

# 1 Additional Tables

Note to tables 1.1 – 1.7:

Some NRENs may connect institutions in these categories, but may not have provided the relevant information in the survey

Table 1.1 Number of connected Universities and bandwidth

	NREN	Total # connected	% ≤ isdn	% up to 2 Mb	% up to 10 Mb	% up to 100 Mb	% up to 1 Gb	% ≥ 1 Gb	% ≥ 10 Gb
EU/EFTA countries									
Belgium	BELNET	18	0	0	28	0	50	22	0
Cyprus	CYNET	1	0	0	0	0	100	0	0
Czech Republic	CESNET	37	0	16	5.5	4	0	75	0
Denmark	UNI•C	12	0	0	0	10	20	70	0
Estonia	EENet	11	0	0	36	9	36	19	0
Finland	FUNET	49	0	0	0	0	65	35	0
France	RENATER	406	0	40	17	37	6	0	0
Germany	DFN	70	0	0	0	34	59	7	0
Greece	GRNET	20	0	0	25	30	30	15	0
Hungary	NIIF/ HUNGARNET	24	0	17	4	8	4	33	33
Iceland	RHnet	8	0	0	0	20	0	80	0
Ireland	HEAnet	7	0	0	0	14	86	0	0
Italy	GARR	85	0	12	22	46	12	8	0
Latvia	LANET	27	0	20	10	45	0	25	0
Latvia	LATNET	22	0	40	45	15	0	0	0
Lithuania	LITNET	20	0	0	0	65	1	34	0
Luxembourg	RESTENA	6	0	17	17	0	0	66	0
Malta	CSC	5	0	60	0	40	0	0	0
Netherlands	SURFnet	60	0	0	0	0	0	95	5
Norway	UNINETT	4	0	0	0	0	25	75	0

**Table 1.1 Number of connected Universities and bandwidth (continued)**

	NREN	Total # connected	% ≤ isdn	% up to 2 Mb	% up to 10 Mb	% up to 100 Mb	% up to 1 Gb	% ≥ 1 Gb	% ≥ 10 Gb
Poland	PIONIER	95	2	12	20	42	11	13	0
Portugal	FCCN	22	0	10	50	40	0	0	0
Slovakia	SANET	52	0	0	0	0	5	95	0
Slovenia	ARNES	10	0	0	20	20	0	60	0
Spain	RedIRIS	66	0	7	3	27	43	20	0
Sweden	SUNET	40	0	0	0	20	0	80	0
Switzerland	SWITCH	31	0	0	29	33	0	34	4
United Kingdom	UKERNA	120	0	0	0	60	30	10	0
Other countries									
Algeria	CERIST	36	0	80	20	0	0	0	0
Azerbaijan	AzNET	4	20	80	0	0	0	0	0
Azerbaijan	AzRENA	16	10	30	50	10	0	0	0
Belarus	BASNET	10	0	70	0	30	0	0	0
Bulgaria	IST Foundation	20	0	0	100	0	0	0	0
Croatia	CARNet	190	0	62	3	7	4	23	1
Georgia	GRENA	10	0	80	10	10	0	0	0
Israel	IUCC	8	0	0	0	75	25	0	0
Kazakhstan	KazRENA	6	0	100	0	0	0	0	0
Kyrgyzstan	KRENA-AKNET	16	0	100	0	0	0	0	0
Macedonia, FYRo	MARNet	10	10	0	40	0	0	50	0
Moldova	RENAM	6	0	0	65	0	0	35	0
Morocco	MARWAN	13	0	15	7	78	0	0	0
Romania	RoEduNet	50	0	0	10	75	15	0	0
Russian Federation	RBNNet/RUNNet	168	2	62	10	21	3	2	0
Serbia / Montenegro	AMREJ	5	0	33	0	0	17	50	0
Syria	SHERN	5	0	100	0	0	0	0	0
Ukraine	URAN	25	40	20	8	32	0	0	0
Uzbekistan	UzSciNet	80	0	90	10	0	0	0	0
Turkey	ULAKBIM	78	0	23	39	31	7	0	0

Table 1.2 Number of connected research institutes and bandwidth

	NREN	Total number connected	% ≤ isdn	% up to 2 Mb	% up to 10 Mb	% up to 100 Mb	% up to 1 Gb	% ≥ 1 Gb	% ≥ 10 Gb
EU/EFTA countries									
Belgium	BELNET	34	0	0	79.4	11.8	5.9	2.9	0
Cyprus	CYNET	3	0	100	0	0	0	0	0
Czech Republic	CESNET	21	0	42	47.6	10.4	0	0	0
Denmark	UNI•C	25	0	50	35	15	0	0	0
Estonia	EENet	15	0	33	0	47	20	0	0
Finland	FUNET	15	0	0	10	15	65	10	0
France	RENATER	244	0	45.5	29.5	24.2	0.8	0	0
Germany	DFN	127	0	28	46	24	2	0	0
Greece	GRNET	20	0	20	70	5	5	0	0
Hungary	NIIF/ HUNGARNET	66	12	50	3	23	0	12	0
Iceland	RHnet	7	0	0	0	0	0	100	0
Ireland	HEAnet	10	0	70	0	30	0	0	0
Italy	GARR	106	0	48.1	9.4	30.2	3.8	8.5	0
Latvia	LANET	36	0	0	0	100	0	0	0
Latvia	LATNET	18	0	18	73	9	0	0	0
Lithuania	LITNET	54	0	2	0	90	0	8	0
Luxembourg	RESTENA	16	18.8	31.3	18.8	12.5	0	18.8	0
Malta	CSC	1	0	100	0	0	0	0	0
Netherlands	SURFnet	65	0	5	0	10	5	80	0
Norway	UNINETT	83	0	19	7	62	1	10	0
Poland	PIONIER	160	12	40	30	12	5	1	0
Portugal	FCCN	12	0	60	40	0	0	0	0
Slovakia	SANET	25	0	0	7	50	33	10	0
Slovenia	ARNES	57	7	42	21	23	0	7	0
Spain	RedIRIS	150	5	36	30	20	3	6	0

	NREN	Total number connected	% ≤ isdn	% up to 2 Mb	% up to 10 Mb	% up to 100 Mb	% up to 1 Gb	% ≥ 1 Gb	% ≥ 10 Gb
Sweden	SUNET	5	0	0	0	60	20	20	0
Switzerland	SWITCH	2	0	0	0	50	0	50	0
United Kingdom	UKERNA	50	0	10	35	40	10	5	0
Other countries									
Algeria	CERIST	11	0	100	0	0	0	0	0
Azerbaijan	AzRENA	24	10	20	0	40	30	0	0
Belarus	BASNET	180	0	60	35	5	0	0	0
Bulgaria	IST Foundation	72	0	0	50	50	0	0	0
Croatia	CARNet	50	2	86	2	2	0	8	0
Georgia	GRENA	30	10	90	0	0	0	0	0
Israel	IUCC	5	0	40	60	0	0	0	0
Kazakhstan	KazRENA	21	0	100	0	0	0	0	0
Kyrgyzstan	KRENA-AKNET	2	0	100	0	0	0	0	0
Macedonia, FYRo	MARNet	5	80	0	20	0	0	0	0
Moldova	RENAM	35	0	0	60	30	0	10	0
Morocco	MARWAN	2	0	100	0	0	0	0	0
Romania	RoEduNet	35	0	20	20	50	0	10	0
Russian Federation	RBNet/RUNNet	270	10	60	20	10	0	0	0
Serbia / Montenegro	AMREJ	22	0	59	14	0	0	27	0
Syria	SHERN	3	0	100	0	0	0	0	0
Turkey	ULAKBIM	14	0	64.3	21.5	14.2	0	0	0
Ukraine	URAN	6	33	0	67	0	0	0	0
Uzbekistan	UzSciNet	24	0	90	0	10	0	0	0

Table 1.3 Number of connected institutions of higher/further education and bandwidth

	NREN	Total number connected	% ≤ isdn	% up to 2 Mb	% up to 10 Mb	% up to 100 Mb	% up to 1 Gb	% ≥ 1 Gb	% ≥ 10 Gb
EU/EFTA countries									
Belgium	BELNET	36	0	0	44	50	5.6	0	0
Cyprus	CYNET	5	0	100	0	0	0	0	0
Czech Republic	CESNET	21	0	38	38	24	0	0	0
Denmark	UNI•C	74	0	35	45	15	5	0	0
Estonia	EENet	22	0	36	14	18	32	0	0
France	RENATER	272	0	39	3,7	5	3.3	0	0
Germany	DFN	102	0	10	17	70	3	0	0
Greece	GRNET	158	87	2	8	1	1	1	0
Hungary	NIIF/HUNGARNET	38	4	32	11	13	24	16	0
Ireland	HEAnet	21	0	0	0	100	0	0	0
Italy	GARR	2	0	100	0	0	0	0	0
Latvia	LATNET	15	0	50	50	0	0	0	0
Lithuania	LITNET	93	0	0	92	8	0	0	0
Luxembourg	RESTENA	6	0	50	16.7	0	0	33.3	0
Malta	CSC	2	0	100	0	0	0	0	0
Netherlands	SURFnet	15	0	10	0	0	0	90	0
Norway	UNINETT	64	0	31	17	14	31	6	0
Poland	PIONIER	11	30	70	0	0	0	0	0
Portugal	FCCN	24	0	50	50	0	0	0	0
Slovakia	SANET	12	0	25	0	0	75	0	0
Slovenia	ARNES	10	0	50	10	40	0	0	0
Sweden	SUNET	0	0	0	0	0	0	0	0
Switzerland	SWITCH	1	0	0	0	100	0	0	0
United Kingdom	UKERNA	560	0	0	80	20	0	0	0

**Table 1.3 Number of connected institutions of higher/further education and bandwidth (continued)**

	NREN	Total number connected	% ≤ isdn	% up to 2 Mb	% up to 10 Mb	% up to 100 Mb	% up to 1 Gb	% ≥ 1 Gb	% ≥ 10 Gb
<b>Other countries</b>									
Algeria	CERIST	21	0	100	0	0	0	0	0
Azerbaijan	AzRENA	2	100	0	0	0	0	0	0
Bulgaria	IST Foundation	1	0	100	0	0	0	0	0
Croatia	CARNet	21	0	52	0	19	5	24	0
Georgia	GRENA	20	0	100	0	0	0	0	0
Israel	IUCC	4	0	50	50	0	0	0	0
Kazakhstan	KRENA-AKNET	2	0	100	0	0	0	0	0
Kyrgyzstan	KazRENA	5	0	100	0	0	0	0	0
Moldova	RENAM	2	0	0	100	0	0	0	0
Morocco	MARWAN	10	0	100	0	0	0	0	0
Serbia / Montenegro	AMREJ	80	0	0	0	0	0	0	0
Syria	SHERN	4	0	100	0	0	0	0	0
Turkey	ULAKBIM	293	0	100	0	0	0	0	0
Ukraine	URAN	1	0	0	0	100	0	0	0

**Table 1.4 Number of connected libraries, museums and national archives and bandwidth**

Country	NREN	Total number connected	% ≤ isdn	% up to 2 Mb	% up to 10 Mb	% up to 100 Mb	% up to 1 Gb	% ≥ 1 Gb
Algeria	CERIST	10	100	0	0	0	0	0
Azerbaijan	AzNET	1	0	100	0	0	0	0
Azerbaijan	AzRENA	0	0	0	100	0	0	0
Belarus	BASNET	10	0	50	50	0	0	0
Belgium	BELNET	10	0	0	100	0	0	0
Bulgaria	IST Foundation	5	60	40	0	0	0	0
Croatia	CARNet	18	6	72	6	11	5	0
Czech Republic	CESNET	21	0	33.3	42.8	19.1	0	4.8
Denmark	UNI•C	5	0	0	0	100	0	0
Estonia	EENet	95	0	90	1	2	7	0

Country	NREN	Total number connected	% ≤ isdn	% up to 2 Mb	% up to 10 Mb	% up to 100 Mb	% up to 1 Gb	% ≥ 1 Gb
Finland	FUNET	3	0	33.3	33.3	33.3	0	0
France	RENATER	4	0	25	75	0	0	0
Georgia	GRENA	10	10	90	0	0	0	0
Hungary	NIIF/ HUNGARNET	287	40	55	1	1	2	1
Iceland	RHnet	0	0	0	0	0	0	100
Ireland	HEAnet	1	0	100	0	0	0	0
Italy	GARR	27	0	100	0	0	0	0
Kazakhstan	KazRENA	1	0	0	0	0	0	0
Kyrgyzstan	KRENA-AKNET	1	0	100	0	0	0	0
Latvia	LANET	0	0	0	0	0	0	0
Latvia	LATNET	24	4	16	68	12	0	0
Lithuania	LITNET	89	0	1.2	1.2	96	0	1.2
Luxembourg	RESTENA	10	60	10	30	0	0	0
Macedonia, FYRo	MARNet	1	100	0	100	0	0	0
Moldova	RENAM	14	0	0	100	0	0	0
Morocco	MARWAN	1	0	0	100	0	0	0
Netherlands	SURFnet	10	0	0	0	0	10	90
Norway	UNINETT	14	0	80	7	7	7	0
Poland	PIONIER	38	0	31	53	16	0	0
Romania	RoEduNet	20	0	10	10	70	5	0
Russian Federation	RBNet/RUNNet	26	0	0	0	0	0	0
Serbia / Montenegro	AMREJ	5	0	20	0	60	0	20
Slovakia	SANET	10	0	0	0	100	0	0
Slovenia	ARNES	145	32	44	15	9	0	0
Spain	RedIRIS	15	0	80	20	0	0	0
Sweden	SUNET	15	0	0	0	100	0	0
Turkey	ULAKBIM	2	0	100	0	0	0	0
Uzbekistan	UzSciNet	9	0	0	0	0	0	0

**Table 1.5 Number of connected hospitals (other than University hospitals) and bandwidth**

Country	NREN	Total number connected	% ≤ isdn	% up to 2 Mb	% up to 10 Mb	% up to 100 Mb	% up to 1 Gb	% ≥ 1 Gb
Algeria	CERIST	30	100	0	0	0	0	0
Belarus	BASNET	15	0	100	0	0	0	0
Belgium	BELNET	8	0	0	50	37.5	12.5	0
Czech Republic	CESNET	24	0	20.8	45.8	25	8.4	0
France	RENATER	7	0	71.5	28.5	0	0	0
Georgia	GRENA	5	0	100	0	0	0	0
Italy	GARR	6	0	100	0	0	0	0
Kyrgyzstan	KRENA-AKNET	2	0	100	0	0	0	0
Latvia	LATNET	1	0	0	100	0	0	0
Lithuania	LITNET	11	0	4	0	96	0	0
Moldova	RENAM	3	0	35	65	0	0	0
Netherlands	SURFnet	1	0	0	0	0	0	100
Poland	PIONIER	29	0	10	55	24	3	8
Serbia / Montenegro	AMREJ	1	0	100	0	0	0	0
Spain	RedIRIS	41	0	90	10	0	0	0
Uzbekistan	UzSciNet	7	0	0	0	0	0	0

**Table 1.6 Number of connected government departments (national, regional, local) and bandwidth**

Country	NREN	Total # connected	% ≤ isdn	% up to 2 Mb	% up to 10 Mb	% up to 100 Mb	% up to 1 Gb	% ≥ 1 Gb
Algeria	CERIST	50	80	20	0	0	0	0
Belarus	BASNET	14	0	40	60	0	0	0
Belgium	BELNET	35	0	0	42.9	34.3	14.3	8.5
Croatia	CARNet	6	0	33	0	0	0	67
Czech Republic	CESNET	38	0	31.6	55.3	13.1	0	0
Estonia	EENet	17	0	82	0	0	18	0



Country	NREN	Total # connected	% ≤ isdn	% up to 2 Mb	% up to 10 Mb	% up to 100 Mb	% up to 1 Gb	% ≥ 1 Gb
Finland	FUNET	2	0	0	50	50	0	0
France	RENATER	14	0	78.5	21.5	0	0	0
Georgia	GRENA	3	0	33	0	66	0	0
Greece	GRNET	8	0	25	75	0	0	0
Hungary	NIIF/HUNGARNET	3	0	33	0	67	0	0
Ireland	HEAnet	6	0	84	16	0	0	0
Italy	GARR	3	0	0	0	33.4	66.6	0
Latvia	LATNET	5	0	70	15	15	0	0
Lithuania	LITNET	65	0	1.5	1.5	89	0	8
Luxembourg	RESTENA	2	0	50	0	0	0	50
Macedonia, FYRo	MARNet	1	0	0	100	0	0	0
Moldova	RENAM	5	0	0	100	0	0	0
Morocco	MARWAN	2	0	100	0	0	0	0
Poland	PIONIER	28	6	39	47	8	0	0
Portugal	FCCN	12	0	100	0	0	0	0
Romania	RoEduNet	20	0	5	15	80	0	0
Russian Federation	RBNet/RUNNet	48	0	0	0	0	0	0
Serbia / Montenegro	AMREJ	2	0	50	0	0	0	50
Slovakia	SANET	8	0	0	0	100	0	0
Spain	RedIRIS	12	0	0	30	70	0	0
Sweden	SUNET	5	0	0	0	100	0	0
Turkey	ULAKBIM	11	0	72.7	9.1	9.1	9.1	0
Ukraine	URAN	1	0	0	0	0	0	0
Uzbekistan	UzSciNet	18	0	0	0	0	0	0

Table 1.7 Number of connected others and bandwidth

Country	NREN	Total number connected	% ≤ isdn	% up to 2 Mb	% up to 10 Mb	% up to 100 Mb	% up to 1 Gb	% ≥ 1 Gb
Azerbaijan	AzNET	5	0	80	20	0	0	0
Azerbaijan	AzRENA	2	50	50	0	0	0	0
Belgium	BELNET	1	0	0	0	0	100	0
Croatia	CARNet	25	16	60	4	12	0	8
Czech Republic	CESNET	25	0	48	36	16	0	0
Denmark	UNI•C	15	0	40	30	30	0	0
Estonia	EENet	65	0	26	12.5	21.5	40	0
Finland	FUNET	13	0	0	15	35	50	0
France	RENATER	9	0	77.8	11.1	11.1	0	0
Greece	GRNET	1265	93	5	2	1	0	0
Hungary	NIIF/HUNGARNET	72	36	52	3	6	0	3
Italy	GARR	76	0	77.6	10.5	7.9	1.3	2.7
Kazakhstan	KazRENA	4	0	100	0	0	0	0
Kyrgyzstan	KRENA-AKNET	3	0	100	0	0	0	0
Latvia	LATNET	2	0	100	0	0	0	0
Lithuania	LITNET	146	0	0	0	100	0	0
Netherlands	SURFnet	20	0	30	5	5	0	60
Norway	UNINETT	8	100	0	0	0	0	0
Poland	PIONIER	179	6	36	42	15	0	1
Serbia / Montenegro	AMREJ	11	0	27	36	27	0	9
Slovenia	ARNES	158	30	46	8	16	0	1
Spain	RedIRIS	1	0	0	0	0	100	0
Sweden	SUNET	10	0	0	20	60	20	0
Switzerland	SWITCH	2	0	0	0	100	0	0
Ukraine	URAN	2	0	0	0	100	0	0
Uzbekistan	UzSciNet	41	0	100	0	0	0	0

## 1.8 Number of PoPs and of managed links on the network

The number of Points of Presence (PoPs) on the network and the number of managed links are both indicators of the amount of resources that is needed for the NREN to maintain the network. The number of PoPs was defined more explicitly than in 2004 as the the number of sites where the NREN manages routing or switching equipment. As can be seen from the table below, NRENs vary considerably in this respect. Thus, ARNES of Slovenia manages the equipment at 800 institutions (many of them secondary and primary schools) and thus has 800 managed links. In many other countries, the links from a PoP on the backbone or from a MAN to the end user are managed by other bodies.

Table 1.8

	NREN	# of PoPs	# of Managed links
<b>EU &amp; EFTA countries</b>			
<b>Belgium</b>	BELNET	15	29
<b>Cyprus</b>	CYNET	2	1
<b>Czech Republic</b>	CESNET	22	46
<b>Denmark</b>	UNI•C	15	30
<b>Finland</b>	FUNET	15	21
<b>France</b>	RENATER	39	70
<b>Germany</b>	DFN	27	52
<b>Greece</b>	GRNET	12	14
<b>Hungary</b>	NIIF/HUNGARNET	35	38
<b>Iceland</b>	RHnet	10	13
<b>Ireland</b>	HEAnet	9	11
<b>Italy</b>	GARR	39	50
<b>Latvia</b>	LANET	21	21

	NREN	# of PoPs	# of Managed links
<b>Latvia</b>	LATNET	42	50
<b>Lithuania</b>	LITNET	25	23
<b>Luxembourg</b>	RESTENA	12	13
<b>Malta</b>	CSC	1	0
<b>Netherlands</b>	SURFnet	138	150
<b>Norway</b>	UNINETT	60	80
<b>Poland</b>	PIONIER	22	25
<b>Portugal</b>	FCCN	20	25
<b>Slovakia</b>	SANET	22	23
<b>Slovenia</b>	ARNES	800	800
<b>Spain</b>	RedIRIS	19	32
<b>Sweden</b>	SUNET	23	30
<b>Switzerland</b>	SWITCH	30	35
<b>United Kingdom</b>	UKERNA	28	34
<b>Other countries</b>			
<b>Algeria</b>	CERIST	4	3
<b>Azerbaijan</b>	AzNET	8	8
<b>Azerbaijan</b>	AzRENA	8	8
<b>Belarus</b>	BASNET	14	13
<b>Bulgaria</b>	IST Foundation	10	30
<b>Croatia</b>	CARNet	250	300
<b>Georgia</b>	GRENA	17	26
<b>Israel</b>	IUCC	10	18
<b>Kazakhstan</b>	KazRENA	6	6
<b>Kyrgyzstan</b>	KRENA-AKNET	30	30
<b>Macedonia, FYRo</b>	MARNet	1	0
<b>Moldova</b>	RENAM	15	25
<b>Morocco</b>	MARWAN	1	0
<b>Romania</b>	RoEduNet	41	53

Table 1.8

	NREN	# of PoPs	# of Managed links
Russian Federation	RBNet/RUNNet	40	60
Syria	SHERN	5	4
Turkey	ULAKBIM	3	3
Ukraine	URAN	11	10
Uzbekistan	UzSciNet	13	22

Table 1.9 Traffic with the general Internet

	NREN	% of 'T3' traffic that is with the general Internet	% of 'T4' traffic that is with the general Internet
EU/EFTA countries			
Cyprus	CYNET	90	90
Czech Republic	CESNET	83	70.4
Estonia	EENet	90	90
Finland	FUNET	80	80
France	RENATER	90	80
Germany	DFN	90	83
Greece	GRNET	82.2	82.2
Hungary	NIIF/ HUNGARNET	70	70
Ireland	HEAnet	88	81
Italy	GARR	49	43
Luxembourg	RESTENA	85	80

	NREN	% of 'T3' traffic that is with the general Internet	% of 'T4' traffic that is with the general Internet
Malta	CSC	80	80
Poland	PIONIER	88	87
Portugal	FCCN	70	70
Slovakia	SANET	75	75
Slovenia	ARNES	70	65
Spain	RedIRIS	90	86
Switzerland	SWITCH	61	58
United Kingdom	UKERNA	95	86
Other countries			
Algeria	CERIST	50	50
Azerbaijan	AzNET	100	100
Azerbaijan	AzRENA	100	100
Belarus	BASNET	15	85
Bulgaria	IST Foundation	25	50
Croatia	CARNet	95	95
Georgia	GRENA	50	50
Israel	IUCC	95	95
Kyrgyzstan	KRENA-AKNET	100	100
Lithuania	LITNET	90	89
Macedonia, FYRo	MARNet	85	88
Netherlands	SURFnet	55.2	51.6
Romania	RNC	60	60
Russian Federation	RBNet/RUNNet	62	55
Serbia / Montenegro	AMREJ	80	80
Turkey	ULAKBIM	97	94
Ukraine	UARNet	91	93
Ukraine	URAN	90	95