

Airports and BIM: A State of the Industry Discussion

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@realBIMinator

Class summary

A small group of airports have seized positions of leadership in the aviation industry as BIM, GIS and asset management. As part of that position of leadership, they've also taken on the roles of mentors and teachers for other airports, sharing their victories, their failings, and their lessons learned. We will discuss what these airports are doing to lead the way and what other airports are doing as they surge to catch up.

Key learning objectives

At the end of this class, you will be able to:

- Learn which airports are adopting BIM and how they are implementing it
- Discover how BIM adoption has benefitted those airports and what other airports have learned from them
- Learn what role the FAA and other agencies have taken in getting involved with BIM
- Discover where BIM is going next in the aviation industry

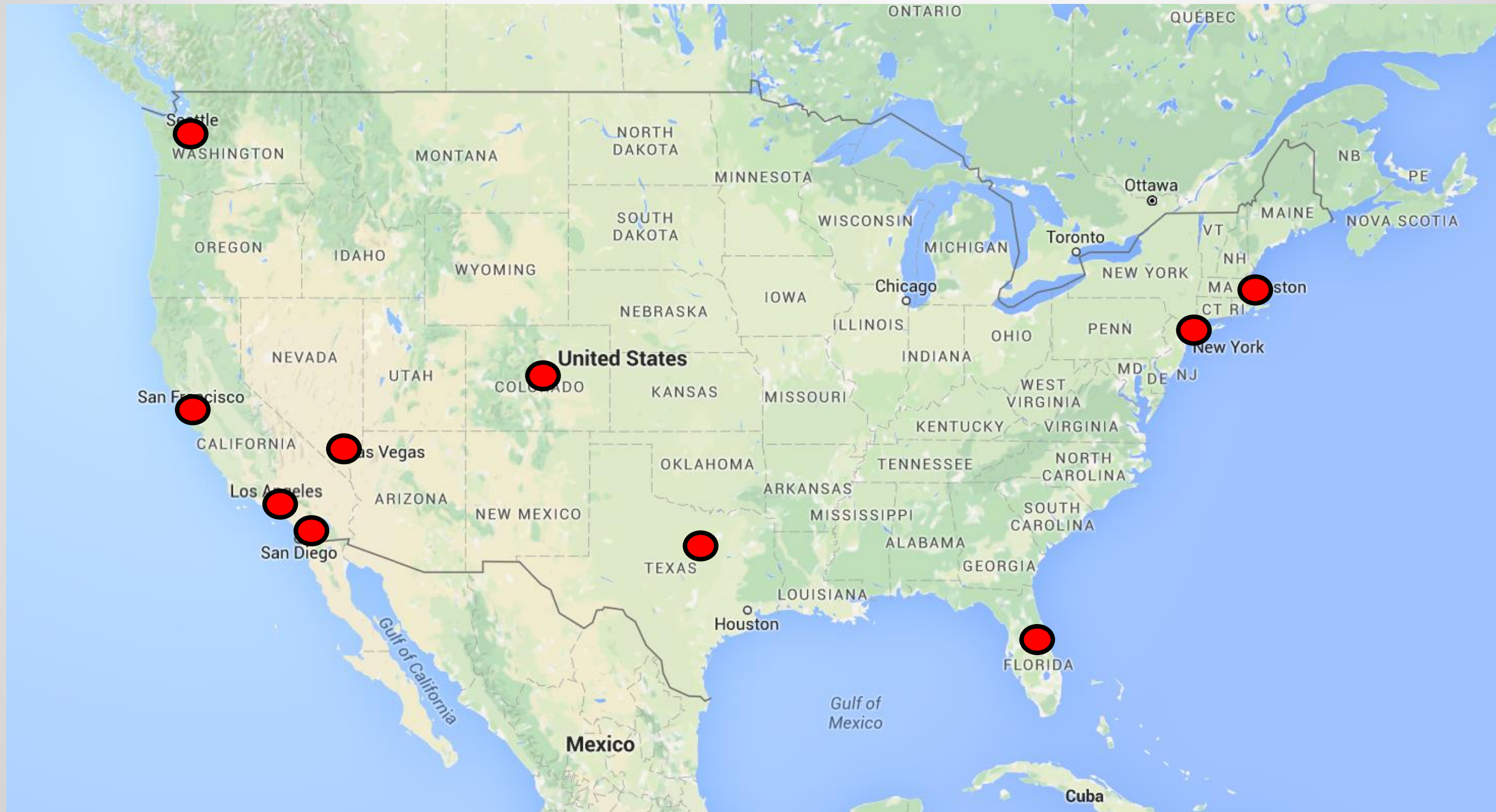
Introductions

- Brendan Dillon
BIM Manager
Denver International Airport
- Mark Hughes
BIM Manager
AECOM - Denver

You the audience...

- Owners/Operators
 - Architects/Engineers
 - Specialty consultants (e.g. BIM Consultants)
 - General Contractors
 - Trade Contractors
 - Software/Hardware
 - Sith
- (14 days 3 hours)

Who is doing BIM? Who is Engaged in BIM?



International



Image by Luis Vidal + Architects



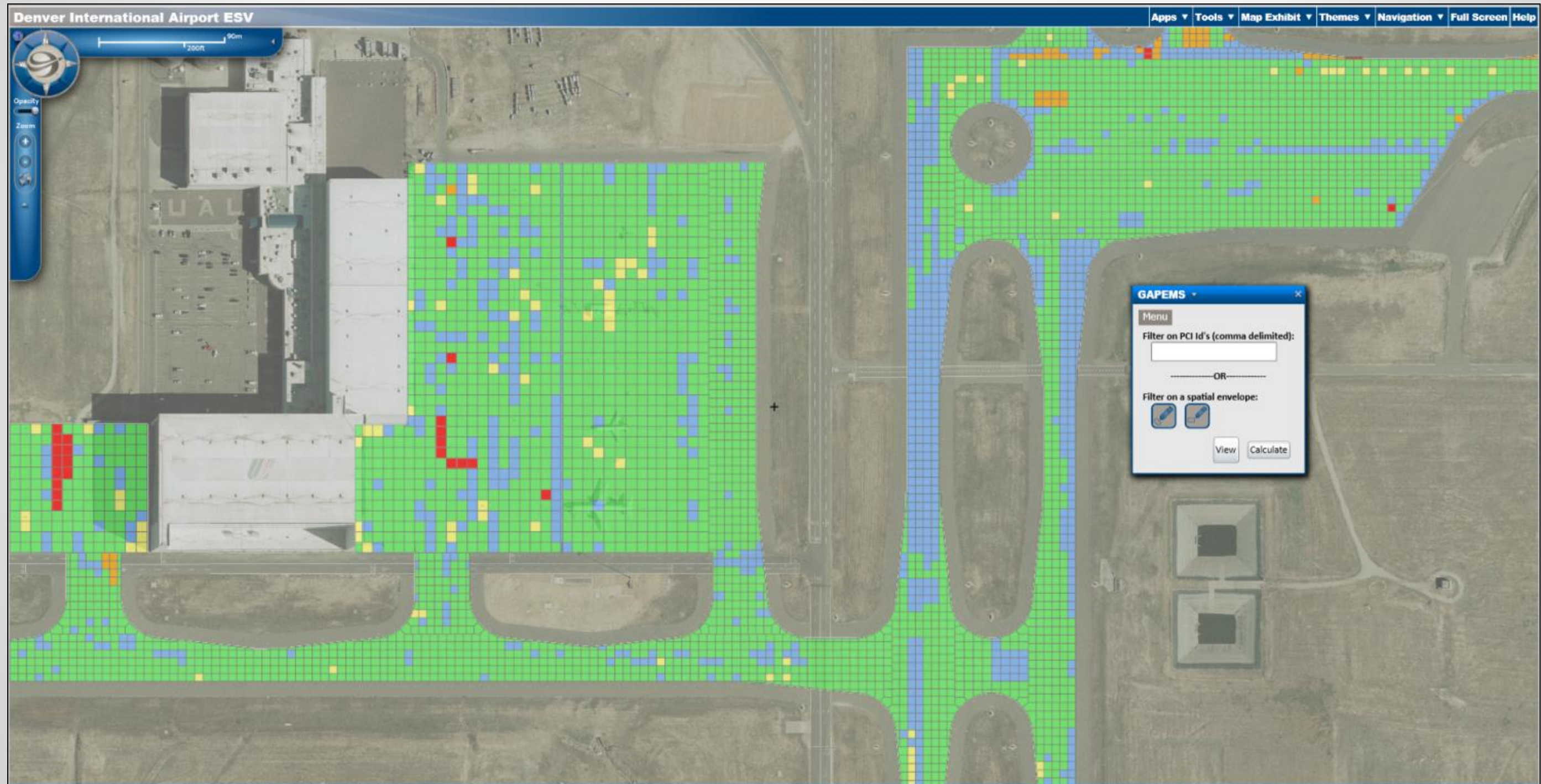
Dubai Airports



BIM, GIS and Asset Management

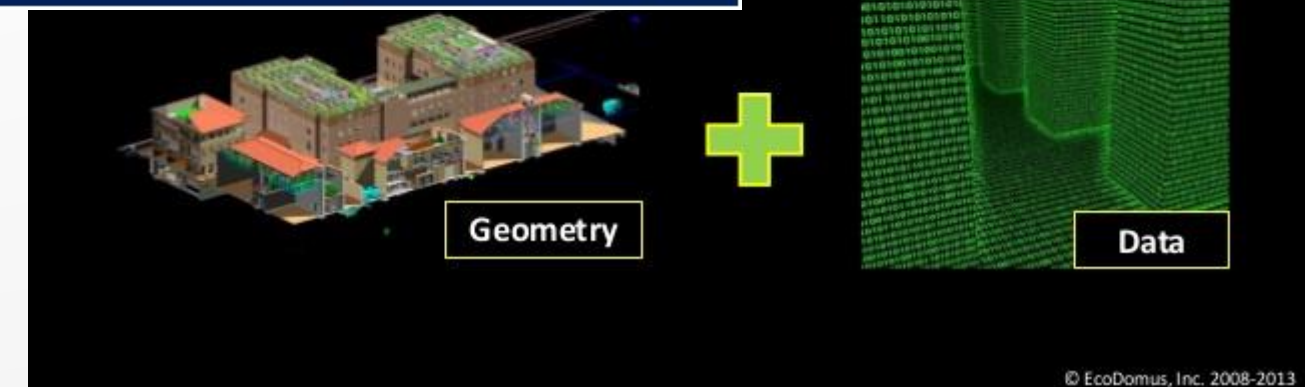
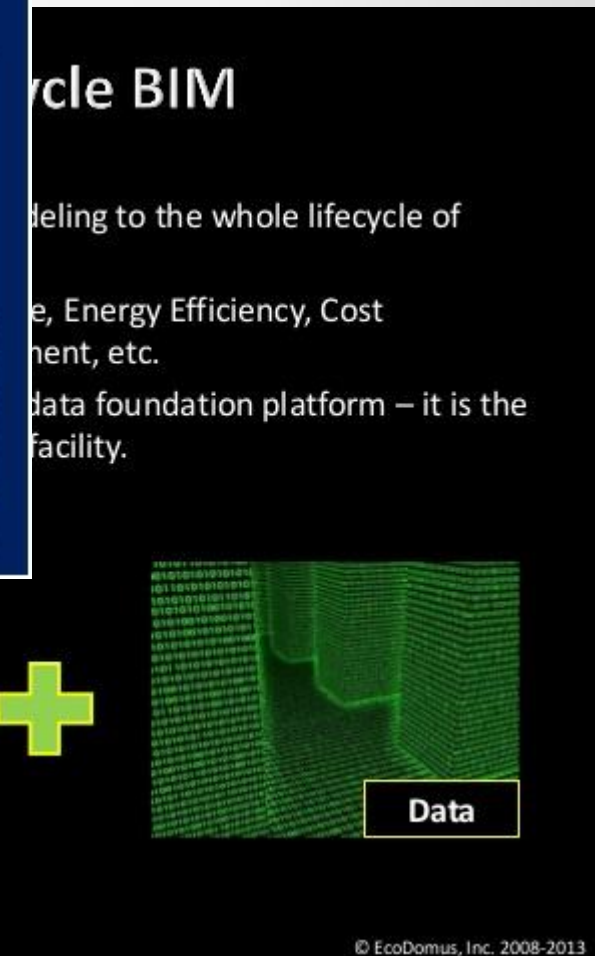
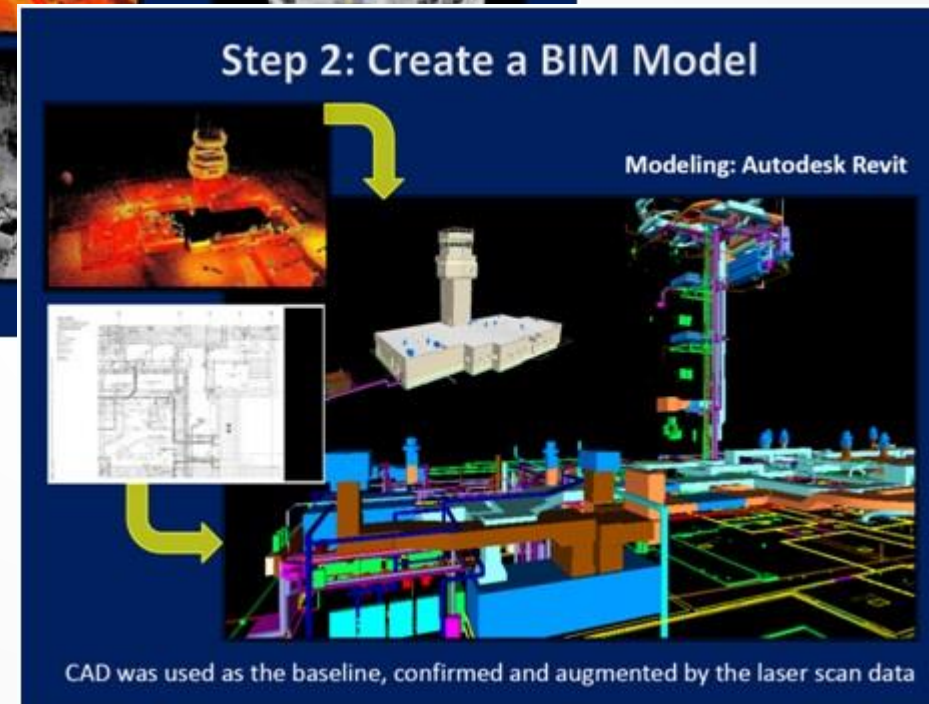
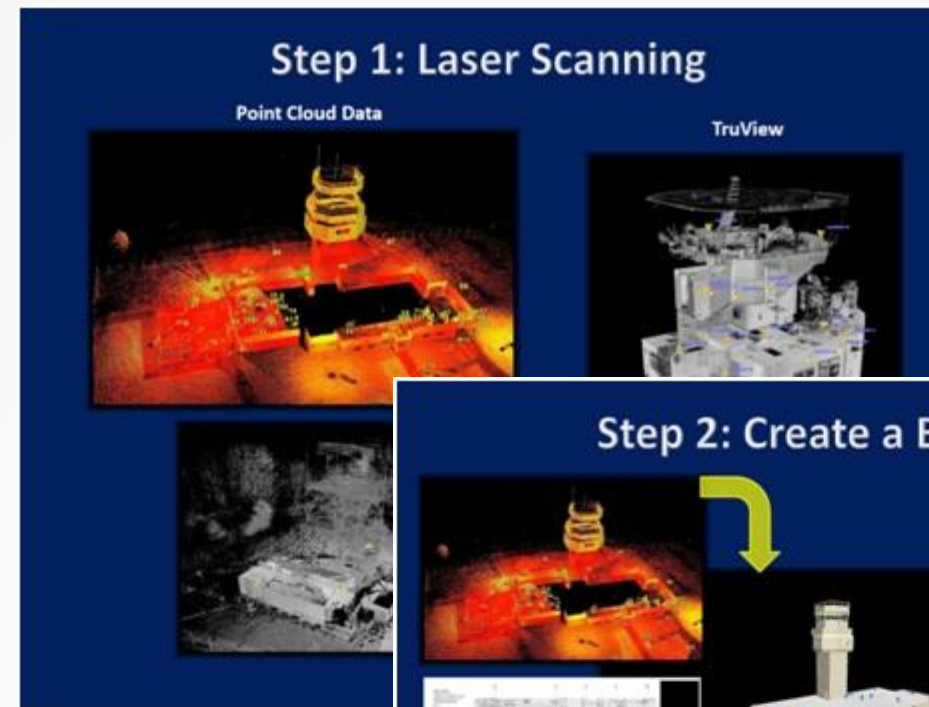


What are they doing with BIM?



Lifecycle BIM for the FAA

- Pilot project
- Projected savings of \$65m over 10 years for Eastern region



FAA BIM Requirement

- Unfunded Mandate
- First released in 2012

A/E Scope of Work
TUS ATCT

Attachment 1: Minimum BIM Requirements

Minimum Building Information Modeling (BIM) Requirements

Introduction:

The following Building Information Modeling (BIM) requirements have been developed to define the BIM process within the FAA and establish requirements for the utilization of BIM in the design and construction of its new facilities. These requirements are based on the United States Army Corp of Engineers (USACE) BIM requirements.

Facility data requirements are based on the Department of Defense – Military Health System (DoD-MHS) requirements. Samples of typical facility data exports under the heading, “Medical Clinic Example,” can be downloaded at <http://www.buildingsmartalliance.org/index.php/projects/activeprojects/140#clinic>.

Scope:

The Architectural/Engineering (A/E) firm will develop the Model with Facility Data for the purposes of coordination between various disciplines (also known as Clash Detection) and developing 2-dimensional extractions generated from the Model to produce accurate construction contract drawings required in the A/E Scope of Work (SOW) and A/E Project Manual. BIM associated submittals shall conform to the standards described in this document. Exceptions must be approved by FAA.

Section 1 - General:

1.1 Definitions. See Section 7 for definitions of terms used in this document.

1.2 Design Deliverables. Develop all designs using BIM. Design submittal drawings shall be D-size, suitable for half-size (11"x17") scaled reproduction.

ACRP Panel

- **ACRP Synthesis 11-03/Topic S09-07
Building Information Modeling for
Airports**

BIM Early Adopters in Aviation

- Specific to airport owners
- Open forum for discussion
- Hosted at DEN in 2015

Aviation BIM Library

00_Annotation

00_Detail Components

01_Nested Components

02_Nested Symbols

223000-Grease Interceptor.rfa

223000-Manual Oil Intercep.rfa

224000-Wall Hydrant.rfa

230000-DISC-Switch.rfa

230000-Pipe Break.rfa

230000-Pipe Cap.rfa

230516-Pipe Guide.rfa

230523-GDVALV-Angle Horizontal-2-8 Inch.rfa

230523-GDVALV-Angle Vertical-2-8 Inch.rfa

230523-GDVALV-Ball.rfa

230523-GDVALV-Butterfly.rfa

230523-GDVALV-Check Threaded-0.375-4 Inch.rfa

230523-GDVALV-Check Wafer-2-24 Inch.rfa

230523-GDVALV-Control Electric-4-16 Inch.rfa

230523-GDVALV-Diaphragm Straight-0.5-2 Inch.rfa

230523-GDVALV-Diaphragm Straight-2.5-14 Inch.rfa

230523-GDVALV-Diaphragm Weir-0.5-12 Inch.rfa

230523-GDVALV-Diaphragm Y Flanged-1.5-20 Inch.rfa

230523-GDVALV-Diaphragm Y Threaded-1.5-3 Inch.rfa

230523-GDVALV-Gate-2-12 Inch.rfa

230523-GDVALV-Globe Flanged-2-18 Inch.rfa

230523-GDVALV-Globe Threaded-0.375-2 Inch.rfa

230523-GDVALV-Hose End Drain.rfa

230523-GDVALV-Lockshield Angle Vertical-0.375-4 Inch.rfa

230523-GDVALV-Lockshield Straight-0.375-4 Inch.rfa

230523-GDVALV-Needle-0.5-2 Inch.rfa

230523-GDVALV-Plug Gear Operated-4-16 Inch.rfa

230523-GDVALV-Plug Lever Handle-0.5-4 Inch.rfa

230523-GDVALV-Pressure Reducing Flanged-2-6 Inch.rfa

230523-GDVALV-Pressure Reducing Threaded-0.5-2 Inch.rfa

230523-GDVALV-Quick Closing Fusible Link.rfa

230523-GDVALV-Quick Opening.rfa

230523-GDVALV-Relief or Safety Horizontal-1-10 Inch.rfa

230523-GDVALV-Solenoid-0.5-3 Inch.rfa

230523-GDVALV-Square Head Cock-0.5-2 Inch.rfa

230523-GDVALV-Temperature Control Three Way-2.5-8 Inch.rfa

230523-GDVALV-Temperature Control Two Way-0.375-1.5 Inch.rfa

230523-GDVALV-Temperature Control Two Way-2-2.5 Inch.rfa

230523-GDVALV-Three Way Gear Operated-4-16 Inch.rfa

230523-GDVALV-Three Way Horizontal Gear Operated-4-16 Inch.rfa

230523-GDVALV-Three Way Horizontal Lever-0.5-4 Inch.rfa

230523-GDVALV-Three Way Horizontal-0.5-2 Inch.rfa

230523-GDVALV-Three Way Lever-0.5-4 Inch.rfa

230523-GDVALV-Three Way Vertical Gear Operated-4-16 Inch.rfa

230523-GDVALV-Three Way Vertical Lever-0.5-4 Inch.rfa

230523-GDVALV-Three Way Vertical-0.5-2 Inch.rfa

232114-EXPTNK-Combination.rfa

232114-EXPTNK-Freestanding-Horizontal.rfa

232114-EXPTNK-Freestanding-Vertical.rfa

232114-EXPTNK-Inline.rfa

232123-HYPUMP-Base Mounted.rfa

232123-HYPUMP-Centrifugal Horizontal.rfa

232123-HYPUMP-End Suction Close Coupled.rfa

232123-HYPUMP-Inline.rfa

232123-HYPUMP-Inline-Circulator.rfa

232123-HYPUMP-Inline-Vertical.rfa

232123-HYPUMP-Sewage Horizontal Discharge.rfa

232123-HYPUMP-Sewage Vertical Discharge.rfa

232123-HYPUMP-Split Case Horizontal.rfa

232214-MIXTNK-Cone Bottom Mixing Tank.rfa

232214-MIXTNK-Dish Bottom Mixing Tank.rfa

232223-SCPUMP-Pressure Operated Condensate Horizontal

232223-SCPUMP-Pressure Operated Condensate Vertical

233113-DUCT-Rectangular Duct Cross.rfa

233113-DUCT-Rectangular Duct Elbow - Mitered.rfa

233113-DUCT-Rectangular Duct Takeoff.rfa

233113-DUCT-Rectangular Duct Tee.rfa

233113-DUCT-Rectangular Duct Transition - Angle.rfa

What's Next in Aviation for BIM?

- Integration of BIM/GIS/CMMS
 - Broader adoption
 - International adoption
 - Medium and Small Airports
-
- Market Outlook

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