

WEATHER OPERATIONS FUNCTIONS

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The two functions of weather operations are **analysis and forecasting** and **mission integration**. Analysis and forecasting describe past, present, and future weather conditions. Integration enables decision makers to adjust and maximize operations based on weather and weather effects information. Figure 2 compares the main features of analysis and forecasting, and integration as used by weather forces.

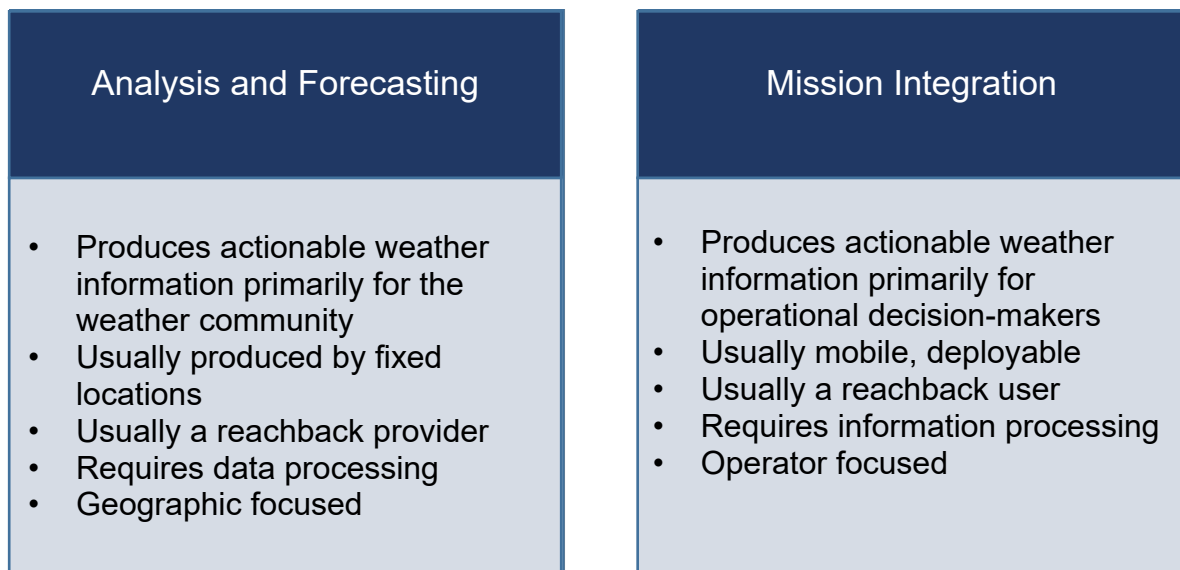


Figure 2. Comparison between weather functions

ANALYSIS AND FORECAST PROGRAM

The analysis and forecast program (AFP) is a systematic and consistent approach to weather forecasting. The AFP identifies techniques and tools used to forecast individual weather elements, describes requirements for locally prepared work charts/composites, and explains refinements and application of centralized products.¹ AFP represents the ability to collect and process data into usable information to produce a coherent and accurate picture of the past, present, or future

¹ Air Force Manuals 15-129, [Air and Space Weather Operations](#)

state of the atmosphere and space environment. AFP encompasses the weather process of *collection*, as well as elements of the processes of *analysis*, *prediction*, and *tailoring*. Department of the Air Force weather operations provide actionable situational awareness to commanders covering past, present, and future states of the atmosphere and space environment to improve operational outcomes. Air Force weather operations collect and analyze atmospheric and space environmental data using satellites, and through the employment of a complex network of ground-based, airborne, and maritime sensors. The spatial and temporal measurements received from these sensors are processed to predict the future state of the atmosphere and space environment by applying the science of meteorology and by using complex, physics-based computer models.

MISSION INTEGRATION

Mission integration entails the ability to understand mission platforms, equipment, and systems capabilities/sensitivities, as well as mission processes (e.g., the joint planning process for air and the joint air tasking cycle) and inject the right information at the right time every time, enabling mitigation of environmental threats as early as possible in the mission planning process, ultimately optimizing mission execution.² Mission integration injects weather effects into planning and execution to minimize or mitigate any negative effects of the environment on friendly forces while capitalizing on conditions that maximize the operational advantage over enemy forces. It requires weather personnel to analyze, tailor, and integrate weather data that mitigates adverse effects. Knowledge of the weather and how it affects both friendly and adversary operations is a key component of battlespace awareness. Accurate, consistent, and relevant analysis and forecasting of the weather, integrated into operational planning in a timely manner, can provide friendly forces with the meteorological knowledge necessary to anticipate and exploit the best window of opportunity to plan, execute, support, and sustain specific operations.

² Air Force Manual 15-129, [Air and Space Weather Operations](#)