What is Detector Fusion?

Detector Fusion is a distributed, scalable data fusion algorithm which combines data from many different radiation detectors in order to optimize location and characterization of one or more radiation sources in a 1 km^2 complex scene. Fusing data from many sensors allows for better localization using Bayesian algorithms and advanced machine learning allows for faster and more acurate refining of the search area. In the refined search, targeted measurements to characterize the gemoetry of obstacles in the area further enhnances the speed and accuracy of the search. It takes in data from both stationary and mobile radiation detectors and then provides directions to mobile detectors for optimized paths to more accurately locate the souce of the radiation.

Detector Fusion improves the ability of governments and first responders rapidly react to potential radiological threats by saving critical time locating the source of the radiation. Furthermore, Detector Fusion is integrated with TAK / WinTAK / ATAK to connect with preexisting datastreams and provide geospatial information on a platform many responders are already familiar with.
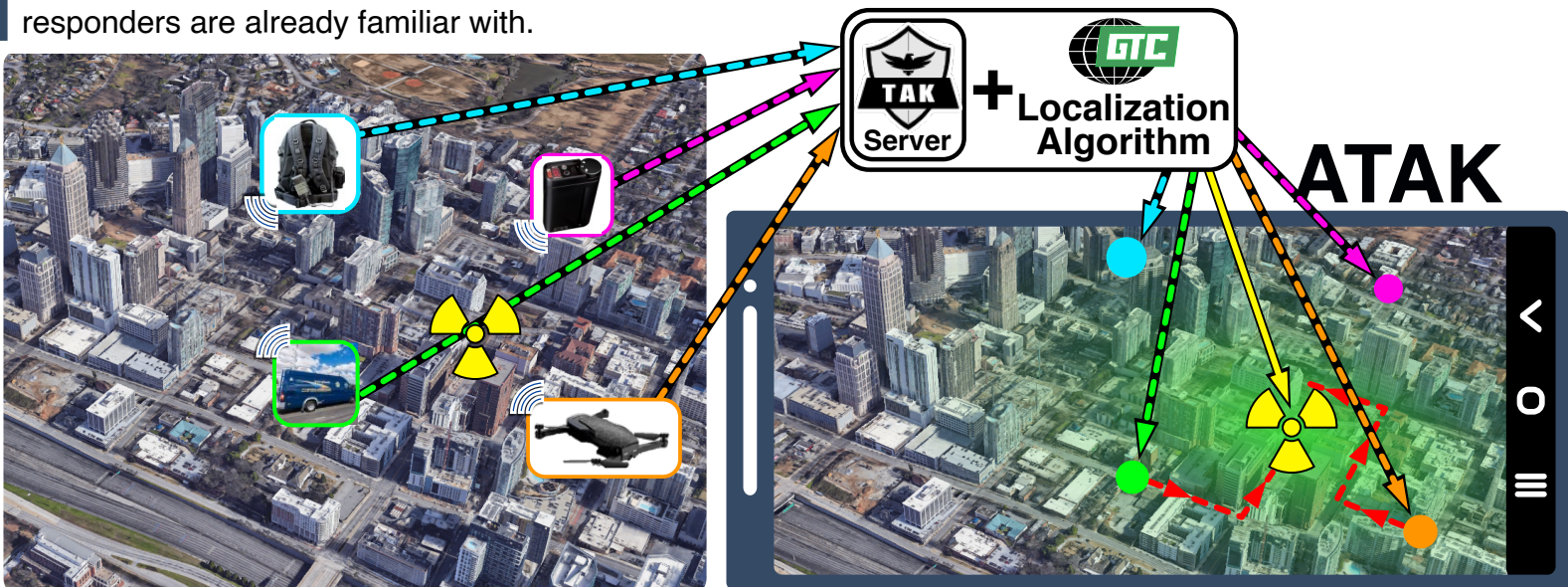
Capabilities:
- Fuse noisy data from multiple moving and stationary sensors
- Real-time modeling of obstacles in a complex scene for radiation localization
- Fast and robust localization of multiple stationary or moving radiation sources

Applications:
- Localizing multiple radiation sources in:
  - Urban Area
  - Battlefields
  - Stadiums
  - Airports
- Assist first responders

Benefits:
- Faster than current single sensor radiation detection
- Localizing multiple similar and different types of radiation sources
- Integrate data from different types of sensors from various manufacturer