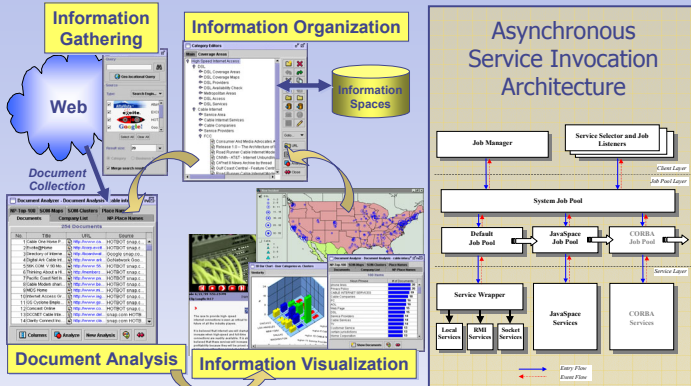


SIM-TBASSCO – Semantic Interoperability Measures: Template-based Assurance of Semantic Interoperability in Software Composition

Testbed Application: GeoWorlds

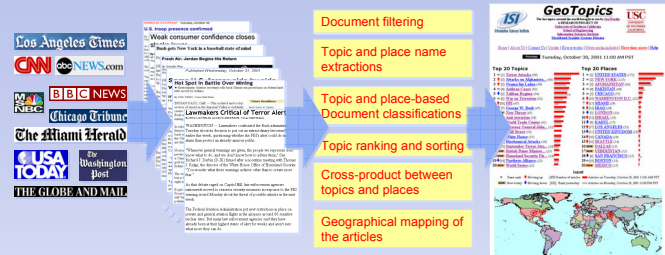
Geo-spatial Information Management System



- Large component-based system, in experimental use at PACOM & JFCOM
 - Supports crisis ops planning and execution
 - PACOM and JFCOM Joint Futures Laboratory serve as outside evaluators

GeoWorlds is a, “significant capability... that helps us to rapidly find, filter and organize information specific to locales and topics of concern to us.”
 -- Jens Jensen, Chief, Operation Planning Team, US PACOM

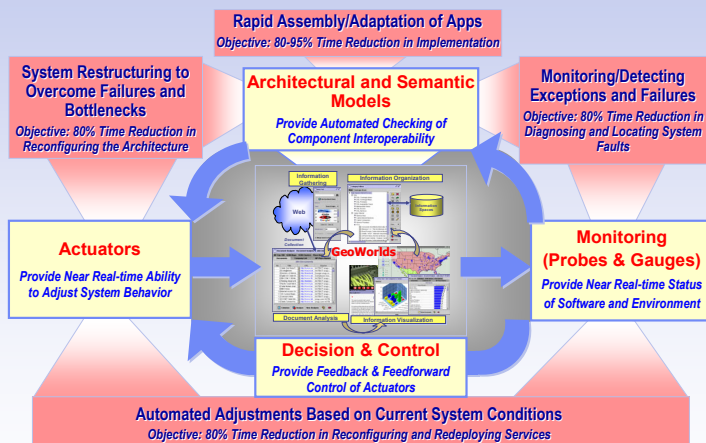
Custom Analyses e.g., News Topics



- Combines Geographic Information Systems and Web processing services
- Architected from the ground up as a component-based framework
- Presents key common software challenges
 - Assembling custom analyses from components
 - Restructuring new version releases
 - Integrating new functionality
 - Adapting for local environments
 - Detecting and resolving service failures, bottlenecks, and network congestions

IntelliGauge TIE: DASADA Applied to Internet Information Systems

Goal: Improve Internet Information Systems Throughout the Software Lifecycle



- Adapt System to Overcome Failures and Bottlenecks
 - ISI: Dynamically Modify Scripts for Service Substitutions
 - ISI: Transform Architecture while Preserving Script Semantics (Redeployment, Alternate Connectors, etc.)
 - CMU: Reconfigure Architecture (Tailor)
- Automate Checking of Component Interoperability to Reduce Time to Build Information Management Applications
 - CMU: Model Component Behavior and Data Using Acme Language
 - ISI: Generate Semantically-based Application Scripts
- Monitor & Detect Architectural Misbehaviors and Failures
 - ISI: Monitor Application's Current Behavior
 - OBJS: Determine Application's Normative Behavior
 - CMU: Verify Structural Constraints (Armani)
 - Columbia: Verify Dynamic Behavior (XUES)
- Automate System Adjustments Based on Current Conditions
 - BBN: Adapt Workflows for Service Deployments and Migration

Build and Evaluate High-Speed Maintenance and Extension Tool Suite