (if any) that is connected via dark fibre	Comments (if any)
Universities & Other <i>ISCED 5+6</i>			
Institutes of further education ( <i>ISCED 4</i> )			
Research institutes			
Secondary schools ( <i>ISCED 2+3</i> )			
Primary schools ( <i>ISCED 1</i> )			
Libraries, Museums, Archives, Cultural institutions			
Hospitals (other than University hospitals)			
Government departments (national, regional, local)			

**A.3 Level of Connectivity by Institution type:**

This table explores the level of connectivity for each type of institution. Please enter a tick or cross to indicate:

- i) The lowest speed at which an institution in this category is connected
- ii) The highest speed at which an institution of this category is connected.
- iii) The typical speed of connection for the majority of institutions in this category of institution.

**EXAMPLE:**

	Link Access speeds	less than 10 Mb/s	10 Mb/s or more but less than 100 Mb/s	100 Mb/s or more but less than 1 Gb/s	1 Gb/s or more but less than 10 Gb/s	10 Gb/s or more but less than 40 Gb/s	40 Gb/s or more but less than 100 Gb/s	100 Gb/s or above
Universities & Other <i>ISCED 5+6</i>	SLOWEST			✗				
	FASTEST						✗	
	TYPICAL					✗		

For an explanation of number of institutions please see attached notes	Link Access speeds	less than 10 Mb/s	10 Mb/s or more but less than 100 Mb/s	100 Mb/s or more but less than 1 Gb/s	1 Gb/s or more but less than 10 Gb/s	10 Gb/s or more but less than 40 Gb/s	40 Gb/s or more but less than 100 Gb/s	100 Gb/s or above
Universities & Other <i>ISCED 5+6</i>	SLOWEST							
	FASTEST							
	TYPICAL							
Further education ( <i>ISCED 4</i> )	SLOWEST							
	FASTEST							
	TYPICAL							
Research institutes	SLOWEST							
	FASTEST							
	TYPICAL							
Secondary schools	SLOWEST							
	FASTEST							

(ISCED 2+3)	TYPICAL								
Primary schools (ISCED 1)	SLOWEST								
	FASTEST								
	TYPICAL								
Libraries, Museums, Cultural inst.	SLOWEST								
	FASTEST								
	TYPICAL								
Non-university Hospitals	SLOWEST								
	FASTEST								
	TYPICAL								
Government departments	SLOWEST								
	FASTEST								
	TYPICAL								

#### A.4 How are the sites connected to the network?

Please enter a tick or cross to indicate the ways in which institutions are connected to your network.

	Proportion of sites connected through this route	Via a POP on the NREN backbone	Via a MAN or RAN managed by the NREN	Via a MAN or RAN NOT managed by the NREN	Served via or behind another connected site	Some other way
Universities & Other <i>ISCED</i> 5+6	none or few					
	less than half					
	about half					
	more than half					
	all or nearly all					
Further education (ISCED 4)	none or few					
	less than half					
	about half					
	more than half					
	all or nearly all					
Research institutes	none or few					
	less than half					
	about half					
	more than half					
	all or nearly all					
Secondary schools (ISCED 2+3)	none or few					
	less than half					
	about half					
	more than half					
	all or nearly all					
Primary schools (ISCED 1)	none or few					
	less than half					
	about half					
	more than half					
	all or nearly all					
Libraries, Museums, Cultural inst.	none or few					
	less than half					
	about half					
	more than half					
	all or nearly all					

<b>Non-university Hospitals</b>	none or few					
	less than half					
	about half					
	more than half					
	all or nearly all					
<b>Government departments</b>	none or few					
	less than half					
	about half					
	more than half					
	all or nearly all					

A.5 Remarks:

## Section B: CONNECTIVITY SERVICES

### Network & connectivity services

*In this section, please provide information about the entire network that is **managed** by your organisation, excluding links outside your national territory.*

- B.1** What is the number of PoPs on your network? (A PoP is defined here as a point on the NREN backbone which can connect client networks or aggregations of client networks such as MANs, or external networks.)
- B.2** What is the number of places where you undertake core networking routing?
- B.3** What is the number of managed sites on your network? (i.e. the number of sites where you manage routing or switching equipment)
- B.4** At how many places do you offer optical PoPs?
- B.5** How many of these optical POPs also provide L3 routing?
- B.6** How many circuits (that carry production traffic, primary or backup) do you manage?
- B.7** What is the total kilometric length of dark fibre installed on your network?
- B.8** What percentage of the total network does this represent?
- B.9** What percentage of the total network do you expect to be dark fibre in early 2012?
- B.10** What is the current typical core usable backbone capacity on your network?
- B.11** Please provide a list of the operational external IP connections you had at the end of January 2010 (usable links excluding backup links):

External Network IP Connections	Usable capacity (Mbit/s)
Direct to GÉANT	
Indirectly to GÉANT via the SEEREN or EUMEDCONNECT project or another NREN <i>(please specify each connection - adding as many lines as needed)</i>	

Direct to NORDUnet	
Direct to other research locations (e.g. other NRENs, CERN, Starlight, Abilene <i>(please specify each connection - adding as many lines as needed)</i> )	
Direct connections to the Commercial Internet excluding Internet Exchanges <i>(please specify each connection - adding as many lines as needed)</i>	
Peerings, connections to Internet Exchanges <i>(please specify each peering - adding as many lines as needed)</i>	
Other – Please specify type	
<b>Total:</b>	

### B.12 Future Developments and Trends

Please give a descriptive outline of the major initiatives that relate to the development of the underlying network that you might expect to see on your network over the next 2-5 years. It would be helpful if you could associate an approximate level of confidence to each of these predictions: **QUITE CERTAIN, LIKELY, UNCERTAIN.**

Initiative / Development	Expected timeframe	confidence

### Questions relating to the introduction and uptake of IPv6

- B.13** Does your network currently support production native IPv6 services?
- B.14** If you **CURRENTLY** provide native IPv6 when was the service introduced?
- B.15** If you are **PLANNING** to provide native IPv6 in future what is the planned introduction date?
- B.16** How many clients use IPv4 services only?  
How many clients use dual IPv4/IPv6 services?  
How many clients use IPv6 services only?
- B.17** Do you **CURRENTLY** have any compelling reasons or drivers to migrate any parts of your network to IPv6 and if so, what are they?
- B.18** What are the major inhibitors for your NREN to migrate to IPv6?

<input type="checkbox"/>	Our NREN hardware is not currently capable of supporting such a
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	migration
	Our NREN sees no user demand for IPv6
	Not physically possible unless all domains in path participate
	Not economically viable
	No lack of IPv4 address space in the foreseeable future
	Other reason – please state

### Cross-Border Dark Fibre (CBF)

#### B.19 a) CBF links in use as at January 2009

End points	USAGE Testing, Production, Project, Backup .	Number of lambdas ( $\lambda$ )	Capacity of each $\lambda$ (Gb/s)	Date entered service
<i>(please add one line for each CBF)</i>				

#### b) Planned CBF links

End points	USAGE Testing, Production, Project, Backup .	Number of lambdas ( $\lambda$ )	Capacity of each $\lambda$ (Gb/s)	Planned date
<i>(please add one line for each CBF)</i>				

#### B.20 Other Technologies

Which other technologies are used in your access network?

	In use now	Under trial	Planned	Not planned
FTTH/FTTO				
DSL				
WLAN				
3G/use of mobile operators				
Satellite				
Licensed Spectrum				
Unlicensed Spectrum				
Other				

#### B.21 Other Technologies

Which other technologies are made available by you to individual end users?

	In use now	Under trial	Planned	Not planned
FTTH				
DSL				
WLAN				
3G/use of mobile operators				
Satellite				
Licensed Spectrum				
Unlicensed Spectrum				
Other				

#### eduroam

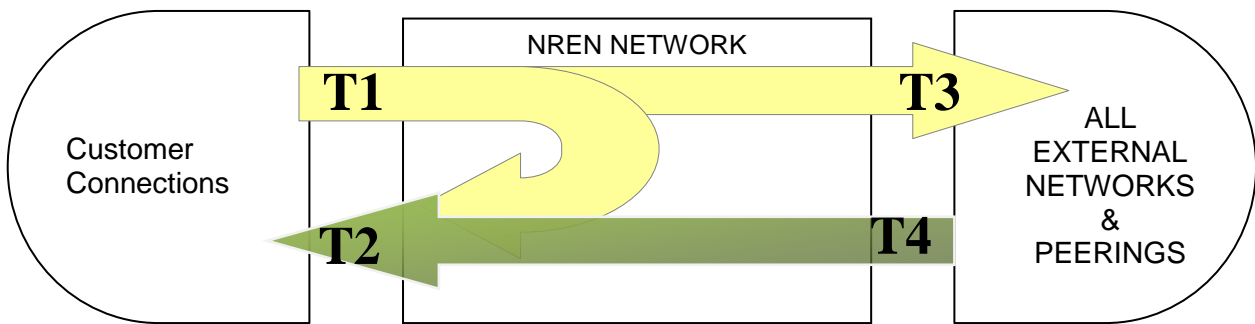
To ascertain level of eduroam deployment, we will use the official eduroam database as a source of information. In order that the compendium reflects an accurate picture of the

deployment in your country, please ensure that the entries from your NREN in the database are up-to-date (see <http://monitor.eduroam.org/> for more information).

B.22 Remarks:

### Section C: TRAFFIC

In the following questions, we propose a distinction between different types of traffic by source or destination. Please take a look at the figure below, which attempts to illustrate the distinctions in terminology.



T1 – all IP traffic from customer sites and the NREN

T2 – all IP traffic to customer sites and the NREN

T3 – all IP traffic to external networks

T4 – all IP traffic to the NREN

**External** traffic = all traffic to GÉANT, the Commercial Internet, Internet exchanges, etc. (made up of T3 and T4 above)

C.1 Please supply an estimate of the total amount of external traffic in Terabytes in 2009 as defined in the picture above (note that given the definition as outlined in the graph above, T1+T4 should be equal to T2+T3, unless there is a special situation in your NREN – in which case, please explain):

flow	TOTAL IP Traffic during 2009 (Terabytes)	Volume of IPv6 Traffic if known during 2009 (Terabytes)	percentage of total IP traffic to / from commercial internet (%)	Percentage of your commercial internet traffic that is exchanged freely through peering agreements
T1				
T2				
T3				
T4				

**C.2 What was the volume of traffic to/from your network in January 2010 in Terabytes?**

flow	TOTAL IP Traffic during JANUARY 2010 (Terabytes)	Volume of IPv6 Traffic if known During JANUARY 2010 (Terabytes)	percentage of TOTAL IP traffic to / from commercial internet (%)	Percentage of your commercial internet traffic that is exchanged freely through peering agreements
T1				
T2				
T3				
T4				

**NETWORK CONGESTION**

**C.3 Perceived congestion (if any) on your IP network. You are not expected to give precise numbers.**

Please give a rough indication of the percentage of institutions that experience congestion because of bottlenecks at the different levels (ie Campus, Metro/Regional Network, Access, Backbone or on external links

		Campus LAN	Metro / Regional Networks	Access network	NREN backbone	External links
% of institutions experiencing no or very little congestion	☺					
% of institutions experiencing some or moderate congestion	☺					
% of institutions experiencing serious congestion	☹					
<i>each column should total 100%</i>						

**Performance Monitoring and Management**

**C.4 Do you have a Performance Enhancement & Response Team (PERT)?**  
 YES       NO

**C.5 If NO do you plan to deploy such a team:**

within 1 year

- within 3 years
- never

- C.6 Do you have traffic statistics on your website?  YES  NO
- C.7 If yes, please provide the URL:
- C.8 Do you offer other tools for monitoring or troubleshooting the network?
- C.9 Do you have an online topology map of your network?  YES  NO
- C.10 If available online please give the URL:
- C.11 Do you have an online weather map of your network?  YES  NO
- C.12 If available online please give the URL:

### Optical Circuits

- C.13 Are you offering lambdas (wavelengths) to your customers?  
 YES  NO  Planned

If YES:

- C.14 How many lambdas did you provision in 2009?
- C.15 Is this number an increase or a decrease compared to 2008?
- C.16 What is the percentage of the increase or decrease?
- C.17 Is there a separate charge to your users for using lambdas?
- C.18 How long does it take you, on average, to provision a circuit?
- C.19 What percentage of the lambdas assigned belong to each of these usage categories?"

Percentage	Usage category
	Production or downstream peering
	Production trunk circuit
	Production backup circuit
	p2p intra-client link
	p2p inter-client link
	Other

- C.20 Which interfaces do you provide?

Percentage	Interface
	GigE
	10GigE
	STM-16
	STM-64
	Other, please specify:

- C.21 What is the percentage of cross-domain lambdas (NREN-GEANT) vs. in-country lambdas (among customers)?
- C.22 Are you measuring the traffic on those lambdas?  
 YES  NO  Planned

If YES:

- C.23 What is the average traffic flow per year (in Mb/s)?
- C.24 Please describe the measurement method:
- C.25 What is the average time that data flows over the link? (For example: is the lambda used for a peering with Google (used continually) or is it used for data backup (used once a day or week or month)?)
- C.26 Are you measuring the availability of your lambdas?  
 YES     NO     Planned
- If YES:
- C.27 What is the average availability per year per lambda?
- C.28 Please describe your measurement method:
- C.29 Remarks:

## Section D: TECHNICAL SERVICES

### D.1 eduGAIN

Does your NREN participate in or is it planning to participate in the eduGAIN service?
<input type="checkbox"/> YES, we are participating in the pre-pilot phase
<input type="checkbox"/> YES, we plan to participate in this as soon as the service becomes available
<input type="checkbox"/> MAYBE, not this year, but perhaps in the next two or three years
<input type="checkbox"/> NO, currently not interested in this service
<input type="checkbox"/> Other, please state:

### Authorisation and Authentication Infrastructure

- D.2 Is an AAI provided by the NREN?  
 Currently deployed     Planned     Not planned
- D.3 Do your users have access to a web single sign-on federation?  YES     NO
- D.4 If so, do you operate it?     YES     NO
- D.5 Contact information for your web single sign-on federation<sup>1</sup>  
 First name / last name:  
 Phone number:  
 E-mail address:  
 URL:
- D.6 Does your federation interfederate?  
 NO     No, but planned  
 YES: Kalmar     YES: eduGAIN     YES: other:
- D.7 You are urged to complete the REFEDS survey at [https://refeds.terena.org/index.php/Federations#REFEDs\\_Federation\\_Survey](https://refeds.terena.org/index.php/Federations#REFEDs_Federation_Survey) if you have not already done so
- D.8 Do you provide digital certificates for your community?  
 Currently deployed     Planned     Not planned

<sup>1</sup> This information will not be made publicly available through the Compendium website.

- D.9 Do you operate a Certification Authority independent of or in addition to the TERENA Certificate Service?  
 YES  NO
- If YES:
- D.10  This CA is operated by us  
 The certificates are provided by a commercial CA  
 The certificates are provided in another way
- D.11 Does the CA issue server certificates?  YES  NO  
D.12 If YES: number issued in 2009:  
D.13 Does the CA issue personal certificates?  YES  NO  
D.14 If YES: number issued in 2009:  
D.15 Does the CA issue code signing certificates?  YES  NO  
D.16 If YES: number issued in 2009:  
D.17 Does the CA issue CA certificates?  YES  NO  
D.18 If YES: number issued in 2009:
- D.19 Is the CA accredited by a PMA?  
 NO  YES  
If yes:  IGTF  eduPKI PMA  others:

## Housing, Storage, Hosting and Content Delivery Services

This table explores the level of deployment for each type of service. Please enter a tick or cross to indicate if services are currently deployed, planned or of no interest to your NREN.

		Currently deployed	Planned	Not planned
D.20	Distributed Storage for GRID users			
D.21	Distributed Storage for any NREN users			
D.22	Dedicated/special connectivity to provide high levels of connectivity to commercial content servers or commercial content			
D.23	Hosting of commercial content servers or commercial content on the NREN network			
D.24	Video servers for use by NREN sites			
D.25	Mirroring of content from outside the NREN network			

## Collaboration services

### Voice over IP (VoIP) services

		Current	Planned	Not planned
D.26	Does your NREN run VoIP as a centrally managed service for institutions and/or users?			
If you are currently running a VoIP service:				
D.27	Do you provide VoIP to PSTN services for your institutions?			
D.28	Do you provide inter-organizational VoIP			

	services for institutions on your network?			
D.29	Are E.164 numbers – reachable in/through your VoIP network – announced/propagated in ENUM or NRENUM.net?			
D.30	Do you provide VoIP for individual users?			

#### Video- and webconferencing

		Currently	Planned	Not planned
D.31	Do you provide a centrally managed videoconferencing service?			
	If you are currently running such a service:			
D.32	Is there a centrally provided user support?			
D.33	Is ITU-T H.323 based videoconferencing supported?			
D.34	Is Session Initiation Protocol (SIP) based videoconferencing supported?			
D.35	Is H.323 Global Dialing Scheme (GDS) access supported?			
D.36	Do you provide Standard Definition (SD) MCU services?			
D.37	Do you provide High Definition (HD) MCU services?			
D.38	Do you have an online MCU booking system?			
D.39	Are members of other R&E communities outside your NREN allowed to use your videoconference services (e.g. MCU)?			
D.40	Do you offer centrally provided recording and streaming of videoconferences?			
D.41	Do you provide a centrally managed webconferencing service?			
	If you are currently running such a service:			
D.42	Do you provide interoperability with your videoconferencing service?			

#### Multimedia repositories and streaming

		Currently	Planned	Not planned
D.43	Does your NREN run a multimedia content repository			

	service for its users?			
If you are currently running a multimedia content repository service:				
D.44	Please give the URL of the repository:			
D.45	Is video sharing functionality provided for your users?			
D.46	Is standards based metadata exchange possible (e.g. OAI-PMH)?			
D.47	Is live streaming service offered for users?			

## Networked Computing Resources (Grids)

		Currently running	Planned	Not planned
D.48	Is your NREN offering GRID services to the community you serve?			
If currently running which of the following do you provide for your national GRID community?				
D.49	Dedicated optical paths for GRID users			
D.50	Dedicated point-to-point IP circuits			
D.51	Storage facilities run by the NREN			
D.52	Compute CPUs provided by the NREN			
D.53	Other – please state			

## Clouds

D.54 Do you offer "virtualization" services? (similar to Virtual Private Server, cloud, etc)?  
 YES       NO       Planned

If YES:

D.55 To whom is this service addressed (NOCs, end-users, laboratories, etc.)?

D.56 How do users manage the virtualized resources allotted to them?

D.57 How do you manage the virtualized infrastructure?

D.58 Do you offer permanent storage outside the individual virtual machines?  
 YES       NO

D.59 Do you provide distributed computational frameworks (e.g., Hadoop) to your users?  
 YES       NO

D.60 Do you provide the capability to migrate live virtual instances to end users?  
 YES       NO

D.61 What automatic failover recovery software and/or mechanisms (if any) do you use?

## User interaction

- D.62 Do you organise national user conferences?  YES  NO
- D.63 Do you organise training courses?  YES  NO
- D.64 Do you provide any broker or proxy services, such as software licensing, organising framework or other tenders, spectrum licensing? If so, please name the services.
- D.65 Do you provide premium professional services, such as consultancy, security audits, etc. If so, please give examples.
- D.66 Remarks:

## Section E: FUNDING AND STAFFING

- E.1 Is your budget year equal to the calendar year?  YES  NO
- E.2 If NO, please dates between which the budget runs:

E.3 What was your organization's total budget for 2009 (or 2009/2010)?  
(please use millions of euro at the current exchange rate)

E.4 How much of the 2009 budget was dedicated directly to NREN activities?

(please use millions of euro at the current exchange rate)

*Note NREN Activities: Some NRENs provide services **only** to the Research or Education communities in their country. Others provide services to other sectors as well, for example because they administer the country-code tld.*

*In order to permit like-for-like comparisons in this section, please regard 'NREN-Activities' as those activities For the sake of comparability, we would like to ask you to provide information only about the activities for the Research or Education communities in your country in this section.*

E.5 What is your organization's total budget for 2010 (or 2010/2011)?  
(please use millions of euro at the current exchange rate)

E.6 How much of the 2010 budget is dedicated directly to NREN activities?

(please use millions of euro at the current exchange rate)

E.7 Is your organization able to develop multi-annual budgets or multi-annual plans?  YES  NO

E.8 If YES, please briefly describe how this operates

E.9 Do you make your corporate strategy and/or business plan available on-line?  YES  NO

E.10 If so, please provide the URL:

E.11 What changes, if any, do you foresee in your funding base in the next 3 to 5 years?

E.12 Please give an estimate of the sources of your NREN-related income (for 2009 or 2009/2010)

Source	Percentage of income
Users/clients	
Government/public bodies	
The EU (e.g. for Framework Programme projects)	
Other sources	
All of the above should total to 100%	

E.13 Does this budget include the amount of the EU subsidy for GN3 that your NREN receives? [ ] YES [ ] NO

E.14 How do you charge your clients?  
[ ] We do not charge them directly  
[ ] We charge a flat fee, based on bandwidth  
[ ] We charge a traffic-based fee  
[ ] We use a combination of flat fee and usage-based fee  
[ ] Other (eg. some, but not all, please explain):

E.15 What is the total number of paid staff directly employed by your organisation (not outsourced)?

E.16 What is the number of staff engaged in NREN activities (see explanation above)?

E.17 Some of the staff could be working part-time. We would like to know the number of staff as given above, but in full-time equivalents (FTEs):

E.18 On average, how many people (in FTE) are working for the organisation as subcontractors or on outsourced basis (for NREN activities)?

E.19 Please provide a breakdown of the staff engaged in NREN activities (in FTEs):

	Breakdown of staff working on NREN activities directly employed by your organisation:	Breakdown of personnel working on NREN activities but employed by others (outsourced):
NOC		
Other Technical staff		
Administrative and financial staff		
User support and training staff		
Others not included elsewhere		
Total (should be the same as above)		

E.20 Please give us an indication of the main expenditure categories in your budget (for 2009 or 2009/2010).

Expenditure category	Percentage
Salaries and general office costs	
Equipment (switches, routers etc.)	

Transmission capacity (IRUs, leased lines, optical equipment etc.)	
Other	

E.21 Please indicate how much of the following network levels (equipment + transmission capacity + manpower) are paid for through the NREN budget (and not by some other body):  
(please mark n/a if this level does not exist in your network)

Level	Percent of your budget that is spent on this	Estimated percentage of the total cost of this that is paid through the NREN budget
External connections		
NREN backbone		
Access network		
Metropolitan or regional networks		
Campus LAN		

E.22 Remarks or further information regarding section E:

### Section F: BASIC INFORMATION

- F.1 Full name of the organisation (in English):
- F.2 Full name of the organisation in the national language(s) (please use the Latin alphabet):
- F.3 Abbreviation in English (if applicable):
- F.4 Abbreviation in the national language(s):
- F.5 Visiting address:
- F.6 Postal address (if different from above)
- F.7 Country:
- F.8 Fax:
- F.9 Phone:
- F.10 General e-mail address:
- F.11 Website:
- F.12 Year the first research network operations started:
- F.13 Year in which research networking was started as a dedicated organisational unit:
- F.14 Year in which the NREN was founded in its current form:
- F.15 If you have a short description of the history of your organisation on your website, please provide a URL to it:
- F.16 Form of organisation:  
 Separate legal entity in its own right  
 Not a separate legal entity and also not part of a larger organisation  
 Not a legal entity of its own, but part of a larger organisation.
- F.17 If so, please give the name of the parent organisation (in English):

F.18 What is the formal relationship between your organisation and your government?  
 We are a government agency or part of a ministry  
 The Government appoints at least half of the members of our Governing body  
 There is an indirect relationship (*for example if at least half the members of your Governing body are appointed by research and education institutions that in itself are (largely) government-funded*)  
 No formal relationship     Other. If so, please explain:

F.19 Please briefly describe the governing structure of your NREN (in terms of members, governing body, decision making process, etc.):

F.20 If you have a description of your governing structure on your website, please give the URL:

F.21 Do you have a Connection Policy  YES  NO

F.22 If YES – Please give the URL for the Connection Policy:

F.23 Do you have an Acceptable Use Policy?  YES  NO

F.24 If YES please provide the URL for the AUP:

F.25 Has your AUP been changed in the last year?  YES  NO

F.26 If YES, please summarize briefly how it has changed

F.27 Do you have a Security Policy?  YES  NO

F.28 If YES – Please give the URL:

F.29 Do you request your connected sites to sign Terms and Conditions in addition to the CP and AUP  YES  NO

F.30 Does your NREN have an environmental policy for efficient use of power, recycling etc.?  YES  NO

F.31 If available online please give the URL:

F.32 Has your NREN carried out a greenhouse gas audit, or does it plan to do so?  
 Yes     No     Planned

F.33 If Yes, please give the net result, in tonnes of GHG equivalent, or else a URL to the audit report:

F.34 We would appreciate it if you would be able to give us a short description of major changes that occurred in your organisation and/or services during the past year or that you foresee for the coming year (structural changes, changes in your mandate or remit, major technology upgrades, changes in the user base, etc.)

**F.35 We would be interested in receiving your feedback, both regarding the Compendium 2009 and this questionnaire. Both general comments and specific comments (e.g. about questions that you found difficult to understand or to answer or of limited value) would be appreciated.**

**F.36 Who can we contact with further questions regarding the Compendium?<sup>1</sup>**

**(First name, last name, e-mail address: )**

**F.37 Remarks:**

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<sup>1</sup> This information will not be made publicly available.