Research Questions
1: What are the most common tanker/receiver base pairings that practice AR over the CONUS?
2: Which current tracks can be eliminated regardless of the conclusions of the redesign?
3: Where are the optimal tracks that can be utilized between tanker and receiver bases?
4: Weighing historical usage and proposed NAS redesign, where can AR tracks be placed to optimize efficiency for the USAF and commercial aviation?

Introduction
The current air refueling infrastructure over the continental United States was first created in 1963 and, while having incremental changes through the years, has not been recently analyzed for system utilization and redesigned (if required) based on updated demands, aircraft beddowns, changing weather patterns, and NextGen concerns.

Analysis and Results
98% of the CONUS AR track usage was performed on only 62% of the current AR track infrastructure and, as a result, proposes the elimination of 35 existing AR tracks. An alternate optimized infrastructure structure will provide standardization and deconfliction with NextGen concerns and other airspace issues enabling greater utilization of flight hours towards training and operational objectives.

Methodology
1. Analyze the current AR system for utilization.
2. Utilize a multi nonlinear optimization using current and proposed infrastructure to provide proposed AR tracks.
3. Compare the proposed tracks against the projected NextGen airspace to provide a system that is advantageous to all stakeholders (DoD, Commercial Aviation, FAA, DoT).

Implications
Optimizing training and operational value for 36K flights per year. Reducing operational impact to 8 million commercial flights per year.

Recommendations
1. Eliminate 28 AR Tracks from Infrastructure (1 x Month)
2. Eliminate 7 More AR Tracks (2 x Month)
3. Add data Element to G2
4. Incrementally implement holistic change to system to change 91 tracks into 42 optimized tracks