High-level Regional Roundtable on Telecommunications Connectivity in Central Asia
Almaty, Kazakhstan
2-3 June 2014, Intercontinental Hotel

Central Asian Research and Education Network(CAREN) development

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Current status of CAREN

From ancient Silk Road to high-speed data highway

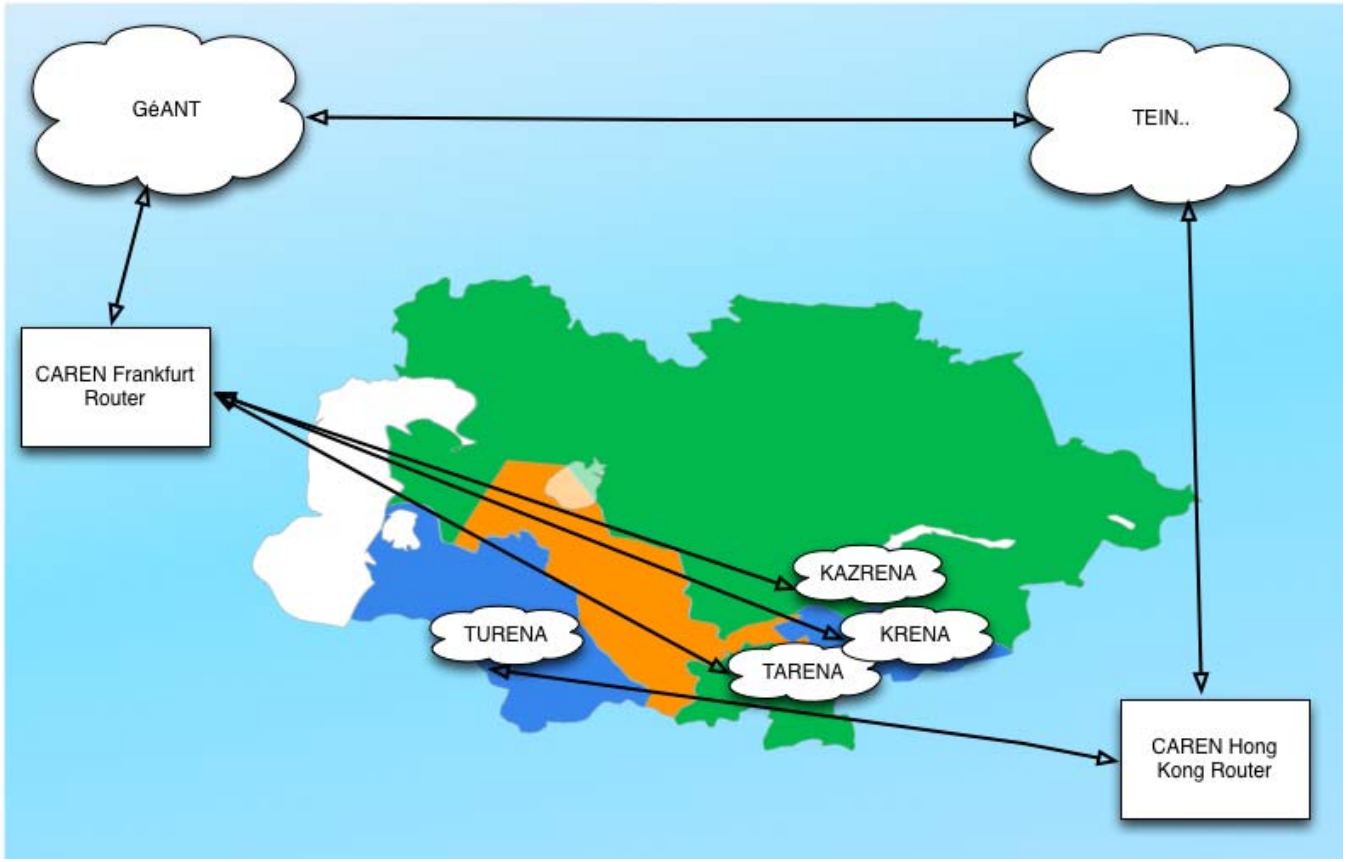
- EC-funded project to establish high-capacity R&E network in Central Asia
  - The CAREN network connects the national research and education network of four Central Asian countries: Kazakhstan (KazRENA), Kyrgyrstan (KRENA), Tajikistan (TARENA) and Turkmenistan (TURENA)

NRENs in CA countries as important vehicle for reaching Millennium Development Goals

- Terrestrial fibre connections (155 Mbps connection to GEANT for Kazakhstan and Kyrgyzstan, 34 Mbps connections for Tajikistan and Turkmenistan)
- Serve 1 million users at over 200 universities and research institutes in the region
- With direct link to GÉANT and TEIN , CAREN provides Central Asia with a gateway to global collaborations in R&E
- The second phase of CAREN Project has started from October 1, 2013 and it focus on applications development

Add logos here if needed

CAREN connectivity to GEANT (Europe) or TEIN (Asia)



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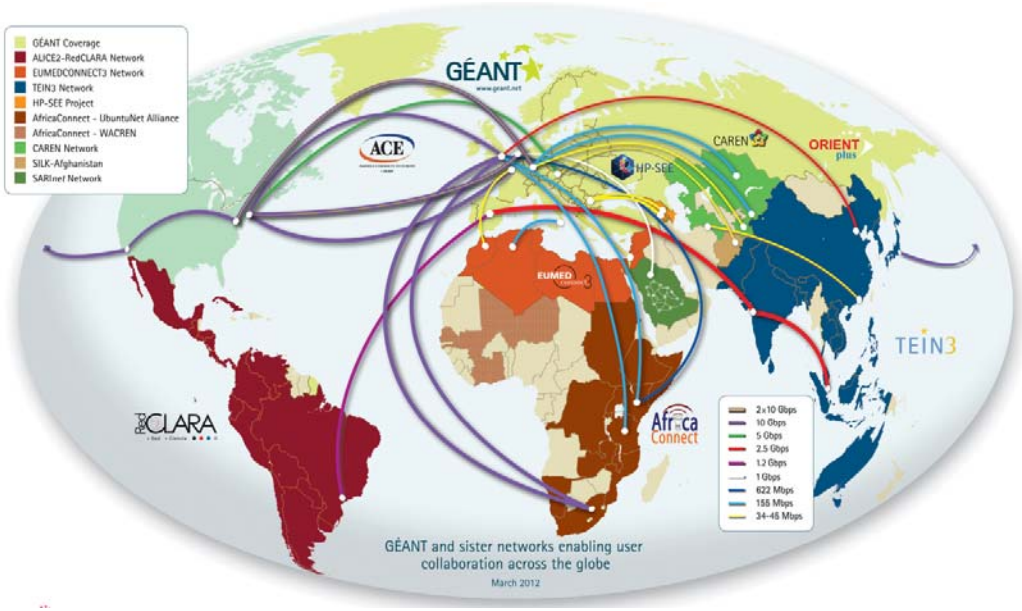
World Connectivity
The Global Virtual Research Village

CAREN



- The GÉANT network has high speed links to networks in other world regions, connecting researchers across the globe:
  - Asia-Pacific
  - South Caucasus
  - Central Asia
  - Latin America
  - North America
  - Southern and Eastern Africa
  - Southern Mediterranean

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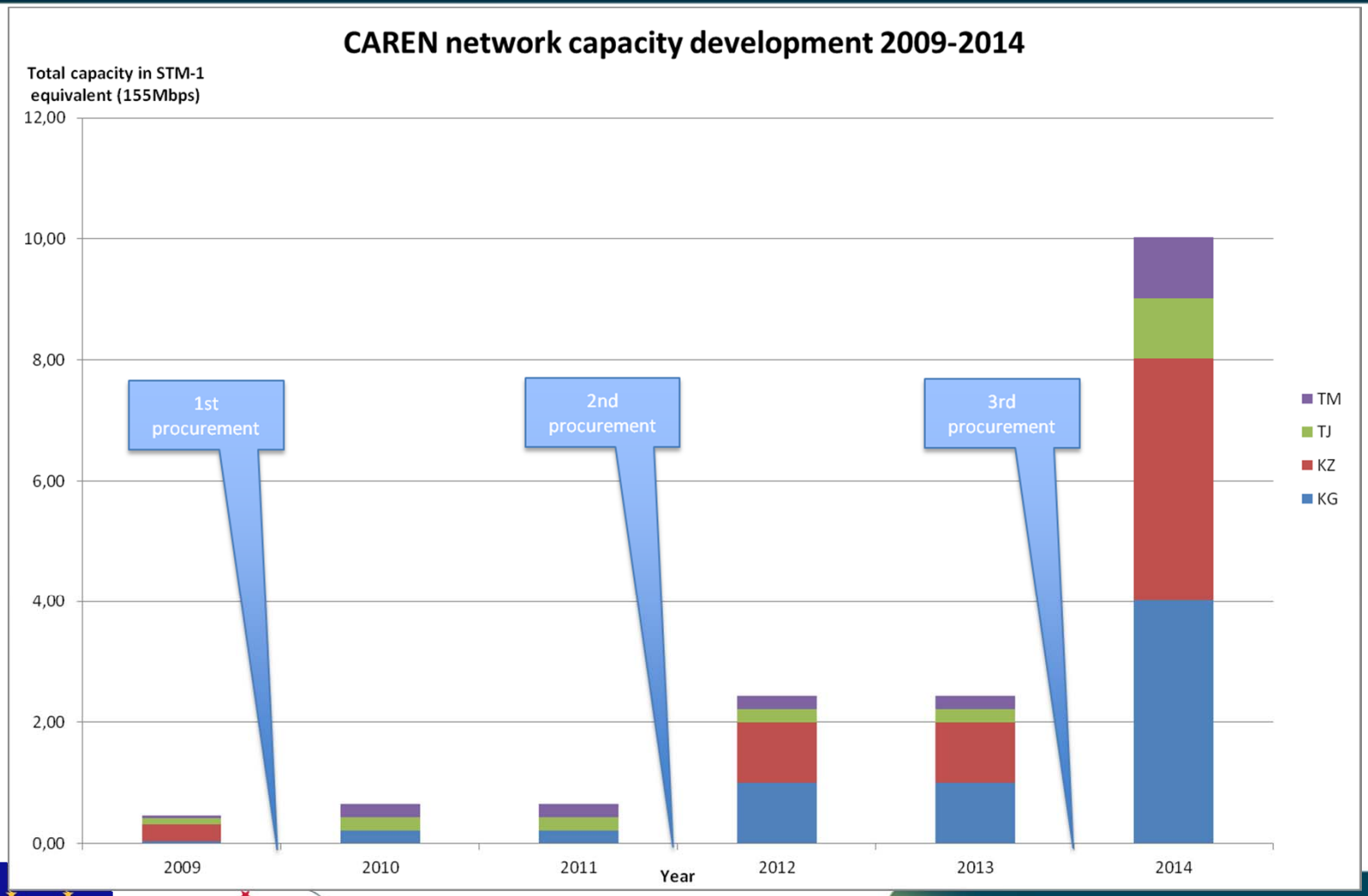
Network development in a nutshell

- Users are universities and research institutions (academic)
- Public procurement according the EU rules
- Strict rules, fair and equal competition, communication in English
- International Public Leased Circuits /IPLC/ services
- Procurement time + service delivery time ~ 12 month
- Managed service, NOC at Bishkek
- Uplink provider is GEANT/DANTE at Frankfurt
- Total circuit lengths 20,000+ km

Year	Capacity	Comment
2010	3*E3	Hong Kong centric
2012	2*E3,2*STM-1	3*Frankfurt, 1*Hong Kong
2014	2*STM-1,2*STM-4	3*Frankfurt, 1*Hong Kong

Network development in a nutshell



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CAREN network service in figures

NREN Circuit Availability	KAZRENA		KRENA		TARENA		TURENA	
	Avg. monthly # of outages	Availability %	Avg. monthly # of outages	Availability %	Avg. monthly # of outages	Availability %	Avg. monthly # of outages	Availability %
2010	0	0,00%	2	98,45%	3	98,72%	5	95,11%
2011	0	0,00%	6,58	98,38%	2,75	99,05%	2,42	99,37%
2012	10,08	99,77%	4,08	99,99%	7,33	99,92%	1,17	99,78%
2013	2,33	99,90%	1,67	99,95%	3,33	99,63%	2,33	99,73%
2014 (3 months)	1,33	99,27%	0,67	99,70%	2,67	99,69%	0,33	99,98%

- Service level is improving over the years
- Special problem the lack of circuit resiliency (not yet available everywhere)
- Operation wise the network service is challenging sometimes

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CAREN

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belcom over Kazakhstan

outes avoid Uzbekistan

T – interconnecting Tajikistan to China; and connecting
ek

en Telecom and Kazakh Telecom new interconnection

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