



Counting SLOCs, ESLOCs and Issues from an Estimating Perspective

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**32nd International Forum on COCOMO® and
Systems/Software Cost Modeling**

University of Southern California (USC)

October 17-19, 2017

SLOC = Source Lines of Code
ESLOC = Effective SLOC

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Tools

■ The Count

- Over 10 years of in-house development based on Unified Code Counter (UCC)
- The Count = UCC plus Boeing-specific GUI and features
- Separate development path from UCC
- XML and other newer languages/features

■ Unified Code Counter (UCC)

- Just completed trade study of The Count and UCC
- New large programs will use UCC and others will be encouraged
- Government requires UCC for programs with Software Resource Data Reports (SRDRs)
- Working to get easier access to UCC vs. lengthy corporate download process
- Creating guidance now

Approach to Sizing

- **Approach to Calculate Effective Source Lines of Code (ESLOC)**
 - New vs. reuse
 - Count at file level or line level?
 - If a file has lines added/modified/deleted, is the entire file counted as modified?
 - If you add a line to an existing file, is this one new line of code?
 - How do we do this consistently between estimates and actuals?
 - Subjective nature of %redesign, %recode, %retest
 - How to do this consistently across programs and between estimates and actuals?
- **Provide Guidance for Assessing %redesign, %recode, %retest**
 - Suggested scenario values and starting points
 - Process-weighted worksheets
 - Formulas based on “altered” (add, deleted, modified) SLOC counts

Counting Baselines

- **Maintain a Counting Baseline to Capture Product Line Changes**

- Document how to run the code counting tool
- Maintain consistency among users such that they can achieve the same count
- Include directories, types of files to include/exclude
- Which teams develop which code
- Points of contact

- **Developed Desk Instruction for the Process**

- A new employee could get access to the files and run the tool
- Base ESLOC values will be the same (New, Reused Modified, Reuse Unmodified)
- Subjectivity of %redesign, %recode, %retest remains

Product Lines and Auto-Generated Code

- **Product Line Differences**

- Different configuration management tools
- Moving files
- Folder name changes
- File name changes
- Files that change under different projects

- **Auto-Generated Code**

- Model-Based Development
- Non-Software groups
- Non-ESLOC sizing
- Discrete estimates

Agile Development

■ Agile and Incremental Development

- Frequent iterations
- Refactoring of code
- Can ESLOC > Delivered SLOC (DSLOC)?
- “Not invented here” mentality -> scrap and start anew!
- Build-to-build integration
- More testing hours in later iterations

Metrics

- **Metrics**

- Size
- Cost data
- Productivity
- Estimates-at-Complete (EACs)
- Predictions