

DHS Planning Scenarios

“Created for Use in National, Federal, State, and
Local Homeland Security Preparedness Activities”

Prepared by Homeland Security
Planning Council, July 2004

[http://www.globalsecurity.org/security/library/report/2004/
hsc-planning-scenarios-jul04.htm](http://www.globalsecurity.org/security/library/report/2004/hsc-planning-scenarios-jul04.htm)

Overview

- 15 scenarios of interest to DHS
- “Designed to be the foundational structure for the development of national preparedness standards from which homeland security capabilities can be measured”
- Attacks could be carried out by foreign terrorists, domestic radical groups, state-sponsored adversaries, disgruntled employees, etc. → *Univeral Adversary (UA)*
- Consider impact to infrastructure, economy, and environment
- Not ranked in any particular order

Use Cases

- Identify how sensors could be used in scenarios provided by DHS
- Identify entity responsible for those sensors
- How will those entities benefit from sensor standards harmonization?

What “customers” need to know about sensor standards harmonization?

Scenario 1 – Nuclear Detonation

15 kTon Improvised Nuclear Device

Foreign terrorists detonate device in center of a large city

Sensors

Prevention:

- Portal monitors
- Video

Detection:

- Nuclear
- Radiological

Response:

- Hand-held nuclear
- Fire sensors

Responsible Parties

Customs

Local, state, federal govts, private

DHS, local authorities

DHS, local authorities

Local authorities

Local authorities

Scenario 2 – Biological Attack

Aerosol Anthrax

Anthrax spores sprayed from a truck in a city

Sensors

Responsible Parties

Prevention:

- Video

Local law enforcement

Detection:

- Anthrax sensors in region
- Anthrax sensor in buildings

Federal, state, local law enforcement

Building owners

Response:

- Anthrax sensors for cleanup
- Chemical sensors for cleanup

Federal, State, Local personnel

Scenario 3 – Biological Disease Outbreak

Pandemic Influenza

Outbreak spreads from Asia; 15% of population afflicted; 5% fatality rate

Sensors

Responsible Parties

Prevention:

Detection:

Response:

Scenario 4 – Biological Attack

Plague

Pneumonic plague released in 3 places in 3 cities: sports arena, train station, airport bathrooms

Sensors

Responsible Parties

Prevention:

- Video

Transit authorities

Detection:

- Plague sensors?

HHS, arena owner, transit authorities

Response:

- Plague sensors?
- Chemical sensors (cleanup)

HHS, DHS

HHS, DHS

Scenario 5 – Chemical Attack

Blister Agent

Light aircraft disperses agent YELLOW over a 100k seat college football stadium

Sensors

Responsible Parties

Prevention:

- Radar

Air traffic control

Detection:

- Chemical sensors in stadium
- Chemical sensors in region

University law enforcement
State, local, federal law enforcement

Response:

- Meteorological
- Ad-hoc chemical sensors

National Weather Service, private
DHS, local first responders

Scenario 6 – Chemical Attack

Toxic Industrial Chemicals

Terrorists simultaneously attack chemical plant with RPG's and cargo containers at a port

Sensors

Responsible Parties

Prevention:

- Radar
- Intrusion sensors

Air traffic control, military
Plant, port authority

Detection:

- Chemical sensors
- Fire sensors

Plant, port authority
Plant, port authority

Response:

- Meteorological sensors
- Chemical, fire sensors

Weather service, private
Local first responders

Scenario 7 – Chemical Attack

Nerve Agent

Sarin vapor released into ventilation systems of 3 large commercial bldgs. in a metropolitan area

Sensors

Responsible Parties

Prevention:

- Video
- Intrusion sensors

Building owners, local law enforcement
Building owners

Detection:

- Chemical sensors
- Chemical sensors – regional

Building owners
Local law enforcement

Response:

- Meteorological sensors
- Ad-hoc chemical sensors

Weather service
Local first responders

Scenario 8 – Chemical Attack

Chlorine Tank Explosion

UA infiltrates chemical plant & sets off an explosion that ruptures storage tank containing chlorine

Sensors

Responsible Parties

Prevention:

- Video, RFID tracking Plant
- Intrusion sensors Plant

Detection:

- Chlorine sensors Plant
- Regional chemical sensors DHS, Regional emergency management

Response:

- Meteorological Weather Service
- Chemical, fire sensors Plant, local first responders
- Traffic sensors Local traffic authorities

Scenario 9 – Natural Disaster

Major Earthquake

A 7.2 magnitude earthquake strikes a metro region containing 10 million people in a 6-county area

Sensors

Responsible Parties

Prevention:

Detection:

- Seismic
- Vibration sensors–structures

USGS
Local traffic, building owners

Response:

- Aerial & Satellite imagery
- Fire sensors
- Utility sensors

NASA(?), Military(?)
Building owners, local first responders
Utilities

Scenario 10 – Natural Disaster

Major Hurricane

Category 5 hurricane hits a major metropolitan area

Sensors

Responsible Parties

Prevention:

Detection:

- Meteorological

National Weather Service, private

Response:

- Traffic
- Satellite & aerial imagery
- Ad-hoc water quality

Local traffic authorities
NASA, Defense, DHS, Commercial
DHS, EPA

Scenario 11 – Radiological Attack

Radiological Dispersal Devices

Three dirty bombs containing Cesium-137 are exploded in a mid- to large-sized city

Sensors

Responsible Parties

Prevention:

- Border radiation detectors
- Video surveillance

U.S. Customs
Local law authorities

Detection:

- Regional radiological sensors
- Explosive sensors

DHS, local law enforcement
Buildings, local law enforcement

Response:

- Meteorological
- Traffic
- Portable radiological sensors

National Weather Service
Local traffic authorities
Federal law enforcement

Scenario 12 – Explosives Attack

Bombings using Improvised Explosive Devices

Explosive devices set off in (a) large sports arena, (b) truck outside arena, (c) subway, (d) parking facility, and (e) hospital lobby.

Sensors

Responsible Parties

Prevention:

- Security cameras
- Explosive detection

Arena owner, hospital, transit authority
Arena owner, hospital, transit authority

Detection:

- Fire

Building owner, hospital

Response:

- Video
- Fire

Local law enforcement
Building owners, first responders

Scenario 13 – Biological Attack

Food Contamination

Workers at food processing plants place liquid anthrax in several batches of ground beef and orange juice

Sensors

Responsible Parties

Prevention:

- RFID badges
- Pathogen detection

Food processor
Food processor

Detection:

- Food inspection

Processor, FDA(?), retailers

Response:

- Food inspection

Processor, FDA(?), retailers

Scenario 14 – Biological Attack

Foreign Animal Disease (Foot & Mouth)

UA infects farm animals at locations in the U.S. Disease spreads as livestock is transported.

Sensors

Prevention:

- Video surveillance
- Biosensors
- RFID tracking

Detection:

- Lab on a Chip (?)

Response:

Responsible Parties

Farmers

Customs

Agriculture department, farmers

Agriculture department

Scenario 15 – Cyber Attack

Financial System Attack

UA attacks financial system: ATM's, credit-card facilities, mutual fund cos., payroll centers.

Sensors

Responsible Parties

Prevention:

Detection:

Response:

Scenario 16* – Radiological Attack

Container Security

Radiological device smuggled into U.S. in cargo container; device detonated downtown.

Sensors

Prevention:

- Portal monitors
- RFID tracking

Detection:

- Radiological sensors

Response:

- Meteorological
- Radiological

Responsible Parties

Border patrol, Customs, Coast Guard
Shipping companies, DHS

Shipping companies, Coast Guard

National Weather Service, private
Local law enforcement, DHS

Sensor Standards Harmonization

- Who will benefit from sensor standards harmonization?
- How will sensor standards improve the ability to prevent and respond to events that impact homeland security?