IC Ontology and Controlled Vocabulary (O/CV) Framework

Spatial Ontology Community of Practice Workshop

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MITRE

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Agenda

- IC O/CV Program Overview
- Framework FAQ
- Target Capabilities
- Roadmap

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IC O/CV Program Overview

- **Who:** Team of MITRE engineers sponsored by IC CIO to provide guidance for IC-wide collaborative ontology and controlled vocabulary (O/CV) development, management and implementation

- **What/When**
  - Phase 1-2008
    - Assess the current IC ontology and CV development and management capabilities and gather requirements for target capabilities
    - Develop a framework that estimates target capabilities and provides guidance for achieving them
  - Future Phases – 2009+
    - Refine Framework
    - Support implementation

- **Why:** To rapidly and continuously improve the semantic and structural interoperability of IC information, including legacy information from disparate sources

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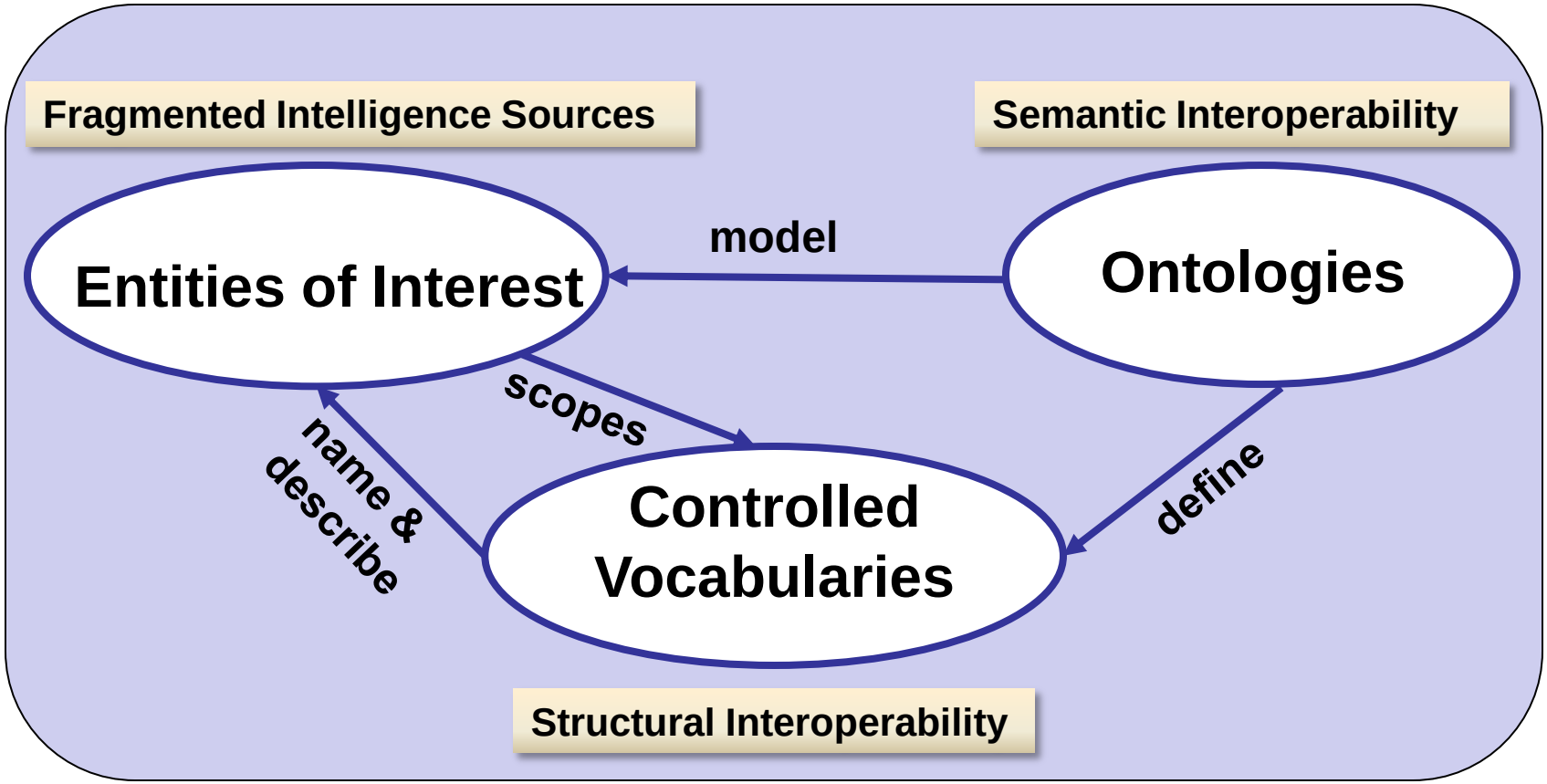
What is Semantic and Structural Interoperability?



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IC O/CV Framework FAQs

1. **What is the IC Ontology and Controlled Vocabulary Framework?**
   - **The framework is an end-to-end approach for the collaborative development, management, governance and implementation of ontologies and controlled vocabularies across the IC enterprise.**
   - **Defines target capability, processes, principles and best practices**
2. **How does the intelligence analyst benefit?**
   - **Improved enterprise information sharing and exchange capability**
     - **preserves context of information from disparate sources**
     - **improves information retrieval and discovery capabilities**
     - **enables intelligent information aggregation and visualization**
   - **Improved advanced analytic capabilities such as**
     - **entity correlation and disambiguation**
     - **link analysis capability**
     - **predictive analysis**

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IC O/CV Framework FAQs

3. **How does the IC enterprise benefit?**
   - **Provides continuous, measurable improvement of information sharing and analytic capability**
   - **Supports centralized planning and rapid, distributed execution via communities of interest (CoI)**
   - **Addresses enterprise-scale information sharing challenges at the enterprise level such as**
     - **cross-domain information assurance**
     - **enterprise standards support**
     - **mediation of formal data sharing agreements**
   - **Builds trust through the establishment of a community of communities**
   - **Promotes transparency and reduces waste by managing ontologies and controlled vocabularies as enterprise assets**
     - **reduces wasted time and money on agency-specific solutions to enterprise-scale problems**
     - **reduces inefficiency, redundancy, and rework associated with O/CV development and implementation**
     - **makes enterprise semantics continuously more explicit and transparent**

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IC O/CV Framework FAQs

4. **How does O/CV developers and implementers benefit?**
   - **Enterprise-level infrastructure**
     - collaboration space and tools enable collaborative development and IC O/CV transparency
     - enables the IC to concentrate on developing and implementing ontologies and controlled vocabularies rather than building the infrastructure to support them
     - builds an enterprise library of high quality ontologies and controlled vocabularies for repurposing and reuse
   - **Enterprise-level O/CV Technical Support**
     - improves the quality and reusability of ontologies and controlled vocabularies
     - provides the technical guidance that ensures practical use and reuse through consistent development and implementation
   - **Governance**
     - provides a venue to resolve the challenges, which will enable enterprise-wide information sharing
     - provides enterprise-level guidance for implementing information sharing solutions

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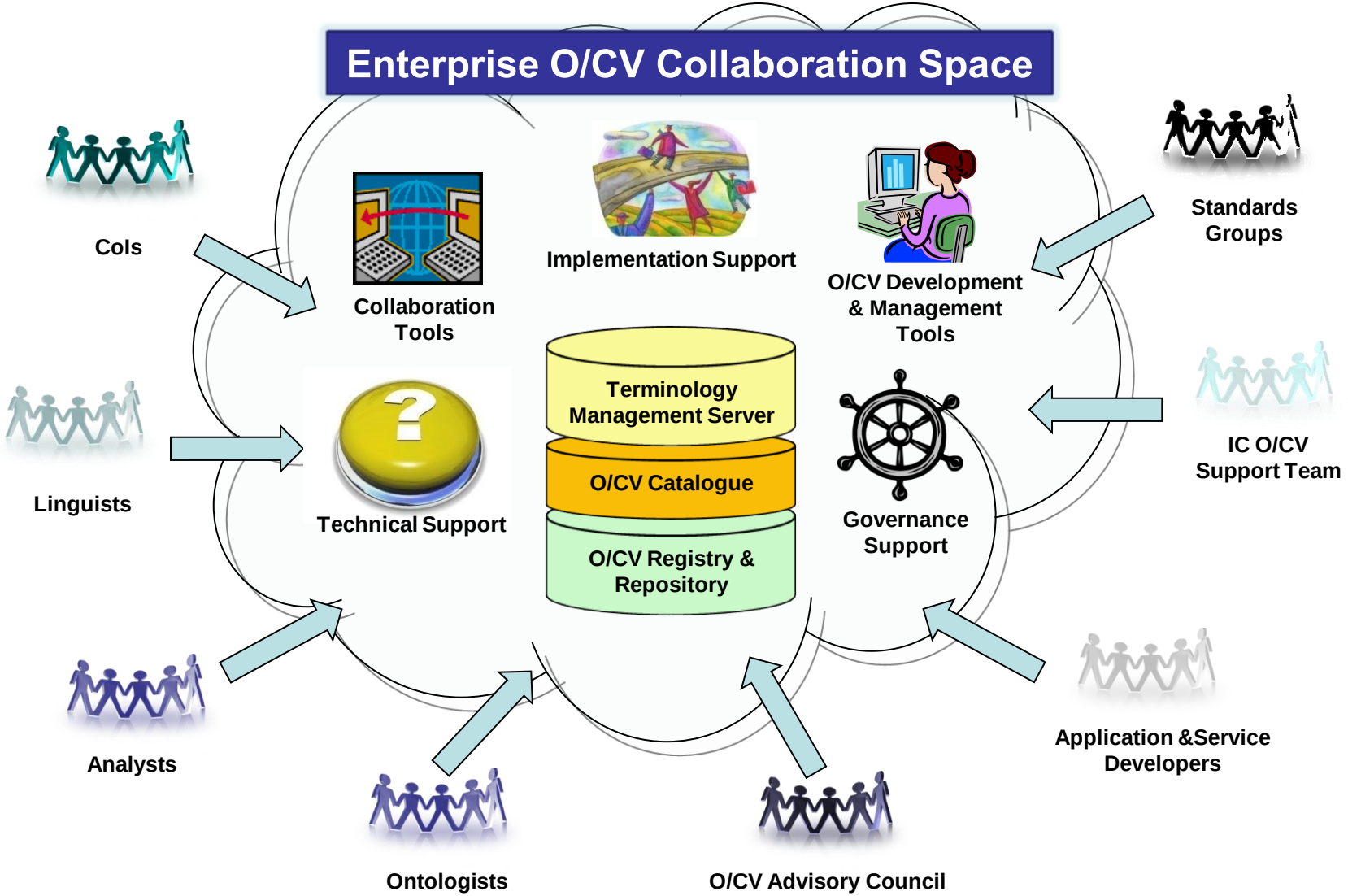
IC Ontology/Controlled Vocabulary Framework Concept



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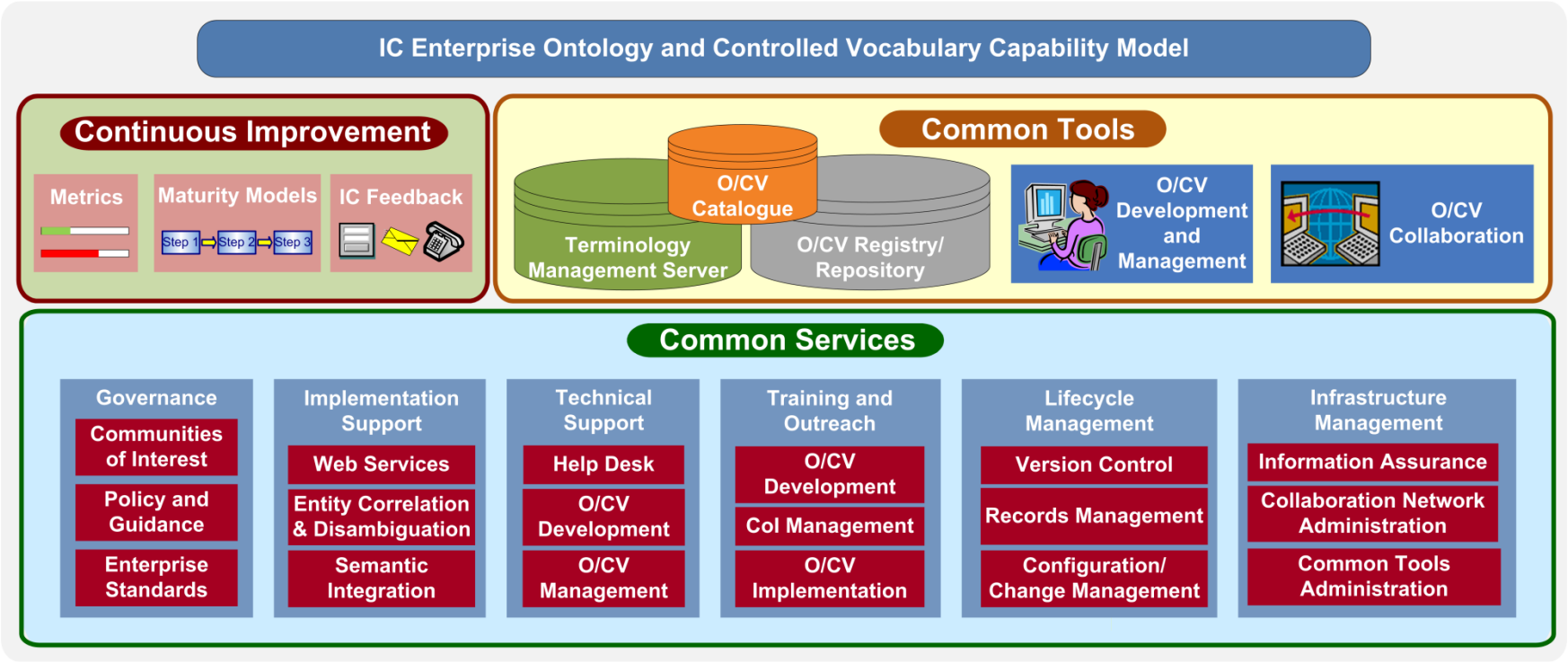
IC O/CV Capability Model



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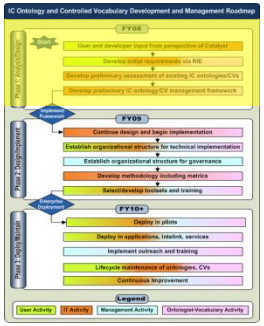
Roadmap Phase 1: 2008



Phase 1: Analysis/Design

Develop Framework

FY08

User and developer input from perspective of Catalyst

Develop initial requirements via RIE

Develop preliminary assessment of existing IC ontologies/CVs

Develop preliminary IC ontology/CV Management Framework

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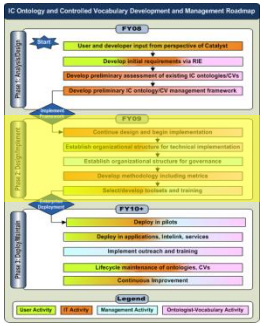
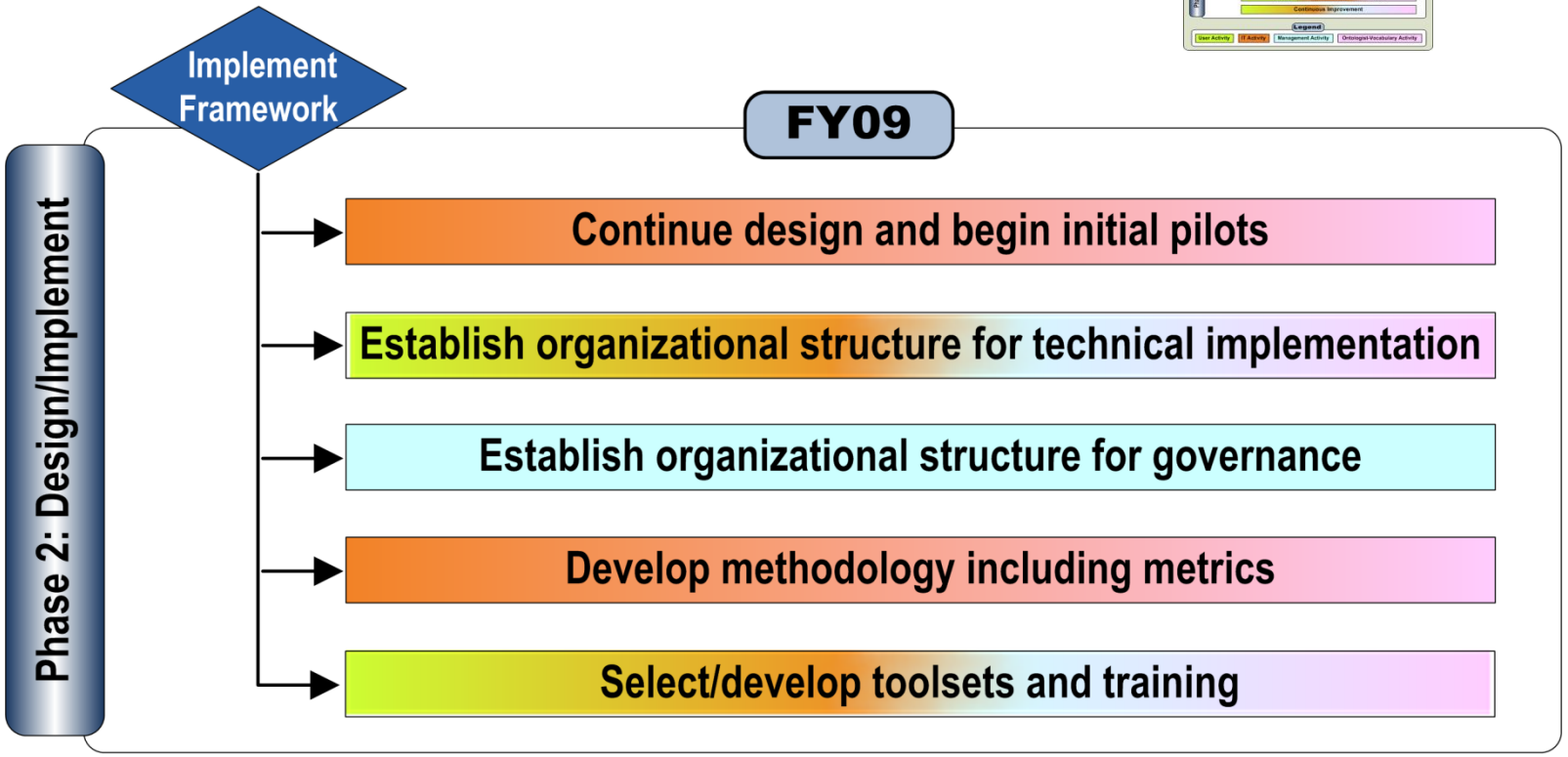
Roadmap Phase 2: 2009





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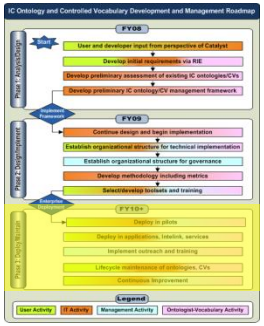
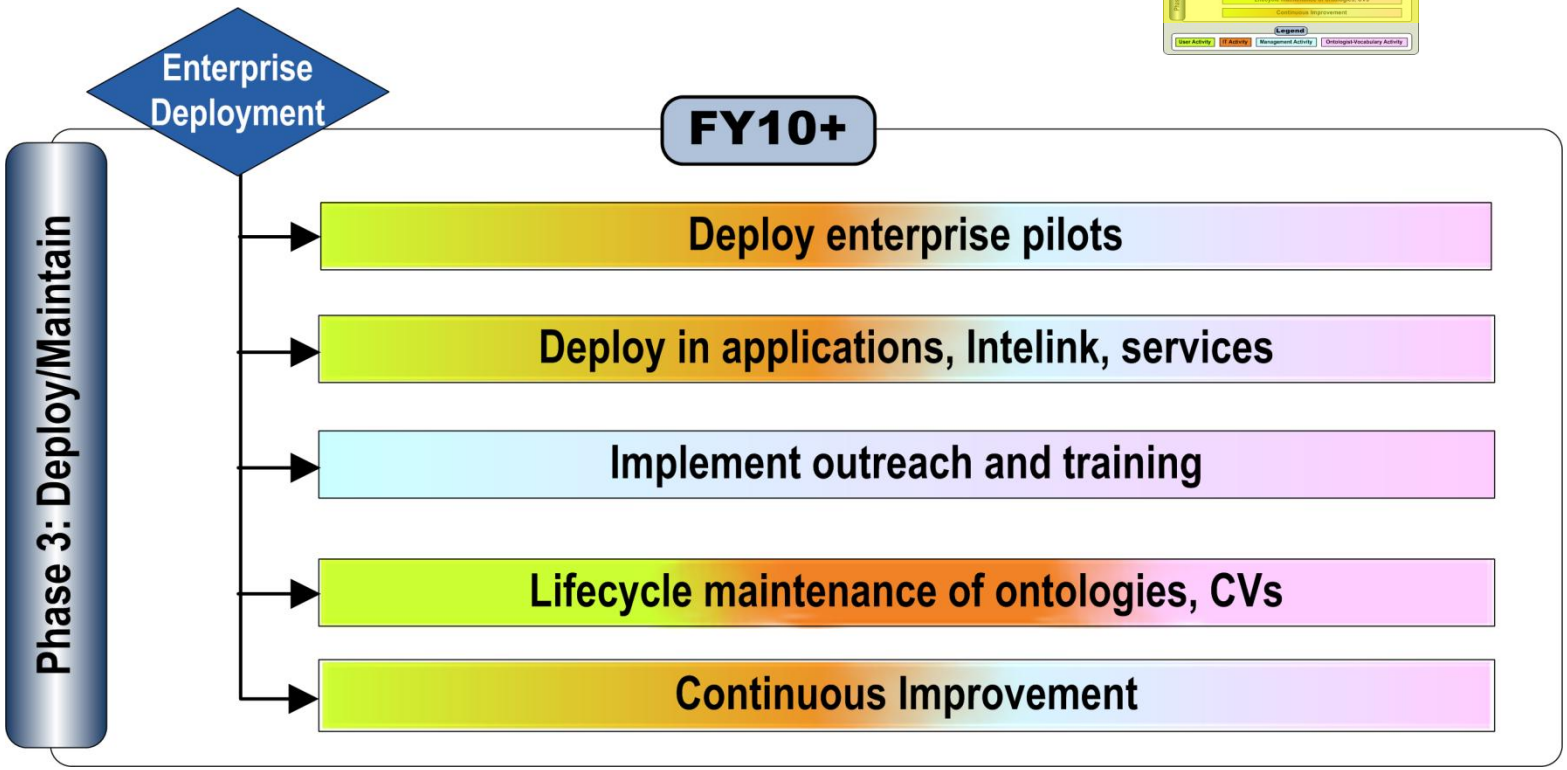
Roadmap Phase 3: 2010+





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Questions?

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