



# Synthetic Aperture Radar Imager

**NORTHROP GRUMMAN**

## Team 18

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**Aim:** Use Synthetic Aperture Radar (SAR) technology to remotely detect and image metal objects for weapon detection applications

### Background

- Create a weapons metal detection system for homeland security
- 2nd Generation Project



Structure

### Goals

Structure:

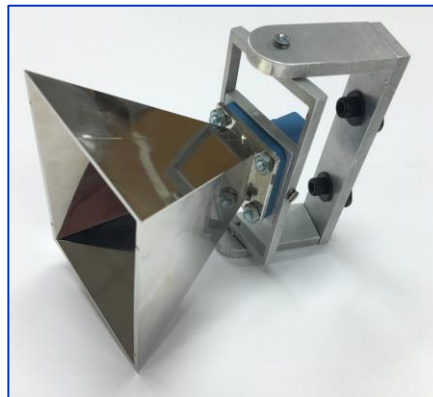
- Lower weight; make mobile
- Improve stability

Horn Holders:

- Allow 2 axis adjustment

Calibration/Testing:

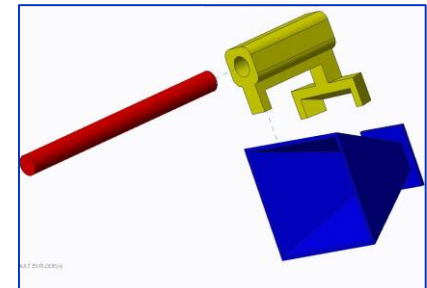
- Method to align all 20 horns
- Create radar reflecting equipment



Horn Holders

### Results

- Reduced weight by 50%
- Horn holders have 3 degrees of freedom
- Structure has negligible deflection



Laser Alignment

### Future Work

- Custom Fabrication
- Wall-mounted System
- Easily collapsible
- Improve horn adjustment fidelity