ADMIRE Overview

European Commission

7th Framework Programme

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ADMIRE – Framework 7 ICT 215024
ADMIRE Goals

- Accelerate access to and increase the benefits from data exploitation;
- Deliver consistent and easy to use technology for extracting information and knowledge;
- Cope with complexity, distribution, change and heterogeneity of services, data, and processes, through **abstract view of data mining and integration**; and
- **Provide power to users and developers of data mining and integration processes.**
ADMIRE Structure

- WP1: High-Level Model and Language Research
  - Incremental development of models and languages with a goal of describing Data Mining and Integration (DMI) processes abstractly

- WP2: Architecture Research
  - Incremental development of a flexible, scalable and open DMI architecture

- WP3: Platform Support & Delivery
  - Deliver robust service platforms, support users and encapsulate knowledge in a book

- WP4: Service Infrastructure Development and Enhancement
  - Develop technology and services to enhance the DMI service infrastructure based on Fujitsu’s USMT

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ADMIREE Structure

– WP5: Data Mining and Integration Tools Development
  • Develop and integrate tools that make the technology easier to use and reduce the frequency of failures

– WP6: Integrated Applications
  • Demonstration of validation and performance of architecture, language, platform and tools as an integrated environment for Data Mining and Integration

– WP7: Project Management
  • Management and coordination of the project
WP1: High-Level Model and Language Research

• Aim:
  – To develop a high-level model and language paradigms for specification of DMI processes.

• Tasks:
  – Identify the requirements for a feasible high-level DMI language
  – Develop the ADMIRE model to support that language
  – Produce iterative versions of definitions of both the model and language
  – Validate each version of the definitions through a prototype
  – Publish and encourage wider adoption of the model and language
Data Mining Process Model – V0

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A Low-Level, Automatically Generated Process

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Ontology for Generating the Process
WP2: Architecture Research

• Aim:
  – To define and communicate the overall architecture that enables the enactment of the ADMIRE language

• Tasks:
  – Develop a definition of the ADMIRE architecture to support DMI
  – Validate the architecture through a series of prototypes
  – Provide the design and definitions to work packages WP3, WP4, and WP5
  – Publish and encourage wider adoption of the architecture
ADMIRE’s High-Level Architecture

- Custom data cleansing
- Data source 3
- Custom data integration
- Data source 1
- Data source 2
- Internet/Grid
- Unified Systems Management Technologies
- Gateways
- Tools
- Custom data mining process

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ADMIRE Architecture Components

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Architecture V1

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WP3: Platform Support & Delivery

• Aim:
  – Provide, Maintain, and Support the ADMIRE test-bed in support of research and product a book of ADMIRE results.

• Tasks:
  – Deliver for public and project use a series of well-engineered DMI platforms.
  – Provide support to users of the platform, within and external to the project.
  – Produce a book that communicates effectively to professional data using communities best practice in data mining and data integration based on ADMIRE Technology.
WP4: Infrastructure Development & Enhancement

• **Aim:**
  – To develop and enhance the core service infrastructure that will form the foundation of the DMI platform.

• **Tasks:**
  – Integration of developments from other parts of the project:
    • OGSA-DAI, Enhanced Monitoring, Semantic Registry and Provisioning, Workflow Enactment, Distributed Query Processing.
  – General enhancement of USMT
  – Standards Alignment
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WP5: Data Mining & Integration Tools Development

• Aim:
  – To provide key data tools which advance the power and ease of use of data mining and data integration.

• Tasks:
  – Advanced integration, analysis and results browsing
  – Data Mining Results Visualizer
  – DMI Workflows Composition Assistant
  – Service Description Assistant
  – Semantic Knowledge Sharing Assistant
WP6: Integrated Applications

• **Aim:**
  - To evaluate ADMIRE and develop pilot applications of the technology.

• **Tasks:**
  - Evaluation of the architecture, model, DMI language, platform, and tools.
  - Application Development:
    - Flood Forecasting Simulation Cascade
    - Analytical Platform for Customer Relationship Management
    - Data Federation and Analysis for Data Centre Management

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Flood Modeling Workflow

• Series of simulations
  – Weather prediction
  – Watershed integration
  – Hydrological simulation
  – Hydraulic simulation
  – Visualization of flood conditions
WP7: Project Management

• Partners:
  – University of Edinburgh, UK (Coordinator)
  – Fujitsu Laboratories of Europe, UK
  – University of Vienna, Austria
  – Universidad Politécnica de Madrid, Spain
  – Institute of Informatics, Slovak Academy of Sciences, Slovakia
  – ComArch S.A., Poland

• Finance:
  – €4.3 Million in costs, €3 Million in EC funding.
Any questions?

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