THE SCENARIO

Commercial Information Surveillance and Reconnaissance (ISR) of critical infrastructure is an emerging market. Inspection using Unmanned Aerial Vehicles (UAVs) rather than manned ground vehicles can often be faster, safer and more cost effective.

THE CHALLENGE

You will be provided with a file containing Point of Interest (POIs) that need to be inspected using the optimal path. Your challenge is to write an algorithm to determine the optimal path between these POIs.

The Concept of Operations (CONOPS) for a UAV POI inspection mission is that the UAV must perform a complete loop of the POI at a range of 1NM so the pilot has an opportunity to visually inspect the POI for damage. Your algorithm will need to account for this.

CONSIDERATIONS

Think about how you will visualise such a mission for your demonstration.

Stretch goal: an additional file will be provided to you including the coordinates of a No Fly Zone (polygon) which will need to be avoided.

RESOURCES

- Esri ArcGIS
- Google Maps Platform Documentation
- OpenStreetMap