CarnegieMellon
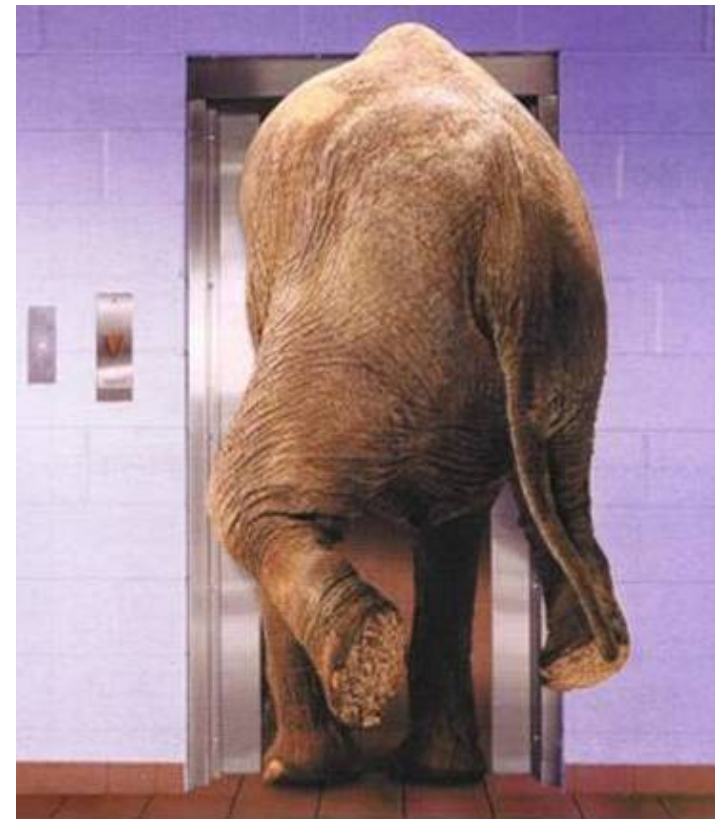**Software Engineering Institute**

Pittsburgh, PA 15213-3890

Process Mismatch with COTS-Based Systems: Problems and Solutions

GSAW Breakout Session Outbrief

Carnegie Mellon
Software Engineering Institute

Participants -1

Moderators
- Ceci Albert, SEI
- Lisa Brownsword, SEI

Discussion instigators
- Don Sanders, ISI
- John Brown, ISI
- Mary Rich, Aerospace

Participants -2

Recommendation contributors:

Gineen Zabolotnyy, Lockheed
Paul Weyman, Universal Space Network
Martin Frank Wasiak, General Dynamics
Mike Todaro, ISI
Candace Shoemaker, General Dynamics
Steve Rutkowski, Raytheon
Joe Romero, SMC/MCC
Tom Reiners, Aerospace
Wayne Otsuki, Aerospace
Steve Heidorn, Aerospace

Mark Hardgrove, Northrop Grumman
Don Gorman, USAF
Tracy Estes, Honeywell Technical Solutions
James De Vries, Naval Satellite Ops Center
Young Chae, Ducom, Inc
Rich Carnahan, Lockheed Martin
Sheri Bundsen, Aerospace
Wynn Battig, Aerospace

Carnegie Mellon
Software Engineering Institute

Breakout Session Objective

Recommend suitable requirements and architecture processes for acquiring, developing and maintaining COTS-Based Ground Systems

What do we want from COTS?

Meet real needs/operational requirements with capability that you can believe in

- Formal certification???
  - for security
  - networthiness
  - human factors
  - standards compliance

And the usual suspects … cheaper, sooner, ease of maintenance, new features, maturity of products, recapitalization of investment

Requirements Processes

How do we have an honest dialogue early enough?

Underlying needs:
- Acquirer wants to avoid protest
- Acquirer wants ease of evolution and maintenance of system
- Offeror wants to look good to win the business
- Integrator and vendor want to protect competitive environment/avoid protest

Recommendations:
- Prototypes help
- Prioritize requirements
- Define "must haves", growth needs (vs objectives)
- Specify "ideal" but potentially unachievable requirements
- Leverage use cases to capture requirements (captures behaviors of the operators)

Architecture Processes

What do we want from an architecture?

Underlying needs:
- Acquirers want to
  - analyze attributes (e.g. flexibility, replaceability), understand the system to refine requirements
  - visibility to assign responsibility, analyze risk
  - protection of investment (vendor goes out of business, contractor no longer interested)
- Integrators want to
  - evaluate choices of COTS products, encapsulate product to fit needs
  - make system work
  - interpret requirements, anticipate growth
- Vendors want to have product used and protect position in market

Recommendations:
- Be flexible across stakeholders
- Band together to define domain-specific reference architecture – create market incentive

Carnegie Mellon
Software Engineering Institute

In Summary

Conflicting interests and needs were surfaced

The necessary dialogue has just begun…