



Figure 5-2. Satellite-based navigation and tracking allows more aircraft to fly closely together on more direct routes.



Figure 5-3. Automatic Dependent Surveillance-Broadcast (ADS-B) systems.

ADS-B ground infrastructure is complete and ATC now uses ADS-B for aircraft tracking both in the air and on the ground at many airports.

2. System wide information management (SWIM)—will provide a single infrastructure and information management system to deliver high quality, timely data to many users and applications. By reducing the number and types of interfaces and systems, SWIM will reduce data redundancy and better facilitate multi- user information sharing. SWIM will also enable new modes of decision-making as

information is more easily accessed. [Figure 5-4]

3. Next generation data communications—current communications between aircrew and ATC, and between air traffic controllers, are largely realized through voice communications. Initially, the introduction of data communications will provide an additional means of two-way communication for ATC clearances, instructions, advisories, flight crew requests, and reports. With the majority of aircraft data link equipped, the exchange of routine controller-pilot messages and clearances via data link will enable controllers to handle more traffic. This will improve ATC productivity, enhancing capacity and safety. [Figure 5-5]
4. Next generation network enabled weather (NNEW)— seventy percent of NAS delays are attributed to weather every year. The goal of NNEW is to cut weather-related delays at least in half. Tens of thousands of global weather observations and sensor reports from ground, airborne, and space-based sources will fuse into a single national weather information system updated in real time. NNEW will provide a common weather picture across the NAS and enable better air transportation decision-making. [Figure 5-6]
5. NAS voice switch (NVS)—there are currently seventeen different voice switching systems in the NAS; some in use for more than twenty years. NVS will replace these systems with a single air/ground