

SWITCHlan: Project ALPSTEIN

A brief overview on a major network overhaul



SWITCH

Felix Kugler
felix.kugler@switch.ch

Terena Network Architecture Workshop
Prague, November 13, 2013

What we announced one year ago

“SWITCHlan’s heaviest modification since SWITCHlambda (2001-2005)”

Recalling the claimed goals:

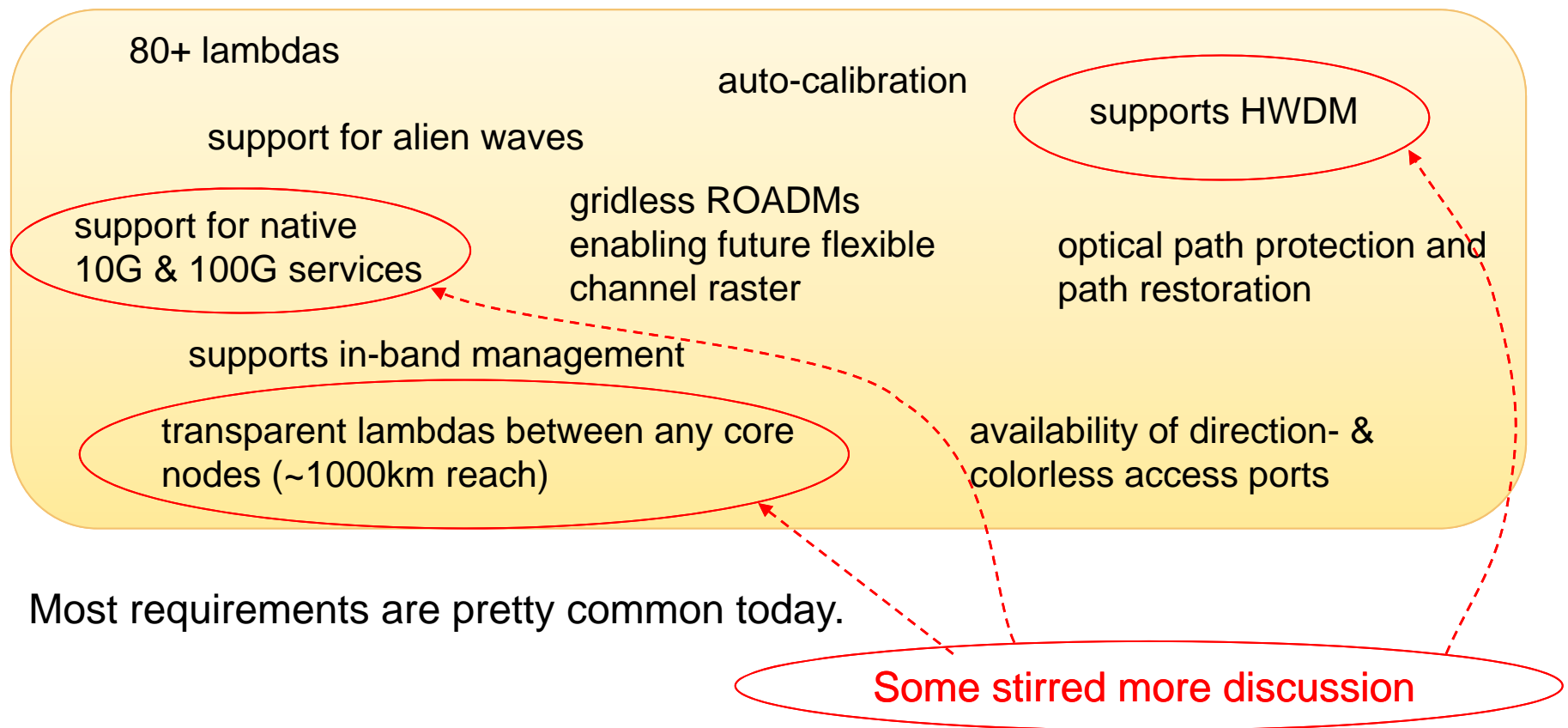
- a new, efficient, scalable optical transport system
- sufficient bandwidth reserves for another decade
- enhanced operational flexibility
- improved overall network stability
- enlarged footprint

The resulting areas of activity:

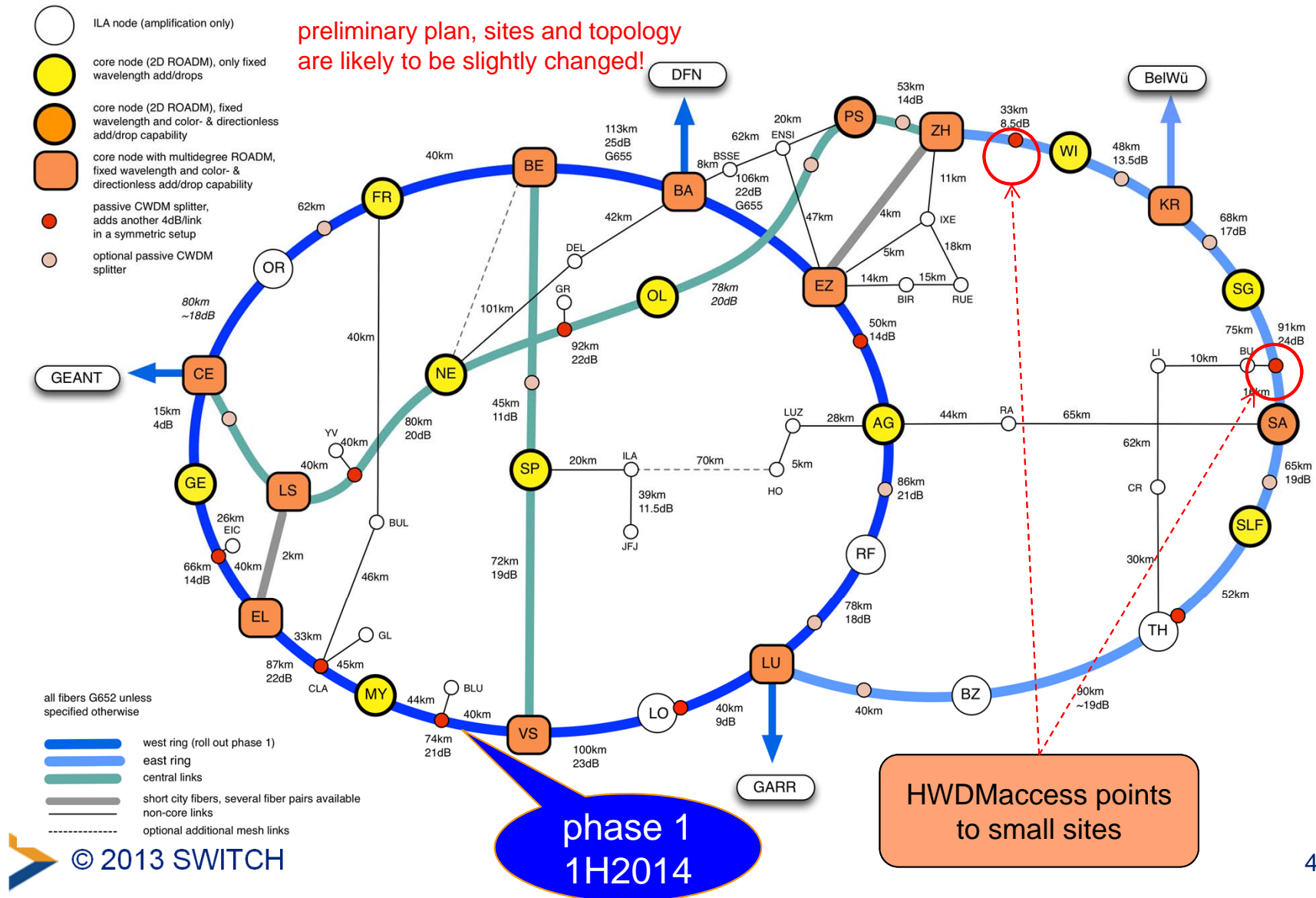
- topological modifications and moderate extensions
- deployment of first 100G routers
- complete rebuild of the optical transport system

Optical Transmission Layer

Key requirements for our new optical transport platform



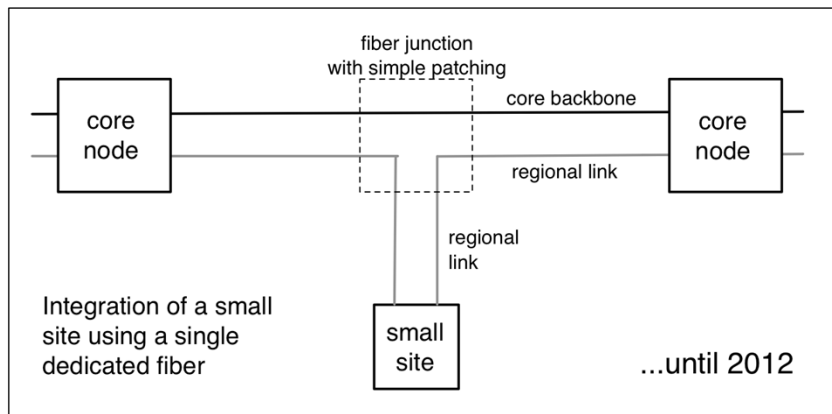
Planned SWITCHlan backbone 2015



Integration of regional sites

intentional move towards uni-directional transmission

ROADM
availability
full freedom of
switching



Hybrid WDM (HWDM) is our new preferred solution to keep regional sites connected without leasing more fibers.

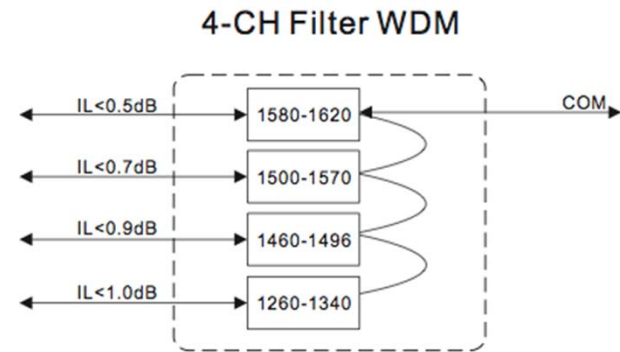
The magic element is called HMUX splitter; its key characteristics are:

- small and purely passive
- optimized for lowest possible attenuation in C-band
- C-band pass-through range 1504..1570nm, OSC channel friendly

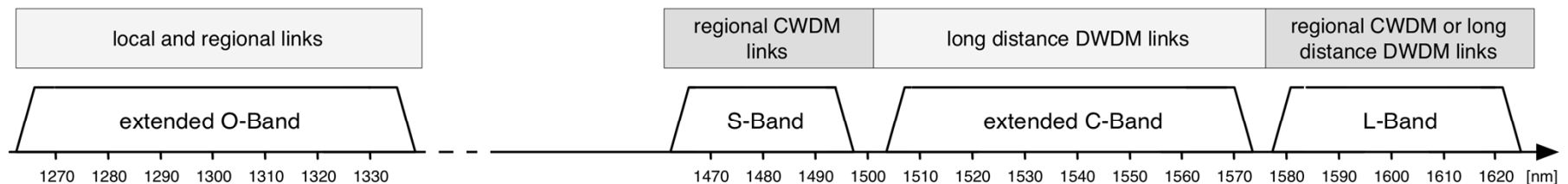
HMUX splitters



4 windows, low loss splitters:



actual design, work still in progress!

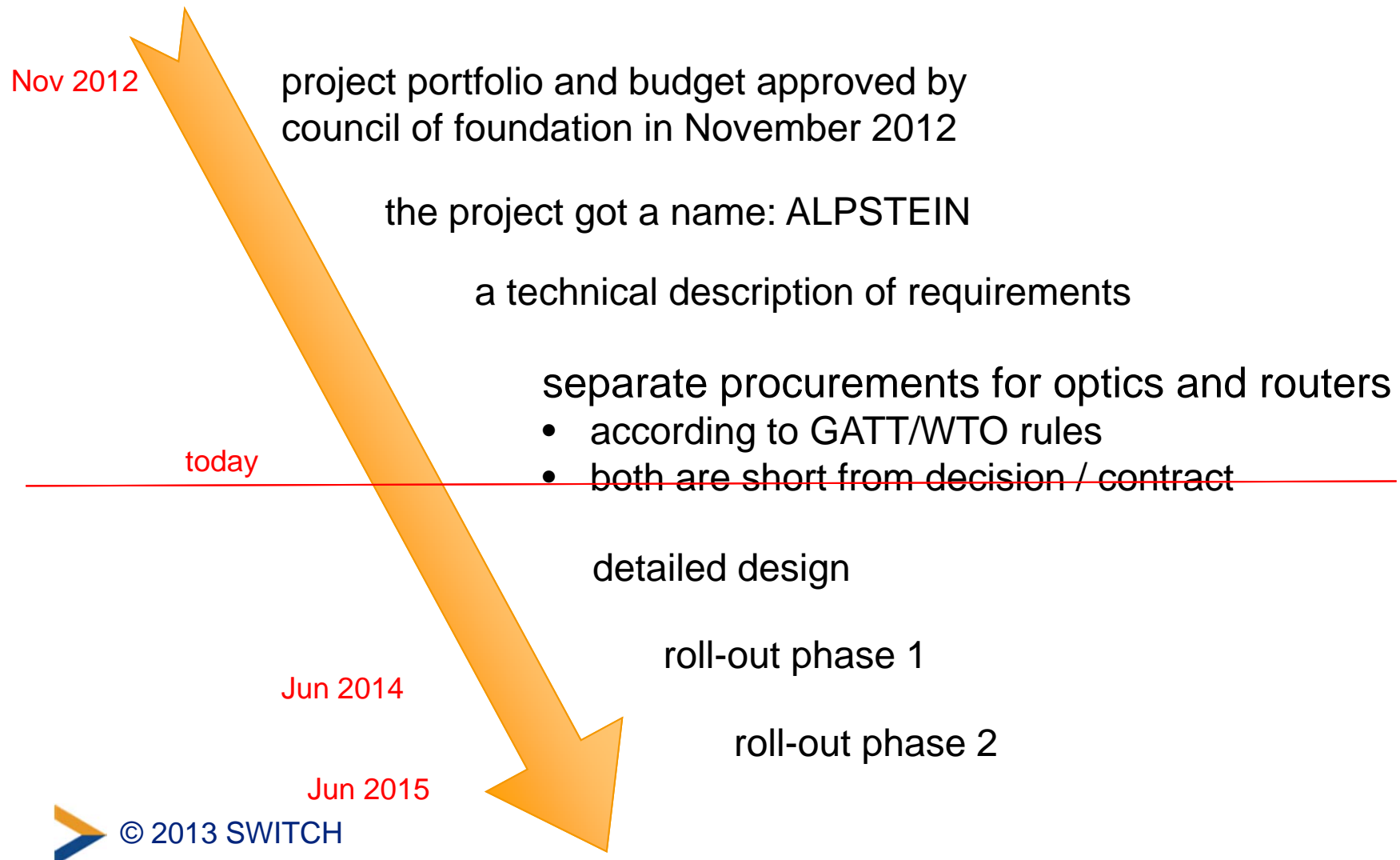


4-Band Hybrid WDM wavelength allocation scheme

compatible with

- operational C-band DWDM system incl. OSC
- half of the “standard” CWDM colors
- L-band (for experimental services?)
- long-range optics LR & LR4 (up to 10km)

Project Timeline



ALPSTEIN ?



AgiLe Photonic Scalable TErabit Network