

LHCOPN update

LHCONE meeting in Tsukuba
16th October 2017
edoardo.martelli@cern.ch

LHCOPN



Latest news

CH-CERN

- Tender for datacentre routers and switches: Juniper QFX
- 2nd network hub in Preveessin (FR) site:
 - construction completed
 - first two routers installed
 - preparing for REN installations (GEANT, ESnet, SURFnet, NORDUnet)
- Withdrawn plan of shared datacentre for Experiments' Data Acquisitions
- Still considering construction of datacentre extension in Preveessin

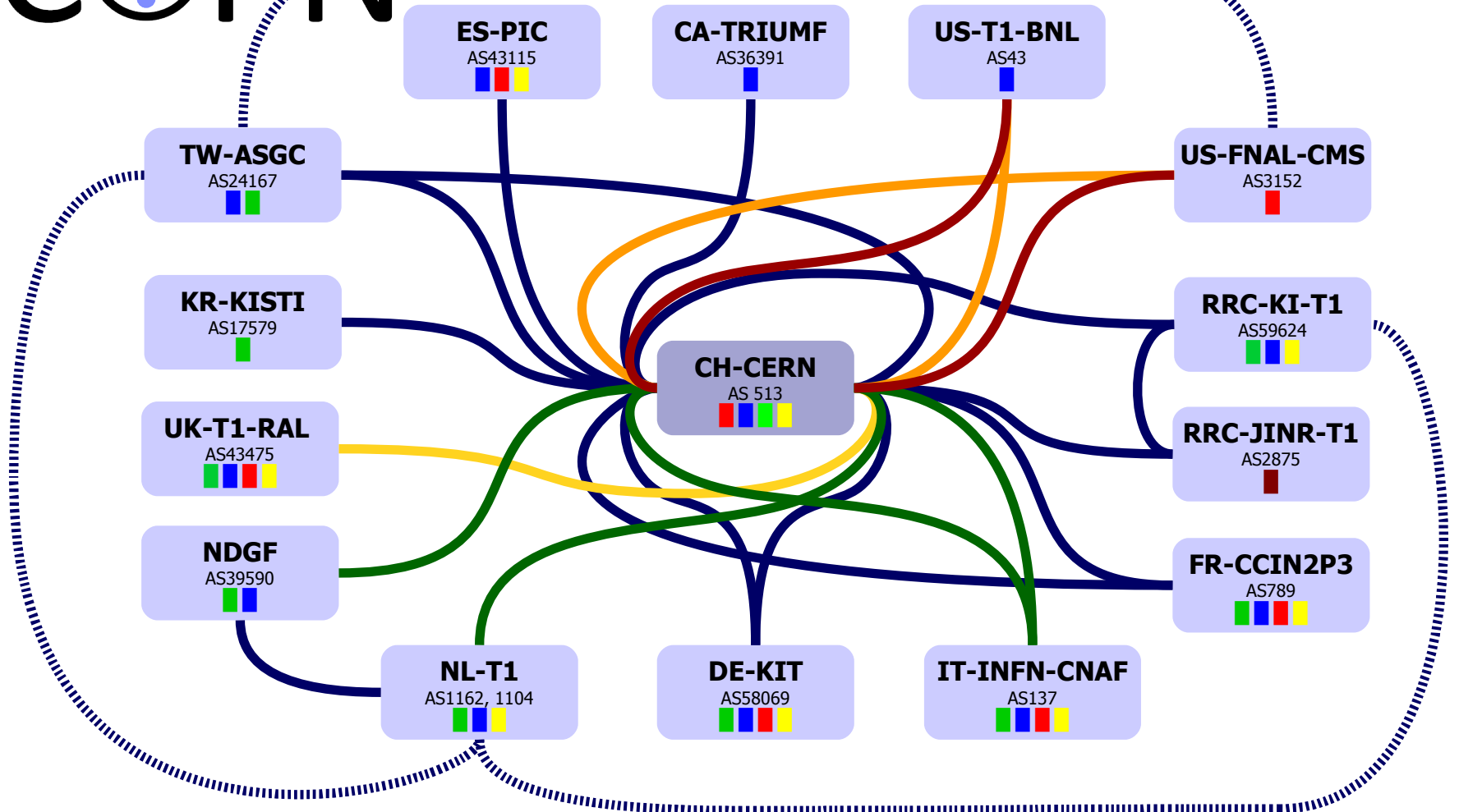
Latest news

[Input from Tier1s in the audience]

T0-T1 links upgrade

- Received requests to upgrade links to 100GbE
- Can be accommodated once new Juniper routers are installed and Brocade 100G interfaces are freed
- Upgrade of CERN LHCONE routers to Juniper not yet scheduled

LHCOPN



	T0-T1 and T1-T1 traffic		10Gbps
	T1-T1 traffic only		20Gbps
	= Alice		30Gbps
	= Atlas		40Gbps
	= CMS		100Gbps
	= LHCb		

edoardo.martelli@cern.ch 20170927

LHC Schedule 2017 Q3-Q4

	July			Aug				Sep					
Wk	27	28	29	30	31	32	33	34	35	36	37	38	39
Mo	3	10	17	24	31	7	14	21	28	4	11	18	25
Tu				MD 2								TS2	
We	TS1			VdM run									
Th										Jeune G			
Fr											MD 3		
Sa													
Su													

Here today

	Oct			Nov				Dec					
Wk	40	41	42	43	44	45	46	47	48	49	50	51	52
Mo	2	9	16	23	30	6	13	20	27	4	11	18	Xmas 25
Tu													
We				MD 4									
Th													
Fr													
Sa													
Su													

- Technical Stop
- Recommissioning with beam
- Scrubbing (indicative - dates to be established)
- Machine development
- Special physics runs (indicative - schedule to be established)

https://beams.web.cern.ch/sites/beams.web.cern.ch/files/schedules/LHC_Schedule_2017.pdf

Draft LHC Schedule 2018

	Jan			Feb				Mar					
Wk	1	2	3	4	5	6	7	8	9	10	11	12	13
Mo	1	8	15	22	29	5	12	19	26	5	12	19	26
Tu													
We					Technical stop								
Th													
Fr													G. Friday
Sa													
Su											Machine checkout		

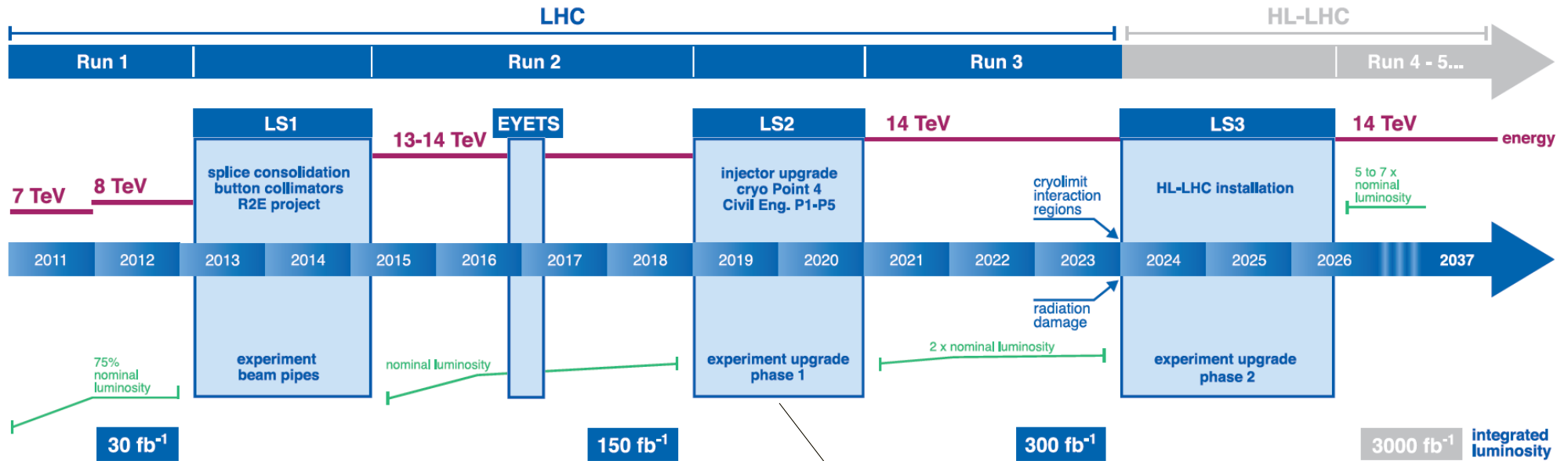
	Apr			May				June					
Wk	14	15	16	17	18	19	20	21	22	23	24	25	26
Mo	Break Mar	9	16	23	30	7	14	Whit	21	28	4	11	18
Tu					1st May								
We		Scrubbing											
Th					Special physic run	Ascension							
Fr										MD 1			
Sa													
Su													

	July			Aug				Sep					
Wk	27	28	29	30	31	32	33	34	35	36	37	38	39
Mo	2	9	16	23	30	6	13	20	27	3	10	17	24
Tu											Special physic run		
We													
Th			MD 2					MD 3					
Fr													
Sa													
Su													

	Oct			Nov				Dec					
Wk	40	41	42	43	44	45	46	47	48	49	50	51	52
Mo	1	8	15	22	29	5	12	19	26	3	10	17	24
Tu													Xmas
We							Ions setup						
Th					MD 4				IONS				
Fr												Start LS2	
Sa													
Su													

https://lhc-commissioning.web.cern.ch/lhc-commissioning/schedule/2018-LHC-schedule_v0.3.pdf

HL-LHC plan



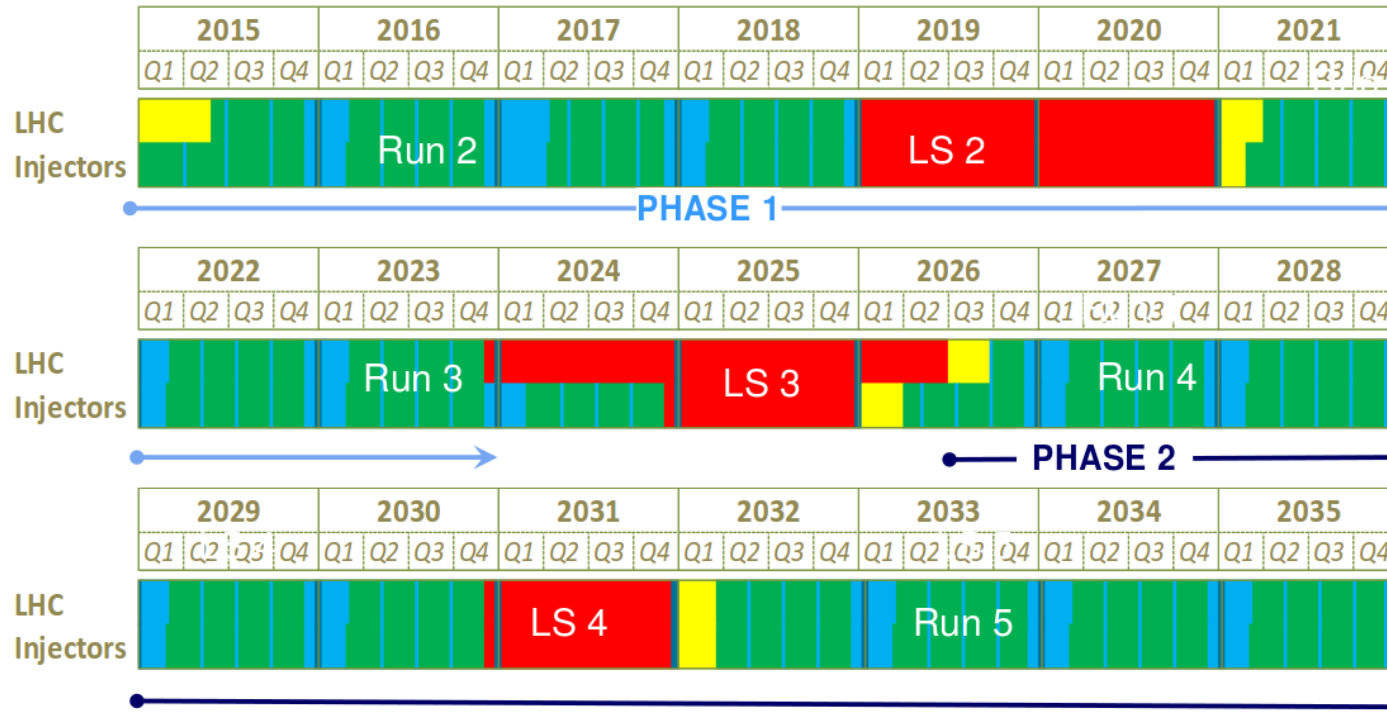
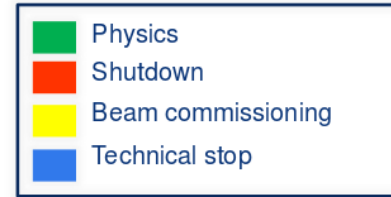
LS2 (Long Shutdown #2)

- 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

LHC roadmap: according to MTP 2016-2020 V2

LS2 starting in 2019 => 24 months + 3 months BC
 LS3 LHC: starting in 2024 => 30 months + 3 months BC
 Injectors: in 2025 => 13 months + 3 months BC



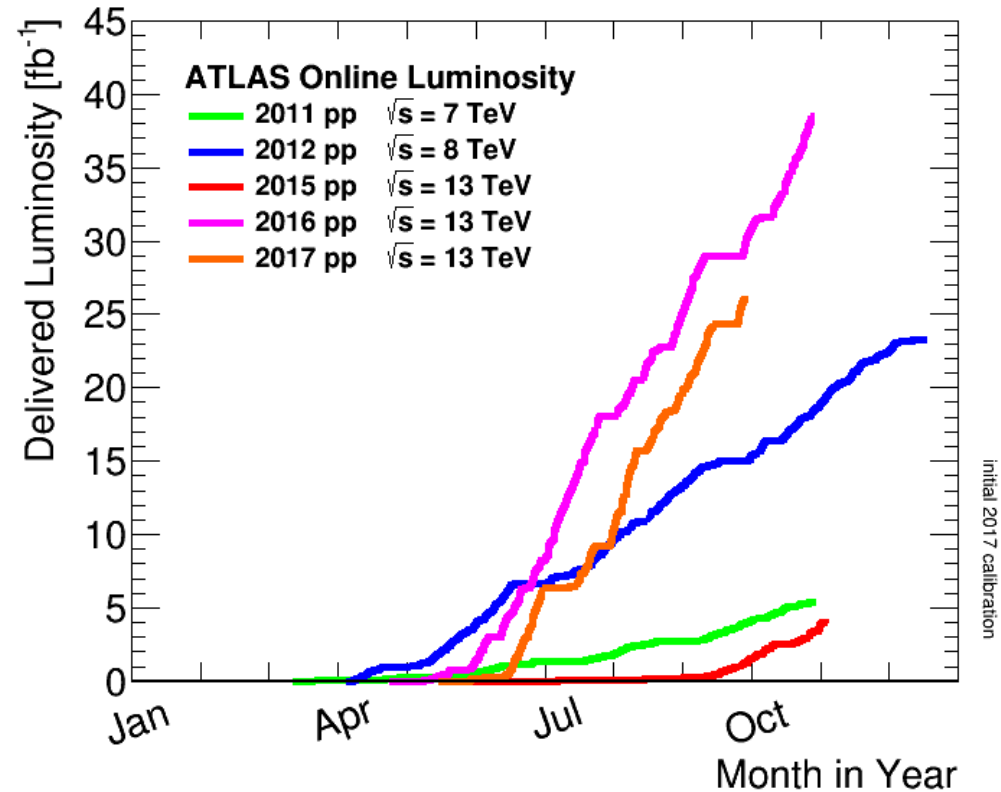
<https://lhc-commissioning.web.cern.ch/lhc-commissioning/schedule/LHC-long-term.htm>

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

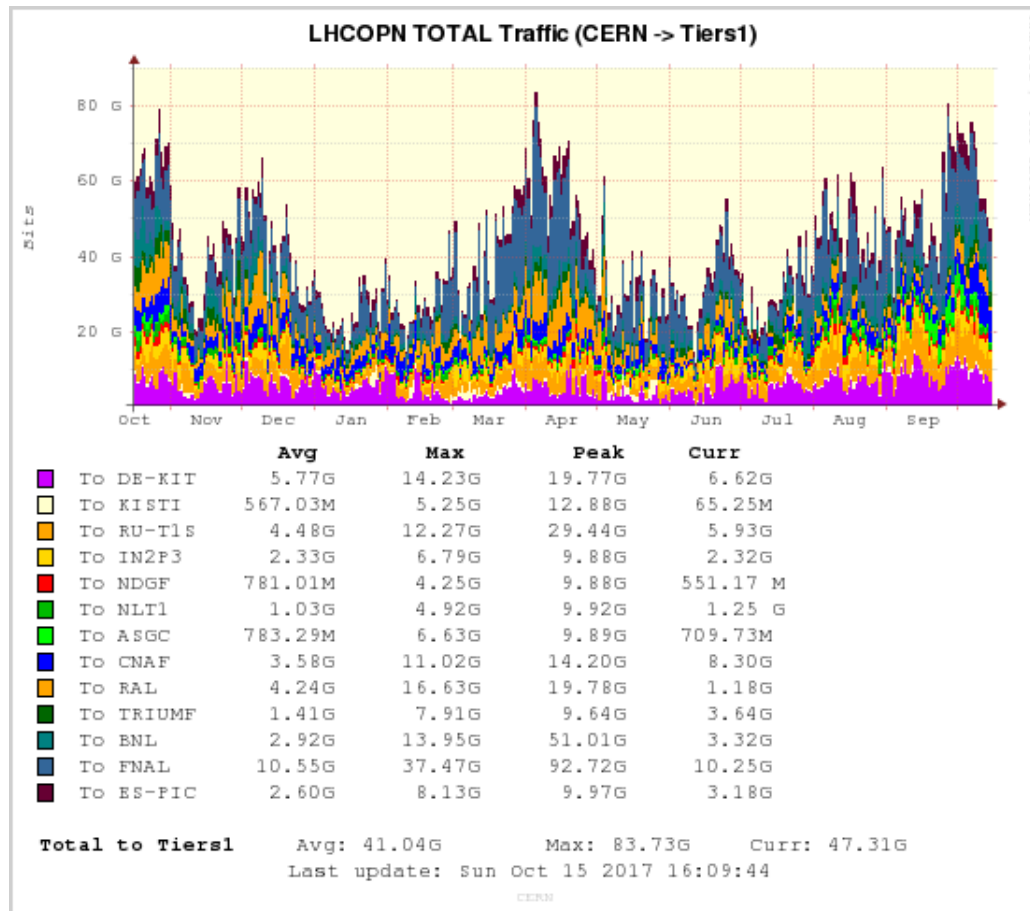
LHC performances in 2017

2017 operations affected by beam instabilities. Suspected some air got trapped in vacuum chambers during last Long Shutdown

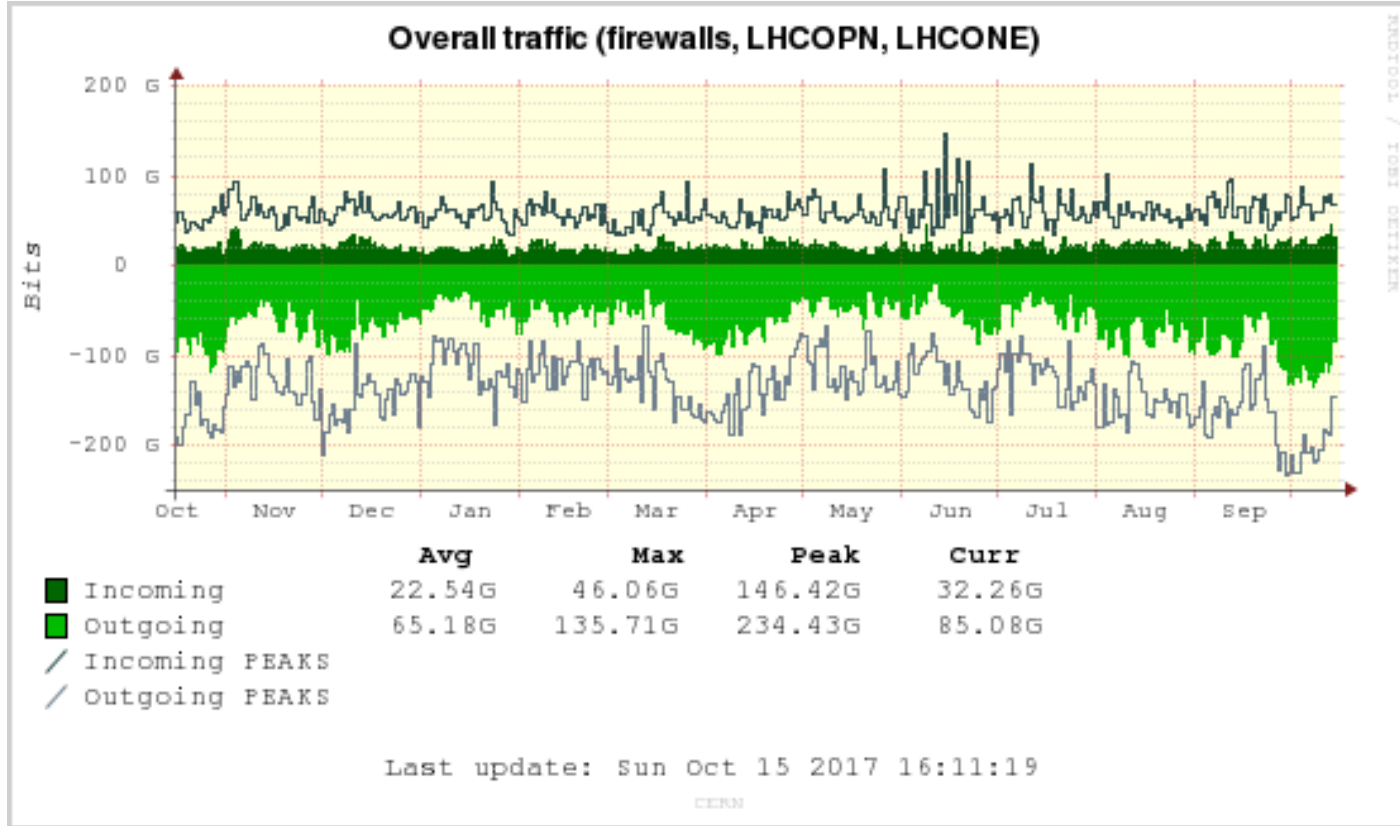
Target integrated luminosity for 2017 is 45 fb⁻¹, despite less LHC running time in 2017 due to EYETS (last year it achieved 40 fb⁻¹)



LHCOPN traffic - last 12 months



CERN traffic - last 12 months



Constant during the year, regardless of 4 months of maintenance

Questions?

edoardo.martelli@cern.ch

