

ISSUE: NOT MEETING QUALITY GOALS

- Engineering senior management (VP and Director level) needs to know the current software operational defect density for each product in the field and how it compares to the goal.
- Engineering senior management needs to monitor the software defect density over time as it relates to the goal.

Information Needs

(for A & B) If OPERATIONAL DEFECT DENSITY > PRODUCT QUALITY GOAL then... OR (B only) If AGE < 180 days and projections based on current trend shows that OPERATION DEFECT DENSITY will likely exceed PRODUCT QUALITY GOAL then...
 ...investigate root cause and initiate corrective action (e.g., improve process for next product development effort, upgrade fielded product,, consider need to replace product in the field).

A Operational Defect Density by Product,
 B Operational Defect Density Status (Product)

Decision Criteria & Indicator

A. Monthly, generate a bar graph w/ goal and actual series where each data value corresponds to one product. Include only those products whose AGE > 180 days
 B. Monthly, generate a line graph w/ goal and actual series where each data value represents a monthly snapshot both measures. Use a 24 month rolling window. Include # DEVICES IMPLANTED for additional information.

Analysis Model

OPERATIONAL DEFECT DENSITY (PRODUCT)

AGE

Derived Measure(s)

= ESCAPED SW DEFECTS (PRODUCT) / TOTAL FPs (PRODUCT)

= Today's Date - RELEASE DATE

Functions

ESCAPED SW DEFECTS (PRODUCT)

TOTAL FPs (PRODUCT) aka SW Size

OPERATIONAL QUALITY GOAL (PRODUCT)

RELEASE DATE (PRODUCT)

Base Measures

• TBD - see Implementation Plan

• Soon after the release of a product to the field, conduct a FP count based on the SW Requirements Spec.

• At beginning of each product development project, establish goal based on 1) Reqts/ market/ Benchmarks, 2) Historical baseline data, 3) reasonable improvement targets

Measurement Methods



The Process (Entities & Attributes)