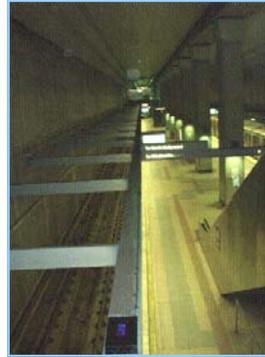


Subway/Transportation Hub Deployment



Metro Station



DICAST® Cable Deployed



DICAST® Cable

DICAST®

DICAST® (*D*istributed, *I*ntrinsic, *C*hemical *A*gent *S*ensing and *T*ransmission) changes the chemical detection paradigm by replacing point sensors with optical cables in which threat detection occurs, upon exposure, anywhere along the length of the sensing fiber. DICAST® cables achieve distributed chemical detection over tens of meters of coverage without the hazards and shortcomings of laser-based "standoff" systems. Chemically sensitive optical fibers, each designed to detect a specific chemical agent, are housed in a ruggedized cable assembly. With DICAST®, the cable *is* the sensor!

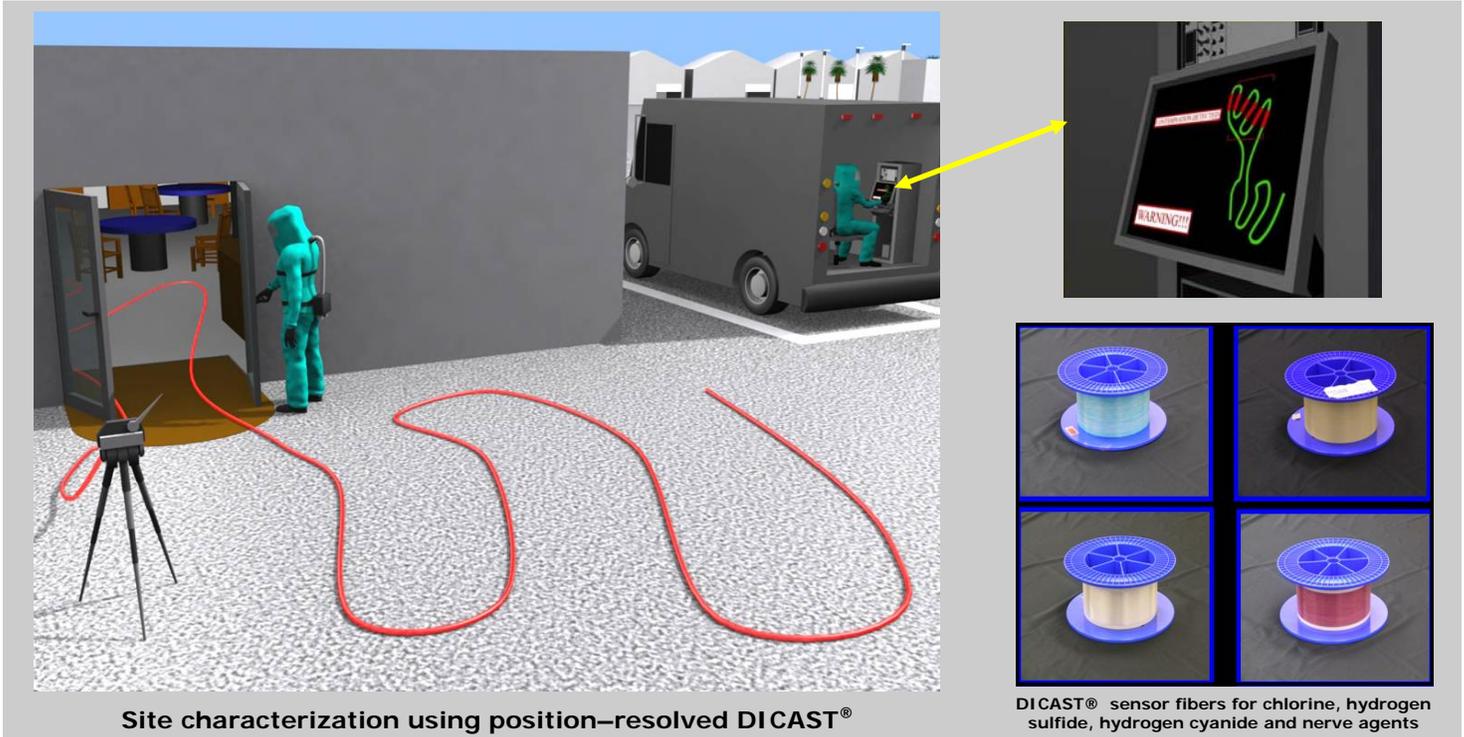
The DICAST® readout system is approximately the same size as a conventional point detector and can be connected to one or more multi-analyte DICAST® sensor cables through off-the-shelf optical communication cables. The technology has been field-tested and refined through several years of deployment at two sites: a rural air traffic control tower, and a subway station in a major metropolitan transportation hub.

FEATURES & BENEFITS

- Distributed DICAST® sensors provide continuous coverage over the deployed sensor length.
- Distributed sensors "bridge the gap" between traditional point sensors and standoff detection systems.
- DICAST® sensors can integrate response to chemical agents; increased fiber exposure yields faster, larger response.
- DICAST® sensors are sensitive; even short lengths (m) respond to IDLH/LCT₅₀ levels and lower.
- With sensor cables spread throughout a facility, DICAST® systems respond to chemical threats much more rapidly than point sensors.

APPLICATIONS

- Indoor facilities/ventilation systems
- Stadium/theater/shopping mall security
- Fixed and mobile asset protection
- Pipeline leak detection
- Corrosion monitoring
- Perimeter protection
- Decontamination efficacy profiling



The DICAST® Distributed Chemical Sensor System has been developed under a multi-year contract administered by the Counter Terrorism Technology Support Office's Technical Support Working Group (TSWG). The system is in final stage preparation for initial commercial sales commencing in 2009.

Initially targeted for indoor facility protection, demonstrated system enhancements will become available, including:

- Position-resolved DICAST®: Capable of determining both exposure location (<1 meter resolution), magnitude, and rate of speed. (Technology has been demonstrated.)
- Wireless network: Independent sensor cable segments can be powered individually, installed where required, and self-establish an ad-hoc mesh network to each other and to the central processor/communications unit. Application: installing in individual train cars or covering very large areas.
- Concatenated system: Individual sensor cable segments can be serially-connected ("string-of-pearls") via standard communications fiber and electro-optical repeaters to cover long distances (perimeter defense).

Target Specifications

- **Response Time to Alarm:**

<20 seconds for IDLH/LCT₅₀
 <60 seconds for 10% of IDLH/LCT₅₀
 1-meter of fiber exposed to analyte:
 sensitivity and response time improve
 with longer exposure lengths.

- **Sensor Cable Service Lifetime:**

1 year minimum

- **Temperature Range:**

50-95 °F Operating
 14-122 °F Storage