Laser focus on accuracy in BIM Execution Plans, the USIBD’s Level of Accuracy (LOA)

Presenters: Bryan Merritt & Joseph Romano

#BIMForumED
Laser Focus On Accuracy In BIM Execution Plans, The USIBD’s Level Of Accuracy (LOA)

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What Is The USIBD

• Non-Profit
• Leading Resource in the Building Doc. Industry
• Promoting, Guiding, Educating ALL Stakeholders
• Published First Building Documentation Specs.
• USIBD.org
What Is Your Standard For Accuracy?

- USIBD KPIs for Accuracy
- Other Known Standards

USIBD Level of Accuracy (LOA) Specification Guide

Guide for USIBD Document C220-: Level of Accuracy (LOA) Specification for Building Documentation
When is Close Enough, Close Enough?
Acceptable Forms of Measurement?
Why Do You Need The LOA?

Frog protection, right?

Yeah, fraud protection.

I think we're on the same page.

We're totally on the same page!
Why Do You Need The LOA?

• Expectation Management
Why Do You Need The LOA?

- Laser Scanning
- AND Other Measuring methods
Why Do You Need The LOA?

• Expectations
Why Do You Need The LOA?

• Today’s Expectations
Why Do You Need The LOA?

• Procurement
Why Do You Need The LOA?

• Procurement
• No Spec = SHORTCUTS

Winner
BEWARE of Quality, Service and CO’s!
Why Do You Need The LOA?

• Precision vs. Accuracy
Why Do You Need The LOA?

• Risk Management
• Increased Risk for All

“Risk is measurable uncertainty”

“Uncertainty is unmeasurable risk”
What Is The LOA?

Document C220™ 2014 ver. 1.0
Level of Accuracy (LOA) Specification

![Diagram of LOA specification]

### LOA Summary

<table>
<thead>
<tr>
<th>LOA</th>
<th>LOA10</th>
<th>LOA20</th>
<th>LOA30</th>
<th>LOA40</th>
<th>LOA50</th>
<th>Validation</th>
<th>Note</th>
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<tbody>
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### Level of Accuracy (LOA) Table

- LOA10: LOA10 (LOA 10%)
- LOA20: LOA20 (LOA 20%)
- LOA30: LOA30 (LOA 30%)
- LOA40: LOA40 (LOA 40%)
- LOA50: LOA50 (LOA 50%)

### Validation Notes

- LOA10: Limited surface
- LOA20: Limited surface
- LOA30: Limited surface
- LOA40: Limited surface
- LOA50: Limited surface

### Special Functions

- LOA10: Special functions
- LOA20: Special functions
- LOA30: Special functions
- LOA40: Special functions
- LOA50: Special functions

### Note

- LOA10: Note (Required)
- LOA20: Note (Required)
- LOA30: Note (Required)
- LOA40: Note (Required)
- LOA50: Note (Required)
What Is The LOA?

- Defined Levels of Accuracy, Upper and Lower ranges

<table>
<thead>
<tr>
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<th>Level Of Accuracy</th>
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<tr>
<td><strong>Upper Range (Imperial)</strong></td>
<td>- 2&quot; 5/8&quot; 1/4&quot; 1/16&quot;</td>
</tr>
<tr>
<td><strong>Lower Range (Imperial)</strong></td>
<td>2&quot; 5/8&quot; 1/4&quot; 1/16&quot; 0</td>
</tr>
<tr>
<td><strong>Upper Range (Metric)</strong></td>
<td>- 5cm 15mm 5mm 1mm</td>
</tr>
<tr>
<td><strong>Lower Range (Metric)</strong></td>
<td>5cm 15mm 5mm 1mm 0</td>
</tr>
</tbody>
</table>

LOA10 LOA20 LOA30 LOA40 LOA50
What Is The LOA?

• Measured vs. Represented

Measured vs. represented

Measured point

Object

LOA10  LOA20  LOA30  LOA40  LOA50
Take Aways

• Independent standard
• Easy to use flexible template
• Suggested accuracy levels as a guideline for inexperienced users or when under time constraints
• Distinction between data acquisition and “the model”