Data Link Weather

Non Commercial General Aviation Perspective

This is a springboard for further discussion to discuss the weather uplink applications and automation.
VFR Flight Decision Making

For VFR pilots, it is simple. Just stay out of the clouds and convective weather!
IFR Decision Making

For IFR pilots, it is not that easy.

Do you know what evil lurks within these clouds?

Turbulence?

Embedded Thunderstorms?

Ice?
We Need Tools to Peer Inside The Cloud

• If you think that this issue is for the little piston pumpers:
  – Listen to channel nine when you fly through a frontal system.
  – 90% of en-route ATC communications traffic is related to turbulence ahead. Folks in the heavy iron don’t know what is behind the clouds either.

• Pilots have gone from carrying weather briefing data printed on a piece of paper to an interactive personal tablet device.
  – Applications need development to peer inside and beyond the cloud.
Portable Electronic Devices - A Timeline

- Portable GPS - Moving Map Display
- Windows PC Tablets
- Tablet Devices – Data Linked Weather / Flight Planning in The Bag

Today

- Integrated Cockpit
- Ship to Ship Sensor
- System Wide Information Management
Integrated Cockpit Concept

- PFD
- MFD
- Primary Navigational Device
- Wireless Hub
- Tablet Device
- Data Link Radio

Non Export Controlled Information
Future Applications?

• GOALS
  – Reduce the need for in-flight weather forecasting by the flight crew.
    • Simplify weather presentation and the decision making process.
    • Integrate the flight trajectory and en-route weather forecasting into ground weather forecast products- SWIM applications.
    • Include sensor data obtained from aircraft or sensors in the vicinity or along the path of the aircraft.
  – Current Electronic Flight Bag applications basically move flight planning into the cockpit.
    • EFB Applications need to move towards predictive information delivery of;
      – Data relevant to the trajectory of the aircraft,
      – Data obtained from sensors on aircraft in the aircraft route and vicinity.