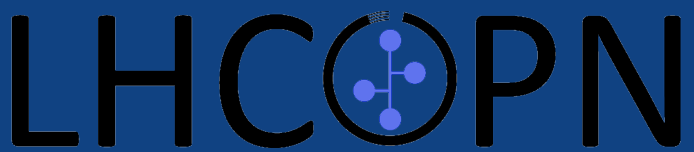
LHCOPN update

LHCOPN meeting in Abingdon
6th March 2018
edoardo.martelli@cern.ch



Latest news

CH-CERN

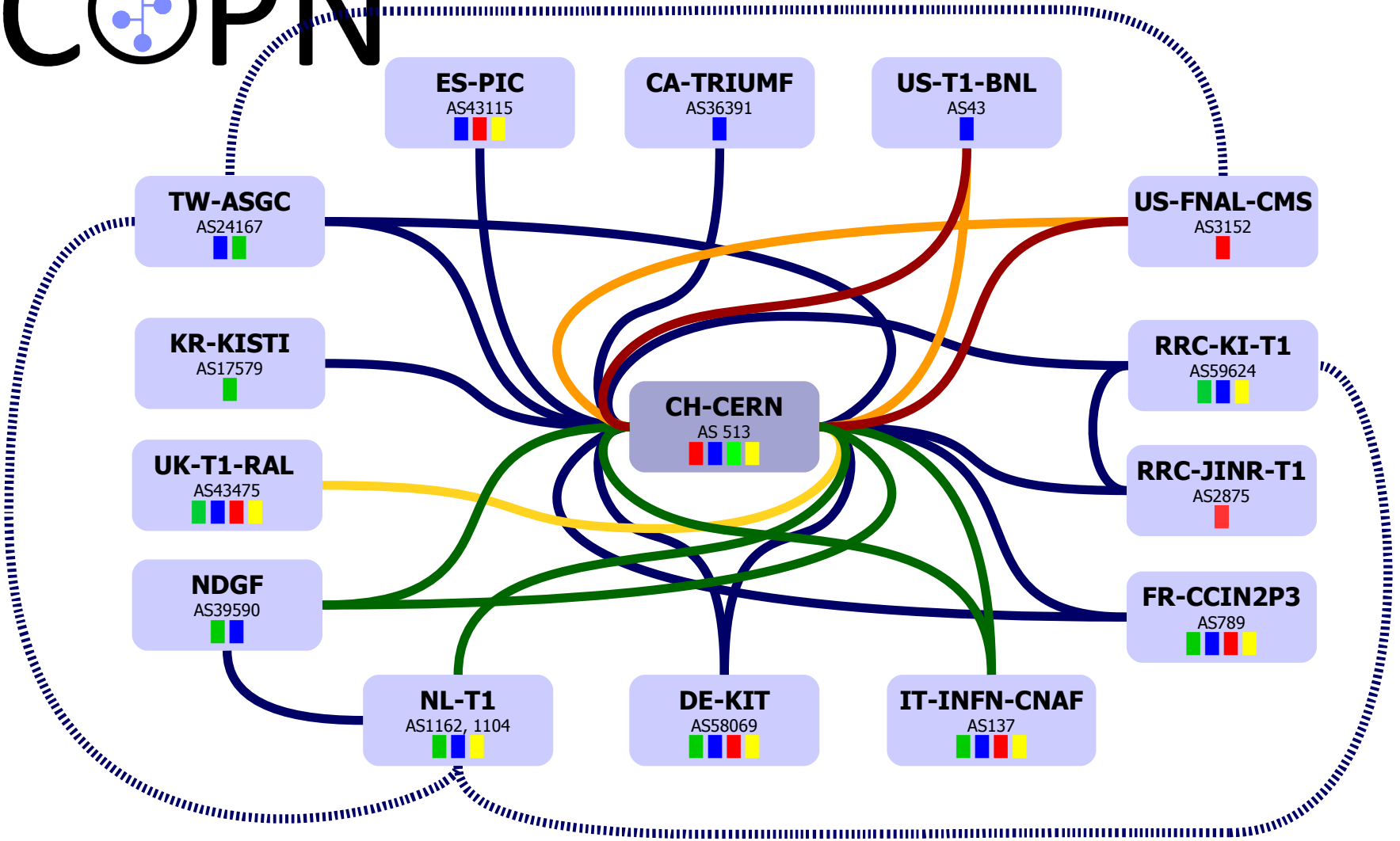
- Started installation of Juniper QFX routers. Brocade Datacentre routers will be phased out in 2018 and 2019

- 2nd network hub in Prevessin (FR) site:
  - construction completed
  - two routers in production
  - right now validating firewall with 100G IPv4-v6 bypass
  - preparing for REN installations (GEANT, ESnet, SURFnet, NORDUnet)

Latest news

[Input from Tier1s in the audience]

LHCOPN



T0-T1 and T1-T1 traffic
T1-T1 traffic only
= Alice = Atlas = CMS = LHCb
edoardo.martelli@cern.ch 20171030

10Gbps
20Gbps
30Gbps
40Gbps
100Gbps

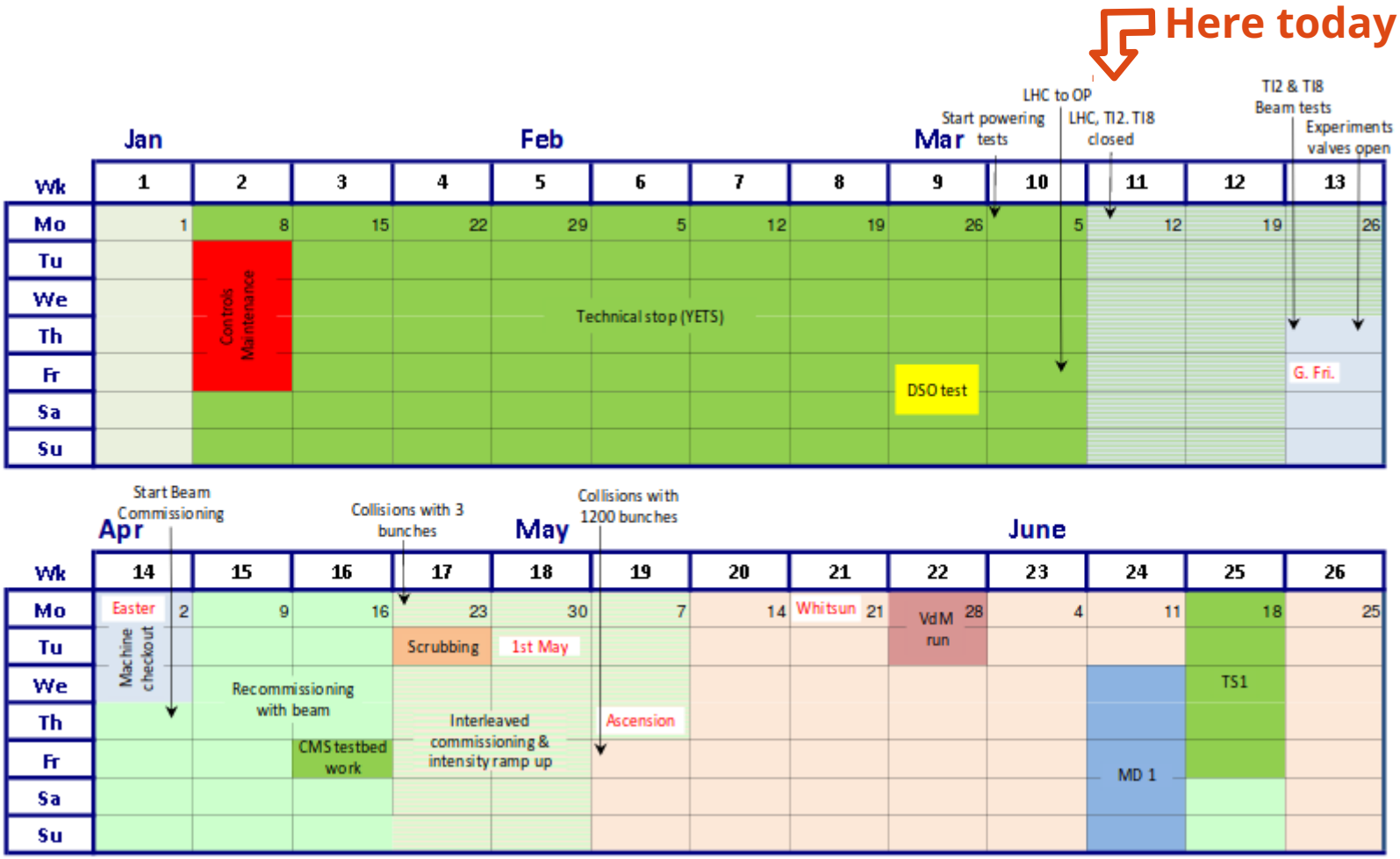
CERN LHCOPN

T1-T1 routing policies

From \\ To	CA-T	CH-C	DE-K	ES-P	FR-I	IT-C	KR-K	NDGF	NLT1	RRCK	RRCJ	TW-A	UK-R	US-F	US-B
CA-TRIUMF		OPN	1	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN	n/a	1
CH-CERN	OPN		OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN
DE-KIT	1	OPN		OPN	1	1	OPN	OPN	OPN	OPN	OPN	OPN	OPN	1	OPN
ES-PIC	OPN	OPN	OPN		OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN
FR-CCIN2P3	OPN	OPN	1	OPN		1	OPN	OPN	OPN	OPN	OPN	OPN	OPN	1	OPN
IT-INFN-CNAF	OPN	OPN	1	OPN	1		OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN
KR-KISTI		OPN													
NDGF	OPN	OPN	OPN	OPN	OPN	OPN	OPN		OPN	OPN	OPN	OPN	OPN	OPN	OPN
NL-T1	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN		OPN	OPN	OPN	OPN	OPN	OPN
RRC-KI-T1		OPN													
RRC-JINR-T1		OPN													
TW-ASGC	OPN	OPN	OPN	OPN	OPN	OPN	1	OPN	OPN	OPN	OPN		OPN	1	1
UK-T1-RAL	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN	OPN		OPN	OPN
US-FNAL-CMS	OPN	OPN	1	OPN	1	OPN	OPN	OPN	OPN	OPN	OPN	1	OPN		1
US-T1-BNL	1	OPN	OPN	OPN	OPN	OPN	1	OPN	OPN	OPN	1	1	OPN	1	

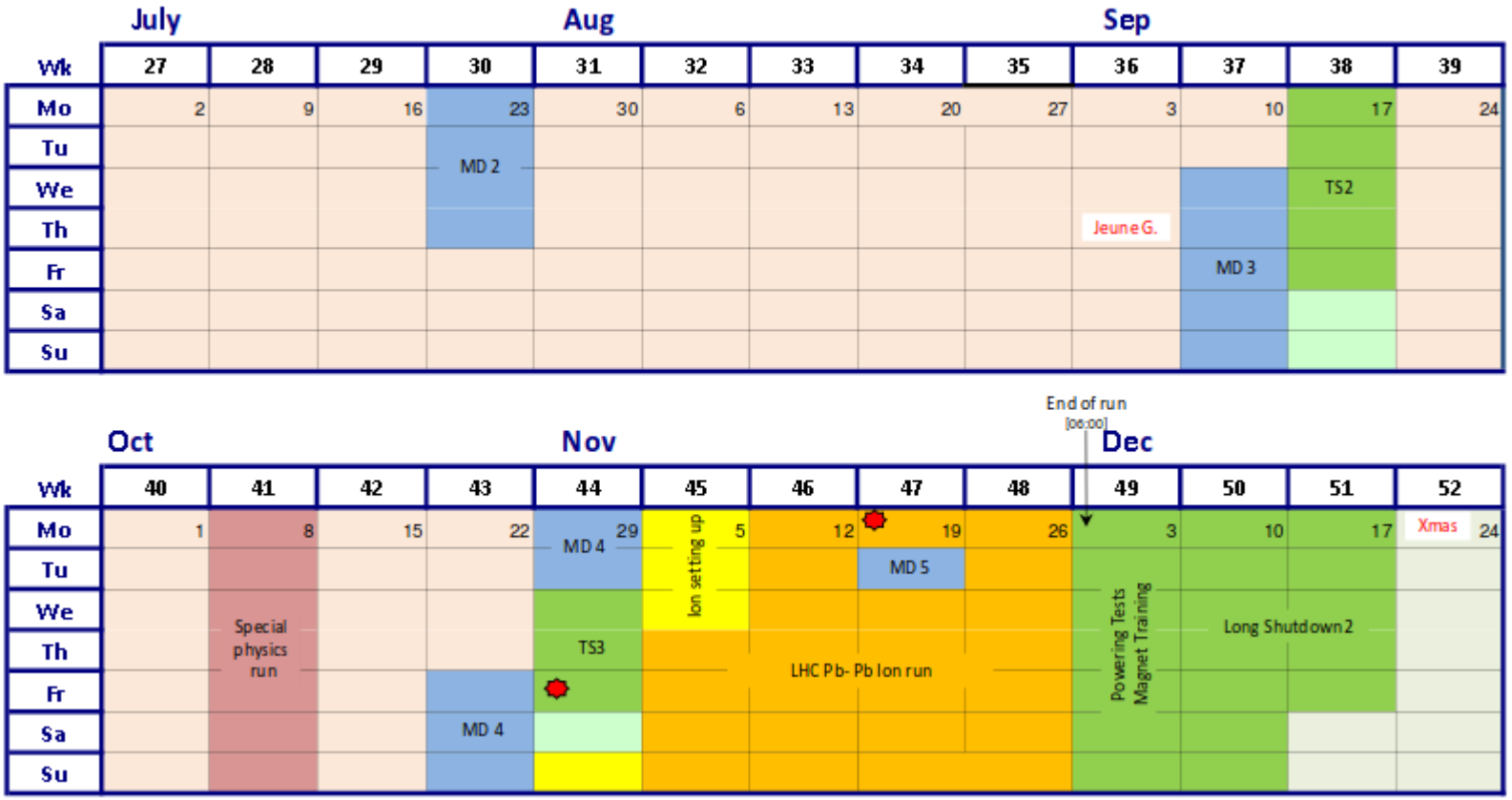
https://twiki.cern.ch/twiki/bin/view/LHCOPN/RoutingPolicies

LHC Schedule 2018 Q1-Q2



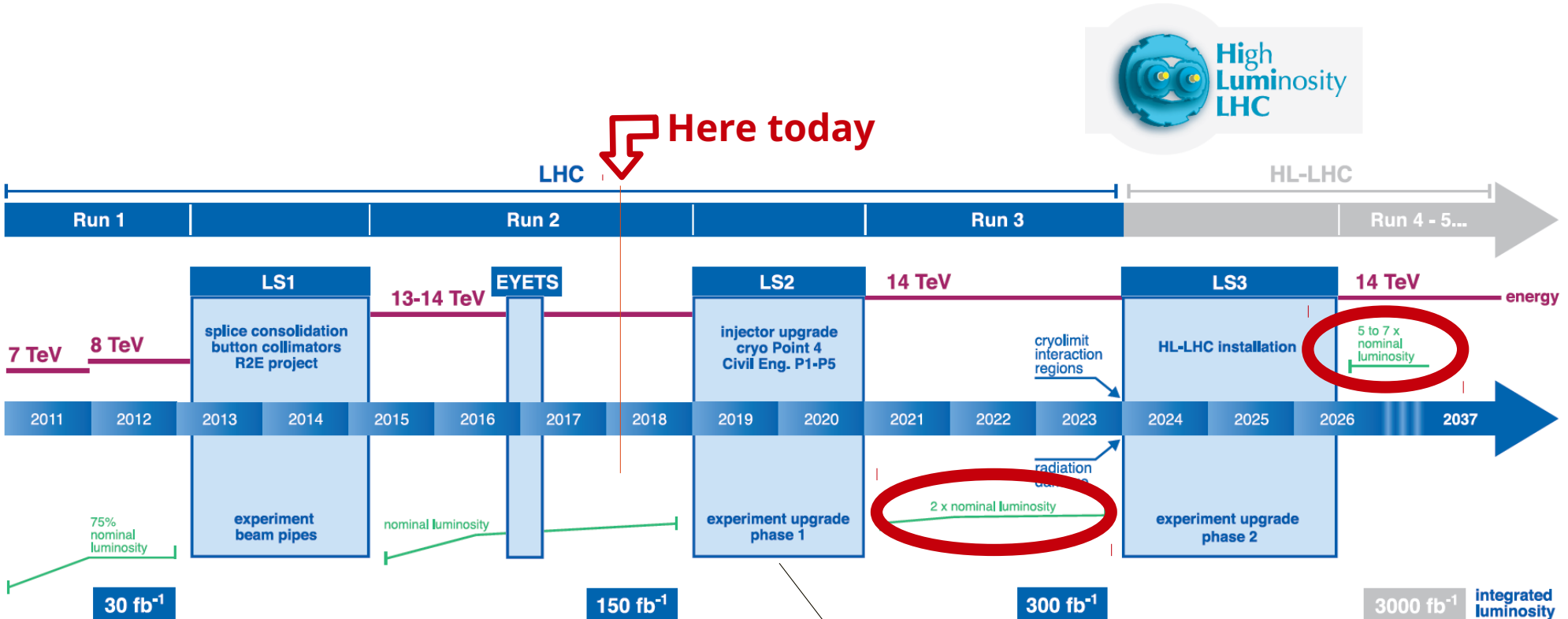
https://beams.web.cern.ch/sites/beams.web.cern.ch/files/schedules/LHC_Schedule_2018.pdf

LHC Schedule 2018 Q3-Q4



https://beams.web.cern.ch/sites/beams.web.cern.ch/files/schedules/LHC_Schedule_2018.pdf

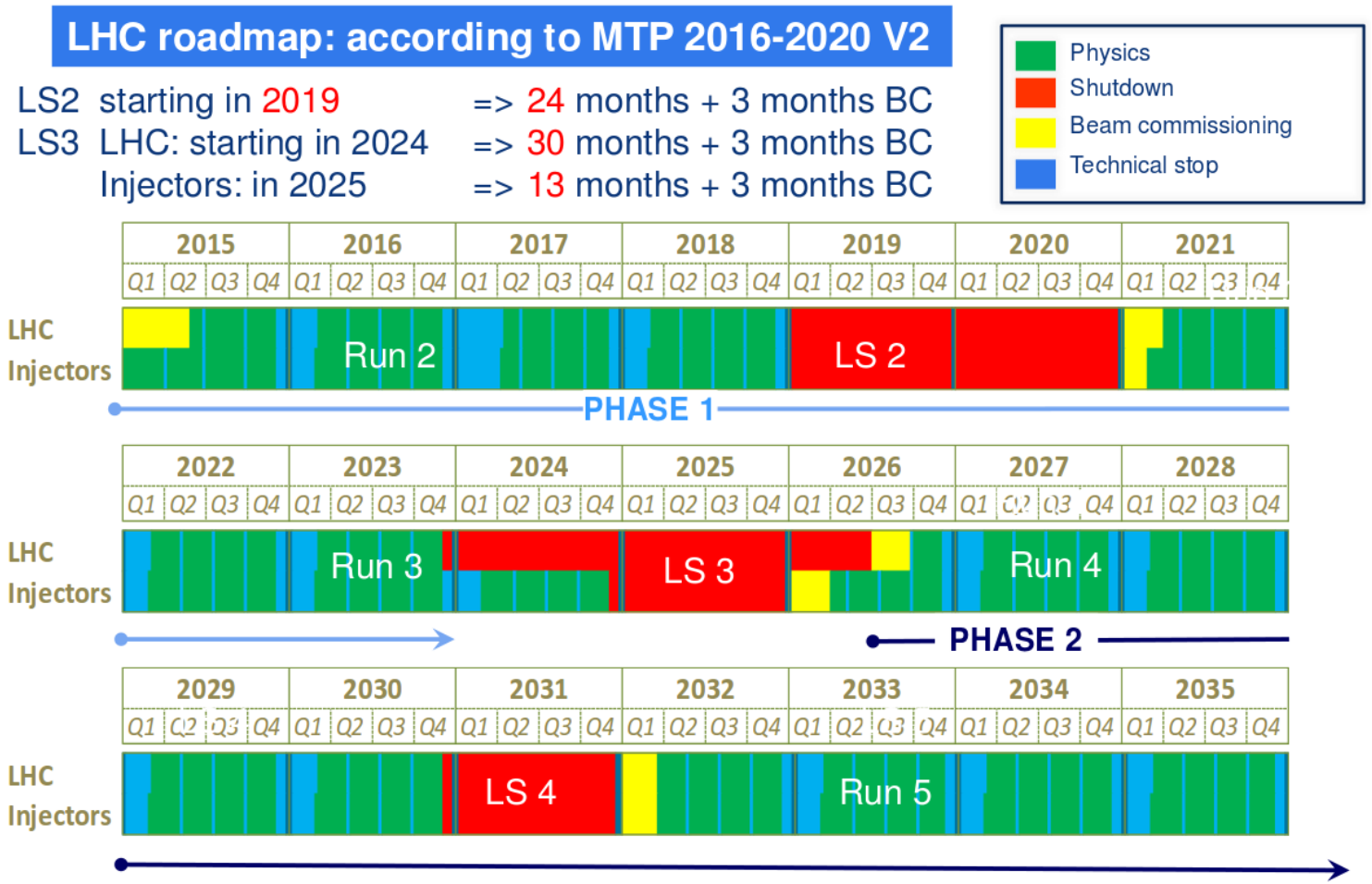
HL-LHC plan



LS2 (Long Shutdown #2)

- Perform major maintenance and consolidation
- Increase injector reliability and lifetime to cover HL-LHC run until ~2035
- Increase intensity in the injectors to match HL-LHC requirements
- Anticipate HL-LHC work

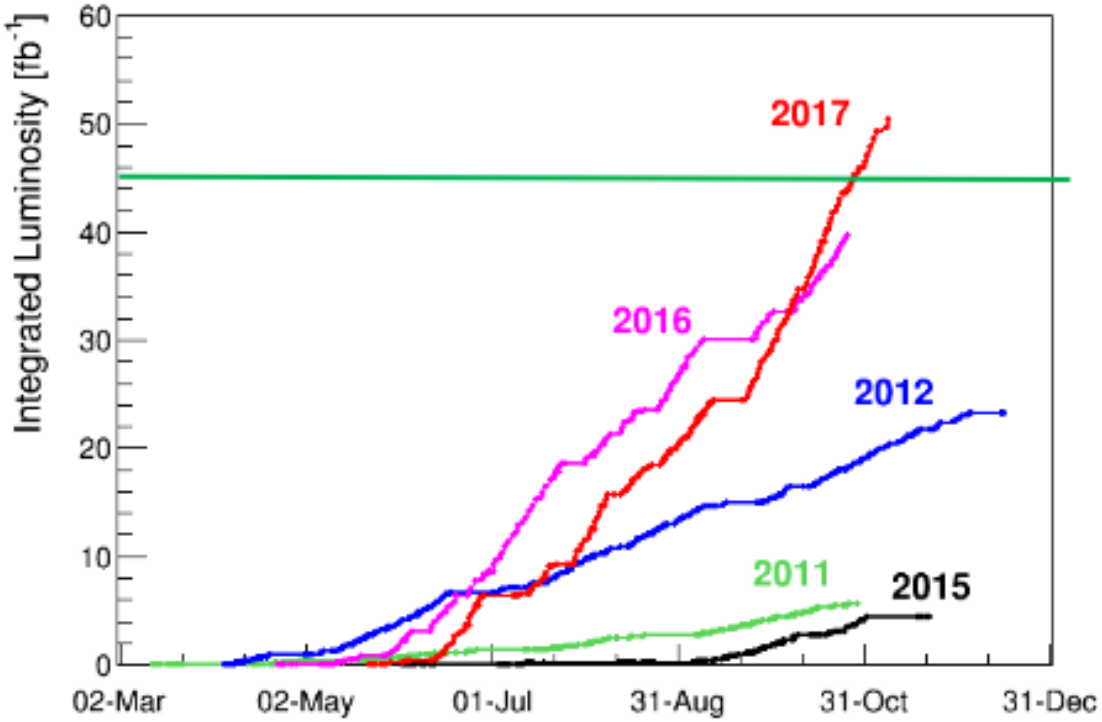
Long term planning



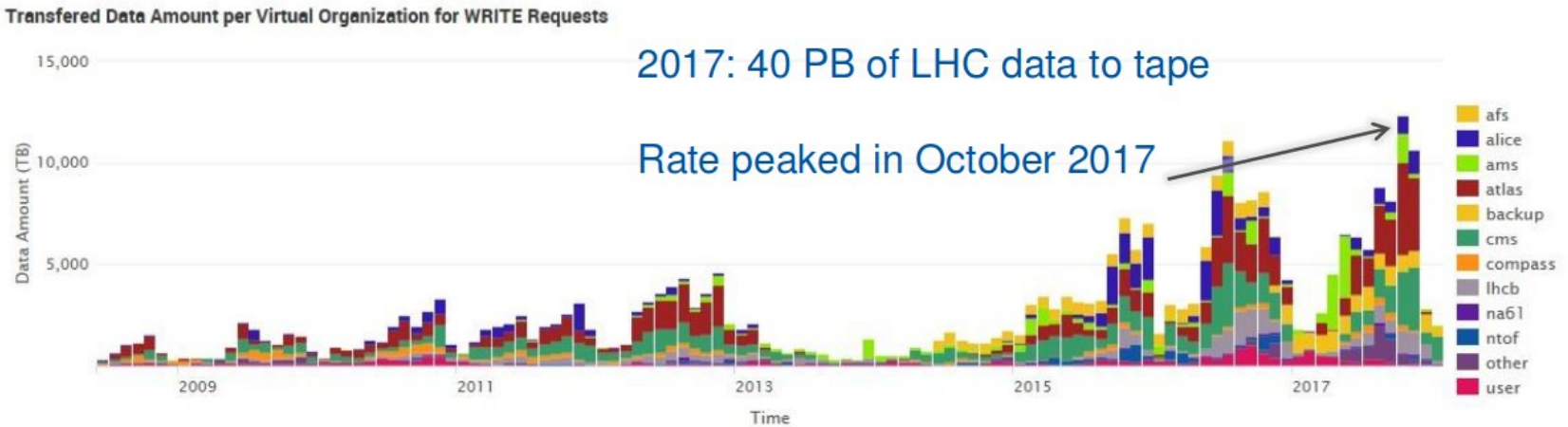
https://lhc-commissioning.web.cern.ch/lhc-commissioning/schedule/LHC-long-term.htm
https://lhc-commissioning.web.cern.ch/lhc-commissioning/schedule/LHC%20schedule%20beyond%20LS1%20MTP%202015_Freddy_June2015.pdf

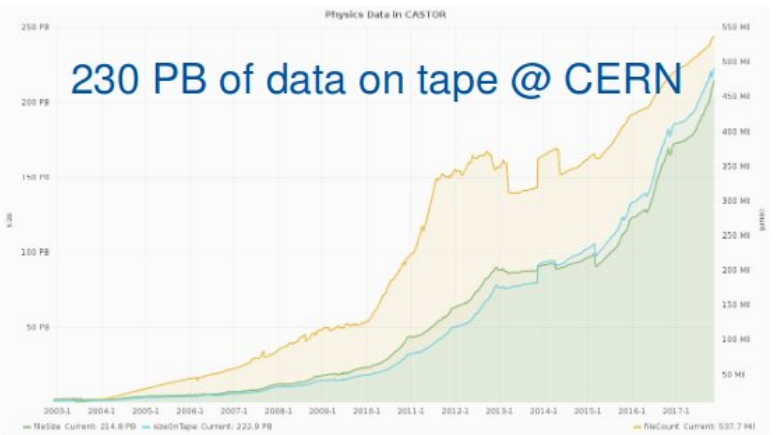
LHC performances in 2017

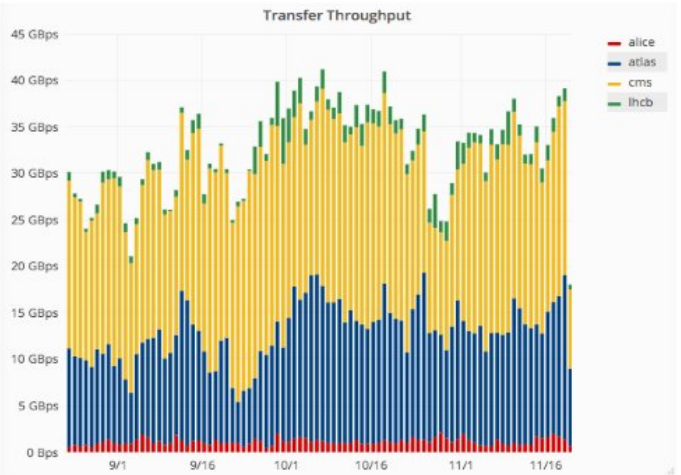
Record integrated luminosity of 50 fb^{-1} in 2017 (goal was 45fb^{-1}), regardless of some operational issues and shorter running time



WLCG performance in 2017

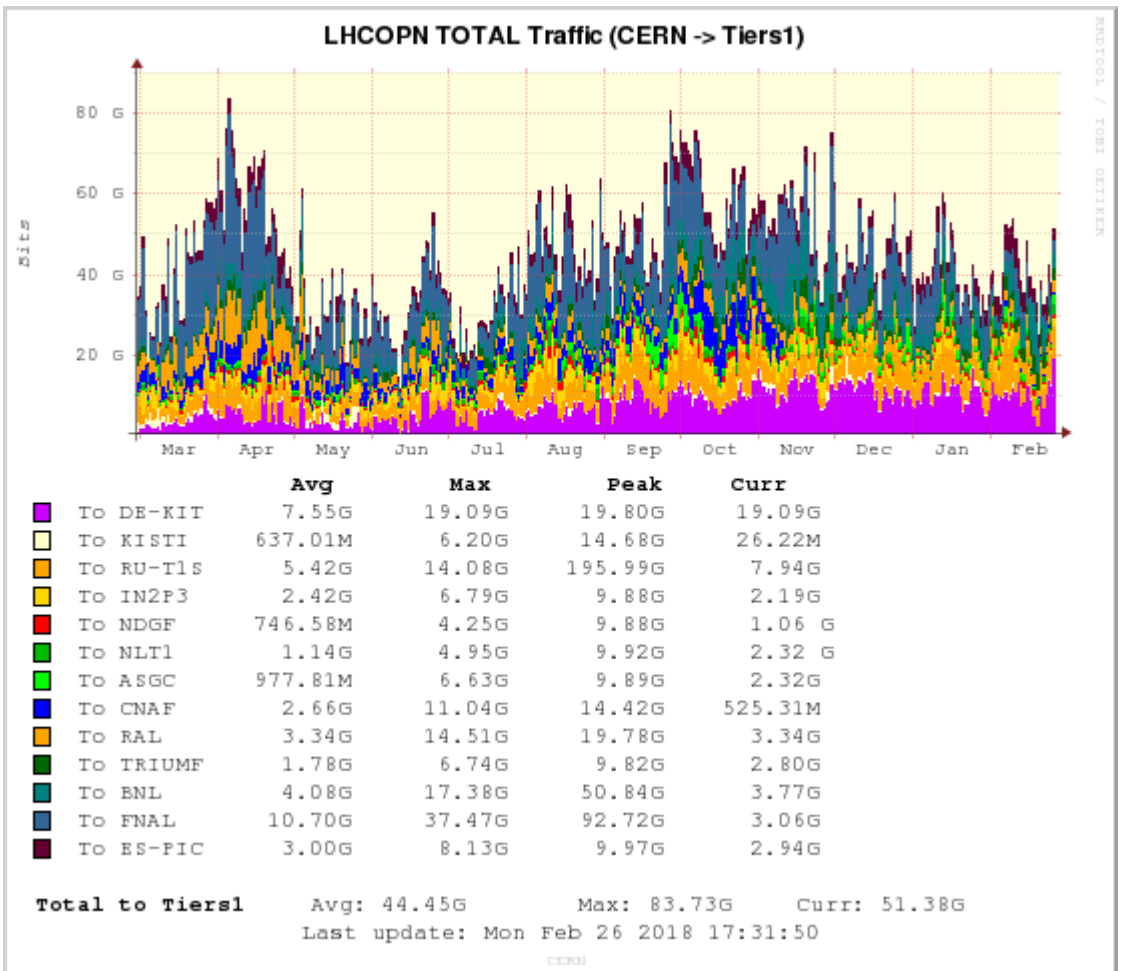




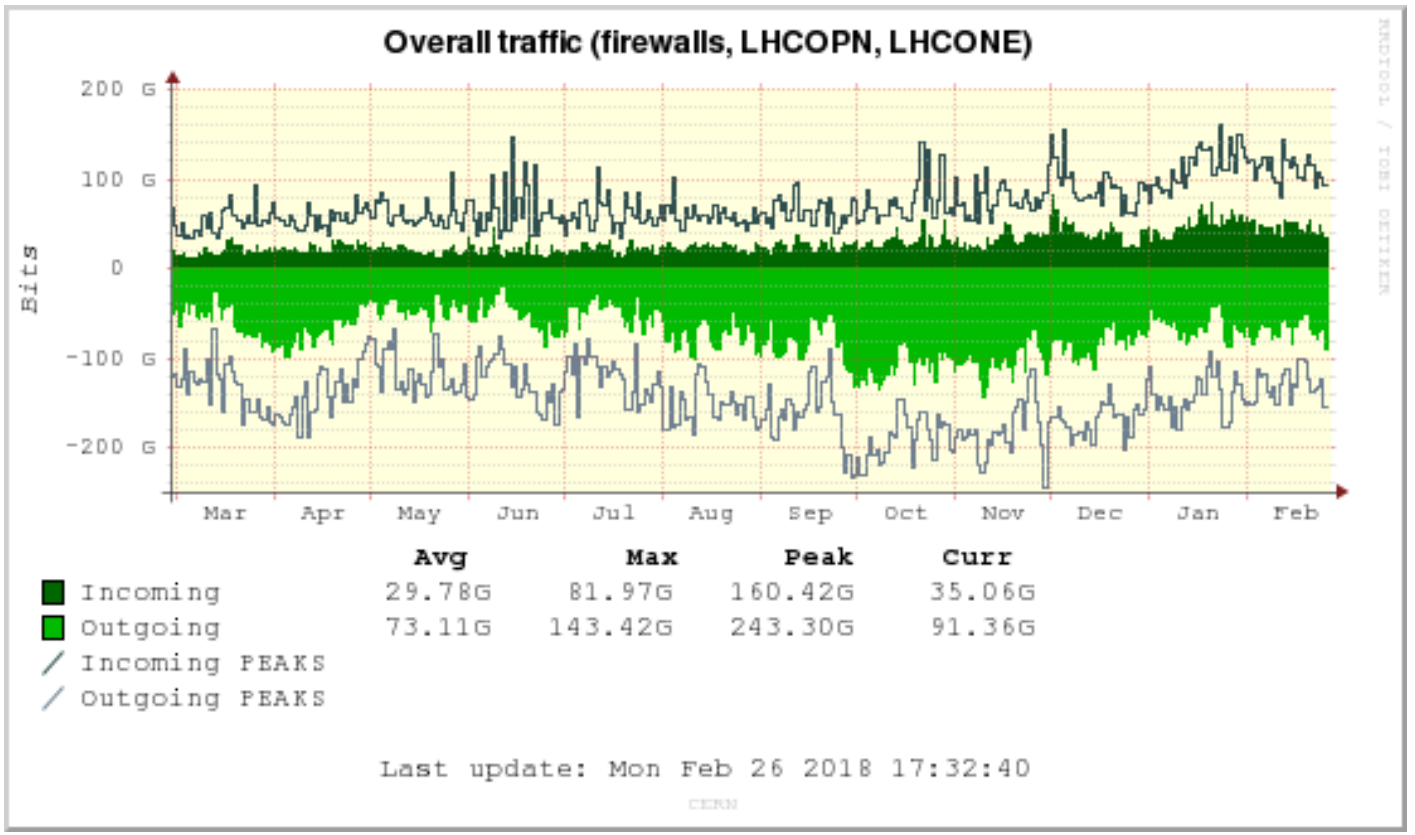


Steady transfer rate in WLCG

LHCOPN traffic – last 12 months



CERN traffic – last 12 months



Questions?

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