# Disaster Response Trade Study Tool

## Report Details

**Date Report Generated:** Friday, July 22, 2016 3:13:44 AM EDT  
**Country Report Generated:** United States

## Best Architecture

|  |  |  |
| --- | --- | --- |
| Technology | Type | Description of Selected Technology |
| Heavy UAV | Platform | Cost Rank: 2 [1 < 5]  Range: 2800.0 kilometers  Ops Duration: 24.0 hours  Payload: 160.0 kg |
| Short Range | Communications | Cost Rank: 1 [1 < 5]  Range: 8.0 km  Data Rate: 0.5 Mbps  Weight: 2.0 kg |
| X-Band SAR | Sensors | Cost Rank: 5 [1 < 5]  Swath Size: 12.5 km  Ground Sample Distance: 0.2 m  Weight: 90.0 kg |

## Selected Disaster Effects

|  |  |
| --- | --- |
| Disaster Effect | Selected |
| Flood |  |
| Debris |  |
| Smoke/Dust (airborne) |  |
| Ground Instability | ✓ |
| Land Slide |  |
| Mud Slide |  |
| Structural Damage |  |
| High Wind (near term) | ✓ |
| Hazardous Material Spill |  |
| Radiological Spill |  |
| Lava |  |
| Ash |  |

## Environment Definition

|  |  |  |
| --- | --- | --- |
| Terrain Effect | Value Selected | Description of selected value |
| Elevation |  |  |
| Roads |  |  |
| Bridges | 3 | Bridges handle only foot traffic |
| Foliage |  |  |
| Wetness |  |  |
| Streams | 2 | Streams have no bridges crossings |
| Beach |  |  |
| Water Ways |  |  |
| Urbanization |  |  |
| Range |  |  |
| Population |  |  |
| Persistence |  |  |
| Trafficability |  |  |
| Slope | 3 | Steep Terrain (greater than 45 degrees) |

## Defined Weighting Criteria

### Platforms

|  |  |
| --- | --- |
| Platform Attributes | Weighting |
| Cost Rank ([1 < 5]) | 52.98% |
| Range (kilometers) | 18.54% |
| Ops Duration (hours) | 23.84% |
| Payload (kg) | 4.64% |

### Communications

|  |  |
| --- | --- |
| Communications Attributes | Weighting |
| Cost Rank ([1 < 5]) | 18.52% |
| Range (km) | 43.3% |
| Data Rate (Mbps) | 34.76% |
| Weight (kg) | 3.42% |

### Sensor

|  |  |
| --- | --- |
| Sensor Attributes | Weighting |
| Cost Rank ([1 < 5]) | 65.84% |
| Swath Size (km) | 7% |
| Ground Sample Distance (m) | 10.7% |
| Weight (kg) | 16.46% |