COMMERCIAL ROUTING ASSISTANCE

OVERVIEW
With the support of the DHS Cybersecurity and Infrastructure Security Agency (CISA), Idaho National Laboratory (INL) has designed, developed, and deployed a capability for truckers and other commercial drivers in the U.S. to understand restrictions that they might encounter as they travel across the country. The Commercial Routing Assistance (CRA) tool merges coordinated and vetted data streams, plots multiple automated or custom routing options, and visualizes the wide variety of state regulations and actions that a driver would encounter along a route. With the CRA, commercial operators can plan vehicle movements across multiple states quickly, particularly during emergencies. Learn more at cra.inl.gov

IMPACT
Essential resources that support nationally critical functions and missions are moved around the country by trucks and commercial vehicles during both steady-state and crisis/incident situations. Decisions and actions at the state and local level often dictate the ease with which these goods can be transported across boundaries. Particularly in the case of emergencies or disasters, a thorough understanding of the state-by-state variations of road closures, declarations, waivers, and load limits is important for operational decision makers and route planners for effective and efficient deployment of vehicles and delivery of vital supplies.

For more information regarding resilience capabilities at INL, visit the INL Resilience Optimization Center: resilience.inl.gov

The CRA tool can be accessed at cra.inl.gov, or alternatively through the All Hazards Consortium: commroute1.org
The CRA was first developed by INL in response to an urgent request by CISA to address challenges to the delivery of essential resources and products across the U.S. amid the COVID-19 pandemic. Working with the All Hazards Consortium’s (AHC) Sensitive Information Sharing Environment (SISE) to coordinate and validate industry-relevant data streams, INL created CRA in order to aid private and public transportation fleets in navigating across states with varying restrictions. The capability, which includes a routing utility, a custom map to visualize layers of multivariate state-level data relevant to the industry and a dashboard of dynamic and frequently updated data summaries, was successfully demonstrated to CISA less than a week after their initial appeal for help. The request for this capability, and its subsequent rapid and successful development, reflects and strengthens the confidence held by CISA in the geospatial and critical infrastructure analysis capabilities of the National and Homeland Security directorate of INL.

PROSPECTS

Effective and efficient routing of fleet vehicles is vital, both in crises or in normal operations, saving costs to logistics companies and maintaining supply chains of essential resources. The CRA can be applied in many other contexts beyond pandemic response, from steady-state routing operations to planning and response efforts related to many types of major incidents, including inclement weather, terrorism, or earthquakes. Already designed for use on multiple platforms including mobile devices, the CRA could soon benefit from real-time updates from drivers and dispatchers, who would submit reports of new closures, conditions, curfews, or other constraints, and from new data feeds and scales of analysis. Its current architecture allows for the integration of publicly available data streams, but future versions will, given access permissions, incorporate those that might be considered sensitive to business or national security. Future capabilities may also include filters for routing that automate the planning of routes to avoid designated areas of travel restrictions. INL and its partners anticipate positive and constructive feedback from private and public sector operational users of the CRA and will be responsive and agile to the requirements and concerns of our stakeholders and industry partners.

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