Airline Operation Center's Access to Integrated Terminal Weather System (ITWS) Products

Orlando NBAA Meeting

November 2005

ITWS Currently Being Deployed

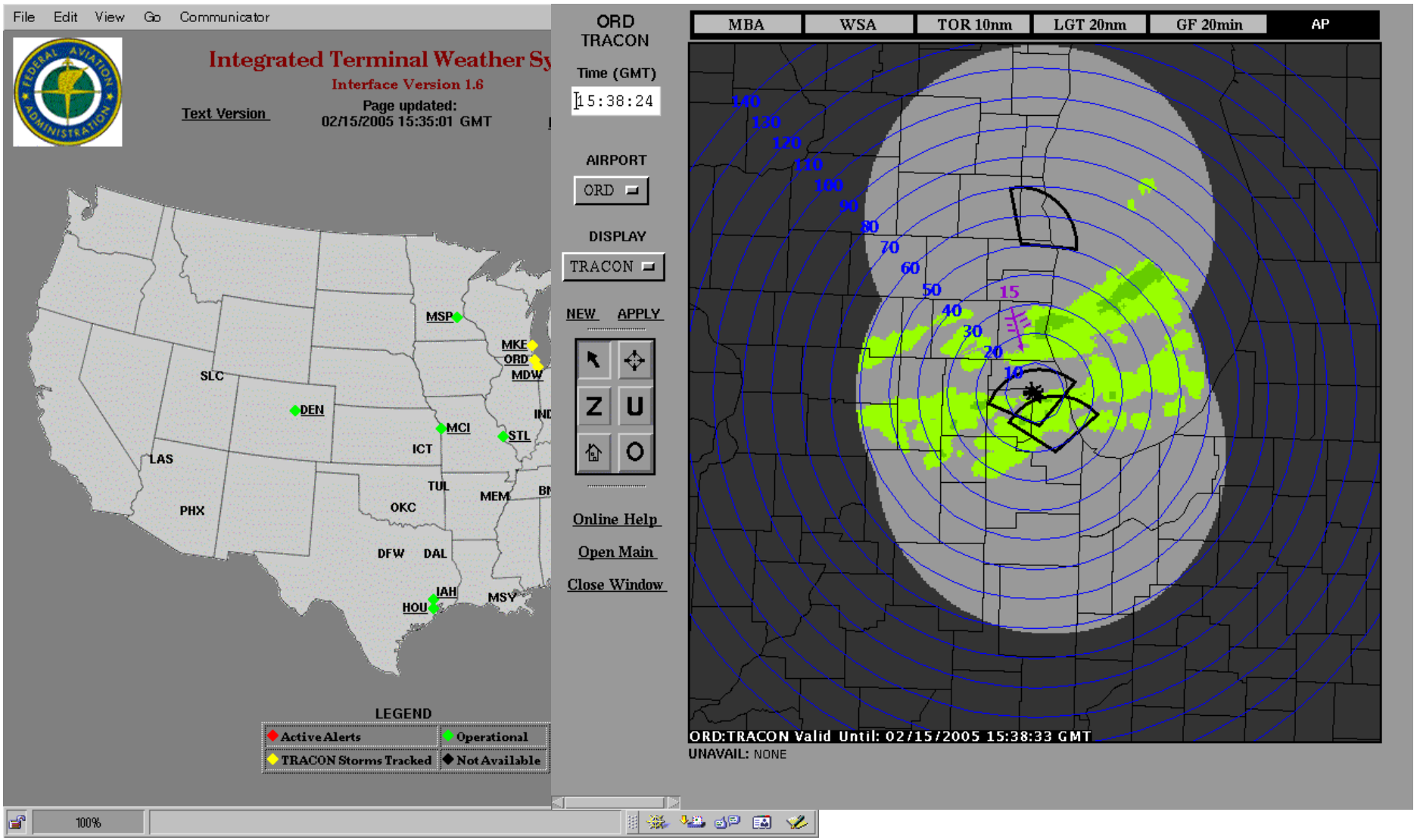
- 11 ITWS sites, covering 19 major airports, already operational
  - Potomac (IAD, ADW, BWI, DCA)
  - Atlanta (ATL)
  - Miami (MIA, PBI, FLL)
  - Houston (IAH, HOU)
  - Kansas City (MCI)
  - St. Louis (STL)
  - Chicago (ORD, MDW, MKE)
  - Boston (BOS)
  - Denver (DIA)
  - Charlotte (CLT)
  - Minneapolis/St. Paul (MSP)

- NY ITWS (LGA, JFK, EWR) coming late Summer / early Fall 2006
  - First production ITWS site to feature 1-hour forecast

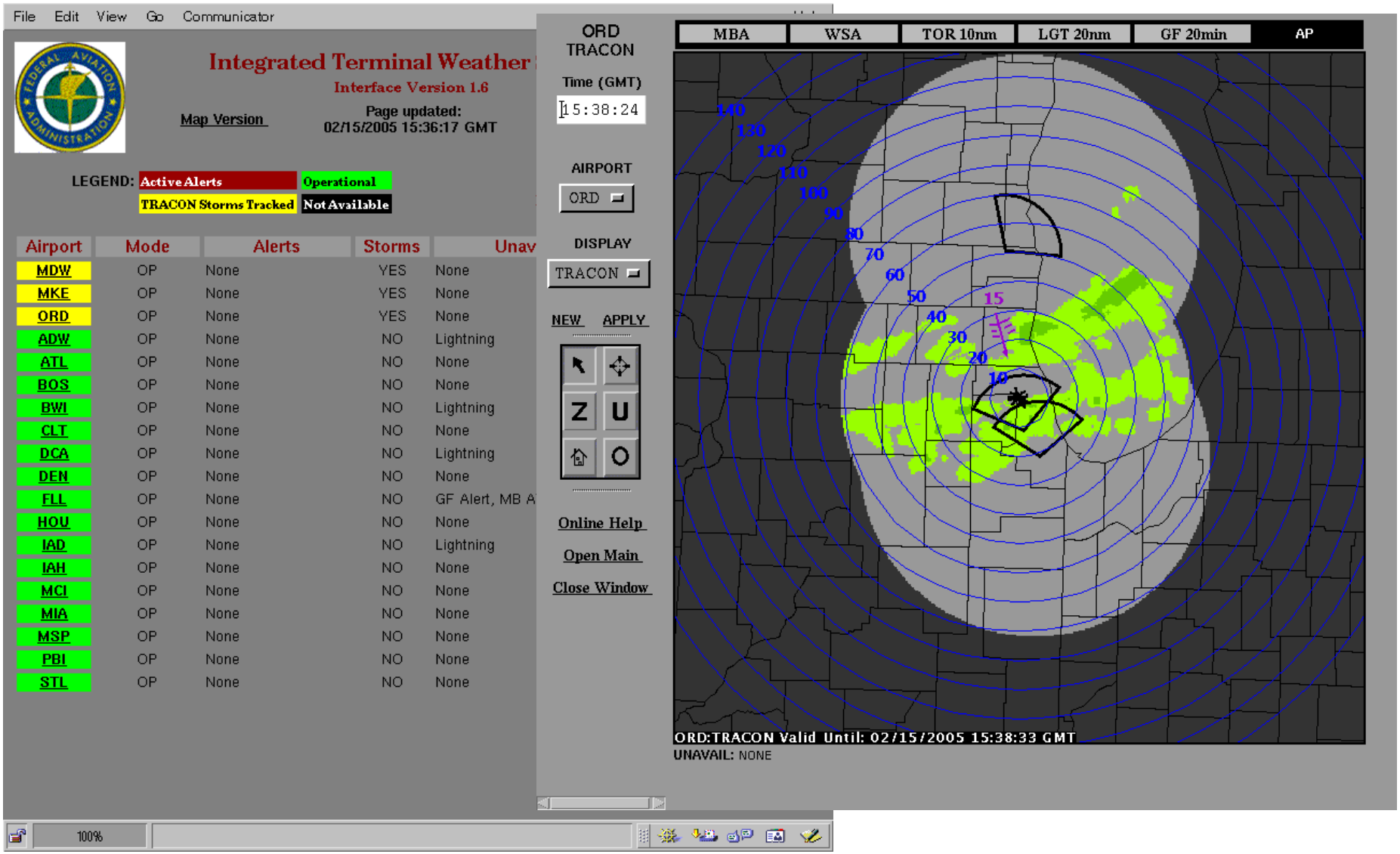
Products Available in Two Forms

- **A digital data feed, for those users wanting to integrate ITWS data into their own TFM tools**
  - **Requires development of application software to interpret and process binary data**
  - **Bandwidth depends on number of ITWS sites**
- **A Web site**
  - **Designed in collaboration with the users to serve the majority of their needs**
  - **User interface, allowing simultaneous access to all ITWS sites, is easy to use**
  - **Requires only a standard browser**
  - **Bandwidth depends on number of simultaneous users on the line**
- **Both product streams operational – but AOC user access continues to be a problem!**

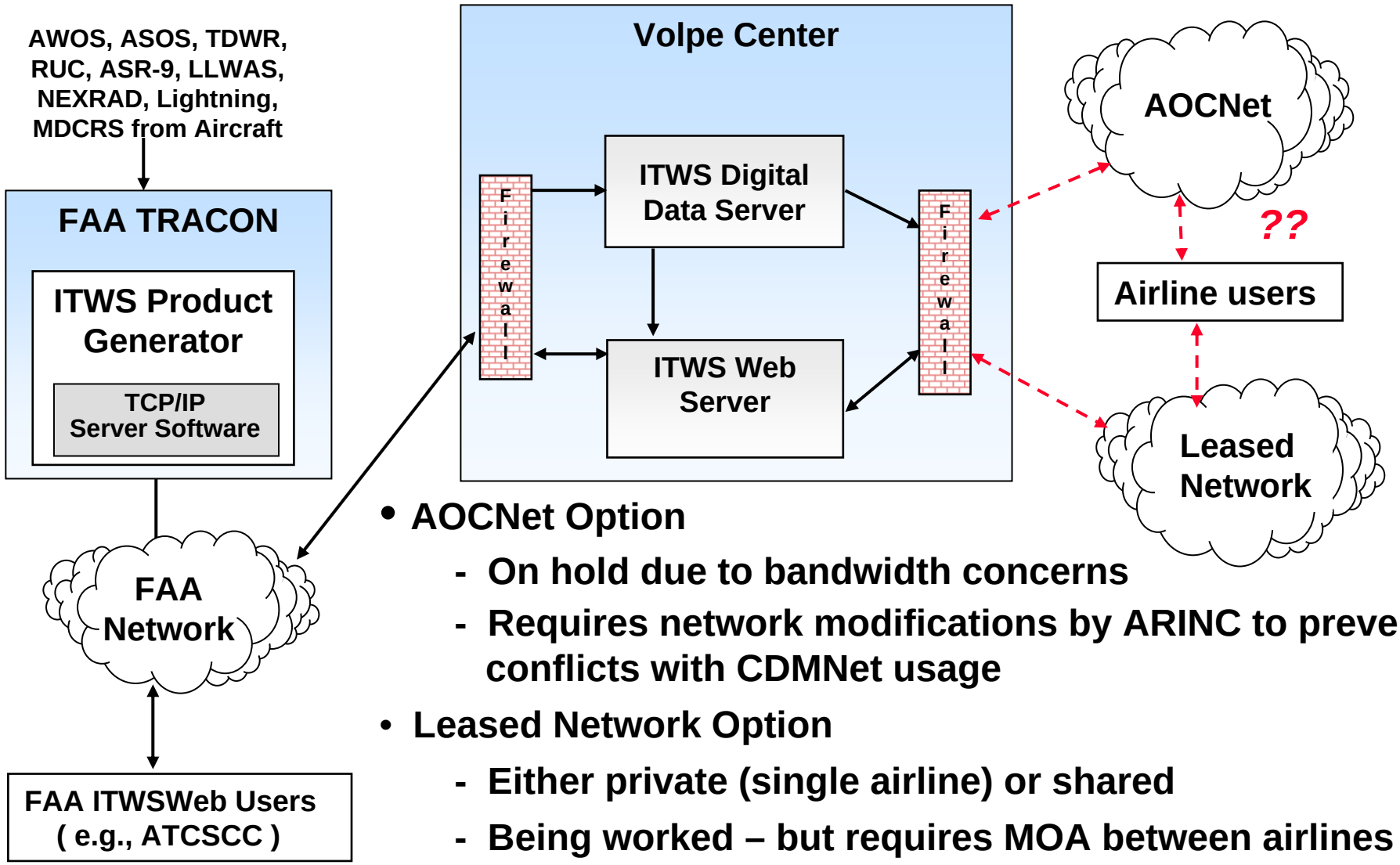
ITWS Website Interface (top-level map)



ITWS Website Interface (top-level text)



Options for ITWS Web Access



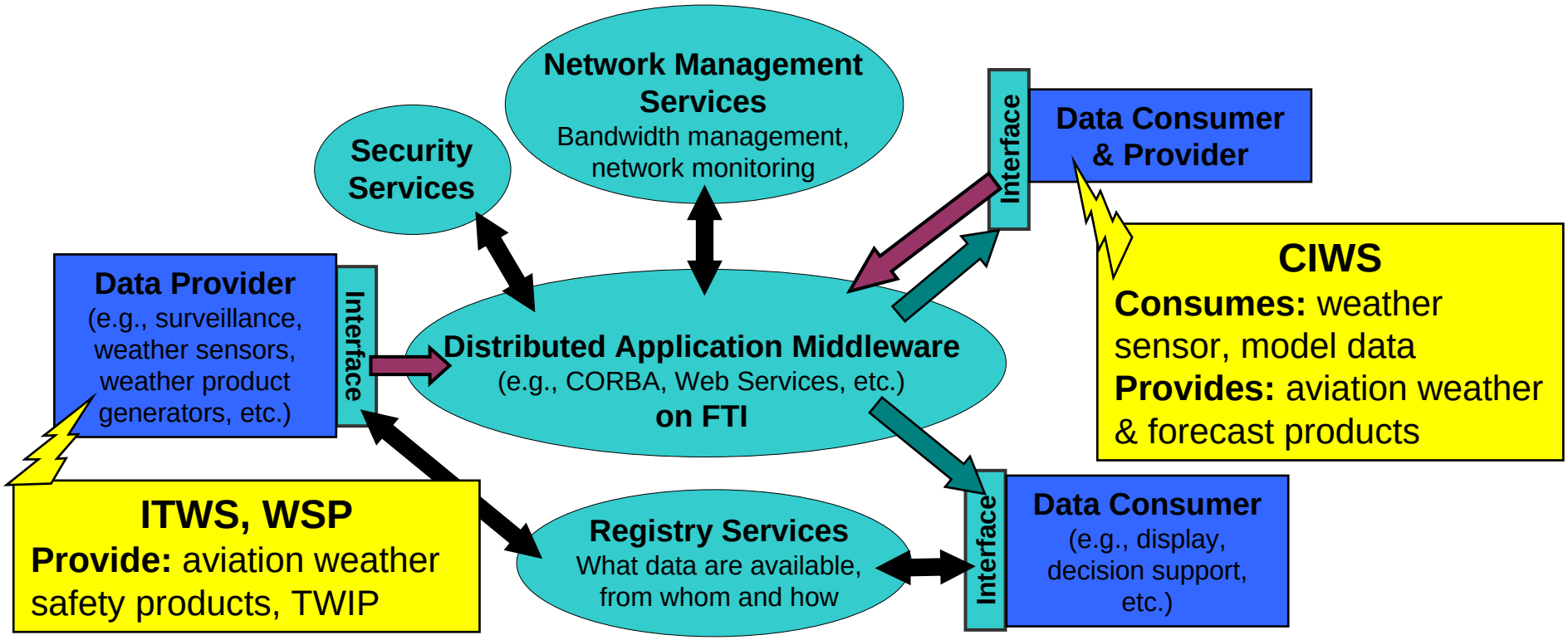
- AOCNet Option
  - On hold due to bandwidth concerns
  - Requires network modifications by ARINC to prevent conflicts with CDMNet usage
- Leased Network Option
  - Either private (single airline) or shared
  - Being worked – but requires MOA between airlines and FAA (drafted but not signed)

Could Products Other Than ITWS Be Included?

- In theory, WSP products could be provided on the ITWS Web display
  - WSP products are subset of ITWS, with similar display concepts
    - Six-level weather (AP-corrected)
    - Microburst and gust front alerts/alarms
    - Storm motion vectors
    - Runway advisories
  - WSP products are made available via a comm server at the WSP-equipped TRACON

- In practice, would require
  - Connectivity from WSP sites to Volpe hubsite (lower bandwidth than ITWS)
  - Software modifications to ITWSWeb software
    - Translate the WSP products into ITWS-compatible form
    - Adjust the web interface to include WSP airports and product availability logic

SWIM Concepts and Services



- **SWIM will provide key services for all distributed applications on the network (saves duplication and $$$)**
- **Data providers publish data on SWIM using *standard interface and data formats* without needing details about consumers**
- **Data consumers ingest data from SWIM network via standard interface without needing details about providers**

Core Services

Applications

Publish

Subscribe

Architecture slide adapted from Boeing, Corp.

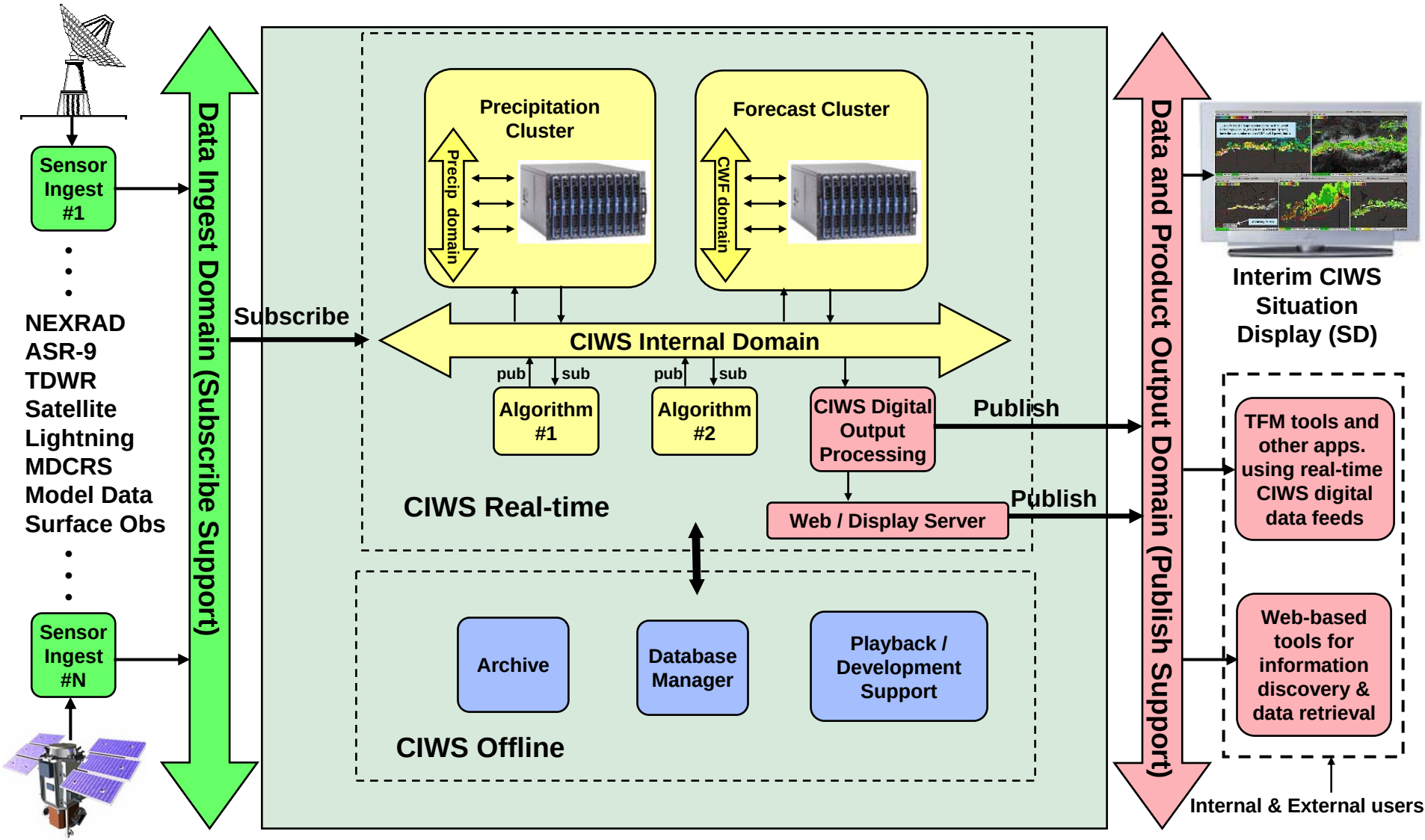
Summary

- ITWS Web and digital data distribution are operational
  - Web used currently by ATCSCC
  - Web and digital products not yet available to airline community (except in test mode)
- Access to products still stalled
  - Issues not technical
  - Obstacles due to process roadblocks and financial concerns
- Adding products from systems such as WSP feasible, but not likely
  - New requirements would need to be justified and accepted
  - FAA business case would have to be made
- Recommend approaching FAA ITWS program office to request resolution of access issues

BACKUP

TWIP Availability

- TWIP messages provided to airlines through arrangement with ARINC
  - Currently, both Production ITWS and TDWR TWIP (where ITWS not yet available) messages are sent
    - Common format used
    - ITWS messages similar in structure to TDWR, but with more elements
  - WSP also has a TWIP product generator, but messages not acquired by ARINC for distribution

- WSP TWIP distribution proposed at one time, but insufficient market identified
  - Would need development by ARINC
  - Would require FAA/ARINC testing, which was not done earlier

CIWS Architecture