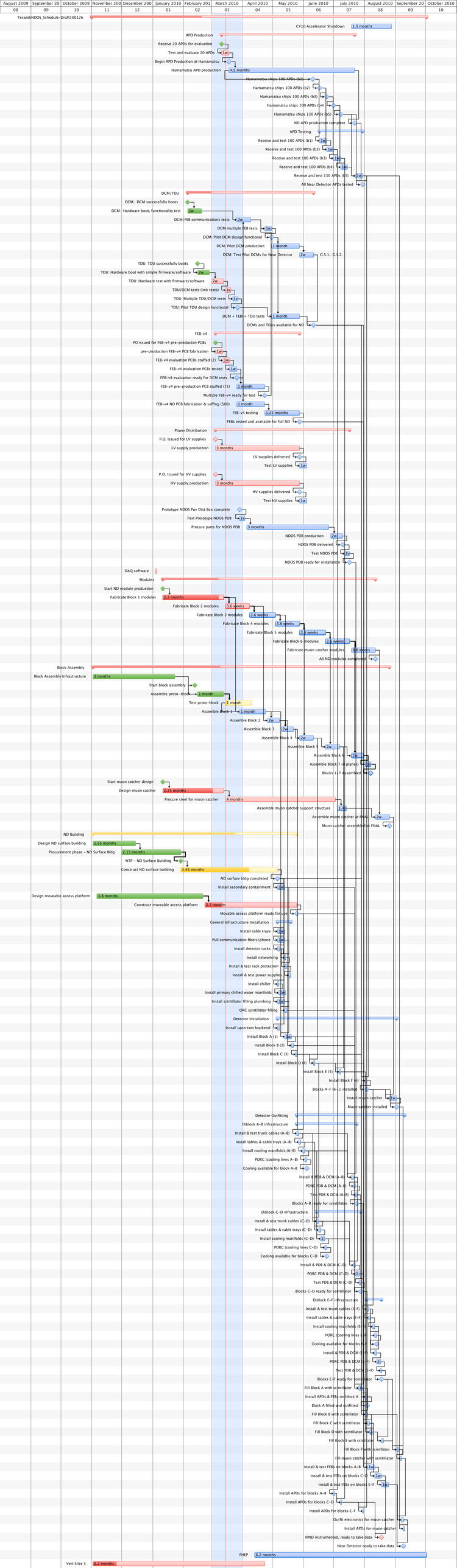
August 2009
September 20
October 2009
November 200
December 200
January 2010
February 201
March 2010
April 2010
May 2010
June 2010
July 2010
August 2010
September 20
October 2011
08
09
10
11
12
01
02
03
04
05
06
07
08
09
10
TesarekNDOS_Schedule-Draft100126
CY10 Accelerator Shutdown
1.5 months
APD Production
Receive 20 APDs for evaluation
Test and evaluate 20 APDs
1w
Begin APD Production at Hamamatsu
Hamamatsu APD production
4.5 months
Hamamatsu ships 100 APDs (b1)
Hamamatsu ships 100 APDs (b2)
Hamamatsu ships 100 APDs (b3)
Hamamatsu ships 100 APDs (b4)
Hamamatsu ships 130 APDs (b5)
ND APD production complete
APD Testing
Receive and test 100 APDs (b1)
1w
Receive and test 100 APDs (b2)
1w
Receive and test 100 APDs (b3)
1w
Receive and test 100 APDs (b4)
1w
Receive and test 130 APDs (b5)
1w
All Near Detector APDs tested
DCM/TDU
DCM: DCM successfully boots
DCM: Hardware boot, functionality test
2w
DCM/FEB communications tests
2w
DCM multiple FEB tests
1w
DCM: Pilot DCM design functional
DCM: Pilot DCM production
1 month
DCM: Test Pilot DCMs for Near Detector
2w
G.S.1.; G.S.2.
TDU: TDU successfully boots
TDU: Hardware boot with simple firmware/software
2w
TDU: Hardware test with firmware/software
2w
TDU/DCM tests (link tests)
1w
TDU: Multiple TDU/DCM tests
1w
TDU: Pilot TDU design functional
DCM + FEB + TDU tests
1 month
DCMs and TDUs available for ND
FEB-v4
PO issued for FEB-v4 pre-production PCBs
pre-production FEB-v4 PCB fabrication
1w
FEB-v4 evaluation PCBs stuffed (2)
1w
FEB-v4 evaluation PCBs tested
1w
FEB-v4 evaluation ready for DCM tests
FEB-v4 pre-production PCB stuffed (75)
1 month
Multiple FEB-v4 ready for test
FEB-v4 ND PCB fabrication & suffing (500)
1 month
FEB-v4 testing
1.25 months
FEBs tested and available for full ND
Power Distribution
P.O. Issued for LV supplies
LV supply production
3 months
LV supplies delivered
Test LV supplies
1w
P.O. Issued for HV supplies
HV supply production
3 months
HV supplies delivered
Test HV supplies
1w
Prototype NDOS Pwr Dist Box complete
Test Prototype NDOS PDB
1w
Procure parts for NDOS PDB
3 months
NDOS PDB production
2w
NDOS PDB delivered
Test NDOS PDB
1w
NDOS PDB ready for installation
DAQ software
Modules
Start ND module production
Fabricate Block 1 modules
2.2 months
Fabricate Block 2 modules
3.6 weeks
Fabricate Block 3 modules
3.6 weeks
Fabricate Block 4 modules
3.6 weeks
Fabricate Block 5 modules
3.6 weeks
Fabricate Block 6 modules
3.6 weeks
Fabricate muon catcher modules
36 weeks
All ND modules completed
Block Assembly
Block Assembly Infrastructure
3 months
Start block assembly
Assemble proto-block
1 month
Test proto-block
1 month
Assemble Block 1
1 month
Assemble Block 2
2w
Assemble Block 3
2w
Assemble Block 4
2w
Assemble Block 5
2w
Assemble Block 6
2w
Assemble Block 7 (6 planes)
1w
Blocks 1-7 Assembled
Start muon catcher design
Design muon catcher
2.25 months
Procure steel for muon catcher
4 months
Assemble muon catcher support structure
1.5w
Assemble muon catcher at PNNL
2w
Muon catcher assembled at FNAL
ND Building
Design ND surface building
1.55 months
Procurement phase - ND Surface Bldg
2.15 months
NTP - ND Surface Building
Construct ND surface building
3.45 months
ND surface bldg completed
Install secondary containment
2w
Design moveable access platform
3.8 months
Construct moveable access platform
3.3 months
Movable access platform ready for use
General Infrastructure Installation
Install cable trays
2w
Pull communication fibers/phone
2w
Install detector racks
Install networking
Install & test rack protection
Install & test power supplies
Install chiller
Install primary chilled water manifolds
1w
Install scintillator filling plumbing
2w
ORC scintillator filling
Detector Installation
Install upstream bookend
Install Block A (1)
2w
Install Block B (2)
Install Block C (3)
Install Block D (4)
Install Block E (5)
Install Block F (6)
Blocks A-F (6-1) installed
Install muon catcher
2w
Muon catcher installed
Detector Outfitting
Diblock A-B infrastructure
Install & test trunk cables (A-B)
Install tables & cable trays (A-B)
Install cooling manifolds (A-B)
PORC (cooling lines A-B)
Cooling available for block A-B
Install & PDB & DCM (A-B)
PORC PDB & DCM (A-B)
Test PDB & DCM (A-B)
Blocks A-B ready for scintillator
Diblock C-D infrastructure
Install & test trunk cables (C-D)
Install tables & cable trays (C-D)
Install cooling manifolds (C-D)
2
PORC (cooling lines C-D)
Cooling available for blocks C-D
Install & PDB & DCM (C-D)
PORC PDB & DCM (C-D)
2
Test PDB & DCM (C-D)
Blocks C-D ready for scintillator
Diblock E-F infrastructure
Install & test trunk cables (E-F)
Install tables & cable trays (E-F)
Install cooling manifolds (E-F)
PORC (cooling lines E-F)
Cooling available for blocks E-F
Install & PDB & DCM (E-F)
PORC PDB & DCM (E-F)
2
Test PDB & DCM (E-F)
Blocks E-F ready for scintillator
Fill Block A with scintillator
1w
Install APDs & FEBs on block A
Block A filled and outfitted
Fill Block B with scintillator
Fill Block C with scintillator
Fill Block D with scintillator
2
Fill Block E with scintillator
Fill Block F with scintillator
Fill muon catcher with scintillator
Install & test FEBs on blocks A-B
1w
Install & test FEBs on blocks C-D
1w
Install & test FEBs on blocks E-F
1w
Install APDs for blocks A-B
Install APDs for blocks C-D
Install APDs for blocks E-F
Outfit electronics for muon catcher
Install APDs for muon catcher
IPND instrumented, ready to take data
Near Detector ready to take data
FHEP
6.2 months
Vert Slice 5
6.2 months