# US CMS Project Cost Estimate

7/26/96

| WBS Number | Description | US Mfg M&S (K$) | US Mfg Labor (K$) | US EDIA (K$) | US Base Cost (K$) | US Cont (K$) | Total US Cost (K$) | DOE Request (K$) | NSF Request (K$) |
|---|---|---|---|---|---|---|---|---|---|
| **Total US CMS Project Request** | | | | | | | | **148,418** | **20,032** |
| Escalation | | | | | | | | 20,911 | |
| FY'96 R&D | | | | | | | 2,400 | 2,300 | 100 |
| **US CMS Total Estimated Cost (FY'96 $s)** | | **84,819** | **11,384** | **22,717** | **118,919** | **26,220** | **145,139** | **125,207** | **19,932** |
| **1** | **Endcap Muon System** | **18,425** | **5,337** | **6,990** | **30,752** | **7,739** | **38,491** | **36,827** | **1,664** |
| 1.1 | Muon Measurement System | 18,425 | 5,337 | 5,511 | 29,273 | 7,369 | 36,642 | 34,978 | 1,664 |
| 1.2 | Endcap Iron Design | 0 | 0 | 1,479 | 1,479 | 370 | 1,849 | 1,849 | 0 |
| **2** | **Hadron Calorimeter** | **26,331** | **3,112** | **3,254** | **32,697** | **9,809** | **42,506** | **35,420** | **7,086** |
| 2.1 | Barrel Hadron Calorimeter | 20,966 | 1,973 | 2,610 | 25,548 | 7,664 | 33,213 | 31,161 | 2,052 |
| 2.2 | Endcap Hadron Calorimeter | 3,196 | 587 | 90 | 3,873 | 1,162 | 5,035 | 0 | 5,035 |
| 2.3 | Very Forward Calorimeter | 2,169 | 552 | 554 | 3,276 | 983 | 4,259 | 4,259 | 0 |
| **3** | **Trigger/Data Acquisition** | **9,736** | **454** | **3,804** | **13,994** | **4,019** | **18,013** | **16,155** | **1,858** |
| 3.1 | Endcap Muon Level 1 CSC Trigger | 1,181 | 0 | 873 | 2,053 | 595 | 2,649 | 2,649 | 0 |
| 3.2 | Calorimeter Level 1 Regional Trigger | 3,018 | 0 | 1,465 | 4,482 | 1,300 | 5,782 | 5,782 | 0 |
| 3.3 | Luminosity Monitor | 345 | 42 | 48 | 435 | 87 | 522 | 0 | 522 |
| 3.4 | Data Acquisition | 5,193 | 412 | 1,419 | 7,024 | 2,037 | 9,061 | 7,724 | 1,336 |
| **4** | **Electromagnetic Calorimeter** | **5,742** | **1,382** | **1,675** | **8,800** | **1,696** | **10,495** | **7,724** | **2,772** |
| 4.1 | Barrel Photodetectors | 2,175 | 283 | 314 | 2,771 | 693 | 3,464 | 693 | 2,772 |
| 4.2 | Very Front-End Electronics | 2,835 | 451 | 922 | 4,208 | 717 | 4,925 | 4,925 | 0 |
| 4.3 | Crystal Processing | 176 | 270 | 291 | 737 | 72 | 809 | 809 | 0 |
| 4.4 | Monitoring Light Source | 556 | 379 | 148 | 1,083 | 214 | 1,297 | 1,297 | 0 |
| **5** | **Tracking** | **2,346** | **1,099** | **1,915** | **5,360** | **2,144** | **7,503** | **4,134** | **3,369** |
| 5.1 | Forward Pixel Tracker | 2,346 | 1,099 | 1,915 | 5,360 | 2,144 | 7,503 | 4,134 | 3,369 |
| **6** | **Common Projects** | **22,238** | **0** | **0** | **22,238** | **0** | **22,238** | **19,055** | **3,183** |
| **7** | **Project Management** | **0** | **0** | **5,080** | **5,080** | **813** | **5,892** | **5,892** | **0** |
| 7.1 | Project Administration | 0 | 0 | 2,651 | 2,651 | 424 | 3,076 | 3,076 | 0 |
| 7.2 | Technical Coordination | 0 | 0 | 2,428 | 2,428 | 389 | 2,817 | 2,817 | 0 |