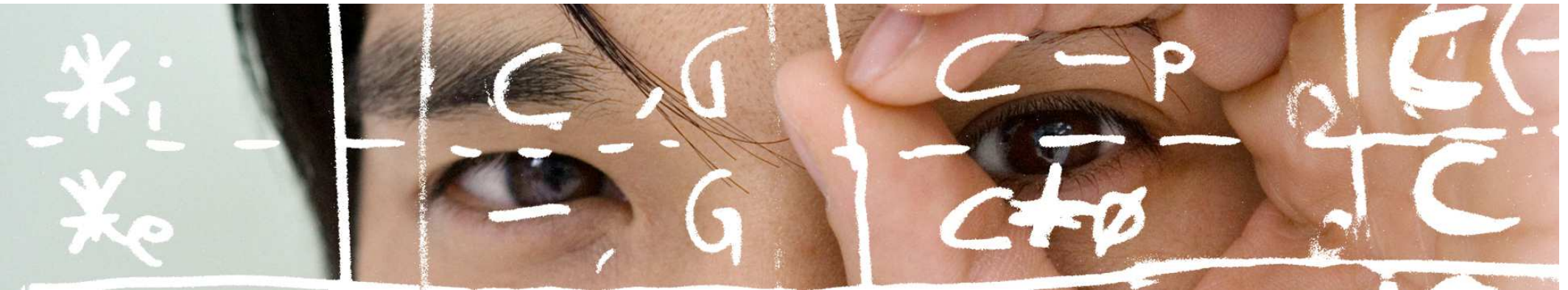


Success Will Be Inevitable – 16 Years of Testing the Future Internet



SWITCH

Serving Swiss Universities

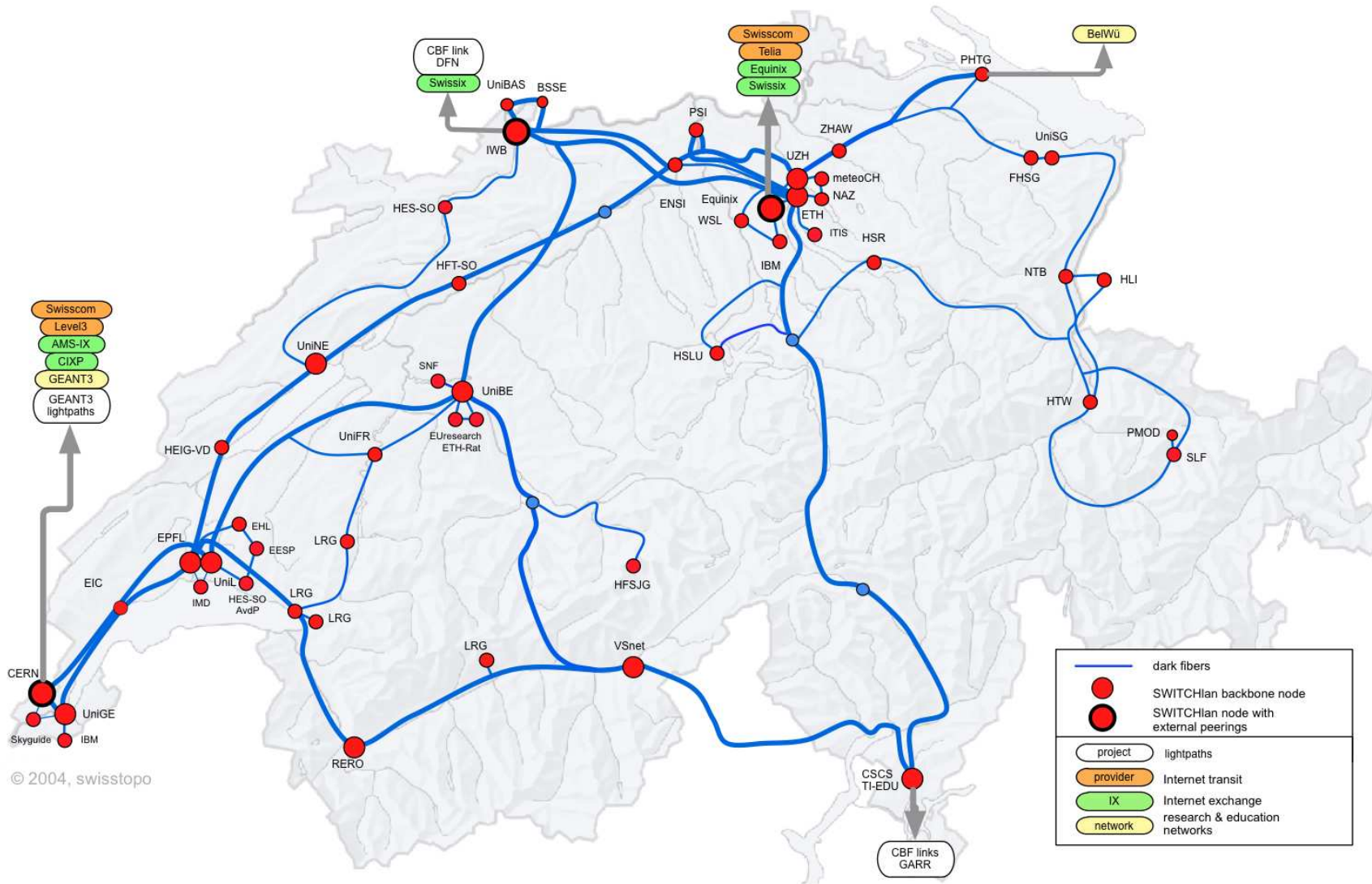
Alexander Gall,
IPv6 Council Membership Event
alexander.gall@switch.ch

Zürich, 14.5.2012

About SWITCH

- Founded in 1987
- Original purpose: connect the Swiss higher education institutions to the Internet
- These days, we do a lot more
 - .ch ccTLD registry
 - Collaboration
 - E-Learning
 - AAI
 - CERT
 - ...
- Current backbone based on own dark fiber infrastructure

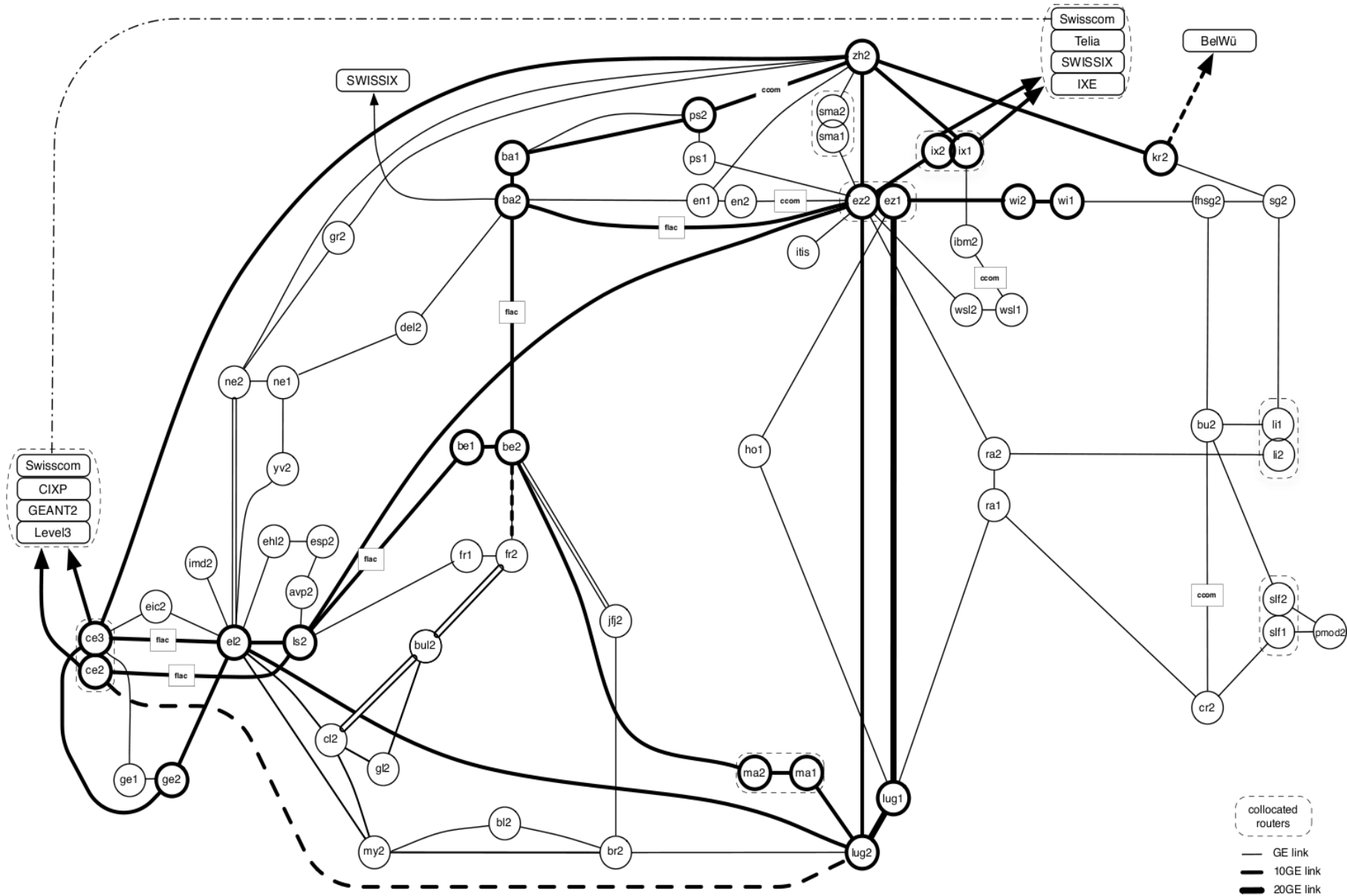
SWITCH Backbone Layer 1



Timeline of IPv6 @SWITCH

- Sometime in 1996: a Sun Server (Solaris 2.5.1) becomes our first 6bone node. Initial allocation 5F02:2F00:823B::/64
- 9.10.1997: 3FFE:2000::/48 allocated to SWITCH, the first renumbering
- 3.9.1999: allocation of 2001:620::/35 (soon expanded to /32), second renumbering
- 2001: public 6to4 anycast relay (still in operation)
- February 2004: our backbone goes dual-stack with the initial IPv6 support (in software) on Cisco Catalyst 6500/7600 with Sup2, IOS 12.2S
- Many internal and external services are IPv6-enabled today

Layer 3 Backbone – 100% Dual-Stack



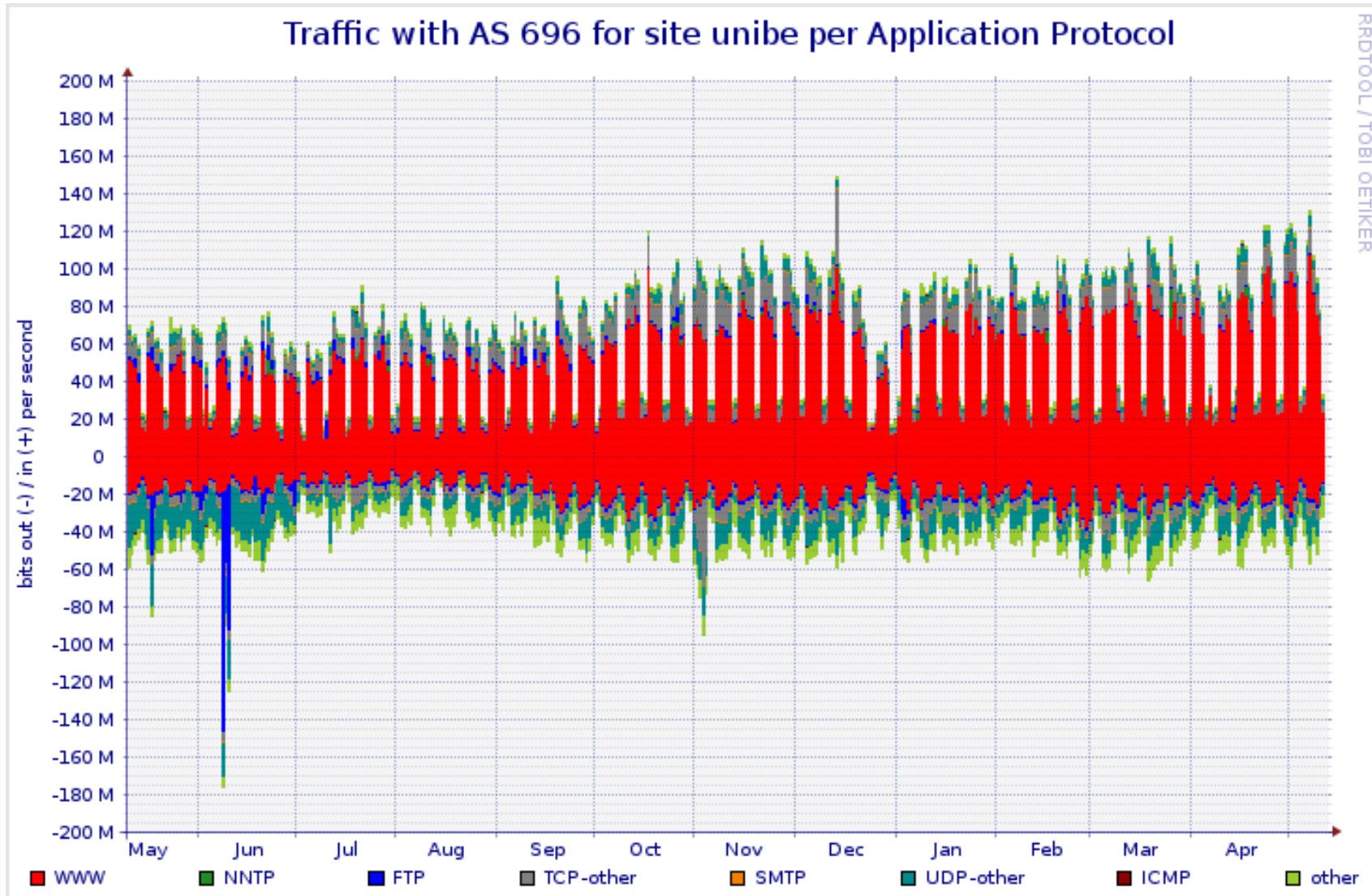
IPv6 Services

- Connected sites
 - Dual-Stack Internet access
 - Full feature parity with IPv4, including Multicast
- Domain registration
 - Registry application
 - WHOIS, EPP, DNS server
 - IPv6 glue records

IPv6 Adoption by Connected Sites

- ~40 sites
- ~50% have dual-stack access
- Little deployment in internal network
- Notable exception: University of Berne has been using a dual-stack Web-Proxy
 - Running for several years
 - Google DNS whitelisting → all IPv6-enabled Google Services available to entire University
 - It simply works!

UniBE: All Traffic (long-term average)



UniBE: IPv6 traffic

