The Aviation Safety program has been put in charge of addressing the JPDO concerns that current V&V techniques are not sufficient to verify and validate NextGen. This is reflected in the VVFCS element under the SSAT project in the Aviation Safety program.

VVFCS has four major themes:

- **Argument-based safety assurance**, which aims at unifying and formalizing how V&V results for ground and airborne software systems are folded into a safety argument for certification.

- **Distributed Systems**, which aims at developing guidance on the V&V of distributed applications, e.g., communication topologies, mixed-criticality architectures, and fault tolerance schemes.

- **Authority and Autonomy**, which explores the modeling and analysis of authority problems in the NAS when viewed as a distributed system within which automation and humans interact.

- **Software-intensive systems**, which focuses on early, formal methods for the V&V of software systems.

This year, VVFCS is interested in technologies that can be transitioned (meaning that tools are made available) to industry in the following areas:

- **Run-time monitoring.**

- **Safety case.**

- **Static analysis.**

- **Code libraries implementing fundamental technologies** that can be used in formal method research, such as:
  - Memory and time efficient decision procedures.
  - Memory and time efficient abstractions for static analysis.