Baselining the New GSFC

ISC Information Systems Center

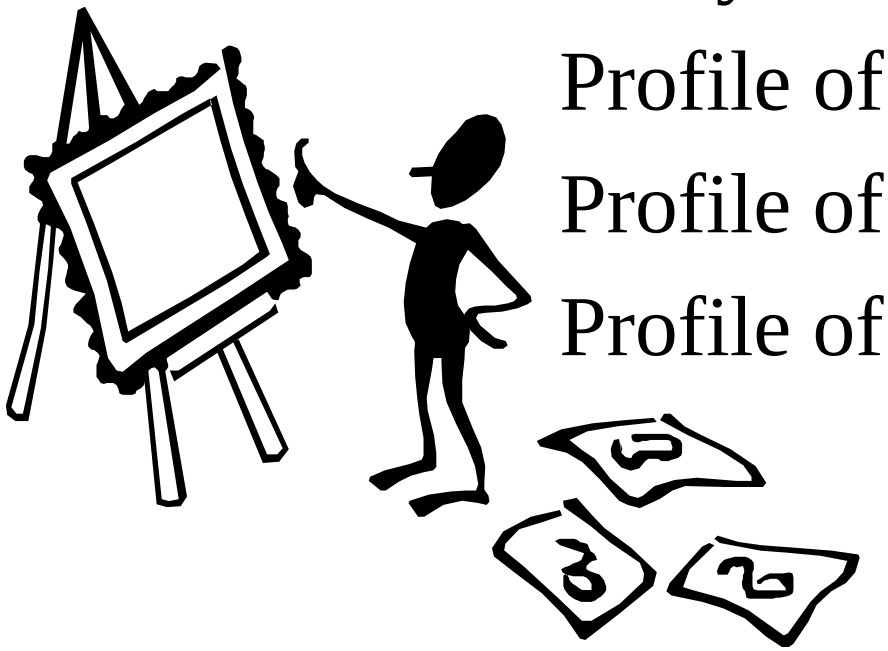
The Foundation for Verifiable Software Process Improvement

A. Parra, D. Schultz, J. Boger, S. Condon, *CSC*

V. Basili, R. Webby, M. Morisio, D. Yakimovich, J. Carver, M. Stark, *U. of MD*

S. Kraft, *GSFC*

Prior Baseline Studies



Many Baselines of FDD

Profile of GSFC Code 500 (1993)

Profile of GSFC (1994)

Profile of NASA (1995)

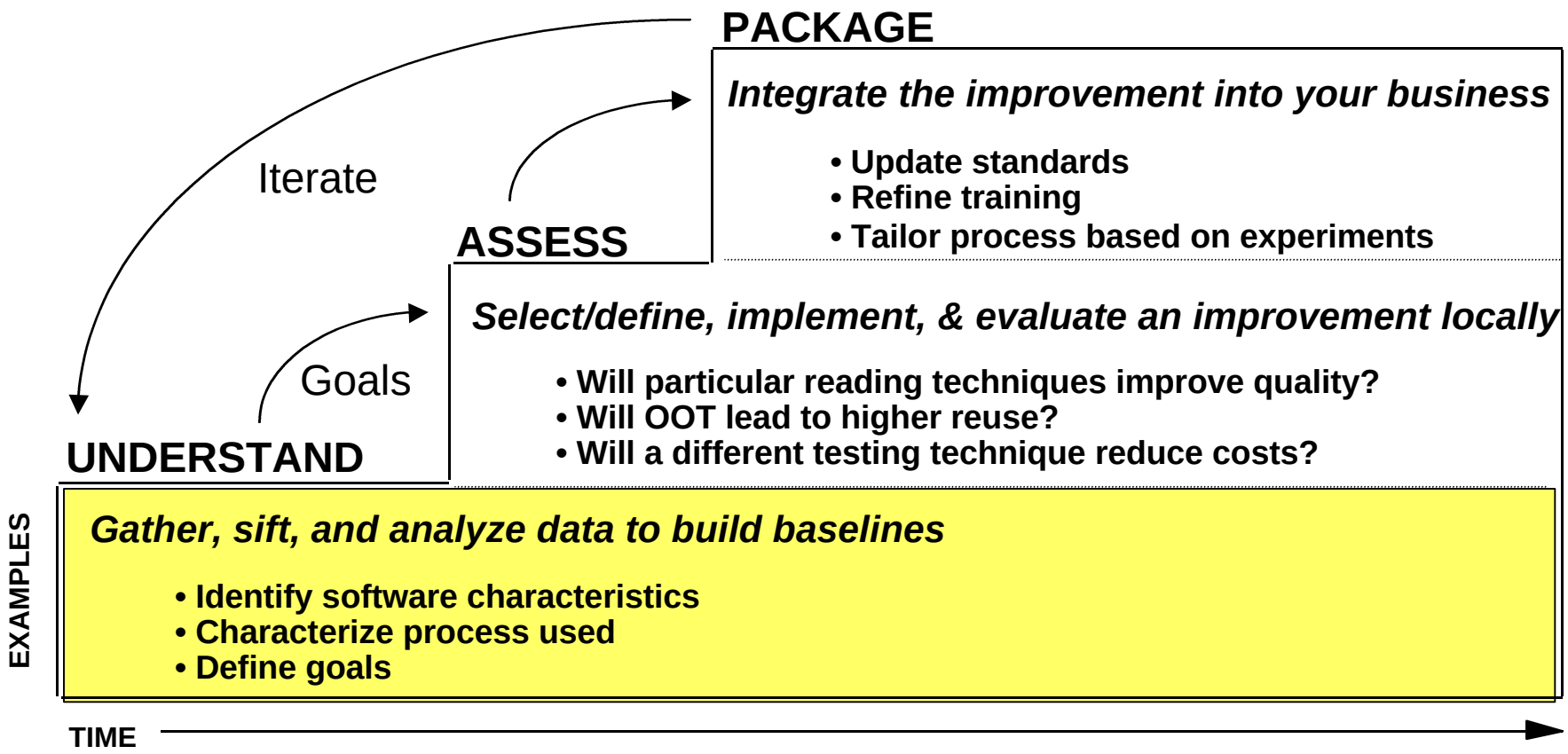
What's a Baseline?

organization
product
process

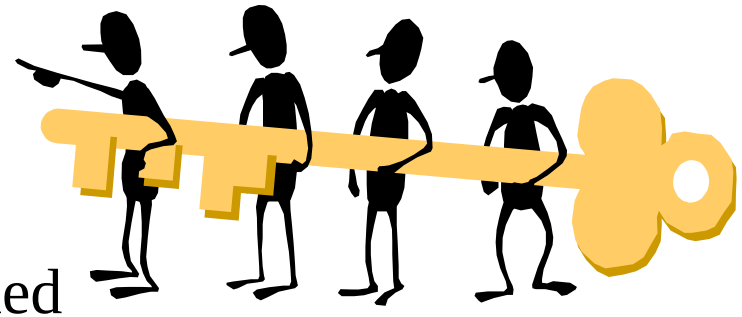
- Identify software characteristics
- Characterize process used
- Define goals
- Develop models to measure improvements

Gather, sift, & analyze data to build baselines

Role of Baselines in Process Improvement



Produce a baseline characterization - branches & teams



Short term benefits -

share lessons learned

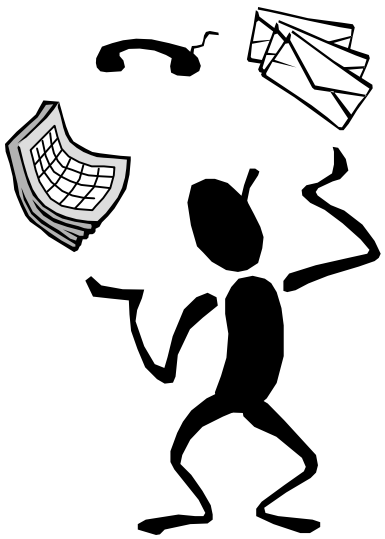
better understanding of the ISC

Long term benefits -

demonstrable product and process improvements

Methods of ISC Baseline Study

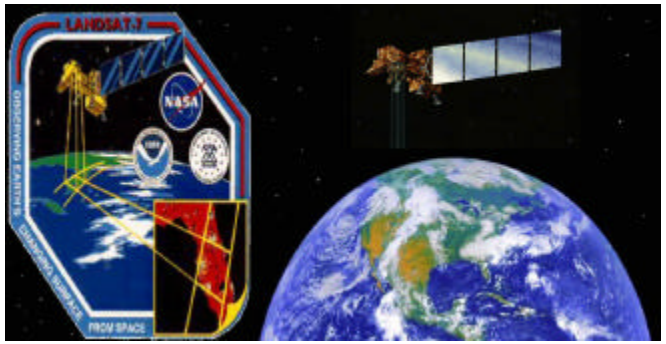
- Gather information at two levels
  - Branch
  - Team
- Gather information in two modes
  - Structured interviews
  - Questionnaires
- Analyze data
- Verify data & results with data provider



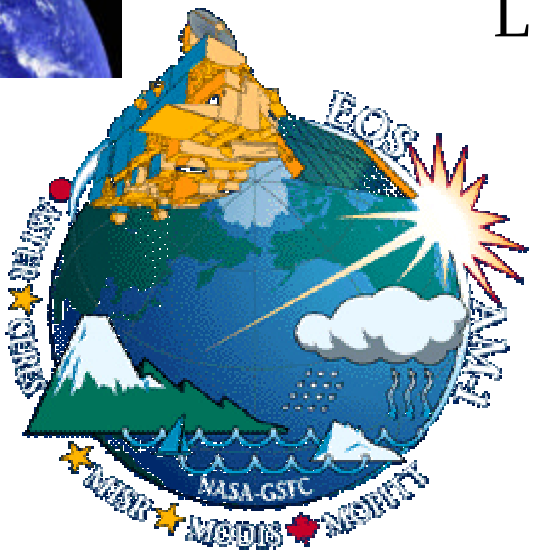
Next Steps for the Baselining

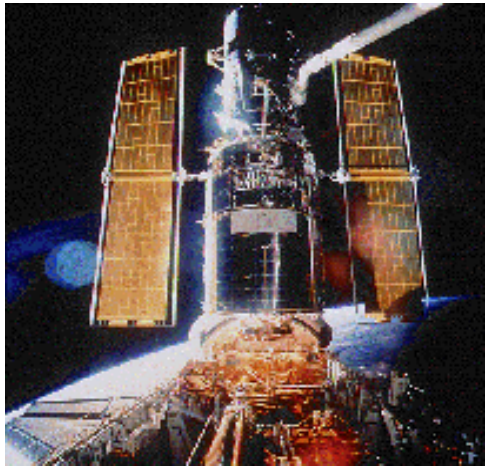
- Complete team level data extraction; analyze team level results
- Compare branch and team level data results
- Publish ISC baseline
- Study ISC environment
- Build models for ISC

The Diversity of ISC

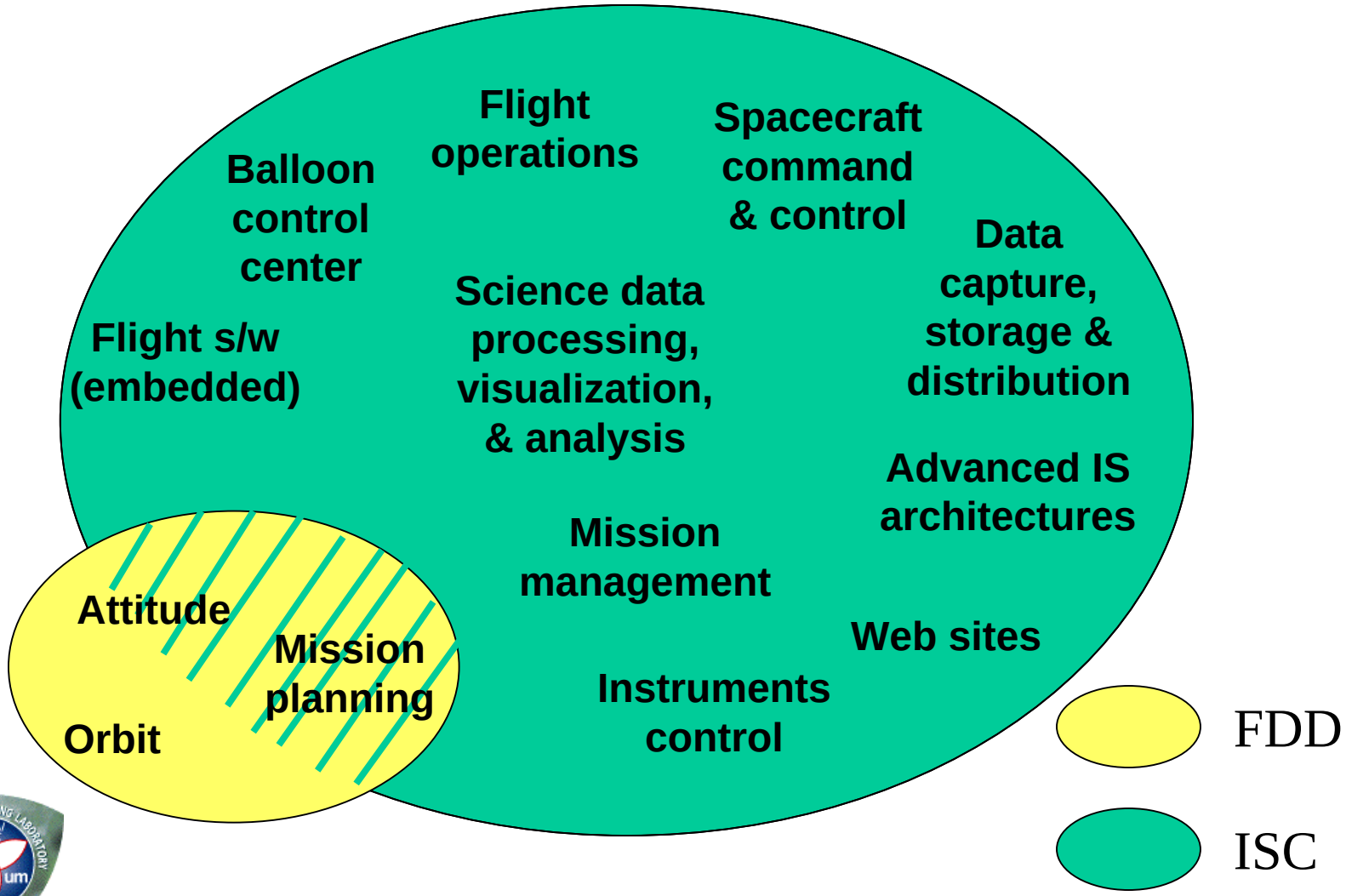


Application Domains
Matrixing
COTS Usage
Software Activities
Language

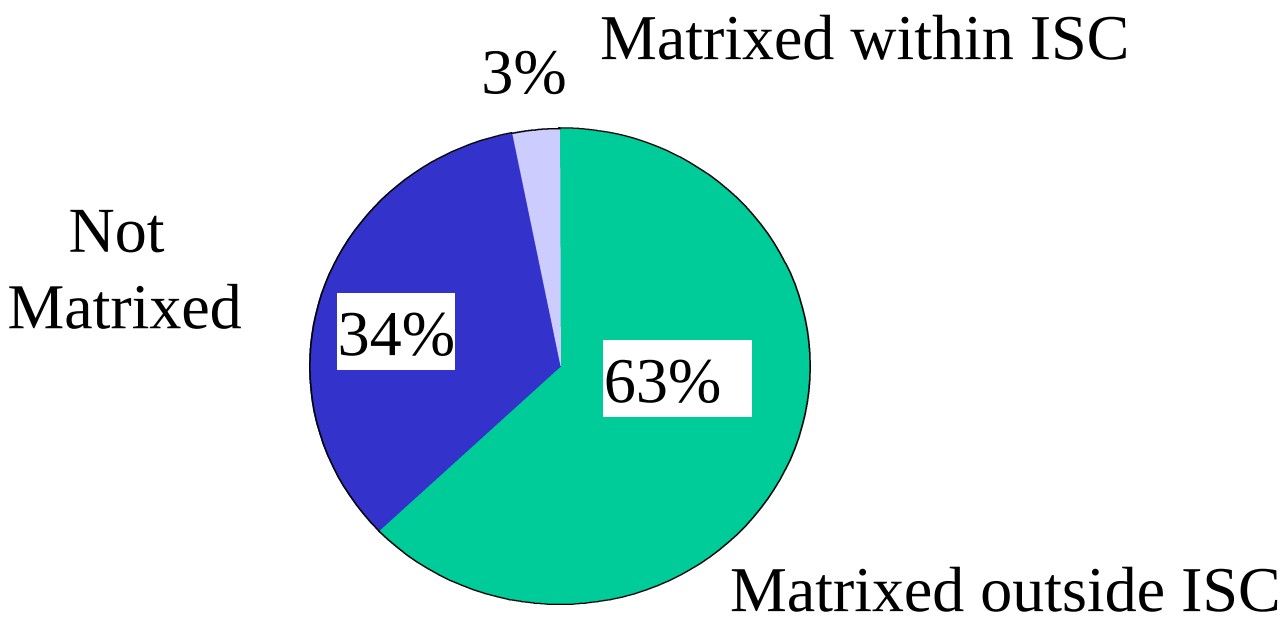


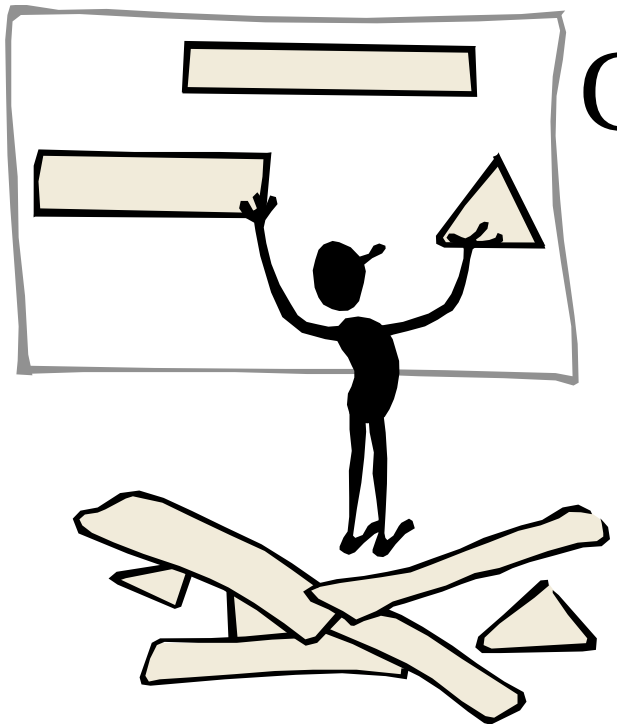


Application Domains



Matrixing

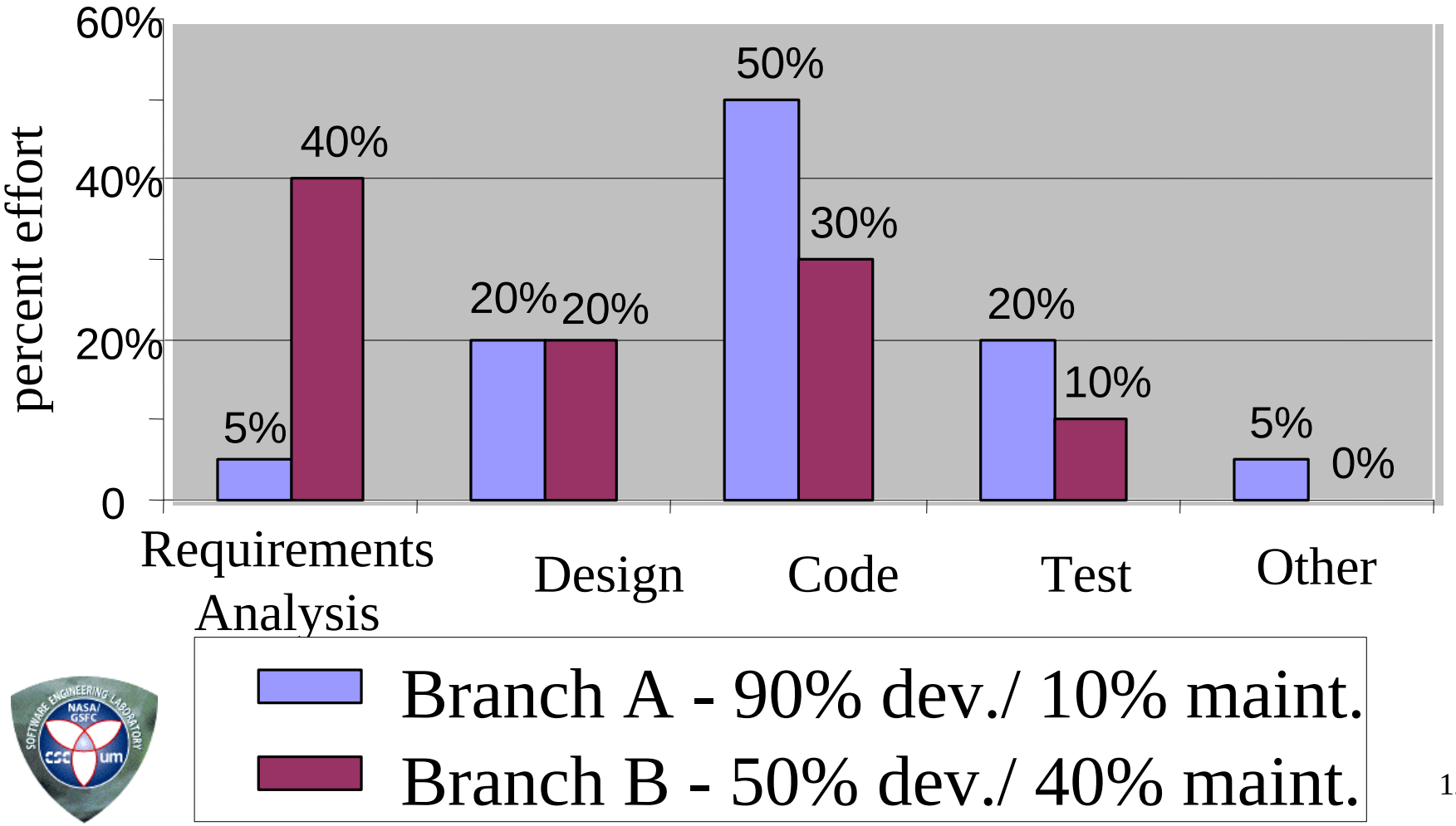

3%
Matrixed within ISC
Not Matrixed
34%
63%
Matrixed outside ISC



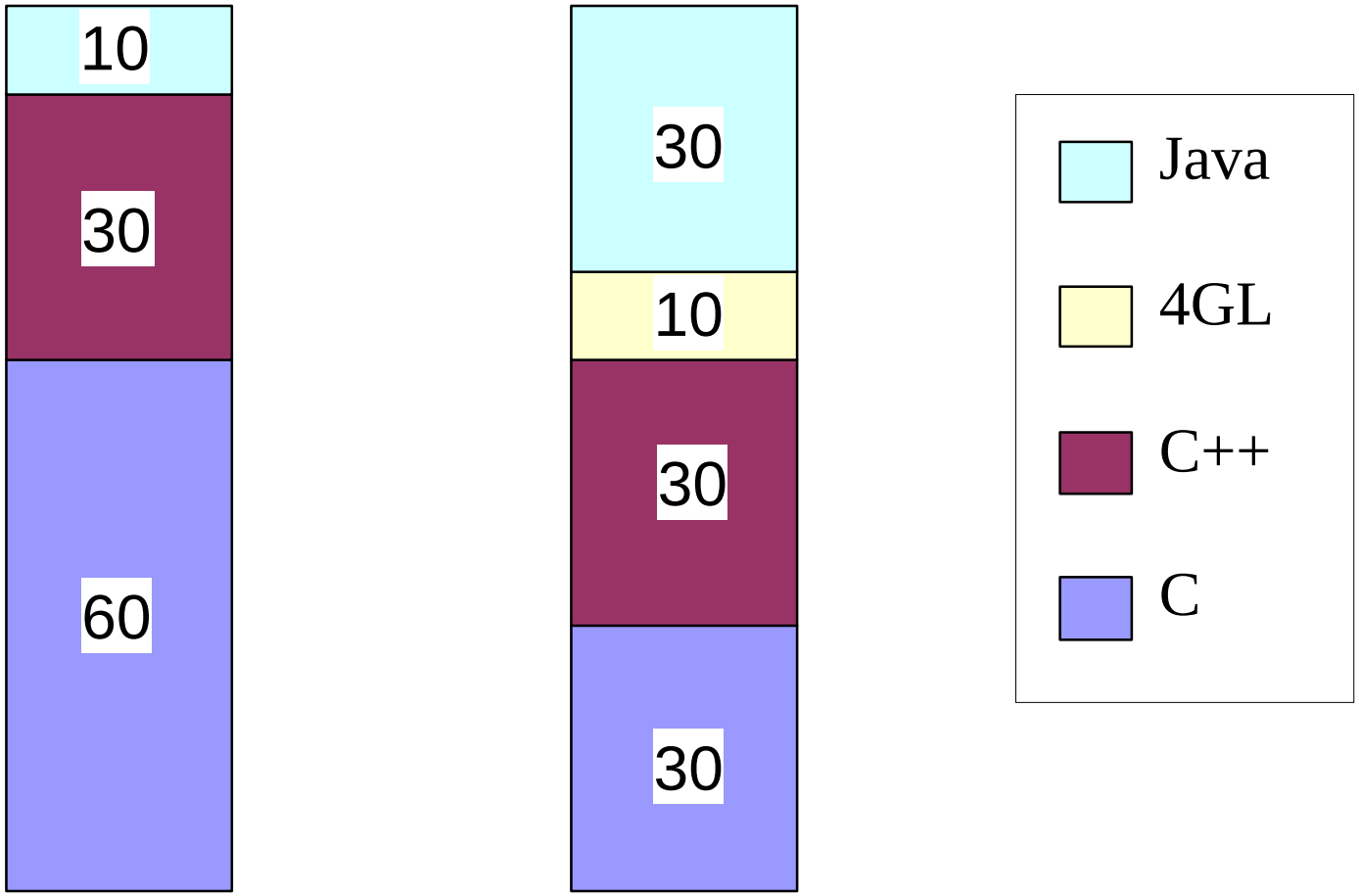
COTS Usage

- Heavy COTS usage across all branches
- Diverse COTS products support unique Application Domains

Software Activities



Language Mix



Existing Software

New Software

Initial Conclusions & Implications

- Diverse Domain - multiple models
- Matrixing - opportunity for Tech Transfer
- COTS - important issue, continue studies
- Software activities - multiple models
- Language Mix - evolution within a branch

Proposed Focus
based on Baselining Experience

- Cost estimation/defect models
- COTS Studies
- Process Improvement Program
  - To tailor & integrate in evolving organizations