

**IST-063**  
**Visualization and Management of Interdependencies for Critical Infrastructure Protection**

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**Abstract**

Discussions about infrastructure security require system-wide comparisons and interdisciplinary approaches. Our consideration of critical infrastructure protection focuses on large-scale implications of risks or vulnerabilities on major infrastructure sectors. Infrastructure sectors are fundamental to the economy and merit special attention due to their pervasiveness and also the complexity in the way that they depend on each other. In this project, we will explore the critical connections between core service infrastructure sectors (e.g. electricity, telecom, and transportation) using a total supply chain dependency analysis model originally developed to estimate environmental effects of production in the U.S. Sectors of interest when discussing vulnerabilities are those involved with critical infrastructure such as the electricity sector. Analysis of this kind can lead to new approaches to resource allocation for investments to assure infrastructure capabilities. An additional aspect of this project will be to better understand the interdependencies of the critical infrastructure sectors – e.g., how much the electricity sector depends on the telecom sector, or vice versa. Understanding these interdependencies is key to being able to manage survivable power, communication, and transportation systems.