Bridging the Data Gap Between Build and Operate
Integrating BIM and Maximo at KCI
Takeaways

- Explain the Data Gap in Plan/Build/Operate Life Cycle
- Understand How KCI is Attacking the Problem (BIM/Maximo)
- Understand The Opportunities That Still Exist
- Answer If The Technology is Delivering on the Promise
EDI Overview

- Founded 1999
- HQ in St. Petersburg, FL
- IBM Gold Business Partner
- IWMS / EAM Software from IBM
- Consulting and Implementation Services
- Acquired by Arora Engineers in April 2019
The Kansas City Aviation Department owns and operates Kansas City International Airport and Charles B. Wheeler Downtown Airport.

The MCI complex spans more than 10,000 acres, and its three runways can accommodate up to 139 aircraft operations per hour.

Dedicated by Charles Lindbergh in 1927, Charles B. Wheeler Downtown Airport is the city’s first airport. Located on 695 acres, the airport now attracts a large number of corporate, charter and recreational flyers.
The Problem
Data Gap in Plan/Build/Operate Life Cycle

- Each Phase:
  - Different People
  - Different Objectives/Goals
  - Different Tools
  - Different Pressures/Motivations

- Owner Is On the Tail End Trying to Piece It All Together
New Single Terminal Building and Parking

- 39 gate Terminal replaces existing terminals A, B and C.
- The total estimated building area for the Terminal is 1,094,000 sf.
- A 6,300 space six-level garage
- The KCI Terminal will achieve LEED Gold certification.
New Project = OPPORTUNITY!

- **START FRESH:**
  - Facilities Design Management: BIM
  - Enterprise Asset Management: Maximo
  - Good Data: BIM to COBie to Maximo Hand-Off
Pilot With New Maintenance Building

Plan
• Designed in Revit

Build
• Data Enriched Through COBie Based Commissioning Tool

Operate
• Loaded Into Maximo and Linked to 3D Model
Maximo Asset Application: 3D Model View Tab w/ Asset Selected
Maximo Asset Application: Selecting Asset From Model and Creating WO
Project Deliverables

- BIM Design Standards For All Future Projects
- COBie Data Standards For All Future Projects
- BIM/COBie/Maximo Integration Standard Process
- Best of Breed Systems for Both BIM and EAM
BIM/EAM Integration “Opportunities”

- Not Actual Integration
- Level of Development (LOD)
- Chain of Custody
- It’s about the end user, stupid!
Not an Actual Integration

- More of a data-load process
- One-way flow of data
- Maximo is a great EAM and information collector, but not a great 3D viewer
- Revit is a great design tool, but not a great execution or field data collection tool
Level of Development (LOD)

LEVEL of DEVELOPMENT

LOD 100  LOD 200  LOD 300  LOD 400  LOD 500

Concept (Presentation)  Design Development  Documentation  Construction  Facilities Management

DESCRIPTION:
Office Chair
Arms, Wheels
WIDTH: 700
DEPTH: 450
HEIGHT: 1100
MANUFACTURER:
Herman Miller, Inc.
MODEL:
Mira
LOD: 100

(Only data in red is usable)

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KANSAS CITY INTERNATIONAL AIRPORT
An ARORA Company
Chain of Custody

Iterative
Chain of Custody
Chain of Custody

Typical
Chain of Custody

Success = Iterative and Incremental
The Common Question

Is the Technology Delivering on the Promise?
EAM of Future is Spatial-Based and Mobile!
Gap between Plan/Build and Operate can be Bridged by Integrating BIM and EAM

Plan
- Designed in BIM

Build
- Data Enriched Through BIM Based Commissioning Tool w/ EAM Attribution

Operate
- Boundary Between BIM/EAM Transparent, In Tech’s Hands, Continuously Updated (Digital Twin)
Technology is NOT the Hurdle; It’s People and Processes

Homer - There’s three ways to do things!

Homer - The right way;

Homer - The wrong way;

Homer - And the Max Power way!

Bart - Isn’t that the wrong way?

Homer - Yeah but, faster!
Technology is NOT the Hurdle; It’s People and Processes

The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency.

The second is that automation applied to an inefficient operation will magnify the inefficiency.

-Bill Gates