Remote Tower Services (RTS)

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Agenda

- Overarching Remote Tower Services
- Leesburg Remote Tower
- Fort Collins Remote Tower
- FY18 Congressional Appropriation for Remote Towers

OVERARCHING REMOTE TOWER SERVICES

Remote Tower Services (RTS) in the NAS

OVERARCHING RTS – FAA EXECUTIVE COUNCIL GOAL

- Establish non-federal certification strategy to allow for RTS in NAS at Sponsor-Owned FAA Contract Tower (FCT) airports
  - **Establish Remote Tower Service Levels.** Bundle existing tower operation services to create RTS Service Levels and identify RTS standards for each Service Level.
  - **Qualified Vendor/System Approval Process.** Develop process to implement, evaluate, and certify non-federal vendor systems for RTS Service Levels.

Remote Tower Displays of Airfield w/ Controller positions

ONGOING SITE SPECIFIC ACTIVITIES

- Leesburg Remote Tower
  - FAA collaborates with SAAB and the Commonwealth of Virginia to develop an evaluation process which is designed to reach a decision on operational approval for their remote tower system at Leesburg Executive Airport (JYO) only.
  - SAAB funded effort with FAA providing internal Subject Matter Expertise
- Fort Collins Remote Tower
  - FAA collaborates with the State of Colorado to select and evaluate a Remote Tower system at Northern Colorado Regional Airport (FNL). The goal is to determine if provision of Class D air traffic control tower services can be provided safely and efficiently by a tower controller using Remote Tower technologies instead of the traditional Out-The-Window (OTW) view of a tower cab.
  - Colorado Department of Transportation (CDOT) funded effort with FAA providing Subject Matter Expertise

Airfield Camera Housing

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Tower Funding Types

Legend
- FAA costs
- Non-FAA costs

Tower Funding Type		FAA Share of Funding: Tower Construction, Equipment, and Maintenance	FAA Share of Funding: Controller Staff	Number of Airports > 40 Years Old / Total	Number with Union Rep.* / Total
FAA-staffed Tower		●	●	103/264	264/264
FAA Contract Tower (FCT)	FAA-owned	● Technical Operations Service Area Office	●	80/102	34/102
	FAA-owned (Cost Share)	● Technical Operations Service Area Office	◔ Capped at 20%	3/3	1/3
	Sponsor-owned	◔ FAA Pays for FAA owned and operated equipment as well as training for government furnished equipment	●	66/135	51/135
	Sponsor-owned (Cost share)	◔ FAA Pays for FAA owned and operated equipment as well as training for government furnished equipment	◔ Capped at 20%	9/13	6/13

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Sources:
Order JO 7210.54B FAA Contract Tower (FCT) Operation and Administration (October 1, 2006); updated version C does not describe cost share arrangements.
49 U.S. Code § 47124 - Agreements for State and local operation of airport facilities

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* Includes NATCA and PASS

Working Service Level (SL) Framework

Current Model

Physical tower - Class D

ALL

- "ALL" refers to airport ATM services provided by the tower controller
- Excludes radar separation services
- Airborne IFR separation is provided by overlying IFR facility

None

Proposed Model

Physical or Remote Tower - Airspace Class varies by SL

ATCT with Radar Services

Radar Separation, Control, Advisory, & Information Services – 25/25

- ATCT Service provided by a CPC in accordance with JO 7110.65 and other Orders
- Pilot participation in accordance with the FAR
- Visual observation of the airfield augmented **with** secondary surveillance source used to provide radar services

ATCT Services – Mode A

Control, Advisory & Information Services – 24/25

- ATCT Service provided by a CPC in accordance with JO 7110.65 and other Orders
- Pilot participation in accordance with the FAR
- Visual observation of the airfield augmented **with** secondary surveillance source for situational awareness only (not used to provide radar services)

ATCT Services – Mode B

- ATCT Service provided by a Certified Professional Controller (CPC) in accordance with JO 7110.65 and other Orders
- Pilot participation in accordance with the FAR
- Visual observation of the airfield augmented **without** secondary surveillance source
- Lack of secondary surveillance source may result in the implementation of site-specific ATC procedures

Airport Advisory Services – Mode A

Advisory & Information Services – 14/25

- Airport advisory services provided by certified Specialist in accordance with JO 7110.10 and other Orders
- Voluntary pilot participation
- Airport advisory services provided **with** visual observation of the airfield
- Traffic information about observed, known, or reported traffic

Airport Advisory Services – Mode B

- Airport advisory services provided by certified Specialist in accordance with JO 7110.10 and other Orders
- Voluntary pilot participation
- Airport advisory services provided **without** visual observation of the airfield required
- Traffic information about known or reported traffic

Airport Information Services

Information Services – 3/25

- No special personnel certification required
- Voluntary pilot participation
- Can be automation based
- Airport information services provided without visual observation of the airfield required

Notes: 1) These airport ATM service levels are distinct from ATC facility levels and the Navigation Service Groups
2) IFR separation services are delivered by overlying IFR facility in the SLs without Radar Services
3) Each SL has the equipment from SLs that precede it
4) Remote Tower services may or may not be applicable/business viable to deliver Airport Advisory or Airport Information Service Levels

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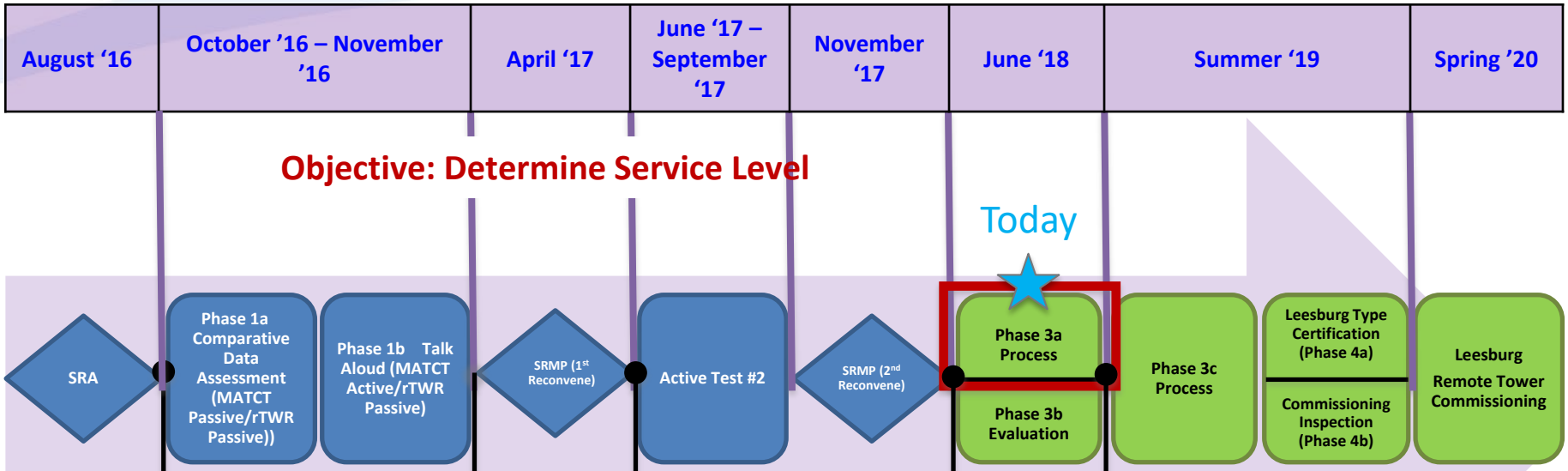
LEESBURG REMOTE TOWER

Leesburg RTS Status Sequence of Events



Decision Point #1:
•Proceed with System Assessment (Phase 1)

Timeframe: Mid-August '16 - September '16

Complete

Prepare for SRMP (1st Reconvene

Timeframe: mid-December '16 – mid- March '17

Complete

Decision Point #2:
•Proceed with Active Test (Phase 2)
- **Temporary CTO issued to proceed with Phase 2**

Timeframe: May '17

Complete

Deliverable: Determine Service Level

Decision Point #3a:
•Proceed with Phase 3a Process: Validate ATCT Service – Mode B Service Level

Timeframe: June '18

Safety Risk Management Panel for Phase 3b

Decision Point #3b (after Phase 3a is underway):
•Proceed with Phase 3b Evaluation

Timeframe: May '19

Safety Risk Management Panel for Phase 3c

Decision Point #3c:
•Proceed with Phase 3c Process

Decision Point #4:
•VSATS/Town of Leesburg DP: Proceed with Operational System.
- **Yes: Saab Prepares Final Site Configuration**
- **No: Completion of Project**

Decision Point #5:
•Acquire Minimum Equipment for rTWR

Deliverable: Final air traffic requirements to develop performance standards

Decision Point #6:
•Final Assessment
•Air Traffic functional acceptability

Timeframe: Summer '19

- **Note: Phase 3a, 3b, 3c are the extended periods of assessment of the remote tower system.**
- **SRA: Safety Risk Assessment**
- **SRMP: Safety Risk Management Panel**
- **rTWR: Remote Tower**
- **VSATS: Virginia Small Aircraft Transportation System**
- **MATCT: Mobile Airport Traffic Control Tower**

- Complete
- On Track

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Leesburg RTS Status

- Since 2016, FAA completed series of passive tests and Safety Panels investigating RTS hazards and risks, building up to Active Testing
- Active RTS testing completed Jun-Sep 2017
  - Actively controlled 5500+ aircraft and 500+ ground movements over 3.5 months under varying traffic loads, traffic patterns and weather conditions
- Held Safety Risk Management Panel in Nov 2017
  - Investigated hazards/risks associated with moving into Phase 3a – Industry-Led Initial Operating Capability (IOC) operation
  - Established Industry-Led IOC operational terms and associated safety risk validation processes with JYO airport, contract controllers and vendor
- Initiated Industry-Led IOC capability on June 25, 2018
  - **IOC IS EXTENDED ASSESSMENT & VALIDATION OF THE REMOTE TOWER SYSTEM**
  - Airport Traffic Control Tower (ATCT) services provided 7 days/week, 14 hours/day
  - Remote Tower is applying Site-Specific Standard Operating Procedures (SOPs) fully coordinating with adjacent facilities (Potomac TRACON and Dulles Tower)
  - No limitations placed on number of aircraft

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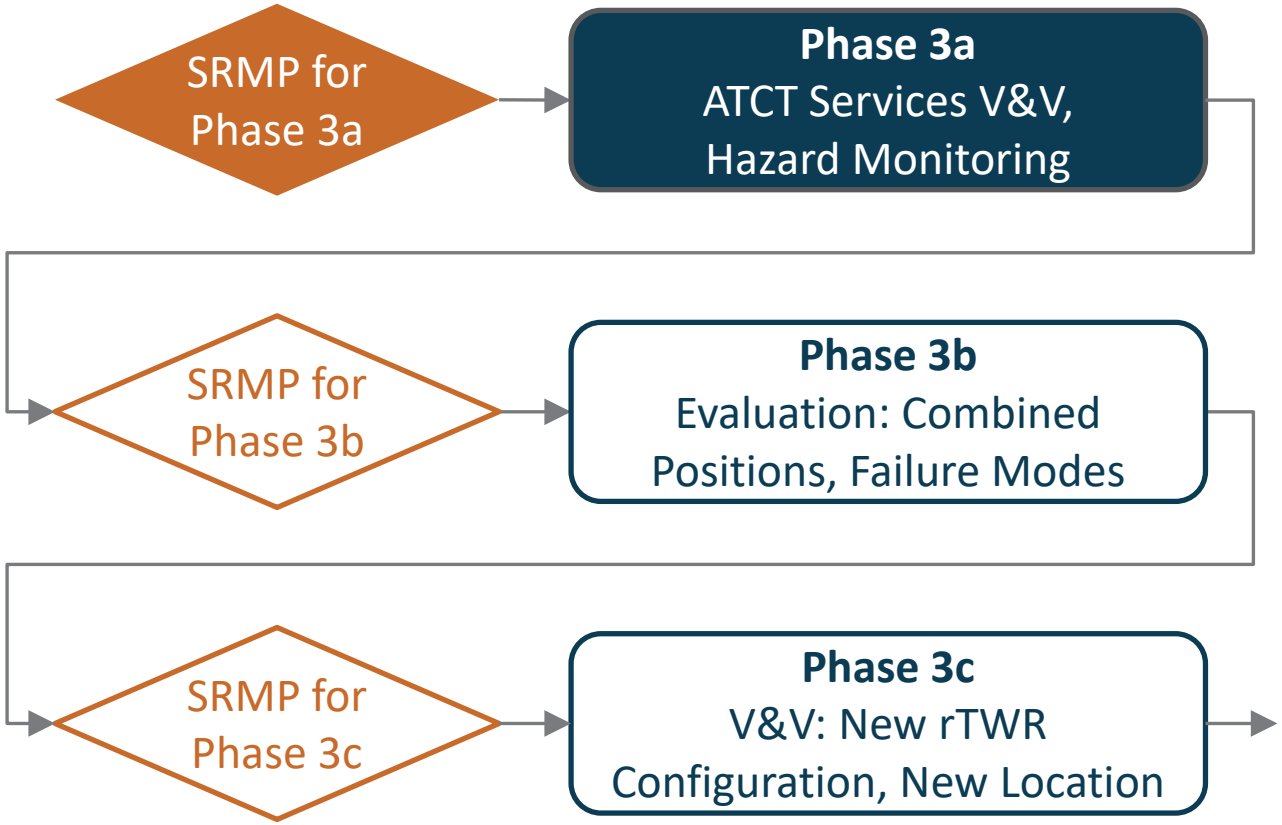
Phase 3 Overview



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Leesburg RTS Phase 3a – *Industry Led Initial Operating Capability (IOC)*

- **Purpose:**
  - Operate Remote Tower with existing array of functions and capabilities in its current location, applying Site-Specific Standard Operating Procedures (SOPs)
  - Validate safety requirement
  - Validate Remote Tower Service Level (Mode B) needs and gain valuable insight and data contributing toward future standardization efforts
- **Logistics:**
  - Airport Traffic Control Tower (ATCT) services provided 7 days/week, 14 hours/day, with a staff of three (3) controllers at all times for approximately 1 year
  - During the first five weeks of Phase 3a:
    - Mobile Airport Traffic Control Tower (MATCT) was staffed to maintain situational awareness and intervene as necessary to ensure safety
    - Remote Tower was only used 5 days/week, 8 hours/day with FAA personnel present

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Leesburg RTS Phase 3b – *Industry-Led Initial Operating Capability (IOC) – Additional Evaluation*

- **Purpose:**
  - Further evaluate the Leesburg RTS under degraded mode operation (e.g., loss of a screen display or camera) in its current location
  - Evaluate consolidation of controller positions in its current location
  - Validate Remote Tower Service Level needs and gain valuable data toward future standardization efforts
- **Logistics:**
  - ATCT services provided for a pre-determined number of days and number of hours per day
  - ATCT services provided by MATCT and rTWR during set periods – Details still to be determined

Leesburg RTS Phase 3c – *Industry Led Initial Operating Capability (IOC) with potential system improvements*

- **Purpose:**
  - Operate the Leesburg RTS with added system capabilities (e.g., RADAR) in its new location
  - Allow for added redundancy to Leesburg RTS
  - Validate added system improvements to reduce or eliminate existing safety controls from Phase 3a (Site-Specific SOPs)
  - Validate Remote Tower Service Level (Mode A) needs and gain valuable insight and data toward future standardization efforts
- **Logistics:**
  - ATCT services provided for a pre-determined number of days and number of hours per day

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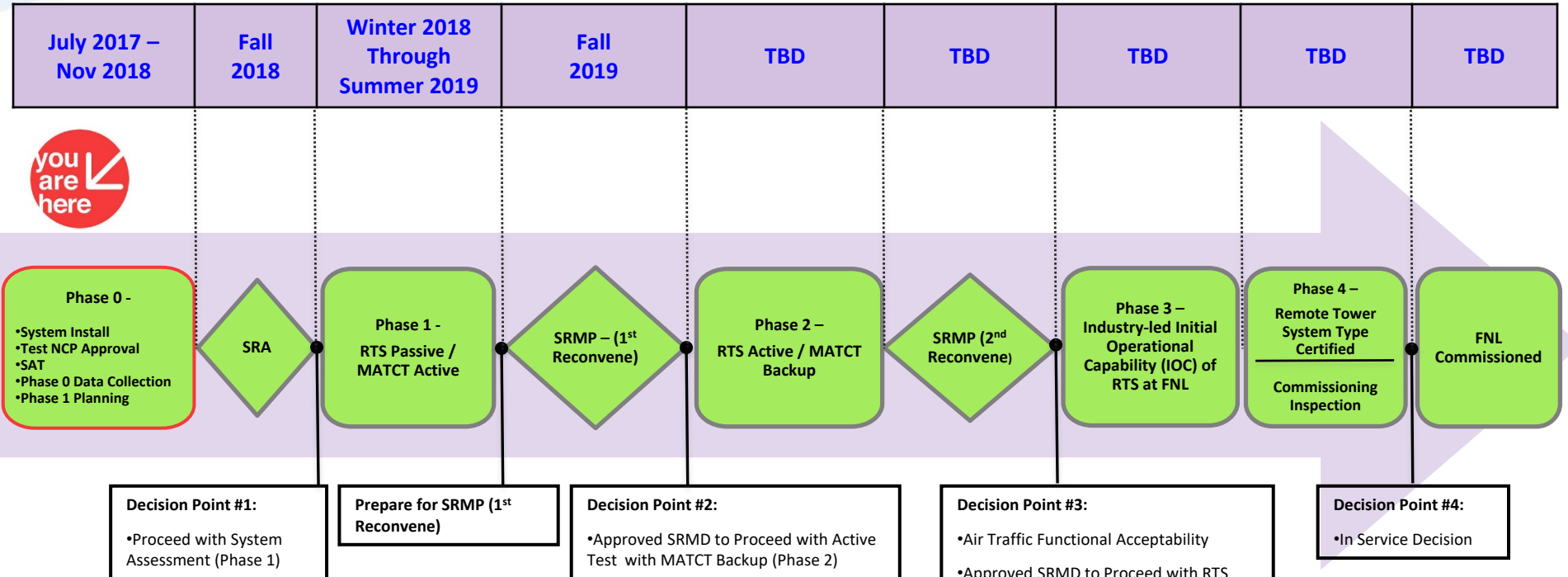
FORT COLLINS REMOTE TOWER

Fort Collins RTS Status
Planned Sequence of Events



SAT: **Industry-led Site Acceptance Test**
SRA: Safety Risk Assessment
SRMP: Safety Risk Management Panel
RTS: Remote Tower Services
FNL: Northern Colorado Regional Airport
NCP: NAS Change Proposal
MATCT: Mobile Airport Traffic Control Tower

- On Track

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Fort Collins RTS Status

- **Contract Establishment – Completed**
  - **Nov. 2016:** Fort Collins RTS Request for Information (RFI) posted
  - **Jul. 2017:** FAA and Searidge Technologies (SRT) Sign an OTA
- **Site Engineering & System Design Activities – Completed**
  - **Oct. 2017:** Solicited Construction Bid, Developed Integrated Schedule
  - **Dec. 2017 – Jan. 2018:** Vendor finalized FNL System Design, Drafted Concept of Operations Document
  - **Jan. – Apr. 2018:** Vendor completed Site Engineering Report, Conducted Industry-led Factory Acceptance Test (FAT)
- **System Installation/Optimization Activities – Ongoing**
  - **Summer 2018:** Complete Site Engineering and System Installation
  - **Summer / Fall 2018:** Conduct FNL Remote Tower system optimization,
- **Evaluation Activities – Upcoming**
  - **Fall 2018:** Conduct FNL Remote Tower system shakedown (Phase 0 eval)
  - **Fall 2018 / Winter 2019:** Conduct initial Safety Risk Assessment (SRA) of the FNL Remote Tower system
  - **Spring 2019:** Begin Phase 1 Evaluation at FNL

FY18 CONGRESSIONAL APPROPRIATION FOR REMOTE TOWERS

2018 Congressional Appropriation

*"**Remote Towers.*** – The agreement includes **$5,000,000** to continue the ongoing remote tower project, including operating costs, and to deploy and pilot remote tower systems to at least two additional airports. The FAA is directed to begin the remote tower pilot initiative within 45 days of enactment of this act."

RTS Plan responding to 2018 Congressional Appropriation

- **Complete activities at Existing Site (Leesburg)[1]**
  - Complete Evaluation / Certification Activities
- **Issue RFIs searching for airport/vendor/ANSP teaming arrangements via Other Transaction Agreement (OTA) to begin deploying Remote Tower services at 2 additional sites**
  - Focus on Sponsor-owned FAA Contract Tower (FCT) airports with aging tower infrastructure[2]
  - Validate Remote Tower Business Case
  - Explore true Remote Tower configurations with Remote Tower Center located off-airport
  - Expand the Qualified Vendor System List to other vendors and/or yet unexplored Service Level categories

CONSIDERATIONS / NOTES:

[1] Remote Tower business case not yet proven

[2] Vendors actively engaging airports with Sponsor-owned FCTs now

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