



### GSD and NextGen

The Global Systems Division (GSD) is developing state-of-the-art weather forecasts, verification tools, and information technology services for the Next Generation Air Transportation System (NextGen). This congressionally-mandated, multi-agency, and private sector partnership aims to increase the efficiency of the nation's airspace while maintaining high levels of safety.

### What is NextGen?

- NextGen is the solution to the predicted U.S. air traffic increase of two to three times by 2025.
- NextGen is active networking technology that updates itself with real-time shared information and tailors itself to the individual needs of all U.S. aviation operations.
- NextGen's computerized air transportation network stresses adaptability by enabling aircraft to immediately adjust to ever-changing factors, such as weather, traffic congestion, aircraft position via GPS, flight trajectory patterns, and security issues.



By 2025, all aircraft and airports in U.S. airspace will be connected to the NextGen network and will continually share information in real time to improve efficiency, safety, and absorb the predicted increase in air traffic.



**GSD Primary Goal for NextGen**

Develop and test concepts for generating accurate, timely, and highly-useful weather information and delivering that information, wherever and whenever needed, to those managing the U.S. airspace.



### At GSD we develop:

- Enhanced data assimilation and numerical models that generate forecasts of aviation-impact variables that meet NextGen requirements for accuracy, spatial and temporal resolution, and consistency;
- Post-processing methods that include observational-based statistical bias correction, blended nowcasts and forecasts, and optimal weighting for ensemble-based probabilistic forecasts;
- Capability to handle large amounts of data (weather forecasts and aviation operational information) and extract those data that are most relevant to supporting specific FAA Air Traffic Management (ATM) operations;

- NexGen puts tools in the hands of those managing U.S. airspace.
- NextGen shares information in real time to improve efficiency, safety, and absorb the predicted increase in air traffic.

## At GSD we develop (continued):

- Capability to verify weather forecasts and ensure that those forecasts are optimized to support ATM operations;
- Capability to enable forecasters to transition from producing products to managing the forecast process. Such capability will enable forecasters to add value to guidance in the fast-tempo, digital era and focus on areas of potential high-impacts to aviation operations; and
- Capability (based on standard services and data formats) to integrate NWS data repositories into an interoperable virtual database.



## For Further Information, Contact:

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