CONS and HL-LHC day
Analysis of needs from BE-CO

Mick Draper BE-CO

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CONS and HL-CONS approved requests
(for HL-CONS except spares)

Item n.	Description	Approved Budget	Funding (CONS/HL-CONS) %	Budget to be allocated in the years
1	LHC WorldFIP Repeater Consolidation	200	CONS	2017
2	WorldFIP Master boards	600	CONS	2017-2018
3	GMT distribution renovation (Repeaters + cabling)	600	CONS	2017-2019
4	OASIS	627	CONS	2016-2019
5	Video Distribution System	205	CONS	2016-2017
6	Accelerator Database Servers and Storage	380	CONS	2016-2018

CONS and HL-CONS approved requests
(for HL-CONS except spares)

Item n.	Description	Approved Budget	Funding (CONS/HL-CONS) %	Budget to be allocated in the years
1	LHC WorldFIP Repeater Consolidation	200	CONS	2017

- Replace "end-of-life" hardware
- WorldFIP used to control many critical systems, Power converters, QPS and Cryo. Should not depend on out-of-date h/w
- This activity has been completed; the repeaters were installed in (E)YETS and TS or during unplanned stops

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Item n.	Description	Approved Budget	Funding (CONS/HL-CONS) %	Budget to be allocated in the years
2	WorldFIP Master boards	600	CONS	2017-2018

- Replace unreliable old, unsupported Alsthom cards with new BE-CO ones
- Have seen recent problems on WorldFIP network with freezes of Kontron Front-End computers
  - Impossible to diagnose
- Boards now designed and drivers developed.
- Production will start soon to be ready for installation in LS2

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Item n.	Description	Approved Budget	Funding (CONS/HL-CONS) %	Budget to be allocated in the years
3	GMT distribution renovation (Repeaters + cabling)	600	CONS	2017-2019

- Remove obsolete electronics (>20 years old); no spares nor new boards
- Running a critical system based on obsolete hardware is a risk
- 90% PS, 5% SPS and 5% LHC
- Installed during YETS and then finish in LS2

CONS and HL-CONS approved requests
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Item n.	Description	Approved Budget	Funding (CONS/HL-CONS) %	Budget to be allocated in the years
4	OASIS	627	CONS	2016-2019

- This request has two parts:
  a. Renovation of the VXI multiplexors. This has been 80% completed
  b. Renovation of the OASIS triggering network using White Rabbit. This will be done in LS2.

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Item n.	Description	Approved Budget	Funding (CONS/HL-CONS) %	Budget to be allocated in the years
5	Video Distribution System	205	CONS	2016-2017

- This request has now been completed
  - Video decoders/encoders installed throughout the complex.
  - New screens installed in CCC and old screens recuperated for satellite control rooms.

CONS and HL-CONS approved requests
(for HL-CONS except spares)

Item n.	Description	Approved Budget	Funding (CONS/HL-CONS) %	Budget to be allocated in the years
6	Accelerator Database Servers and Storage	380	CONS	2016-2018

- This request is in progress:
    - Increase storage for the accelerator databases supporting the ACCCON, ACCMEAS, ACCLOG and LASERDB databases
    - Warranties extended until 31/03/2018.

New requests in view of HL-LHC installation
(to meet HL-LHC goals)

New requests for conversion of LHC into HL-LHC

Item n.	Description	Budget request	Budget to be allocated in years (from-to)	Priority (1-3) 1 top 3 low
1	Renovation of Technical Network Routers	2.3MCHF	2019-2020	1

ITEM: TN Router renovation

Rational of the request			
Total Budget request	2.3 MCHF + 1 FSU (80kCHF)	Budget to be allocated in years 2019-2020, Procurement starts in 2019 and installation before the end of LS2 in 2020.	
Material budget request		No personnel request.	

Consequences of suppression of request on HL performance: <u>Risk of network downtime</u>.

Consequences of delay of request to LS4 or later. <u>Critical equipment not under warranty. Would depend on old "retired" equipment for spares.</u>

TN Router renovation

- This comes from the network experts in the IT Department.
- They point out that the Technical Network (TN) Routers have already reached their "end of sale" in 2015 and by 2020 they will reach "End of support".
- In addition, the current setup is not tolerant to a router failure (no redundancy).
- So the proposal by IT is to replace the existing routers by state of the art network devices and modify the TN architecture (doubling up routers and installing extra fibres) to support router redundancy. While doubling the current bandwidth available to TN services.

The cost of this consolidation is estimated at 2.3MCH for routers and fibres plus 1 FTE of FSU effort for the installation work.