

ICAO 9750 Document: Global Air Navigation Plan

ICAO Document 9750 is the linkage for the FAA NextGen Implementation Plan

Key Performance Areas (KPAs) in the Global Air Traffic Management Operational Concept, ICAO Document 9854 are high level expectations for the future of aviation

Global Plan Initiatives (GPIs) support KPAs and consolidate operational improvements into logical initiative areas to better support changes in future aviation needs

FAA NAS Operational Improvements align with many Global Plan Initiatives and also Key Performance Areas

The FAA NextGen Portfolio has seven solution sets* containing operational improvements; each set focuses on a series of related operational capabilities that together will create the future era of aviation

* The category "Other" is not part of the seven solution sets and is for needed improvements not designated in those capabilities

An asterisk (*) next to an operational improvement is an indicator the FAA is not the Office of Primary Responsibility (OPR)

Key Performance Area--Safety



GPI-6 Air Traffic Flow Management



GPI-9 Situational Awareness



GPI-10 Terminal Area Design and Management



GPI-12 Functional Integration of Ground
Systems with Airborne Systems



GPI-13 Aerodrome Design and Management



GPI-14 Runway Operations



GPI-15 Match IMC and VMC Operations Capacity



GPI-16 Decision Support Systems
and Alerting Systems



GPI-17 Data Link Applications



GPI-18 Aeronautical Information



GPI-19 Meteorological Systems



GPI-20 WGS-84



GPI-21 Navigation Systems



GPI-22 Communication Infrastructure

Key Performance Area—Safety (1 of 2)

NAS Operational Improvements By Solution Set That Support This KPA:

Initiate Trajectory-Based Operations

102123 ADS-B Separation
102137 Automation Support for Separation Management
104105 Automation-Assisted Trajectory Negotiation and Conflict Resolution
104127 Automated Support for Conflict Resolution

Increase Arrivals/Departures at High Density Airports

104206 Full Surface Traffic Management with Conformance Monitoring

Increase Flexibility in the Terminal Environment

102409 Provide Surface Situation to Pilots, Service Providers
and Vehicle Operators for Near-Zero-Visibility Surface Operations
103206 Expanded Traffic Advisory Services
Using Digital Traffic Data
102138 Expanded Radar-Like Services to Secondary Airports
104207 Enhanced Surface Traffic Operations
102145 Single Runway Arrival Wake Mitigation
103208 Improved Runway Safety Situational Awareness for Pilots
103207 Improved Runway Safety Situational Awareness for Controllers
102406 Provide Full Surface Situation Information

Improve Collaborative ATM

103305 On-Demand NAS Information

Key Performance Area—Safety (2 of 2)

NAS Operational Improvements By Solution Set That Support This KPA:

Reduce Weather Impact

103116 Initial Improved Weather Information from Non-Ground Based Sensors
103122 Full Improved Weather Sensor Network
103123 Full Integration of Weather Information into NAS Automation and Decision Making
103104 Deploy FIS-B Nationally

Increase Safety, Security, and Environmental Performance

109303 ASIAS – Information Sharing and Emergent Trend Detection
109304 Enhanced Aviation Safety Information Analysis and Sharing
109305 Improved Safety for NextGen Evolution
109306 Increased International Cooperation for Aviation Safety
109307 Improved Safety Across Air Transportation System Boundaries
109308 Enhanced (Automated) Aviation Safety Information Sharing and Analysis Scope and Effectiveness
106202 Enhance Emergency Alerting

Key Performance Area--Security



GPI-10 Terminal Area Design and Management



GPI-12 Functional Integration of Ground Systems with Airborne Systems



GPI-13 Aerodrome Design and Management



GPI-15 Match IMC and VMC Operations Capacity



GPI-17 Data Link Applications



GPI-18 Aeronautical Information



GPI-19 Meteorological Systems



GPI-21 Navigation Systems



GPI-22 Communication Infrastructure

Key Performance Area—Security

NAS Operational Improvements By Solution Set That Support This KPA:

Increase Flexibility in the Terminal Environment

102406 Provide Full Surface Situation Information

Improve Collaborative ATM

103305 On-Demand NAS Information

Increase Safety, Security, and Environmental Performance

109302 Enhance Government/Agency SSA Cooperation and Support

109317 Operation Security Capability with Dynamic Flight Risk Assessment for Improved Security Airspace Planning and Management

Transform Facilities

109402 Remotely Staffed Tower Services

Key Performance Area--Capacity

GPI-5 RNAV and RNP (Performance Based Navigation)

GPI-6 Air Traffic Management

GPI-7 Dynamic and Flexible ATS Route Management

GPI-8 Collaborative Airspace Design and Management

GPI-9 Situational Awareness

GPI-10 Terminal Area Design and Management

GPI-11 RNP and RNAV SIDs and STARs

GPI-12 Functional Integration of
Ground Systems with Airborne
Systems

GPI-13 Aerodrome Design and
Management

GPI-14 Runway Operations

GPI-15 Match IMC and VMC
Operations Capacity

GPI-16 Decision Support Systems
and Alerting Systems

GPI-17 Data Link Applications

GPI-19 Meteorological Systems

GPI-21 Navigation Systems

GPI-22 Communication Infrastructure

GPI-23 Aeronautical Radio Spectrum

Key Performance Area—Capacity (1 of 3)

NAS Operational Improvements By Solution Set That Support This KPA:

Initiate Trajectory-Based Operations

104105 Automation-Assisted Trajectory Negotiation and Conflict Resolution
108206 Flexible Airspace Management
102137 Automation Support for Mixed Environments
104102 Flexible Entry Times for Oceanic Tracks
102114 Initial Conflict Resolution Advisories
102136 Reduced Oceanic Separation and Enhanced Procedures
104120 Point-in-Space Metering
102117 Reduce Horizontal Separation Standards, En Route – 3 miles
108213 Dynamic Airspace Performance Designation
104121 Automated Negotiation/Separation Management
102123 ADS-B Separation
108209 Increase Capacity and Efficiency Using RNAV and RNP
104127 Automated Support for Conflict Resolution

Increase Arrivals/Departures at High Density Airports

102143 Delegated Responsibility for Horizontal Separation (lateral and longitudinal)
104122 Integrated Arrival/Departure Airspace Management
104125 Integrated Arrival/Departure and Surface Traffic Management for Metroplex
102141 Improved Parallel Runway Operations
102150 Reduce Separation – High Density Terminal, Less Than 3-miles
102153 Limited Simultaneous Runway Occupancy *
102142 Efficient Metroplex Merging and Spacing

Key Performance Area—Capacity (2 of 3)

NAS Operational Improvements By Solution Set That Support This KPA:

Increase Flexibility in the Terminal Environment

- 102409 Provide Surface Situation to Pilots, Service Providers and Vehicle Operators for Near-Zero-Visibility Surface Operations
- 102138 Expanded Radar-Like Services to Secondary Airports
- 102151 Single Runway Departure Wake Mitigation
- 102152 Dynamic Pairwise Wake Turbulence Separation
- 102145 Single Runway Arrival Wake Mitigation
- 102140 Wake Turbulence Mitigation for Departures (WTMD): Wind-Based Wake Procedures
- 107107 GBAS Precision Approaches
- 107202 Low Visibility Surface Operations
- 107115 Low Visibility/Ceiling Takeoff Operations
- 107116 Low Visibility/Ceiling Departure Operations
- 107117 Low Visibility/Ceiling Approach Operations
- 107118 Low Visibility/Ceiling Landing Operations
- 107119 Expanded Low Visibility Operations using Lower RVR Minima
- 102154 Wake Re-Categorization

Collaborative ATM

- 105207 Full Collaborative Decision Making
- 105208 Traffic Management Initiatives with Flight Specific Trajectories
- 105302 Continuous Flight Day Evaluation

Key Performance Area—Capacity (3 of 3)

NAS Operational Improvements By Solution Set That Support This KPA:

Reduce Weather Impact

103121 Full Improved Weather Information from Non-Ground Based Sensors

Transform Facilities

105104 NAS Wide Sector Demand Prediction and Resource Planning

Other

107103 RNAV SIDS, STARS and Approaches
107114 Domestic RNP Navigation
108203 Expand Use of RNAV/RNP Procedures
107105 CAT I Precision Approach (GLS)
109201 Current Spectrum Management

Key Performance Area--Cost Effectiveness

GPI-7 Dynamic and Flexible ATS Route Management

GPI-9 Situational Awareness

GPI-10 Terminal Area Design and Management

GPI-15 Match IMC and VMC Operations Capacity

GPI-17 Data Link Applications

GPI-21 Navigation

Key Performance Area—Cost Effectiveness

NAS Operational Improvements By Solution Set That Support This KPA:

Initiate Trajectory-Based Operations

102146 Flexible Routing
104121 Automated Negotiation/Separation Management

Increase Arrivals/Departures at High Density Airports

102149 Delegated Separation – Complex Procedures *

Transform Facilities

109404 Automated Virtual Towers
109402 Remotely Staffed Tower Services

Other

109102 Increase Remote Monitoring and Maintenance
107105 CAT I Precision Approach (GLS)

Key Performance Area--Efficiency

GPI-1 Flexible use of Airspace

GPI-5 RNAV and RNP (Performance Based Navigation)

GPI-6 Air Traffic flow Management

GPI-7 Dynamic and Flexible ATS Route Management

GPI-9 Situational Awareness

GPI-10 Terminal Area Design and Management

GPI-11 RNP and RNAV SIDs and STARs

GPI-12 Functional Integration of
Ground Systems with Airborne
Systems

GPI-13 Aerodrome Design and
Management

GPI-14 Runway Operations

GPI-15 Match IMC and VMC
Operations Capacity

GPI-16 Decision Support Systems
and Alerting Systems

GPI-17 Data Link Applications

GPI-19 Meteorological Systems

GPI-21 Navigation Systems

GPI-22 Communication Infrastructure

Key Performance Area—Efficiency (1 of 3)

NAS Operational Improvements By Solution Set That Support This KPA:

Initiate Trajectory-Based Operations

- 104127 Automated Support for Conflict Resolution
- 104121 Automated Negotiation/Separation Management
- 102114 Initial Conflict Resolution Advisories
- 108209 Increase Capacity and Efficiency Using RNAV and RNP
- 102117 Reduce Horizontal Separation Standards, En Route – 3 miles
- 104105 Automation-Assisted Trajectory Negotiation and Conflict Resolution
- 104120 Point-in-Space Metering
- 104102 Flexible Entry Times for Oceanic Tracks
- 102136 Reduced Oceanic Separation and Enhanced Procedures
- 101103 Provide Interactive Flight planning From Anywhere
- 102108 Oceanic In-Trail climb and Descent
- 102118 Delegated Responsibility for In-Trail Separation
- 102147 Self-Separation Airspace – Oceanic *
- 102148 Self-Separation Airspace Operations *

Increase Arrivals/Departures at High Density Airports

- 104209 Initial Surface Traffic Management
- 102143 Delegated Responsibility for Horizontal Separation (lateral and longitudinal)
- 104122 Integrated Arrival/Departure Airspace Management
- 104125 Integrated Arrival/Departure and Surface Traffic Management for Metroplex
- 104208 Enhance Departure Flow Operations
- 102149 Delegated Separation – Complex Procedures *
- 104206 Full Surface Traffic Management with Conformance Monitoring
- 104123 Time-Based Metering Using RNP and RNAV Route Assignments
- 104117 Improved Management of Arrivals/Surface/Departure Flow Operations
- 102142 Efficient Metroplex Merging and Spacing
- 104128 Time-Based Metering in the Terminal Environment

Key Performance Area—Efficiency (2 of 3)

NAS Operational Improvements By Solution Set That Support This KPA:

Increase Flexibility in the Terminal Environment

- 102409 Provide Surface Situation to Pilots, Service Providers and Vehicle Operators for Near-Zero-Visibility Surface Operations
- 102406 Provide Full Surface Situation Information
- 104207 Enhanced Surface Traffic Operations
- 104124 Use Optimized Profile Descent
- 107202 Low Visibility Surface Operations
- 107115 Low Visibility/Ceiling Takeoff Operations
- 107116 Low Visibility/Ceiling Departure Operations
- 107117 Low Visibility/Ceiling Approach Operations
- 107118 Low Visibility/Ceiling Landing Operations
- 107119 Expanded Low Visibility Operations using Lower RVR Minima

Collaborative ATM

- 108212 Improved Management of Special Activity Airspace
- 105208 Traffic Management Initiatives with Flight Specific Trajectories

Key Performance Area—Efficiency (3 of 3)

NAS Operational Improvements By Solution Set That Support This KPA:

Reduce Weather Impact

103121 Full Improved Weather Information from Non-Ground Based Sensors

Increase Safety, Security, and Environmental Performance

109311 Environmentally and Energy Favorable En Route Operations
109312 Environmentally and Energy Favorable En Route Operations - Enhanced
109313 Environmentally and Energy Favorable Terminal Operations
109314 Environmentally and Energy Favorable Terminal Operations - Enhanced

Other

107103 RNAV SIDS, STARS and Approaches
107114 Domestic RNP Navigation
108203 Expand Use of RNAV/RNP Procedures

Key Performance Area--Environment



GPI-5 RNAV and RNP (Performance Based Navigation)



GPI-6 Air Traffic Flow Management



GPI-7 Dynamic and Flexible ATS Route Management



GPI-9 Situational Awareness



GPI-10 Terminal Area Design and Management



GPI-11 RNP and RNAV SIDs and STARs



GPI-12 Functional Integration of Ground Systems with Airborne Systems



GPI-13 Aerodrome Design and Management



GPI-14 Runway Operations



GPI-15 Match IMC and VMC Operations Capacity



GPI-16 Decision Support Systems and Alerting Systems



GPI-17 Data Link Applications



GPI-19 Meteorological Systems



GPI-22 Communication Infrastructure



GPI-23 Aeronautical Radio Spectrum

Key Performance Area—Environment (1 of 2)

NAS Operational Improvements By Solution Set That Support This KPA:

Initiate Trajectory-Based Operations

102118 Delegated Responsibility for In-Trail Separation
102136 Reduced Oceanic Separation and Enhanced Procedures
104102 Flexible Entry Times for Oceanic Tracks
102117 Reduce Horizontal Separation Standards, En Route – 3 miles
104120 Point-in-Space Metering
108209 Increase Capacity and Efficiency Using RNAV and RNP
104121 Automated Negotiation/Separation Management
102108 Oceanic In-Trail Climb and Descent

Increase Arrivals/Departures at High Density Airports

104128 Time-Based Metering in the Terminal Environment
102143 Delegated Responsibility for Horizontal Separation (lateral and longitudinal)
104117 Improved Management of Arrivals/surface/Departure flow Operations
104206 Full Surface Traffic Management with Conformance Monitoring
104122 Integrated Arrival/Departure Airspace Management
104123 Time-Based metering Using RNP and RNAV Route Assignments
104208 Enhance Departure Flow Operations
104142 Efficient Metroplex Merging and Spacing
104209 Initial Surface Traffic Management

Collaborative ATM

105208 Traffic Management Initiatives with Flight Specific Trajectories
108212 Improved Management of Special Activity Airspace

Key Performance Area—Environment (2 of 2)

NAS Operational Improvements By Solution Set That Support This KPA:

Increase Flexibility in the Terminal Environment

104207 Enhanced Surface Traffic Operations
104124 Use Optimized Profile Descent
102140 Wake Turbulence Mitigation for Departures (WTMD): Wind-Based Wake Procedures
102409 Provide Surface Situation to Pilots, Service Providers
and Vehicle Operators for Near-Zero-Visibility Surface Operations

Increase Safety, Security, and Environmental Performance

109311 Environmentally and Energy Favorable En Route Operations
109312 Environmentally and Energy Favorable En Route Operations - Enhanced
109313 Environmentally and Energy Favorable Terminal Operations
109314 Environmentally and Energy Favorable Terminal Operations - Enhanced
109315 Implement NextGen Environmental Engine and Aircraft Technologies
109316 Increased Use of Alternative Aviation Fuels
109309 Implement EMS Framework
109310 Implement EMS Framework Enhanced

Reduce Weather Impact

103121 Full Improved Weather Information and Dissemination

Other

107114 Domestic RNP Navigation
108203 Expand Use of RNAV/RNP Procedures
107103 RNAV SIDS, STARS and Approaches

Key Performance Area--Predictability



GPI-5 RNAV and RNP (Performance Based Navigation)



GPI-6 Air Traffic Flow Management



GPI-7 Dynamic and Flexible ATS Route Management



GPI-8 Collaborative Airspace Design and Management



GPI-9 Situational Awareness



GPI-10 Terminal Area Design and Management



GPI-11 RNP and RNAV SIDs and STARs



GPI-12 Functional Integration of Ground Systems with Airborne Systems



GPI-13 Aerodrome Design and Management



GPI-14 Runway Operations



GPI-15 Match IMC and VMC Operations Capacity



GPI-17 Data Link Applications



GPI-19 Meteorological Systems



GPI-22 Communication Infrastructure

Key Performance Area—Predictability (1 of 2)

NAS Operational Improvements By Solution Set That Support This KPA:

Initiate Trajectory-Based Operations

108206 Flexible Airspace Management
104120 Point-in-Space Metering
104121 Automated Negotiation/Separation Management
104126 Trajectory-Based Management – Gate-to-Gate

Increase Arrivals/Departures at High Density Airports

104128 Time-Based Metering in the Terminal Environment
104117 Improved Management of Arrivals/Surface/Departure Flow Operations
104206 Full Surface Traffic Management with Conformance Monitoring
104122 Integrated Arrival/Departure Airspace Management
104123 Time-Based Metering Using RNP and RNAV Route Assignments
102141 Improved Parallel Runway Operations
102142 Efficient Metroplex Merging and Spacing
104209 Initial Surface Traffic Management

Collaborative ATM

101102 Provide Full Flight Plan Constraint Evaluation with Feedback
105207 Full Collaborative Decision Making
105302 Continuous Flight Day Evaluation

Key Performance Area—Predictability (2 of 2)

NAS Operational Improvements By Solution Set That Support This KPA:

Increase Flexibility in the Terminal Environment

102140 Wake Turbulence Mitigation for Departures (WTMD): Wind-Based Wake Procedures

Reduce Weather Impact

103121 Full Improved Weather Information and Dissemination

Transform Facilities

105104 NAS Wide Sector Demand Prediction and Resource Planning

Key Performance Area--Flexibility

GPI-5 RNAV and RNP (Performance Based Navigation)

GPI-6 Air Traffic Flow Management

GPI-7 Dynamic and Flexible ATS Route Management

GPI-8 Collaborative Airspace Design and Management

GPI-9 Situational Awareness

GPI-10 Terminal Area Design and Management

GPI-11 RNP and RNAV SIDs and STARs

GPI-12 Functional Integration of Ground Systems with Airborne Systems

GPI-13 Aerodrome Design and Management

GPI-14 Runway Operations

GPI-16 Decision Support Systems and Alerting Systems

GPI-17 Data Link Applications

GPI-19 Meteorological Systems

GPI-22 Communication Infrastructure

Key Performance Area—Flexibility (1 of 2)

NAS Operational Improvements By Solution Set That Support This KPA:

Initiate Trajectory-Based Operations

104126 Trajectory-Based Management – Gate-to-Gate
102108 Oceanic In-Trail Climb and Descent
102118 Delegated Responsibility for In-Trail Separation
102136 Reduced Oceanic Separation and Enhanced Procedures
104102 Flexible Entry Times for Oceanic Tracks
101103 Provide Interactive Flight Planning from Anywhere
108206 Flexible Airspace Management
102123 ADS-B Separation
108105 Flow Corridors – Level 1 Static *
108106 Flow Corridors – Level 2 Dynamic *
108213 Dynamic Airspace Performance Designation
102146 Flexible Routing

Increase Arrivals/Departures at High Density Airports

104128 Time-Based Metering in the Terminal Environment
104122 Integrated Arrival/Departure Airspace Management
104123 Time-Based Metering Using RNP and RNAV Route Assignments

Increase Flexibility in the Terminal Environment

107115 Low Visibility/Ceiling Takeoff Operations
107116 Low Visibility/Ceiling Departure Operations
107117 Low Visibility/Ceiling Approach Operations
107118 Low Visibility/Ceiling Landing Operations
107119 Expanded Low Visibility Operations using Lower RVR Minima
107202 Low Visibility Surface Operations

Key Performance Area—Flexibility (2 of 2)

NAS Operational Improvements By Solution Set That Support This KPA:

Collaborative ATM

101102 Provide Full Flight Plan Constraint Evaluation with Feedback
105207 Full Collaborative Decision Making
108212 Improved Management of Special Activity Airspace
105208 Traffic Management Initiatives with Flight Specific Trajectories

Reduce Weather Impact

103119 Initial Integration of Weather Information into NAS Automation and Decision Making
103121 Full Improved Weather Information and Dissemination

Transform Facilities

105104 NAS Wide Sector Demand Prediction and Resource Planning

Other

107103 RNAV SIDS, STARS and Approaches

Key Performance Area—Global Interoperability



GPI-5 RNAV and RNP (Performance Based Navigation)



GPI-6 Air Traffic Flow Management



GPI-7 Dynamic and Flexible ATS Route Management



GPI-8 Collaborative Airspace Design and Management



GPI-9 Situational Awareness



GPI-10 Terminal Area Design and Management



GPI-11 RNP and RNAV SIDs and STARs



GPI-12 Functional Integration of Ground Systems with Airborne Systems



GPI-13 Aerodrome Design and Management



GPI-14 Runway Operations



GPI-15 Match IMC and VMC Operations Capacity



GPI-16 Decision Support Systems and Alerting Systems



GPI-17 Data Link Applications



GPI-18 Aeronautical Information



GPI-19 Meteorological Systems



GPI-21 Navigation Systems



GPI-22 Communication Infrastructure

Key Performance Area—Global Interoperability (1 of 2)

NAS Operational Improvements By Solution Set That Support This KPA:

Initiate Trajectory-Based Operations

- 104127 Automated Support for Conflict Resolution
- 102123 ADS-B Separation
- 102108 Oceanic In-Trail Climb and Descent
- 102118 Delegated Responsibility for In-Trail Separation
- 102136 Reduced Oceanic Separation and Enhanced Procedures
- 104105 Automation-Assisted Trajectory Negotiation and Conflict Resolution
- 108209 Increase Capacity and Efficiency Using RNAV and RNP
- 104121 Automated Negotiation/Separation Management

Increase Arrivals/Departures at High Density Airports

- 102143 Delegated Responsibility for Horizontal Separation (lateral and Longitudinal)
- 104206 Full Surface Traffic Management with Conformance Monitoring
- 104123 Time-Based Metering Using RNP and RNAV Route Assignments
- 104208 Enhance Departure Flow Operations
- 102141 Improved Parallel Runway Operations

Increase Flexibility in the Terminal Environment

- 107107 GBAS Precision Approaches

Improve Collaborative ATM

- 103305 On-Demand NAS Information
- 105207 Full Collaborative Decision Making

Key Performance Area—Global Interoperability (2 of 2)

NAS Operational Improvements By Solution Set That Support This KPA:

Reduce Weather Impact

103116 Initial Improved Weather Information from Non-Ground Based Sensors
103121 Full Improved Weather Information and Dissemination

Increase Safety, Security, and Environmental Performance

109306 Increased International Cooperation for Aviation Safety
109307 Improved Safety Across Air Transportation System Boundaries
109308 Enhanced (Automated) Aviation safety Information Sharing and Analysis and Effectiveness
106202 Enhance Emergency Alerting

Other

108203 Expand Use of RNAV/RNP Procedures
107103 RNAV SIDS, STARS and Approaches
107105 CAT I Precision Approach (GLS)

Key Performance Area—Community Participation



GPI-6 Air Traffic Flow Management



GPI-7 Dynamic and Flexible ATS Route Management



GPI-8 Collaborate Airspace Design and Management



GPI-9 Situational Awareness



GPI-16 Decision Support Systems and Alerting Systems



GPI-17 Data Link Applications



GPI-19 Meteorological systems



GPI-22 Communication Infrastructure

Key Performance Area—Community Participation

NAS Operational Improvements By Solution Set That Support This KPA:

Initiate Trajectory-Based Operations

101103 Provide Interactive Flight Planning from Anywhere

Increase Flexibility in the Terminal Environment

102138 Expanded Radar-Like Services to Secondary Airports

Collaborative ATM

101102 Provide Full Flight Plan Constraint Evaluation with Feedback

105302 Continuous Flight Day Evaluation

105208 Traffic Management Initiatives with Flight Specific Trajectories

Reduce Weather Impact

103121 Full Improved Weather Information and Dissemination

Increase Safety, Security, and Environmental Performance

109302 Enhance Government/Agency SSA Cooperation Support

Key Performance Area--Access and Equity

GPI-5 RNAV and RNP (Performance Navigation)

GPI-6 Air Traffic Flow Management

GPI-9 Situational Awareness

GPI-10 Terminal Area Design and Management

GPI-11 RNP and RNAV SIDs and STARs

GPI-12 Functional Integration of Ground Systems with Airborne Systems

GPI-13 Aerodrome Design and Management

GPI-15 Match IMC and VMC Operations Capacity

Key Performance Area—Access and Equity

NAS Operational Improvements By Solution Set That Support This KPA:

Initiate Trajectory-Based Operations

102123 ADS-B Separation
102108 Oceanic In-Trail climb and Descent
108209 Increase Capacity and Efficiency Using RNAV and RNP
104126 Trajectory-Based Management – Gate-to-Gate

Increase Arrivals/Departures at High Density Airports

104122 Integrated Arrival/Departure Airspace Management

Increase Flexibility in the Terminal Environment

107107 GBAS Precision Approaches
107115 Low Visibility/Ceiling Takeoff Operations
107116 Low Visibility/Ceiling Departure Operations
107117 Low Visibility/Ceiling Approach Operations
107118 Low Visibility/Ceiling Landing Operations
107202 Low Visibility Surface Operations
102138 Expanded Radar-Like Services to Secondary Airports

Collaborative ATM

108212 Improved Management of Special Activity Airspace

Other

107105 CAT I Precision Approach (GLS)

GPI-1 Flexible Use of Airspace

Definition: The optimization and equitable balance in the use of airspace between civil and military users, facilitated through both strategic coordination and dynamic interaction

NAS Operational Improvements that support this GPI:

108212 Improved Management of Special Activity Airspace

GPI-2 Reduced Vertical Separation Minima

Definition: To increase capacity and improve efficiency through optimized use of airspace and enhanced aircraft altimetry systems

NAS Operational Improvements that support this GPI:

None

GPI-3 Harmonization of Level Systems

Definition: Implementation by all states of the ICAO Flight Level Scheme based on feet as contained in Appendix 3 to Annex 2—*Rules of the Air*

NAS Operational Improvements that support this GPI:

None

GPI-4 Alignment of Upper Airspace Classification

Definition: Harmonization of upper airspace and associated traffic handling through application of a common ICAO ATS Airspace Class above an agreed division level

NAS Operational Improvements that support this GPI:

102147 Self-Separation Airspace – Oceanic *
102148 Self-Separation Airspace Operations *

108105 Flow Corridors - Level 1 Static *
108106 Flow Corridors - Level 2 Dynamic *

GPI-5 RNAV and RNP (Performance Based Navigation)

Definition: The incorporation of advanced aircraft navigation capabilities into the air navigation system infrastructure bringing additional safety and efficiency benefits to the airspace user

NAS Operational Improvements that support this GPI:

108209 Increase Capacity and Efficiency Using Area Navigation (RNAV) and Required Navigation Performance (RNP)

107114 Domestic RNP Navigation

109311 Environmentally and Energy Favorable En Route Operations

108203 Expand Use of RNAV/RNP Procedures
109312 Environmentally and Energy Favorable En Route Operations - Enhanced

104123 Time-Based Metering Using RNAV and RNP Route Assignments

104128 Time-Based Metering in the Terminal Environment

GPI-6 Air Traffic Flow Management

Definition: The implementation of strategic, tactical and pre-tactical measures aimed at organization and handling traffic flows in such a way that the totality of the traffic handled at any given time or in any given airspace or aerodrome is compatible with the capacity of the ATM system

NAS Operational Improvements that support this GPI:

102136 Reduced Oceanic Separation and Enhanced Procedures
104102 Flexible Entry Times for Oceanic Tracks

108206 Flexible Airspace Management
101102 Provide Full Flight Plan Constraint Evaluation with Feedback

104122 Integrated Arrival/Departure Airspace Management
104207 Enhanced Surface Traffic Operations

104120 Point-in-Space Metering
103121 Full Improved Weather Information and Dissemination

105207 Full Collaborative Decision Making
109311 Environmentally and Energy Favorable En Route Operations

105208 Traffic Management Initiatives with Flight Specific Trajectories
105302 Continuous Flight Day Evaluation

109312 Environmentally and Energy Favorable En Route Operations - Enhanced

104125 Integrated Arrival/Departure and Surface Traffic Management for Metroplex
104126 Trajectory-Based Management- Gate-to-Gate

GPI-7 Dynamic and Flexible ATS Route Management

Definition: The establishment of more flexible and dynamic route systems, on the basis of navigation performance capability, aimed at accommodating preferred flight trajectories

NAS Operational Improvements that support this GPI:

104121 Automated Negotiation/Separation Management
108213 Dynamic Airspace Performance Designation

103121 Full Improved Weather Information and Dissemination

103119 Initial Integration of Weather Information into NAS Automation and Decision Making

105104 NAS Wide Sector Demand Prediction and Resource Planning
105302 Continuous Flight Day Evaluation

105207 Full Collaborative Decision Making
104122 Integrated Arrival/Departure Airspace Management

104125 Integrated Arrival/Departure and Surface Traffic Management for Metroplex
108105 Flow Corridors - Level 1 Static *

109312 Environmentally and Energy Favorable En Route Operations - Enhanced

108106 Flow Corridors - Level 2 Dynamic *

GPI-8 Collaborative Airspace Design and Management

Definition: The application of uniform airspace organization and management principles on a global basis, leading to a more flexible airspace design to accommodate traffic flows dynamically

NAS Operational Improvements that support this GPI:

105104 NAS Wide Sector Demand
Prediction and Resource Planning

105207 Full Collaborative Decision Making

109311 Environmentally and Energy Favorable En
Route Operations

108213 Dynamic Airspace Performance Designation

108206 Flexible Airspace Management

105302 Continuous Flight Day Evaluation

109312 Environmentally and Energy Favorable En
Route Operations - Enhanced

GPI-9 Situational Awareness

Definition: Operational implementation of data link-based surveillance to provide improved efficiency through reduced separation minima and increased capacity, reduced fuel costs and emissions and enhanced safety. The implementation of equipment to allow traffic information to be displayed in aircraft allowing implementation of conflict prediction and collaboration between flight crew and the ATM system. Improve situational awareness in the cockpit by making available electronic terrain and obstacle data of required quality.

NAS Operational Improvements that support this GPI:

102108 Oceanic In-Trail Climb and Descent	102114 Initial Conflict Resolution Advisories
107119 Expanded Low Visibility Operations using Lower RVR Minima	102123 ADS-B Separation
107202 Low visibility Surface Operations	102147 Self-Separation Airspace – Oceanic *
102118 Delegated Responsibility for In-Trail Separation	102138 Expanded Radar-like Services to Secondary Airports
104121 Automated Negotiation/Separation Management	107115 Low Visibility/Ceiling Takeoff Operations
102117 Reduce Horizontal Separation Standards, En Route - 3 Miles	103207 Improved Runway Safety Situational Awareness for Controllers
107116 Low Visibility/Ceiling Departure Operations	103104 Deploy FIS-B Nationally
107107 Ground Based Augmentation System (GBAS) Precision Approaches	103206 Expanded Traffic Advisory Services Using Digital Traffic Data
107117 Low Visibility/Ceiling Approach Operations	102149 Delegated Separation–Complex Procedures *
107118 Low Visibility/Ceiling Landing Operations	103208 Improve Runway Safety Situational Awareness for Pilots
102150 Reduce Separation–High Density Terminal, Less Than 3-miles	102148 Self-Separation Airspace Operations *

GPI-10 Terminal Area Design and Management

Definition: The optimization of terminal control areas (TMA) capacity and efficiency, through improved management techniques, to provide for more fuel efficient aircraft operations and to minimize the effects of adverse events in the TMA

NAS Operational Improvements that support this GPI:

104122 Integrated Arrival/Departure Airspace Management
104206 Full Surface Traffic Management with
Conformance Monitoring

104117 Improved Management of
Arrival/Surface/Departure Flow Operations
107105 Cat I Precision Approach (GLS)

109313 Environmentally and Energy Favorable
Terminal Operations

104123 Time-Based Metering Using RNAV
and RNP Route Assignments

109314 Environmentally and Energy Favorable
Terminal Operations - Enhanced

104125 Integrated Arrival/Departure and
Surface Traffic Management for Metroplex
104126 Trajectory-Based Management- Gate-to-Gate

GPI-11 RNP and RNAV SIDs and STARS

Definition: The optimization of terminal control area (TMA) capacity and efficiency to provide for more fuel efficient aircraft operations through the implementation of RNP and RNAV arrival and departure routes, standard instrument departures (SIDs) and standard terminal arrival routes (STARs)

NAS Operational Improvements that support this GPI:

107114 Domestic RNP Navigation	108209 Increase Capacity and Efficiency Using Area Navigation (RNAV) and Required Navigation Performance (RNP)
104122 Integrated Arrival/Departure Airspace Management	109314 Environmentally and Energy Favorable Terminal Operations - Enhanced
109313 Environmentally and Energy Favorable Terminal Operations	

GPI-12 Functional Integration of Ground Systems with Airborne Systems

Definition: The efficiency of terminal control area (TMA) airspace will result integrating automation capabilities to deliver time of arrival over applicable fixes in order to assist in the sequencing process allowing aircraft to remain closer to their 4-D preferred trajectories

NAS Operational Improvements that support this GPI:

104122 Integrated Arrival/Departure Airspace Management 104124 Use Optimized Profile Descent	107103 RNAV SIDS, STARS and Approaches
102152 Dynamic, Pairwise Wake Turbulence Separation 104126 Trajectory-Based Management- Gate-to-Gate	103305 On-Demand NAS Information 102141 Improved Parallel Runway Operations

GPI-13 Aerodrome Design and Management

Definition: Improve capacity and efficiency through implementation of management strategies that improve movement area utilization

NAS Operational Improvements that support this GPI:

104122 Integrated Arrival/Departure Airspace Management

104206 Full Surface Traffic Management
with Conformance Monitoring

102406 Provide Full Surface Situation Information

104209 Initial Surface Traffic Management
109404 Automated Virtual Towers

109313 Environmentally and Energy Favorable
Terminal Operations

109314 Environmentally and Energy Favorable
Terminal Operations - Enhanced

GPI-14 Runway Operations

Definition: Improve capacity through reduction of runway occupancy times

NAS Operational Improvements that support this GPI:

102142 Efficient Metroplex Merging and Spacing 107119 Expanded Low Visibility Operations using Lower RVR Minima	102140 Wake Turbulence Mitigation for Departures (WTMD): Wind-Based Wake Procedures 107202 Low Visibility Surface Operations
107114 Domestic RNP Navigation 107115 Low Visibility/Ceiling Takeoff Operations	104123 Time-Based Metering Using RNAV and RNP Route Assignments
102141 Improved Parallel Runway Operations 107118 Low Visibility/Ceiling Landing Operations	107117 Low Visibility/Ceiling Approach Operations 107116 Low Visibility/Ceiling Departure Operations
102145 Single Runway Arrival Wake Mitigation 102151 Single Runway Departure Wake Mitigation	102144 Wake Turbulence Mitigation for Arrivals: CSPRs
103207 Improved Runway Safety Situational Awareness for Controllers 104128 Time-Based Metering in the Terminal Environment	103208 Improve Runway Safety Situational Awareness for Pilots 102154 Wake Re-Categorization
102152 Dynamic, Pairwise Wake Turbulence Separation 102153 Limited Simultaneous Runway Occupancy *	

GPI-15 Match IMC and VMC Operating Capacity

Definition: Improve the ability of aircraft to maneuver on the aerodrome surface in adverse weather conditions

NAS Operational Improvements that support this GPI:

102409 Provide Surface Situation to Pilots, Service Providers and Vehicle Operators for Near-Zero-Visibility Surface Operations

102140 Wake Turbulence Mitigation for Departures (WTMD): Wind-Based Wake Procedures
107115 Low Visibility/Ceiling Takeoff Operations

109402 Remotely Staffed Tower Services
107202 Low Visibility Surface Operations

107107 Ground Based Augmentation System (GBAS) Precision Approaches
107116 Low Visibility/Ceiling Departure Operations

107117 Low Visibility/Ceiling Approach Operations
107118 Low Visibility/Ceiling Landing Operations

107119 Expanded Low Visibility Operations using Lower RVR Minima

102145 Single Runway Arrival Wake Mitigation

GPI-16 Decision Support Systems and Alerting Systems

Definition: Improve capacity and efficiency through the use of conflict prediction tools and the automation of coordination tasks

NAS Operational Improvements that support this GPI:

104105 Automation-Assisted Trajectory
Negotiation and Conflict Resolution
102146 Flexible Routing

102114 Initial Conflict Resolution Advisories
102150 Reduce Separation—High Density Terminal,
Less Than 3-miles

103119 Initial Integration of Weather Information into NAS
Automation and Decision Making

102137 Automation Support for
Separation Management

102409 Provide Surface Situation to Pilots, Service Providers
and Vehicle Operators for Near-Zero-Visibility Surface
Operations

105208 Traffic Management Initiatives with
Flight Specific Trajectories

1029317 Operational Security Capability Dynamic Flight Risk
Assessment for Improved Security Airspace Planning
Management

103123 Full Integration of Weather Information into
NAS Automation and Decision Making
104126 Trajectory-Based Management- Gate-to-Gate

109317 Operation Security Capability with Dynamic Flight Risk
Assessment for Improved Security Airspace Planning and
Management

104209 Initial Surface Traffic Management
104127 Automated Support for Conflict Resolution

GPI-17 Data Link Applications

Definition: Improve efficiency through the use of data link communications which reduces workload and provides exact data transfer

NAS Operational Improvements that support this GPI:

101103 Provide Interactive Flight Planning from Anywhere
103305 On-Demand NAS Information

104105 Automation-Assisted Trajectory Negotiation and Conflict Resolution
103104 Deploy FIS-B Nationally

102143 Delegated Responsibility for Horizontal Separation (lateral and longitudinal)

102136 Reduced Oceanic Separation and Enhanced Procedures
104208 Enhance Departure Flow Operations

102409 Provide Surface Situation to Pilots, Service Providers and Vehicle Operators for Near-Zero-Visibility Surface Operations

102149 Delegated Separation–Complex Procedures *
102146 Flexible Routing

103206 Expanded Traffic Advisory Services Using Digital Traffic Data
104127 Automated Support for Conflict Resolution

104121 Automated Negotiation/Separation Management
104126 Trajectory-Based Management- Gate-to-Gate

104207 Enhanced Surface Traffic Operations

GPI-18 Aeronautical Information

Definition: The availability of real-time quality information to any ATM participant, anytime, anywhere

NAS Operational Improvements that support this GPI:

103206 Expanded Traffic Advisory Services
Using Digital Traffic Data

103305 On-Demand NAS Information

GPI-19 Meteorological Systems

Definition: To improve the availability of meteorological information in support of a seamless global ATM system

NAS Operational Improvements that support this GPI:

103121 Full Improved Weather Information and Dissemination

103104 Deploy FIS-B Nationally

103305 On-Demand NAS Information

102409 Provide Surface Situation to Pilots, Service Providers and Vehicle Operators for Near-Zero-Visibility Surface Operations

103123 Full Integration of Weather Information into NAS Automation and Decision Making

103116 Initial Improved Weather Information from Non-Ground Based Sensors

103122 Full Improved Weather Sensor Network

GPI-20 WGS-84

Definition: The implementation of WGS-84 (latitude/longitude coordinates for navigational use) by all states

NAS Operational Improvements that support this GPI:

103121 Full Improved Weather Information and
Dissemination

GPI-21 Navigation Systems

Definition: Enable the introduction and evolution of performance-based navigation supported by a robust navigation infrastructure providing an accurate, reliable and seamless global positioning capability

NAS Operational Improvements that support this GPI:

106202 Enhance Emergency Alerting

107105 Cat I Precision Approach (GLS)

GPI-22 Communication Infrastructure

Definition: Timely availability of material for improving communication capabilities as a means of improving safety and efficiency in aviation as well as improving airspace and aerodrome capacity

NAS Operational Improvements that support this GPI:

101103 Provide Interactive Flight Planning from Anywhere

102406 Provide Full Surface Situation Information

102136 Reduced Oceanic Separation and Enhanced Procedures

101102 Provide Full Flight Plan Constraint Evaluation with Feedback

103305 On-Demand NAS Information

109102 Increase Remote Monitoring and Maintenance

102409 Provide Surface Situation to Pilots, Service Providers and Vehicle Operators for Near-Zero Visibility Surface Operations

109302 Operational Security Capability for Threat Detection and Tracking, NAS Impact Analysis and Risk-Based Assessment

GPI-23 Aeronautical Radio Spectrum

Definition: Timely availability of adequate radio spectrum to provide viable air navigation services (communication, navigation and surveillance) on a global basis, thus improving safety and efficiency in aviation

NAS Operational Improvements that support this GPI:

109201 Current Spectrum Management