

# FAA Data Center Consolidation Initiative

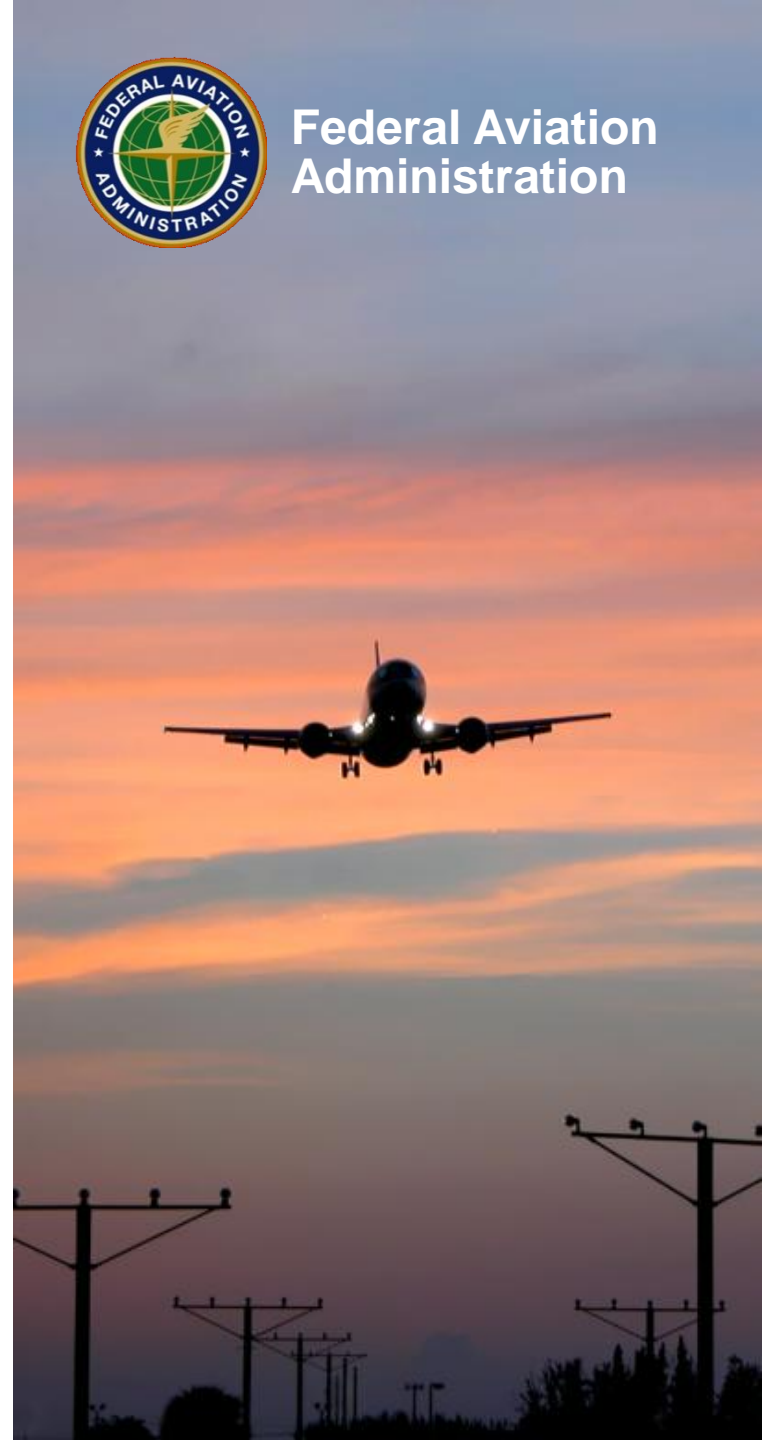
**Lessons Learned: Large and Small Scale Data Center Consolidation, plus Application Mapping Pilot**

**By: FAA DCCI Program Office**

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Federal Aviation  
Administration



# Agenda

- **Aviation Safety (AVS) Regulation and Certification Infrastructure for System Safety (RCISS)**
  - Data Center Infrastructure and IT Assets Consolidation
- **Application Mapping Pilot (AMP)**



# RCISS – Definition of Program

- **RCISS is an existing technology refreshment program funded to upgrade and maintain the safety critical AVS enterprise IT infrastructure.**
- **RCISS provides next generation of AVS's IT infrastructure, designed to support AVS safety workforce as employees become increasingly mobile and reliant on virtual workplaces.**



# RCISS - Business Problem/Issue

- **Affordability**
- **Disparate processes, hardware, and software standards**
- **Wasted resources  
(storage/network/server/SW licensing)**



# RCISS - Solution / Targeted Outcome

- **Consolidate server/backup/storage infrastructure**
- **Develop standardized HW/SW platforms**
- **Develop standardized Data Center processes**



# RCISS - Key Implementation Steps

- **Connectivity between Data Centers**
- **VLAN extensions**
- **SAN Fabric extension**
- **Collapse of legacy data center Virtual Center and VM infrastructure**
- **Space consolidation, purchase more space efficient HW on lifecycles.**
- **Process uniformity**
- **Development of standardized HW/SW platforms**
  - **Backup HW/Backup Methodology**
  - **Monitoring and Reporting**
  - **Servers**
  - **Tool Sets (IP tracking SW, management portals)**



# RCISS - End Result / ROI / Benefits

- **Labor Reduction of 2-3 CTR positions (\$225k) (2 realized right now)**
- **Facility Saving (Generator upgrade/CRACs)**
- **Consistent LOB policies applied**
- **Focused skill sets (training savings/contact uniformity for labor)**
- **Standardized HW/SW platforms**
- **Reduced complexity – fewer DCs to support**



# RCISS - Lessons Learned

- **Vendor savings (leveraging standards)**
- **Team building is important throughout the transition**
- **The technical is not the issue, it is the culture**
- **Plan, Plan, Plan then TEST. Have a failback plan. Document the plan, have weekly review meetings with the different DC leads.**
- **Communication is paramount in keeping projects on track**
- **It will cost more than expected, and it will take longer than projected.**





# AMP- Business Problem/Issue

- **Develop a workable approach to Application Mapping (Phase 2 of FDCCI mandate)**
  - Gather Infrastructure Use & Application Inventory data
  - Utilize questionnaires for pilot data center participants (3 Headquarter and 2 Regional)
    - Automated tool was not available or were difficult to deploy
  - Perform application mapping on small scale
  - Verify that the approach is viable and produces the desired results



# AMP - Solution/Targeted Outcome

- **Answer key application mapping questions:**
  - What applications are in each physical space and what customers are being supported?
  - What applications are on which servers and what are the technical and business requirements?
  - How do applications relate to each other and what are their dependencies?
- **Assess whether sample is representative**
- **Develop process and tools to use agency-wide**
- **Determine level of effort needed for full-scale application mapping**



# AMP - Lessons Learned

- **Limit manual application mapping: use automated tools to get reliable, useful data**
- **Data collection gotcha: Inventory data may become stale quickly**
- **Map it visually: Visualization of data via mapping diagrams significantly enhances understanding of dependencies and improves risk assessment**
- **Speak the same language: Standard terms and definitions enhance information collection (e.g., data center, server room, LAN Room, Tier, application)**
- **Use Automated Tools/SMEs: Application dependency determination specific tools together with domain expertise**

