

# **GSAW 2003 COTS Integration**

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## **COTS Based Systems Issues**

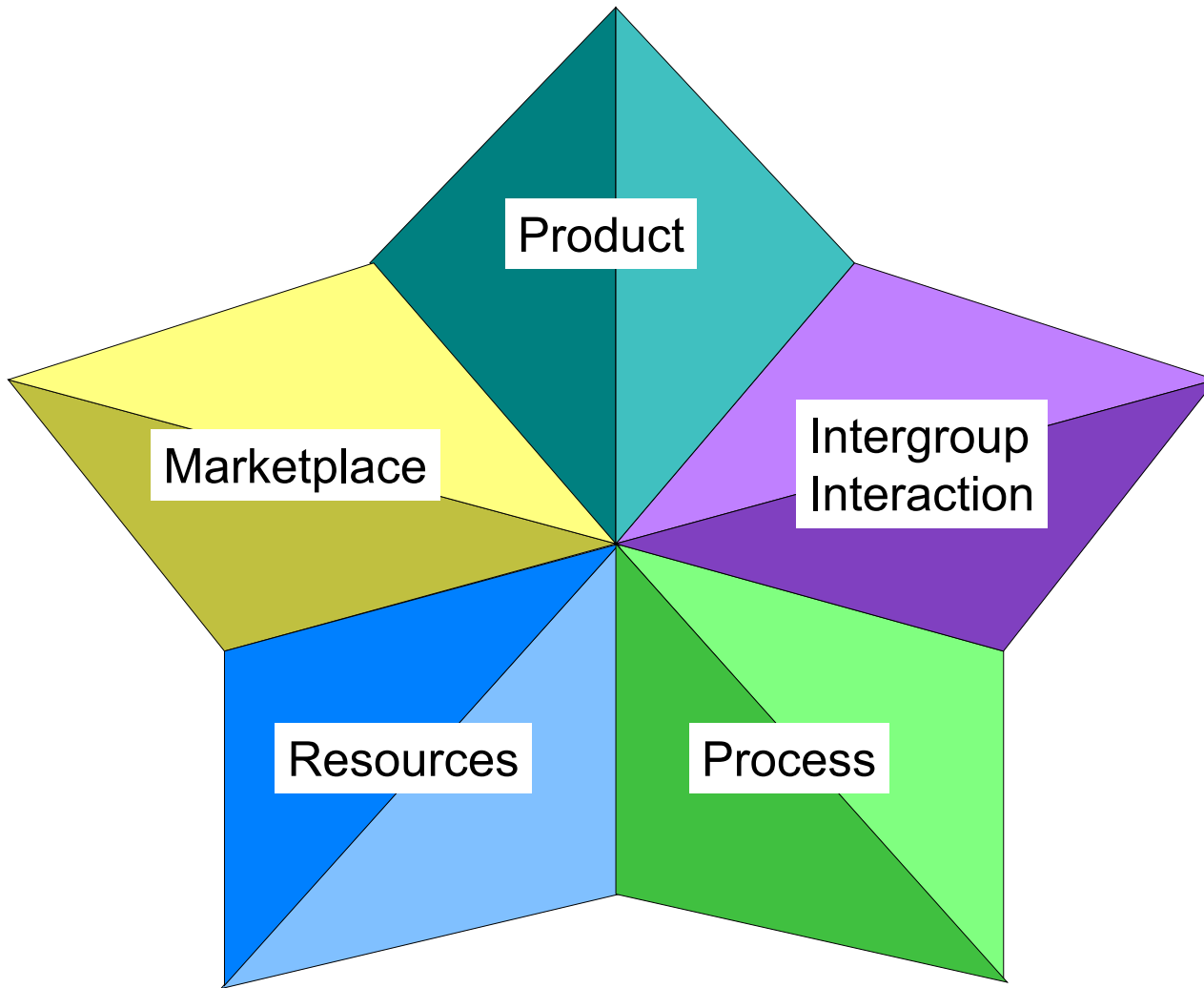
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# **Issue Dimensions**

# Some Emerging Issues from Kohl

- RK01** • **COTS ‘certification’**
- RK02** ❖ What is it? Approaches to achieve it?
- RK03** ❖ How to measure or validate it?
- RK04** ❖ As compared to custom built software ‘certification’
- RK05** • **COTS content at major milestone reviews**
- RK06** ❖ SRR, SDR, PDR, CDR, TRR, etc
- RK07** ❖ What content should be presented at each review?
- RK08** • **COTS impacts to lifecycle processes**
- RK09** ❖ Changes to existing processes (requirements, evaluation)
- RK10** ❖ Differences in sequence of activities
- RK11** ❖ Milestone review impacts (see 2<sup>nd</sup> bullet)

# Product Issues

- PD01 • **Requirements vs. COTS capabilities**
- **Integration of**
- PD02     ❖ Multiple COTS products
- PD03     ☞ Incompatibilities among COTS products
- PD04     ❖ COTS products with new/reuse software
- PD05 • **COTS independent architecture**
- PD06     ❖ Designing architectures for COTS evolution
- PD07     ❖ Designing in safety, security, supportability
- PD08 • **Mission risk**
- PD09 • **Cross platform portability**
- PD10 • **Standards: good, bad, ugly?**
- PD11 • **API breakage (“unplug and replay”)**
- PD12 • **Dormant functionality or features**
- PD13 • **Adverse effects of product upgrades on system**

# Process Issues - Developer

- PC01 • Robust initial and periodic COTS product evaluation**
- PC02 • Prototyping in a system context**
- PC03 • Testing in operational context**
- PC04**      ❖ Regression testing of upgrades in system context
- PC05 • Adapting software and systems engineering processes for CBS development and maintenance**
- PC06 • Still need systems and software engineering**
- PC07 • Need enhanced CM processes**
- PC08 • Planning for COTS upgrades and evolution during development and maintenance**
- PC09 • Selection of hardware platforms with availability of COTS software as key criterion**

# Process Issues - Customer and User

- PC10 • Acquisition and support strategies**
- PC11 • Adapting customer/user processes to CBS**
- PC12 • acquisition, operations and maintenance**
- PC13 • Processes for trading cost, schedule, requirements, and O&M concepts against COTS capabilities**
- PC14 • ❖ Need requirements prioritization**
- PC15 • Need contracts compatible with CBS development and maintenance**
- PC16 • Standardized processes for safety certification and security accreditation of CBS needed**
- PC17 • Standardized license processes to ensure suitability of licenses and maintaining currency**

# Resource Issues

- R01** • **Cost vs. benefit of upgrading**
- R02** • **Acquiring and maintaining CBS skills**
- R03** • **Accurately costing all aspects of CBS development and maintenance**
- R04** • **Optimal scheduling of upgrades**
- R05** • **Increased computer resources for upgrades**
- R06** • **Modifying COTS is a BAD idea!**
- R07** • **Need cost and schedule management reserves**
- R08** • **Reallocating time and effort across life cycle**
- R09**     ❖ **More time for evaluation, prototyping and analysis**
- R10**     ❖ **Less time for implementation; more time for integration**

# Marketplace Issues

- M01 • Product maturity**
- M02**      ❖ Dropped or de-emphasized platforms and products
- M03**      ❖ Changes in fees and fee structure for licenses and services
- M04 • Marketplace maturity**
- M05**      ❖ Vendor volatility
- M06 • Vendor responsiveness**
- M07**      ❖ Changes in type and quality of vendor support
- M08 • Definition of COTS (=“for sale”)**
- M09 • Suitability of licenses for user application (e.g.,  
expiring keys, export restrictions)**
- M10 • Release schedule, content and quality  
unpredictable**
- M11 • Rapid technology turnover and limited support of  
past releases**



# Intergroup Interaction Issues

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- IG01 • Customer resistance to COTS--NIH**
- IG02 • Excessive customer bias toward COTS**
- IG03 • Vendor relationships**
- IG04 • Establishing and maintaining active**
- IG05 partnership between customer, developer and user**
- IG06 • Need flexible and efficient responses to unexpected impacts by customer/user**

# What are Your Experiences with CBS?

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- **Successes**

- ❖ What successes have you experienced (directly or indirectly)?
- ❖ What factors contributed to the success?

- **Problems/Failures**

- ❖ What problems have you experienced (directly or indirectly)?
- ❖ What factors caused the problems?
- ❖ What would you do differently to remove the problem or reduce its impact in the future?

# Survey on COTS Upgrade Release Frequency

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1. In your experience, what is the average duration between releases of a given COTS Product?
  - ❖ GSAW 03 = x months (range: x to x)
2. For system(s) with which you have experience, how frequently are system upgrades released that incorporate COTS software upgrades?
  - ❖ GSAW 03 = x months (range: x to x)