

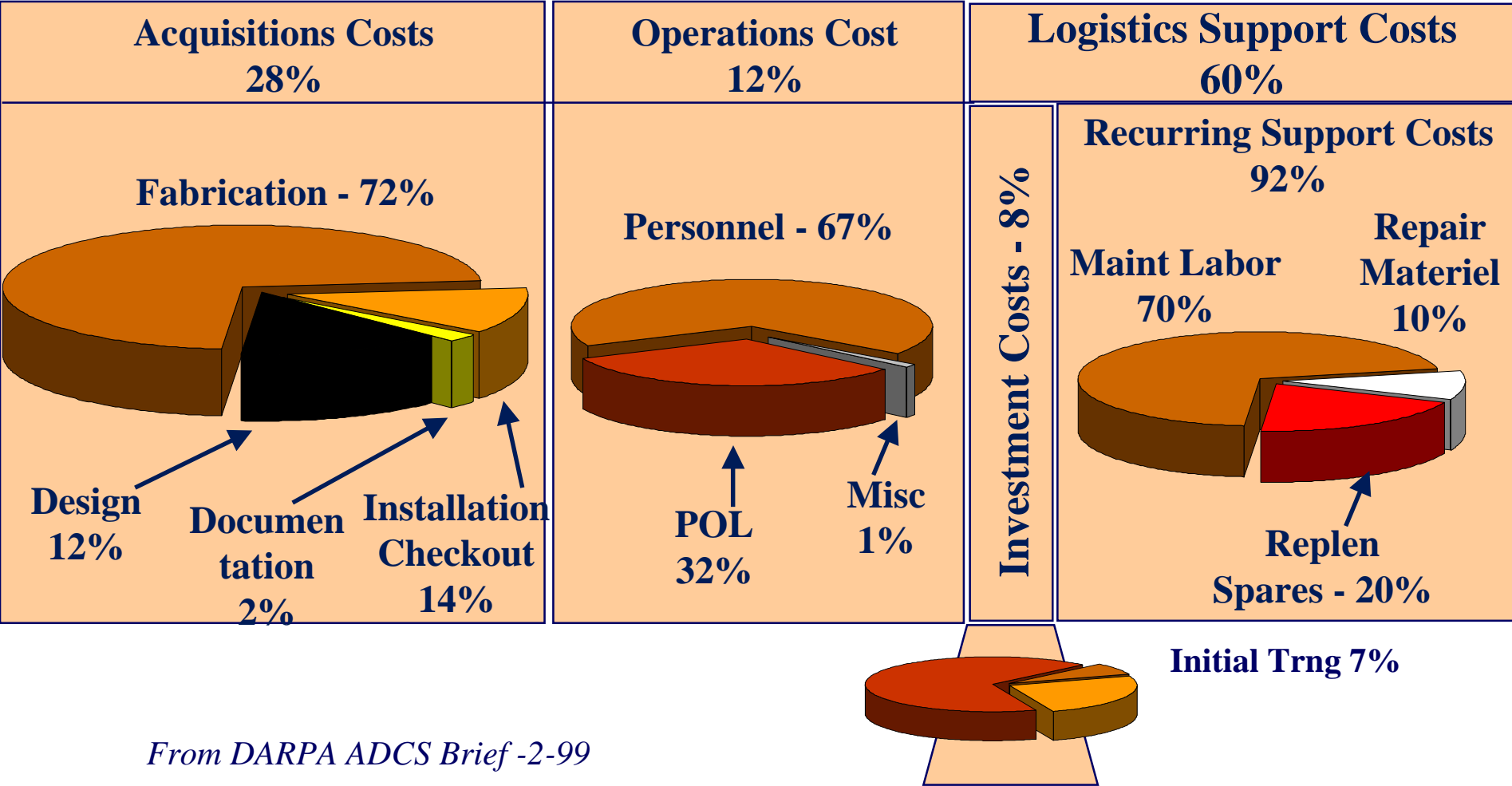


Contact Information: Ron Wagner, Director
Tel. 404.894.3357
ron.wagner@gtri.gatech.edu

Why Should the T&E community care about Life Cycle Cost?

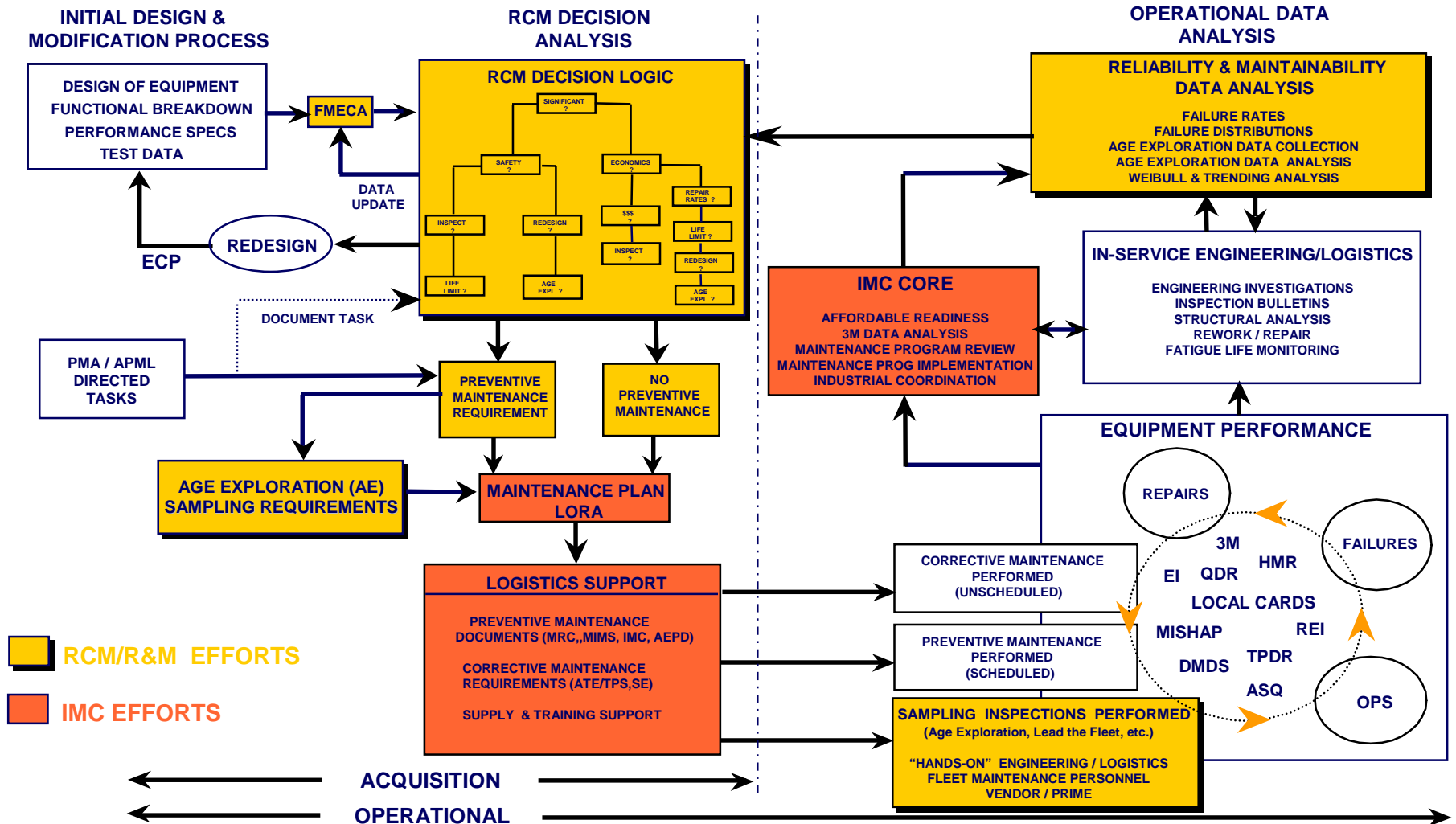
- ◆ Performance-based acquisition will eliminate suitability testing?
- ◆ It's another "illity" to substitute.
- ◆ It will stretch out the testing period.
- ◆ You've already paid the conference fees and you may as well listen?

Life Cycle Cost Distribution



From DARPA ADCS Brief -2-99

RCM Model



The T&E community should care about Life Cycle Cost because

- ◆ There is opportunity to collect data during DT & OT periods that will assist Reliability Centered Maintenance (RCM) activities to improve system affordability.
- ◆ More emphasis on collecting RCM data during DT & OT may improve availability of the system to the tester...less down time .
- ◆ Support of the RCM program during testing helps to support the program team achieve an increasingly important objective.

OT&E vs Affordable Readiness Analysis

Suitability

Reliability

Maintainability

Availability

Supportability

Compatibility

Interoperability

Training

Human Factors

Safety

Affordability

“O” Level Maint. Personnel

Depot Repair

“I” Level Maint. Personnel

“I” Level Material

Recurring Facility Cost

Support Equipment Maint.

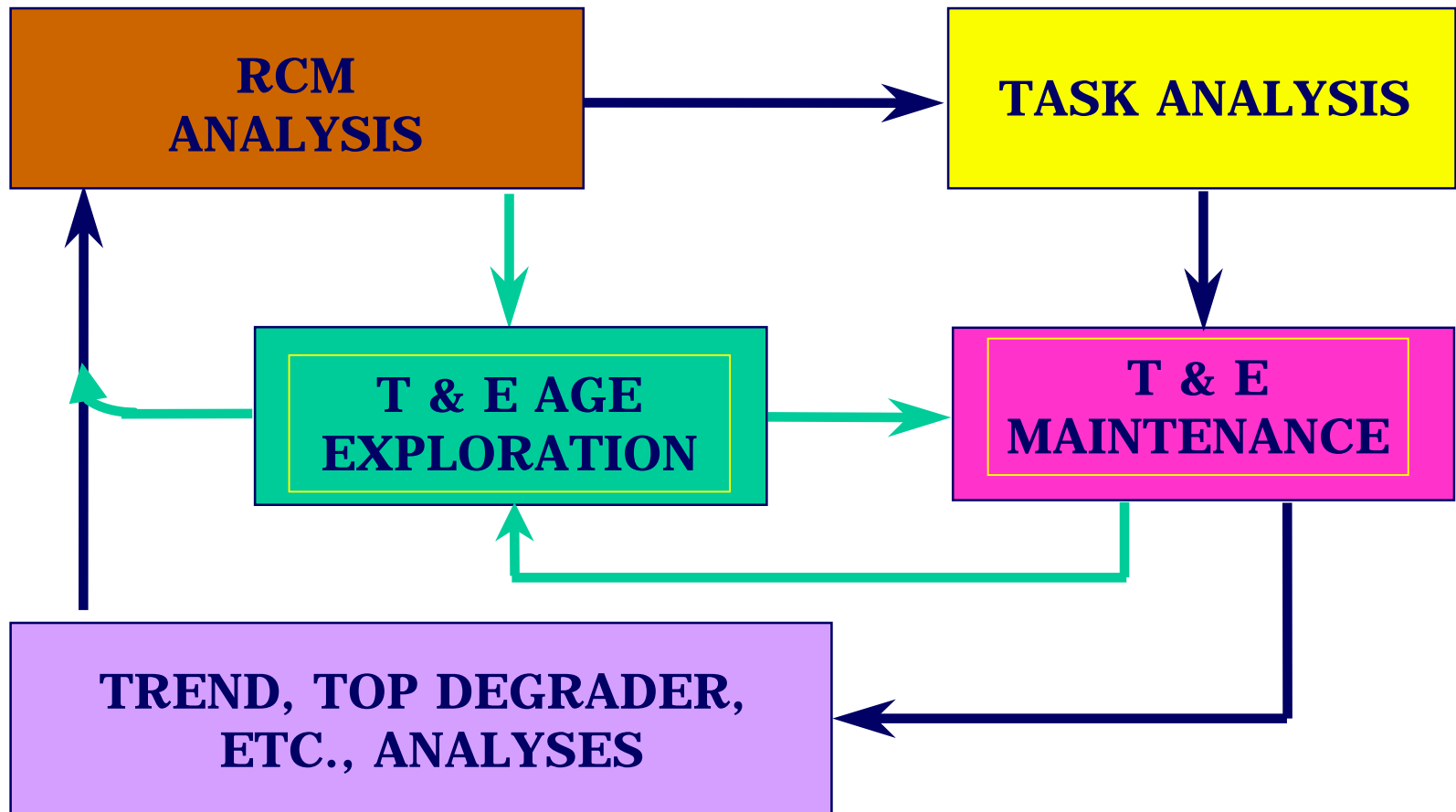
Software Maintenance

Recurring Training Cost

Program Support (CFA)

RCM PROGRAM IMPLEMENTATION

INITIATING AN RCM-BASED PM PROGRAM



Proposed New Acquisition Approach to Affordability

- ◆ Plan a P3I Maintenance Driven Cost Reduction Effort
- ◆ Use FMECA simulation to identify critical failure systems
- ◆ Instrument the critical systems with emerging technology sensors during DT & OT Testing
- ◆ Build a new system RCM model based on like-and similar systems
- ◆ Collect data on affordability parameters for critical systems IAW Maintenance Trade Cost Analysis Handbook
- ◆ Compare observed performance during T&E with RCM models for like-and-similar systems
- ◆ Propose Logistics Engineering Changes based on T&E observations

Proposed New T&E Approach to Affordability

- ◆ Develop an Affordability study baseline
 - Identify an analogous fielded system with recent maintenance history
 - Identify the affordability drivers based on history and FMECA simulation
 - Identify the level that the data needs to be collected based on similar system
 - Construct a three year history of of costs IAW Maintenance Cost Handbook
 - Inflate all historical costs to a constant year base
 - Convert the costs into an average cost per operating hour
- ◆ Collect operating costs during DT & OT Testing for same systems
- ◆ Identify differences that would impact total ownership cost
 - Complexity differences
 - R&M differences
 - Maintenance Differences (Source, level, skill, equipment)
- ◆ Quantify deviations/savings including labor expressed as cost



**Integrated Predictive
Diagnostics**

**Supply Chain and
Obsolescence
Management**

**Logistics and Maintenance
Applied Research Center**

**Integrated Data
Environment**

**Maintenance
Technology**