Information Exchange Framework (IEF)

September 2010

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Co-chair OMG C4I Domain Task Force
IEF History

- Information Exchange Framework (IEF) absorbed two RFPs from the C4I SOPES Initiative in 2006-2007
- Joint effort between MARS/C4I/ECMEM

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<th>SOPES</th>
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<td>c4i/04-06-01: SOPES Information Exchange Mechanism (IEM) DRAFT RFP</td>
<td>mars/2010-08-03 IEF Policy Language (IEPL) RFP Ver 2</td>
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<td>mars/2010-08-04 IEF Information Exchange Policy Renforcement Services (IEPES) RFP Ver 2</td>
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<td>c4i/05-06-19: SOPES Information Exchange Policy &amp; Rules Management Services (P&amp;RMS) DRAFT RFP</td>
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<td>mars/2010-08-03 IEF Diagrams</td>
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IEF/SOPES Conceptual Architecture (Current Approach)
IEF/SOPES Conceptual Architecture (Design to Audit; circa 2003/04)

**Information Exchange Model:**
- Aggregation Rules
- Marshalling Rules
- Transformations
- Dynamic and Fixed Filters
- Semantic Guards

**Storage of Architecture Models**

**Generation of Executable Rules**

**Executable Version of Operational Information Exchange Rules**

**Runtime Control over Information Sharing:**
- COI Configuration
- Information Release Control
- Policy/Rule Assignment
- Policy Activation / Deactivation

**Policy / Rule Enforcement Services / Trusted Data Service**

**Application Programme Interface (API) to the Data Service**

**User Developed Operational Applications**

**User Developed Analysis Tools**

**Design Environment**
IA Policy Life-cycle

- Traceability to legislative, regulatory, policy, ... requirements
- Derived from operational models
- Separation of operational rules from the enforcement applications
- Automated transformation of models into executable rules
- Aligned to standards architecture, modelling, development, etc ... best practices
- Architecture / Metadata Driven
IEF Overview

- **DomainInformationModel**
  - Class IEF Context
  - Specifies the schema for
  - Specifies the rule for exchange using

- **«SOPESPolicyModel» PolicyModel**
  - Specifies the semantics for

- **«RFP» InformationExchangePolicyModelLanguageSpecification**

- **«RFP» InformationExchangePolicyManagementService**

- **InformationExchangePolicyEnforcementService**
  - Enforced by

- **DataManagementService**
  - Delivers policy instances, manages instances of

- **UserApplication**
  - Logs events to

- **InformationDisseminationService**
  - 1..* instances

- **InformationSystems**
  - 1..* instances

- **SecurityService**
Elaborating on IE Policy Language
IE Policy Management Service(s)

ExecutableInformationExchangePolicies
governs-the-use-of

«RFP»
InformationExchangePolicyManagementService

«interface»
UserInterface

«interface»
SecurityServiceInterface

«interface»
InformationExchangePolicyEnforcementServiceInterface

PolicyDiseminationService
PolicyEditingService
PolicyActivationService
PolicyStorageService
PolicyRetrivalService
WorkPlan

• Drafted RPFs available for comments:
  1. mars/2010-08-03 (http://www.omg.org/cgi-bin/doc?mars/2010-08-03)  
     IEF Policy Language (IEPL) RFP Ver 2 -- an IN-PROGRESS DRAFT based on revised Information Exchange Framework (IEF) model produced during the IEF WG meeting in Minneapolis, June 2010.
  2. mars/2010-08-04 (http://www.omg.org/cgi-bin/doc?mars/2010-08-04)  
     IEF Information Exchange Policy Enforcement Services (IEPES) RFP Ver 2 -- an IN-PROGRESS DRAFT based on revised Information Exchange Framework (IEF) model produced during the IEF WG meeting in Minneapolis, June 2010.
     IEF Policy Management Services (IEPMS) RFP Ver 2 -- an IN-PROGRESS DRAFT based on revised Information Exchange Framework (IEF) model produced during the IEF WG meeting in Minneapolis, June 2010.
  4. mars/2010-08-03 (http://www.omg.org/cgi-bin/doc?mars/2010-08-06)  
     IEF Diagrams -- a set of supporting UML diagrams used in the 3 Draft (V2) IEF RFPs.

• Comments on RFP
  ▫ This meeting and the next (December 6-10, 2010 - Santa Clara)

• Release RFP
  ▫ IEPL December 2010  
  ▫ IEPES March 2011  
  ▫ IEPMS June 2011

• Detailed Discussion of RFPs in the IEF WG (Tuesday 1:00 – 3:30)
Any Questions Contact

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Application of Architecture

Use of Architecture to Deliver Capability

Governance
- Investment/De-investment Planning
- Configuration Management
- Quality Management
- Information Management
  - Content Management
  - Data Management
  - Meta-data Management
  - Information Protection
- Certification and Accreditation (C&A)
- Threat Risk Assessments (TRS)
- Other

Transformation / Modernization

Capability Management

Interoperability / Information Protection

Sustainable Operational Capability

Decision Support & Reporting Tools

Architectures Repository

C4ISR Architecture

Metrics / MOCs

Operational / Technical Performance Data

Operational Data

Decision Support

Architecture Repository

Context for a Project
(Extract from Architecture Repository)

Project Management

Auditing

Operations & Maintenance

C&A

Deployment

System Development

System Architecture

Domain Architecture Refinement

Enterprise Architecture Refinement

Metrics / MOCs

IM/IS/IT Blueprints
(Operational Context)