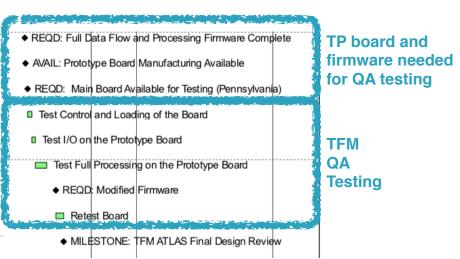# Trigger Q11: QA in RLS

- QA testing related tasks precede ATLAS FDR in schedule (often several tasks)
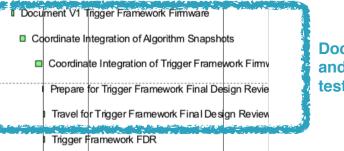
- Example from HTT TFM board

TFHW10450R	REQD: Full Data Flow and Processing Firmware Complete	0	20-Jul-21	
TFHW10400A	AVAIL: Prototype Board Manufacturing Available	0		26-Jul-21
TFHW10410R	REQD: Main Board Available for Testing (Pennsylvania)	0	12-Aug-21	
TFHW10420	Test Control and Loading of the Board	23	12-Aug-21	14-Sep-21
TFHW10460	Test I/O on the Prototype Board	19	15-Sep-21	12-Oct-21
TFHW10470	Test Full Processing on the Prototype Board	64	13-Oct-21	13-Jan-22
TFHW10480R	REQD: Modified Firmware	0	24-Mar-22	
TFHW10490	Retest Board	44	24-Mar-22	24-May-22
HTTMS1120	MILESTONE: TFM ATLAS Final Design Review	0	25-May-22	

◆ REQD: Full Data Flow and Processing Firmware Complete
◆ AVAIL: Prototype Board Manufacturing Available
◆ REQD: Main Board Available for Testing (Pennsylvania)

TP board and firmware needed for QA testing

▫ Test Control and Loading of the Board
▫ Test I/O on the Prototype Board
▫ Test Full Processing on the Prototype Board
◆ REQD: Modified Firmware
▫ Retest Board

TFM QA Testing

◆ MILESTONE: TFM ATLAS Final Design Review

- Example from Global firmware

GEPTFR8160	Document V1 Trigger Framework Firmware	15	21-Apr-22	11-May-22
GEPTFR8170	Coordinate Integration of Algorithm Snapshots	28	29-Jun-22	08-Aug-22
GEPTFR8180	Coordinate Integration of Trigger Framework Firmware	36	03-Nov-22	23-Dec-22
GEPTFR8190	Prepare for Trigger Framework Final Design Review	6	27-Dec-22	04-Jan-23
GEPTFR8200T	Travel for Trigger Framework Final Design Review	6	05-Jan-23	12-Jan-23
GEPTFR8200	Trigger Framework FDR	8	05-Jan-23	16-Jan-23

▫ Document V1 Trigger Framework Firmware
▫ Coordinate Integration of Algorithm Snapshots
▫ Coordinate Integration of Trigger Framework Firmw
Prepare for Trigger Framework Final Design Revie
Travel for Trigger Framework Final Design Review
Trigger Framework FDR

Documentation, and Integration test for FDR

- Global framework interface definitions…

The US project should continue leveraging its close relationship with international ATLAS to settle all interfaces and environmental/utility specifications as soon as possible, preferably before NSF FDR. The US project should focus on resolving all the remaining architectural design issues well before the NSF FDR, including LAr backend board and ADC option choice, CSM module in muon system and global event processing firmware.	M. Tuts, H. Evans, L2 managers	Lar ADC: agreement is now in place that US will take care of most of the ADC design in all cases (even if the "IP block" is used for the analog part); Lar backend responsibilities have been defined, but final form-factor choice will be made in late 2019, when the first test board has been fully evaluated; CSM module choice has been made (use GBT); Global: framework firmware definition is underway and significantly advanced since NFS PDR.	In progress

- A lot of work has gone into the Global firmware framework definition since PDR, and plan to converge with ATLAS collaborators in place (review in Fall 2019)

- HTT Self test at CERN…

After shipment to CERN, power up each trigger board in a crate and run a built in self-test before declaring completion.	E. Lipeles	The built-in selft-test has been added to the board specifications, and running this for all boards on arrival at CERN will be added to the RLS.	In progress

- now in RLS, this is done…

TPSS40435	Arrival Test at CERN	10	01-Apr-24	12-Apr-24
TPSS40425M	Material for Boards (at Two Sites)	10	01-Apr-24	12-Apr-24
TPSS40450	Ship Boards to CERN	1	17-May-24	17-May-24
TPSS40440M	Material for Boards to CERN	1	17-May-24	17-May-24
TPSS40460	Test Remaining Boards (at Two Sites)	34	20-May-24	08-Jul-24
TPSS40470	Arrival Test at CERN	10	20-May-24	03-Jun-24
TPSS40450M	Material for Test Remaining Boards (at Two Sites)	34	20-May-24	08-Jul-24
TPSS40480	Ship Boards to CERN	1	09-Jul-24	09-Jul-24
TPSS40460M	Material for Boards to CERN	1	09-Jul-24	09-Jul-24
TPSS40490	Arrival Test at CERN	10	10-Jul-24	23-Jul-24