

**A Readily
Deployable,
Low-Cost Means
to Track High Risk
Materials
in Transport**

Contact:

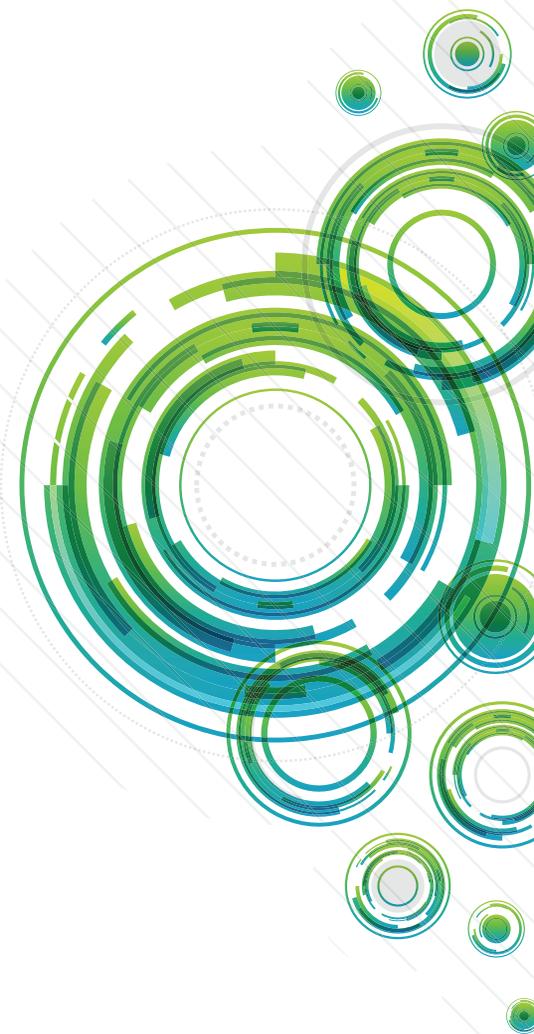
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EM Environmental Management
safety • performance • cleanup • closure
DOE PACKAGING CERTIFICATION PROGRAM

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CommBox



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Overview

- ▶ ARG-US RFID — in conjunction with fixed-mount in-vehicle satellite and cellular communication gear (e.g., Qualcomm MCP 200) — can accurately monitor and track high-risk materials in transport.
- ▶ What if such pre-wired assets are not available in the transport vehicles, due to cost or infrastructural limitations?
- ▶ Argonne's CommBox is a viable alternative.



CommBox ▶

CommBox Performance and Reliability

- ▶ **PROVEN:** System has been successfully demonstrated in multiple road tests.
- ▶ **FULLY FUNCTIONAL:** Tracking features are identical to those of the wired-in system, including accurate sensor and location reporting, rapid alarm notification in near real time (within 2 minutes of event), prompt Geographic Information System (GIS) report dissemination, availability of hard-copy records, and broad adaptability to multiple vehicles and fleets. Other advanced features, such as geo-fencing, are also available.
- ▶ **RELIABLE:** If a Global System for Mobile (GSM) communication connection is lost, the system data are queued and resent the next instant when connection is restored, just as in satellite-based technology.

Fixed-Mount System

Roof-top satellite and GSM transponders with Global Positioning System (GPS) receiver

- ▶ In-cab tablet
- ▶ Cargo-bay reader
- ▶ Power and cable connections for reader and tablet
- ▶ Tracking through Argonne and DOE TRANSCOM

CommBox System

All-in-one robust, compact unit – GSM/GPS module, Qualcomm gear, reader, and disposable batteries

- ▶ Free of any external connections
- ▶ Small footprint and simple installation – just place and tie down the CommBox in the cargo bay with the ARG-US- tagged containers and turn on the power
- ▶ Tracking through Argonne and DOE TRANSCOM



▶ Fixed-Mount Assets in Transport (Big Bird)



▶ Tracking with the fixed-mount systems in two vehicles



▶ Tracking with CommBox in one vehicle – tracking performance comparable to fixed-mount system

Summary

- ▶ When limited by cost or infrastructure, Argonne's CommBox can be deployed to monitor high-risk materials during transport.
- ▶ The all-in-one CommBox can be readily deployed. No fixed infrastructure is required.
- ▶ Because CommBox is reusable, the cost of operation is minimal. The only consumable is the disposable battery.
- ▶ Secure web-based ARG-US software allows the user to track the transport with the CommBox from any location.