



THE GOLD STANDARD FOR AVIATION SINCE 1935

Building the Next Generation Air Transportation System: Tackling the Challenges

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For TRB Policy Session
Woods Hole, MA
June 15, 2012



Why Do We Need NextGen?

- Aging Infrastructure reducing efficiency, increasing costs of air transportation
- Technology available now to facilitate
 - Increased safety
 - Enhanced efficiency, predictability
 - Enhanced fuel efficiency
 - Reduced impact on environment
- At risk of losing global leadership
 - Countries without legacy systems can leapfrog US



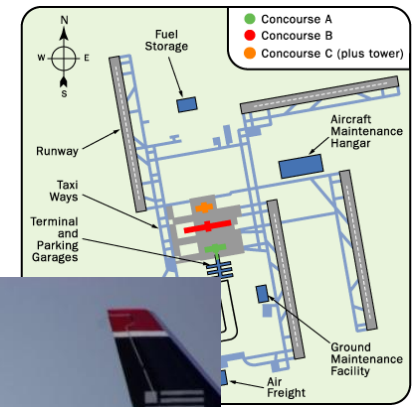
A Quick Overview of NextGen



Airport Surface

Reduce Delays, enhance safety, efficiency of surface traffic by:

- Enhancing situational awareness
- Capturing & disseminating data
- Establishing FAA Surface office



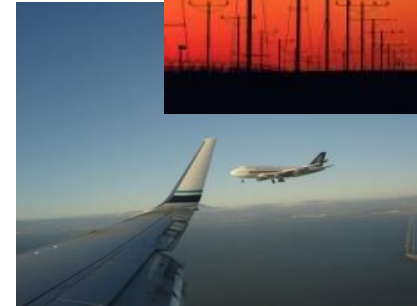
SURFACE



Arrivals and Departures

Increase runway access to converging, intersecting and closely-spaced parallel runways by:

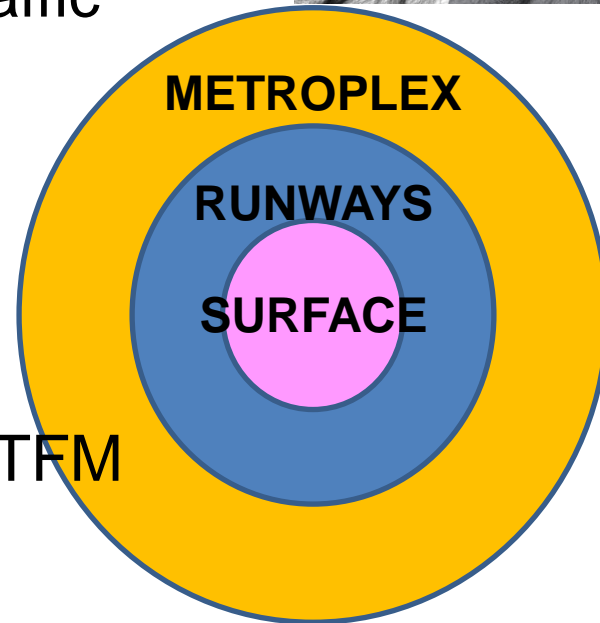
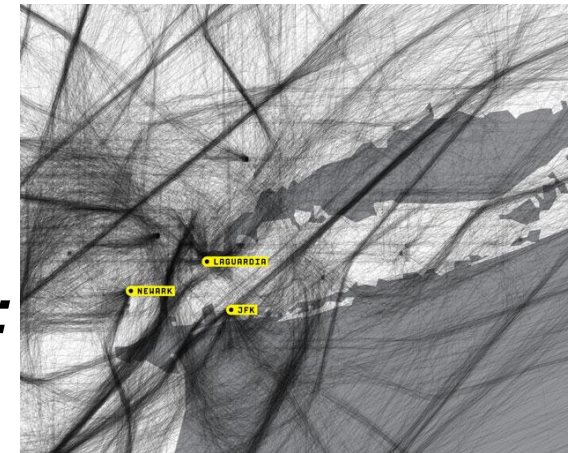
- Using enhanced surveillance methods



Metroplexes

Improve efficiency of cruise operations by:

- De-conflicting adjacent airports traffic
- RNAV, with RNP where needed
- Optimized vertical profiles
- Use 3 NM rules in more airspace
- Enhanced airspace design
- Enhanced ATC, flow and surface TFM

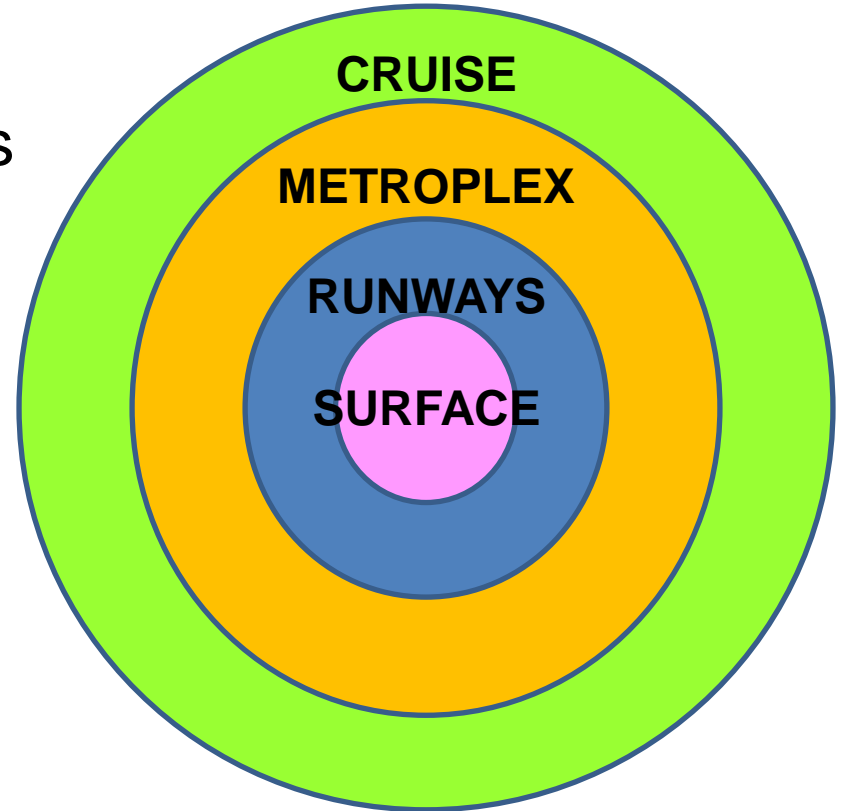


Airborne Cruise



Improve efficiency of cruise operations by:

- Increasing dissemination of airspace status and schedules
- Time-based metering
- DataComm

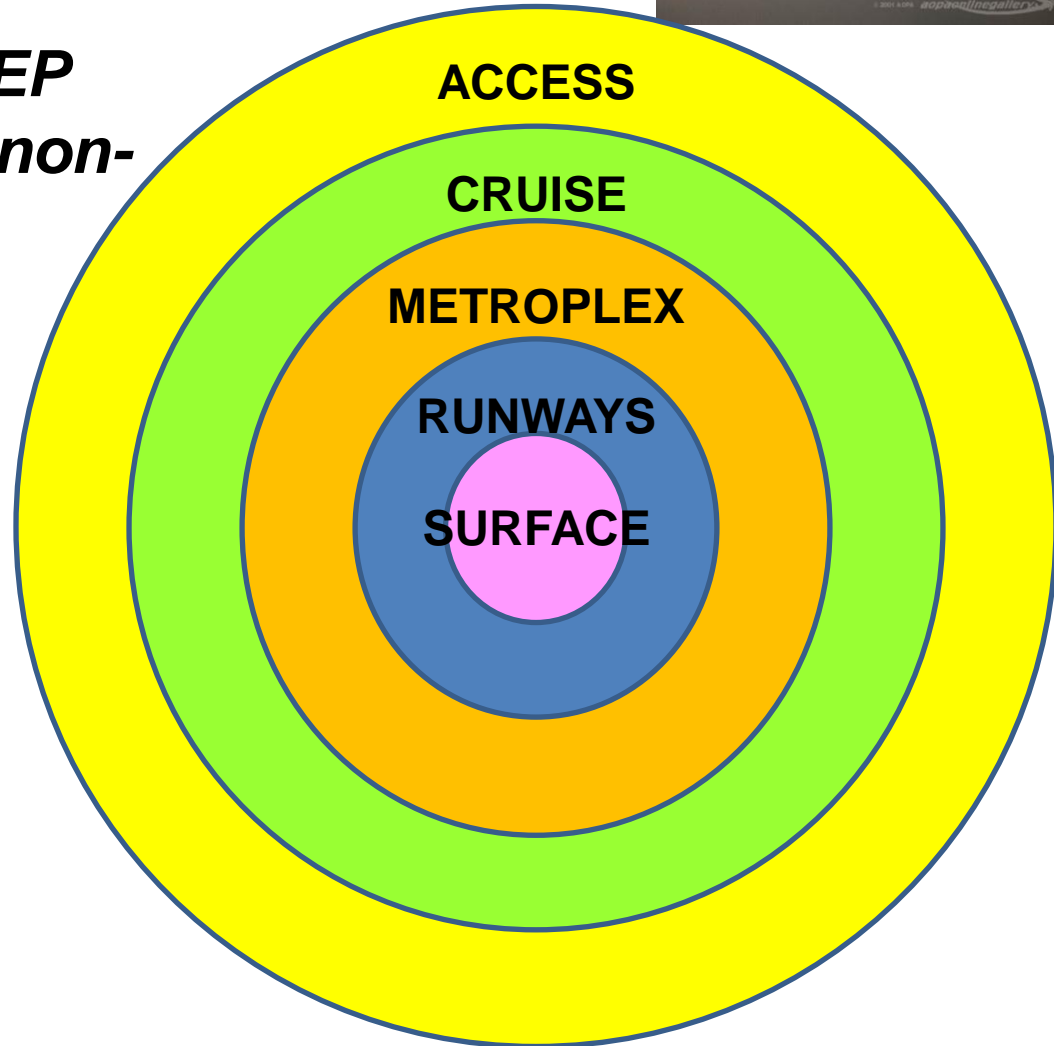


General Aviation Access



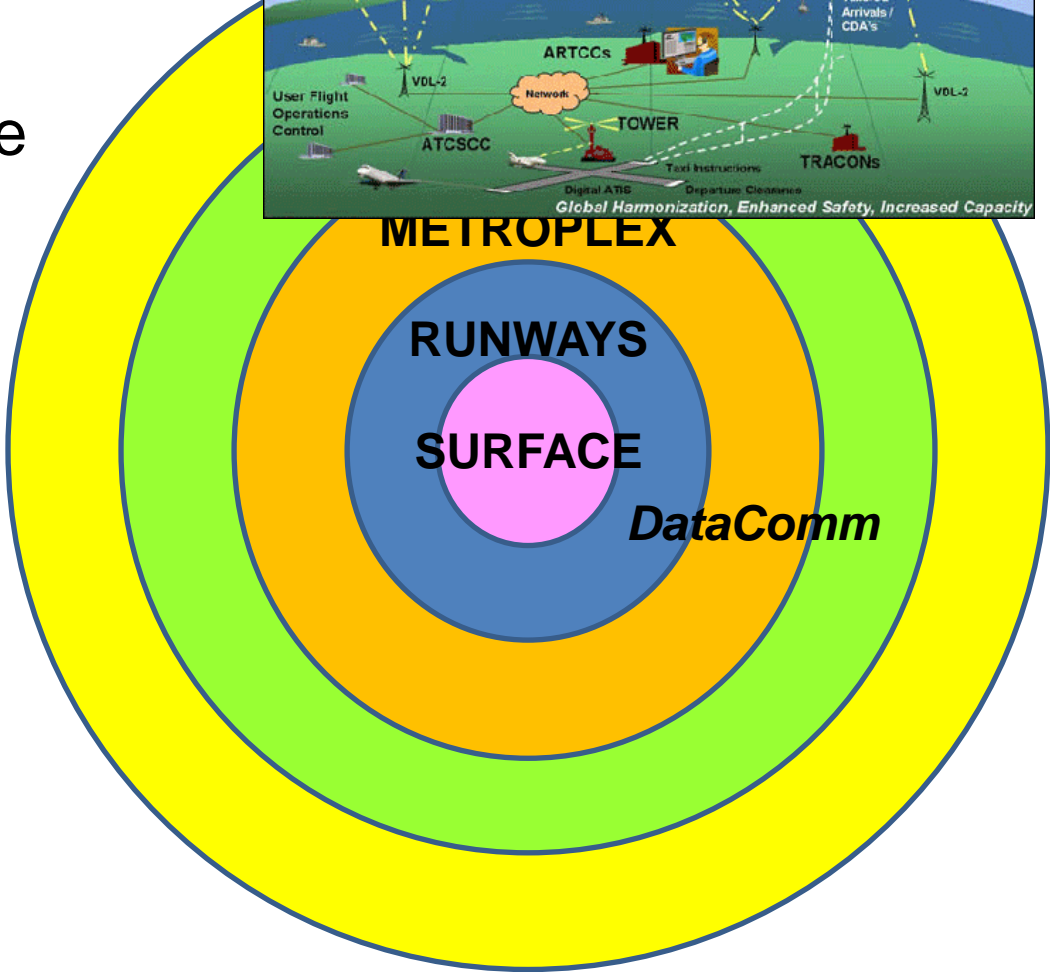
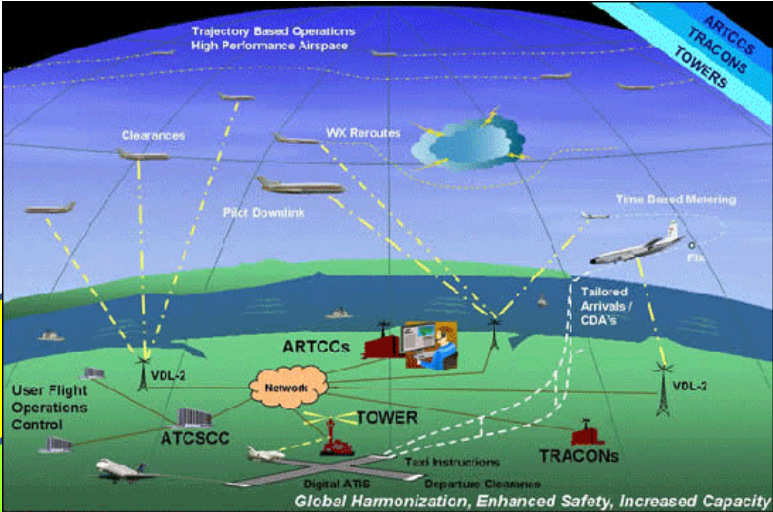
Improve access to non-OEP airports and low altitude, non-radar airspace by:

- Precision-based airport approaches & departures,
- Expansion of surveillance services to areas not currently under radar surveillance



Controller-Pilot Communications & CDM

- Data comm to enable more efficient use of capacity.
- Tactical reroutes around weather and congestion
- CDM



Eliminating the Bottlenecks: Deploying Where the Problems Are



NextGen Core Technologies

- COMMUNICATIONS:
 - *Controller-Pilot Data Digital Communications*
- NAVIGATION:
 - *Performance-Based Nav (RNP, RNAV)*
 - *Satellite-based Nav (ADS-B)*
- SURVEILLANCE:
 - *Satellite-based Surv (ADS-B)*
- ATM-TFM:
 - *Time-Based Traffic Flow Management*
 - *Efficient Airport Surface Operations*
 - *Controller Decision Support Tools*
- SYSTEM-WIDE INFORMATION SHARING

NextGen Relies Increasingly on Integrated Cockpit and Ground Systems, Requiring Increased User Investments

Key Challenges

- NextGen is more than technology
- The devil's in the details
- Path to NextGen is a partnership
 - Must work together to incorporate organizational and institutional changes necessary for success



Industry consensus: the biggest challenge to NextGen is not Technology but rather Policy, Procedures and Financing.

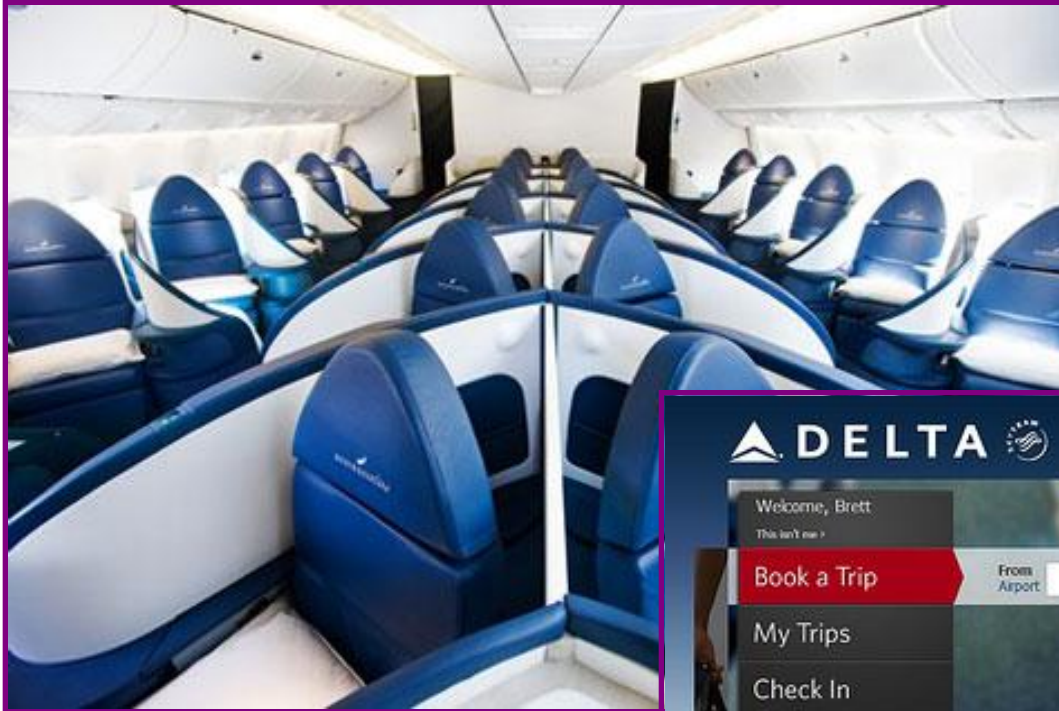
Airline Business Case

- 1. Capital available**
- 2. Creates competitive advantage or remedies disadvantage**
- 3. Confidence in execution**
- 4. Payback less than 3 years**



* From Delta Air Lines, NAC Business Case
Working Group Co-Chair

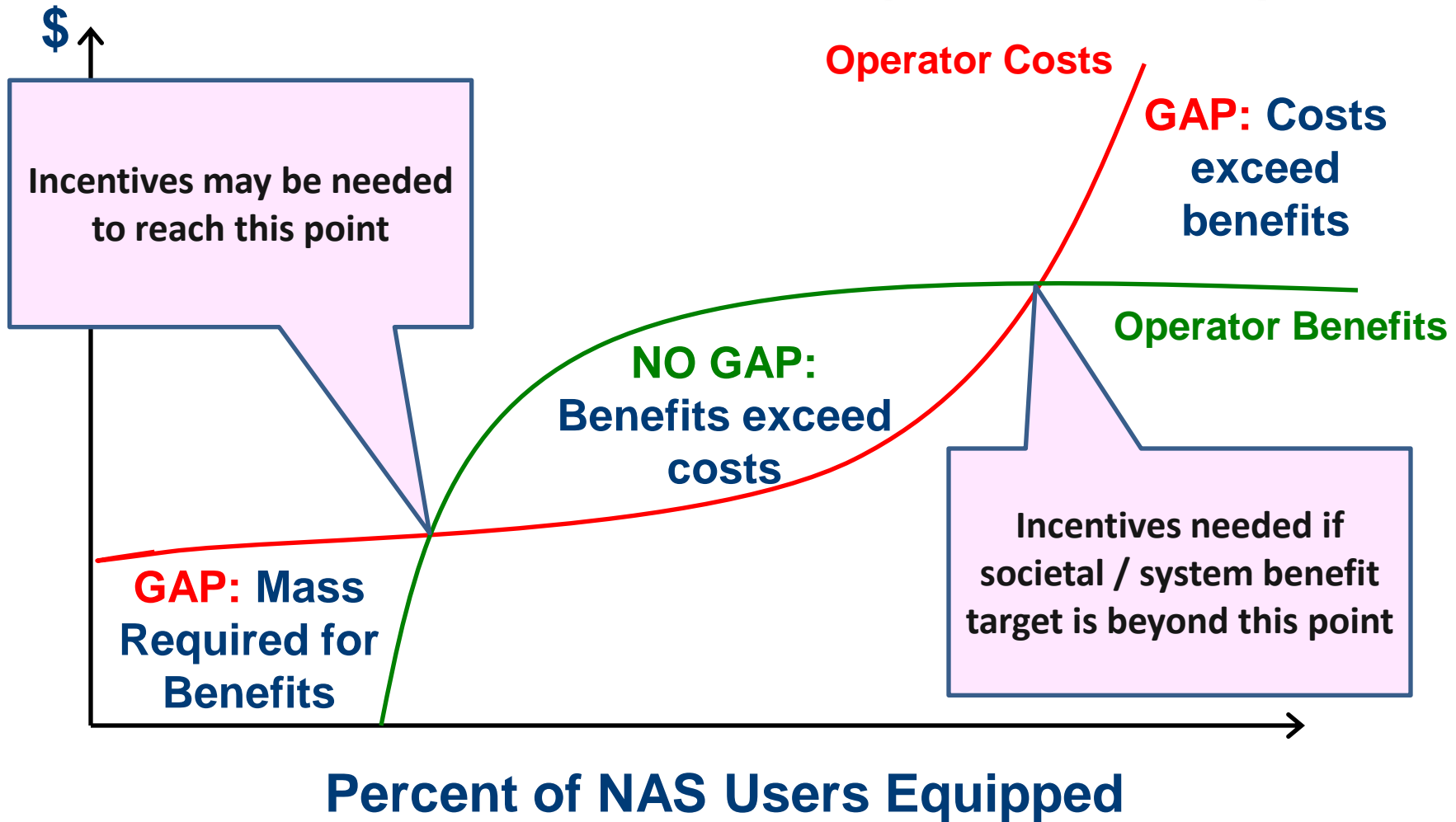
Business Case Gap for Airline



Competing Priorities

A screenshot of the Delta Airlines website homepage. The page features the Delta logo at the top left, a search bar at the top right, and a navigation menu with options like 'Book a Trip', 'My Trips', 'Check In', and 'Flight Status'. A prominent banner advertises 'WI-FI FROM 35,000 FEET' with the text 'Stay connected while you fly. In-flight Wi-Fi service available.' Below the banner, there are social media icons and several promotional tiles for 'NEW LOOK - NEW FEATURES', 'FIRST BAG FLIES FREE', and 'MORE DESTINATIONS'. The background of the website features a person using a laptop on an airplane.

Financial Incentives Help Close Gaps



Diverse Users' Needs

Business Case Closure Criteria	Commercial	High-End GA	Low-End GA	Military
Financial Threshold	2.5 Year Payback	5 Year Payback	Affordability	Cost Neutrality
Monetized Benefits	User Direct Operating Costs	Fuel Savings		
Non-Financial Factors	Fleet Mobility	Access and Time Savings	Access and Safety	Mission, Access and Fleet Mobility

S U C C E S S



Components

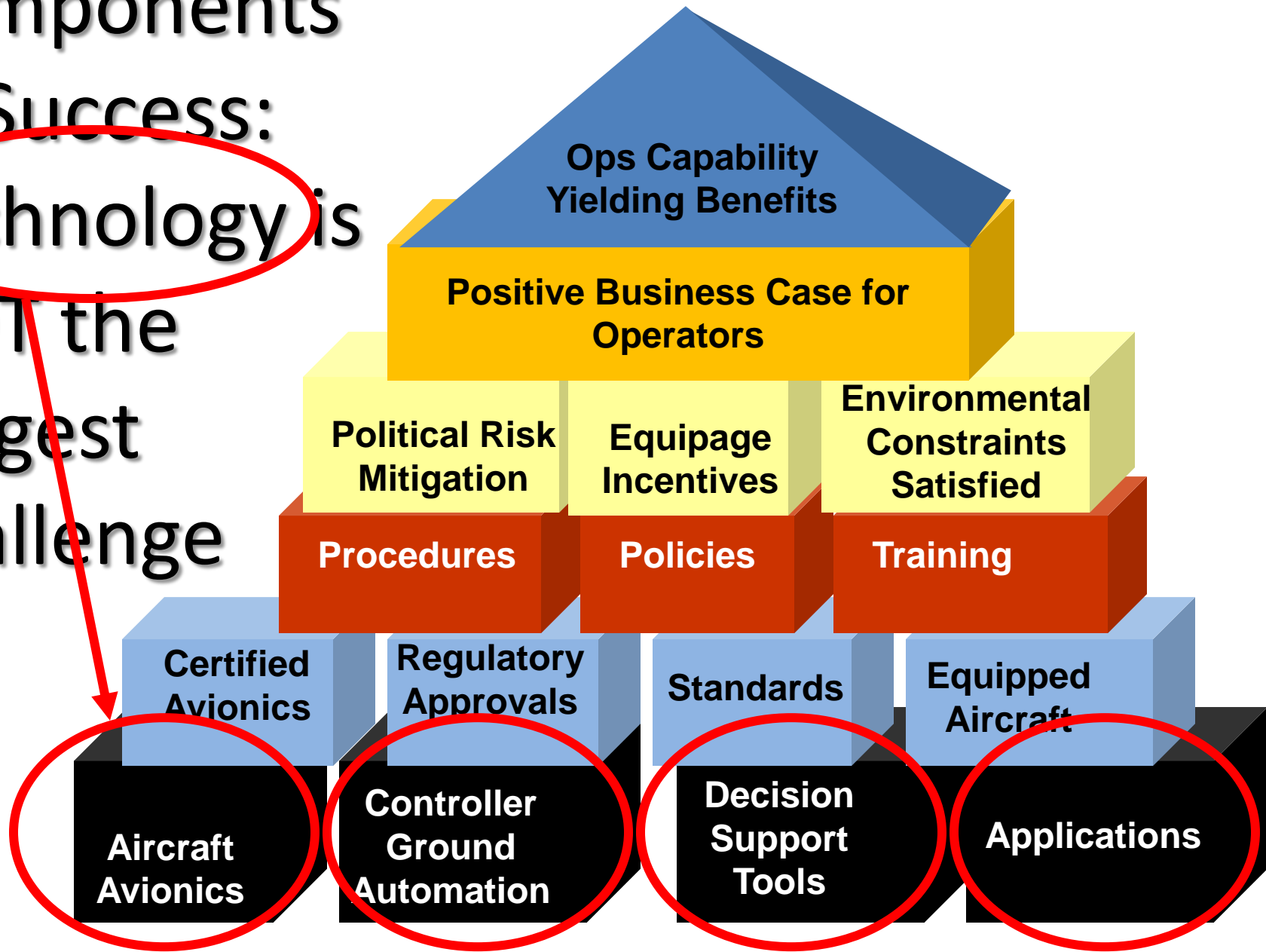
of Success:

Technology is

NOT the

biggest

challenge



Continued Partnership Will Help Ensure All the Pieces are in Place to Achieve the Benefits of Modernization

