



FAA PIREP Activities

- **Top 5 PIREP Modernization Research Project**
- Establish an interagency PIREP research roadmap to develop an integrated strategy to increase number of PIREPs, quality of PIREPs, and distribution and accessibility of PIREPs
 - Schedule a meeting with each LOB and stakeholder organization to discuss potential research efforts (December 31, 2019)
 - Hold focus groups with Flight Standards Service (June 30, 2020)
 - Complete a report summarizing the issues to be used to develop future mitigation strategies (August 31, 2020)





FAA PIREP Activities

- **Top 5 PIREP FY20 Corrective Action Plan**
- **Hazard: Pilot does not receive pilot weather reports**
- **Strategies (5), Mitigations, Targets, Organization, Date**
- **Sample Mitigations and Strategies**
 - Encourage pilots to file more PIREPs
 - Request 3rd parties to encourage submittals
 - Promotional materials
 - Improve knowledge of PIREP processes, tools, and system impacts through ATC training and education
 - Update Proficiency Training requirements in FAA Order to include PIREP solicitation/dissemination with simulation requirements



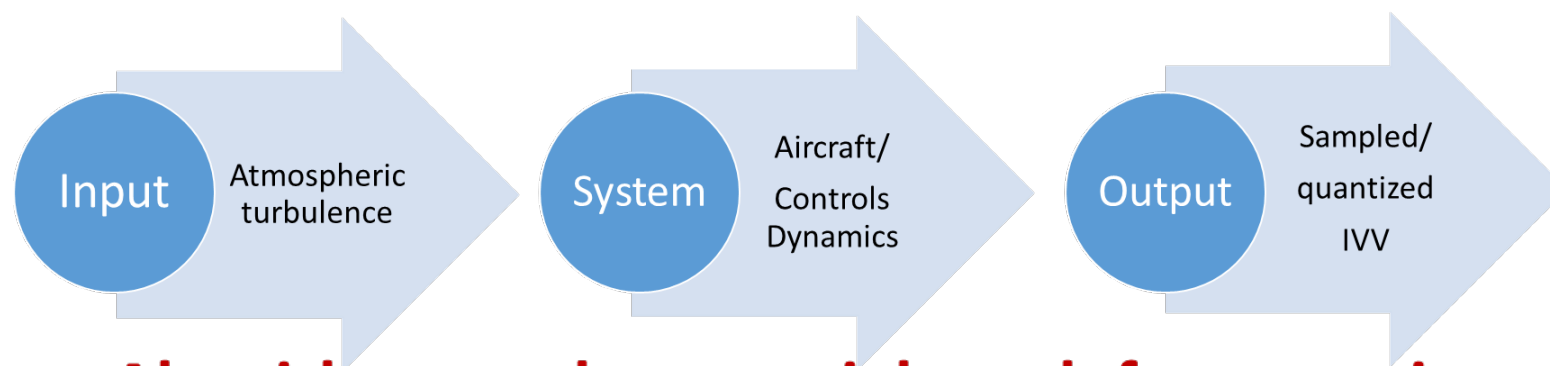
FAA PIREP Activities

- Weather Technology in the Cockpit (WTIC) Research
- Prototype enhancements selected by pilots
 - Voice inputs
 - Solicitation and acceptance to do PIREPs in flight planning
 - Prepopulate information
 - Downlink strategies



FAA PIREP Activities

- Weather Technology in the Cockpit (WTIC) Research
- ADS-B reports Inertial Vertical Velocity (IVV)
 - Determine G-Force from IVV
 - Determine EDR from IVV
 - Anticipating capability between EDR algorithm and PIREP
 - Downlink of 1 Hz acceleration data could enhance quality of output



Algorithm needs to go right to left – meaning that we have to model each backwards step.

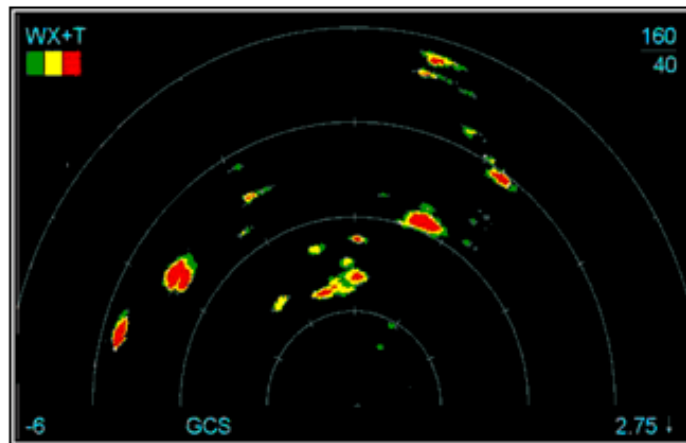
FAA PIREP Activities

- Weather Technology in the Cockpit (WTIC) Research
- Downlink and crowd source geosynchronized photos run through Optical Character Recognition software of cockpit information
 - Lab evaluation at Tech Center on simulator to address research questions identified in proof of concept flight demo

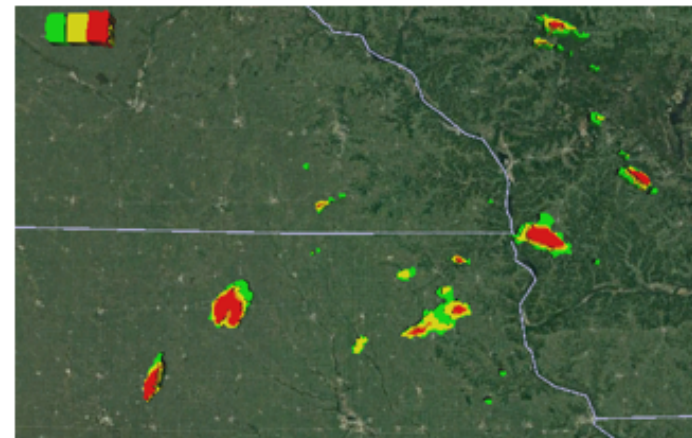


FAA PIREP Activities – WTIC Crowd Sourcing

Forward Looking Radar – Object Classification



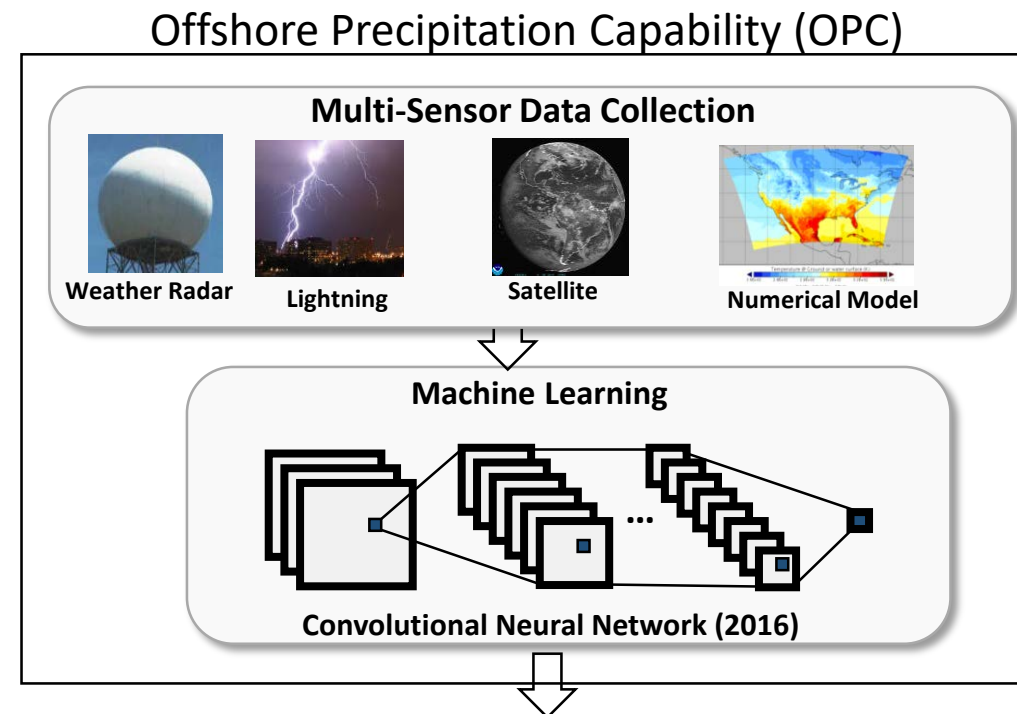
Source [WxR](#) Image Graphic



Weather Cells Segmented and Georeferenced (Displayed in Google Earth)

Discussion Topics

- Long Term Vision of PIREPs?
 - Subjective Pilot Reports (today status quo)
 - Objective aircraft observations
 - Use Inertial Vertical Velocity (IVV) in downlinked ADS-B reports to determine EDR/G-Force
 - Downlink photograph cockpit weather radar and other Wx relevant information
 - Mix of subjective and objective
 - Simulated Weather (like Offshore Precipitation Capability (OPC))





Discussion Topics

- Approach to Enhance PIREPs?
 - Gap analyses and fix problems – List problems and work to resolve them
 - Low hanging fruit – fix easy issues first
 - Pareto List – identify issues causing most of the problems
 - Separate by discipline – Hardware, Weather Information, Flight Operations (ATC), Training
 - By User – Part 121, Part 91, Part 135, Aviation Weather Center, Dispatch, Air Traffic Control, Airline Operations Center





Discussion Topics

- Business Cases to Motivate Industry?
 - What are incentives for industry to add “PIREP capability” (sensors, reporting capabilities, bandwidth for Wx information, etc) to their products?
 - Incentives for all part aircraft to submit PIREPs and airborne observations
 - What types of incentives are needed (regulations, access, financial, crowd sourcing-type status, etc.)?





Discussion Topics

- Are There Barriers to Progress?
 - Lack of funding
 - Competitive advantages
 - Current system works, sort of
 - Fear of change
 - Lack of a confirmed operational shortfall and associated gaps – will better PIREPs really enhance operations and can it be quantified

