RETAIL PAYMENT SYSTEM MODEL

MODEL OVERVIEW
The retail payment system is the collection of equipment and institutions that enables diverse financial transactions involving consumers and small businesses. Examples include: payments of salaries and pensions; payments of mortgages, utilities, and other recurring expenses; and business-to-business payments. Such payments may be in currency, but are more often by checks, credit cards, or debit cards. Reliable functioning of this system is important for economic activity. The National Infrastructure Simulation and Analysis Center’s (NISAC’s) Retail Payment System Model provides decision makers with estimates of system-level consequences from disruptions such as physical damage to facilities or functional disruptions of services or firms.

MODEL CHARACTERISTICS
- Allows decision makers to estimate the consequences of acute disruptions to the retail payment system.
- Configurable to model local, regional, or national problems.
- Represents business layer information flows and dependencies on supporting infrastructures.
- Driven by consumer and business transaction decisions.

OUTPUT
- Purchases by consumers by consumer type, location, and good/service under normal and disrupted conditions.
- Inter-bank exposures associated with payment settlement.

MODEL APPLICATIONS
Capability demonstration analysis of consequences from three disruption scenarios:
- Electric power.
- Telecommunications.
- The Federal Reserve’s Automated Clearing House (FedACH) service.

QUESTIONS ADDRESSED
Given a functional failure of some part of the system (institution, facility, or network) or some part of the supporting infrastructure, NISAC can answer the following types of questions:
- How would the flow of goods, services, and payments be affected?
- How would problems in obtaining goods or services vary by location and demography?
- Would some financial institutions have unusual funding gaps?
- Would some households be affected by delays in automatic payments such as Social Security or pensions?
- How effective would specific changes to the system (redundancy, shorter recovery times) be in reducing impacts?

ABOUT OCIA
The Department of Homeland Security, National Protection and Programs Directorate’s (NPPD) Office of Cyber and Infrastructure Analysis (OCIA) manages NISAC, which is a Congressionally mandated center of excellence in modeling, simulation, and analysis of critical infrastructure.

CONTACTS
Office of Cyber and Infrastructure Analysis
National Protection and Programs Directorate

For more information, contact OCIA@hq.dhs.gov or visit our website: www.dhs.gov/office-cyber-infrastructure-analysis.