The GENESIS platform, its Distribution, and Web Services

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The GENESIS Project

- IST-funded EU project (Durham, Rome, Salerno, Sannio, MoMA, SchlumbergerSema, LogicDIS)
- Open-source platform
- Support co-operation and communication among software engineers
The GENESIS Platform

- Loosely-coupled tools
- Process-aware, but process-neutral (aims to be “non-invasive”)
- Distributed, but centralised
- Main components: *Workflow, Artefact*, and *Resource* Management Systems
The Durham Contribution: OSCAR

- Artefact management system
- “Everything is an artefact”
- Artefacts as (XML) documents and (Java) objects
- Artefact relationships help provide traceability
- Use artefact store as repository for “active” and “historical” projects; useful for evolution
Problems With Original Architecture

- Tight coupling: want to be able to change components
- Communication across firewalls problematic: restricted to local distribution
Restructuring Aims

- Break tight coupling
- Enable incremental adoption
- Enable broad (i.e., global) distribution
New Architecture

[Diagram showing the architecture with nodes and arrows representing interactions.

- **CLIENT**
  - Metrics Tool
  - Workflow client (Tasklist)
  - Process Definition Tool
  - OSCAR Client

- **WFMS**
  - Process Definitions
  - Process Instances

- **OSCAR**
  - Presentation
  - Indexing and Search
  - Persistence

- **Web Services Stub**

- **RMI** connections between nodes.

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Issues: Pros and Cons

+ Distribution
+ Decomposition: no longer restricted to exactly one OSCAR for each platform.
- Extra network and processor burden
-? Efficiency (translations, etc.)
Further Work

- Evaluation with industrial partners
- Other applications of the tools: e-learning, collaborative design, scientific collaboration for the Grid
- Studies of software development processes and practices
- “Real” distributed SCM