

Risk Management in globally-integrated Ecosystems



International Disaster and Risk Conference 2008 Davos

Critical Information Infrastructure: Prospective Issue on Vulnerabilities,
Protection and Resilience

Margarete Donovan-Kuhlisch, mdk@de.ibm.com





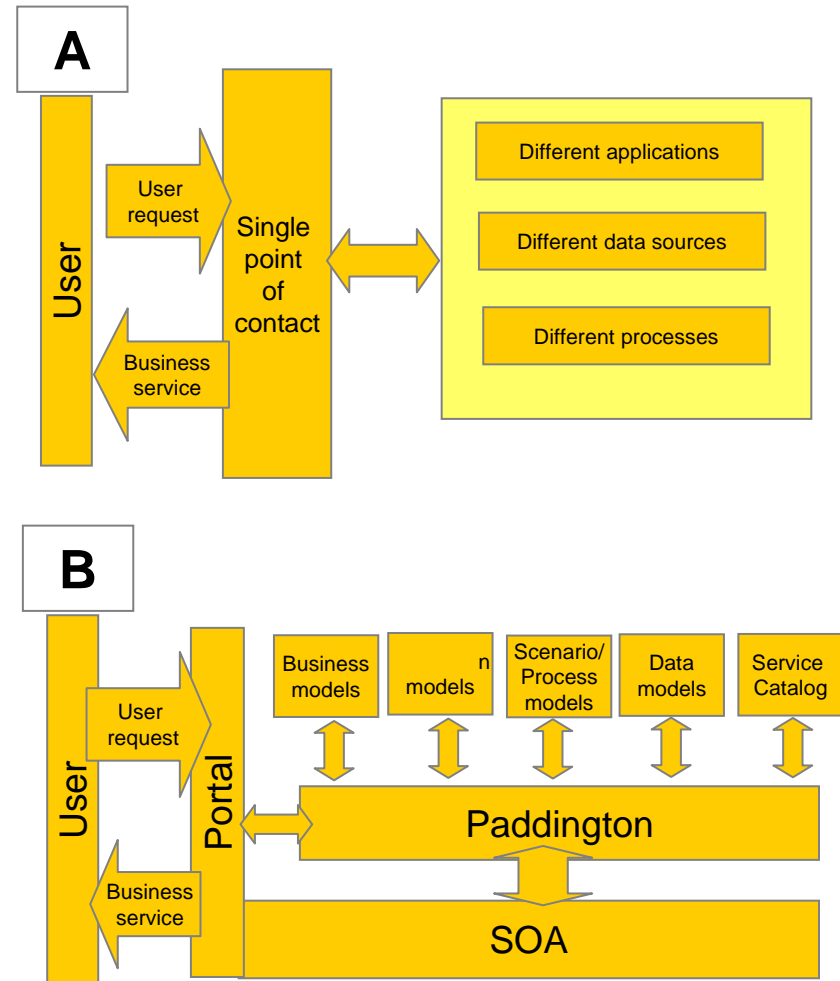
Agenda

- Global Integration
- Supporting ICT
- Semantic Interoperability
- Business Integrity Model
- Business and Complex Event Processing
- Integrated Intelligence and Entity Analytics
- Summary and Q&A

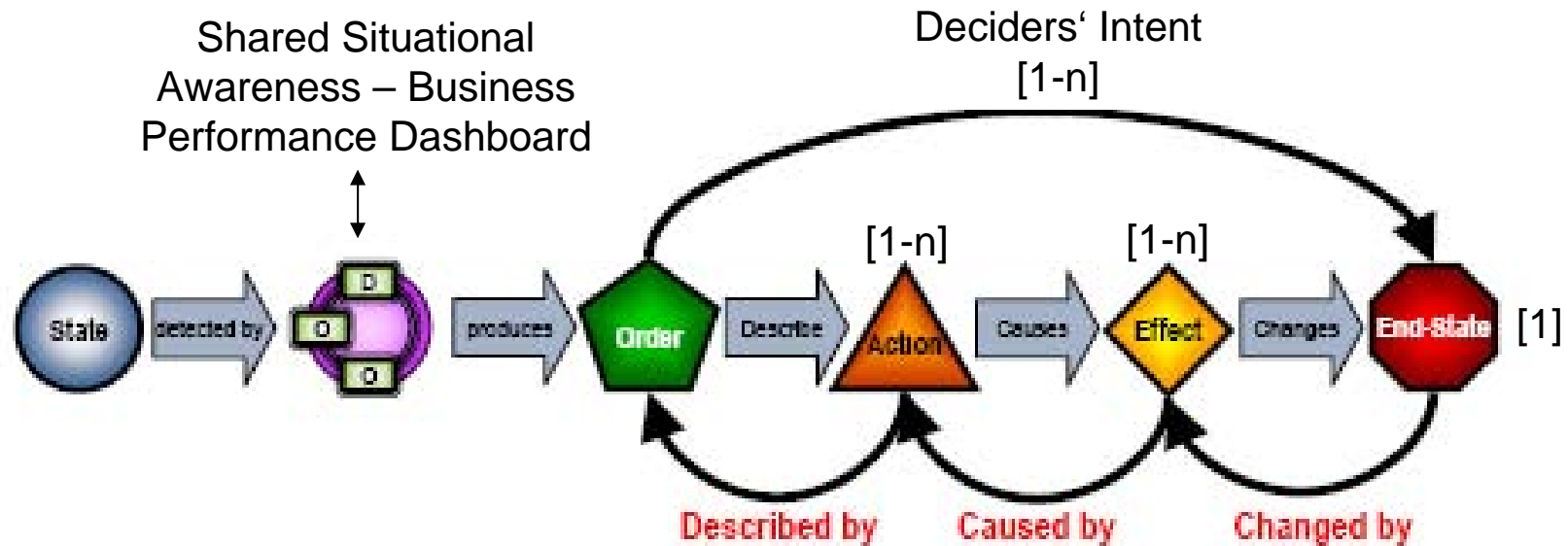
Concept of a globally-integrated Ecosystem

- Diagram 'A' is the description of common need:
 - Single point of contact from citizen, business, organisation to a multitude of applications, data, processes etc. that need to work together to provide the service required by the citizen, business or organisation

- Diagram 'B' is the simplistic architectural diagram:
 - Shows SOA (Service-Oriented Architecture) as foundation
 - Builds on an innovative “model broker”
 - orchestration of services
 - prediction and anticipation by model-based analytics
 - decision support through simulation



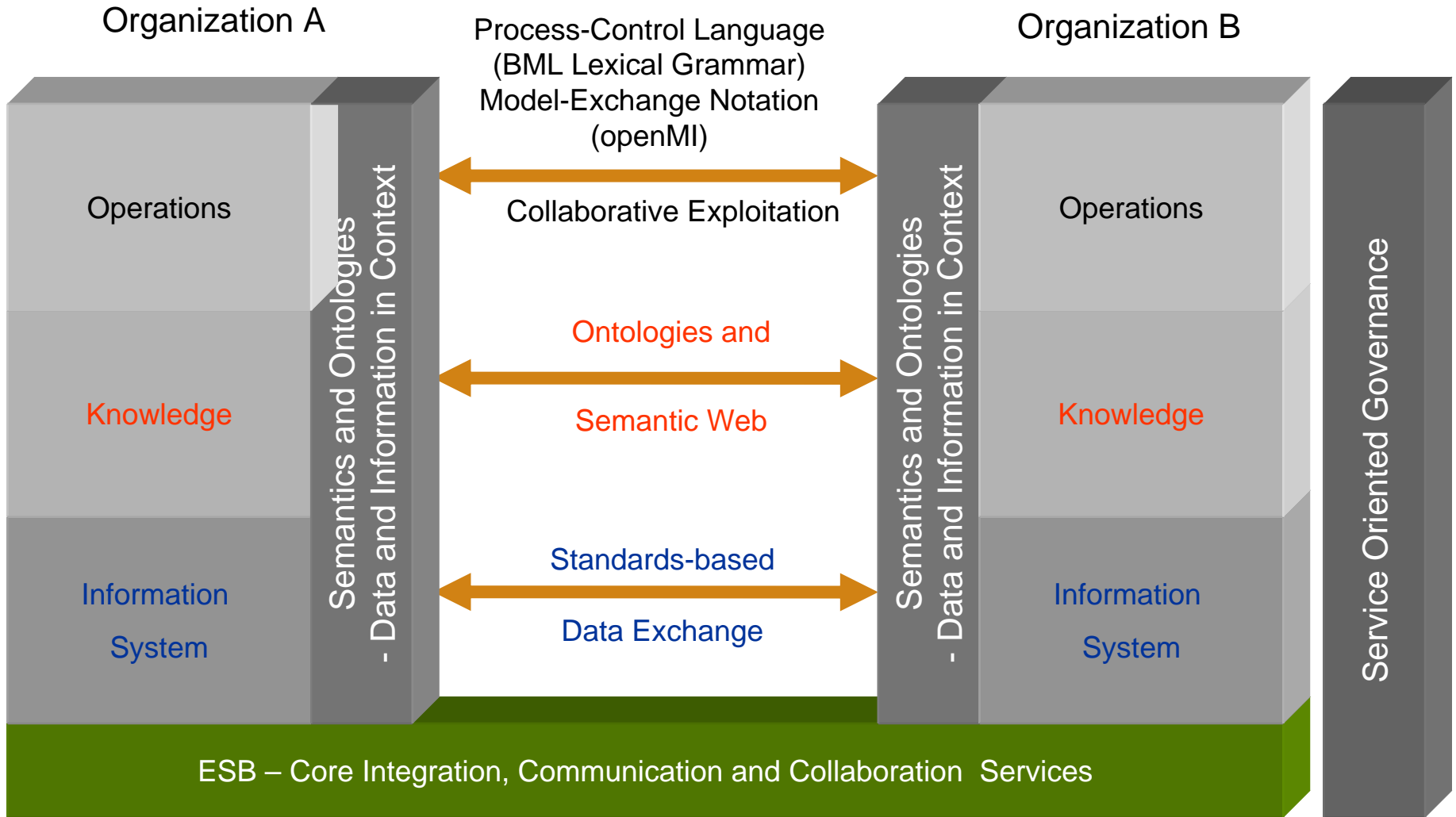
Operational Model of a global Organization



Decider = Commander or Business Executive or Risk Manager



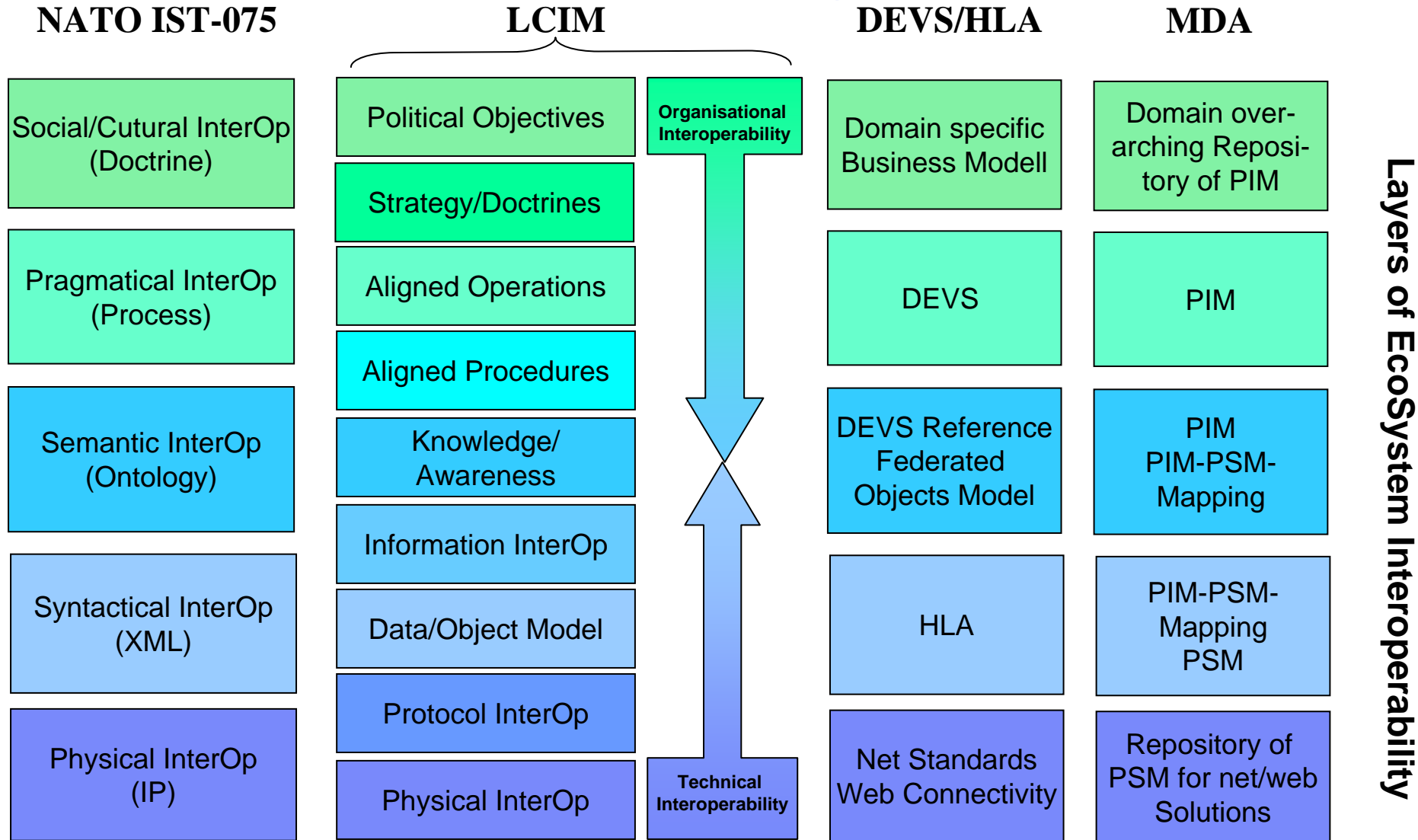
Layers of Semantic Interoperatibility



BML = Battle Management Language
openMI = Open Modelling Interface



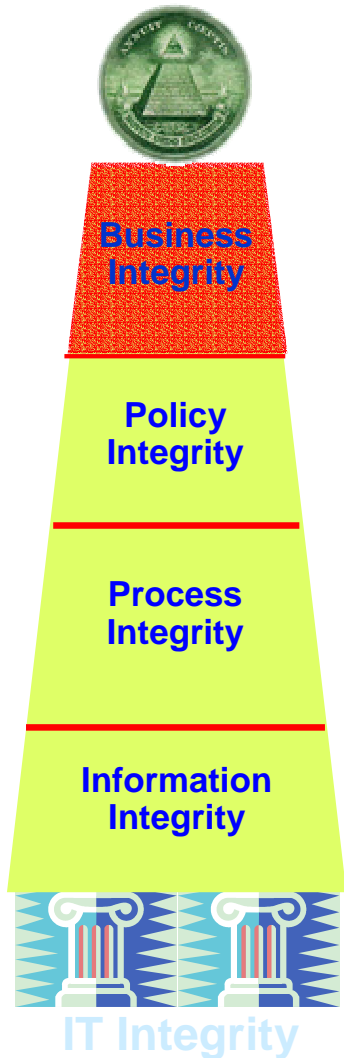
Semantic Interoperability is being standardized



LCIM: Levels of Conceptual Interoperability Model, DEVS: Discrete Event System Simulation, FOM: Federated Object Model, PIM/PSM: Platform Independent/Specific Model



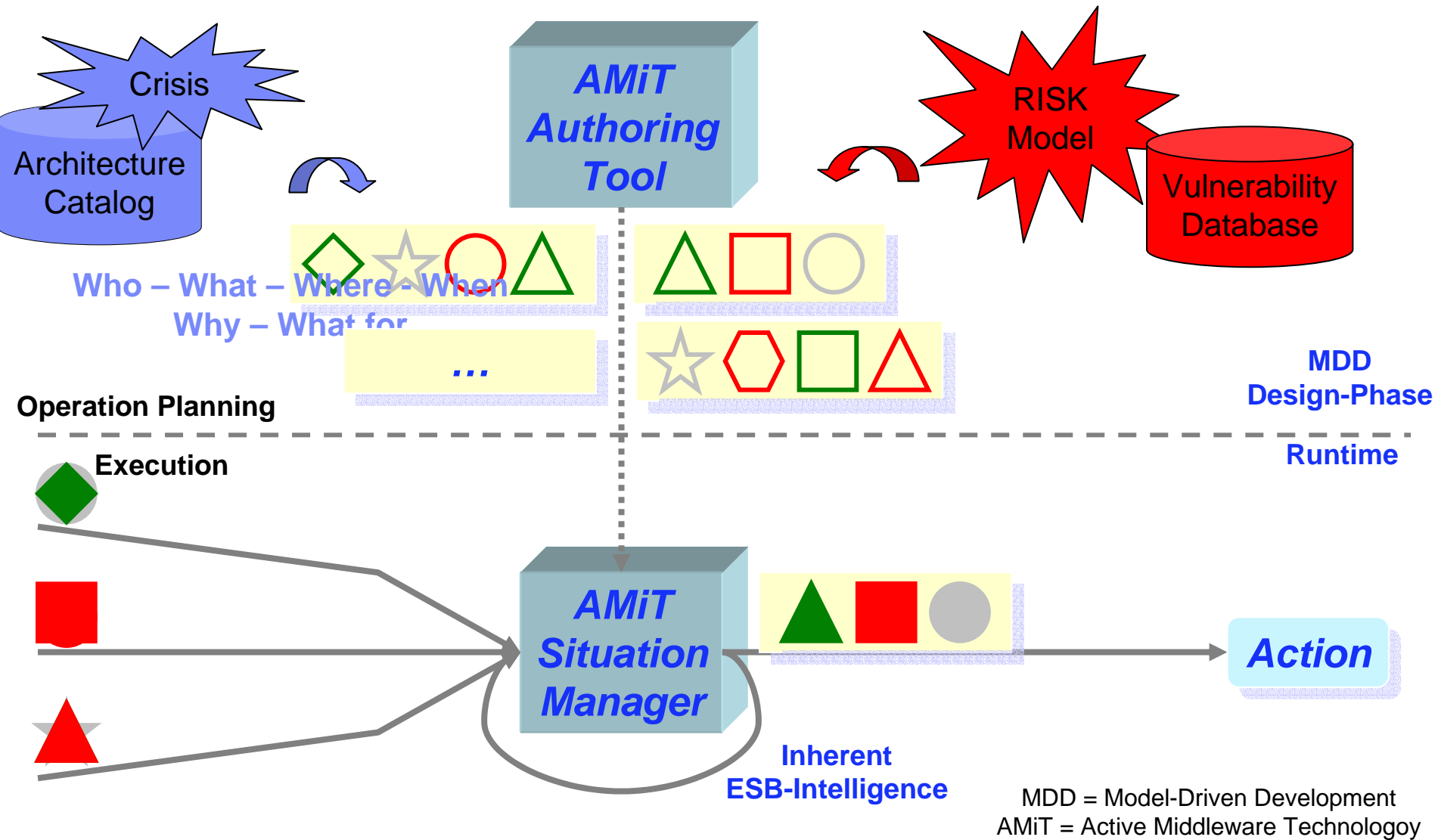
Model-Based Operational Integrity



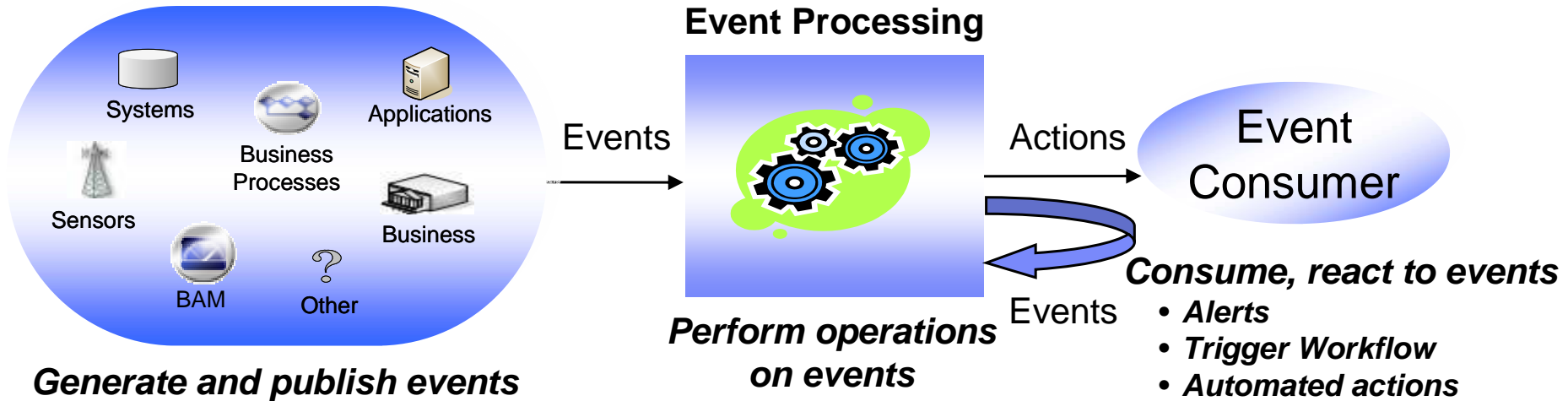
- Business Rules & Process Formalization Standards:
 - Semantics of Business Vocabulary and Business Rules (SBVR)
 - Business Process Modelling Notation (BPMN)
 - Business Process Definition Metamodel (BPDM)
 - Extensible Business Reporting Language (XBRL)
- Rules Automation Tools (e.g., Complex Event Processing)
 - Business Process and Performance Management
- Operational Risk Quantification & Management Framework
 - Master Information Management
 - Information Provenance Management.



Model-Driven Operations Dynamics

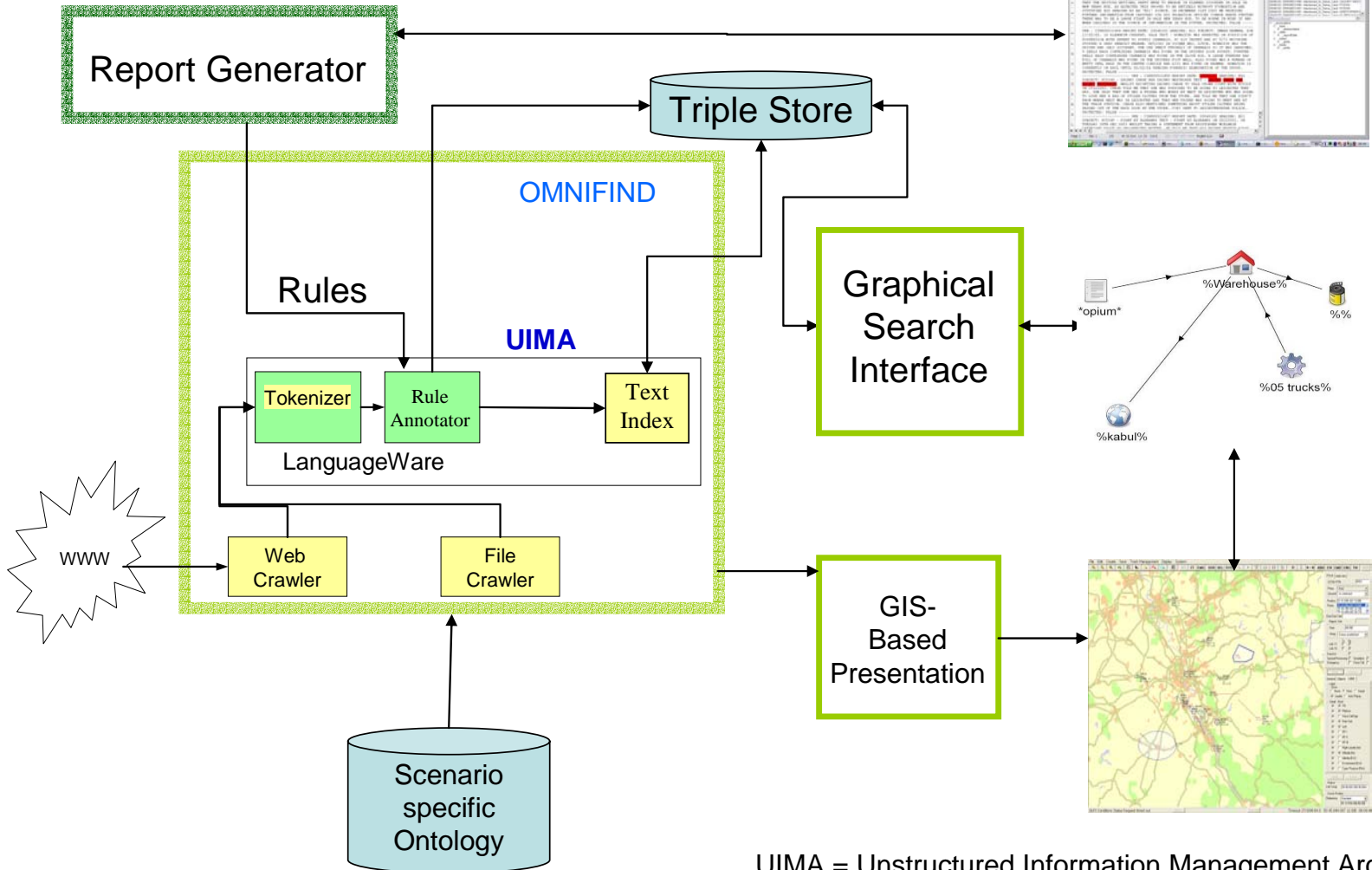


Component Model of Business Event Processing



BEP describes a set of technologies to enable organizations to sense and respond to situational change in an agile manner. Together with Business Activity Monitoring and Business Performance Management, BEP enables organizations to always know, when to act, what to do and be aware of what is happening.

Intelligent Event Processing through UIMA compliant Entity Analytics Module



UIMA = Unstructured Information Management Architecture



Summary

- **Globally Integrated Ecosystems** rely on ICT as their **Critical Information Infrastructure**.
- Insight can be gained through **Collaboration**.
- **Modelling and Simulation** underpin flexible and effective operations.
- **Security and Information Assurance** are gained via a model-driven holistic **Risk Manangement** approach.
- **CII** is maturing to be self-protective – provided proper governance models are applied.
- **Event Processing** Technologies have arrived at the **Business Level**.

???

