

## **Initial Packet of information:**

### **Project Milestones**

**Milestone:** WBS1.1.1.1

**Description:**

Quarter section design complete

**Projected completion date:** FY08 4<sup>th</sup> Quarter

**Critical Path:** Critical path

**Issues:**

**Milestone:** WBS1.1.1.4

**Description:**

2D readout board design complete

**Projected completion date:** FY09 2<sup>nd</sup> Quarter

**Critical Path:** Not a critical path item, but close

**Issues:**

**Milestone:** WBS1.1.1.7

**Description:**

Full-size GEM foils tested and meet specifications

**Projected completion date:** FY09 1<sup>st</sup> Quarter

**Critical Path:** Critical path

**Issues:**

TechEtch has satisfactorily produced smaller foils, but has not yet produced full size foils.

**Milestone:** WBS1.1.1.9

**Description:**

Successful full quarter section test

**Projected completion date:** FY09 2<sup>nd</sup> Quarter

**Critical Path:** Critical path

**Issues:**

This is the first concrete deliverable of the project.

**Milestone:** WBS1.1.2.1

**Description:**

All GEM foils delivered by TechEtch that meet specifications

**Projected completion date:** FY09 3<sup>rd</sup> Quarter

**Critical Path:** Critical path

**Issues:**

Production quantities of large foils is the part with highest technical risk for the project.

**Milestone:** WBS1.1.6

**Description:**

All detector frames assembled and tested.

**Projected completion date:** FY10 1<sup>st</sup> Quarter

**Critical Path:** Critical path

**Issues:**

**Milestone:** WBS1.2.1

**Description:**

Successful testing of first prototype of front end electronic readout board

**Projected completion date:** FY09 3<sup>rd</sup> Quarter

**Critical Path:** Critical path

**Issues:**

Important deliverable

**Milestone:** WBS1.2.5

**Description:**

All FEE readout boards assembled and tested

**Projected completion date:** FY10 1<sup>st</sup> Quarter

**Critical Path:** Critical path

**Issues:**

**Milestone:** WBS1.3.1.2

**Description:**

DAQ readout board prototype complete

**Projected completion date:** FY09 4<sup>th</sup> Quarter

**Critical Path:** Not a critical path item, but close

**Issues:**

**Milestone:** WBS1.3.2.3

**Description:**

DAQ crate master board design complete

**Projected completion date:** FY09 2<sup>nd</sup> Quarter

**Critical Path:** Not a critical path

**Issues:**

**Milestone:** WBS1.3.4.4

**Description:**

Successful DAQ readout test

**Projected completion date:** FY10 1<sup>st</sup> Quarter

**Critical Path:** Not a critical path item, but close

**Issues:**

**Milestone:** WBS1.4.1.1

**Description:**

STAR airflow design and prototype complete

**Projected completion date:** FY09 3<sup>rd</sup> Quarter

**Critical Path:** Not a critical path item

**Issues:**

**Milestone:** WBS1.4.2.4  
**Description:**  
STAR airflow system installed  
**Projected completion date:** FY10 3<sup>rd</sup> Quarter  
**Critical Path:** Not a critical path item  
**Issues:**

**Milestone:** WBS1.4.3.4  
**Description:**  
Slow controls installed  
**Projected completion date:** FY10 1<sup>st</sup> Quarter  
**Critical Path:** Not a critical path item  
**Issues:**

**Milestone:** WBS1.5.1  
**Description:**  
Design of West Support Cone  
**Projected completion date:** FY09 3<sup>rd</sup> Quarter  
**Critical Path:** Critical path  
**Issues:**

**Milestone:** WBS1.5.3  
**Description:**  
Assembly of West Support Cone  
**Projected completion date:** FY10 1<sup>st</sup> Quarter  
**Critical Path:** Critical path  
**Issues:**

**Milestone:** WBS1.5.7  
**Description:**  
System test  
**Projected completion date:** FY10 4<sup>th</sup> Quarter  
**Critical Path:** Critical path  
**Issues:**  
Final deliverable

## **Project Expenditures**

- **Labor and Hardware Costs**

Costs starting from beginning project to the completion of project, separated into WBS sections. Each of these categories is broken into labor and hardware

The cost summary for the STAR FGT project. Amounts are in AY kilo-dollars.

WBS	Task Name	Material k\$	Personnel k\$	BNL transfer k\$	Conting. %	Conting. k\$	TEC, k\$	Preops k\$	TPC k\$
1	FGT Project	591	900	119	29	410	1610		1610
1.1	Triple-GEM Detector	296	167		21	95	558		558
1.2	Front-end Electronics	92	258		23	80	430		430
1.3	DAQ	63	236		20	60	359		359
1.4	Infrastructure	20	62		24	20	102		102
1.5	Integration	120	177		52	155	452		452

- **List major hardware procurements.**

Item	Critical Path (Y/N)	Estimated Cost (k\$)	Projected Procurement Date
GEM foils	Y	60	FY09 3Q
2D readout board	N	131	FY09 3Q
HV power supply	N	57	FY09 2Q
APV25 chips	N	50	FY09 1Q
APV modules	Y	84	FY09 2Q
DAQ readout boards	N	40	FY09 4Q
West support cone	Y	120	FY09 4Q

- **Budget breakdown**

WBS	Item	Baseline Total Cost (AY\$)	Costed & Committed	Estimate To Complete (AY\$)	Estimated Total Cost (AY\$)	Available Contingency (AY\$)	Available Contingency (% of Est to Comp)
1	FGT	1,416	81	1335	1416	411	29
1.1	Triple-GEM Detector	463	10	453	463	95	21
1.2	Front-End Electronics	350	71	279	350	80	23
1.3	DAQ	299	0	299	299	60	20
1.4	Infrastructure	82	0	82	82	20	24
1.5	Integration	297	0	297	297	155	52
1.7	BNL Overhead	119	0	119	119	0	0
1.8	Non-DOE contribution	-194	0			0	
Totals:			-	1335	1416		

## **Project Schedule**

- **Copy of Project Schedule** (electronic version).  
Attached.

WBS	Task Name	Baseline Start Date mo/year	Baseline Completion Date mo/year
1.1	Triple-GEM Detector	05/2008	09/2009
1.2	Front-End Electronics	09/2009	09/2009
1.3	DAQ	05/2008	12/2009
1.4	Infrastructure	07/2008	10/2010
1.5	Integration	10/2008	08/2010

## **Summary of concerns/issues at project initiation**

- Uniformity test of large GEM foils
- Test of prototype charging board
- Test of full size quarter section triple-GEM detector
- Design and solution of integration of west support cone (WSC)