

Multiagency Executable Architecture Case Study

Tom Pawlowski

913-684-9139 • pawlowst@mitre.org

Ken Hoffman

703-883-5613 • khoffman@mitre.org

CEM IR&D



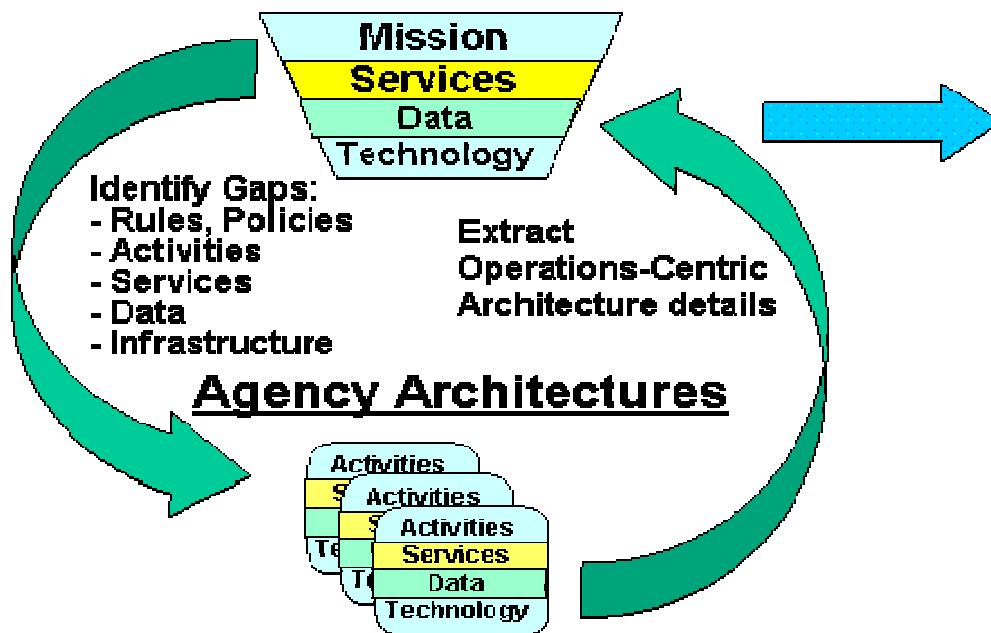
Problem

- **Federal, state, and local agencies must work together on a common mission such as homeland security.**
- **Agencies are unlikely to use the same tools or frameworks to develop and document their architectures.**
- **We need to identify any gaps or overlaps in agencies' architectures to ensure there are no mission failure points.**
- **Although architectures are static representations, dynamic system performance measures are required.**

Background

Static Phase

Multi-Agency Operations-Centric Architecture

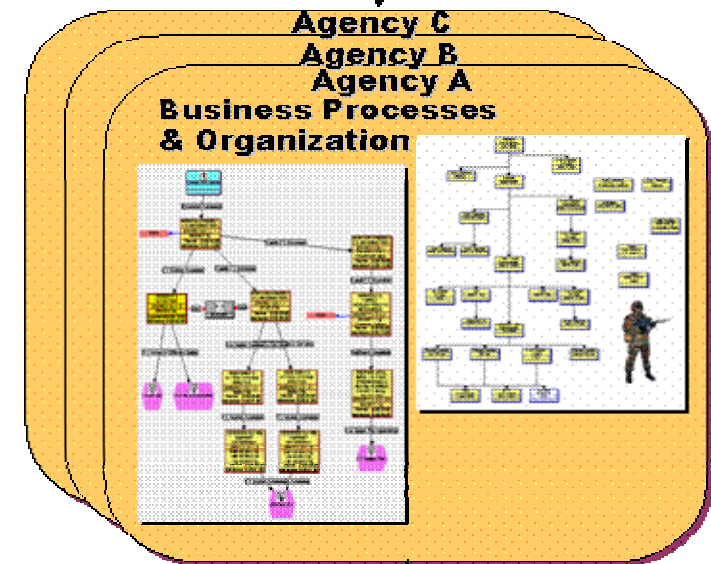


Dynamic Phase

Operational Environment Simulation

Scenario Driver

HLA



Comms Network Model

MITRE

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Objective

- **Examine multiagency architecture issues associated with interoperability and information sharing among multiple agencies performing a common mission**
- **Use a case study involving architectures from DoD, DHS, state and local agencies executing a homeland security mission**
- **Provide a basis and tools for analysis of mission and system performance**

Activities

■ Static Phase

- Collect individual agency architectures
- Develop operations-centric activity model
- Map agency architectures to activity model
- Conduct gap and overlap analysis

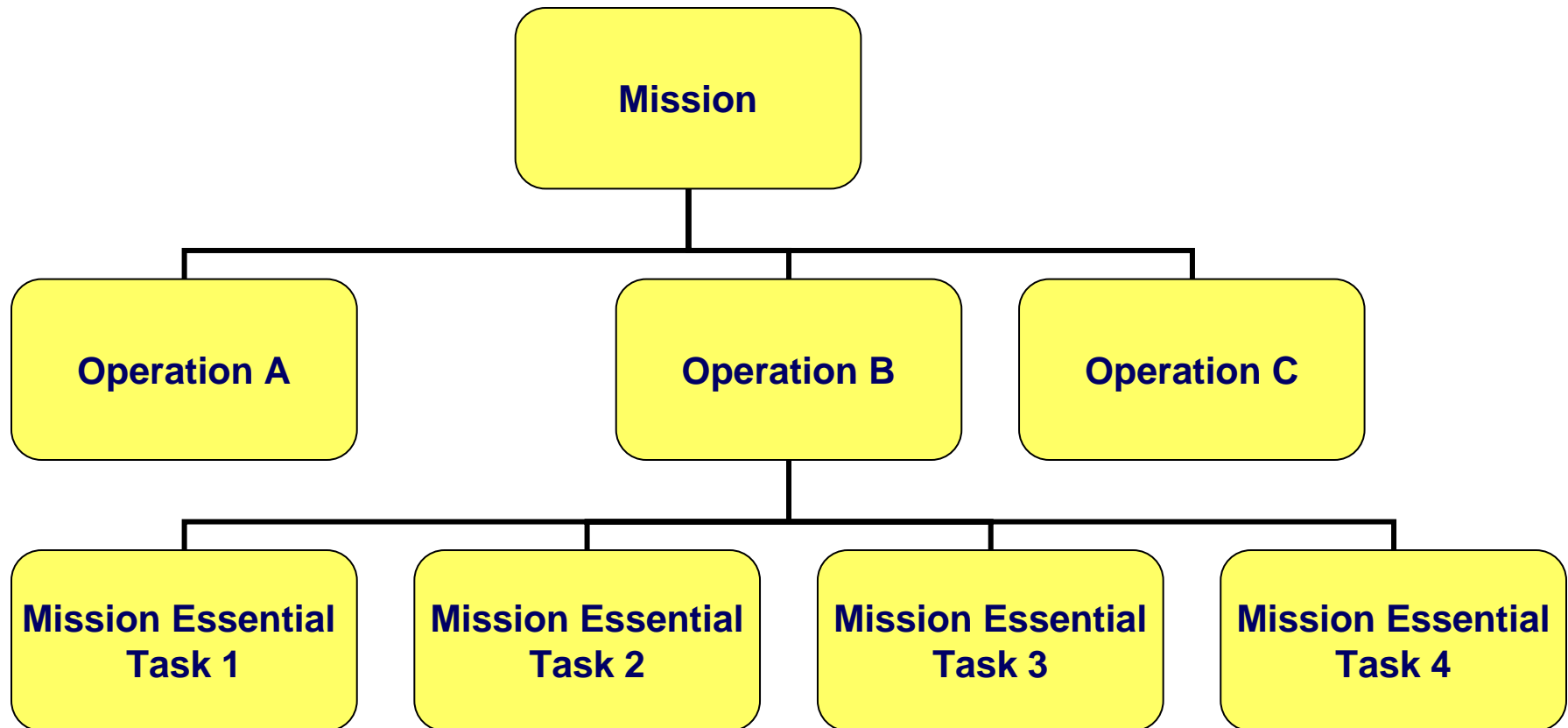
■ Dynamic Phase

- Construct federation of simulations
 - Operational environment scenario driver
 - Business process models
 - Communications network model
- Run federation and conduct analysis

Highlight

Static Phase

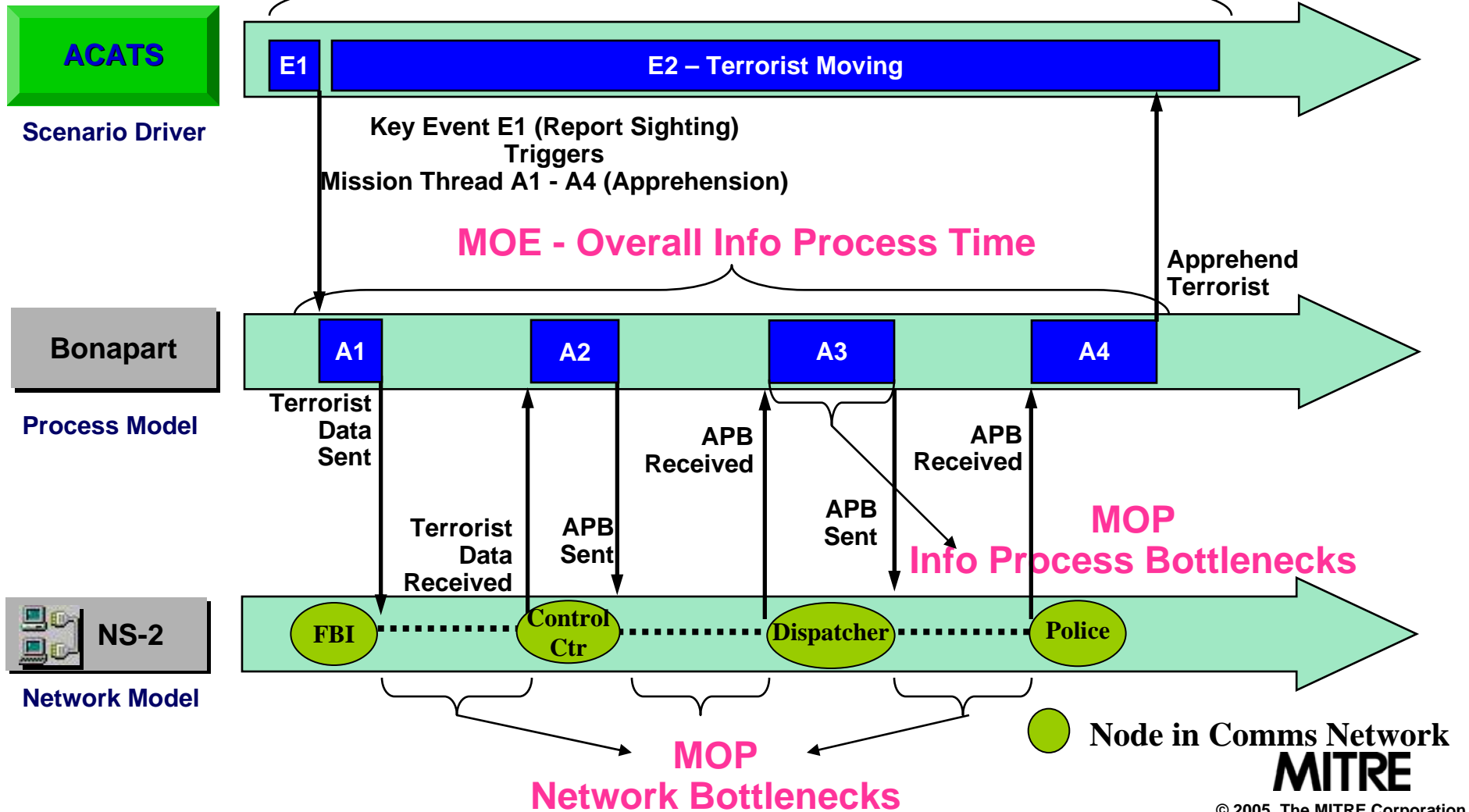
Generic Operations-Centric Activity Model



Demonstration

Dynamic Phase

MOFE – Terrorist Apprehended



Impacts

- **Improve the utility of architectures across federal, state, and local governments**
- **Improve ability to assess architectures for completeness, connectivity, information flow, and performance**
- **Agencies with multiagency missions can improve their ability to identify shortcomings in operational structure and processes**
- **Identify cost and performance factors to facilitate resource allocation and investment strategies**

Future Plans

- **Enhance tools to support different architecture frameworks**
- **Improve simulations to capture dynamic costs of operations and measures of mission and system performance**
- **Apply different modeling tools to allow sponsors to use their preferred tools**
- **Integrate insights and lessons learned from related research efforts**