

# FTI-2 Update

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Federal Aviation  
Administration



# Topics

- **Background**
  - Contractual perspective
  - Scope of services
- **Overview of Recent Activities**
- **Next Steps**
- **FTI-2 Planning Dates**



# Background

- **Existing FAA Telecommunications Infrastructure (FTI) contract with Harris Corporation ends Sept. 30, 2017**
  - Primary means through which the FAA obtains the telecomm services it requires for NAS and agency operations
- **The contract will be extended (on a single source basis) through Sept. 30, 2022**
- **The replacement program, FTI-2, is planned as a competitive solicitation to be awarded before the end of Q3 calendar year 2020**
  - Currently in the acquisition planning phase

# FTI Scope of Services

[what FTI-2 potentially needs to replace]



# FTI Service Paradigm

- **FAA focus is on defining the requirements for telecommunications services provided by FTI vendor**
- **FTI vendor is responsible for service provisioning including design, engineering, implementation, operations, maintenance, and network upgrades**
- **The FAA does not own, operate, or maintain any of the telecommunications equipment**
- **FTI Services Description Document (the FTI Spec) currently defines 100+ service classes**
  - Distinguished by RMA level, latency level, physical interface and other parameters

# FTI Networks

- **FTI provides a modern infrastructure that supports all commercial standard protocols**
- **The FTI Program includes two separate networks:**
  - One to provide connectivity between National Airspace System (NAS) Operational systems (TDM & IP), and
  - One for agency / mission support applications (IP)
- **Both leverage a private optical backbone that is dedicated to FAA use**
  - Separation between the NAS and Mission Support networks is provided at Layer 1 to comply with FAA security policies

# FTI Service Offerings

**In addition to traditional point-to-point and IP-based telecomm services, FTI provides:**

- **Enterprise Messaging Services**
  - Implemented to support the requirements of the System-Wide Information Management (SWIM) program
- **Infrastructure Services**
  - Network Boundary Protection Services (NBPS)
    - NAS Enterprise Security Gateways (NESG) and dedicated NESG connectivity
  - Network Time Protocol / Precision Time Protocol (NTP/PTP)
  - Domain Name Services (DNS)
  - International User Portal (IUP)

# FTI NAS Operational Network

- **Completely private, highly secure network**
- **Provides service to 4,000+ sites, many in remote areas**
- **24,000 individual telecomm services**
- **Provides enhanced security functions**
  - e.g., encryption, firewalling, intrusion protection/detection
- **Implements a dual-core architecture for NAS OPIP services to mitigate the potential for system-wide failures**



# FAA Mission Support Network

- **Provides service to 1,000+ FAA facilities**
- **Provides Internet Access Points for FAA network traffic**
- **Provides dedicated transport for data replication between national data centers**
- **30,000+ Virtual Private Network (VPN) accounts**
- **Supports bandwidth-intensive applications**
  - FAA administrative services including phone, email, training, payroll and internet access
  - Client-based Video and Web Conferencing
  - Interactive web-based training



# Support Services

- **The FTI Vendor also provides *support services* to support the operation of the network:**
  - Network Design and Engineering
  - Service qualification and test support
  - Implementation Management
  - Cutover Support
  - Configuration Management
  - Program Management
  - Network Management and Operations
  - Security Management and Operations
  - etc.

# Outlook

- **Expectation is that a majority of the services obtained under the FTI contract will continue to be required under FTI-2**
- **FAA is still assessing the trade-offs associated with obtaining these services under one or more contract vehicles**
- **Also need to ensure the scope of any awarded contracts provides the flexibility to take advantage of emerging technologies**

# Recent Activities



# Market Research

- **The FTI-2 program's focus over the past 12 months has been on market research**
- **Multiple methods employed for assessing the marketplace:**
  - 1) ACT-IAC Joint FAA/Industry Working Group
  - 2) Industry one-on-one's
  - 3) Meetings with Other Government Agencies
  - 4) Independent Research
- **Questions to be answered by Market Research:**
  - What are the marketplace trends across the anticipated procurement life cycle? (from a technology and a pricing standpoint)
  - Can we expect adequate competition?
    - Are there any steps the FAA can take in the near term to enhance the competitive landscape?

# ACT-IAC Overview (1 of 2)

- **FAA identified specific challenges and areas of interest**
- **Efforts divided across three sub-committees:**
  - Acquisition Strategy
  - Implementation and Transition
  - Technology, Performance, and Operations
- **Sub-committees met to discuss the challenges and marketplace trends specific to their areas**
- **Industry participants developed white papers with recommendations on how to address challenges**
  - Listed on next slide →

# ACT-IAC Overview (2 of 2)

- **The ACT-IAC subcommittees is in the process of finalizing white papers on the following topics:**
  - Acquisition Strategy
  - Technology, Performance & Operations
    - Architectures White Paper
    - Software-defined Networking (SDN) & Network Function Virtualization (NFV)
    - TDM-to-IP Migration
    - Wireless Technologies
    - Security Considerations
  - Implementation and Transition
    - IP Transition Best Practices
    - Parallel Operations
    - Risks and Challenges (FAA unique requirements relative to the marketplace)
- **Papers will be available on the ACT-IAC and FAA websites**

# Meetings with Other Government Agencies

- **The FTI-2 Program has met with a number of other Government agencies to gain an understanding of how they meet their telecommunications service requirements**
  - FAA questions:
    - *Where does the Telecomm Group fit within your agency's organization?*
    - *To what extent does you agency use the GSA Networx contract?*
    - *How big is your network enterprise? How critical are the applications it supports?*
- **To date, the FAA has met with:**
  - Social Security Administration
  - Treasury
  - IRS
  - HHS
  - DOJ
  - NOAA
  - DHS
  - DISA
  - GSA
  - NRO



# Market Research Conclusions

- **The marketplace is changing**
  - Introduction of new technologies, e.g., software-defined networks (SDN) and network function virtualization (NFV)
  - Phase-out of TDM-based infrastructure appears to be accelerating
  - Potential for wireless access to replace wireline facilities in rural areas
  - Ethernet-based access and IP-based transport are becoming more prevalent
  - Larger bandwidths ( $\geq 100$  Gbps) becoming more widely available
  - Unit cost of bandwidth continues to trend downward, but net cost could increase if minimum order quantity increases significantly
- **These changes represent both challenges and opportunities**

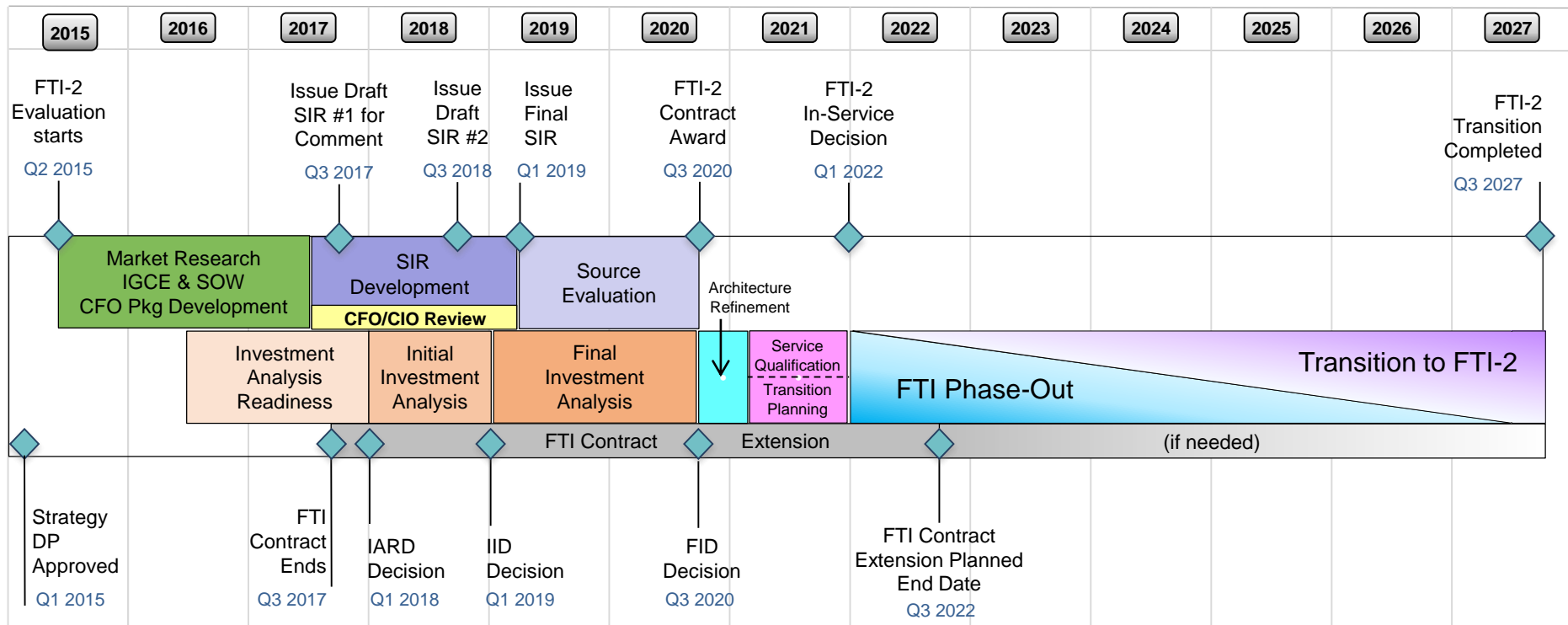
# Next Steps

- **Continue market research**
- **Responses to an FAA request for information (RFI) are due on December 9<sup>th</sup> from industry stakeholder interested in participating in technology demos**
  - FAA objectives are to:
    - Assess interoperability of emerging technologies with FAA legacy systems
    - Determine if the FAA needs to adapt its requirements to fully leverage new capabilities available in the marketplace
- **FAA also considering additional RFIs to solicit feedback from industry on other program elements**
  - e.g., strategies for minimizing transition costs

# FTI-2 Planning Dates

- **Key milestones:**

- JRC strategy discussion                      December 14, 2016
- IARD    Q1 2018
- IID    Q1 2019
- FID    Q3 2020



# Additional Information

- **The FTI-2 Program has a publically-facing website available at:**
  - [https://www.faa.gov/air\\_traffic/technology/cinp/fti2/](https://www.faa.gov/air_traffic/technology/cinp/fti2/)

# Questions?

