



OWS7-AIM Server Side Architecture

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Server Side Results from last year

- Proved that AIXM5 (and xNOTAM) can be loaded, managed and published
- The underlying OGC and ISO standards (GML, WFS, FE) fully supported the Aviation requirements
- Proved interoperability through multiple client integration
- Successfully implemented spatio-temporal queries
- Only minor issues along the way – no show stoppers

All Delivered using COTS

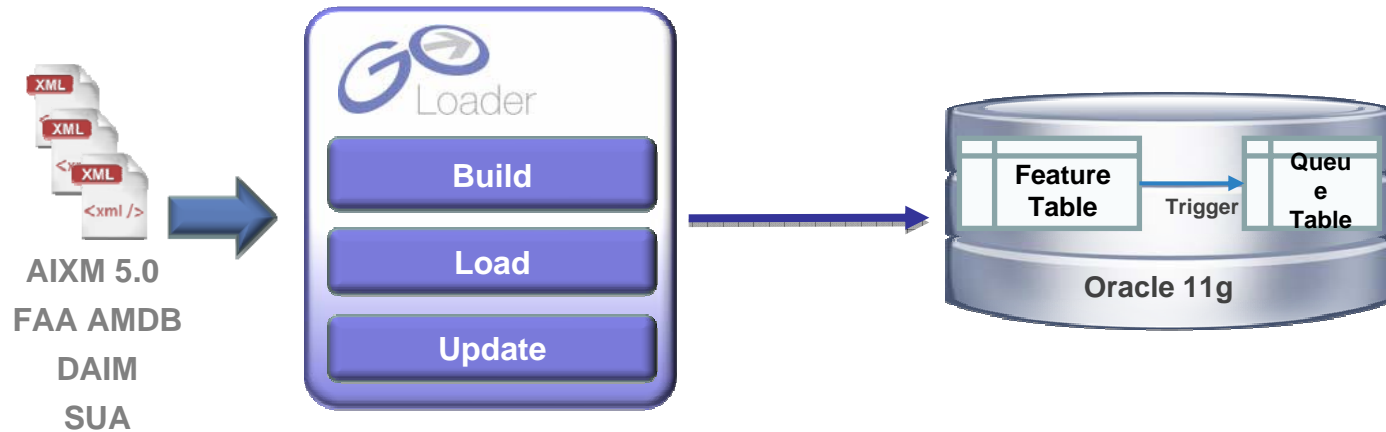


OWS7-AIM Server Side

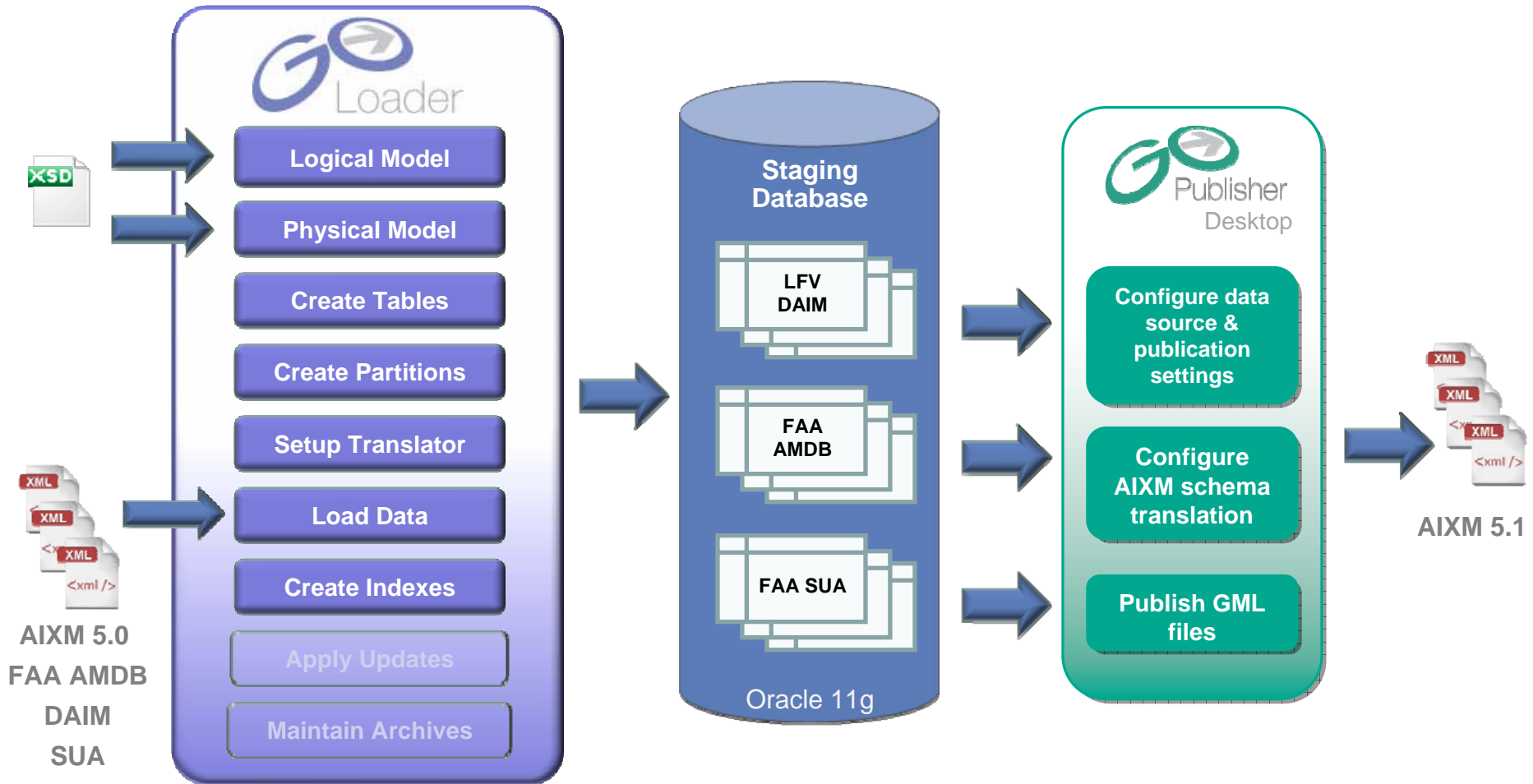
Take a another step towards a standards based implementation
(More weight on the bar!)

- Upgrade to the latest standards
 - WFS 2.0 (ISO 19142 & ISO 19143 Filter Encoding)
 - AIXM 5.1
 - WXXM 1.1.1
- Introduce new concepts
 - Digital NOTAM via web service transactions
 - Deployment according to SWIM
 - Security according to SWIM
- Solve some old problems
 - Metadata
 - Complex queries

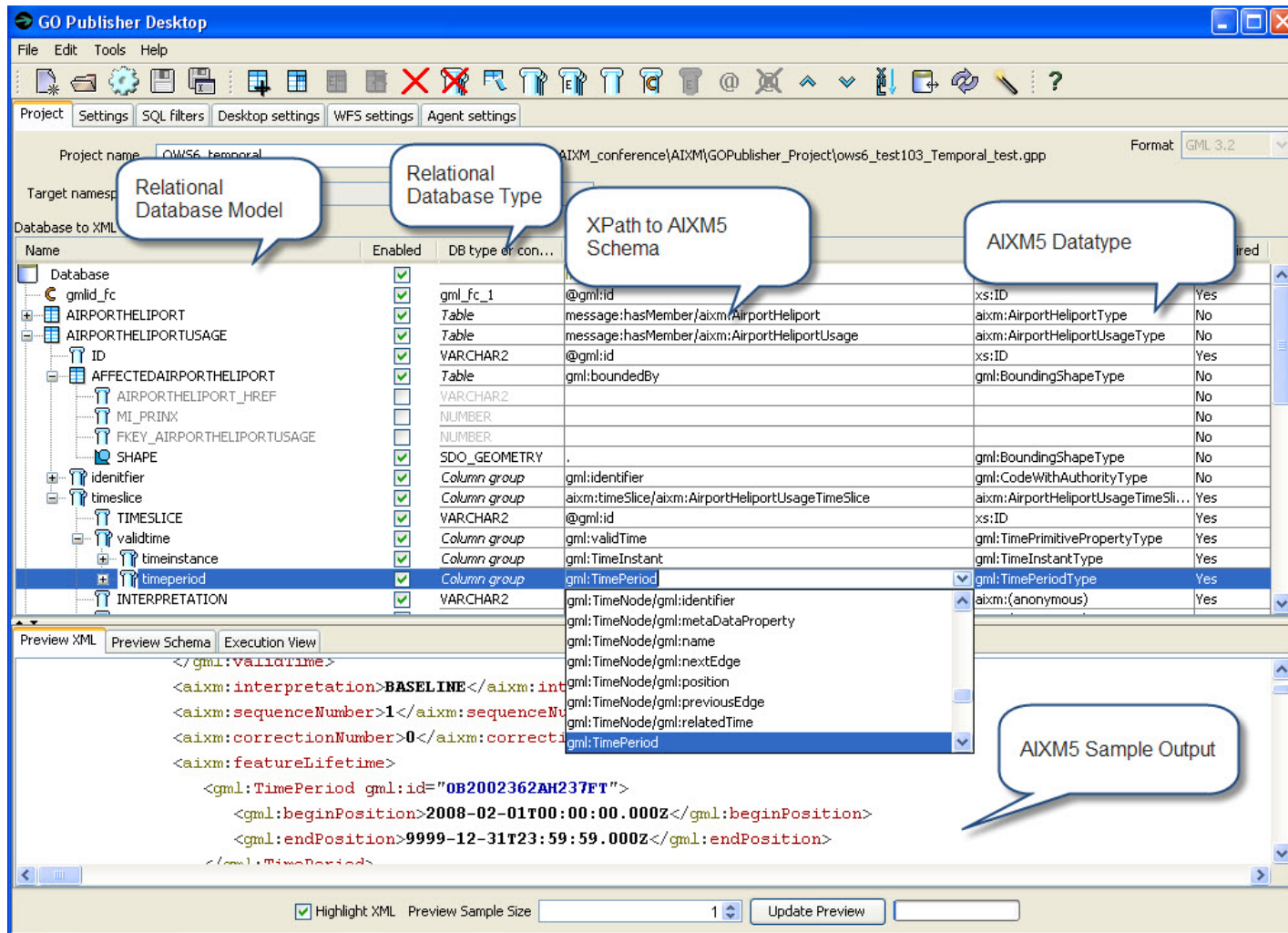
Data Load



Before Data Load!



Mapping AIXM5.1 using GO Publisher



GO Publisher Desktop

Project name: GWS6_temporal | Target name: AIXM_conference\AIXM\GOPublisher_Project\ows6_test103_Temporal_test.gpp | Format: GML 3.2

Database to XML Mapping Table:

Name	Enabled	DB type or con...	XPath to AIXM5 Schema	AIXM5 Datatype	red
Database	<input checked="" type="checkbox"/>				
gmlid_fc	<input checked="" type="checkbox"/>	gml_fc_1	@gml:id	xs:ID	Yes
AIRPORTHELIPORT	<input checked="" type="checkbox"/>	Table	message:hasMember/aixm:AirportHeliport	aixm:AirportHeliportType	No
AIRPORTHELIPORTUSAGE	<input checked="" type="checkbox"/>	Table	message:hasMember/aixm:AirportHeliportUsage	aixm:AirportHeliportUsageType	No
ID	<input checked="" type="checkbox"/>	VARCHAR2	@gml:id	xs:ID	Yes
AFFECTEDAIRPORTHELIPORT	<input checked="" type="checkbox"/>	Table	gml:boundedBy	gml:BoundingShapeType	No
AIRPORTHELIPORT_HREF	<input type="checkbox"/>	VARCHAR2			No
MI_PRINX	<input type="checkbox"/>	NUMBER			No
FKEY_AIRPORTHELIPORTUSAGE	<input type="checkbox"/>	NUMBER			No
SHAPE	<input checked="" type="checkbox"/>	SDO_GEOMETRY		gml:BoundingShapeType	No
Identifier	<input checked="" type="checkbox"/>	Column group	gml:identifier	gml:CodeWithAuthorityType	No
timeslice	<input checked="" type="checkbox"/>	Column group	aixm:timeSlice/aixm:AirportHeliportUsageTimeSlice	aixm:AirportHeliportUsageTimeSli...	Yes
TIMESLICE	<input checked="" type="checkbox"/>	VARCHAR2	@gml:id	xs:ID	Yes
validtime	<input checked="" type="checkbox"/>	Column group	gml:validTime	gml:TimePrimitivePropertyType	Yes
timeinstance	<input checked="" type="checkbox"/>	Column group	gml:TimeInstant	gml:TimeInstantType	Yes
Timeperiod	<input checked="" type="checkbox"/>	Column group	gml:TimePeriod	gml:TimePeriodType	Yes
INTERPRETATION	<input checked="" type="checkbox"/>	VARCHAR2	gml:TimeNode/gml:identifier	aixm:(anonymous)	Yes

Preview XML:

```

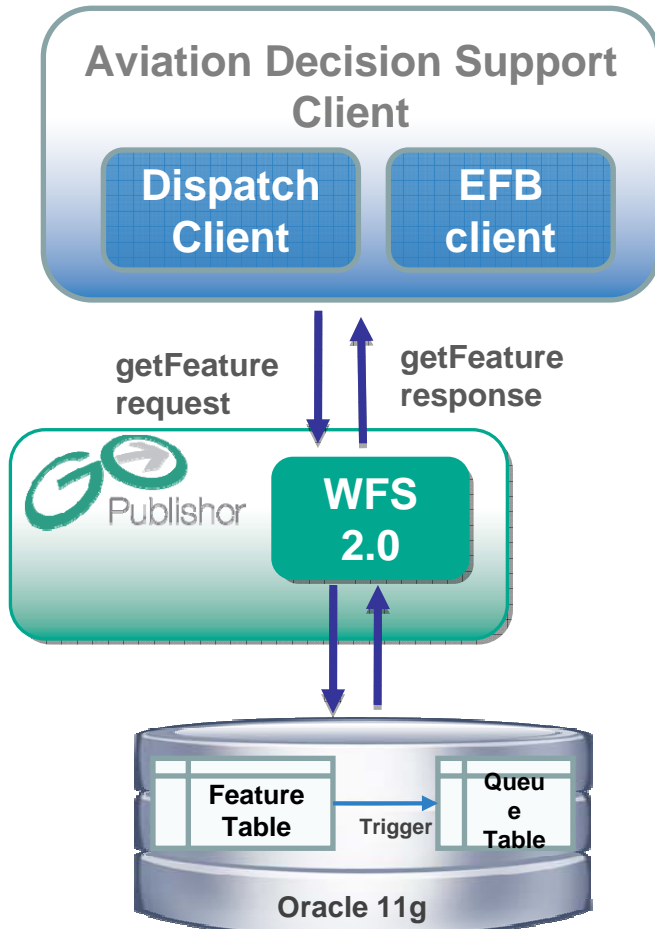
</gml:validTime>
<aixm:interpretation>BASELINE</aixm:int
<aixm:sequenceNumber>1</aixm:sequenceNu
<aixm:correctionNumber>0</aixm:correct
<aixm:featureLifetime>
  <gml:TimePeriod gml:id="OB2002362AK237FT">
    <gml:beginPosition>2008-02-01T00:00:00.000Z</gml:beginPosition>
    <gml:endPosition>9999-12-31T23:59:59.000Z</gml:endPosition>
  </gml:TimePeriod>

```

AIXM5 Sample Output

Publishing via WFS

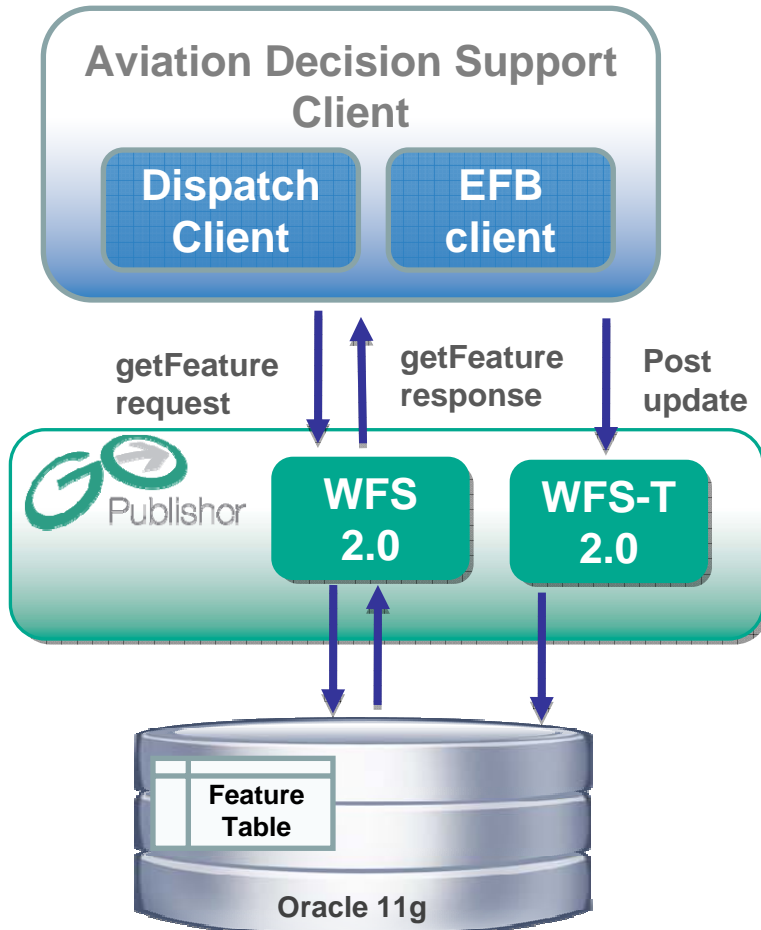
- AIXM 5.1, WXXM 1.1.1
- WFS 2.0 for Data
- Filter 2.0 for Queries
- ISO 19108 Temporal Operators



Publishing AIXM 5.1 - Scenario Examples

- Dispatch client issues WFS requests to retrieve KDFW and EETN airports from WFS (baseline and timeslices)
- Dispatch client issues WFS request (return airports in Estonia that have a passenger terminal, re-fuelling facilities, hard-surface runway, minimum runway length (7000 feet) and navigational aids).
- Dispatch client issues WFS request to retrieve EFHK data (baseline and timeslices)
- Dispatch client issues WFS requests for EETN updates since the last data download
- Dispatch client retrieves airspace over Baltic Sea and Gulf of Finland from WFS

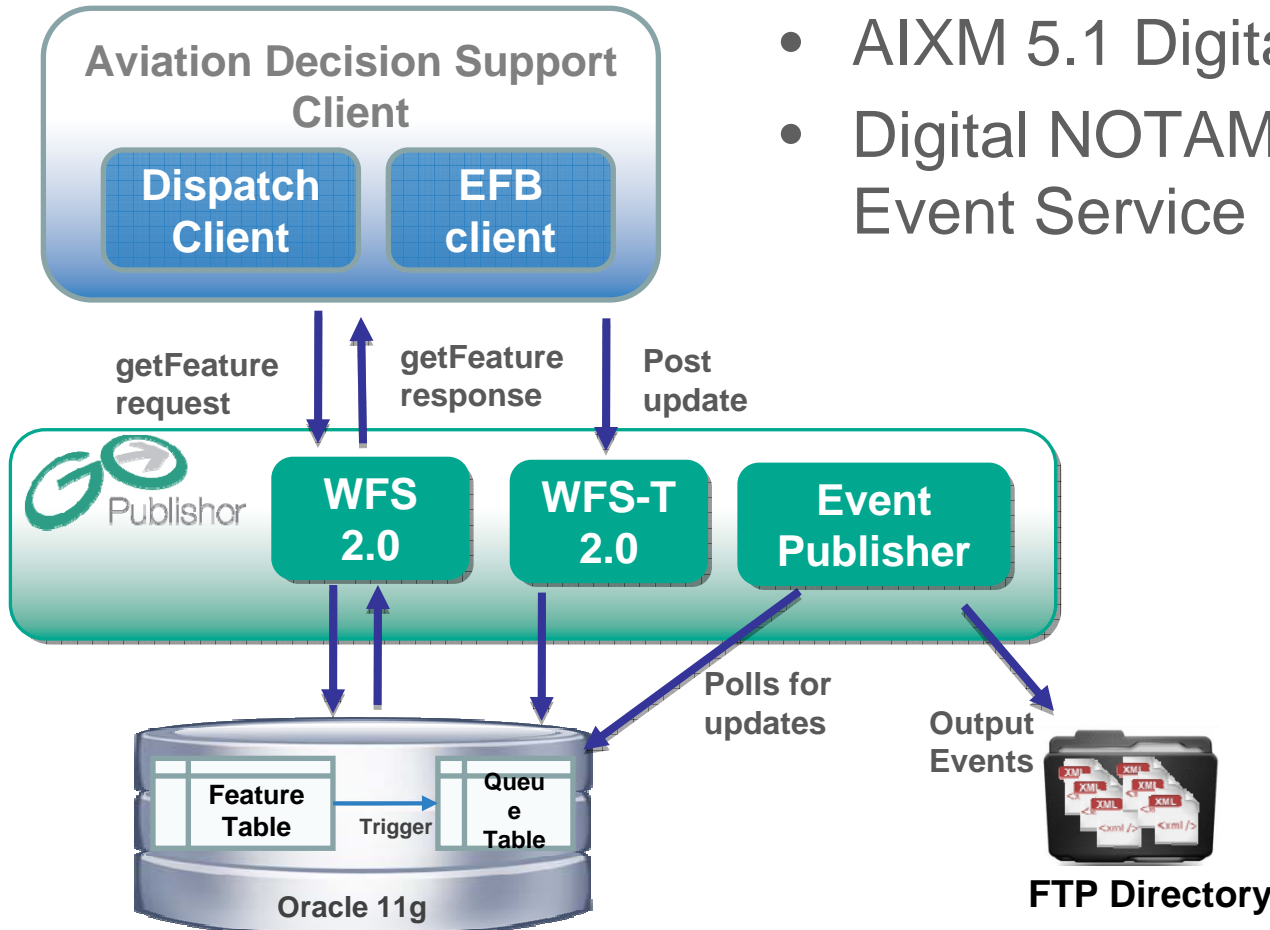
Updating via WFS



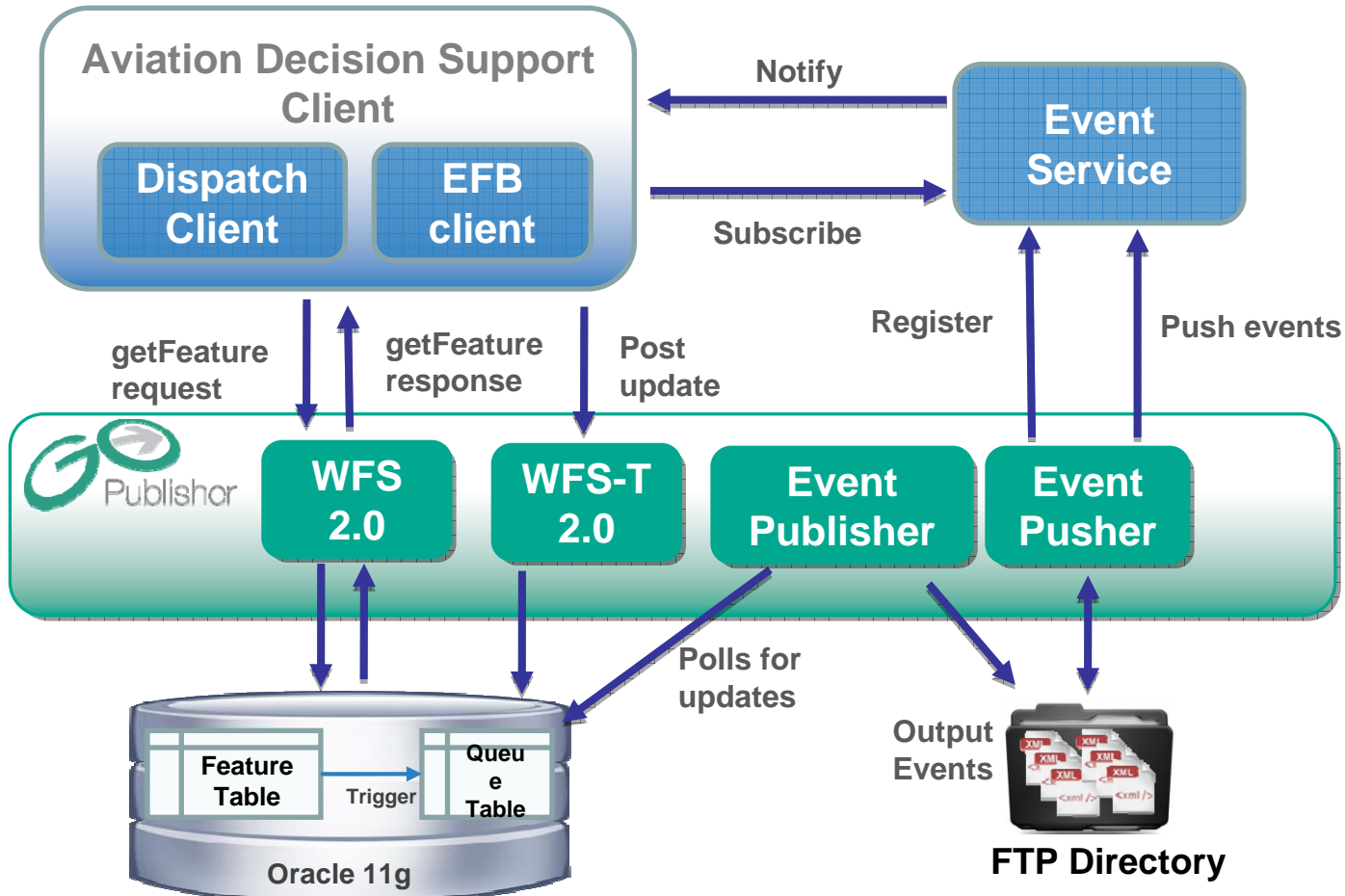
- WFS 2.0 Transactions
- Inserting temp delta
- Inserting perm delta
- Inserting new baseline

Digital NOTAM Creation

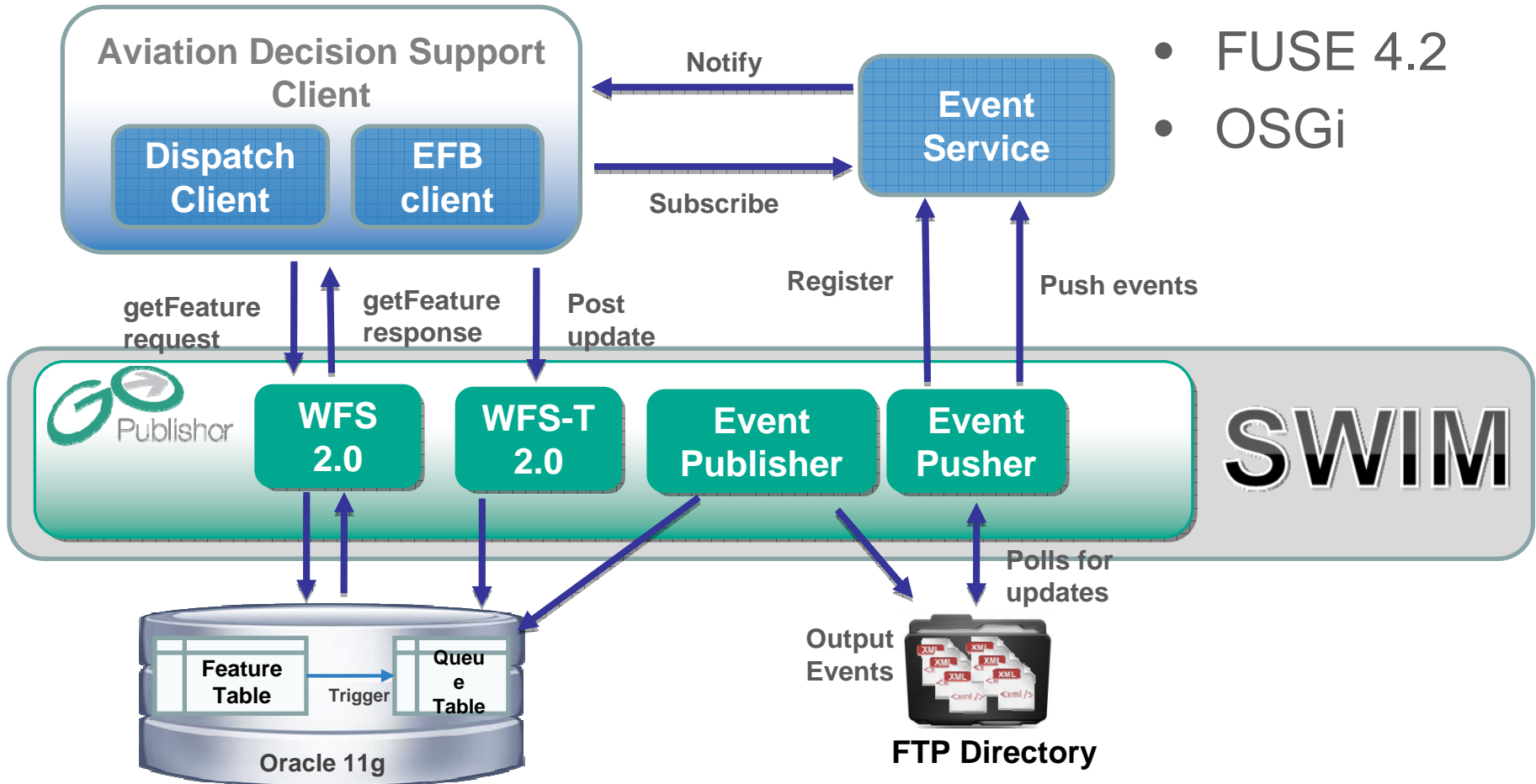
- AIXM 5.1 Digital NOTAMs
- Digital NOTAMs pushed to Event Service



Digital NOTAM Publication



All wrapped up in SWIM




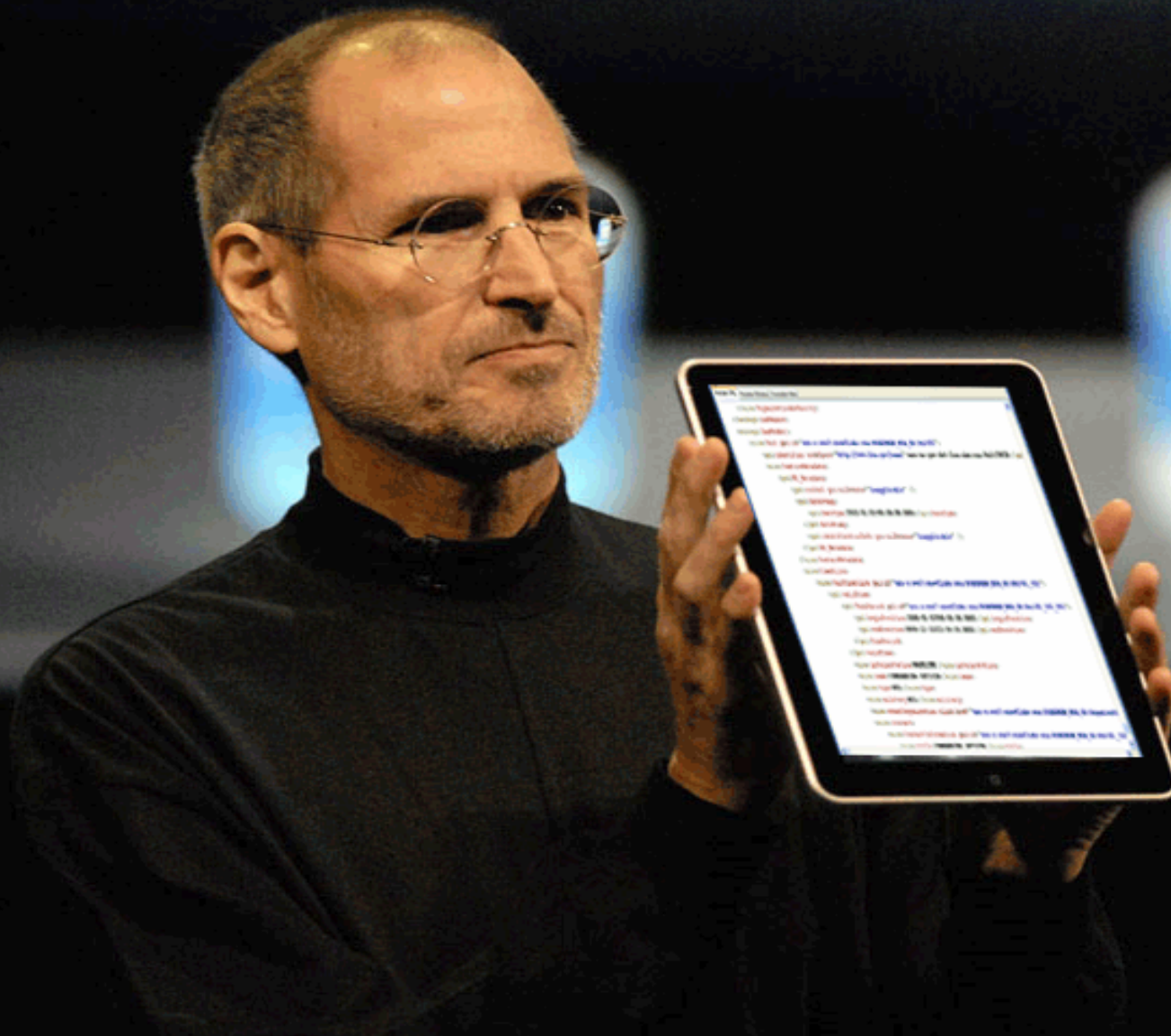
- FUSE 4.2
- OSGi

OWS7-AIM Progress so Far

- Upgrade to the latest standards
 - WFS 2.0 (ISO 19142 & ISO 19143 Filter Encoding)
 - AIXM 5.1
 - WXXM 1.1.1
- Introduce new concepts
 - Digital NOTAM via REST service transactions
 - Deployment according to SWIM
 - Security according to SWIM... we're working on it ... its hard
- Solve some old problems
 - Metadata
 - Complex queries

All Delivered using COTS

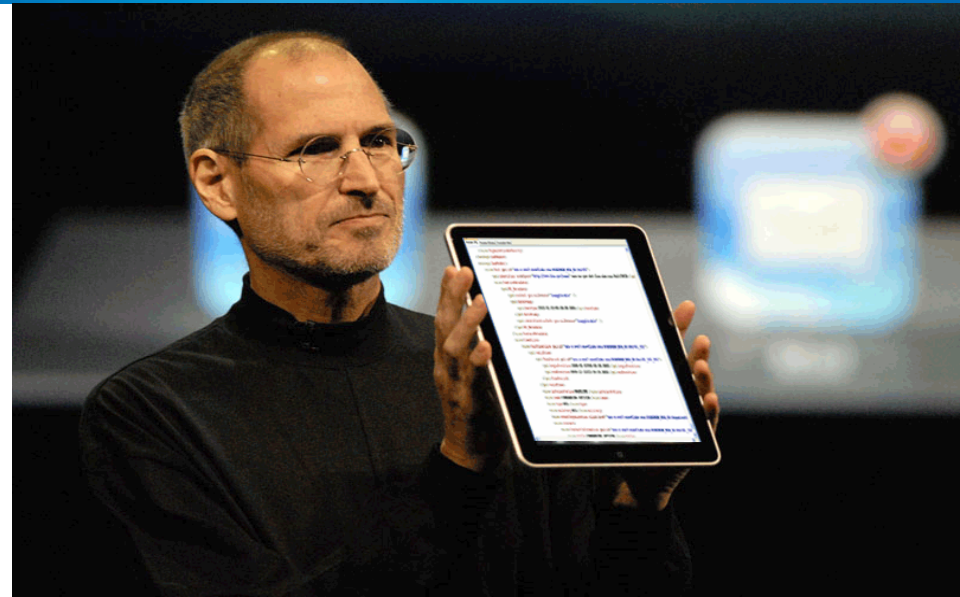




Any Questions?

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