End-to-End Supply Chain Tracking

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A single package exhibits a number of tracking numbers, but lacks end-to-end visibility.

Technology Summary

ORNL researchers have developed a method for tracking sensitive or hazardous materials through a supply chain across loosely coupled networks. This system enables tracking from manufacturing, distribution, and warehousing to transportation. As international trade and off-shore sourcing continues to transform the global supply chain, it is increasingly critical to be able to track assets across local, regional and international systems.

There are current systems which offer asset visibility but without a way to connect the oftentimes proprietary data throughout different systems in the supply chain. This technology exceeds conventional tracking systems by sharing information without requiring integrated systems from end to end. The new method takes advantage of Web 2.0 concepts to exchange information through a supply chain communications backbone, known as LogisPedia in the ORNL system. With this approach, a cost-effective method of enhancing existing environmental management and other asset visibility systems can be implemented.

The system is accessible to all supply chain partners through the secure LogisPedia portal, which identifies each partner as a stakeholder. The portal provides a set of services to permit users and enterprises to register profiles, build networks, and post links to update information regarding their shipments. In the case of a supply chain system, every shipment is assigned a unique uniform resource locator (URL) for tracking purposes. Each step of the transfer, inspection and regulatory review of the shipment is available through the portal by accessing the unique URL. Furthermore, additional information relevant to the shipment flow can be "attached" to the URL. This attached information can be searched to enable further tracking capability. It is then possible to share tracking information across proprietary, older and/or diverse systems using this "social network"-influenced tracking system.

Advantages

- Built on Web 2.0 structure to facilitate information exchange and analysis across diverse systems
- Cost-effective means of enhancing current asset visibility systems
- Assets can be searched by unique identifiers

Potential Applications

- Identifying, tracking and monitoring hazardous, expensive, or sensitive materials
- May be integrated with smart sensors and other asset tracking tools
- Environmental management reporting

Patent

Randy M. Walker, Bryan L. Gorman, David R. Resseguie, and Mallikarjun Shankar. *Associative Tracking for Loosely-Coupled Supply Chain Networks*, U.S. Patent Application 61/451,110, filed March 9, 2011.

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