

*Global Harmonization
Through Collaboration*

The Luminary System

Vendor Brief

Presented By: Edward Swing

Date: August 28, 2012



**Federal Aviation
Administration**

**AIR TRANSPORTATION INFORMATION
EXCHANGE CONFERENCE - (FEATURING
AIXM, WXXM AND FIXM)**

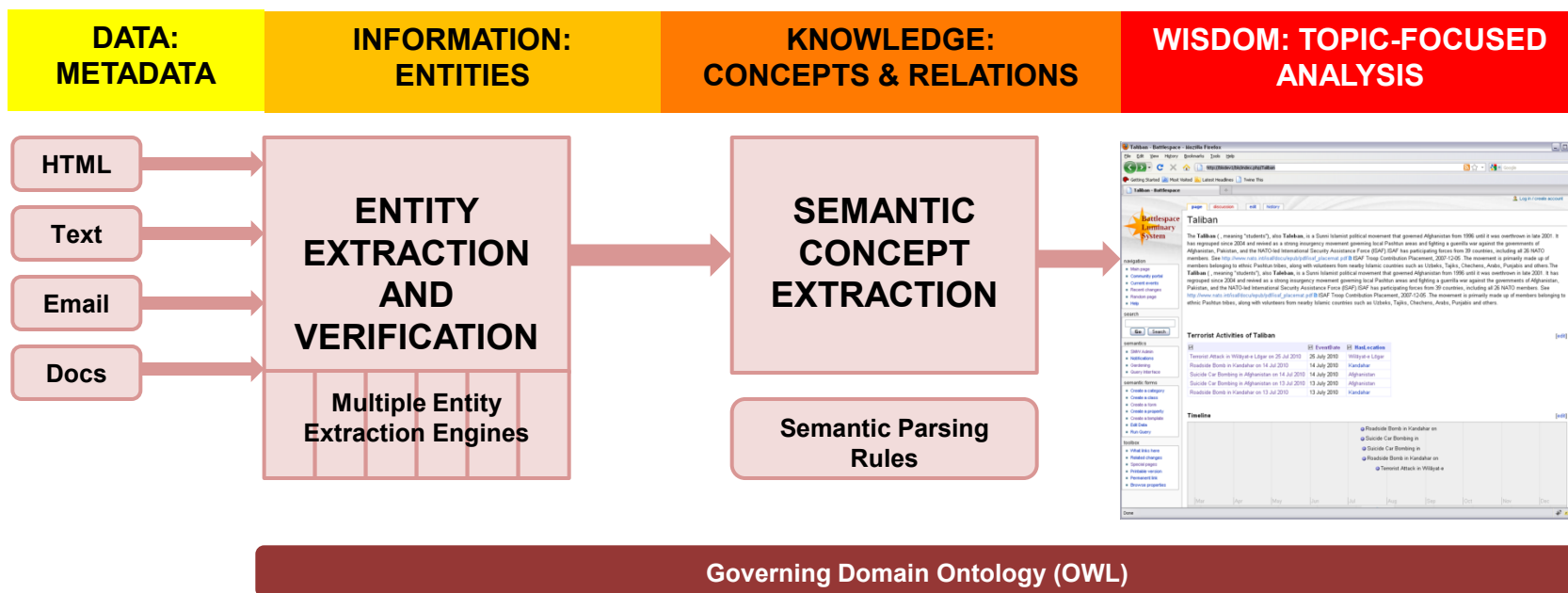
August 28, 2012 - August 31, 2012
NOAA Auditorium and Science Center
Silver Spring, Maryland



Luminary is...



- Entity & Concept Extraction from unstructured text with Verification
- Semantic Wiki as a content repository for topical information
- Governing Domain Ontology defining topics of interest and their relationships
- A Novel Paradigm for coordinating all of the above





Overview



Air Transportation Information
Exchange Conference - (featuring
AIXM, WXXM and FIXM)

- Domain Ontology represents domain of information: “what we want to know”
- Wiki Pages represent current knowledge - “what we know”
 - Ideal repository for collecting and correlating content around topics
 - Familiar interface for most users - no barrier to use
- Semantic Wiki incorporates queries, visualizations and forms to support analysis
 - Enables coordination between automated processing and Wiki content
- Ontology-based Lexical Rules for Concept Identification, incorporating:
 - Synonyms
 - Entity-Variable Substitution
 - Stemming
 - Ontology-based Validation
 - Parts-of-Speech
 - Inferencing

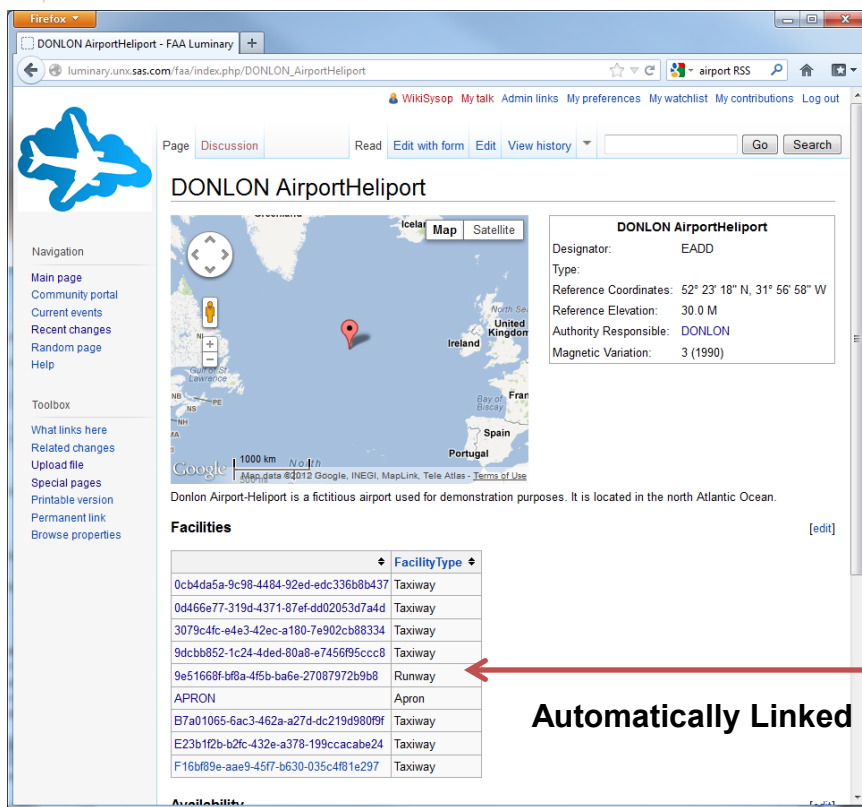


Example Scenarios



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- **Correlating a new NOTAM (Notice to Airmen) message with known resources**
 - Parsing NOTAM contents to identify additional information
 - Automatically adding notifications to pages for affected Runway, Airspace, etc.
- **Detecting information from Twitter, other real-time feeds:**
 - Tweet233636493187489792 TS=Thu Aug 09 14:50:55 EDT 2012
 - Key author value=Carolyn Mann
 - Key location value=Austin
 - Key screenName value=duztaua
 - Delays in ATL (Hartsfield-Jackson Atlanta International Airport) for 61 to 75 minutes, 09 Aug 2012
 - <http://t.co/dFiOTdqM>
- **Detect Relevant news articles, RSS information**
 - Parse for relevant information, identify new or changed information
 - Example: <http://theairdb.com>, airport RSS feeds
- **Collaborative Information Source**
 - Correlates Equipment with Procedures, Airports with their Facilities, etc.

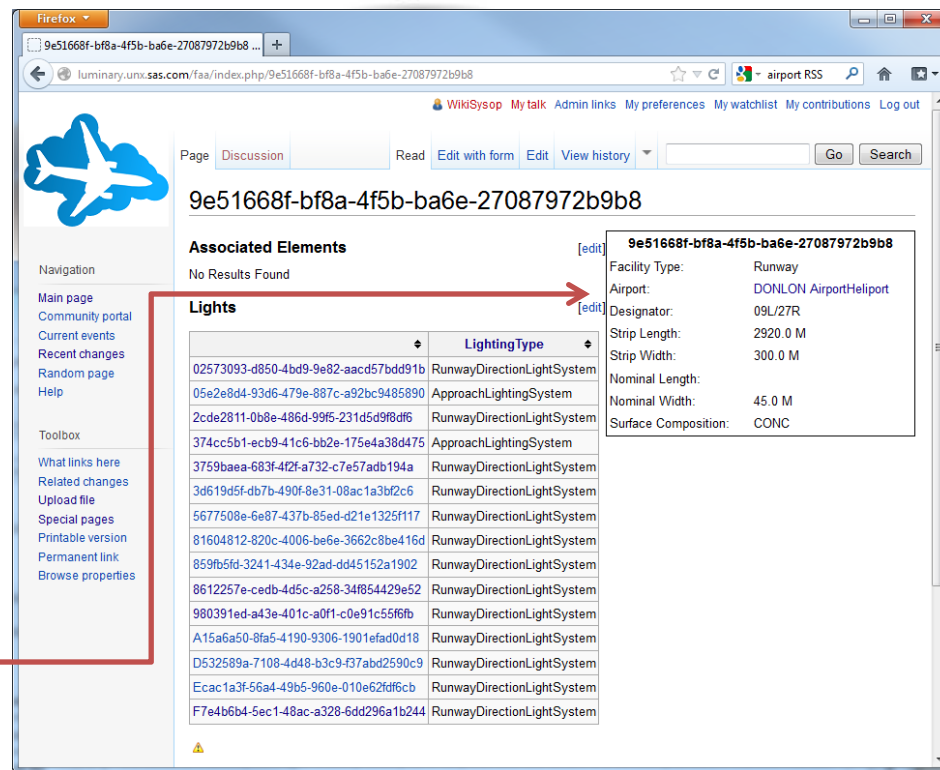
DONLON AirportHeliport

Designator: EADD
 Type:
 Reference Coordinates: 52° 23' 18" N, 31° 56' 58" W
 Reference Elevation: 30 0 M
 Authority Responsible: DONLON
 Magnetic Variation: 3 (1990)

Donlon Airport-Heliport is a fictitious airport used for demonstration purposes. It is located in the north Atlantic Ocean.

Facility ID	Facility Type
0cb4da5a-9c98-4484-92ed-edc336b8b437	Taxiway
0d466e77-319d-4371-87ef-dd02053d7a4d	Taxiway
3079c4fc-e4e3-42ec-a180-7e902cb88334	Taxiway
9dcb852-1c24-4ded-80a8-e7456f95ccc8	Taxiway
9e51668f-bf8a-4f5b-ba6e-27087972b9b8	Runway
APRON	Apron
B7a01065-6ac3-462a-a27d-dc219d9809f	Taxiway
E23b1f2b-b2fc-432e-a378-199ccacabe24	Taxiway
F16bf09e-aae9-45f7-b630-035c4f81e297	Taxiway

Automatically Linked



9e51668f-bf8a-4f5b-ba6e-27087972b9b8

Associated Elements

No Results Found

Lights

Light ID	Lighting Type
02573093-d850-4bd9-9e82-aacd57bdd91b	RunwayDirectionLightSystem
05e2e8d4-93d6-479e-887c-a92bc9485890	ApproachLightingSystem
2cde2811-0b8e-486d-99f5-231d5d98df6	RunwayDirectionLightSystem
374cc5b1-ecb9-41c6-bb2e-175e4a38d475	ApproachLightingSystem
3759baea-683f-4f2f-a732-c7e57adb194a	RunwayDirectionLightSystem
3d619d5f-db7b-490f-8e31-08ac1a3bf2c6	RunwayDirectionLightSystem
5677508e-6e87-437b-85ed-d21e1325f117	RunwayDirectionLightSystem
81604812-820c-4006-be6e-3662c8be416d	RunwayDirectionLightSystem
859bf5fd-3241-434e-92ad-dd45152a1902	RunwayDirectionLightSystem
8612257e-cedb-4d5c-a258-34f854429e52	RunwayDirectionLightSystem
980391ed-a43e-401c-a0f1-c0e91c556fb	RunwayDirectionLightSystem
A15a6a50-8fa5-4190-9306-1901efad0d18	RunwayDirectionLightSystem
D532589a-7108-4d48-b3c9-f37abd2590c9	RunwayDirectionLightSystem
Ecac1a3f-56a4-49b5-960e-010e62fd6cb	RunwayDirectionLightSystem
F7e4b6b4-5ec1-48ac-a328-6dd296a1b244	RunwayDirectionLightSystem

- Wiki Page for Donlon AirportHeliport
 - Shows location on map (Airport diagram in development)
 - Lists available facilities, services

- Wiki Page for Runway at Airport
 - Lists lighting systems
 - Availability, Surface Conditions (in development)



GE Engine Failure A Contained Incident – NTSB

<http://news.airwise.com/story/view/1344531373.html>

August 9, 2012

The [redacted] said on [redacted] that **the failure of a [redacted] jet engine** on a [redacted] 787 Dreamline [redacted] was a contained incident of the sort that does not normally pose an immediate safety risk.

The [redacted] said that a **shaft in the GENx engine fractured**, leading to the incident in [redacted] in which **debris fell from the engine and sparked a grass fire near the runway**. The jet in question was being tested before Boeing shipped it to a customer. "A contained engine failure is a specific engine design feature in which components might separate inside the engine but either remain within the engine's cases or exit the engine through the tail pipe," the NTSB said in a statement. "This design feature generally does not pose immediate safety risks."

Extracted Entities:

- US National Transportation Safety Board (Organization) = NTSB
- General Electric (Organization)
- Boeing (Organization)
- Wednesday (Date_Time, normalized to Aug 8, 2012)
- Charleston SC (Location)

Extracted Concepts:

- Jet Engine Failure
 - Details: Genx Engine Shaft Fractured, Debris fell from engine
 - Date: July 2012
 - Location: Charleston SC
- Grass Fire near Runway (related to Jet Engine Failure)

Questions



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Contact Information



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