Update on OMG SACM specification
Summary

- Background
- A tale of two specifications
  - ARM – Argument Metamodel
  - SAEM – Software Assurance Evidence Metamodel
- Combining as SACM
  - Structured Assurance Case Metamodel
  - Challenges
    - Timing/consensus
- Current status
  - Hope to release SACM Spring 2012
  - Tool support for ARM now
Background

- OMG – Object Management Group
  - Famous for UML/SysML/Corba specifications
  - Focus on Industry standards for exchange
- Adelard and University of York have been collaborating for some time to develop a unified model for assurance cases
  - Developed ARM
    - Represents combined view incorporating GSN and CAE
    - Is a recommended OMG specification
- Also SAEM
SACM

- Developed by OMG System Assurance Task Force
  - SACM Finalisation Task Force (FTF) sub group: the specification
  - Bring together two issued OMG specifications: ARM and SAEM
- SACM FTF participants:
  - UK: Adelard (chair), University of York
  - US: Lockheed Martin, Mitre Corp, Citigtlal, NASA, NIST, Carnegie Melon
  - Canada: KDM Analytics
  - Japan: University of Tokyo, AIST
- OMG process dictates timeline to complete by June 2012
SSEI task 20

- Some UK participation was funded by recent MoD/SSEI task
  - Adelard/York + Independent review by Integrate
  - Seen as being to UK benefit to drive international standards in this area
  - Task concluded April 2011

- Final report concluded
  - ARM was well aligned with UK policy for safety cases could be adopted
  - SAEM needed further simplification to ease user adoption
    - Over 100 modelling classes
  - Final report available via SSEI
OMG Assurance Case standards - now

But technical interface is not fully specified
SACM - harmonisation

ARM: Structured argument

Claim

Claim

Claim

Claim

SAEM: Evidence repository

Some pain...

SACM??
SACM - challenges

- Technical
  - Different world views
  - Different modelling approaches
    - World of claims and argument – ARM
    - World of “facts” – SAEM
  - Some overlap in scope
    - E.g. when is a “fact” a “fact”? 

- Challenges of standardisation itself
  - Consensus, Many participants, Attendance, Funding
  - OMG strict timeline
    - 2 years to “Finalise” specification

- Fall back picture would be to release ARM and SAEM as independent specifications
SACM release schedule

- OMG working meetings:
  - September
  - December
  - March

- OMG process of soliciting and dealing with comments
  - 200 issues in our online issue tracking system
  - Voting in batches

- FTF report due March 2012

- If successful, specification to be released June 2012
  - Fall back position of sticking with ARM and SAEM
ARM plugin for ASCE
Tool support for ARM

- There are pre-defined mappings from existing established notations for structured arguments:
  - Claims, Arguments and Evidence
  - The Goal Structuring Notation (GSN)
- Other tools that implement above notations could easily write import/export filters

- Some tool support already available
- Following slides focus on support in ASCE
ARM plugin concept

- CAE and GSN have mappings into OMG ARM
- Have developed a plugin for ARM exchange from ASCE
  - Simple menu based user interface
  - Import/Export
- Fairly straightforward exercise
  - Approx 1000 lines of code
- Status
  - Export – implemented
  - Import – under development
- Compliance with OMG ARM:
  - Generates valid ARM XMI in accordance with ARM specification
- Availability: To customers on request
ARM plugin

- Provides menu entries for ARM Import/export
  - On ASCE’s file menu
- User interface (forms) to assist user
SACM metamodel – current draft

For the brave...
End of slides