Standards Based Approach to EA and SOA in the MOD Logistics Enterprise

…….MODAF, FredSpec, OAGIS, STEP, SGML, XML, ASD – S1000D, W3, RDF, SOAP, WSDL, UDDI ……..*

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Agenda

- **Context**
  - Defence logistics as a Network
  - The problem
- **Approach**
  - Enterprise Architecting
  - IS/IT standards
  - Logs EA Implementation & SOA De-risking
  - Logs SOA Pilot Architecture Overview
- **Future**
  - What next for Log EA & the SOA Pilot?
- **Questions & Discussion**

Context – the Network

Defence Logistics already an extensive Networked Enterprise

- **Needs:**
  - To be **Agile** to changes in user demand or external events
  - To deliver the **material and information** needed by the Front Line Commander
  - The information to support **logistics decision-making**
    - Tactically
    - Strategically
    - Through Life
    - Throughout the acquisition cycle
      - From MOD Capability need to delivered logistic effect
  - To be **cost effective**
    - overall system to be effective at minimized cost
  - To **integrate** with:
    - Industry
    - OGDs
    - Partner Nations

Context - The Problem

- **Current Defence Logs landscape:**
  - Multiple stove-piped activities
  - Multiple non-interoperating IS/IT systems
  - No single view of the processes being delivered
  - Process descriptions (where they exist) cannot readily be re-used or shared
  - No single view of the high level logs business levers or key system effects
  - Data is held in a multitude of standards and formats
    - Often proprietary and with data model under vendor IPR
  - EAI hubs beginning to improve the data landscape
  - Good IS/IT governance at the solution design level
  - Poor requirements definitions for IS/IT business enabling solutions
  - IS/IT solutions Tightly Coupled and high procurement/through life/change costs
  - Business and IS/IT enabler change is too slow and too expensive
- **But the bottom line …..**
  - **We can no longer afford to continue this way**
  - *And the electronic knowledge/information/data landscape continues to accelerate!*
  - *And we need to be more 'joined up'*

Approach – Enterprise Management

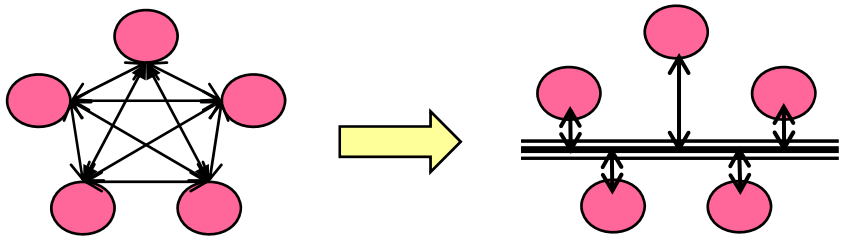
How do we get (defence logistics) out of the mire?

- **Start with Logs as a 'one-box model'**
  - **Take a Service Oriented Approach**
    - Understand the **effects** to be delivered
    - Understand the Logs **context**
- **Adopt a 'common language'**
  - Describe the business and its components
    - ie – what's inside the 'one-box model'
  - **Re-usable** across the enterprise
  - Immediate **sharing**
  - Join design time with solution design and 'run-time'
  - Coherent with the rest of MOD
    - **MODAF is the standard**
    - Common approach to Enterprise Architecting
- **Provide ready access to architectural products and Logs EA 'rules'**
  - Establish a **governance** regime
  - Joint Logistics Architecture (**JLA**)
    (for those inside the MOD Firewall - www.dcsaportal.dii.r.mil.uk/JLA/start/default.htm)
    (also to be accessible from Defence EA portal once established)

Approach – IS/IT Solutions and Management

Establish IS/IT standards

Break the Semantic and Syntactic N^2 models driving through life cost of data and applications

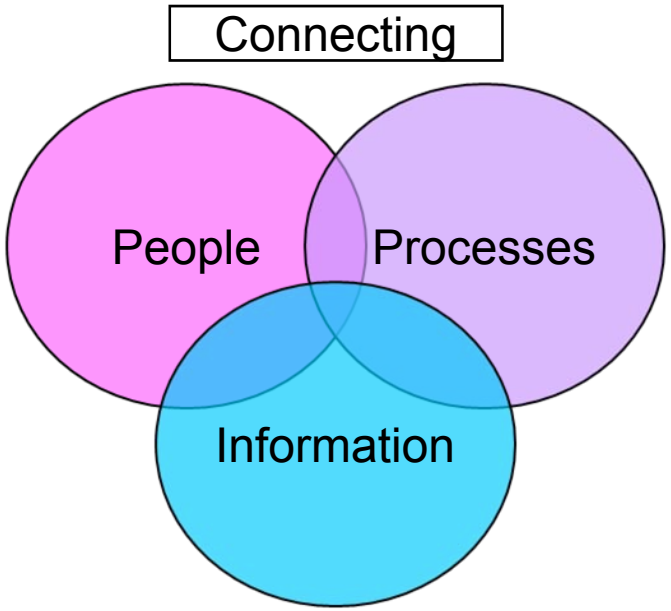


1. Semantic data model
2. Middleware Standards (NECS - FredSpec)

- **The semantic standards – the data people need** – eg…
  - STEP (ISO10303)
    - CAD
    - Product data - AP 239 – Product Life-cycle support (PLCS)
    - Requirements – AP 233 (?)
    - Documentation – S1000D, SGML, XML
  - OAGIS
    - Supply transactions
- **The syntactic standards – how the enabling infrastructure hangs together**
  - Adoption of 'loose coupled' IT solutions
  - Raises a few more issues….
    - IS/IT Implications of adopting an SOA approach?
    - Need to leverage legacy systems and access legacy data
    - Context of SOA with respect to Enterprise Architecture

Approach – Logs EA Implementation & SOA De-risking

What is SOA? – Service Oriented Approach



Understand Your Business

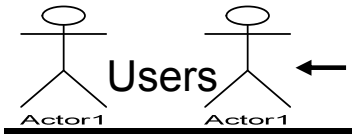
Effects, Levers
Functions & Process

Business 'Effects-Based' Component Architecture

'Applications'

- **Componentisation of the business – based on the desired effects/outputs**
- **Re-usable components anchored in the business service layer**
- **Standardization to assure interoperability of complex middleware**

Approach – LOGs SOA Pilot Architecture Overview

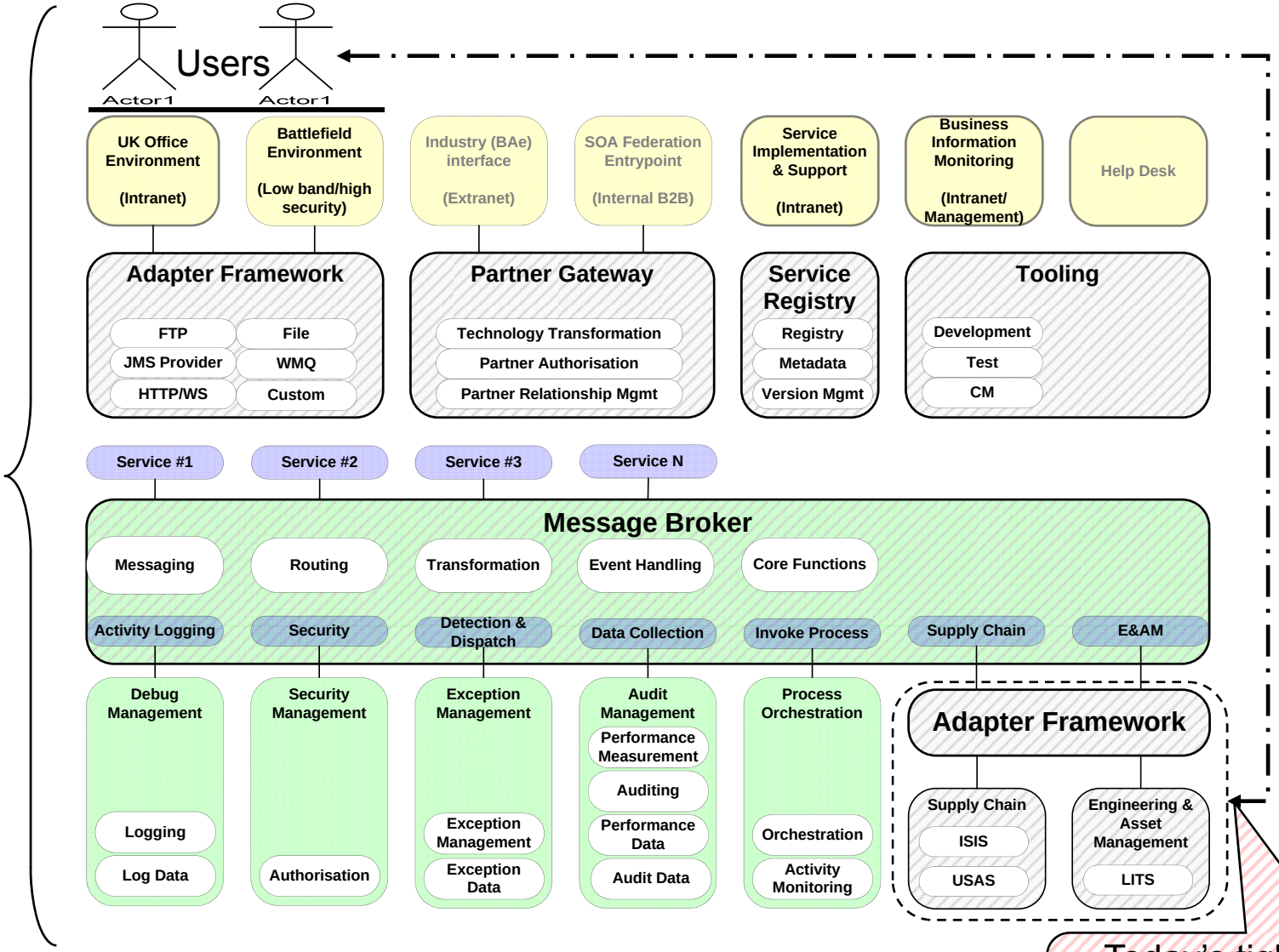


Legacy/Current Applications and Data

Today's tightly coupled Applications

Approach – LOGs SOA Pilot Architecture Overview

Service Orientation '*just* under the bonnet'!
Logs Enterprise, Business & Technical governance required to ensure benefits are delivered



Log Info Transformation

Lower TL Cost, High Agility

High Cost, Low Agility

Today's tightly coupled Applications

EA & SOA Results & Findings (1)

Logs Enterprise Architecture Implementation

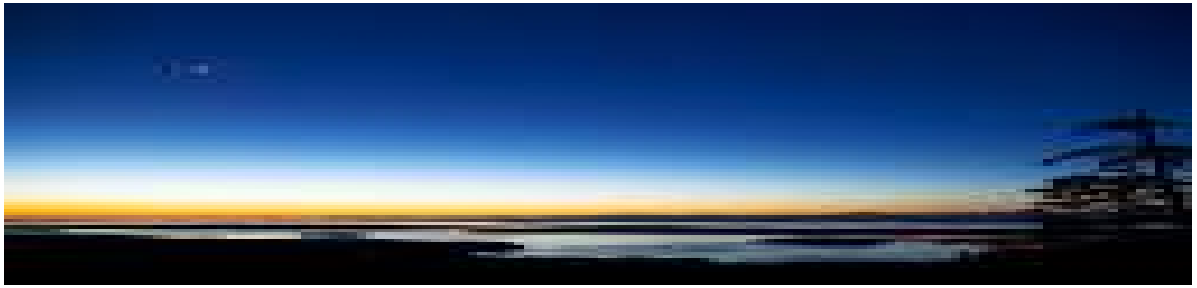
- **MODAF**
  - standardising using MODAF successful
  - v1.1 requires Service Views (from Nato AF)
- **Federated approach to modelling**
  - Ownership of 'need' rests with the business community
  - More work to deliver integrated dictionary – next two months
  - All modeller can add content
  - Method to agree baseline & changes to baseline
- **Community HQ to 'own' & publish integrated dictionary**
  - To be published via JLA portal/web-site
- **Policy, 'rules' and guidance**
  - Tools,
  - Methods
  - Governance
- **Requires 'high level' sponsorship**
- **Understanding of how benefits will accrue**
  - Short term and Long term
  - Standardized cost model

EA & SOA Results & Findings (2)

Logs SOA Pilot

- **EA an essential design & governance methodology**
- **MODAF plus NATO Service View provides common language**
- **Needs an End-to-end design methodology – being published**
- **Design artefacts need to be made visible to other projects in near real-time**
  - Integrated domain dictionary is a must
  - **MODAF compliant baseline models** as design start-point
    - Maximum re-use
    - Minimise re-invention of the baseline
- **Coherence cannot be delegated**
  - Key HQ and End-to-end Defence Process Owner function
    - Need to be able to analyse across projects and ensure re-use is happening
- **Middleware infrastructure interoperability a key standards issue**
  - MODs's Network Enabled Core Service (NECS) – FredSpec & Frederation!
  - Need to orchestrate across security domains
    - Needs more standardised methods and associate guidance
- **Test rig essential to prove the theory can be put into practice**
- **Data incoherence remains a driver except where standards have been applied**
- **Its going to need a new commercial model!!**

Future



- **MODAF to formally incorporate Nato Service Views (and housekeeping fixes)**
  - Used by all MOD projects
- **MOD & Community of Interest Portals (eg Logs JLA)**
  - SOA method deployed across MOD projects
  - Developed to orchestrate across security domains
- **Standardized data models need more effort**
  - Where translation is needed there are 4 options
    - 1) Convert the source database, 2) database adaptors, 3) SOA service, 4) 'in ESB' translator
  - Deliver the MOD policy established in 1993
- **SOA Middleware (ESB) standard (FredSpec)**
  - Standard Development
  - Testing
  - 'Productionize'

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Questions & Discussion

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