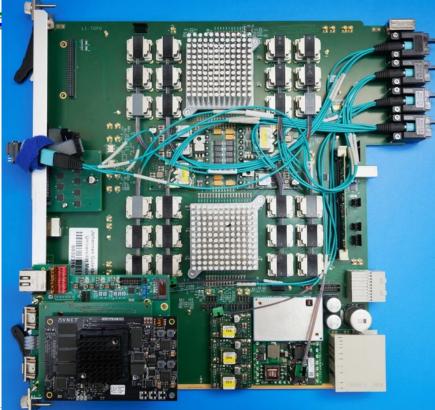
ID	Task Name	Start	Duration	Finish					202	0							
					Jan Feb	Mar	Apr	May .	Jun	Jul	Aug Se	Oct	Nov D	ec Jan	Feb	Mar	Apr
100	Phase-I L1Topo	Mon 09/01/17	1031 days	Mon 15/02/21											-		
101	Prototype	Mon 09/01/17	513 days	Wed 23/01/19													
108	Pre-Production	Thu 24/01/19	463 days	Mon 16/11/20								_					
111	Standalone Tests	Tue 30/04/19	79 wks	Mon 16/11/20									4				
112	Production	Mon 05/08/19	381 days	Mon 15/02/21											-		
114	Assembly of Series Modules	Tue 17/11/20	4 wks	Mon 14/12/20								-		<u>a</u>			
115	Acceptance Tests	Tue 15/12/20	4 wks	Mon 25/01/21											<u>6</u>		
116	Contingency	Tue 26/01/21	3 wks	Mon 15/02/21											Ě.		
117	Firmware	Mon 21/08/17	860 days	Fri 29/01/21							_			1	•		
118	Algorithm	Mon 21/08/17	650 days	Fri 27/03/20		_	•										
123	Control	Mon 21/08/17	675 days	Fri 01/05/20									-				
135	Readout	Mon 21/08/17	825 days	Fri 27/11/20							_	-					
140	Refinement, Revision	Mon 02/09/19	70 wks	Fri 29/01/21					_				10 MIN		20		ATTA

L1Topo Installation Commissioning

Uli / Mainz



ID Task Name Start Duration Finish															
Task Name	Start	Duration	Finish	2020			1								
				Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	N
Installation & Commissioning	Thu 25/04/19	713 days	Mon 28/02/22												
jfEX	Mon 01/03/21	20 days	Fri 26/03/21								L	11-14			
eFEX Shelf 1 (Initial)	Mon 01/03/21	20 days	Fri 26/03/21									4	2 marcel 2		
eFEX Shelf 1 (Completion)	Mon 12/04/21	20 days	Fri 07/05/21											1 PCTS	10
eFEX Shelf 2	wion 07/06/21	20 days	Fri 02/07/21												
L1Topo	Tue 16/02/21	20 days	Mon 15/03/21								L				
FOX	Thu 25/04/19	407 days	Fri 27/11/20					A							
Fibre-Laying: LAr-FOX	Mon 26/10/20	3 wks	Fri 13/11/20						Concernant of						
Schäfor FOX Installation (inc. FOX-FEX fibres	Mon 02/11/20	4 wks	Fri 27/11/20												
	Installation & Commissioning jFEX eFEX Shelf 1 (Initial) eFEX Shelf 1 (Completion) eFEX Shelf 2 L1Topo FOX Eibre-Laving: LAr_EOX	Installation & Commissioning Thu 25/04/19 jFEX Mon 01/03/21 eFEX Shelf 1 (Initial) Mon 01/03/21 eFEX Shelf 1 (Completion) Mon 12/04/21 eFEX Shelf 1 (Completion) Mon 01/06/21 L1Topo Tue 16/02/21 FOX Thu 25/04/19 Eibre Laving: LAr_SOX Mon 26/10/20	Installation & Commissioning Thu 25/04/19 713 days jFEX Mon 01/03/21 20 days eFEX Shelf 1 (Initial) Mon 01/03/21 20 days eFEX Shelf 1 (Completion) Mon 01/03/21 20 days eFEX Shelf 1 (Completion) Mon 01/03/21 20 days eFEX Shelf 2 Mon 07/06/21 20 days L1Topo Tue 16/02/21 20 days FOX Thu 25/04/15 407 days Eibre-1 aving: LAr_EOX Mon 26/01/20 3 w/s	Installation & Commissioning Thu 25/04/19 713 days Mon 28/02/22 jFEX Mon 01/03/21 20 days Fri 26/03/21 eFEX Shelf 1 (Initial) Mon 01/03/21 20 days Fri 26/03/21 eFEX Shelf 1 (Completion) Mon 01/03/21 20 days Fri 02/07/25 eFEX Shelf 1 (Completion) Mon 12/04/21 20 days Fri 02/07/21 eFEX Shelf 2 Mon 01/06/21 20 days Fri 02/07/21 L1Topo Tue 16/02/21 20 days Mon 15/03/21 FOX Thu 25/04/19 407 days Fri 27/11/20 Eibre I aving: LAr_FOX Mon 26/01/20 3 wkg Fri 13/11/20	Installation & Commissioning Thu 25/04/19 713 days Mon 28/02/22 jFEX Mon 01/03/21 20 days Fri 26/03/21 eFEX Shelf 1 (Initial) Mon 01/03/21 20 days Fri 26/03/21 eFEX Shelf 1 (Initial) Mon 01/03/21 20 days Fri 26/03/21 eFEX Shelf 1 (Completion) Mon 01/06/21 20 days Fri 07/05/21 eFEX Shelf 2 Mion 01/06/21 20 days Fri 02/07/21 L1Topo Tue 16/02/21 20 days Mon 15/03/21 FOX Thu 25/04/19 407 days Fri 27/11/20	Installation & Commissioning Thu 25/04/19 713 days Mon 28/02/22 jFEX Mon 01/03/21 20 days Fri 28/03/21 eFEX Shelf 1 (Initial) Mon 01/03/21 20 days Fri 28/03/21 eFEX Shelf 1 (Initial) Mon 01/03/21 20 days Fri 28/03/21 eFEX Shelf 1 (Completion) Mon 01/03/21 20 days Fri 07/05/21 eFEX Shelf 2 Mon 01/04/21 20 days Fri 07/05/21 eFEX Shelf 2 Mon 01/04/21 20 days Fri 07/05/21 eFEX Shelf 2 Mon 01/04/21 20 days Fri 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Shelf 1 (Initial) Mon 01/03/21 20 days Fri 26/03/21 Image: Sep Image: Sep	Installation & Commissioning Thu 25/04/19 713 days Mon 28/02/22 Jul Aug Sep Oct installation & Commissioning Thu 25/04/19 713 days Mon 28/02/22 Jul Jul Aug Sep Oct installation & Commissioning Mon 01/03/21 20 days Fri 26/03/21 Image: Sep Oct ifFEX Mon 01/03/21 20 days Fri 26/03/21 Image: Sep Image: Sep	Installation & Commissioning Thu 25/04/19 713 days Mon 28/02/22 jFEX Mon 01/03/21 20 days Fri 26/03/21 eFEX Shelf 1 (Initial) Mon 01/03/21 20 days Fri 26/03/21 eFEX Shelf 1 (Initial) Mon 01/03/21 20 days Fri 26/03/21 eFEX Shelf 1 (Completion) Mon 01/06/21 20 days Fri 07/05/21 eFEX Shelf 2 Mion 01/06/21 20 days Fri 02/07/21 L1Topo Tue 16/02/21 20 days Fri 27/11/20 FIX Thu 25/04/19 407 days Fri 27/11/20	Installation & Commissioning Thu 25/04/19 713 days Mon 28/02/22 Installation & Commissioning Thu 25/04/19 713 days Mon 28/02/22 jFEX Mon 01/03/21 20 days Fri 26/03/21 eFEX Shelf 1 (Initial) Mon 01/03/21 20 days Fri 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Thu 25/04/19 713 days Mon 28/02/22 jFEX Mon 01/03/21 20 days Fri 28/03/21 eFEX Shelf 1 (Initial) Mon 01/03/21 20 days Fri 28/03/21 eFEX Shelf 1 (Initial) Mon 01/03/21 20 days Fri 28/03/21 eFEX Shelf 1 (Initial) Mon 01/03/21 20 days Fri 28/03/21 eFEX Shelf 1 (Completion) Mon 01/04/21 20 days Fri 02/07/21 eFEX Shelf 2 Mon 07/06/21 20 days Fri 02/07/21 EFEX Shelf 2 Mon 07/06/21 20 days Fri 02/07/21 FOX Thu 25/04/19 407 days Fri 27/11/20 Fibre-Laying: LAr-FOX Mon 26/10/20 3 wks Fri 13/11/20

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Installation

- Effort available: Ren-Jie and Julio
- Need to cover jFEX, L1Topo, legacy L1Topo
- ...will keep them quite busy...
- Requires careful planning
- Intend to send more people once COVID travel restrictions lifted
- Quite some infrastructure at P1 required before we can go down with the first module >> see slides from last joint meeting
 - Shelf
 - Fibering
 - Source/sink systems
 - DCS/hub/clocking/computing/control/JTAG
- Two modules currently available:
 - 1 production, PRRed 2019.08
 - 1 prototype (functionally near identical)
- Equipped with new mezzanine v 3.1
- Well tested at hardware level (though firmware development and tests ongoing)
- Total quantity of production modules required
 - 3 modules at point 1
 - 2 spares
 - All being well tested in home lab (except full link count concurrent test) and STF
- Assume no spares of infrastructure (cables, ...)

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Module production and installation...

- Expect to move one module to point 1 as early as possible to get tests going there
- Assembly and basic tests of further modules assumed to go fast and smoothly (PCBs and components available, established test procedure)
- However, further system level tests required at STF to deal with PRR recommendations before starting production
 - MUCTPI
 - CTP
 - Power/temperature test under full firmware load
 - ...
- Still some work to be done on readout
 → a bit of uncertainty on the production schedule
- We are currently assuming to have modules available for firmware development and system tests with L1Calo at STF and P1 concurrently
- Both STF and P1 testing assumed to be mainly remote controlled
 - Need to arrive at fully remote operation at P1 anyway
 - COVID is an excellent reason to prioritize that goal

Commissioning of modules at P1

- Module health monitoring via DCS (plus automatic-over temperature shutdown of processors)
- Link error monitoring in firmware
- Fibre mapping tests with automated / scripted IBERT (Emanuel, jFEX)
- Fibre mapping tests with playback from source systems (plus meta frames, eg. from jFEX)
- Timing checks in firmware (BCIDs in trailer)
- Expect to receive TOBs from calorimeters/FEXes early on
 - FEX playback
 - Hot towers (noise / lowered thresholds)
 - Cosmics / splashes...
- Comparison with bitwise simulation
- Monitoring plots ??? Inspired from legacy Topo
- As soon as useful data coming from the detectors, compare to legacy system
- Running parasitically without triggering
- -->where to sample trigger bits for disabled triggers ?
- In terms of triggers, any (physics like) should do, obviously legacy topo triggers most useful

Commissioning of algorithms

L1Topo is special in a sense that individual new algorithms need to be commissioned for inclusion in the menu in irregular intervals anyway

- Simulation in HDL
- Comparison to software model (bitwise)
- Include in firmware build
- Test rig playback/spy standalone validation vs. software
- Validation at P1 outside physics run in ATLAS partition
- Validation of freshly included algorithms in physics runs with triggers disabled (parasitic)

While timing calibration / validation used to be crucial and difficult in run 2, we'd assume that this step is eased significantly with BCID information in trailer of TOBs