Air Transportation System Customers Metrics

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National Plan to Transform the Air Transportation System - 2025

☎ ***National Plan Goals - November 2003**

➢ **Reduce aviation system costs by 25%, creating hundreds of thousands of new jobs**

➢ **Provide 3 times the capacity**

➢ **Reduce curb-to-curb transit time by 30% and time in airports to less than 30 minutes**

☞ **Arrivals and departures to be on-time 95% of the time**

➢ **Seamless ATM and security operations for homeland defense without compromising access to aviation**

➢ **Maintain safety, while becoming quietest, cleanest, and most fuel-efficient**

➢ **Retain world leadership role in aviation**

*Secretary Mineta's letter to President Bush

Air Transportation System vs. Air Traffic Services

☎ *Air Transportation System* moves <u>people</u> (pilots and passengers) and/or <u>goods</u> (cargo or payloads) from origin to destination by aircraft for a known purpose

☎ *Air Traffic Services* are those services provided to <u>aircraft operators</u> to allow safe and efficient operations within the National Airspace System

☎ Air Traffic Services are subsets of the Air Transportation System

Metrics

☎ **Measure how well the system or service meets the** <u>**customers' needs**</u>

➤ **Customers must be known**

☞ **Air Traffic Services customers are the aircraft operators**

– **airlines, military commands, pilots, special civil air service organizations, e.g., medical emergency, law enforcement, etc.)**

☞ **Air Transportation System customers --**

– **Air traffic service customers**

– **End-users (some overlap with ATS customers)**

➤ **Needs must be defined in measurable terms**

Air Transportation System Metrics

☎ **Air Traffic Services metrics**

➤ **Being addressed by others**

☎ **End-User metrics**

➤ **Broad and diverse set of customers**

➤ **Customer needs vary across different <u>segments </u>of air transportation**

➤ **Some segments have been addressed**

☞**Express cargo built around their customers needs**

☞**Passenger delays due to security screening**

➤ **No systematic treatment of end-user metrics across all segments of air transportation**

Establishing End-User Metrics

☎ **Define principal air transportation system segments and associated "end-users"**

☎ **Solicit "needs" from representative end-users**

☎ **Define metric(s) for each need**

☎ **Define goals for each need in terms of the metric(s)**

☎ **Validate/modify metric(s) and goals with end-users**

Air Transportation System Segments

☎ **Commercial transportation**
  ➢ **End-users - passengers and cargo customers**

☎ **Business and on-demand services**
  ➢ **End-users - executives, passengers and private pilots**

☎ **Military** **(not addressed here)**
  ➢ **End-users - commands responsible for passengers and cargo**

☎ **Small community air mobility**
  ➢ **End-users - passengers and cargo customers**

☎ **Special civil operations**
  ➢ **End-users - special civil aerospace service organizations**

☎ **Recreational and sport flying**
  ➢ **End-users - private pilots**

The following are examples of potential needs and metrics for segments of air transportation

Commercial Transportation End-User

☎**Passengers**
- ➤ **All passengers**
  - ☞ **Safe and secure flights**
    - – **Safety metric: number of accidents**
    - – **Security metric: number of true security breaches**
  - ☞ **Efficient door-to-door travel**
    - – **Metric: elapsed time**
- ➤ **Business travel**
  - ☞ **Business-day schedules**
    - – **Metric: days lost due to airline schedule**
  - ☞ **Dependable arrival times**
    - – **Metric: number of meetings missed**
  - ☞ **Reasonable costs**
    - – **Metric: annual expense as % of budget**
- ➤ **Personal travel**
  - ☞ **Affordable airline tickets**
    - – **Metric: annual expense as % of discretionary income**

☎**Cargo customers**
- ➤ **All cargo**
  - ☞ **No loss or damage**
    - – **Metric: number of losses/damages**
  - ☞ **Priced consistent with value of service**
    - – **Metric: costs as % of value to customer**
- ➤ **Express cargo**
  - ☞ **Fast and dependable delivery**
    - – **Fast metric: over-night to all customers**
    - – **Dependability metric: number of on-time deliveries**
- ➤ **Regular cargo**
  - ☞ **Dependable delivery**
    - – **Metric: number of on-time deliveries**

Business & On-demand End-User

☎ **Executives and Passengers**

  ➤ **Time-efficient transport from desired origin to destination**
    ☞ **Metric: actual transit time compared to best possible time**

  ➤ **Anytime departure**
    ☞ **Metric: number of departures within 10 minutes of desired time**

  ➤ **Low costs**
    ☞ **Metric: annual costs compared to using commercial service**

  ➤ **Others ?**

☎ **Private Pilots**

  ➤ **Fair access to airports and airspace**
    ☞ **Metric: number of times access is limited**

  ➤ **Low service fees**
    ☞ **Metric: costs of services per flight**

Small Community End-User

☎ **Local air transportation comparable to major cities**

➤ **Passengers**

☞ **Same needs and metrics as for major cities plus -**

☞ **Convenient schedules**

– **Metric: number of times unable to satisfy user schedule**

☞ **Comparable price per seat-mile as for major cities**

– **Metric: average price per seat mile**

☞ **Dependable service in all weather conditions**

– **Metric: number of on-time departures and arrivals**

➤ **Cargo**

☞ **Same needs and metrics as for major cities**

Special Civil Operations

- ☎ **Emergency & law enforcement**
  - ➢ **24 hour operations anywhere in all but extreme weather**
    - ☞ **Metric: number of constrained operations**

  - ➢ **Protection from wires, towers and other objects**
    - ☞ **Metric: number of related mishaps**
- ☎ **Remote area & off-shore operations**
  - ➢ **Precision navigation and landing guidance**
    - ☞ **Metric: number of related mishaps**
- ☎ **Civil Uninhabited Air Vehicles (UAV)**
  - ➢ **Comparable access to NAS as piloted aircraft**
    - ☞ **Metric: number of unconstrained operations compared to piloted**
  - ➢ **Airport-independent operations**
    - ☞ **Metric: number of unconstrained operations**
- ☎ **Space transportation**
  - ➢ **Routine unrestricted operations through the NAS**
    - ☞ **Metric: number of unconstrained operations**
- ☎ **Others?**

Recreational/Sport Flying End-User

☎ **Maximum freedom from rules and regulations**

➤ **Metrics: number of rules and regulations**

☎ **Maximum access to airspace and flexibility under VFR conditions**

➤ **Metrics: number of constraints**

☎ **Minimum equipage requirements**

➤ **Metrics: number and costs of required equipage**

☎ **Low service fees**

➤ **Metrics: annual costs**

☎ **Others ?**

Summary

☎ **Both end-user and air traffic services metrics need to be considered when developing the future air transportation system**

☎ **Systematic treatment of end-user metrics is needed**

☎ **Defining principal air transportation system segments and associated end-users may be helpful**

Backup Charts

Air Traffic Services Customers' Needs

- ☎ **Assure safety and security**

- ☎ **Provide sufficient system capacity to meet demand**

- ☎ **Allow efficient operations**

- ☎ **No service disruption**

- ☎ **Provide equal treatment and access to all aircraft subject to performance limits**

- ☎ **Provide service at reasonable cost**

Air Traffic Services Metrics

☎ **Safety/security**

☎ **Capacity/delay**

☎ **Efficiency/productivity**

☎ **Flexibility/predictability**

☎ **Reliability/maintainability**

☎ **Equity/accessibility**

☎ **Others?**