Frequentis supporting OWS-7

FREQUENTIS

Communication & Information Solutions for a Safer World!

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Washington, May 2010

Overview

- **Short Company Presentation**
- Short Product Overview
- OWS-7 Participation

Frequentis Mission

Communication and Information Systems

For a Safer World

Company Overview

- Founded in 1947
- $ 200 Mio. Revenue 2009
- Corporate headquarters in Vienna, Austria
- Group of Companies around the world
  - Frequentis USA, Columbia, MD
  - Frequentis Defense, Columbia, MD
  - Frequentis California, CA
- Extensive R&D
- Participation in SESAR and NEXTGEN efforts

First Air Traffic Control System in Austria, Vienna / Schwechat, 1955

Breakthrough in the US: FAA Command Centre / Herndon, Virginia, 2003

Company Headquarters on Wienerberg, relocation in 2006

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Our competencies

Technology Leadership

We set standards.

SESAR Joint Undertaking –
Shaping the future European sky

Project & Programme Management

We deliver in time and on budget.

UCMP / Royal Airforce - MCA Award
for outstanding project management

Usability Engineering

We apply unique domain know how.

We make products & technology usable.

ATCSCC in Herndon / Virginia – FAA
Acknowledgment Award for user interface design

Total Quality & Safety Management

We always strive to find a solution that fits our Customer's needs best.

Frequentis Product Portfolio

Defense

Voice Communication System

Recording (DIVOS)

Tower Automation System(TAS)

ATM Civil

Message Handling System (AMHS)

Safety Critical Solutions

Common Product Platforms

Independent Research & Development

Voice, Data Communication Systems

Electronic Flight Strips

AIM (EAD)

Maritime

River Information Services

GSM-Rail Solutions

Network (VCX)

Rail Dispatcher Terminal (DICORA)

Command & Control Centres (ICCS 3020)

Recording (DIVOS)

CAD

Public Safety

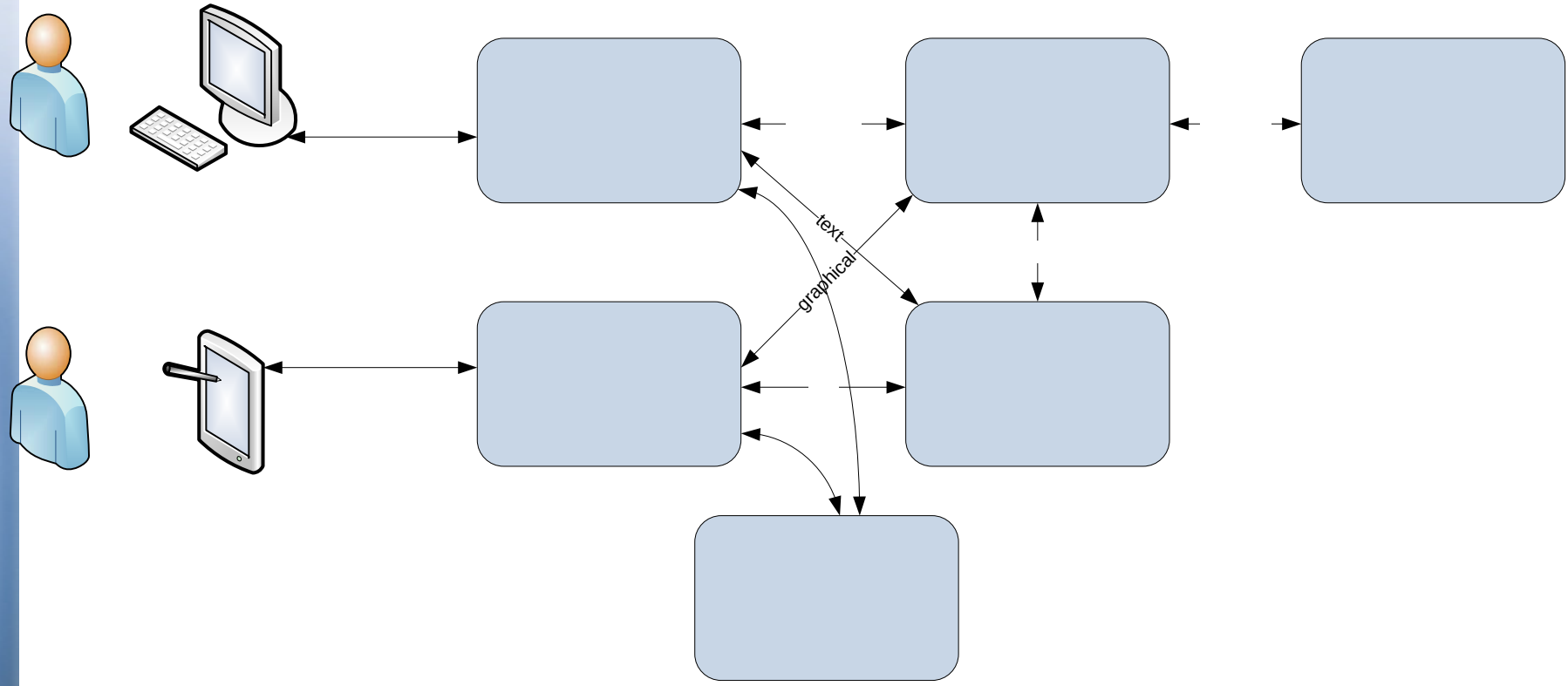
Public Transport

COMMUNICATION
AND INFORMATION
SOLUTIONS FOR
A SAFER WORLD

Participation in OWS-7

- Frequentis was selected for two related client applications:
- Dispatch Aviation Client
  - Client application making use of the OWS infrastructure
  - Used for performing flight planning and pre-flight briefing
  - Dispatchers have a need for a richer HMI and more functionality
  - e.g. scheduling
  - Will typically run on a full sized workstation or laptop
- Handheld / EFB Aviation Client
  - Client application making use of the OWS infrastructure
  - Used on-board for representing similar data as the Dispatch client
  - Tailored to small screens, e.g. handheld devices (iPad, iPhone, Blackberry etc.)
  - Tailored set of functionality for on-board use

Webservice Architecture

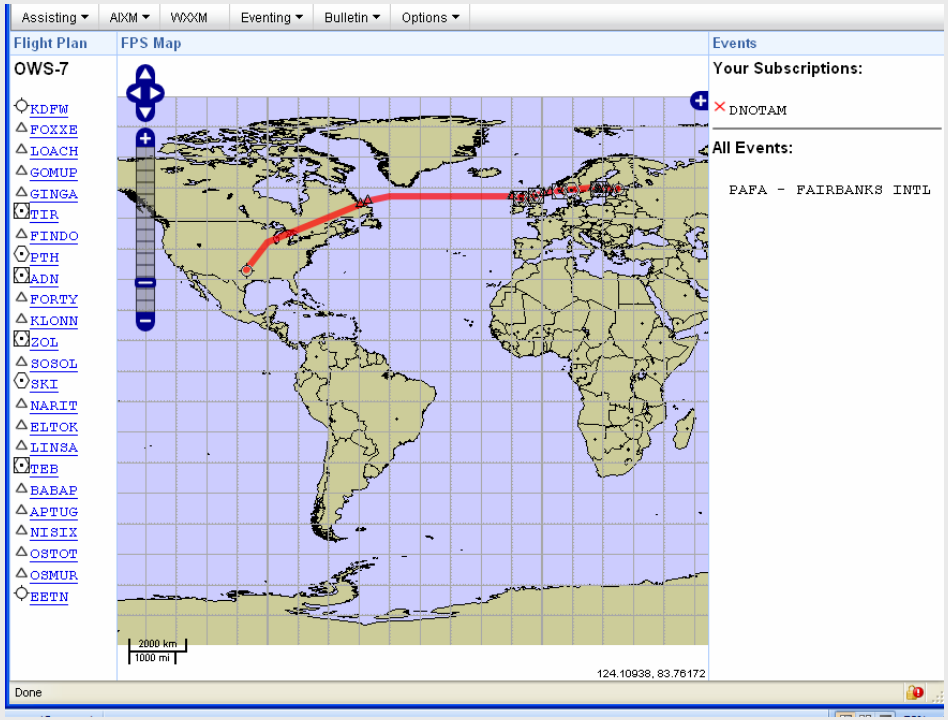


Architecture

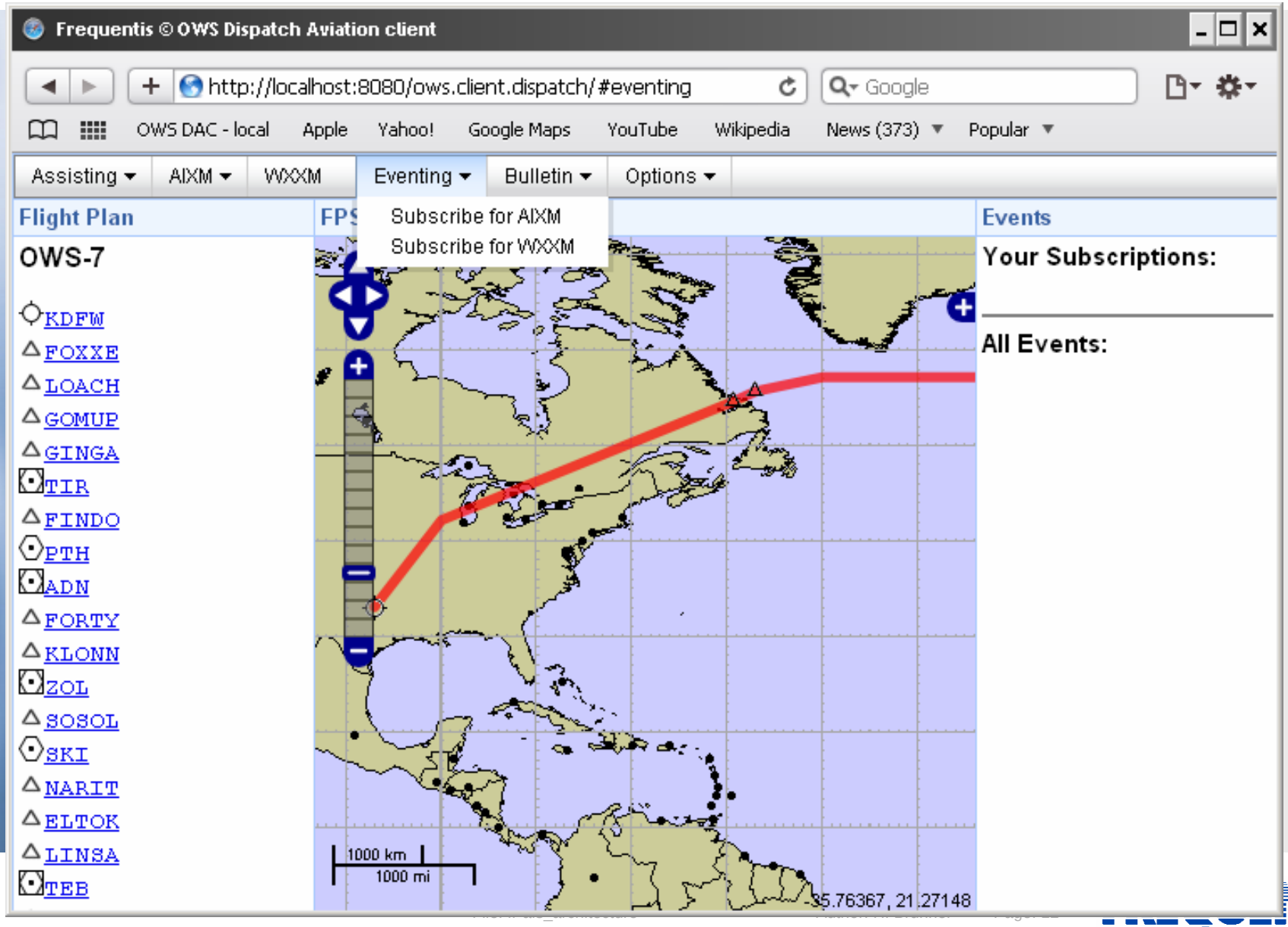
- Clients will retrieve both textual and graphical information
- Textual information: use WFS directly
- Graphical information: Utilize feature portrayal service
- Fusion textual and graphical data in common briefing
- Tailored HMI for dispatch: Standard size monitor on a workstation or PC
- Tailored HMI for EFB: Simplified, smaller monitor, different set of functions
- Both share same underlying webservices

Architecture (continued)

- Subscription to the Event service (which causes receiving NOTAMs)
- Subscription is issued by a “Flight Session” entity of the client solution
- Events received based on that subscription are displayed to Pilot and Dispatcher, connected to the same flight session.



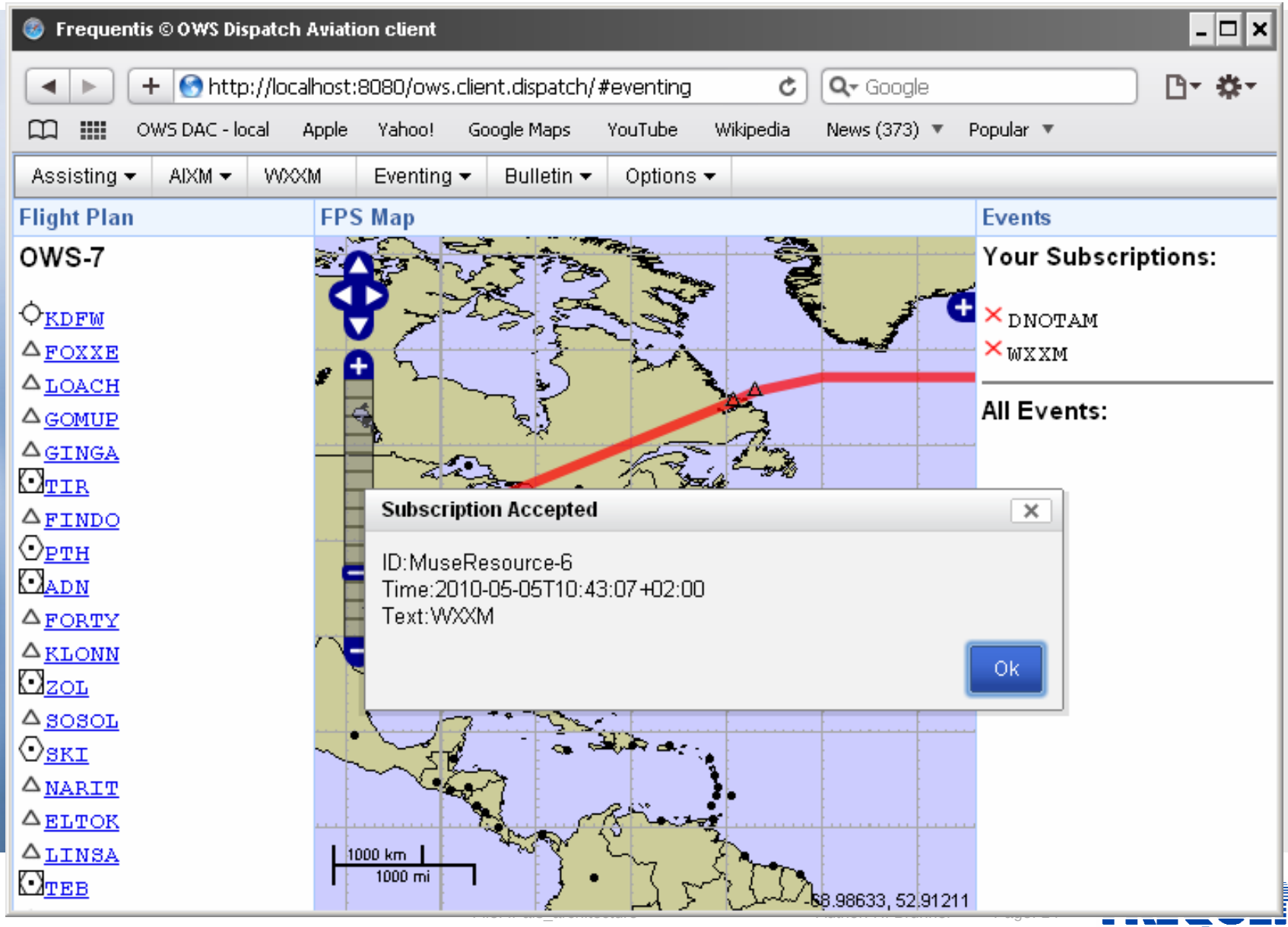
Subscribe to Event Service



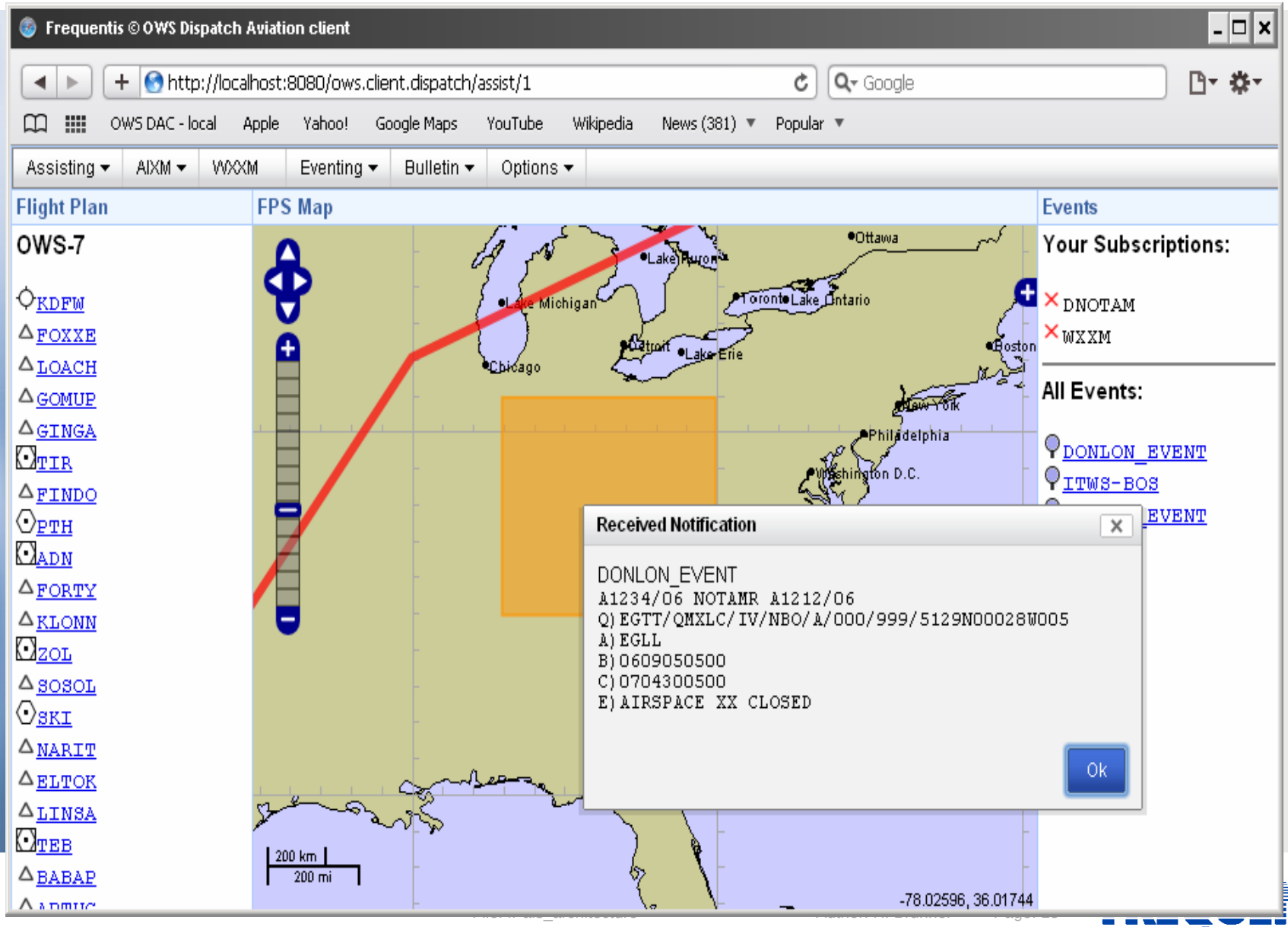
Subscribe to Event Service (continued)

- Users can subscribe to AIXM Events (Digital NOTAM)
- Subscription to WXXM is also supported – AIM – MET fusion
- Currently implemented: Only general subscription to any AIXM or WXXM Events
- Subscription for the flight route filter (narrow route PIB) in planning phase

Subscription Accepted

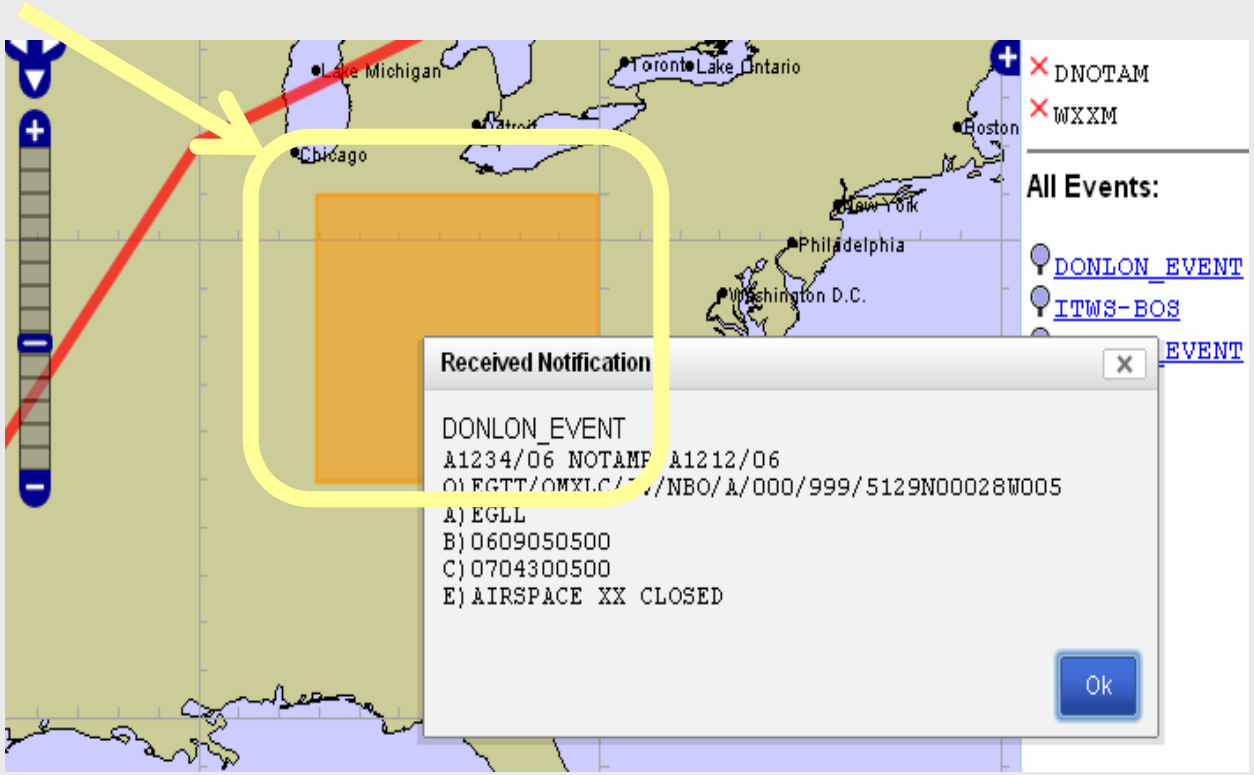


Notification Received

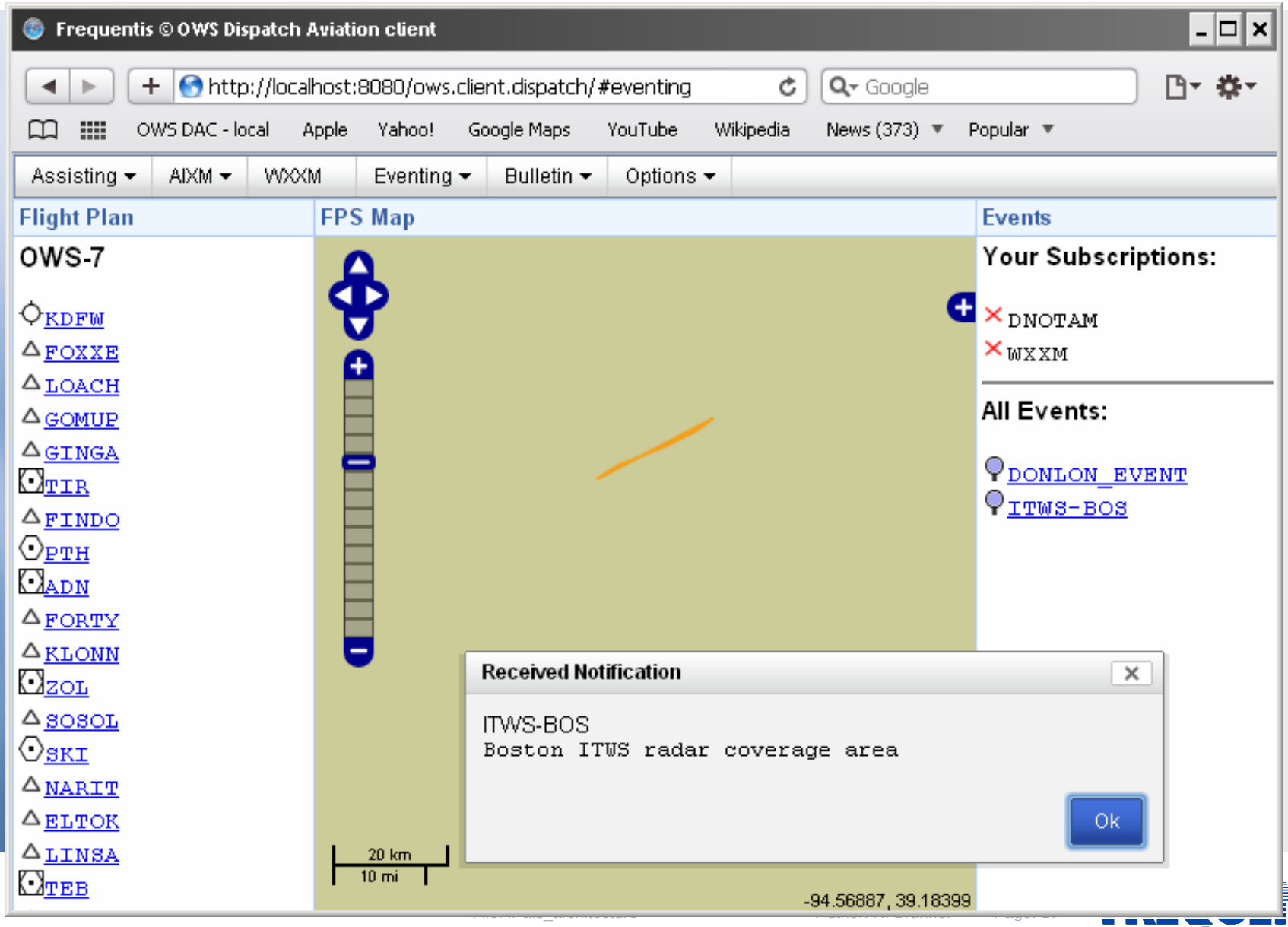


Notification Received (continued)

- System receives the notification and highlights the information immediately (“live data feed”)
- Map zooms into the place of event and displays it (yellow polygon)



Additional Notifications

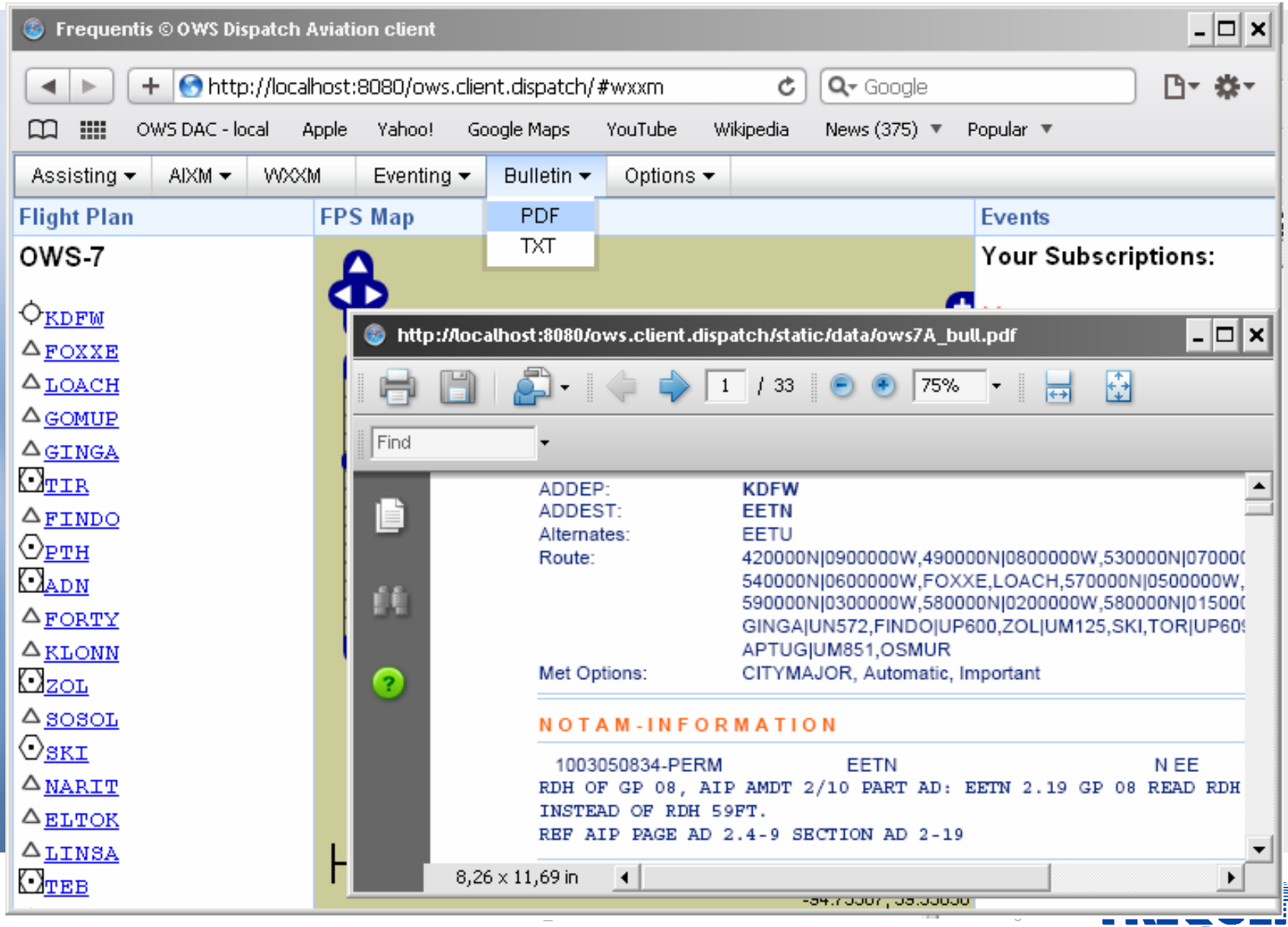


Additional Notifications (continued)

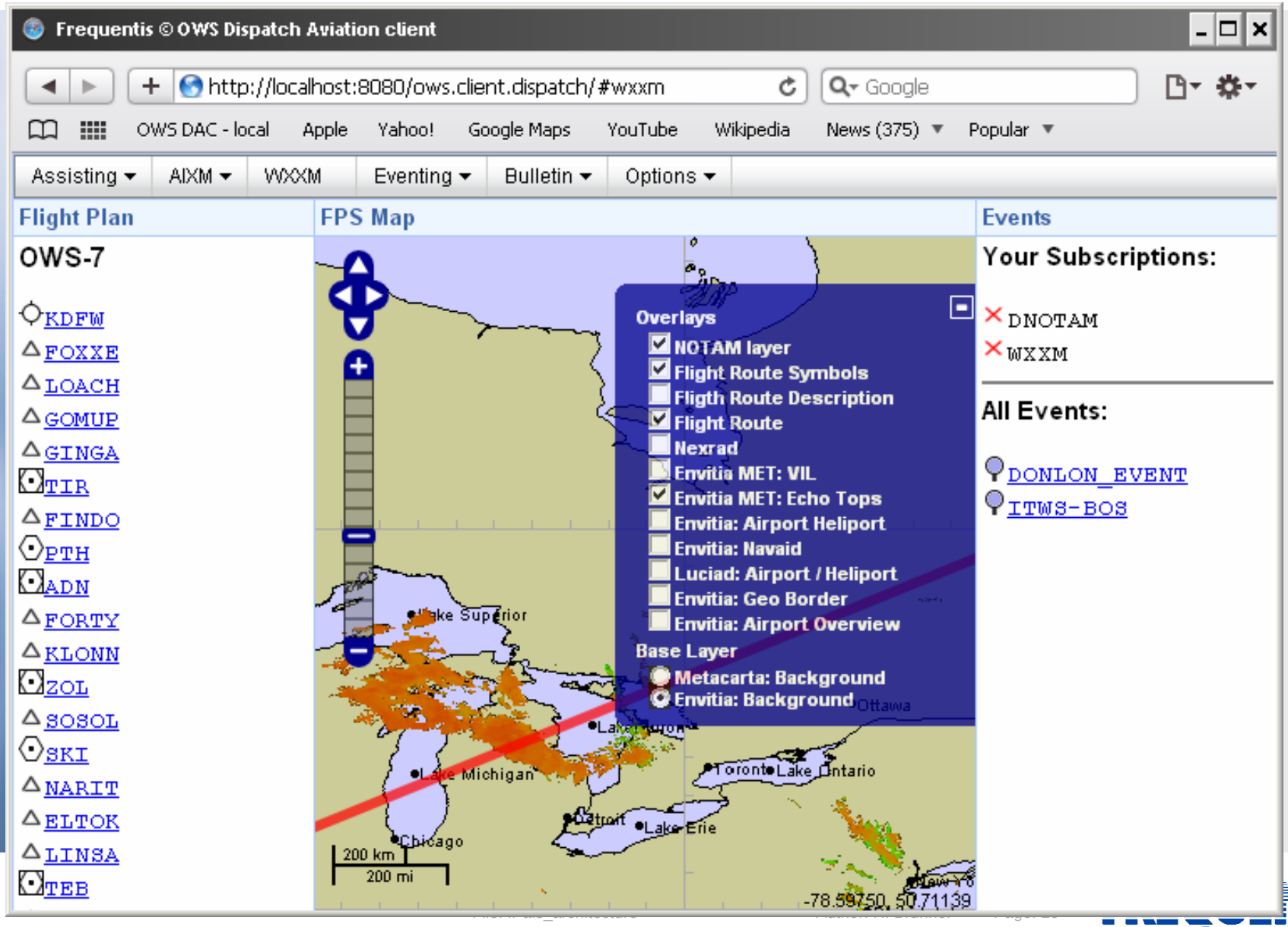
- Events are listed on the right hand side
- They can be visualized by selecting them on the list

PIB

FR-AIS


Frequentis © OWS Dispatch Aviation client
http://localhost:8080/ows.client.dispatch/#wxxm
Google
OWS DAC - local
Apple
Yahoo!
Google Maps
YouTube
Wikipedia
News (375)
Popular
Assisting
AIXM
WXXM
Eventing
Bulletin
Options
PDF
TXT
Flight Plan
FPS Map
Events
OWS-7
Your Subscriptions:
KDFW
FOXXE
LOACH
GOMUP
GINGA
TIR
FINDO
PTH
ADN
FORTY
KLONN
ZOL
SOSOL
SKI
NARIT
ELTOK
LINSA
TEB
http://localhost:8080/ows.client.dispatch/static/data/ows7A_bull.pdf
1 / 33
75%
Find
ADDEP: KDFW
ADDEST: EETN
Alternates: EETU
Route: 420000N|0900000W,490000N|0800000W,530000N|070000
540000N|0600000W,FOXXE,LOACH,570000N|0500000W,
590000N|0300000W,580000N|0200000W,580000N|015000
GINGA|UN572,FINDO|UP600,ZOL|UM125,SKI,TOR|UP60
APTUG|UM851,OSMUR
Met Options: CITYMAJOR, Automatic, Important
NOTAM-INFORMATION
1003050834-PERM EETN N EE
RDH OF GP 08, AIP AMDT 2/10 PART AD: EETN 2.19 GP 08 READ RDH
INSTEAD OF RDH 59FT.
REF AIP PAGE AD 2.4-9 SECTION AD 2-19
8,26 x 11,69 in

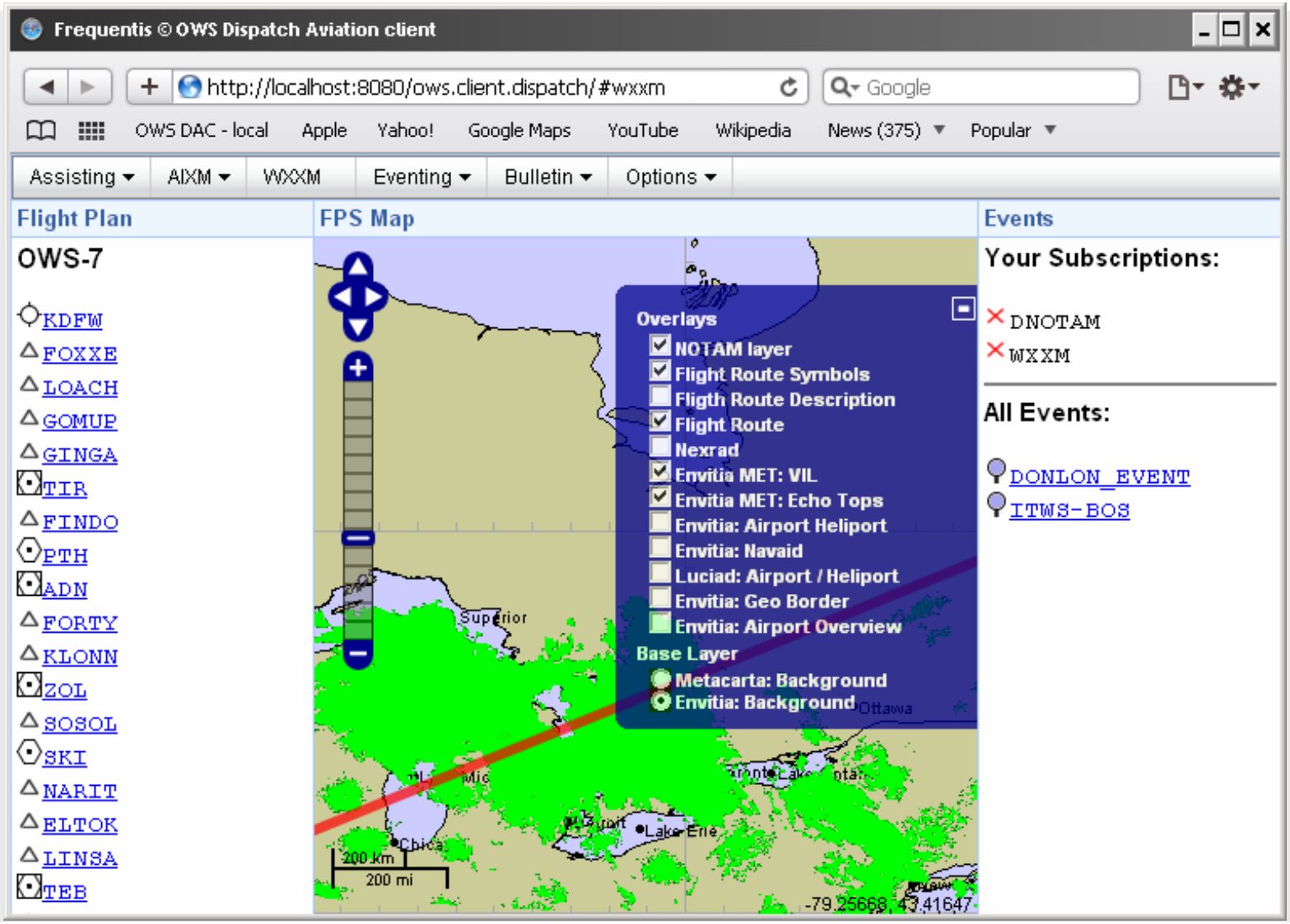
FPS – Envitia Weather layers



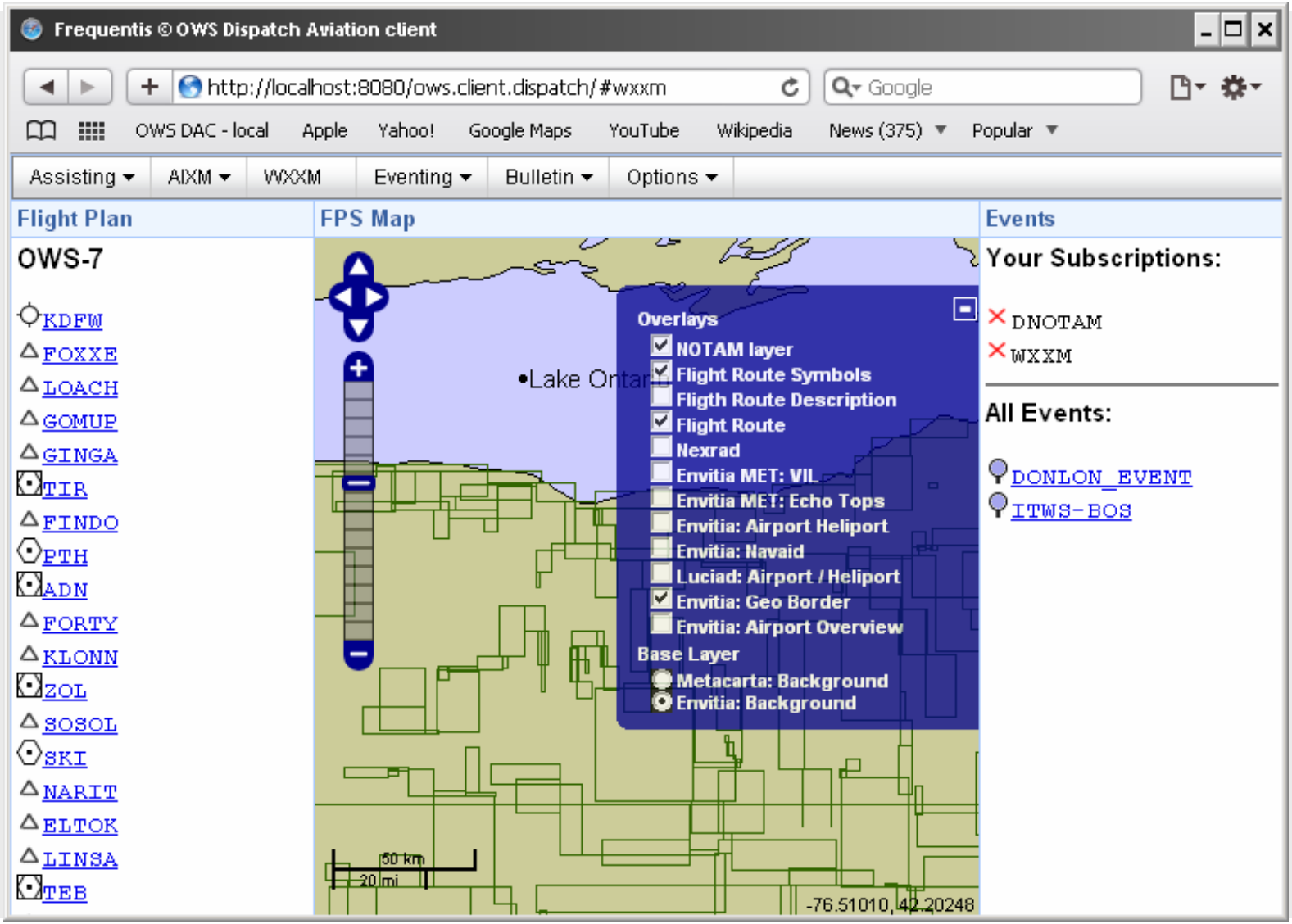
Met Layers

- FPS – Displaying map layer of FPS Envitia MET: Echo Tops
- Map component uses JavaScript to display WMS data (Web Map Server).
- FPS can be also queried as WMS.
- When zooming, panning … every time a new HTTP request is sent to FPS.

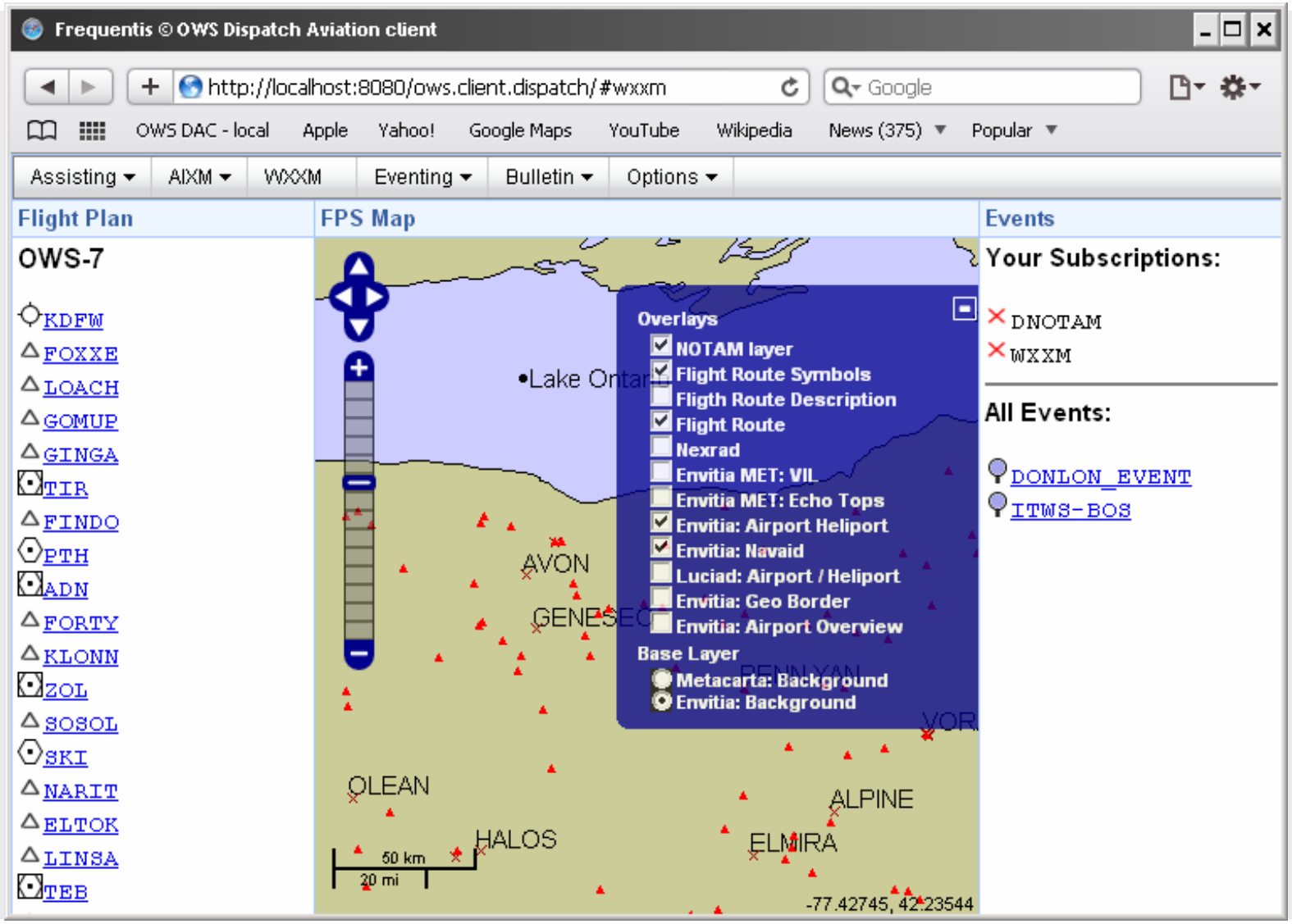
FPS – Envitia Weather layers



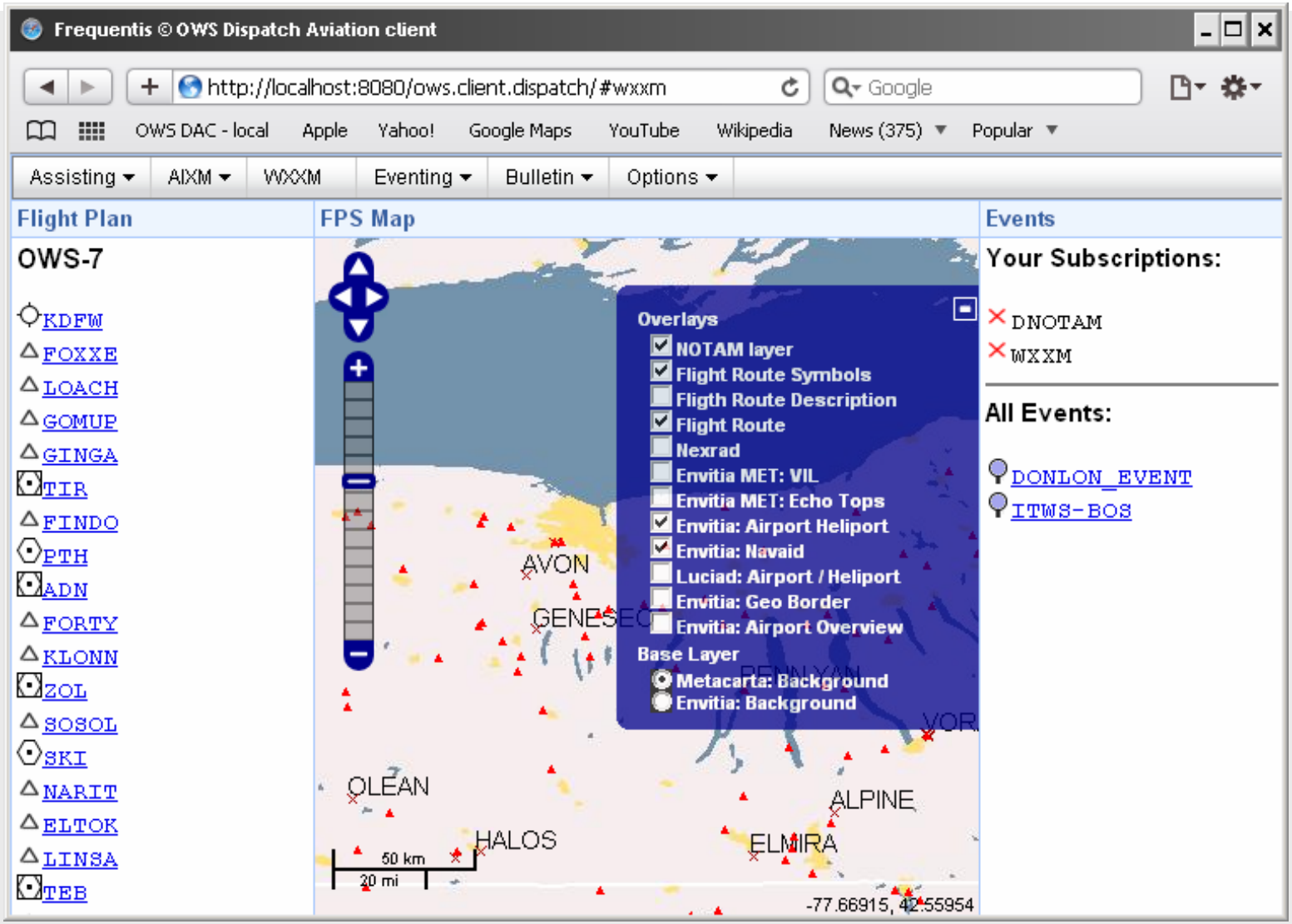
FPS – Envitia AIXM layers



FPS – Envitia AIXM layers

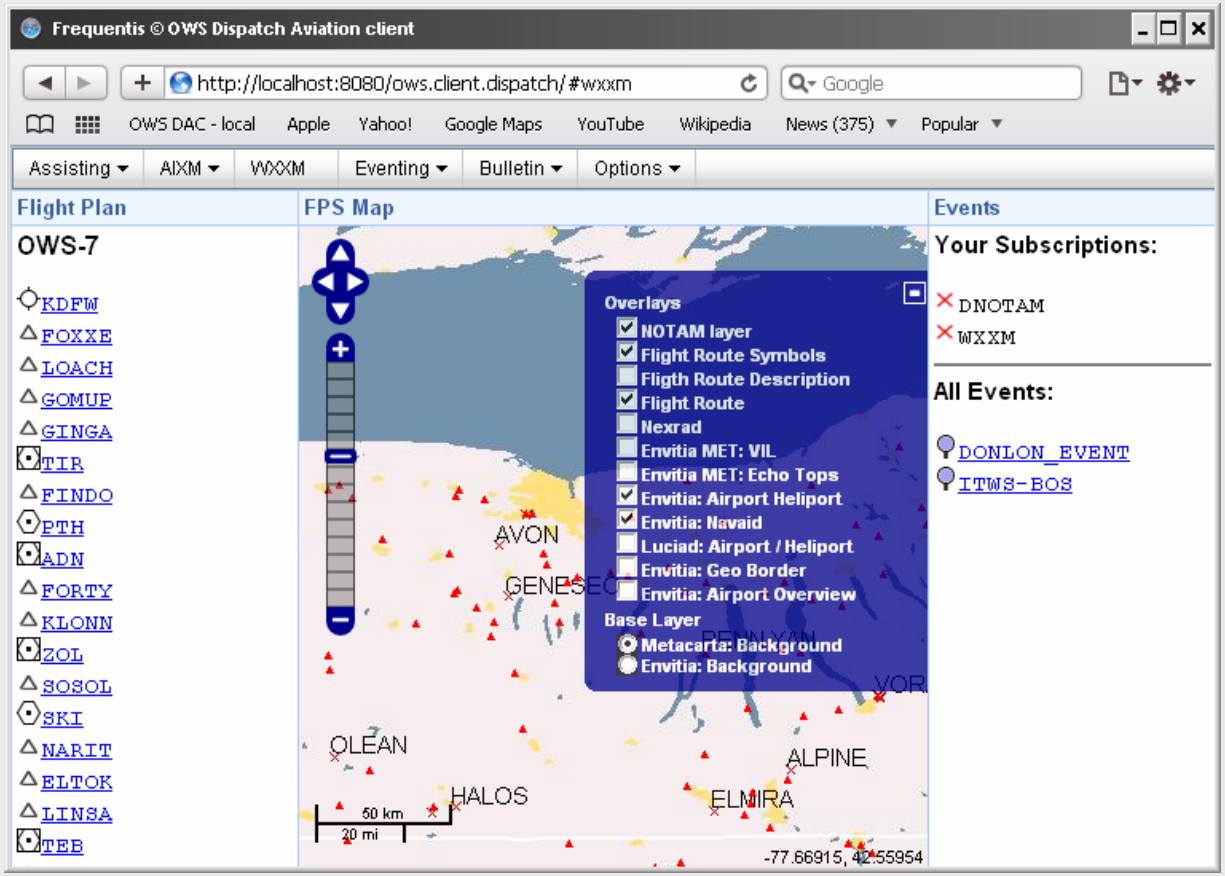


Different Background: Metacarta

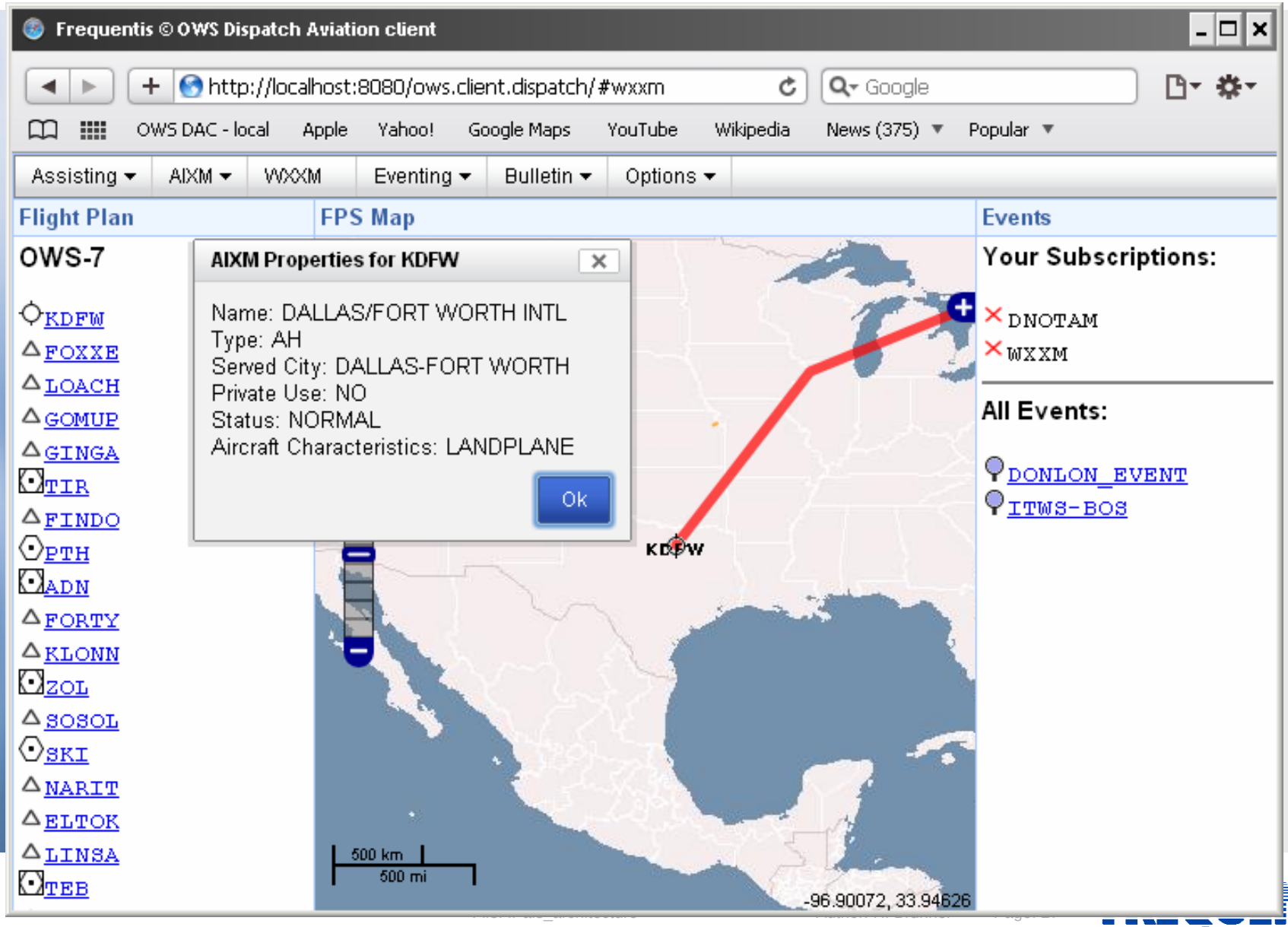


Different data sources

- Backround (and Overlay) layers can be configured to connect to any WMS, such as Metacarta (publicly available WMS)

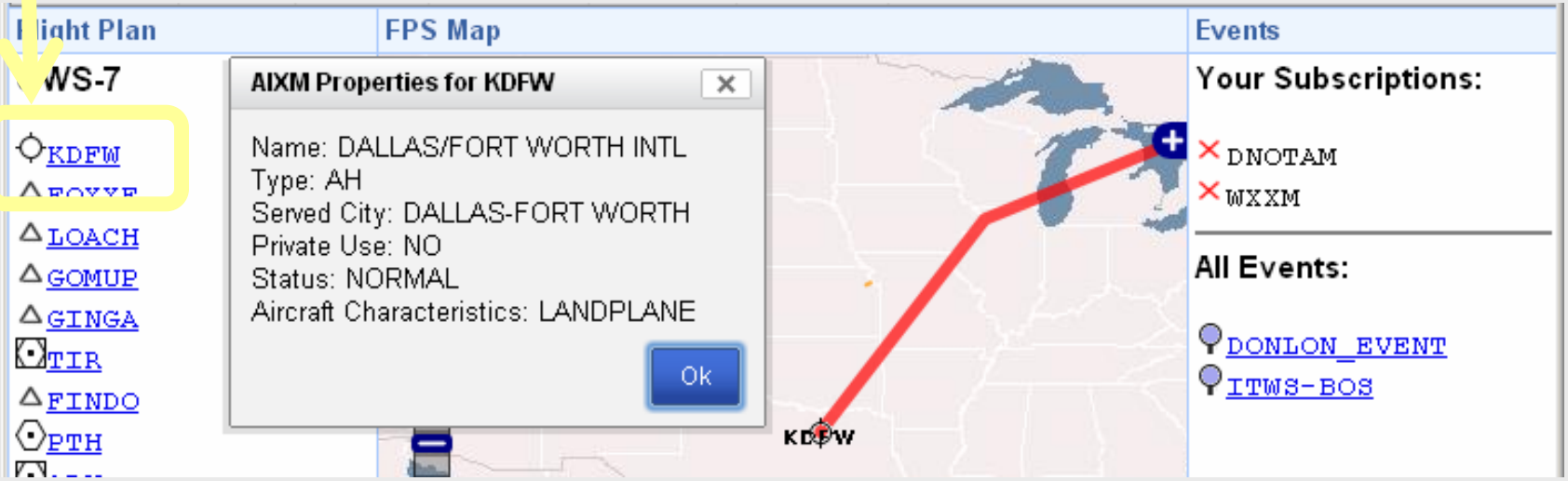


WFS GetFeature

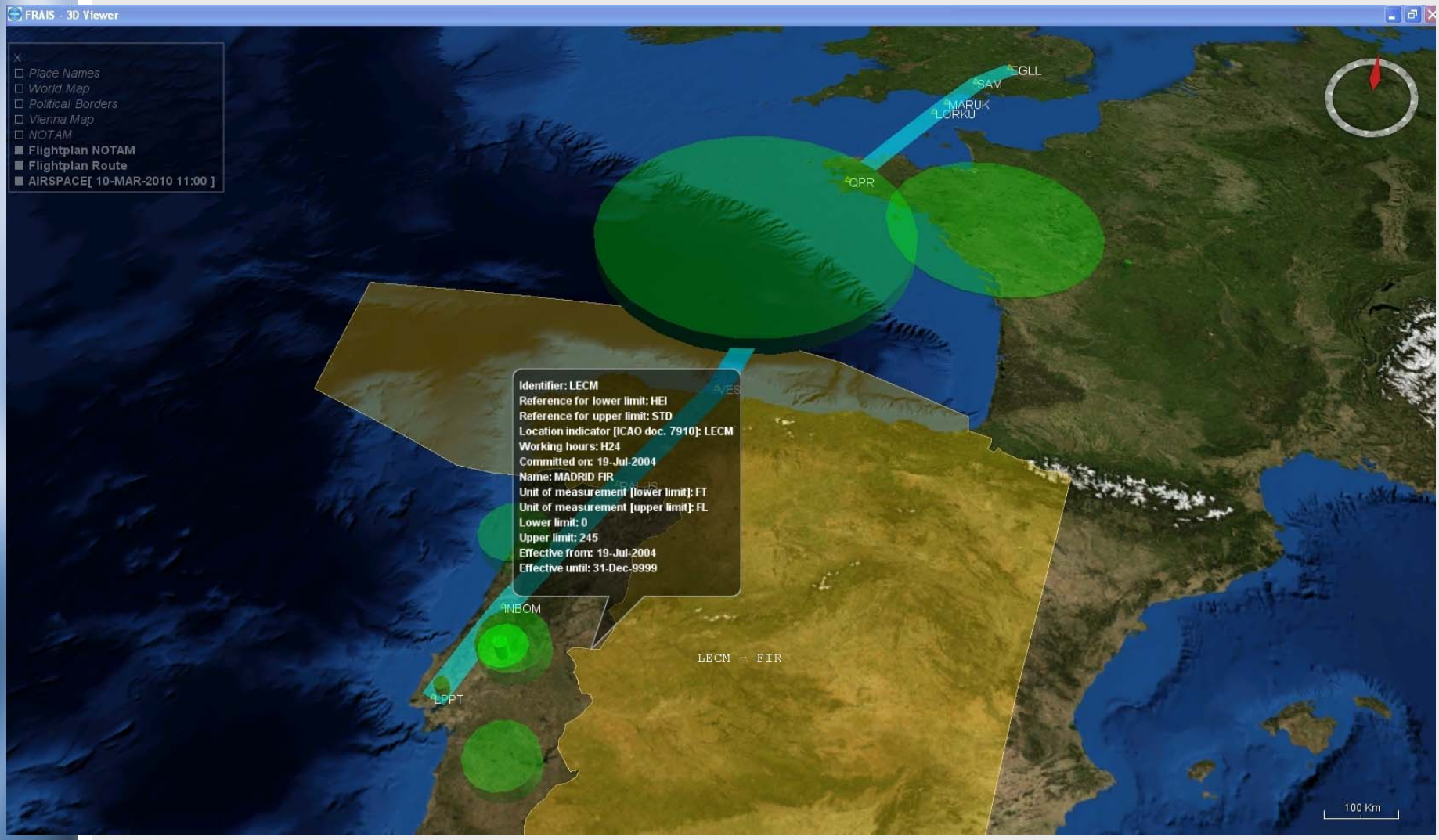


Data drill-down

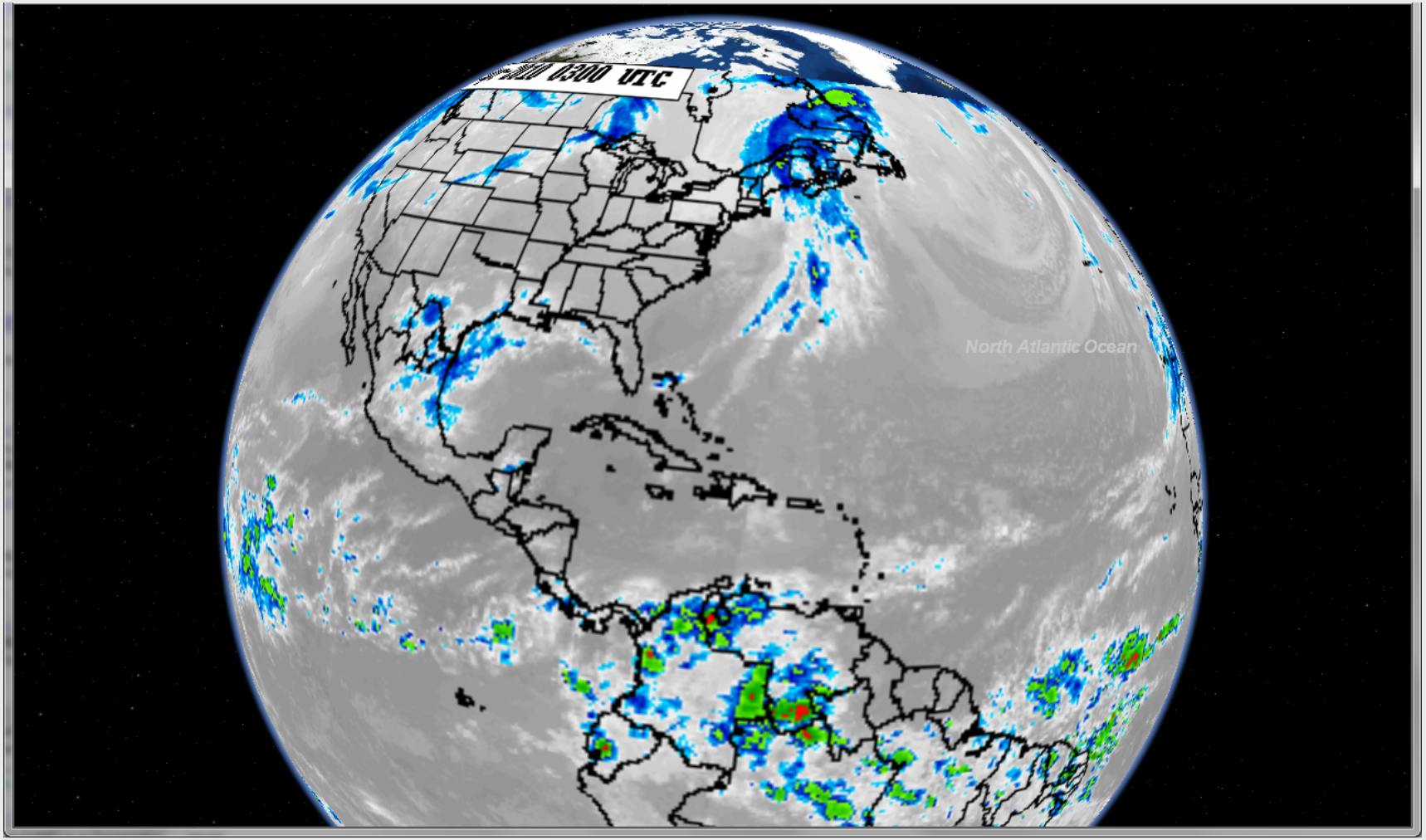
- Click on KDFW aerodrome on the left and display AIXM properties of this AD obtained by querying WFS (Snowflake server).
- Different WFS servers provide different ranges of data. Use Options menu to switch between sources
- Future OWS infrastructure: ‘Routing WFS’ – Selective data hosting based on decision in application, where to send the query.



Alternative visualisation (Frequentis)



Met Data WMS



Lessons Learned

- Intensive backend work to provide application
- Availability and performance of back-end servers essential
- Client performance depends on back-end servers
- Distribution of tasks results in many points of failure,
- However: As long as one of each type is running, the system is operational

Thank You!

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