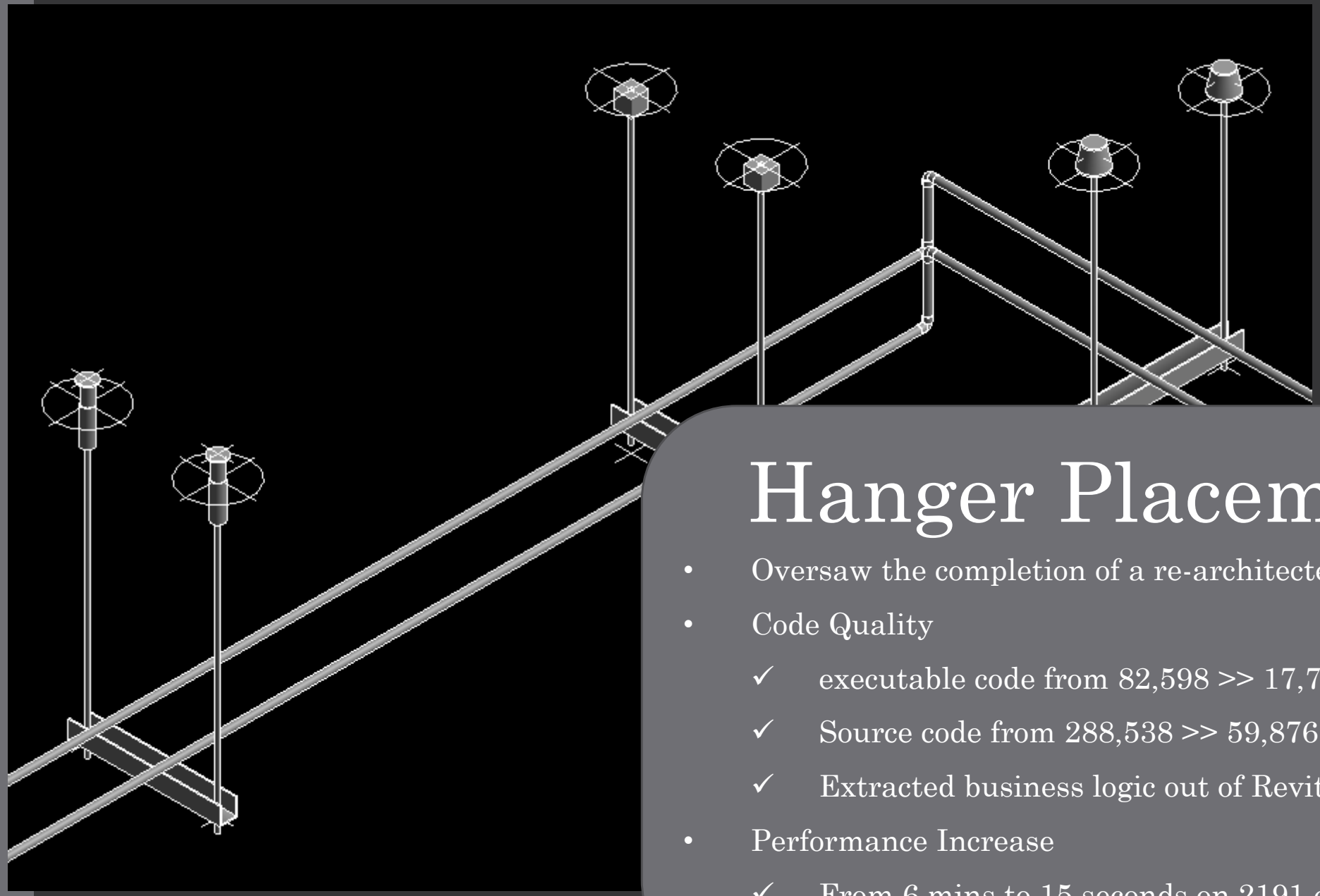
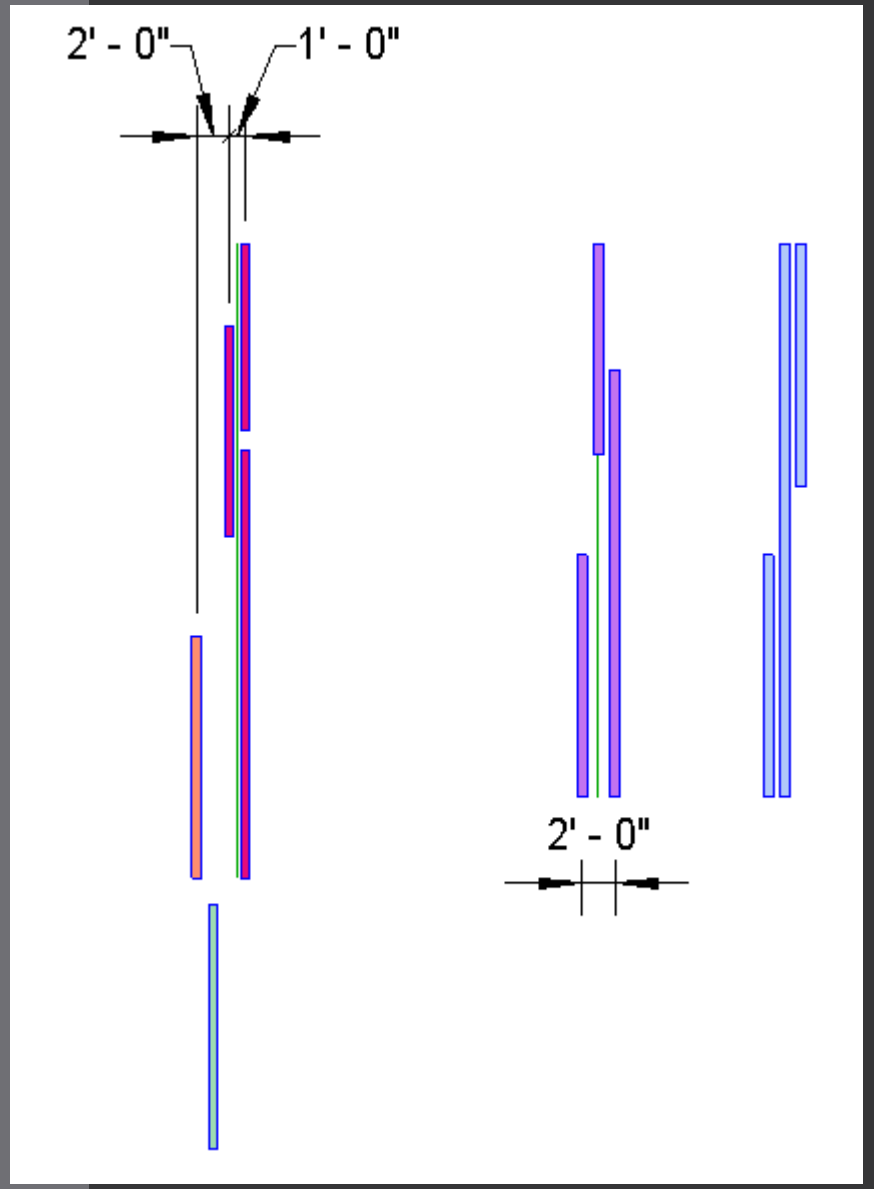
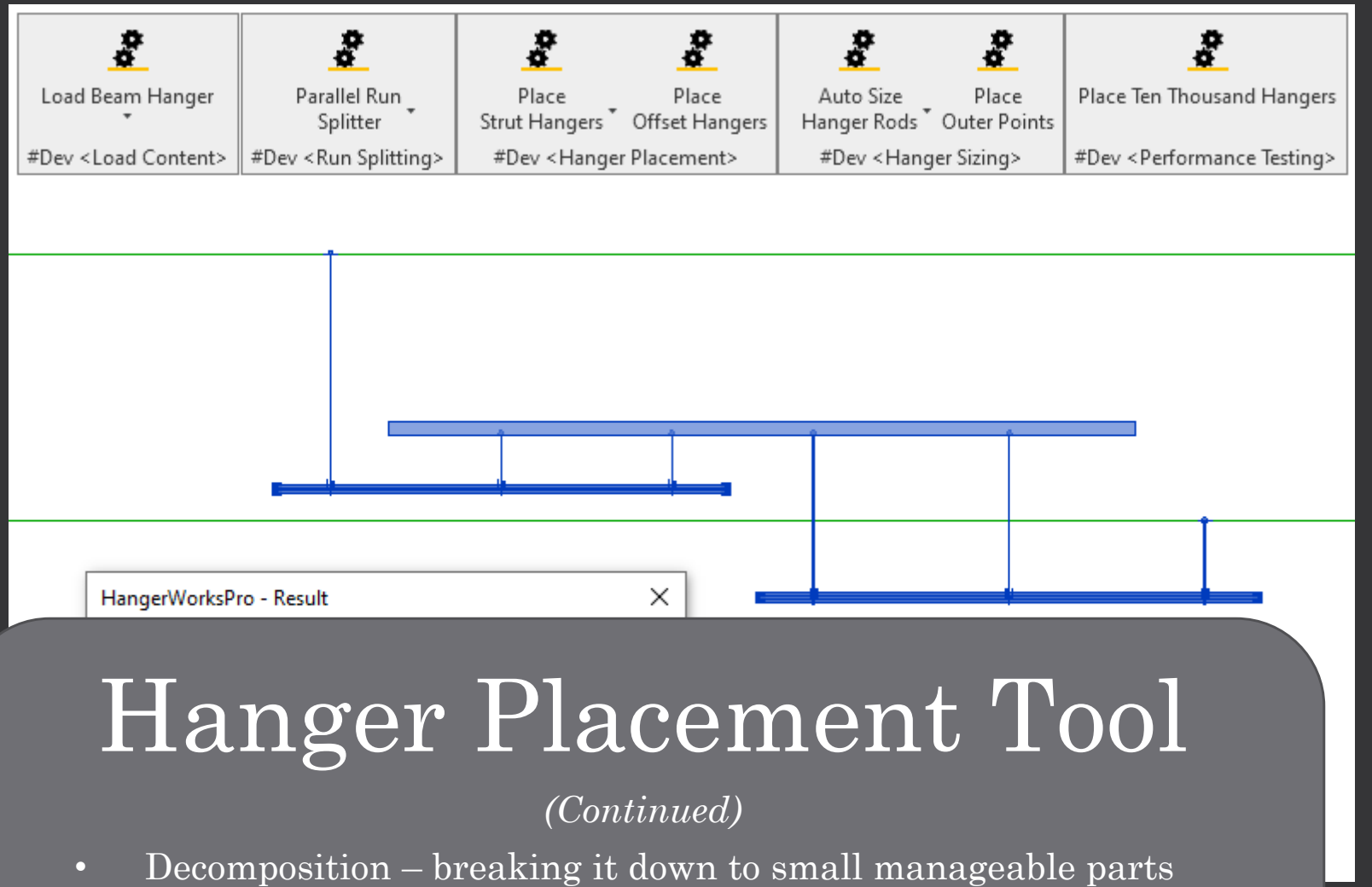
Revit API Accomplishments



Hanger Placement Tool

- Oversaw the completion of a re-architected hanger placement engine
- Code Quality
  - ✓ executable code from 82,598 >> 17,747.
  - ✓ Source code from 288,538 >> 59,876
  - ✓ Extracted business logic out of Revit to allow for unit tests
- Performance Increase
  - ✓ From 6 mins to 15 seconds on 2191 elements

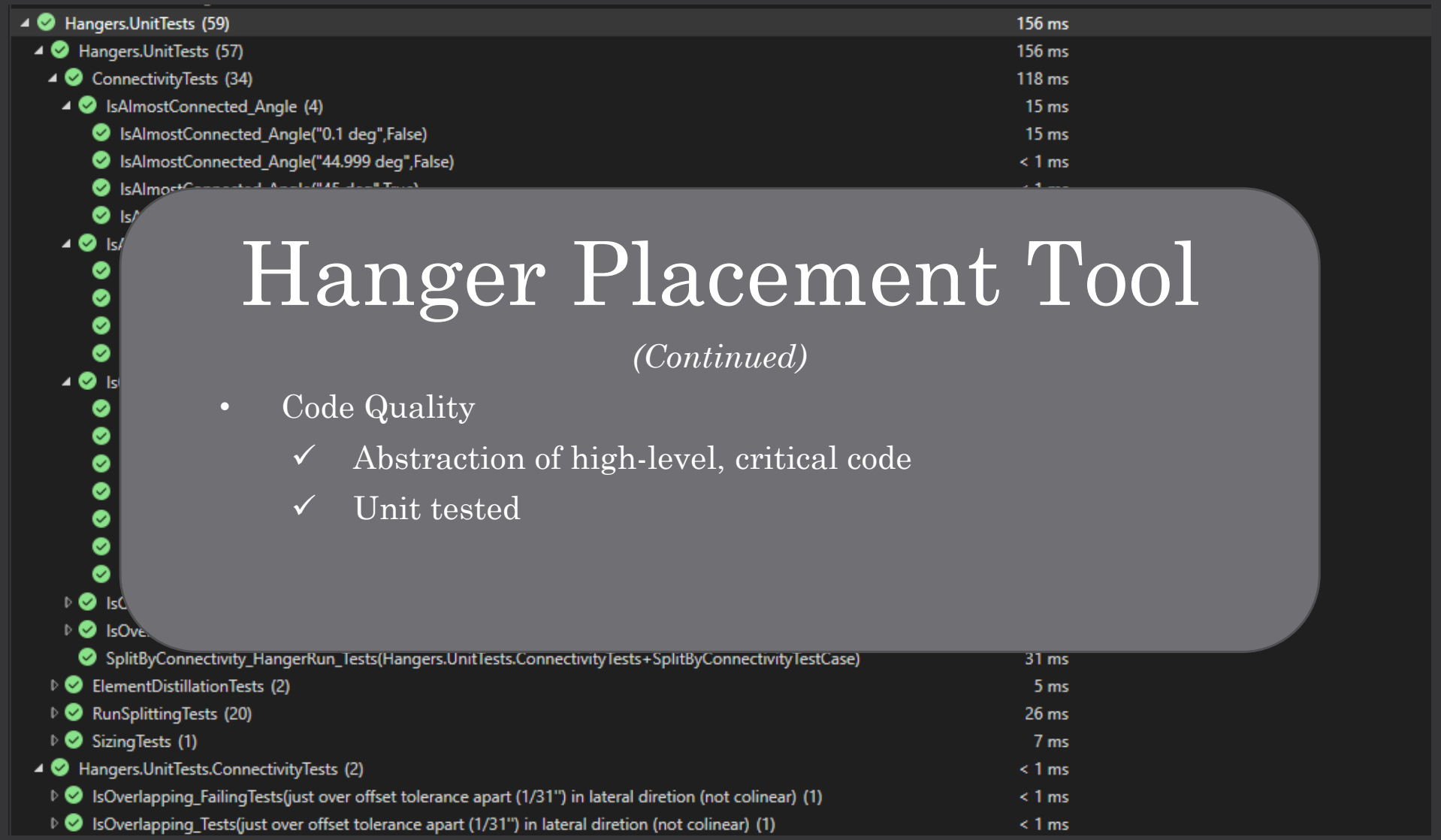




Hanger Placement Tool

(Continued)

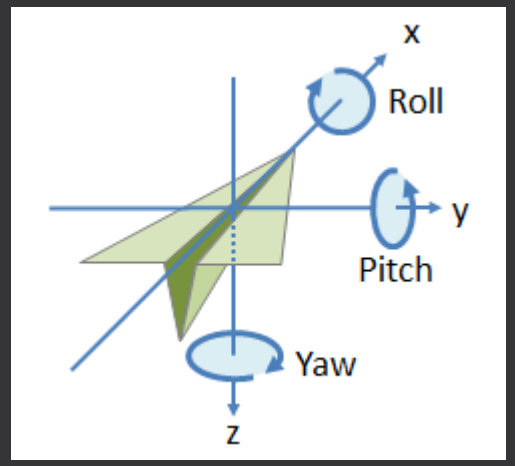
- Decomposition – breaking it down to small manageable parts
  - ✓ Manageable complexity
  - ✓ Faster to dev
  - ✓ Future debugging (allows us to pin-point areas of failure)

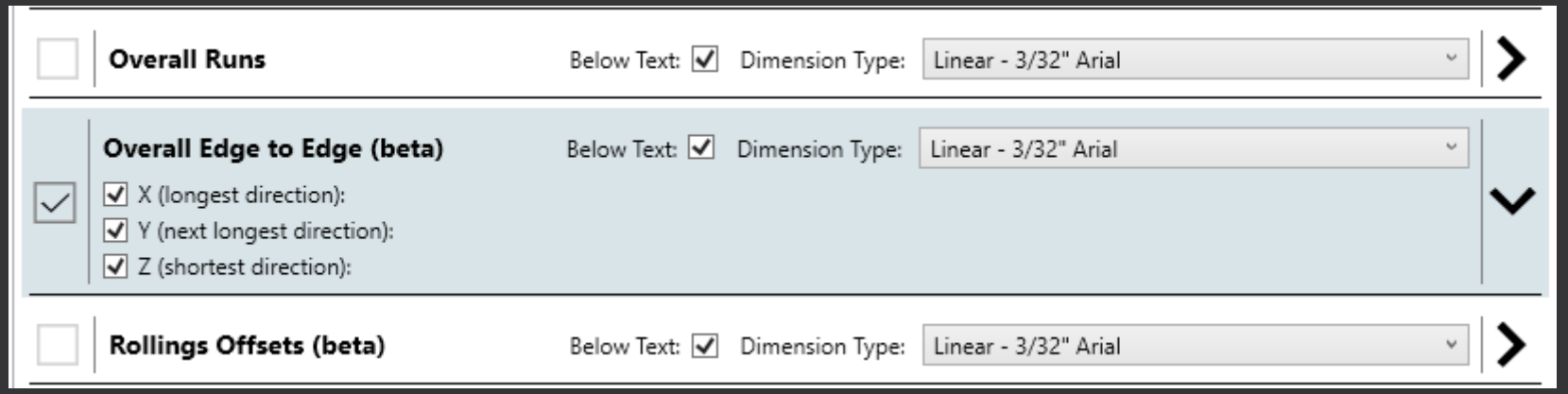


Hanger Placement Tool

(Continued)

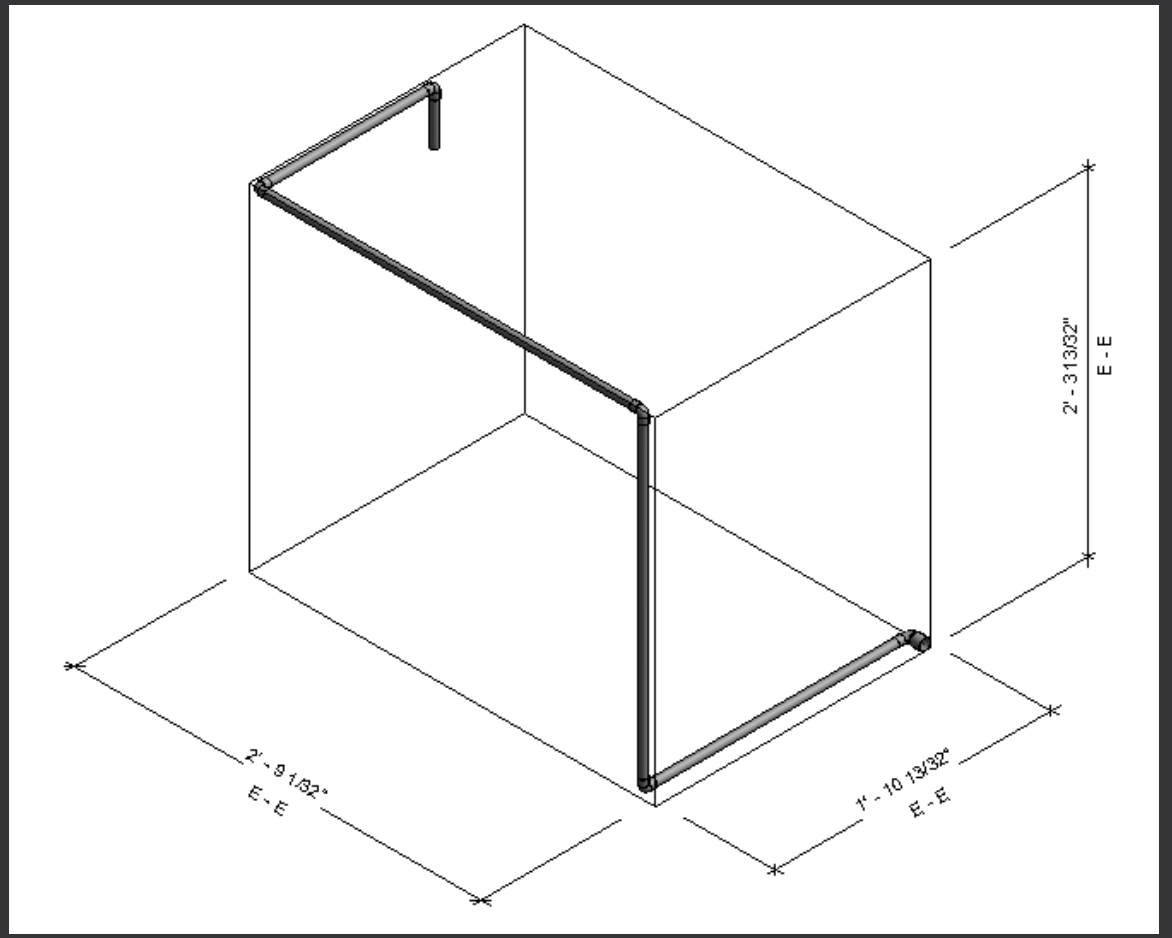
- Code Quality
  - ✓ Abstraction of high-level, critical code
  - ✓ Unit tested

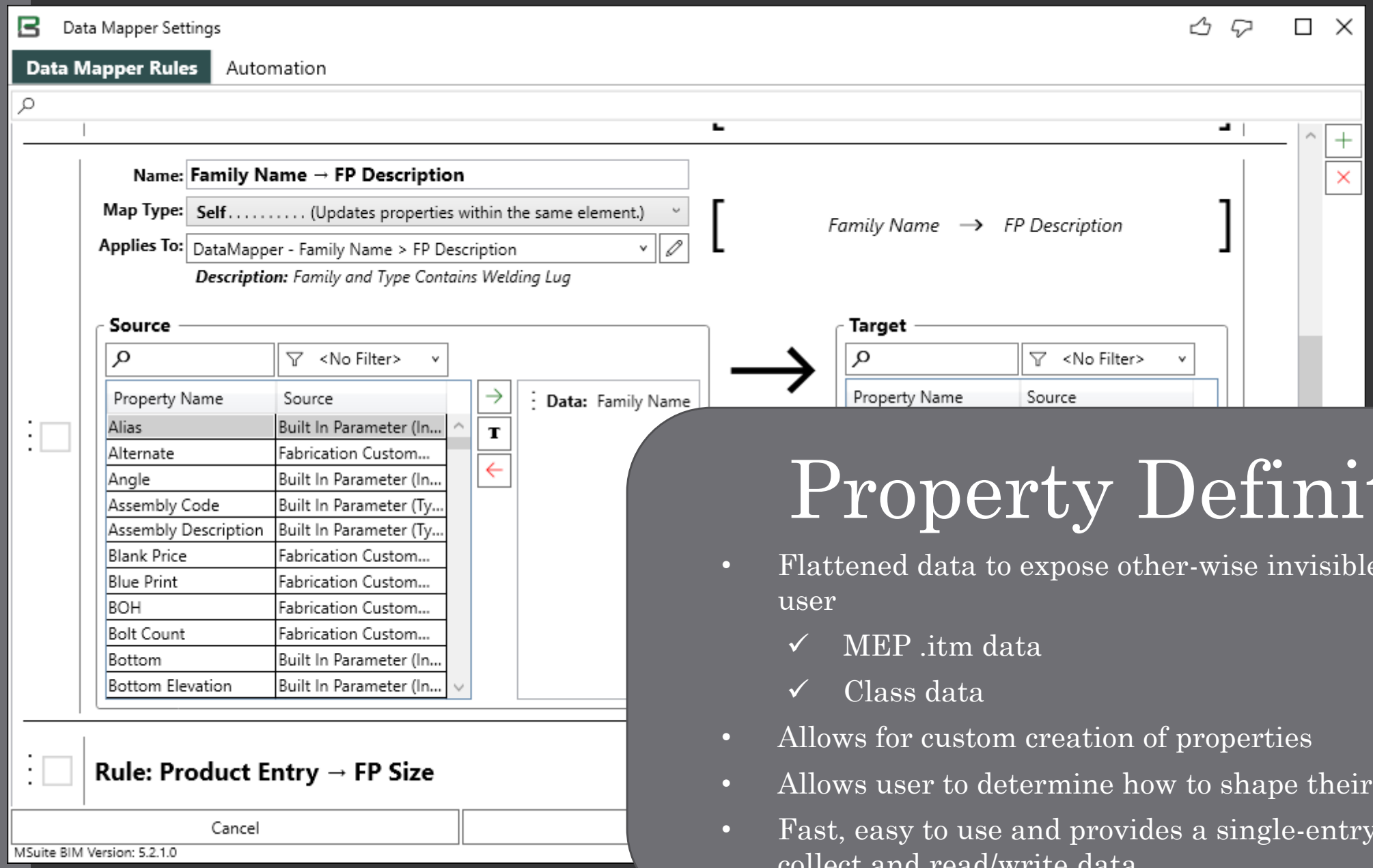




Overall Dimensions

- Use of Tait-Bryan Euler angles to get rotation matrix from one coordinate system to another
- Accurately determine the volume an assembly will require when shipping to field





Property Definition

- Flattened data to expose other-wise invisible properties to the user
  - ✓ MEP .itm data
  - ✓ Class data
- Allows for custom creation of properties
- Allows user to determine how to shape their data
- Fast, easy to use and provides a single-entry point for how we collect and read/write data