The Colorado Surveillance Project
A NextGen Success Story
and
"Blended Airspace"
NextGen Airport Traffic Control
Transportation Committee Briefing
October 18, 2012

The Colorado Surveillance Project
A Brief Review

Colorado Surveillance Project Began in 2005:

What is the Colorado Surveillance Project?

The Colorado Surveillance Project is a cooperative effort between the State of Colorado and the FAA to enhance safety, capacity and efficiency in the airspace serving Colorado's Ski Country Airports by employing the emerging NextGen technologies to support the all important Ski Industry.

Phases of the Colorado Surveillance Project:

- ✓ Phase I – Deployed Wide Area Multilateration
- ✓ Phase II – Is Deploying ADS-B and WAM
- ✓ Phase III – Will Implement "Blended Airspace"

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COLORADO
SURVEILLANCE PROJECT
PHASE III
ADS-B/WAM

FEDERAL AVIATION ADMINISTRATION

Colorado Surveillance Project

Why a State of Colorado Project?

- The State of Colorado Department of Transportation recognized the need to increase capacity at the State's Ski Country Airports during the ski season in order to support the all important ski industry in Colorado.
- The operational level of the Colorado Ski Country Airports do not support the business case necessary to justify an FAA funded project to address the unique issue facing Colorado's Mountain Airports.
- The Division of Aeronautics proactively engaged the FAA to develop solutions that would enhance safety and increase capacity at the mountain airports serving Ski communities.

COLORADO SURVEILLANCE PROJECT PHASE III ADS-B/WAM

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The Colorado Surveillance Project Status

Phase I – **Complete and Certified in the NAS**

Utilized Wide Area Multilateration (WAM)/ADS-B as the surveillance source and provides "radar like" services to the following Colorado Ski Country Airports:

1. **Craig**
2. **Hayden**
3. **Steamboat Springs**
4. **Rifle**

✓ Project Start	2006	**Complete**
✓ Site Acceptance Test (SAT)	2008	**Complete**
✓ Initial Operating Capability (IOC)	2009	**Complete**

Phase II – Will add ADS-B, TIS-B and FIS-B to WAM to provide "radar like" coverage to the Following Colorado Ski Country Airports:

1. **Durango**
2. **Gunnison**
3. **Montrose – Key Site**
4. **Telluride**

✓ IOC Montrose -	**Complete September 28. 2012**
✓ IOC **Durango, Gunnison** and **Telluride**	Scheduled March 2013

Challenges to Colorado Mountain Airports

Factors that Affect Capacity and Efficiency at Mountain Airports:

1. Weather - IMC conditions during winter months (ski season)
2. Traffic Volume - Seasonal Peaks
3. Physical Limitations of the Airport
   a. Mountainous Terrain
   b. Runway Configuration - Most mountain airports have only one instrument runway, reducing airport capacity below demand.
   c. Limited Ramp Space
4. Instrument Approach Procedures - Terrain causes approach minima to be high, resulting in missed approaches .
5. Lack of Surveillance - Inadequate surveillance during the approach and departure phase of flight results in greater separation requirements and reduced airport capacity.

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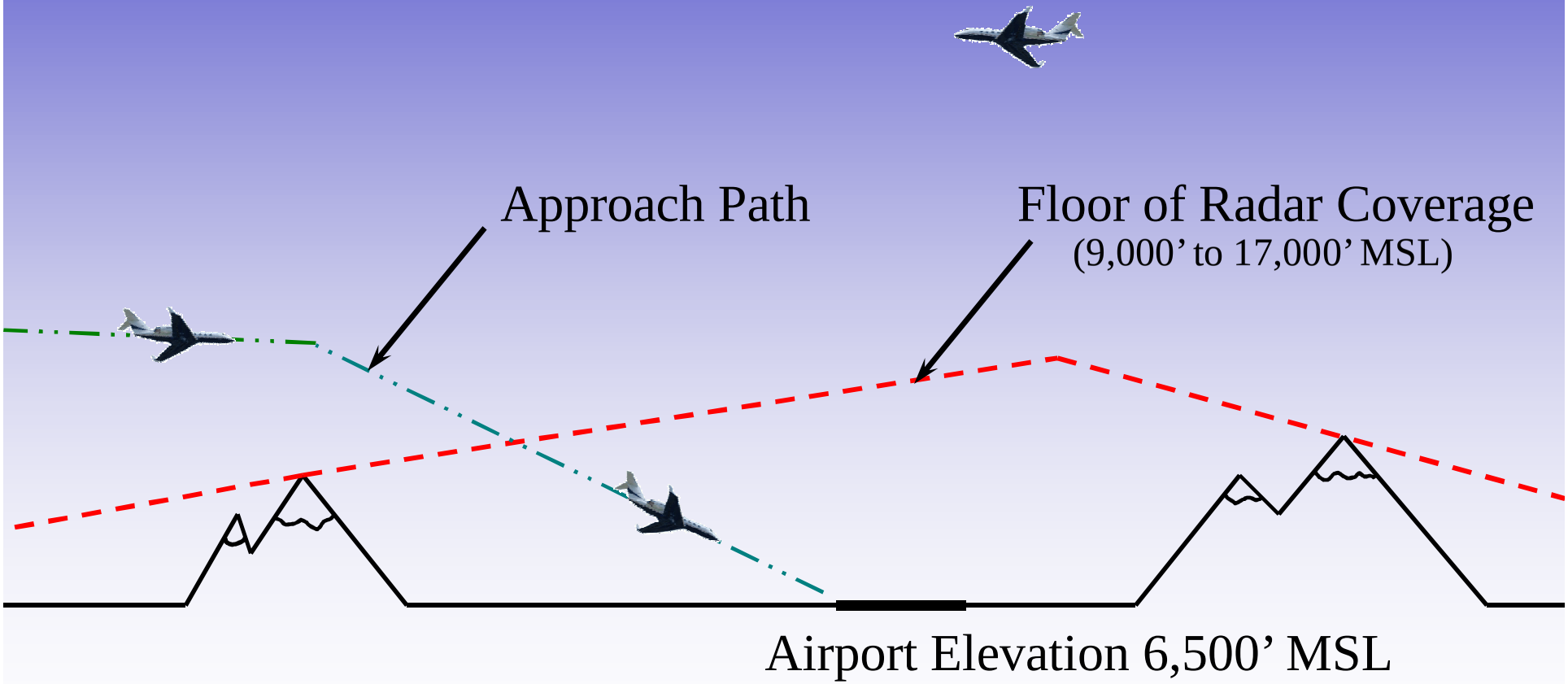
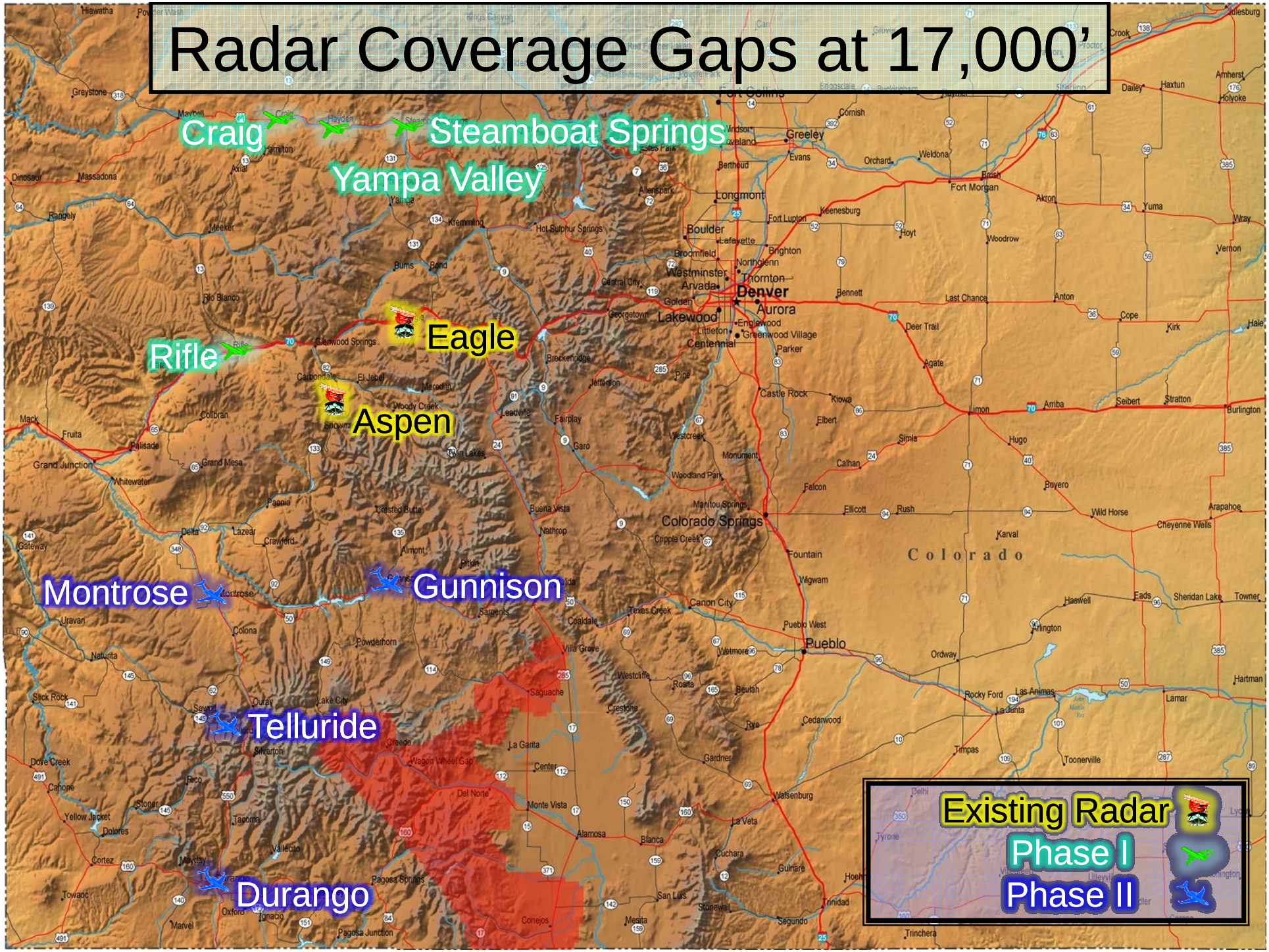
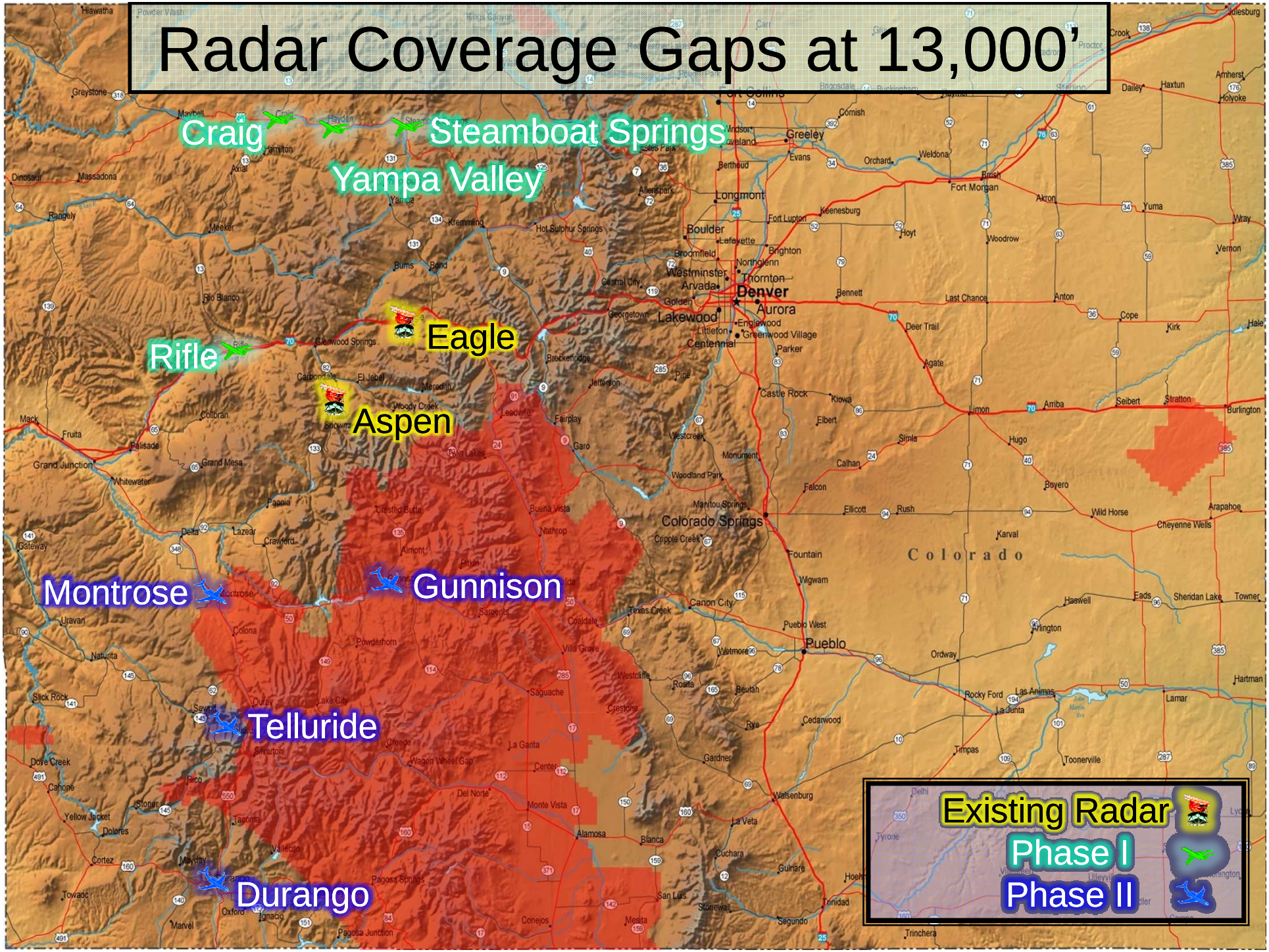
Legacy Radar Coverage



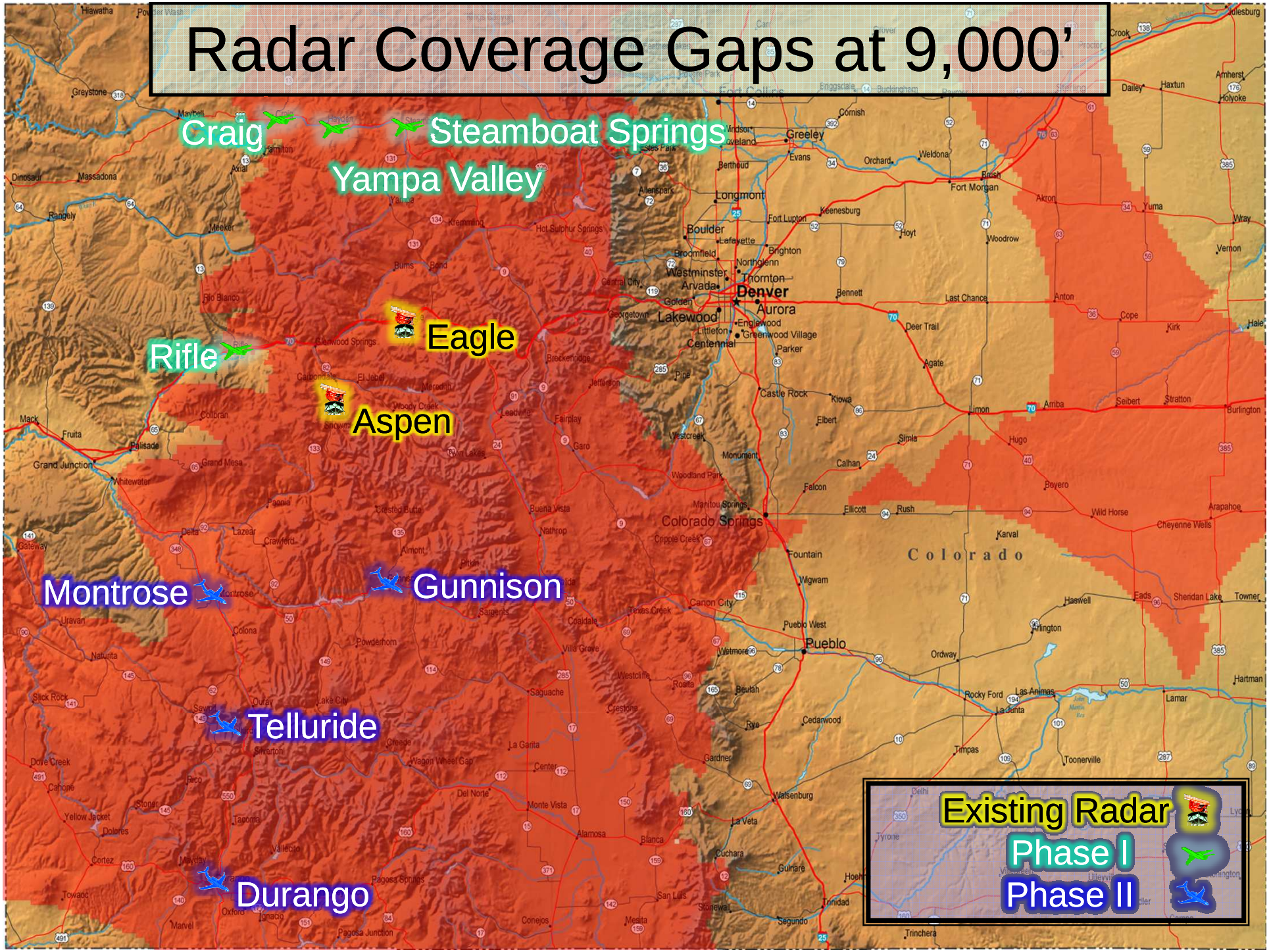
Radar Coverage Gaps at 17,000’

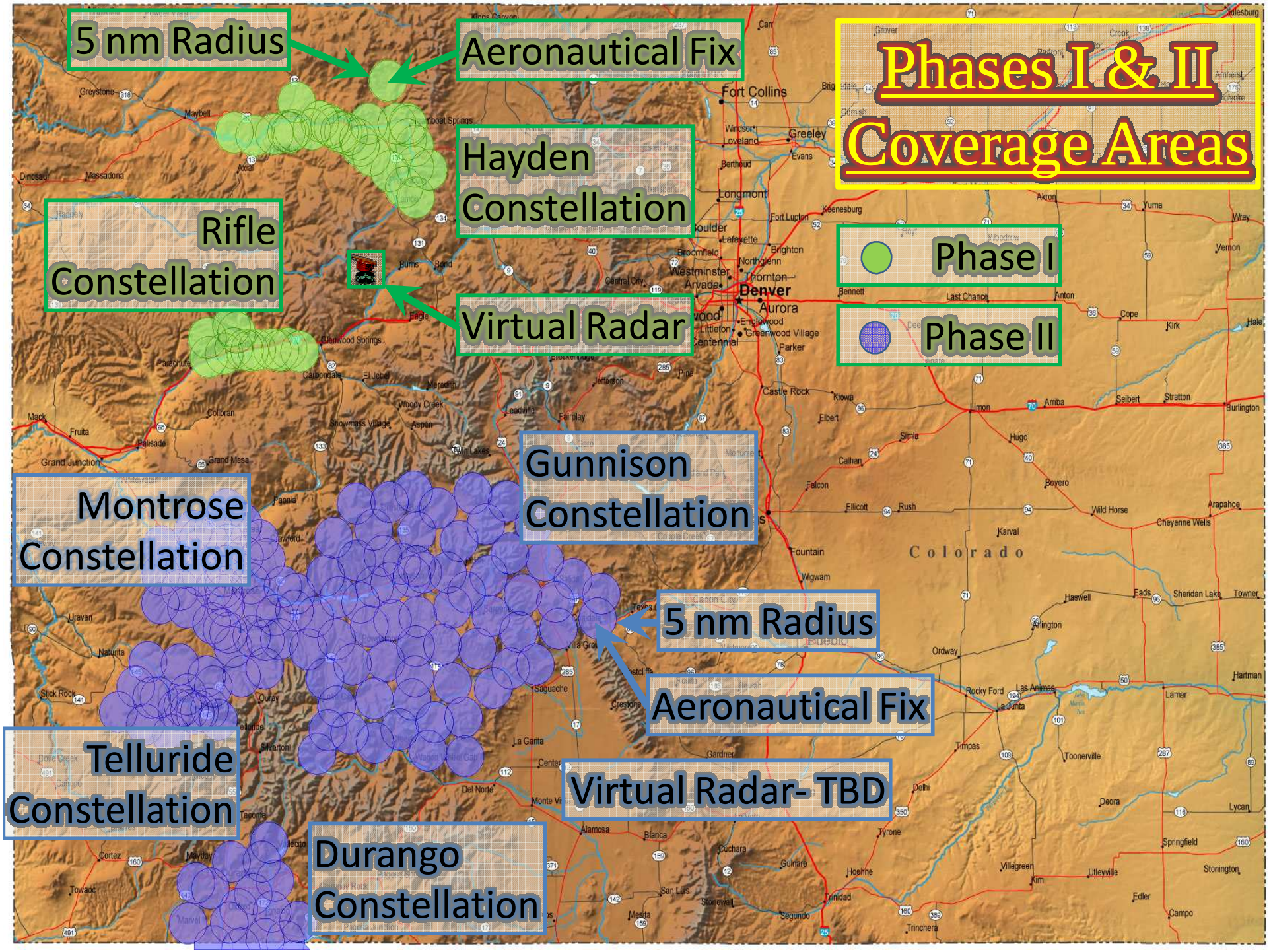


Radar Coverage Gaps at 13,000’



Radar Coverage Gaps at 9,000’




5 nm Radius
Aeronautical Fix
Hayden Constellation
Rifle Constellation
Virtual Radar
Phases I & II Coverage Areas
Phase I
Phase II
Gunnison Constellation
Montrose Constellation
5 nm Radius
Aeronautical Fix
Telluride Constellation
Virtual Radar- TBD
Durango Constellation
Colorado
Denver
Aurora
Fort Collins
Greeley
Grand Junction

Phase III
Blended Airspace

What is "Blended Airspace" ?

- The Integrated and Seamless control of air traffic from the En Route structure to the airport surface.
- A cooperative effort between the State of Colorado and the FAA to enhance safety and increase operational efficiency at non-towered airports.

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COLORADO SURVEILLANCE PROJECT PHASE III ADS-B/WAM

FEDERAL AVIATION ADMINISTRATION

Benefits of "Blended Airspace"

1. Support increased safety, capacity and efficiency at non-towered airports and airports with a part time ATCT;
2. Avoid the cost associated with siting, designing, constructing and maintaining an Air Traffic Control Tower;
3. Move toward the unification of air traffic control paradigm envisioned by NextGen.

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COLORADO
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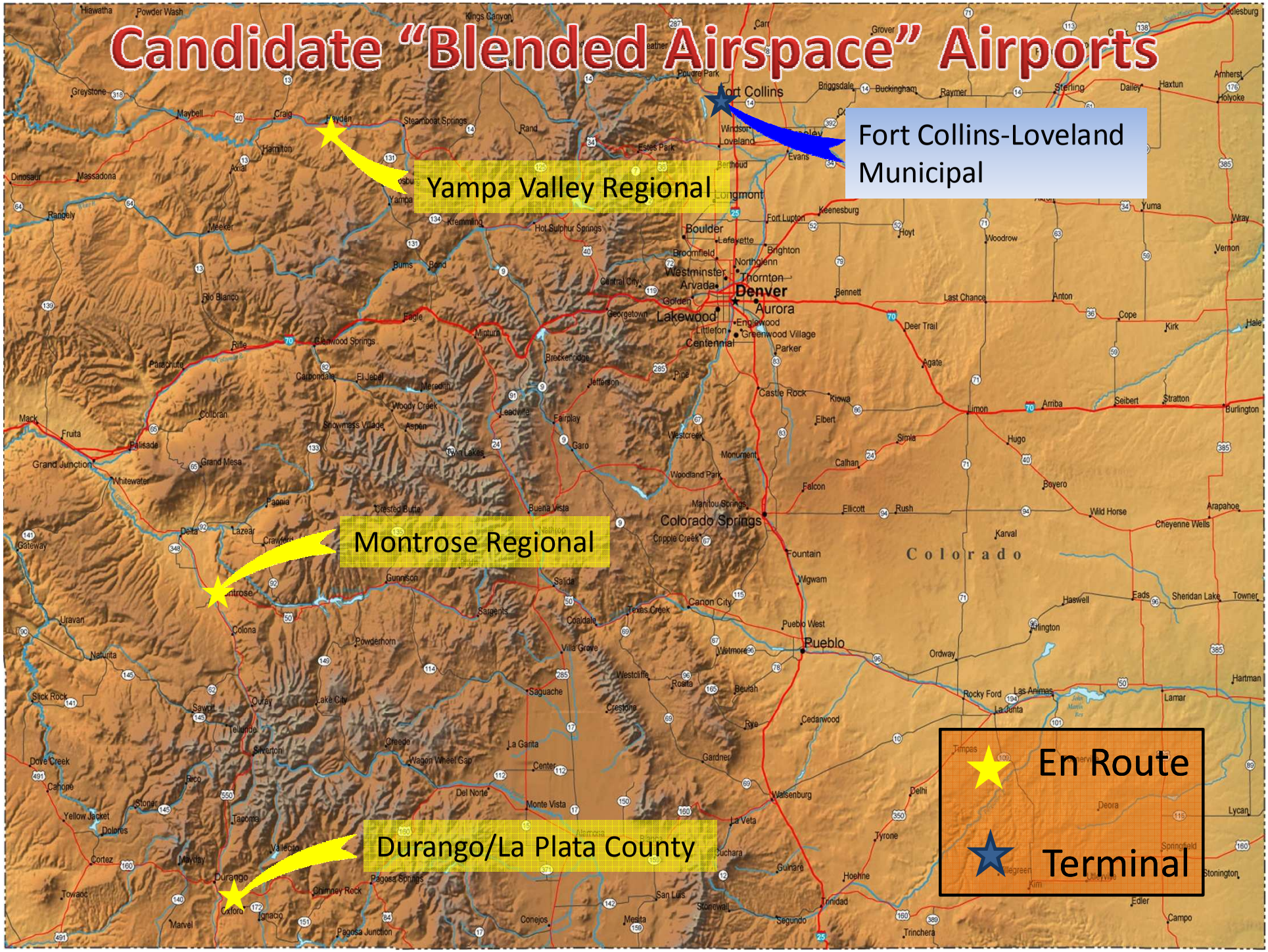
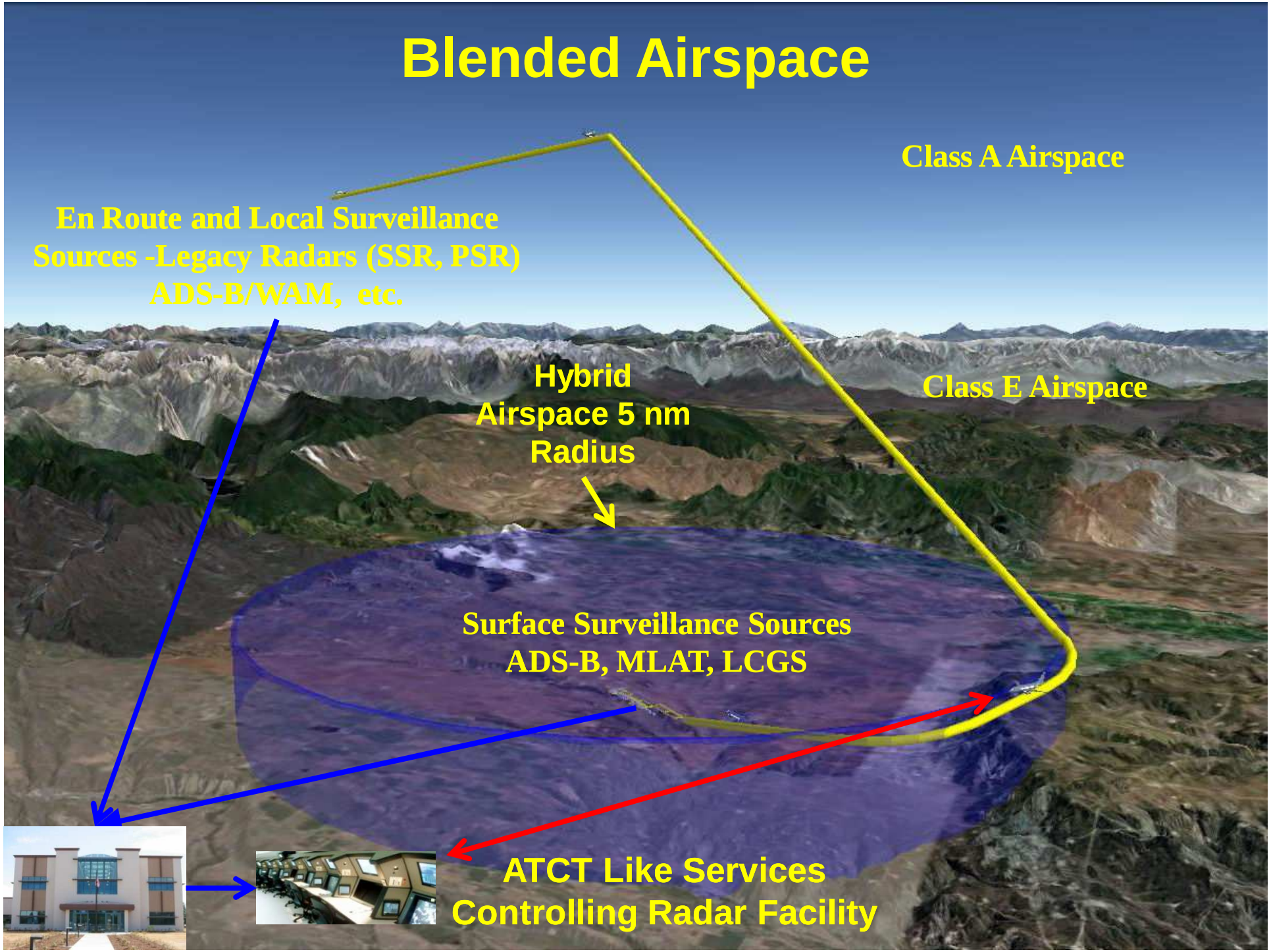
PHASE III
ADS-B/WAM

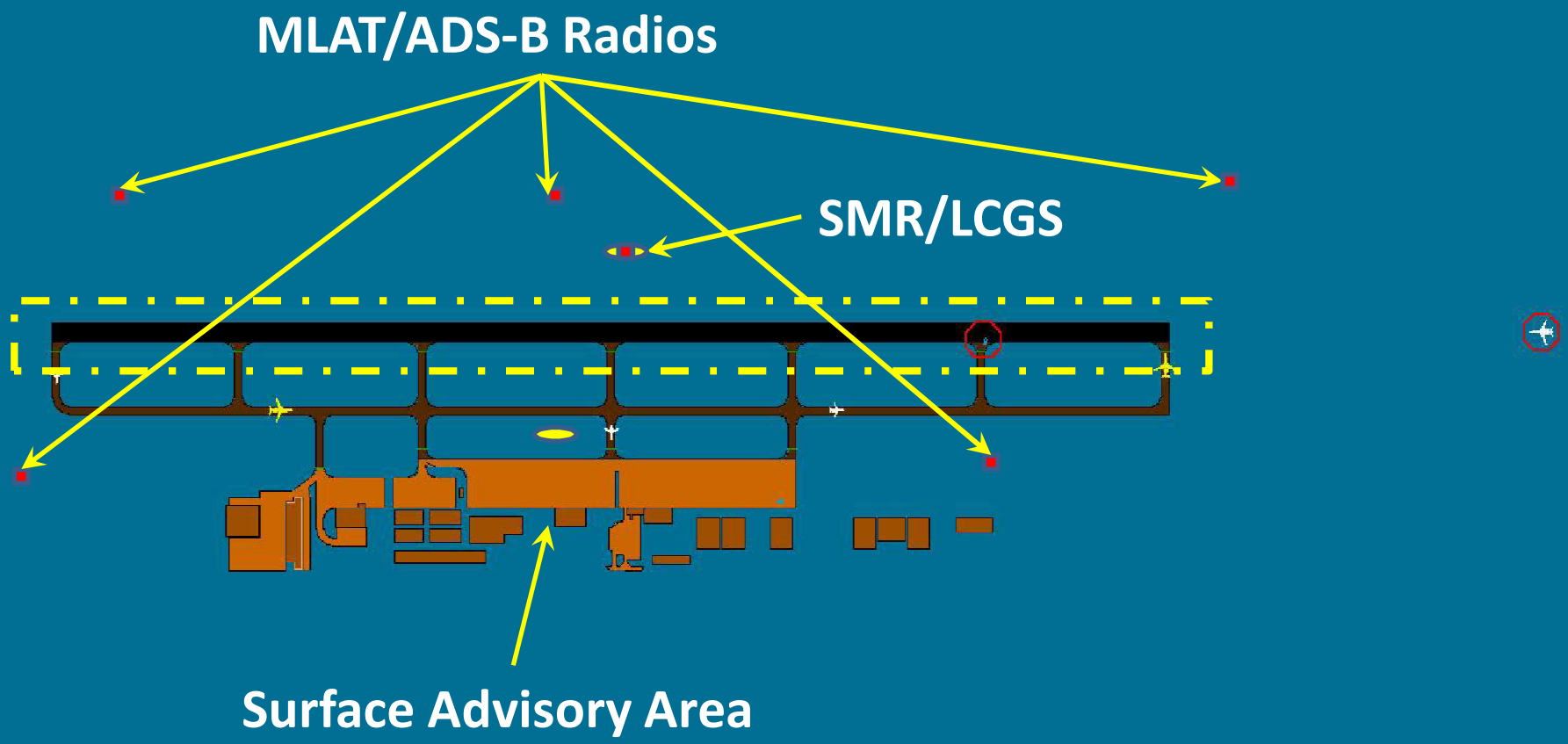
COLORADO DOT
AERONAUTICS
DIVISION


Candidate "Blended Airspace" Airports
Fort Collins-Loveland Municipal
Yampa Valley Regional
Montrose Regional
Durango/La Plata County
En Route
Terminal

Blended Airspace



Airport Surface Advisory Area



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Discussion/Questions ?