

NAS Enterprise Architecture

Business & Technology Roadmaps Version 1.0

Security

- Facilities Security
- Information Security

Safety

- Air Safety
- Facilities Safety

Enterprise Management

- FAA Strategies, Planning and Concepts
 - Acquisitions
 - Regional Administration
 - FAA Facilities
 - FAA Sustainment
 - Training
 - Spectrum Management
- FAA Technology and Infrastructure
- Data and Information Management
- Workforce Planning and Development
 - Human Factors



Federal Aviation
Administration

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Structure of Business and Technology Roadmap Diagram

Roadmap Legend

- The Business and Technology Improvement bars represent the date range which an improvement is expected to be initially (e.g. at the first location) available to users. For Improvements that are expected to be made operationally available incrementally, the range represents the earliest date for the first initial operational change to the latest date for the final operational change.
- Each Business and Technology Roadmap diagram is segmented by Business and Technology Improvement Areas, which are depicted by alternating gray and white backgrounds



Timeline



Current Operations (arrow indicates sustainment)



Current Operation achieved via completion of a BTI - triangle indicates date of full operational availability



Business and Technology Improvement (BTI)



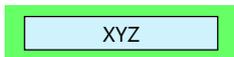
Increment achieved



Planned BTI



External BTI - being researched or developed by a NextGen Partner Agency



Support Activity

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Service Group 3: Security

This Service Group focuses on services provided that ensure the safeguard of civil aviation community, the FAA operating domains, and its facilities against acts of unlawful interference and cyber-attacks. Security services include the administrative and coordination aspects, as well as the technical security measures for the protection of the Federal Aviation Administration operating networks, infrastructures, and facilities. Security services also refers to the protection of information and information systems from unauthorized access, use, disclosure, disruption, modification, or destruction in order to provide confidentiality, integrity and availability.

Standards, guidelines, models, frameworks, architecture, and other documents related to the protection of information that is stored, transferred, or processed in automated systems will guide how those services are protected and provided.

Service 301: Facilities Security

This Service refers to documents and physical security related to the design, procurement, building, and operation of an FAA facility.

Service 302: Information Security

FAA Information/Cyber security identifies specific capabilities that are specific to protecting the operations of the FAA from cyber threats, detect unauthorized system and network behavior, respond to cyber security events, and recover from impacting incidents. The services refer to hardware requirements, telecommunication standards, communication links, protocols, electromagnetic compatibility/interference, and tactical data security requirements.

Service Group 4: Safety

Safety Services provides for the sum total of resources and activities (people, organizations, policies, procedures, time spans, milestones, etc.) devoted to the management of safety at any point during a system's life cycle (i.e. from concept through, design, implementation and operation) and ensures the safety, effectiveness and quality of Aviation System Standards programs through the development and oversight of organizational safety and quality assurance policies and procedures and implementation of a Safety Management System. Key components of the Aviation System Standards integrated safety system include Flight Safety, Environmental, Occupational Safety and Health, Safety Management System, and Internal Evaluation Programs.

Service 401: Air Safety

Air Safety Services are conducted in accordance with the ATO Safety Management System (SMS). Safety Services for Air Traffic Management apply Safety Risk Management (SRM) for new or revised systems or services and Safety Assurance (SA) on implemented air traffic management operations. SRM determines the need for, and adequacy of, new or revised mitigations based on the assessment of acceptable risk. Validation and Verification ensures that requirements, including those designed to mitigate risk, are met. Safety assurance evaluates the continued effectiveness of implemented risk control strategies such as the identification of new hazards.

Air Safety (1 of 1)

| CY | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | + |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
| ATM Operational Safety | | | | | | | | | | | | | | | | | | |
| Current ATM Safety Services (401101) | | | | | | | | | | | | | | | | | | |
| Improved Safety for NextGen Evolution (401102) | | | | | | | | | | | | | | | | | | |
| Prognostic Algorithm Design for Safety (401103) | | | | | | | | | | | | | | | | | | |

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Service 402: Facilities Safety

The purpose of the Facilities Safety Service is to apply system safety techniques to a facility from its initial design through its demolition. Facilities are major subsystems providing safety risks to operational and maintenance staff. By implementing processes similar to those used in airborne and ground systems, control of these risks can be maintained. Some aspects that this Service addresses include: structural systems, Heating, Ventilation, and Air-Conditioning (HVAC) system, electrical systems, hydraulic systems, pressure and pneumatic systems, fire protection systems, water treatment systems, equipment and material handling, and normal operations (e.g. parking garage) and unique operational activities (e.g. chemical laboratories).

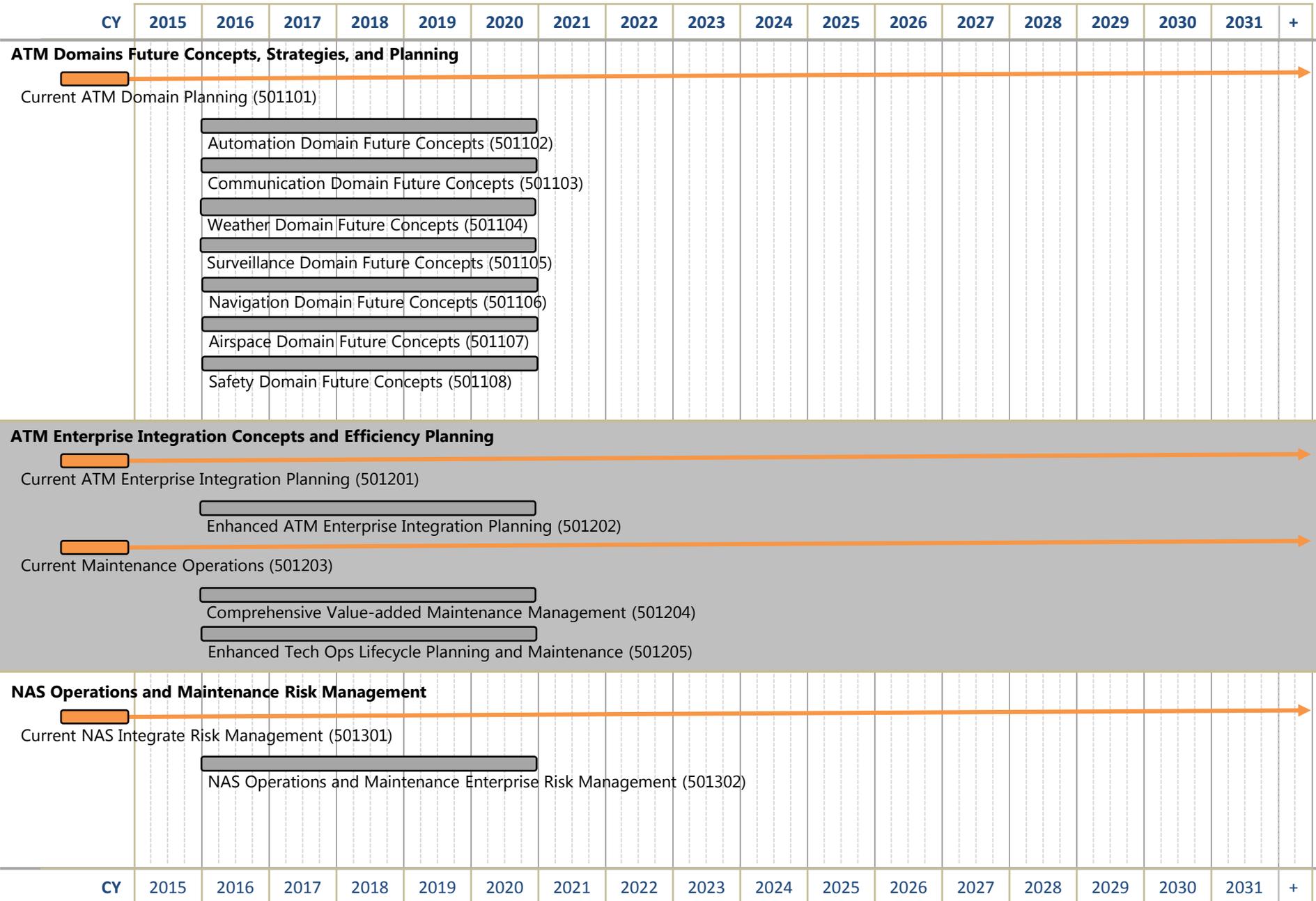
Service Group 5: Enterprise Management

This Service Group embodies the Services provided by an organization that support a defined business scope and mission. An enterprise is comprised of interdependent resources (people, organizations, and technology) that must coordinate their functions and share information in support of a common mission (or set of related missions). The FAA Enterprise Management Services provides an explicit description of the current and desired relationships among business and management processes and information technologies within the FAA. The Services consist of business process models, technical reference models, and systems models.

Service 501: FAA Strategies, Planning, and Concepts

The FAA is a continually evolving operation that requires constant planning of potential improvements or capabilities to maintain operational effectiveness and efficiencies. Concepts to improve methods of how the FAA operates or provides its services or concepts that may develop into new capabilities to the FAA mission and aviation community take time to develop. The Planning, Strategies and Concepts Service identifies potential future concepts that may either develop into a new Capability or Service for improved operations creating a more effective and efficient operating environment.

FAA Strategies, Planning, and Concepts (1 of 1)



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Service 502: Acquisitions

The Acquisition Management System (AMS) establishes agency-wide policy and guidance for all areas of lifecycle acquisition management.

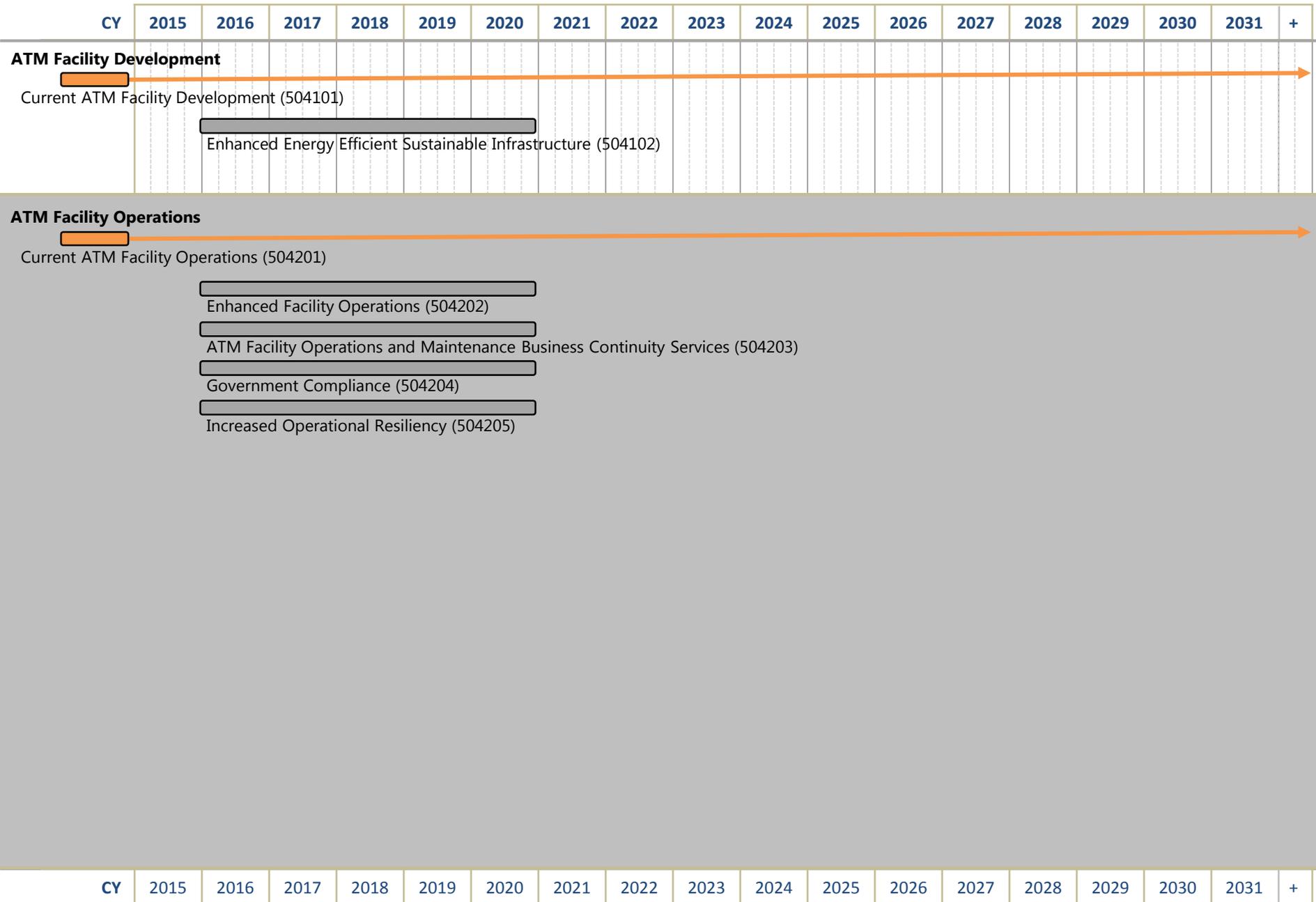
Service 503: Regional Administration

This Service provides government, Department of Transportation, and FAA-wide services in financial systems and operations, emergency readiness (command, control, and communications), information services, business application development, technical, executive/managerial, and international training, logistics services for real estate and materiel management, National Airspace System Maintenance, Repair and Overhaul (MRO) and Supply Chain Management, and public and governmental outreach.

Service 504: FAA Facilities

ATM Facility infrastructure consists of land that houses communications, surveillance and navigation systems and facilities that house operational personnel and their automation systems. ATM facilities procure, operate and maintain these facilities to ensure continuous operations.

FAA Facilities (1 of 1)

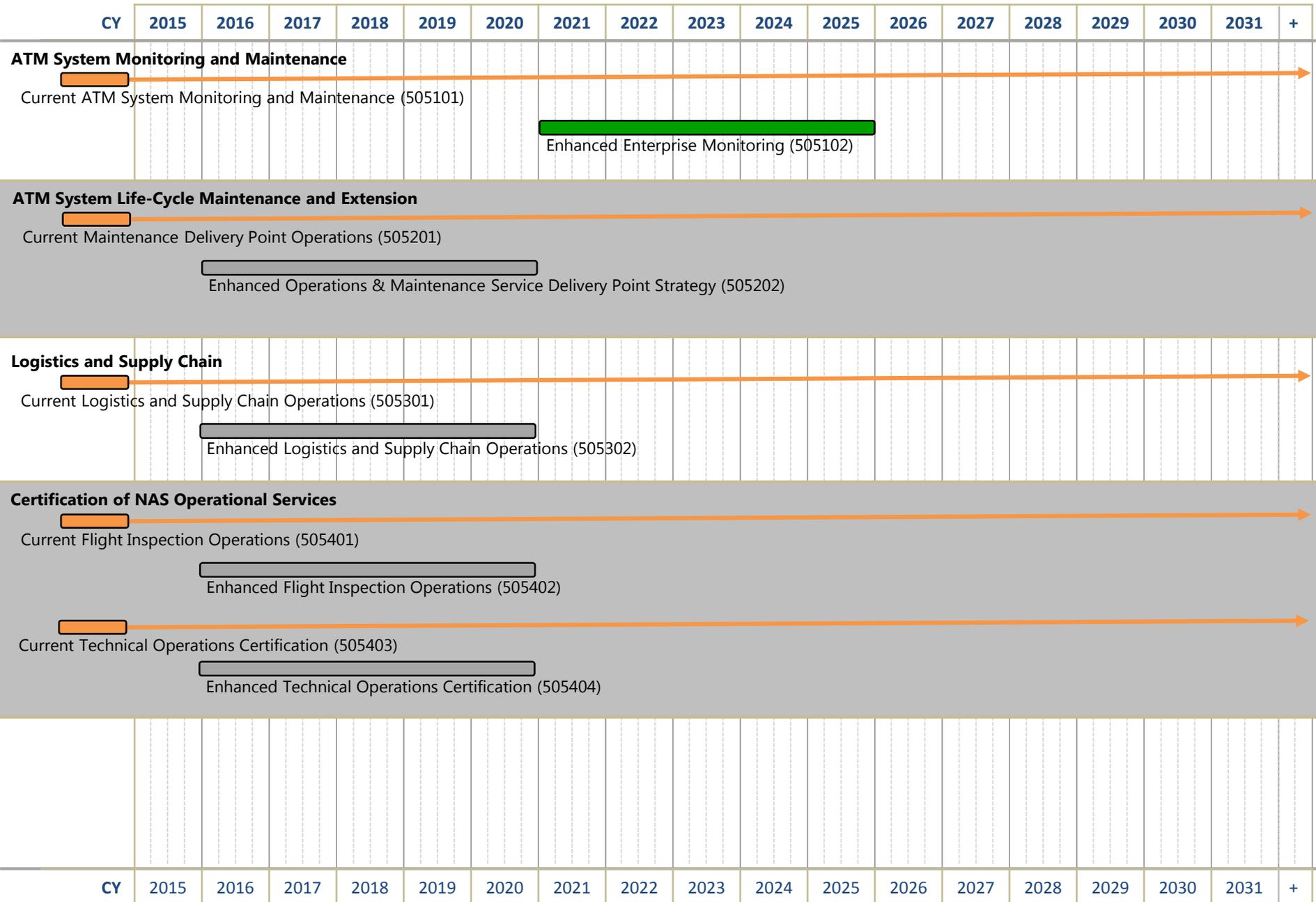


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Service 505: FAA Sustainment

The Sustainment Service describes the general lifecycle management of systems and capabilities. This Service ensures air traffic services are safe, available, and reliable.

FAA Sustainment (1 of 1)



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Service 506: Training

Provides training and develops standards that comply with the flexibility of the current rules and regulations and creates training products and guidelines that account for the current and future ATM and aviation technologies.

Service 507: Spectrum Management

Spectrum management secures, protects, and manages the radio spectrum for the FAA and the U.S. Aviation community. Through coordination and negotiation, it secures spectrum resources for aviation usage and establishes and issues policy and standards regarding frequency use. It assigns radio frequencies for ATM systems, and conducts the engineering analysis and testing for new system requirements. It protects ATM systems by conducting Radio Frequency Interference investigations and coordinating with FCC and FBI to enforce the laws against unauthorized broadcast within the aviation protected radio frequencies. Spectrum Engineering Services protects the National Airspace System from any potential sources of interference from new wireless systems.

Spectrum Management (1 of 1)

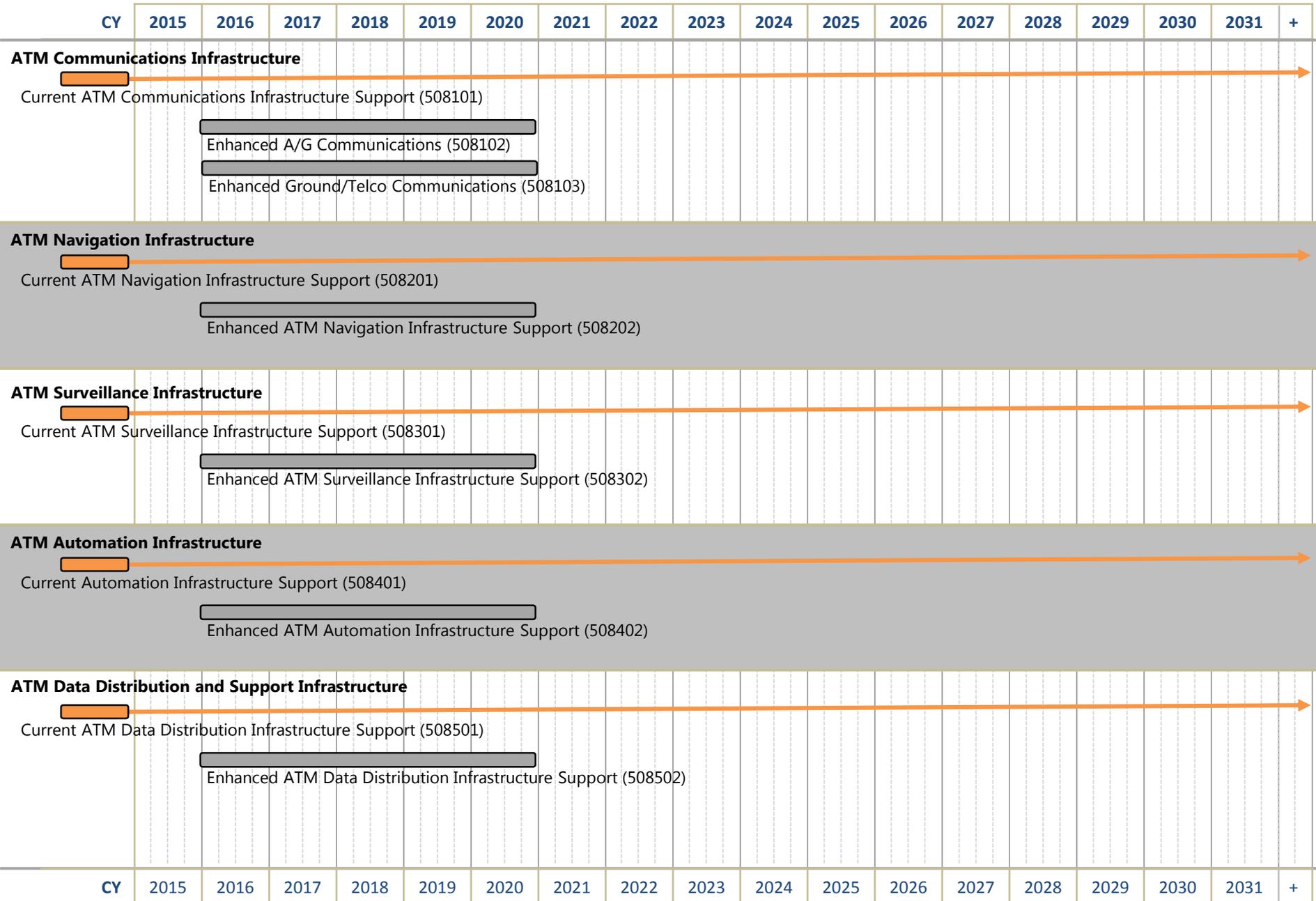
| CY | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | + |
|---------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------|
| Spectrum Management | | | | | | | | | | | | | | | | | | |
| Current Spectrum Management (507101) | | | | | | | | | | | | | | | | | | |
| Enhanced Spectrum Management (507102) | | | | | | | | | | | | | | | | | | |
| CY | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | + |

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Service 508: FAA Technology and Infrastructure

The FAA Infrastructure is the set of telecommunications, radios, computers and other electronics that supports the FAA's ability to meet its mission. Specifically, the ATM Infrastructure is comprised of the surveillance, communications, automation, navigation, and other support systems needed to provide air traffic management services that are safe and efficient.

FAA Technology and Infrastructure (1 of 2)



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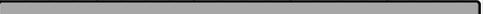
FAA Technology and Infrastructure (2 of 2)

| CY | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | + |
|-------------------------------------|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
| ATM Computing Infrastructure | | | | | | | | | | | | | | | | | | |
| | <p>Current ATM Computing Infrastructure Support (508601)</p> <p>Enhanced ATM Computing Infrastructure Support (508602)</p> | | | | | | | | | | | | | | | | | |
| ATM Weather Infrastructure | | | | | | | | | | | | | | | | | | |
| | <p>Current ATM Weather Infrastructure Support (508701)</p> <p>Enhanced ATM Weather Infrastructure (508702)</p> | | | | | | | | | | | | | | | | | |
| CY | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | + |

Service 509: FAA Data and Information Management

Data and Information Management provides services to organize, disseminate, exchange and govern data and information used in the safe and efficient provision data and information management services.

FAA Data and Information Management (1 of 1)

| CY | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | + |
|--|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
| ATM Enterprise Information Management | | | | | | | | | | | | | | | | | | |
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Service 510: Workforce Planning and Development

This Service focuses on ensuring the FAA has a stable cadre of federal employees and maintains core in-house capabilities necessary to successfully manage ATM operations. It lays out the blueprint for sustaining a high-performing workforce capable of successfully meeting objectives set by the agency.

