Warfighter-Oriented Weather Information Services

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Problem

Current weather Web-services provide raw data, not actionable intelligence

- **Meteorological domain expertise is required just to ask the right questions**
- **Inefficient interface requires multiple queries and/or complex analysis of response data by the client**
- **Current weather Web-services provide raw data, not actionable intelligence**

Background

Joint METOC Broker Language (JMBL) does not support "route" concept. Determining weather along flight plan is difficult.

Warfighters need weather situational awareness. Information must integrate with existing tools without complex analysis.

Current weather services were designed by and built for meteorologists. The interface is inefficient or impractical for mission-related use cases.

Objectives

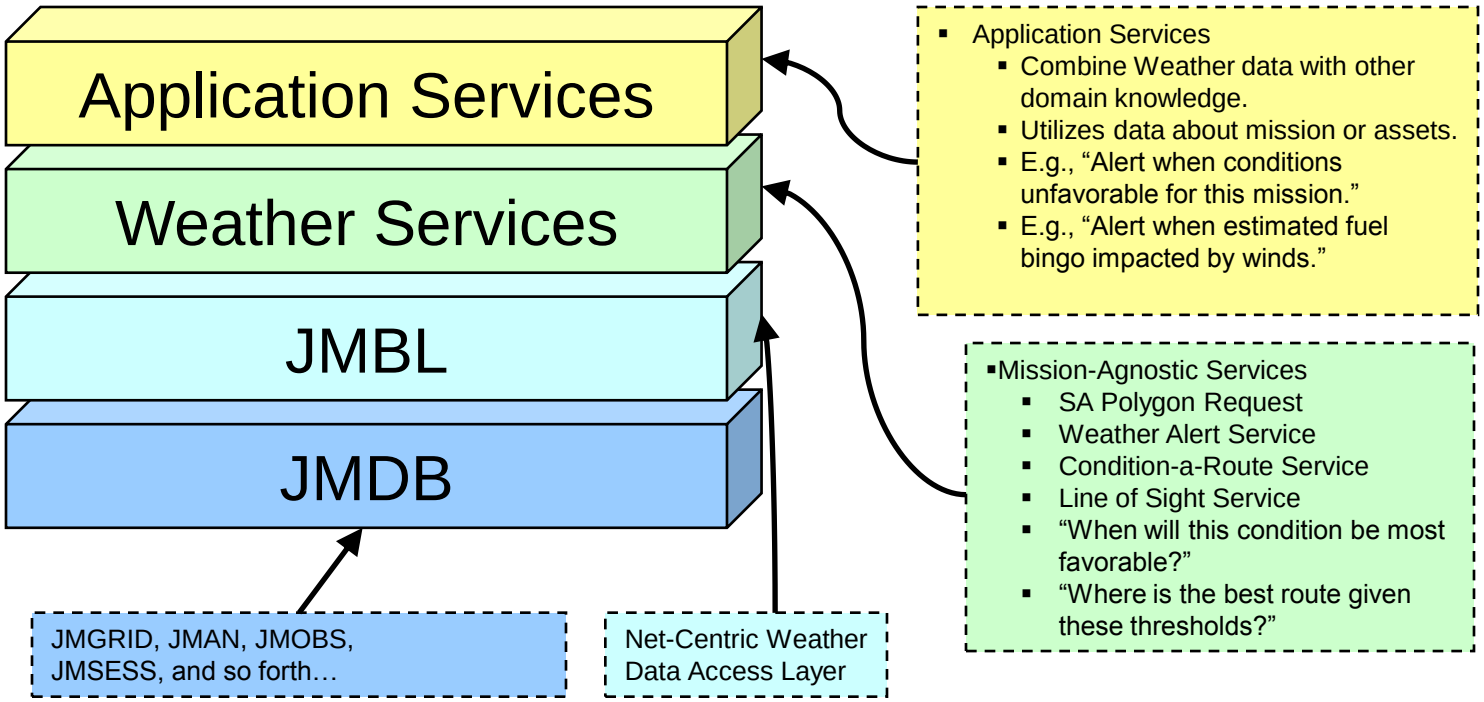
- Develop a new set of weather information services that are designed to answer mission-relevant questions.
  - Built on top of existing data access services; Does not replace JMBL, but abstracts the required meteorology expertise
  - “Mission-agnostic”--New services accept as parameters but do not encapsulate any mission-specific data (e.g., platform performance limits and target locations)
  - Provide concise, actionable answers
- Build reference implementations of new services and client applications that consume them.

Activities

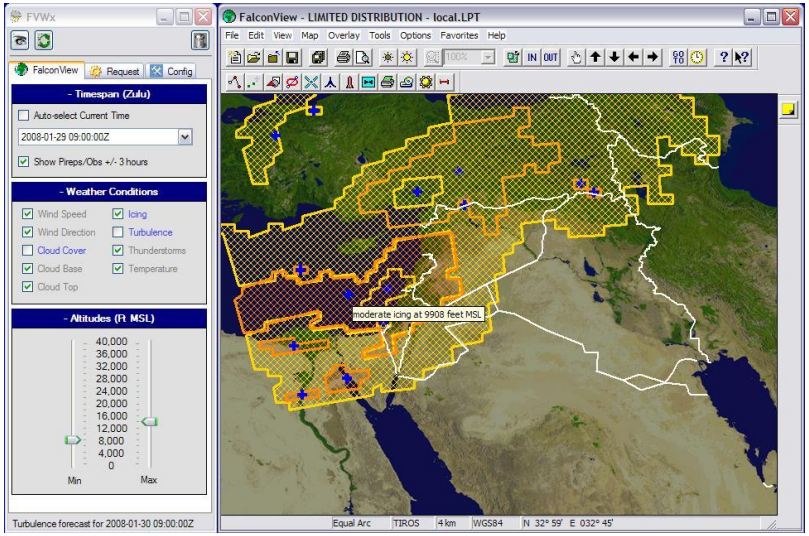
- **Understand warfighter use-cases to guide the design of new weather information services.**
  - **Interview warfighters and document the use-cases that require weather intelligence.**
- **Create reference implementations of appropriate weather services and tools to improve warfighter decision making.**
  - **Design and document well-defined service interfaces.**
  - **Provide rapid prototyping of database, services, and software plug-ins to support warfighter use-cases.**
- **Demonstrate and deploy prototypes to customers. Transition lessons learned to standards organizations, acquisition community, and policy makers.**

Highlight

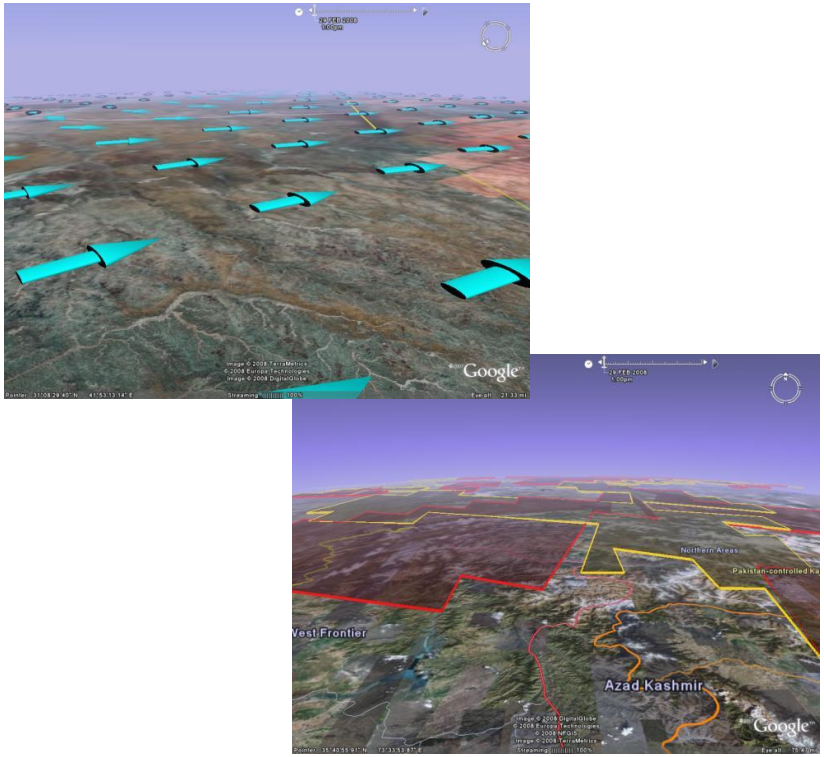
Proposed Architecture for New Weather Information Services



Demonstration



FalconView client



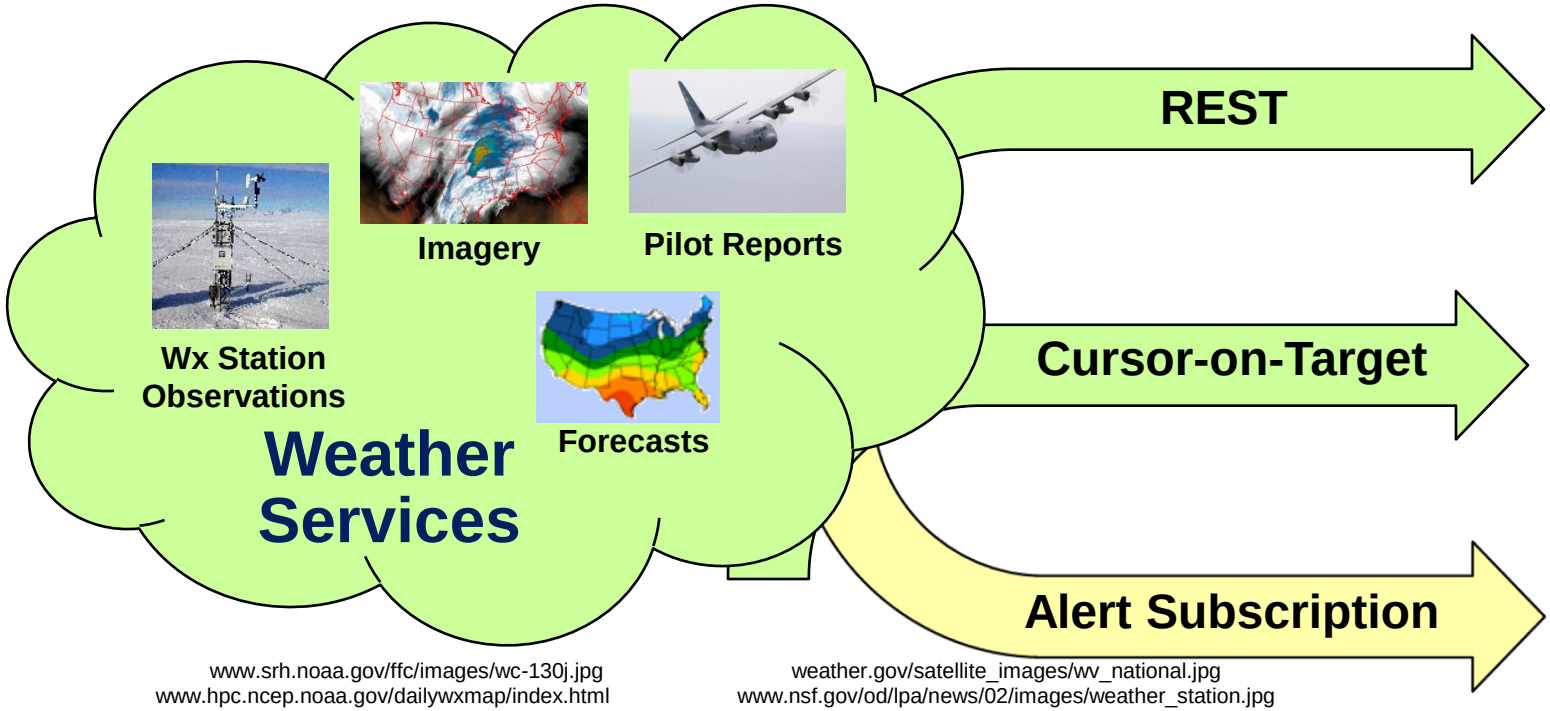
Google Earth client

New weather services (time/condition/altitude-based polygons and wind barbs) exposed by Cursor-on-target; displayed by FalconView and Google Earth clients

Impacts

- **Weather service, FalconView client currently deployed.**
  - **Predator/Reaper Community—432nd Wing, Creech AFB**
  - **Air Force Combat Support Office—Pentagon**
- **Joint METOC Working Group adopting proposed weather information service architecture.**
- **Potential service/interface adoption by Joint Environmental Toolkit**

Future Plans



- Extend Weather Service interface.
- Adopt Representational State Transfer (REST) style services in addition to currently implemented Cursor-on-Target.
- Enhance subscription model to support weather alerts