NAS Enterprise Architecture



Infrastructure Roadmaps v19.2

BASELINE

July 2025



Infrastructure Roadmap Overview

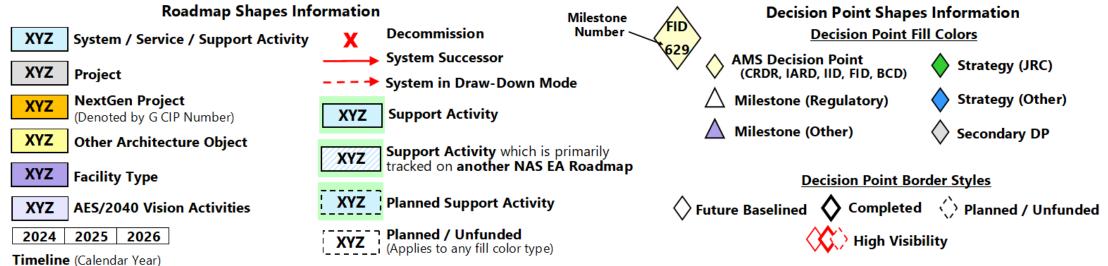
What are the Infrastructure Roadmaps?

- The FAA Infrastructure Roadmaps show the progression of system deployments, investments, and key decision points for major NAS acquisitions. They depict the acquisition strategy to evolve the NAS from the As-Is to the To-Be environment.
- The Infrastructure Roadmaps show all <u>Capital Investment Plan (CIP)</u> investment projects and systems identified in the NSIP that will deliver the necessary functionality to enable OIs and BTIs.

Guidelines for Understanding the Roadmaps

- The Infrastructure Roadmaps are organized by Domain (Automation, Communication, etc.) and depict projects, systems, services, decision points, and support activities.
- The timeline is in calendar years and shows a 17-year outlook.
- The roadmaps have swim lanes for Infrastructure (white), Support Activities (green), and Platform/Compute (purple).
- The DP diamonds represent the quarter in which a decision will occur.
- The Support Activity bars represent the dates that work is being performed on the activity.
- The Project bars represent the dates that CIP funding is allocated to a project.
- The System and Service bars represent the dates that a system or service is operational, with red lines indicating sustainment, drawdown, or convergence

Infrastructure Roadmap Legend

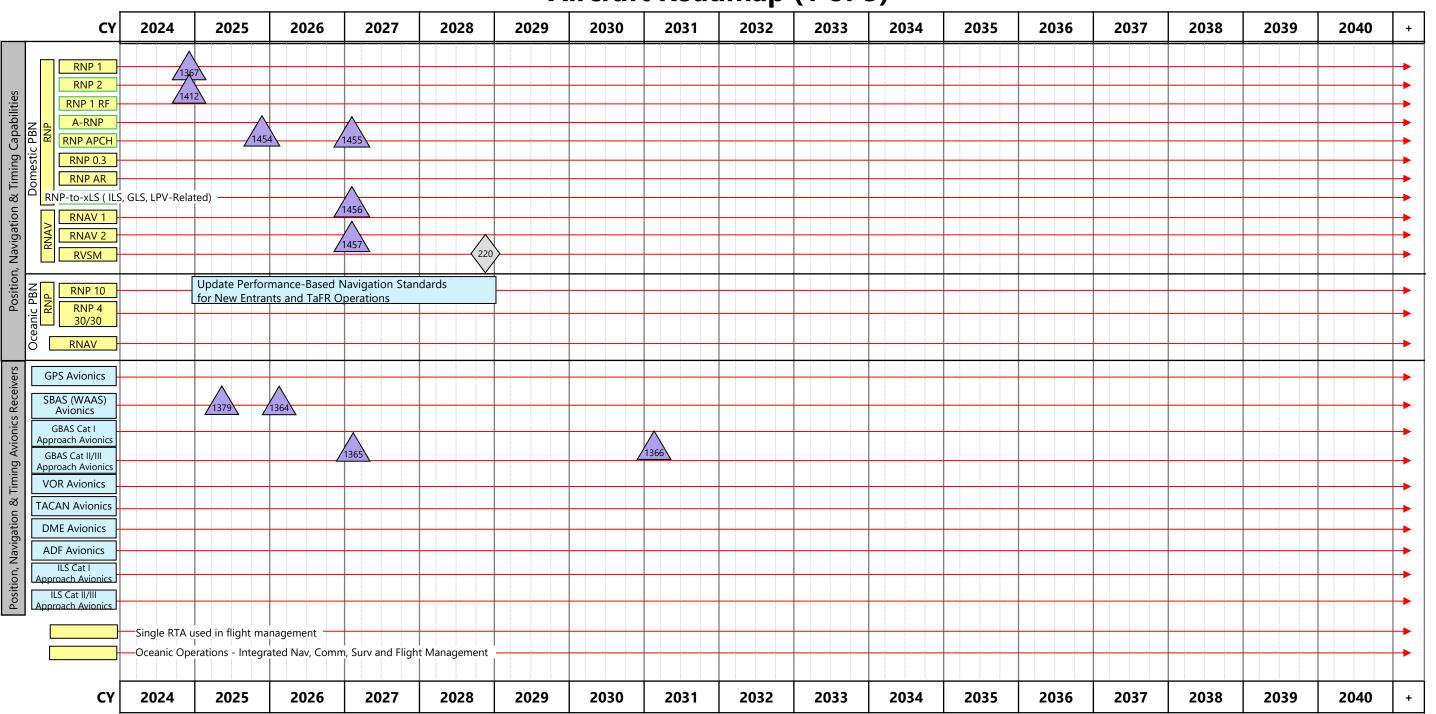


Aircraft

The Aircraft roadmap presents planned advances in Airframe and Avionics in coordination with NAS NextGen improvements.

Items with a green outline are components of the FAA Minimum Capability List (MCL)

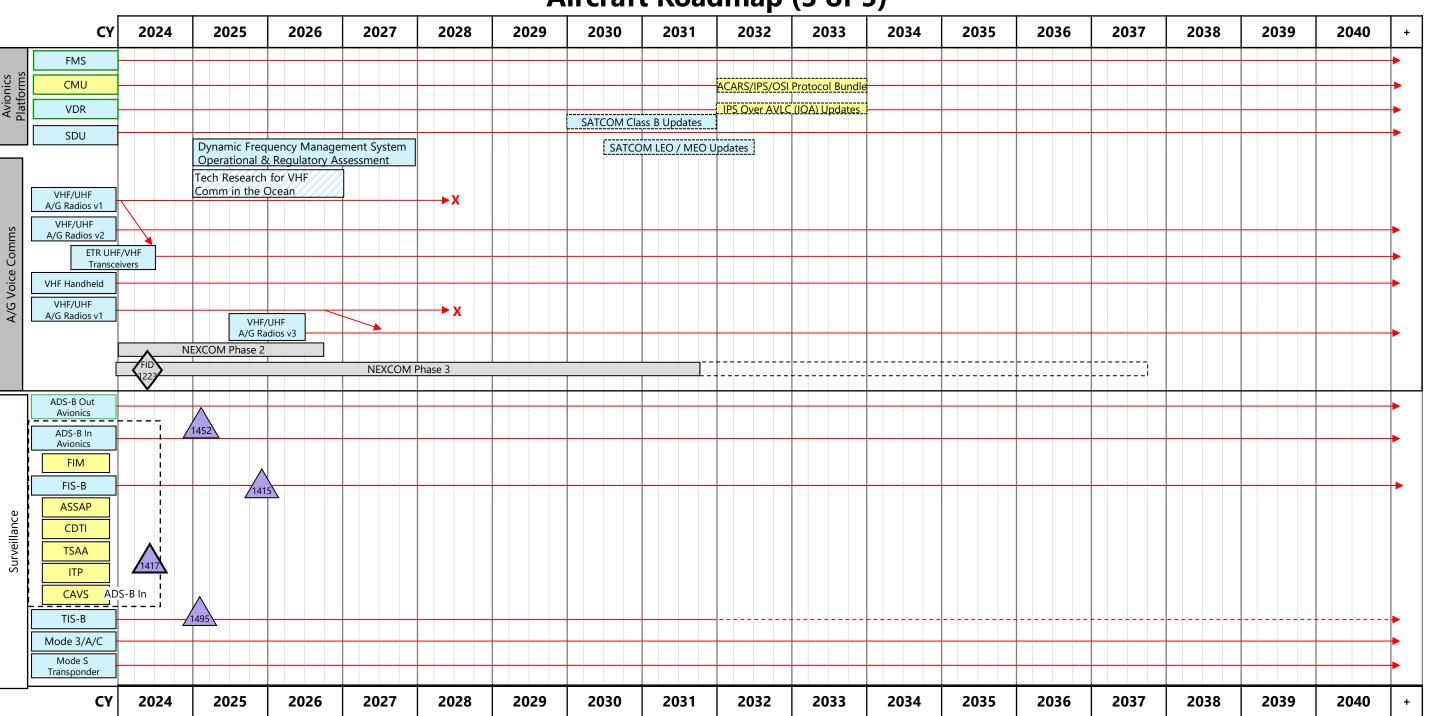
Aircraft Roadmap (1 of 5)



Aircraft Roadmap (2 of 5) Items with a green outline are components of the FAA Minimum Capability List (MCL) 2029 2030 2031 2024 2025 2026 2027 2028 2032 2033 2034 2035 2036 2037 2038 2039 2040 CY **FANS CPDLC Full Services Initial Services FANS CPDLC Enhanced Services** Domestic & Oceanic Ops ADS-C Oceanic Ops AFN B2 CPDLC Accommodation B2 CPDLC v. 4 4DTRAD Svcs 1372 **CPDLC** Initial / Full / Enhanced Services B2 CPDLC v. 4 Interval Mgmt 1416 ADS-C CM MIS Mobile IFR Svcs CATI A/G Traj Sync (Advisory) CDM Airborne CDM Surface CDM Connected Aircraft Engineering Taxi Info Taxi Info **ATS Legacy** PDC & D-ATIS Communications **AOC Safety** -Weight & Balance AOC TWIP, MDCRS Non-safety Commercial IPv6 Commercial IPv6 Non-Safety Services Safety Services IPS Security Data ACARS/IPS/OSI Protocol Bundle 1494 A/G ACARS Oceanic & HF /1357 Remote Ops SATCOM Oceanic & Remote Ops Class C VDL-0 1358 VDL-2 ACARS Over AVLC (AOA) IPS Over AVLC (IOA) Updates Oceanic / Offshore / Remote Ops SATCOM Oceanic Ops SATCOM Class B Updates Class B Domestic & Oceanic Ops 1375 1374 5G Terrestrial 5G Terrestrial Non-Terrestria Non-Terrestrial Safety Services Non-Protected Investigation into Methods to Use Smart SATCOM Routing for Commercial Networks for SATCOM LEO / MEO Performance-Based Services LEO / MEO Safety Services Non-Safety Services 2036 2026 2028 2029 2030 2031 2032 2033 2034 2037 2039 2040 2024 2025 2027 2035 2038

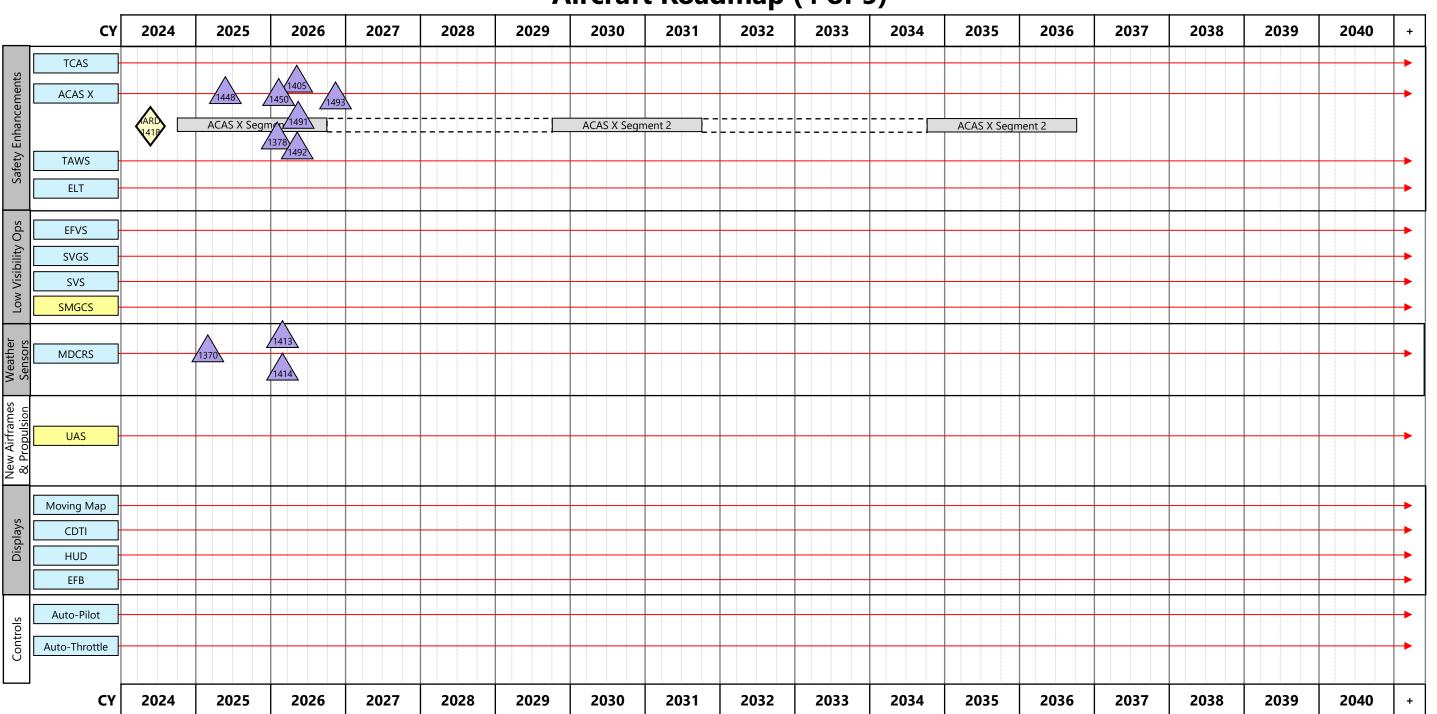
Items with a green outline are components of the FAA Minimum Capability List (MCL)

Aircraft Roadmap (3 of 5)



Items with a green outline are components of the FAA Minimum Capability List (MCL)

Aircraft Roadmap (4 of 5)



Aircraft Roadmap (5 of 5)

	-								Noau		(,	•						
	CY	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	+
,	Airworthiness		1446																
		Detect and Avoid (DAA) for all UAS																	
	Detect and Avoid (DAA)		1448	1450															
ny SC-3	Command and Control (C2)	1380	369																
	Workgroups 3 & 4																		
Human Performance	[1134	Enhanced F Heads-Up/F	Helicopter Visic Head-Worn Dis	n Systems: Huisplay Technolog	man Factors Exc lies and Concer	amination of ots												
	СҮ	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	+

Aircraft Roadmap: Assumptions

Identifier	Description
AC-01	The roadmap identifies four phases a) CONOPs development and R&D in required areas b) Standards development c) AVS Approval d) ATC Procedure development e) Deployment. After the standards process is complete, and manufacturers have developed, integrated, fully tested and made new avionics available, aircraft, engines and fuels available, an additional 7 to 10 years is needed to achieve wide scale equipage of a new capability 1. Different aircraft are expected to equip with different equipment. This roadmap does not currently distinguish between aircraft types.
AC-02	The aircraft roadmap includes environment research areas and assumptions and linkage to Mission Support EA.
AC-03	Any aircraft to include any UAS that participates in the NAS must operate in a way that is transparent to the ANSP and ATSP.
AC-04	The Minimum Capability (MCL) items documented in the Aircraft roadmap are accurate as of the September 2019 draft of the MCL.
AC-05	 The Minimum Capabilities List (MCL) provides clear and comprehensive guidance to support equipage across all fleets operating in the National Airspace System (NAS). The MCL's purpose is to: Define the minimum aircraft capabilities and associated equipment needed to maximize benefits from FAA investment and operational improvements Guide "forward-fit" aircraft equipage and inform operator investment decisions Maximize the return on investment for both the FAA and airspace users
AC-06	The yellow roadmap symbol is being utilized as aircraft operational capabilities on this roadmap.