

NAS Enterprise Architecture



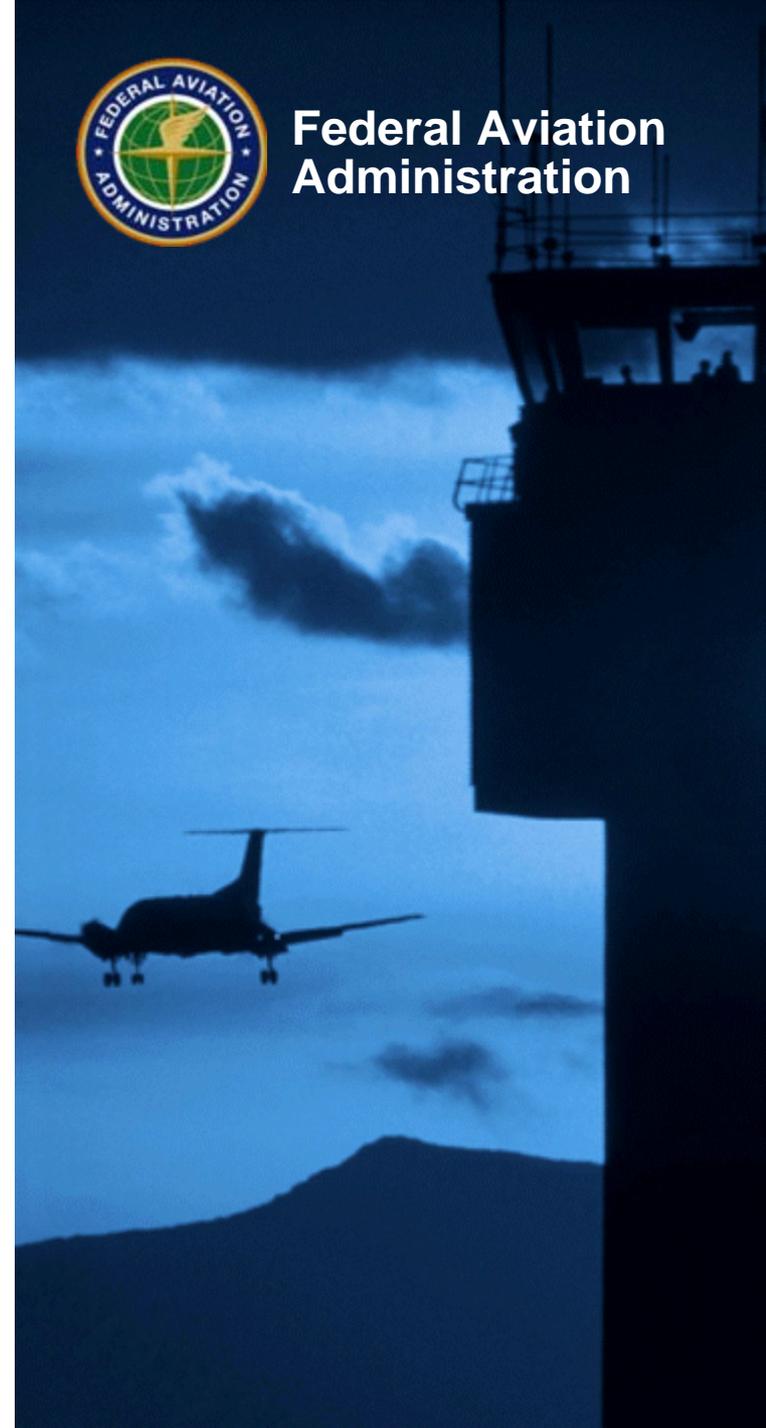
Federal Aviation
Administration

NextGen 2025 System Interface Description SV-1p

System Context

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June 24, 2009



Purpose of View

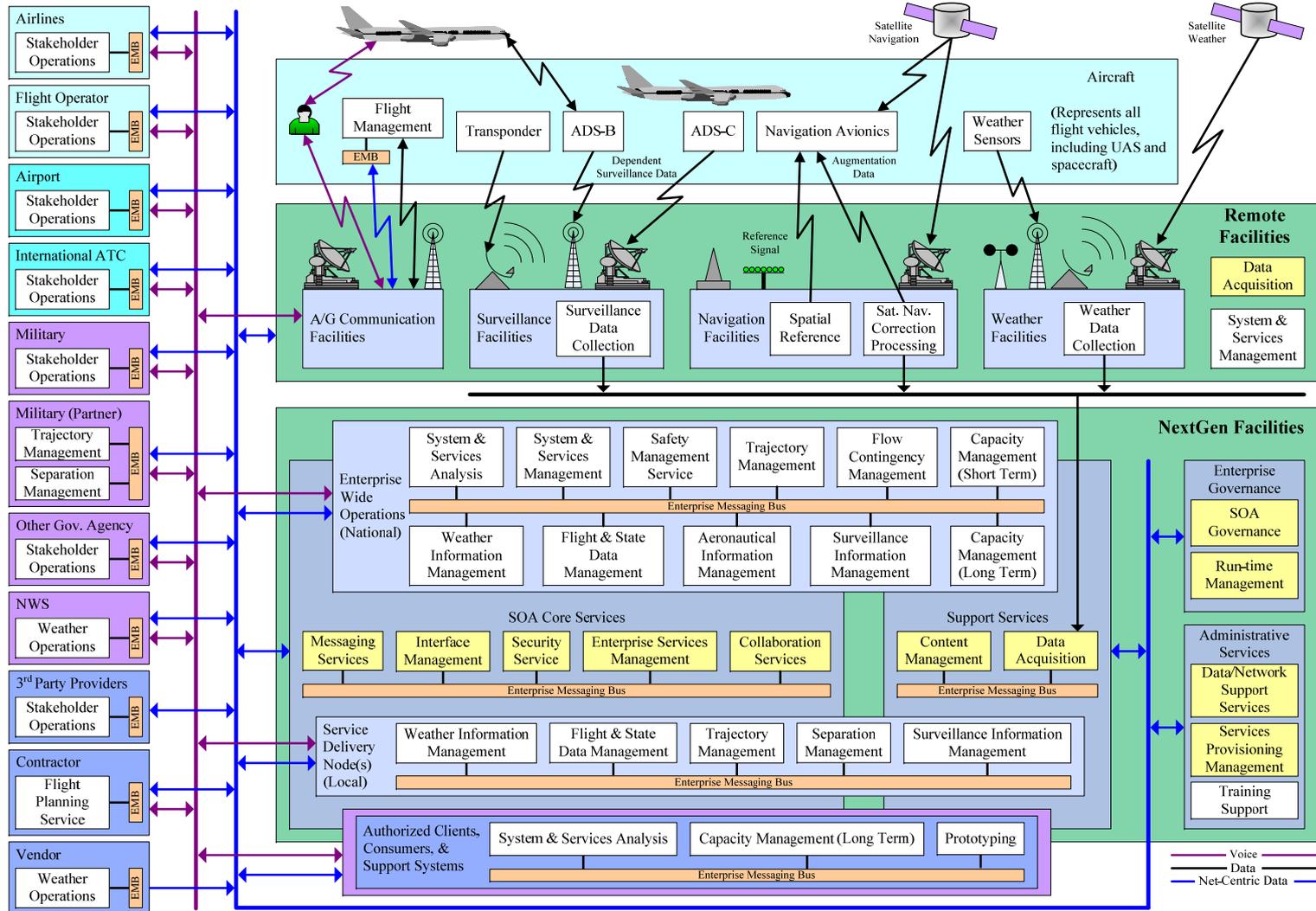
The SV-1p has two purposes –

- **Present the scope of the NextGen systems (functions) in relation to external systems (functions) that they interact with.**
- **Identify the “need lines” (interfaces) that exist among the systems (functions).**

Classical SV-1 vs. SV-1p

- **NAS EA Guidance calls for two types of diagrams:**
 - SV-1n – shows system nodes and their required interfaces.
 - SV-1s – shows systems and their required interfaces.
- **NextGen 2025 systems and system nodes are TBD:**
 - SV-1p uses system functions as placeholders.
 - Includes an overall context diagram and supplemental diagrams that identify functional interfaces.

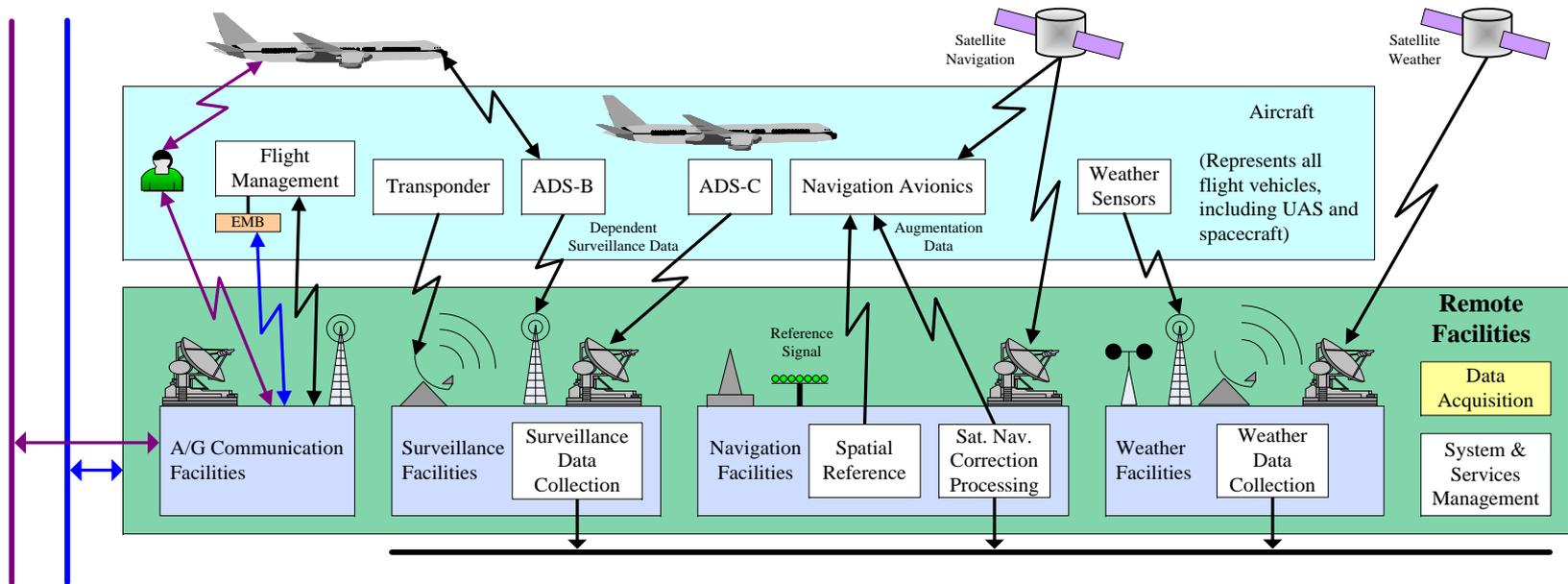
SV-1p - Context Diagram



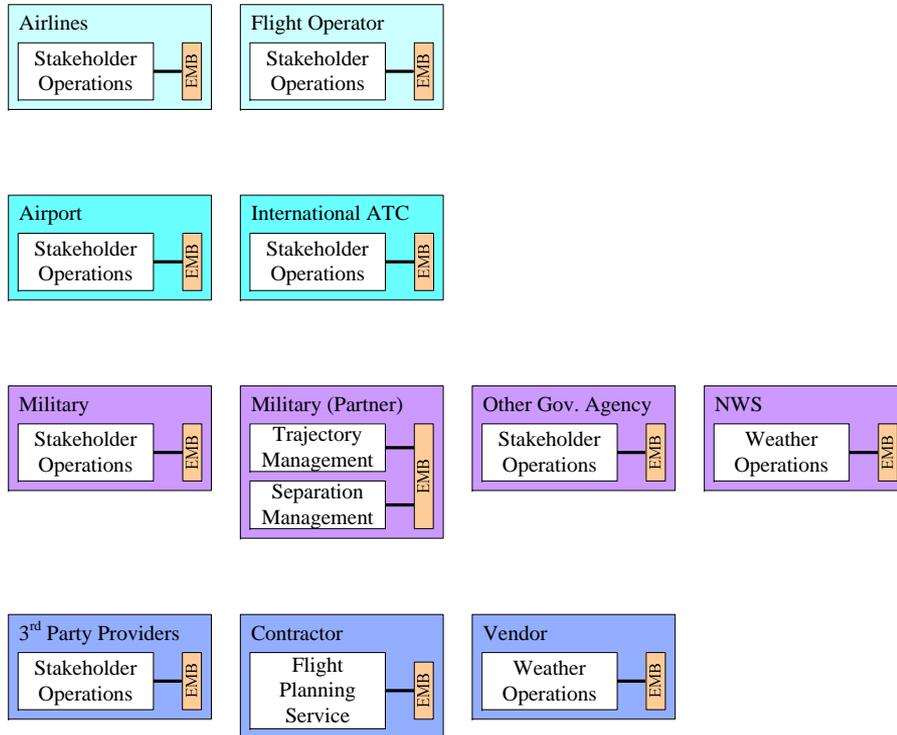
Applications vs. SOA Services

- **Applications (white boxes) are NAS-specific functions required to provide aviation-related services.**
 - Derived from operational needs and concepts.
 - Also include stakeholder operations.
- **SOA Services (yellow boxes) are those services required to create a net-centric environment.**
 - Represent an implementation strategy managing the exchange of operational data.
 - Identified in more detail in the SV-4.
- **Colored boxes enclosing the functions and services represent different categories of entities.**

Airborne Elements & Remote Facilities

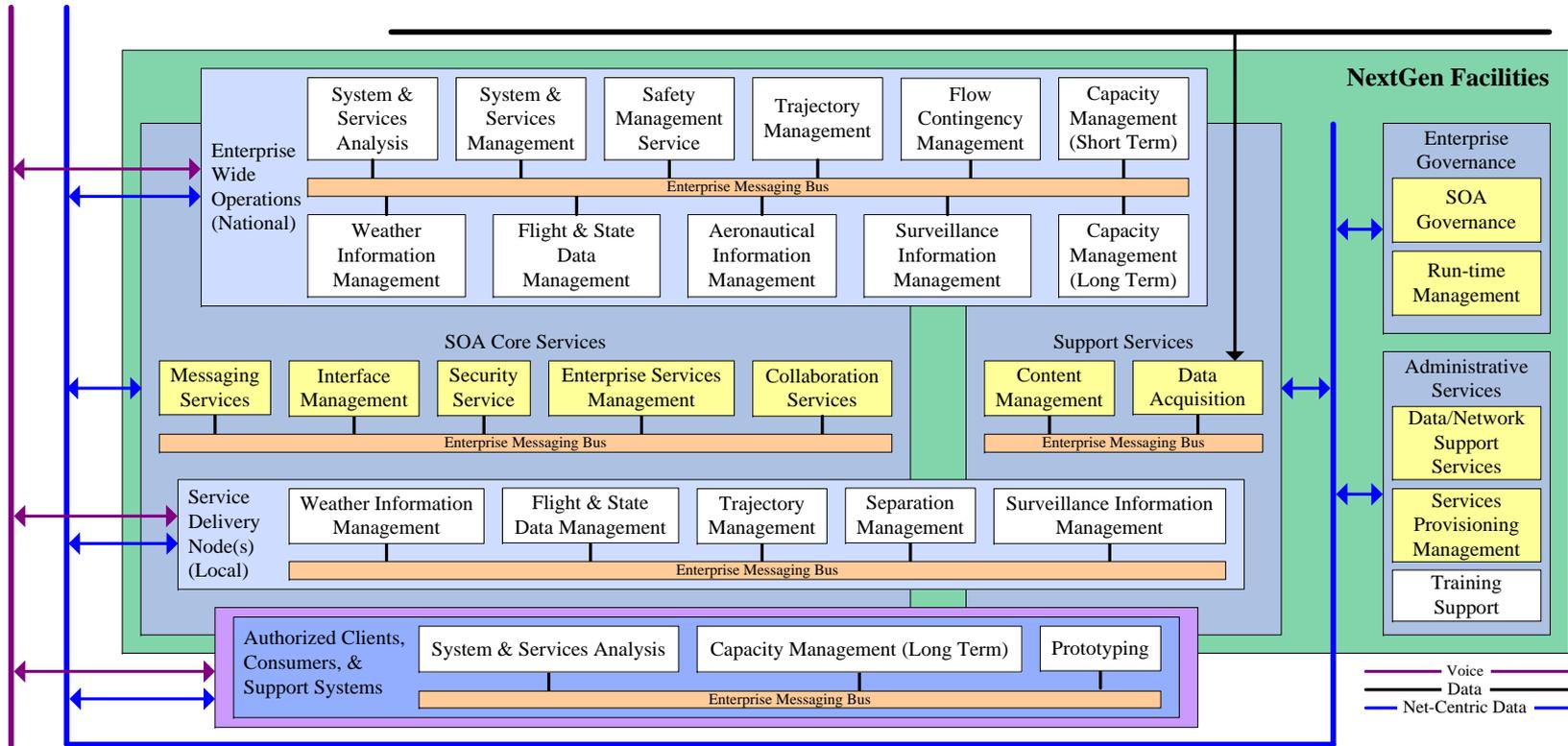


Other External Entities



- **Ground-based Consumers**
- **Non-Federal Partners**
- **Federal Partners**
- **Commercial Partners**

NextGen Facilities



Enterprise Wide vs. Service Delivery

- **Enterprise Wide Operations include those system functions that are national in scope.**
- **Service Delivery includes those functions that are local in scope.**
- **Neither is intended to designate a facility type or location of the functions performed.**
- **Some functions are performed at both the national and local level.**



National vs. Local

- **Flight & State Data Management**
- **Surveillance Information Management**
- **System & Services Management**
- **Trajectory Management**
- **Weather Information Management**



Partner Functions

- **Airborne Consumers: Weather Data Collection**
- **Military: Separation Management & Trajectory Management**
- **NWS: Weather Operations**
- **Contractor: Flight Planning Service**
- **Vendor: Weather Operations**
- **Authorized Clients, Consumers, & Support Systems**
 - System & Services Analysis
 - Long Term Capacity Management
 - Prototyping



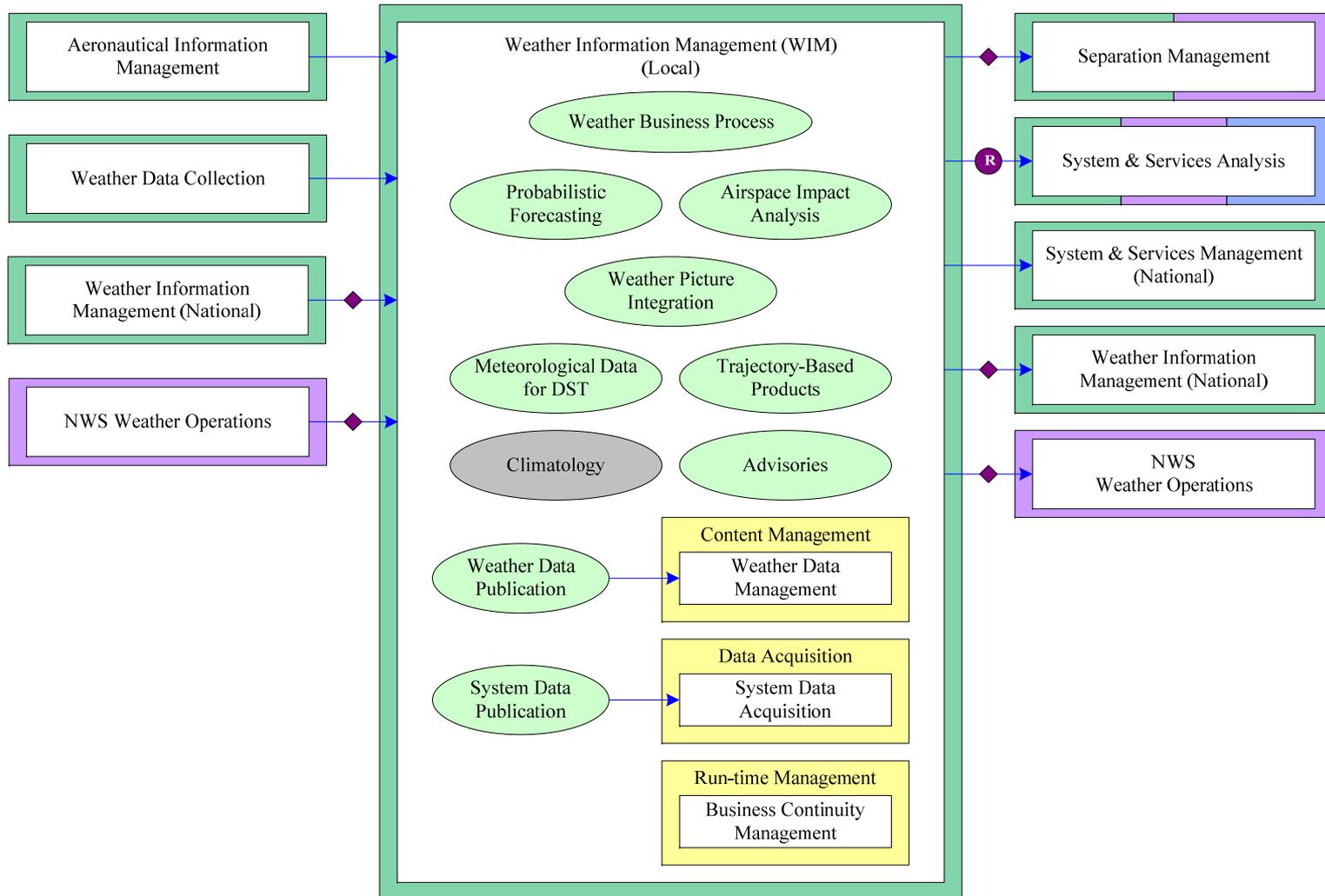
Supplemental Interface Diagrams

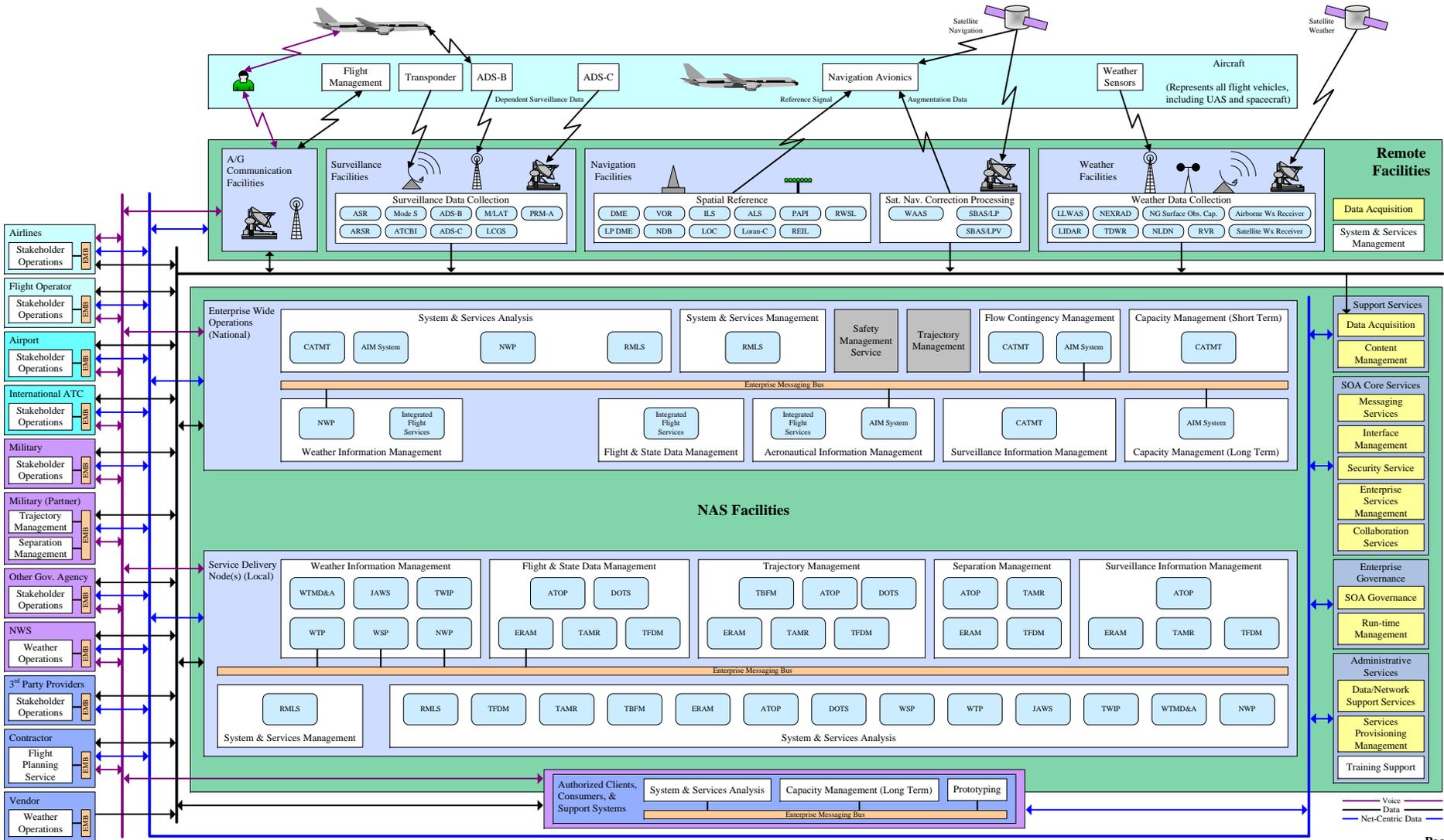
- **Intended to show required information exchanges.**
 - Focus on those interactions projected to be necessary and sufficient for proper operations.
 - SOA environment allows all elements to exchange information with all other elements, subject to authorization.
 - Identifying all possible interactions would obscure vital interactions.
 - SOA provides flexibility to expand the list of interactions as processes and concepts evolve.

Supplemental Interface Diagrams Format

- **Non-standard**
 - Does not use the format specified by current NAS EA guidance (nodes or systems, and interfaces).
- **Each diagram is focused on an individual function.**
 - Includes identification of functions that are sources and consumers of data related to the function.
 - Includes an informal functional decomposition of the function.
 - Includes references to applicable SOA services.

Sample Supplemental Interface Diagram





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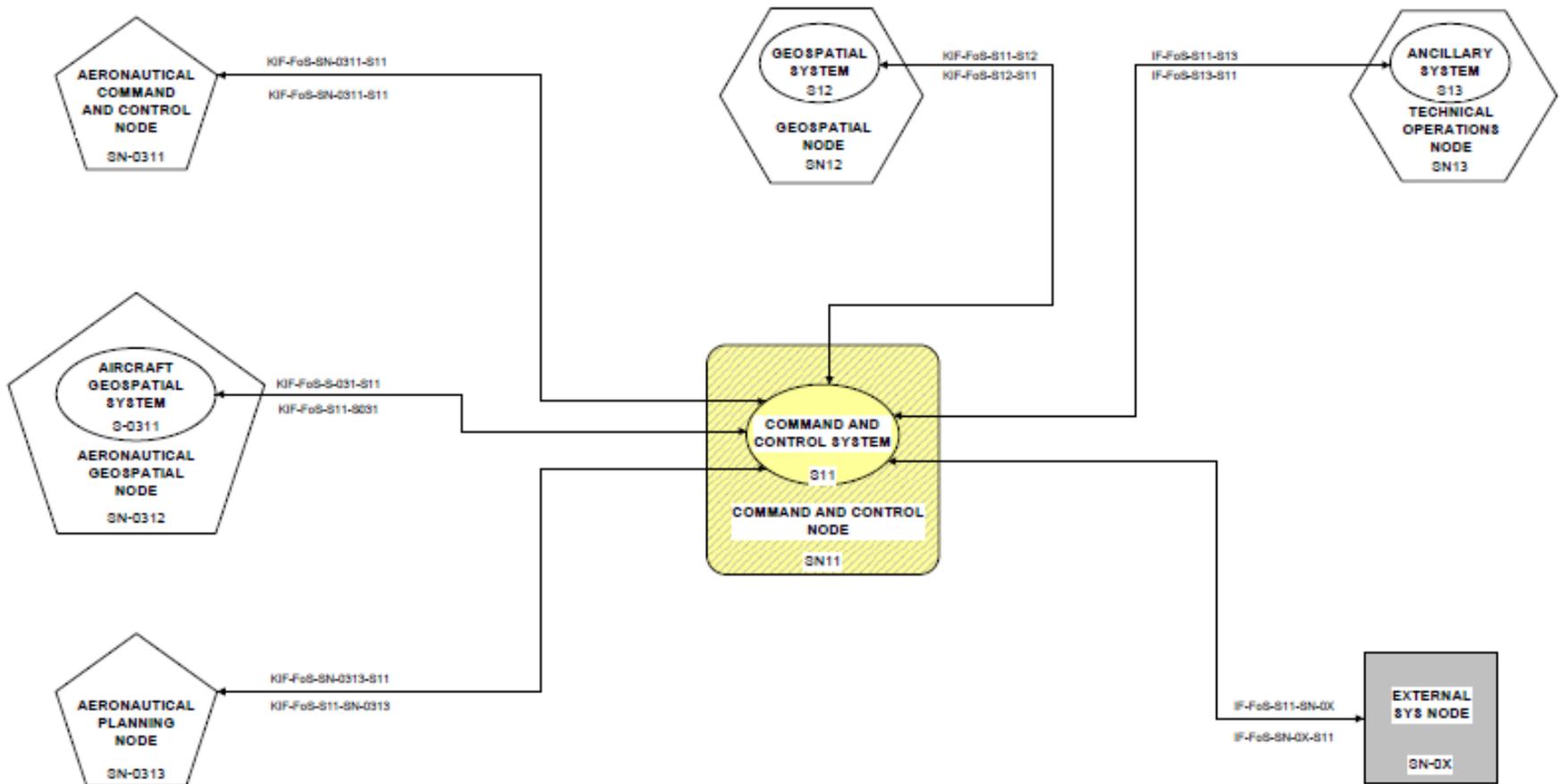
Back-up Slides



National Vs. Local (Continued)

Function	National	Local
Flight & State Data Management	National flight plan filing and flight data distribution, including interaction with International ATC. Is the national repository for flight plans, 4-D trajectories, and flight status data.	Local flight plan filing.
Surveillance Information Management	Integrates the local surveillance data into a national product. Provides support to enterprise-wide functions, including Trajectory Management.	Develops the local portion of the surveillance products. Provides time-sensitive data to critical local functions.
System & Services Management	Receives all system status information and manages system maintenance and configuration.	Monitors remote system functions and performs maintenance commands.
Trajectory Management	Manages the aggregate of 4-D trajectories in support of plans developed by Short Term Capacity Management and Flow Contingency Management.	Manages 4-D trajectories at the local level in support of plans developed by Short Term Capacity Management and Flow Contingency Management, including adjusting trajectories to sequence traffic.
Weather Information Management	Integrates the local weather data into a national product. Provides support to enterprise-wide functions, including climatology analysis.	Develops the local portion of the weather products. Provides time-sensitive data to critical local functions.

Sample SV-1s from NAS EA Guidance



Sample SV-1n from NAS EA Guidance

