### 3.2.3 Reliability Tracking (or Appendix F)

The software reliability tracking effort will start at the beginning of the software design effort in each of the nodes and/or components. Code design reviews will be held for each code module to ensure conformance with the particular contractors' standards and to identify and correct obvious errors. Beginning at the start of the Code and Unit Test (CUT) activity, quality metrics will be collected at all subcontractors for each of their coding efforts. For the Engineering, Manufacturing, and Development (EMD) phase of the program, collection and analysis will continue through all levels of code development, from CUT through Software Integration, Subsystem (node level) Integration, and System Integration.

### 3.2.3.1 Discrepancy Report (DR) Status

Each DR written against contractor-developed software will be prioritized into five levels as defined by the IEEE 12207 specification. Each DR will be initially assigned a level by the subcontractor developing that particular software. The prime integrator and the Government Program Office will perform an independent analysis and redefine levels accordingly. Graphs similar to Figures 1 and 2 will be maintained showing the number of open, closed, and resolved (fixed but not tested) statistics over time, by priority level.
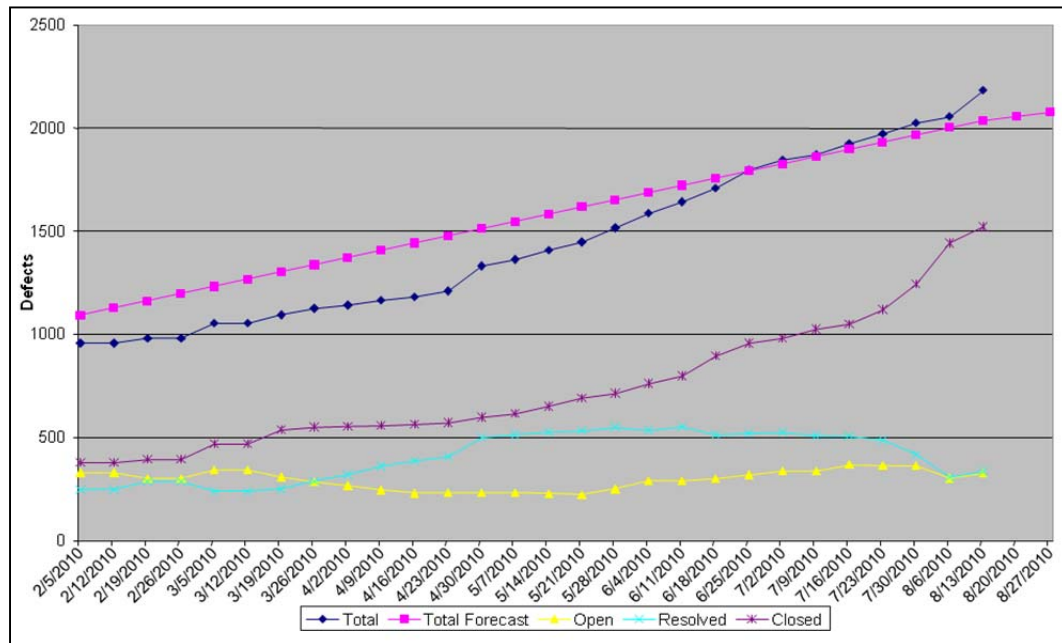


**Figure 1.  Example DR volume tracking (all priorities)**

### 3.2.3.2 DR Aging

DRs at each priority level will be tracked to show how many of each level were open for a particular timeframe by priority. The timeframes will be separated into 30-day increments, up

to a column for >120 days. The values in parentheses reflect the status from the previous reporting period.  Example data are shown in Table 1.
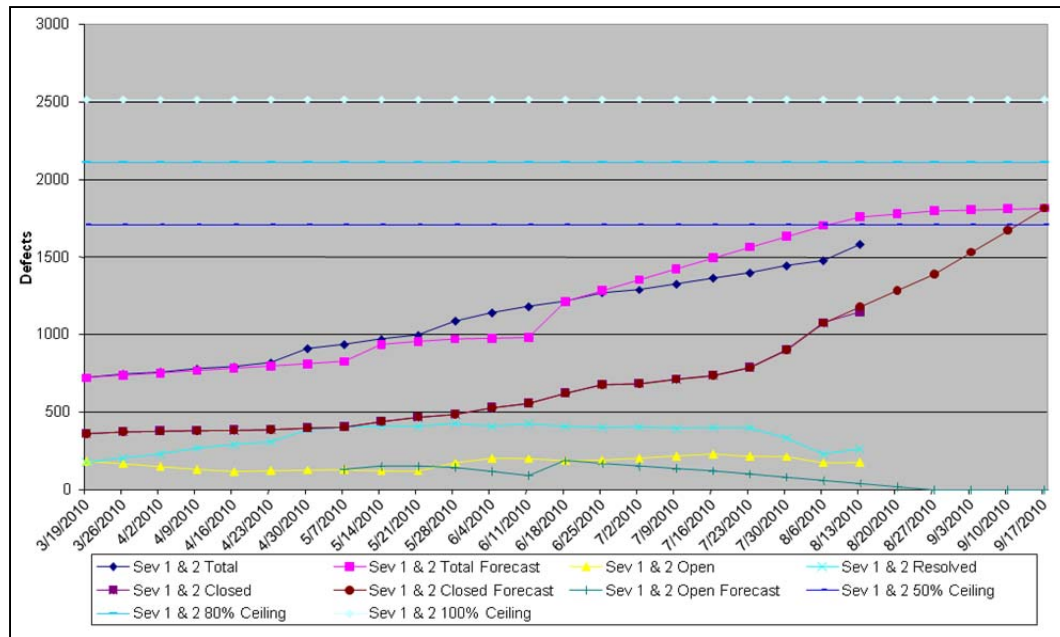


**Figure 2.  Example DR Volume tracking (Priorities 1 and 2)**

**Table 1: Sample DR Aging Metric**

| Severity | Assigned and Submitted Defects – Days Open | | | | |
|---|---|---|---|---|---|
| | 0-30 | 31-60 | 61-90 | 91-120 | >120 |
| 1 | 9(18) | 12(3) | 1(1) | 2(3) | 4(2) |
| 2 | 92(99) | 41(28) | 13(11) | 5(8) | 19(18) |
| 3 | 48(45) | 6(4) | 8(11) | 3(0) | 16(18) |
| 4 | 16(15) | 3(3) | 3(3) | 1(1) | 4(4) |
| 5 | 0(1) | 5(4) | 0(1) | 3(4) | 4(3) |
| Total | 165(178) | 67(42) | 25(27) | 14(16) | 47(45) |

### 3.2.3.3  Commercial Off The Shelf (COTS) DRs

The ageing statistic described above will be maintained for issues found with commercially purchased equipment, such as routers, servers, etc.

### 3.2.3.4  Software Management Strategy

Every DR will be analyzed to determine the effect of the failure. Using this information, a determination will be made as to the severity of the problem (Priority, as defined by the IEEE 12207 specification). All failures that rate a Priority 1 or 2 will be fixed prior to entering the next phase of testing.   These data will be collected and curves will be maintained throughout development and OT&E.