

# Central American and Caribbean Geospatial Trafficking Model for Transnational Criminal Organizations, Terrorism and Radiological/Nuclear Smuggling (TCOTRN)

## RESEARCH PROJECT OBJECTIVE

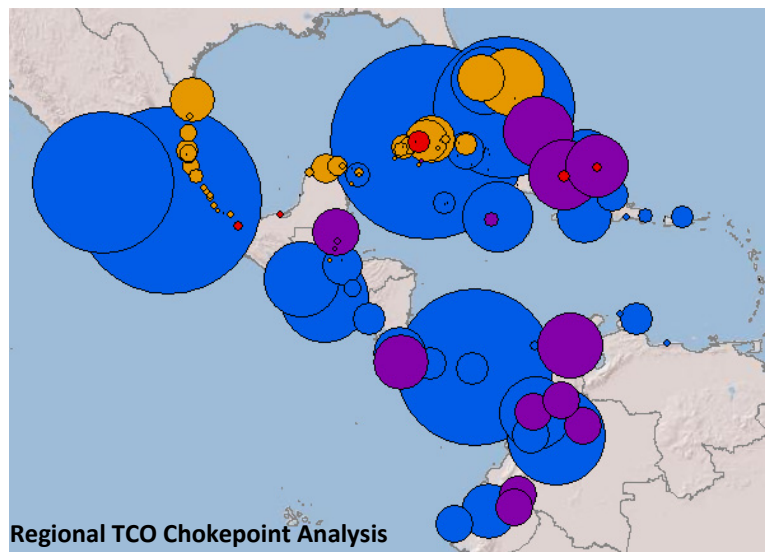
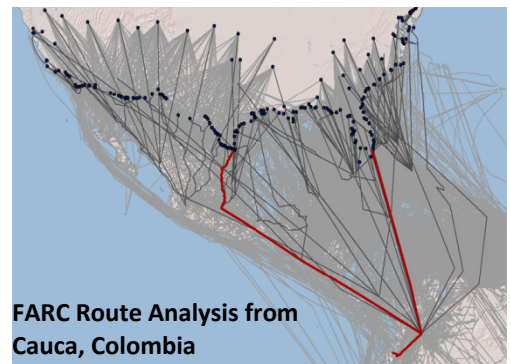
- Identify transnational criminal organizations (TCOs) and networks operating in the Central American Region (including the Caribbean) capable of engaging in radiological/nuclear (RN) smuggling.
- Analyze possible smuggling routes and methods that could be used by TCOs smuggling RN materials on behalf of terrorists.
- Explore and analyze vulnerabilities and provide possible modifications to enhance the Global Nuclear Detection Architecture.

## GEOSPATIAL COMPONENT

The model calculated optimized routes of TCOs based on a variety of risk indices and accounting for 13 modes of transportation including: road, tunnel, foot, air, Cessna, ultra-light aircraft, shipping, go-fast boats, pangas, full and semi-submersibles, ferry and freight rail. Additional air passenger and freight routes were integrated using more than 72 million FAA records.

An in-depth analysis of intermediate transit chokepoints, key aerial, land and sea based transition points and preexisting and predicted trafficking routes was conducted using fixed origin points based on TCO operational areas as well as predetermined destination points, including but not limited to ports of entry. TCOTRN is a dynamic model that is able to continuously absorb the most current data and can be reworked to depict specific RN material scenarios such as avoidance of detection capabilities and shielded material transit.

The resulting assessment includes more than 150,000 probable routes for TCO smuggling, analysis of regional and group variation in trafficking threats, and strategic valuation of trafficking chokepoints, as well as implementation of security initiatives at foreign ports.



By the Numbers - TCOTRN
25,000 Open Sources
Link analysis of 155 groups
Team of 35 coders
115 TCO group profiles created

By the Numbers - GIS
10 million+ segments
3.5 million+ junctions
500+ legitimate ports of entry/illicit entry points
900+ origin points



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