Presentation to
FAA C/SOIT
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ATN Router Project

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Presentation Overview

- Background, Objectives, Organization
- ATN Router Project Status
- Action Plan
- ATN Costs and Benefits
- Conclusions

Background

- ATNSI is a corporation of 11 US Airlines
- ATNSI has entered into a Cooperative Agreement with the FAA to develop a certified ATN Router Reference Implementation (RRI) and a Conformance Test Suite (CTS)
- FAA contributes cash and technical support
- ATNSI Airlines contribute aircraft and management support

ATN = Aeronautical Telecommunication Network

ATNSI Airline Participants

Alaska Airlines
American Airlines
American Trans Air
Continental Airlines
Delta Airlines
Federal Express
Hawaiian Airlines
Northwest Airlines
United Airlines
United Parcel Service
USAir

ATNSI Non-Airline Participants

- Federal Aviation Administration
- Department of Defense
- MITRE

Potential ATNSI Participants

- El Al Israel Airlines
- European Carriers
- Asian Carriers
- EuroControl
- Transport Canada
- Air Services Australia
- Japan CAB

ATNSI Strategic Objectives
1 of 2

- **Product**

  Create an easily certified mobile ATN Router to support the ATN as a worldwide standard for advanced air/ground data communications as a critical deliverable for CNS/ATM-1

- **Process**

  Confirm the ability of a private/government partnership in aviation to effectively bring complex production systems into regular operational use

FANS = Future Air Navigation System

ATNSI Strategic Objectives (
2 of 2

- **Productivity**

  Assist the achievement of Free Flight in domestic and international airline operations through the deployment of ATN Data Communications in Air Traffic Management Systems

ATNSI Organization

- Board of Directors (BoD)
- Cooperative Agreement Management Committee (CAMCOM)
- ATNSI Infrastructure Working Group (IWG)

ATN Router Project Status

- **Vendor Teams Selected**
  - Router Reference Implementation Team
    - » Allied Signal, Honeywell, Sextant, Sofreavia, Thomson-CSF, Vertel
  - Conformance Test Suite Team
    - » ARINC, Allied-Signal, Sextant, Sofreavia, Thomson-CSF
- **Contracts:**
  - Oct 96: FAA Approval of Contracts
  - Dec 96: Project Start

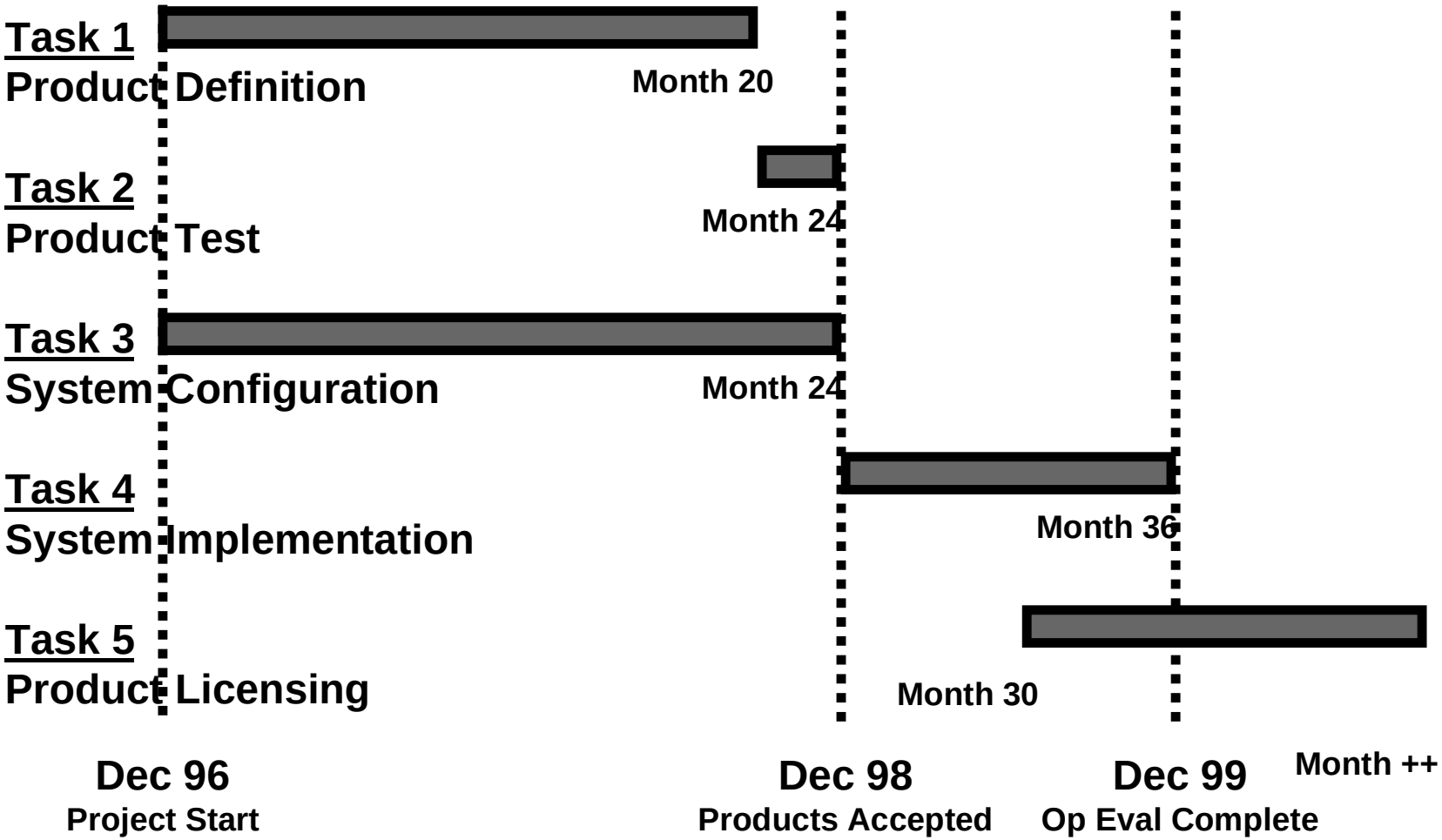
ATN Router Project Objectives

- **Develop the Aeronautical Telecommunication Network (ATN)**
- **Conduct an In-Service Operational Evaluation**
  - Trained Controllers using Certified Ground Systems
  - Trained Pilots using Certified Avionics
  - Demonstrate National/ICAO-Defined Benefits
- **Facilitate Airline Avionics Programs to Support a 75% Fleet upgrade to CNS/ATM-1 Capability**

Program Plan

- **Task 0: Project Oversight**
- **Task 1: Product Definition**
  - **1A: Reqmts Def 1B: CTS Dvpt 1C: RRI Dvpt**
- **Task 2: Product Test/Evaluation**
- **Task 3: System Configuration**
  - **3A: Avionics Cust'n 3B: Ground Sys Cust'n**
- **Task 4: System Implementation**
  - **4A: Certification 4B: Ops Evaluation**
- **Task 5: Product Licensing**

Program Schedule



Program Plan Milestones

- Dec 96: Start Project
- Dec 97/May 98: Interim Deliveries
- Aug 98: Final Product Deliveries
- Dec 98: Compliance Testing Complete
- Jun 99: Part 125 Certification Complete
- Dec 99: Operational Evaluation Complete
- 4Q99: Initial Operational Capability in the North Atlantic

Preliminary Cost Analysis by Delta and UPS

- **CNS/ATM-1 767-300 ER Cost Analysis**
  - **Worst Case Cost - One Aircraft with no existing equipment**
    - » **Analysis Incorporates all equipment for CNS/ATM-1 upgrade, much more than just ATN communications**
    - » **Actual cost will be lower if airline allocates specific equipment costs to other program or to specific equipment already installed**
    - » **Actual cost will be lower due to discount buying**
    - » **Offered price may be lower due to reduced market risk**
  - **Other Aircraft will be costed in follow-on studies**
  - **Cost Breakdown**
    - » **$ 600k (without SATCOM costs)**
    - » **$1,000k (with SATCOM costs)**

CNS/ATM-1 Equipment

- Comm Management Unit
- Updated Flight Management Computer
- New Control/Display Units
- Updated Engine Indication and Crew Alerting System
- GPS Equipment
- SATCOM/VHF/HF Equipment
- Several Other Equipment Items

Benefit Analysis

- **CNS/ATM-1 Benefit Analysis Model**
  - Permits each airline to determine regional benefits for specific airline parameters
  - "End State" Benefits are Targeted
- **Initial Study: 767-300 (North Atlantic)**
  - Benefit: $10M/yr (20 Aircraft)
  - Return on Investment: 1.2 Years
    - » Assumes Benefits in Place

Benefits Enabled by ATN

- FAA Cost/Benefit Studies estimated:
  - $338 mil/yr in enroute airline savings
  - 2 min delay reduction at each airport
  - airport capacity increase
- Study Groups at Boeing, UAL developed complete cost-benefit analysis
- Indications are that Free Flight will provide ≥5% improvement in oceanic Direct Operating Costs (DOCs), half attributable to datalink comm and half to GPS and ADS
- Note that whatever the software chosen, CNS/ATM-1 equipage will be non-trivial expense

Conclusions

- Cost/Benefit Models In-Place
- Airlines are in the Process of Making Fleet Equippage Decisions
- ATN Router Project is a “GO”