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Securing Grid-based Supply Chains

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This talk introduces a transportation supply-chain that exploits Grid services for optimizing both the delivery and cost of each customer order. The proposed case study focuses on an auction-based model to select transporters for given transportation tasks in a generic supply chain. Each transporter uses a Grid-based computing service to re-optimize the routes of its vehicles after the addition of each new transportation task. The main objective of this work is to describe a secure environment for the transportation supply chain by identifying its security issues and presenting security components that help to solve these issues.

The presentation is relevant to two communities:

On one side, industrial users of Grid-based supply chains, by describing an example of a supply chain that uses Grid technology, highlighting security issues that need to be considered when developing them.

On the other side, developers of security services for the Grid. The presentation highlights current developments within the EU GridTrust project, including:

A Grid Security Requirements Editor, helping designer to define security requirements; a VO Management Service, including a Secure-Aware Resource Broker; policy Management for Grid services; Usage-Control Service tailored for Grid systems; Reputation-Management Service for Grids.

The work presented here focuses on usage control for Grids, and its application in the development of a Grid-based supply chains. Usage control extends traditional access control with concepts from trust management and digital-right management, allowing fine-grained security policies. The EU GridTrust project is implementing this concept for Grids at several levels: requirements, design, application and foundation layers.

The Grid services developed are OGSA compatible, it is described how usage control policies can be derived from requirements, and how it can be implemented using policies languages such as XACML.

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Session Classification: Business Track - Modelling and Simulation