

# **Friends/Partners in Aviation Weather -- Vision Forum**

## **Segment Six – Hurdles to the Future**

### **Elephants In The Room -- Things We Avoid Talking About –**

**BGen. Al Kaehn, USAF Ret.  
Nicholas Stoer, FAA CFO, Ret.**

# Elephant Caveats

- Views expressed in the briefing do not necessarily reflect those of the moderators.....but might.
- The issues and concerns expressed are not intended to be critical of all the dedicated work that has brought us this far.....
- Rather, we hope this presentation will foster discussion, bring forth new ideas, provide information, and stimulate interactions for the overall good of NextGen weather and weather integration efforts.

# Elephant One (E-1): FAA's Weather Architecture 6.0 Doesn't Mesh With or Support NextGen

- FAA stove pipes -- separate 1980's/1990's **legacy weather systems** for en route, system operations and terminal. **How should they evolve or morph in the 2012-16 timeframe toward NextGen?**
- **FAA Weather Architecture 6.0** shows Tech Refresh after Tech Refresh with scant collaboration across domains (en route, traffic flow, terminal, Tech Ops), zero links to the 4D Cube concept. Architecture 6.0 is thinly disguised **business-as-usual**. FAA system planners ignore the capabilities of the 4D Cube, NNEW and the NWS AWIPS programs. Why?
- Stove piping 101 – “The New Order”, according to **Niccolo Machiavelli** (circa 1505 AD), assumes an existing hierarchy will preclude a new hierarchy even if the new order would bring new ideas and greater advances. **Change is difficult....**
- **Little buy-in** so far from FAA ATO weather system managers/designers regarding, JPDO Weather ConOps, the 4D Cube and NNEW and their data.
- **Little outreach** to FAA ATO system managers, designers and planners from JPDO and the FAA Aviation Weather Office regarding 4D Cube and NNEW functionality, and vice versa.
- **SWIM** has had four program managers in three years.

For an HTML version of Machiavelli's The Prince go to: <http://www.constitution.org/mac/prince00.htm>

## **Elephant Two (E-2): DOD Joint METOC Lessons Learned Not Being Exploited by FAA & NOAA**

- DOD Joint METOC NEO experience in planning for the 4D Cube has been offered, not yet well sought out.
- What can USAF and Navy offer in the way of a laboratory or test bed environment for NNEW, 4D Cube?
- What benefits accrue to DOD from the Joint METOC effort?
- How will differences between DOD's Joint METOC Broker Language (JMBL), NWS's Digital Weather Geography Markup Language (dwGML) and Open Geospatial Consortium (OGC) standards be reconciled?
- How can FAA and NOAA better utilize DOD experience?
- Will the JPDO 4D Cube "Field of Dreams" build-it-and-they-will-come strategy work? What needs to change? What will be the 4D Cube outputs and outcomes? Which FAA and NWS systems will ingest 4D Cube outputs? How? When?

## Elephant Three (E-3) Lack of Air Traffic Controller (and User) Involvement in NextGen and NextGen Weather

- **Controller participation** -- their input needed for design, trials, and demonstrations. How can controller contributions be obtained without involving the politics of NATCA/FAA contract negotiations?
- Vice versa, **how will line controllers be better educated on NextGen** weather constructs, advances?
- Ditto for journeyman **traffic flow management specialists and supervisors**. How and when will they be invited to the NextGen party?
- Are we getting full input from the airline pilot community and the Airline Dispatcher Federation?
- Are we getting clear input from NBAA, AOPA, ALPA and AIA?

## Elephant Four (E-4): Weather/ATM Integration Still on Back Burner?

- No focal point has been appointed at the FAA for Weather/ATM Integration.
- No one has been appointed to prioritize and bird dog the REDAC Weather Integration Report recommendations. Is the report adrift?
- No planned manual simulation followed by semi-automated simulations/trials of how an algorithm that adds "weather" to a decision support system might be expected to achieve results.
- Need low hanging fruit examples of how Weather/ATM integration reduces bottlenecks. Route Availability Planning Tool (RAPT) works, but not yet widely used.
- Which weather integration applications should be the first? What is the morphing strategy?
- How can the FAA-funded integration lab work at MITRE, and similar NASA-funded work at Ames, be leveraged?
- What are the paths from the laboratory to field trials?

## Elephant Five (E-5): Management Uncertainties/Gaps

- Single FAA weather voice needed -- too many offices set their own agendas for how to handle weather. This problem is currently being worked again by the FAA (for the fifth time in 13 years). Someone needs to pay attention to what Machiavelli wrote 500 years ago.
- What are the implications for weather as Hank Krakowski reshapes the ATO away from separate en route, system operations, terminal and Technical Operations service organizations into unified 'single ATO operations' organization?
- These issues are intertwined with Elephant One.
- Does the weather community of interest take full advantage of MITRE CAASD research? Ditto for NASA research – both aeronautics and earth sciences.
- What the JPDO will look like in 12 months? Will its planning role be subsumed by the FAA?
- What might the next administration propose vis-à-vis NextGen? What priority will aviation have?

## **Elephant Six (E-6): JPDO NextGen Focus on Long Term Has Left Huge Performance Gaps in 2012-2016 (i.e. The NowGen Gap)**

- NextGen does not yet offer the FAA ATCSCC and the airlines with specific solutions for the 2012-2016 time frame.
- How might agency NextGen planners and JPDO shift their focus from 2025 toward NowGen needs in 2012 – 2016?
- How well are the NowGen concepts playing catch up to fill these gaps?
- Are the planners sufficiently nimble, or are they captives of slow government processes?
- How might Steve Jobs and Apple deal with NextGen? (First iPod 2001, first iPhone 2007)

## Elephant Seven (E-7): Executing Joint Agency Initiatives (a.k.a. Who's In Charge?)

- **NEXGEN Executive Weather Panel (NEWP)** has been established. Meets monthly.
- An **Interagency Plan for Weather** is underway; it refines the data in the Integrated Work Plan; but **expected completion of the plan is well out in 2009.**
- The 4D Weather Cube is in the Interagency Plan and this is a test case for management with NWS as the lead agency for 4D Cube. The focus of this initiative is on an Initial Operating Capability by 2012. **How will it avoid the “Field of Dreams” problem?**
- Standards are being addressed, along with multi-customer involvement (domestic and overseas). Weather takes more than standards. Where is the outreach to users? Weather concepts need pull, not just push. RAPT is an example of getting things done.
- To what extent will agencies like NOAA and NASA be able to **actually budget** for their aviation weather activities? Will they have to rely on FAA to provide program funding?
- **Concerns:** **(a)** what requirements set is in play; **(b)** are the interfaces defined; **(c)** is there an integration piece; **(d)** are there clear lines of accountability and responsibility; **(e)** is appropriate authority vested in those accountable; **(f)** who tracks and evaluates technical performance; and **(g)** who makes management and programmatic decisions if/when participating agencies run into adjustments in their budgets?