

Increase Safety, Security, and Environmental Performance

This solution set includes Safety, Security and Environmental Performance.

Safety, Security, and Environment (SSE): Inherent in all evolving aspects of National Airspace System (NAS) operations and protocol are the three areas of safety, security and the environment. Projected Federal Aviation Administration (FAA) investments in these three areas include:

- Safety Management System (SMS)
- Airspace and information security (Note: Since information security is already included in the baseline of each NAS program, only airspace security capabilities are discussed in this solution set.)
- Environmental Management System (EMS) and specific operational demonstrations

All NAS programs will continue to follow NAS institutional processes and protocol in safety, information security, and environment. As technology and best practices in the NAS-installed baseline advance, these three areas will be upgraded accordingly.

Safety:

Safety Summary Description:

This solution set involves activities directly related to ensuring that NextGen systems contribute to steadily reducing risks commensurate with increases in other system capacity.

Safety Background:

The potential for significant growth and increased complexity in the air transportation system requires a fundamental change in the way safety is managed. Although currently enjoying its safest period in history, the current United States Aviation System is on the cusp of one of the most significant periods of transformation in the NAS since the implementation of radar. As a result of these impending changes, risk reductions that keep pace with capacity increases are required. Safety management, the definition and implementation of risk management systems, as well as management of the overall transformation process, must ensure that safety is not only maintained but improved. Safety programs of the future will evolve from reactive data analysis to integrated historical and prognostic evaluation and management of safety risks, thus preventing future accidents and incidents. The current safety programs will evolve to an organizational culture that supports system-wide use of a SMS as well as widespread sharing of safety information. These safety improvement

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programs must occur during the most complete overhaul of aircraft systems and transformation in the history of the National Airspace System.

Safety Operational Capability Description:

The Next Generation Air Transportation (NextGen) system must ensure safety through the implementation of a transformed air transportation system. This system must employ comprehensive, proactive safety practices and new, safer systems that enable the realization of national goals for air transportation. A common vision for safety, safety goals, and safety metrics will drive all aviation system improvement activities and investments. This vision must include operational practices focused on safety risk management, systems designed for safety, as well as regulations and technologies that are implemented consistently worldwide. This vision of Safer Practices requires an implementation of consistent and proactive safety management approaches that incorporate advanced prognostic methods to forecast safety risk potential, as well as encourages information sharing without fear of retribution. These elements must be coordinated to enable a robust, data-driven safety decision-making process, which is an essential component of the NextGen aviation system. The vision of Safer Systems includes enhanced systems interfaces that reduce risk, as well as advanced air and ground-based systems that address future air transportation, needs while preventing incidents and accidents. Additionally, the vision of a collaborative worldwide safety environment will increase the level of safety for air transportation across international and intermodal transportation system boundaries.