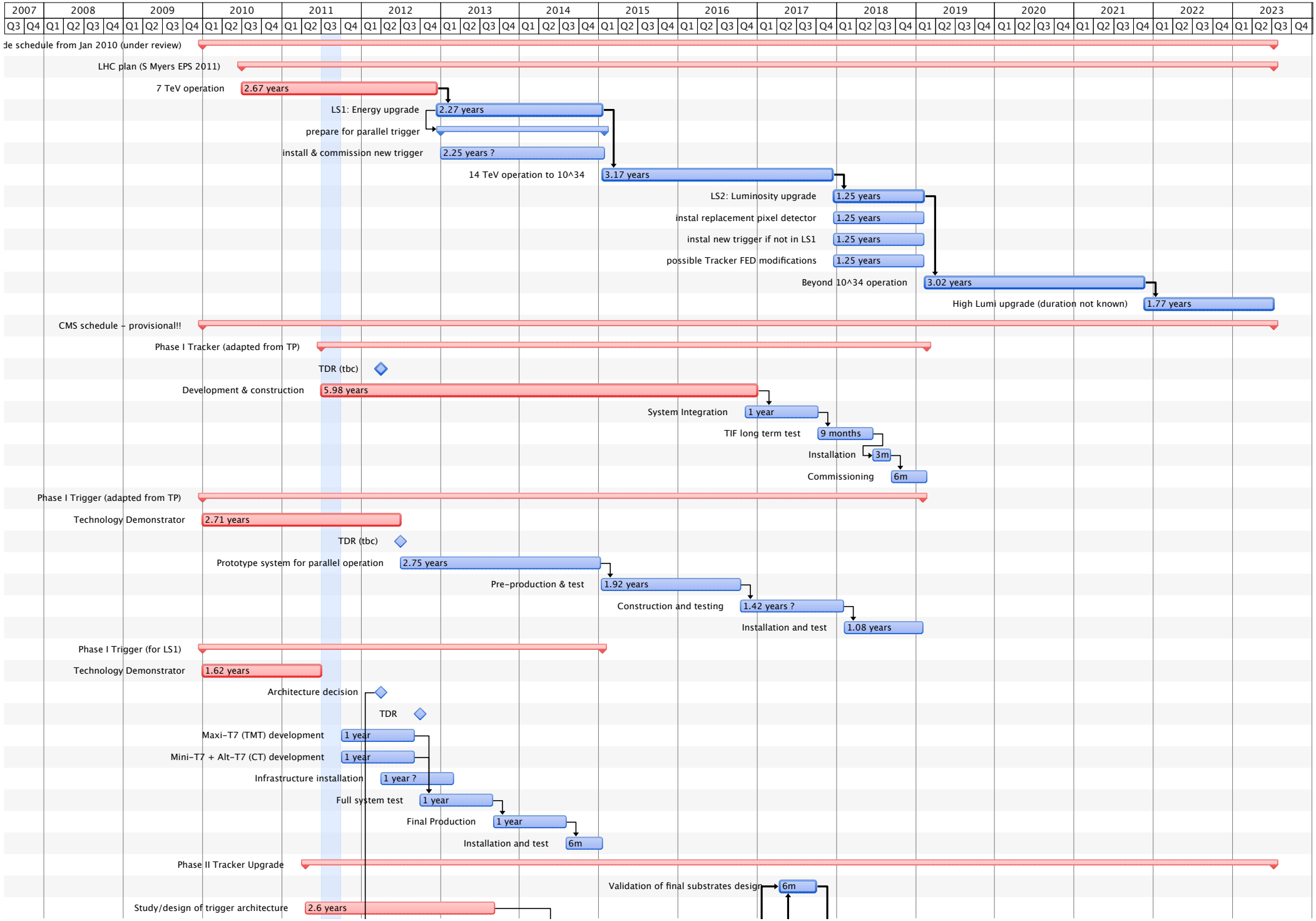
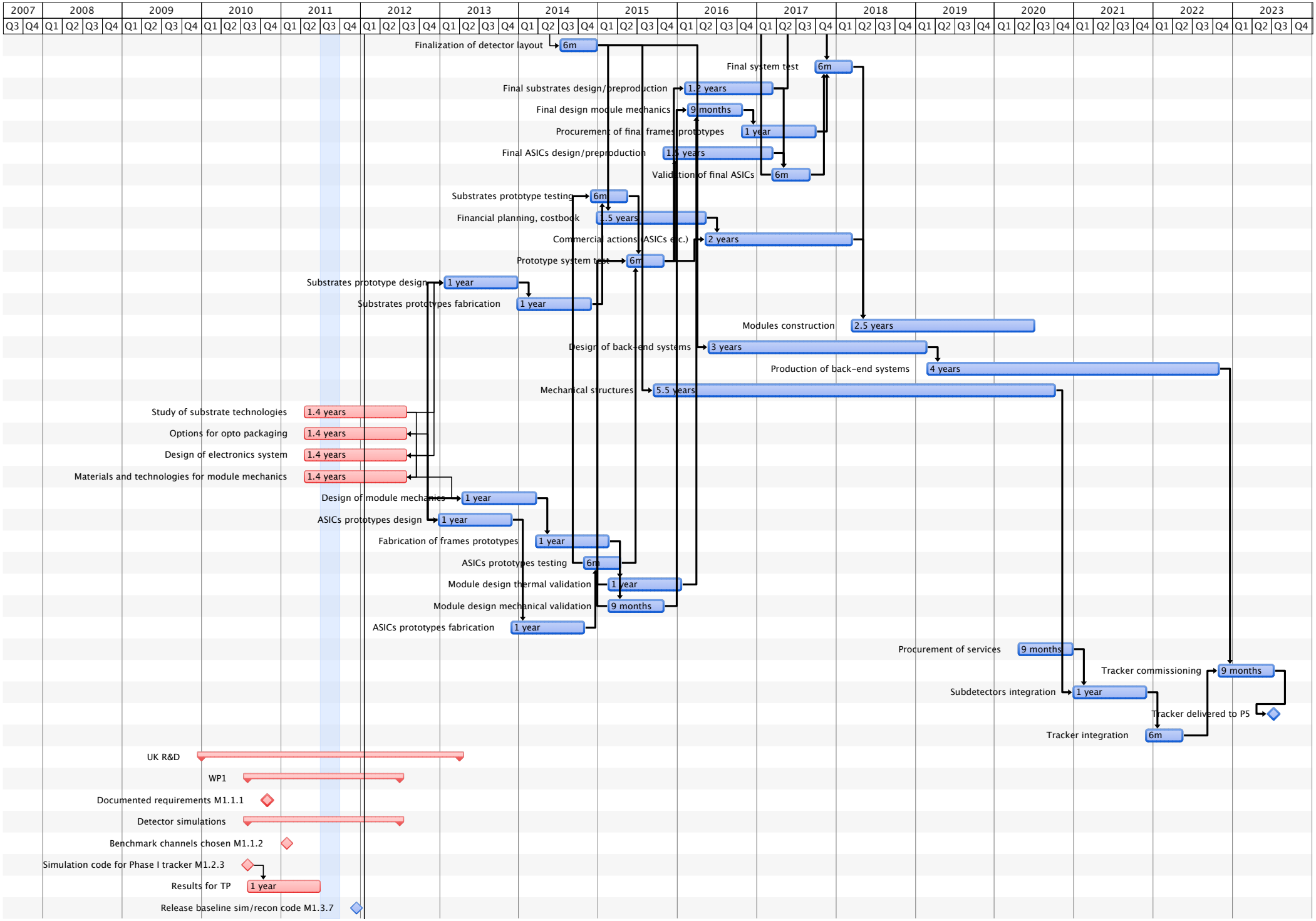
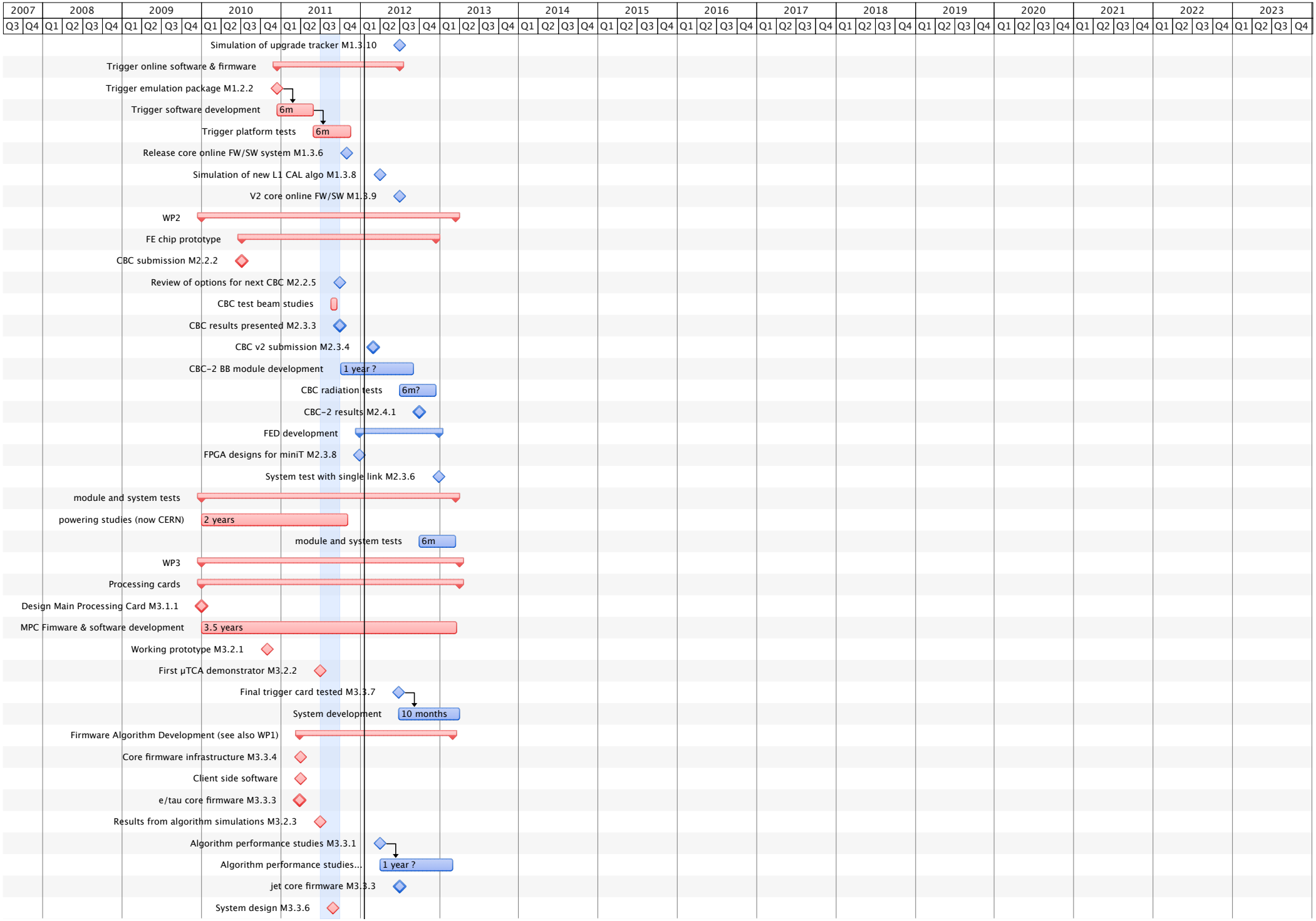
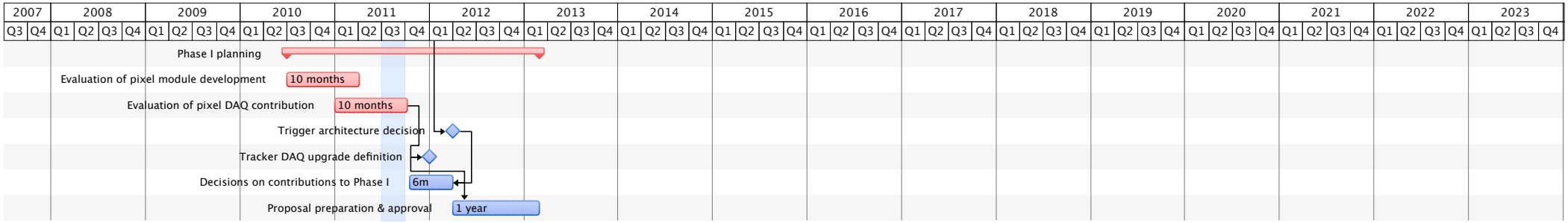

2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Q3 Q4 Q1 Q2 Q3 Q4
de schedule from Jan 2010 (under review)
LHC plan (S Myers EPS 2011)
7 TeV operation
2.67 years
LS1: Energy upgrade
2.27 years
prepare for parallel trigger
install & commission new trigger
2.25 years ?
14 TeV operation to 10^34
3.17 years
LS2: Luminosity upgrade
1.25 years
instal replacement pixel detector
1.25 years
instal new trigger if not in LS1
1.25 years
possible Tracker FED modifications
1.25 years
Beyond 10^34 operation
3.02 years
High Lumi upgrade (duration not known)
1.77 years
CMS schedule – provisional!!
Phase I Tracker (adapted from TP)
TDR (tbc)
Development & construction
5.98 years
System Integration
1 year
TIF long term test
9 months
Installation
3m
Commissioning
6m
Phase I Trigger (adapted from TP)
Technology Demonstrator
2.71 years
TDR (tbc)
Prototype system for parallel operation
2.75 years
Pre-production & test
1.92 years
Construction and testing
1.42 years ?
Installation and test
1.08 years
Phase I Trigger (for LS1)
Technology Demonstrator
1.62 years
Architecture decision
TDR
Maxi-T7 (TMT) development
1 year
Mini-T7 + Alt-T7 (CT) development
1 year
Infrastructure installation
1 year ?
Full system test
1 year
Final Production
1 year
Installation and test
6m
Phase II Tracker Upgrade
Validation of final substrates design
6m
Study/design of trigger architecture
2.6 years


2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Q3 Q4 Q1 Q2 Q3 Q4
Finalization of detector layout
6m
Final system test
6m
Final substrates design/preproduction
1.2 years
Final design module mechanics
9 months
Procurement of final frames prototypes
1 year
Final ASICs design/preproduction
1.5 years
Validation of final ASICs
6m
Substrates prototype testing
6m
Financial planning, costbook
1.5 years
Commercial actions (ASICs etc.)
2 years
Prototype system test
6m
Substrates prototype design
1 year
Substrates prototypes fabrication
1 year
Modules construction
2.5 years
Design of back-end systems
3 years
Production of back-end systems
4 years
Mechanical structures
5.5 years
Study of substrate technologies
1.4 years
Options for opto packaging
1.4 years
Design of electronics system
1.4 years
Materials and technologies for module mechanics
1.4 years
Design of module mechanics
1 year
ASICs prototypes design
1 year
Fabrication of frames prototypes
1 year
ASICs prototypes testing
6m
Module design thermal validation
1 year
Module design mechanical validation
9 months
ASICs prototypes fabrication
1 year
Procurement of services
9 months
Tracker commissioning
9 months
Subdetectors integration
1 year
Tracker delivered to P5
Tracker integration
6m
UK R&D
WP1
Documented requirements M1.1.1
Detector simulations
Benchmark channels chosen M1.1.2
Simulation code for Phase I tracker M1.2.3
Results for TP
1 year
Release baseline sim/recon code M1.3.7


2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Q3 Q4 Q1 Q2 Q3 Q4
Simulation of upgrade tracker M1.3.10
Trigger online software & firmware
Trigger emulation package M1.2.2
Trigger software development
6m
Trigger platform tests
6m
Release core online FW/SW system M1.3.6
Simulation of new L1 CAL algo M1.3.8
V2 core online FW/SW M1.3.9
WP2
FE chip prototype
CBC submission M2.2.2
Review of options for next CBC M2.2.5
CBC test beam studies
CBC results presented M2.3.3
CBC v2 submission M2.3.4
CBC-2 BB module development
1 year ?
CBC radiation tests
6m?
CBC-2 results M2.4.1
FED development
FPGA designs for miniT M2.3.8
System test with single link M2.3.6
module and system tests
powering studies (now CERN)
2 years
module and system tests
6m
WP3
Processing cards
Design Main Processing Card M3.1.1
MPC Fimware & software development
3.5 years
Working prototype M3.2.1
First µTCA demonstrator M3.2.2
Final trigger card tested M3.3.7
System development
10 months
Firmware Algorithm Development (see also WP1)
Core firmware infrastructure M3.3.4
Client side software
e/tau core firmware M3.3.3
Results from algorithm simulations M3.2.3
Algorithm performance studies M3.3.1
Algorithm performance studies...
1 year ?
jet core firmware M3.3.3
System design M3.3.6


2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Q3 Q4 Q1 Q2 Q3 Q4
Phase I planning
Evaluation of pixel module development
10 months
Evaluation of pixel DAQ contribution
10 months
Trigger architecture decision
Tracker DAQ upgrade definition
Decisions on contributions to Phase I
6m
Proposal preparation & approval
1 year