# TMT-APS Analysis

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# TMT-APS Analysis

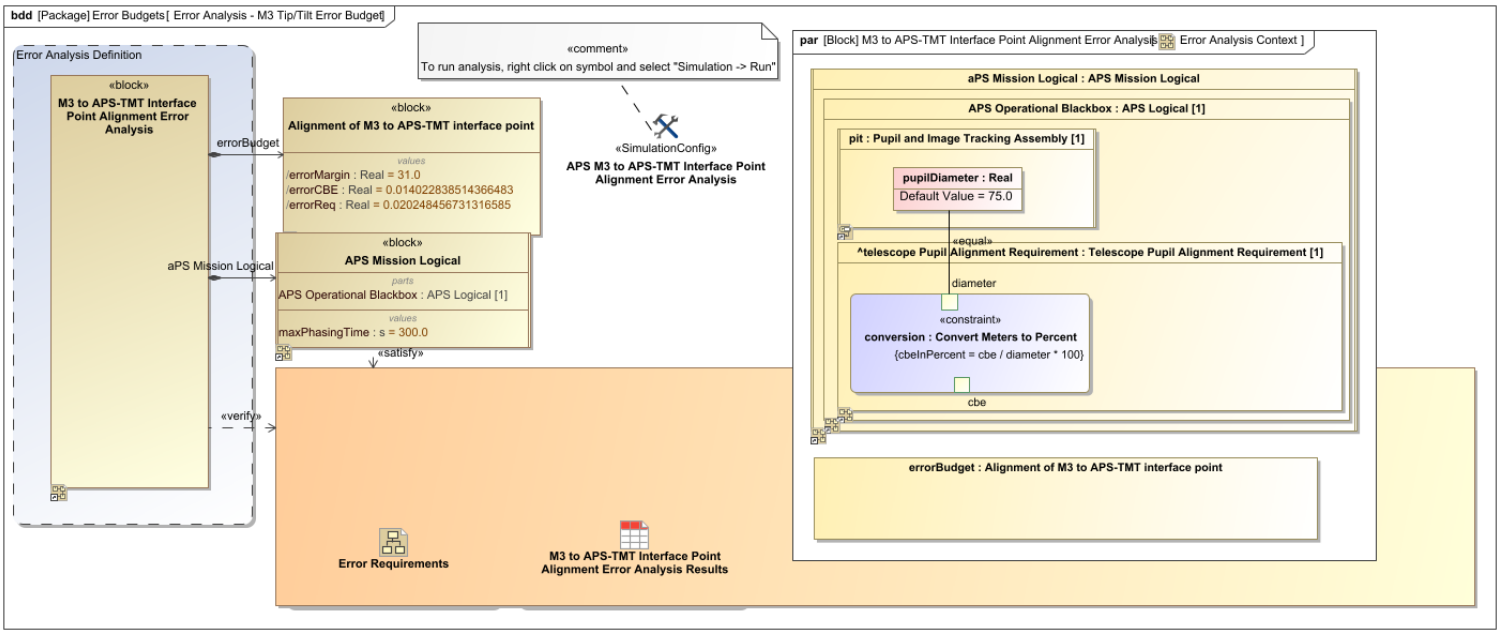
## 1 Introduction

## 2 M3 Tip/Tilt Error Budget

## 2.1 Introduction

This is the M3 Error budget chapter

### Error Analysis - M3 Tip/Tilt Error Budget

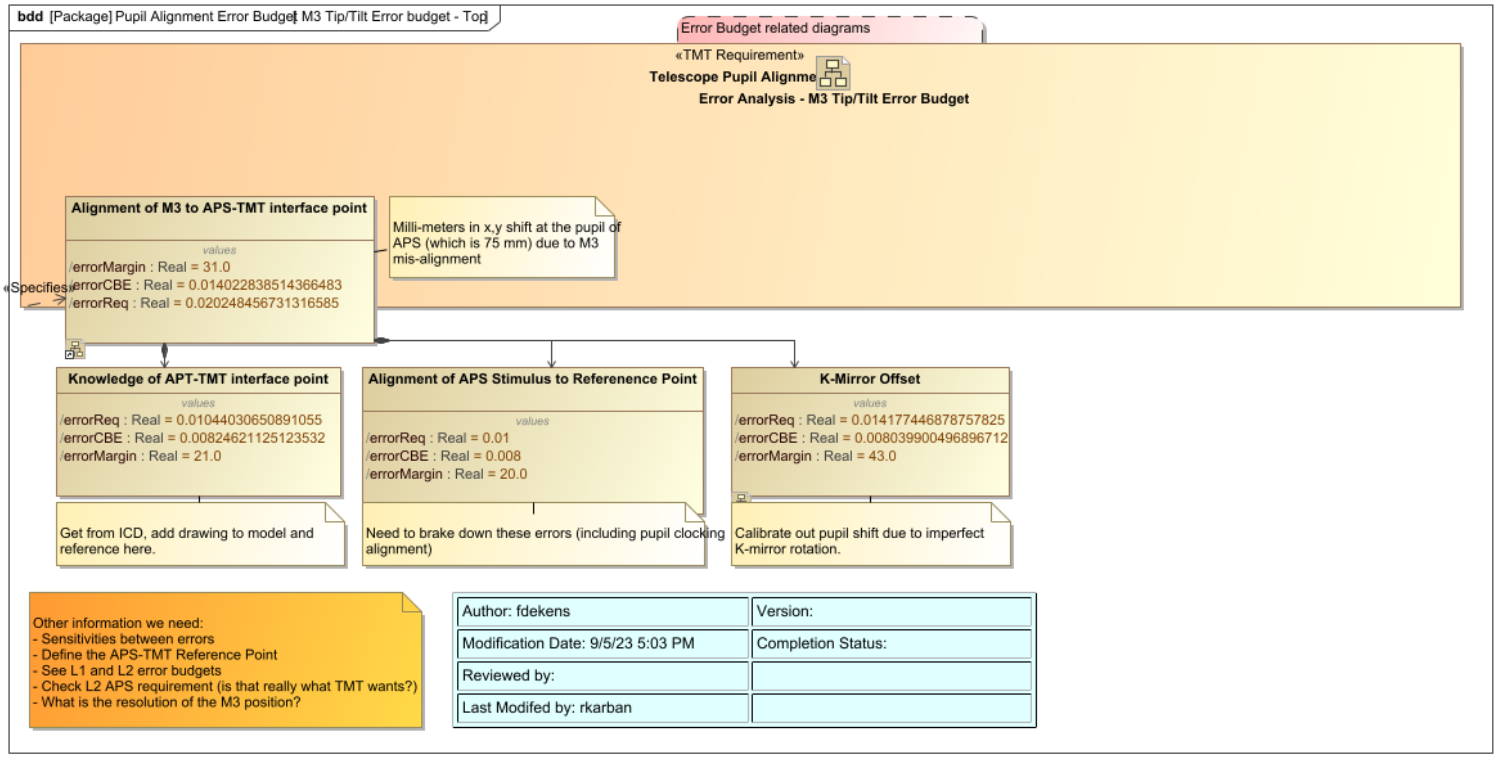



The M3 Tip/Tilt Error Budget diagram shows how the error budget ties together in the model. The error analysis block ties together the top of the error budget, the APS Logical model and the requirement. The <> block is used to start the analysis using the Cameo Simulation Toolkit. The analysis results are stored in a results table which show the history of the top result.

## 2.2 Error Budget Diagrams

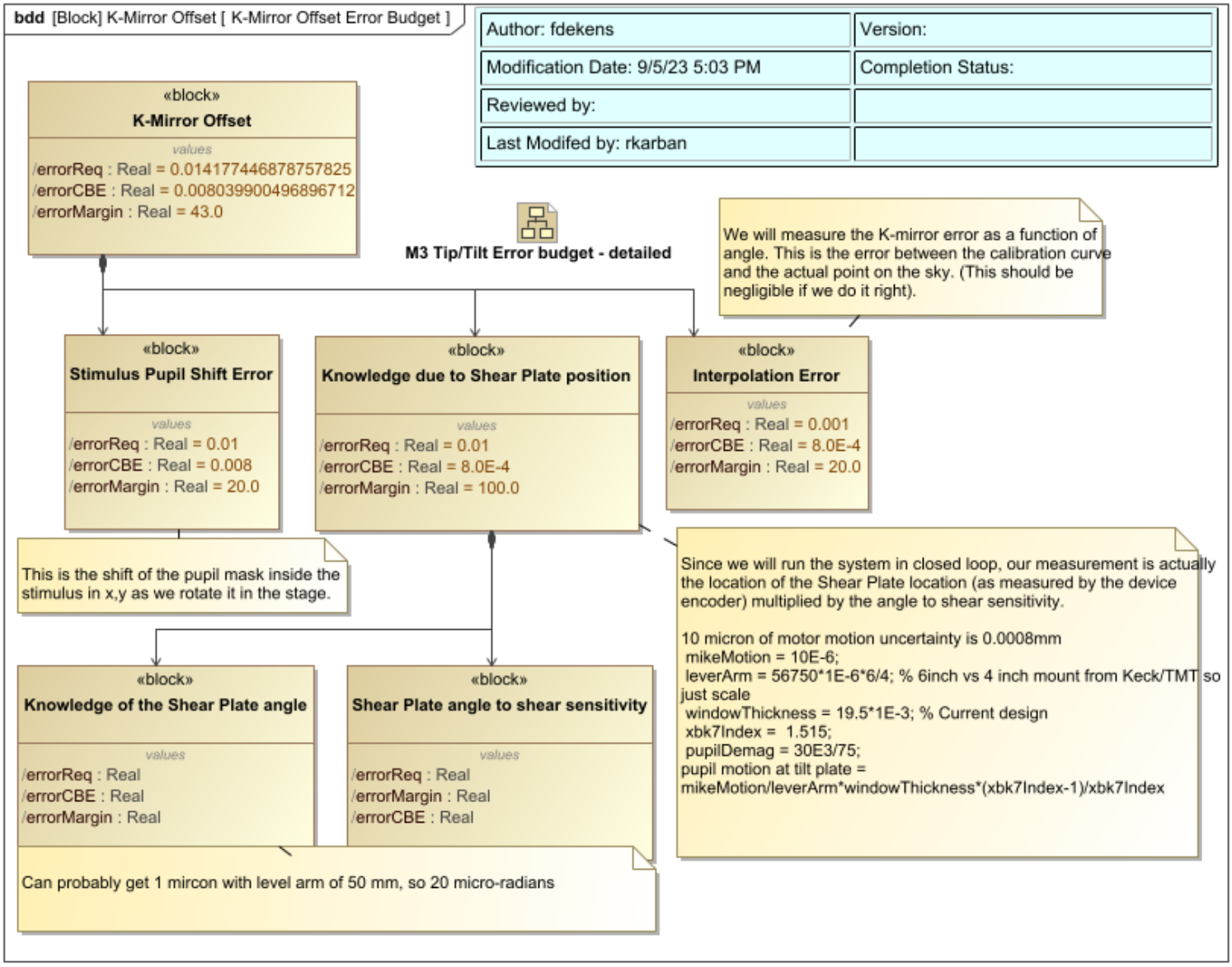
The following diagrams show the M3 tip/tilt error budget

## M3 Tip/Tilt Error budget - Top



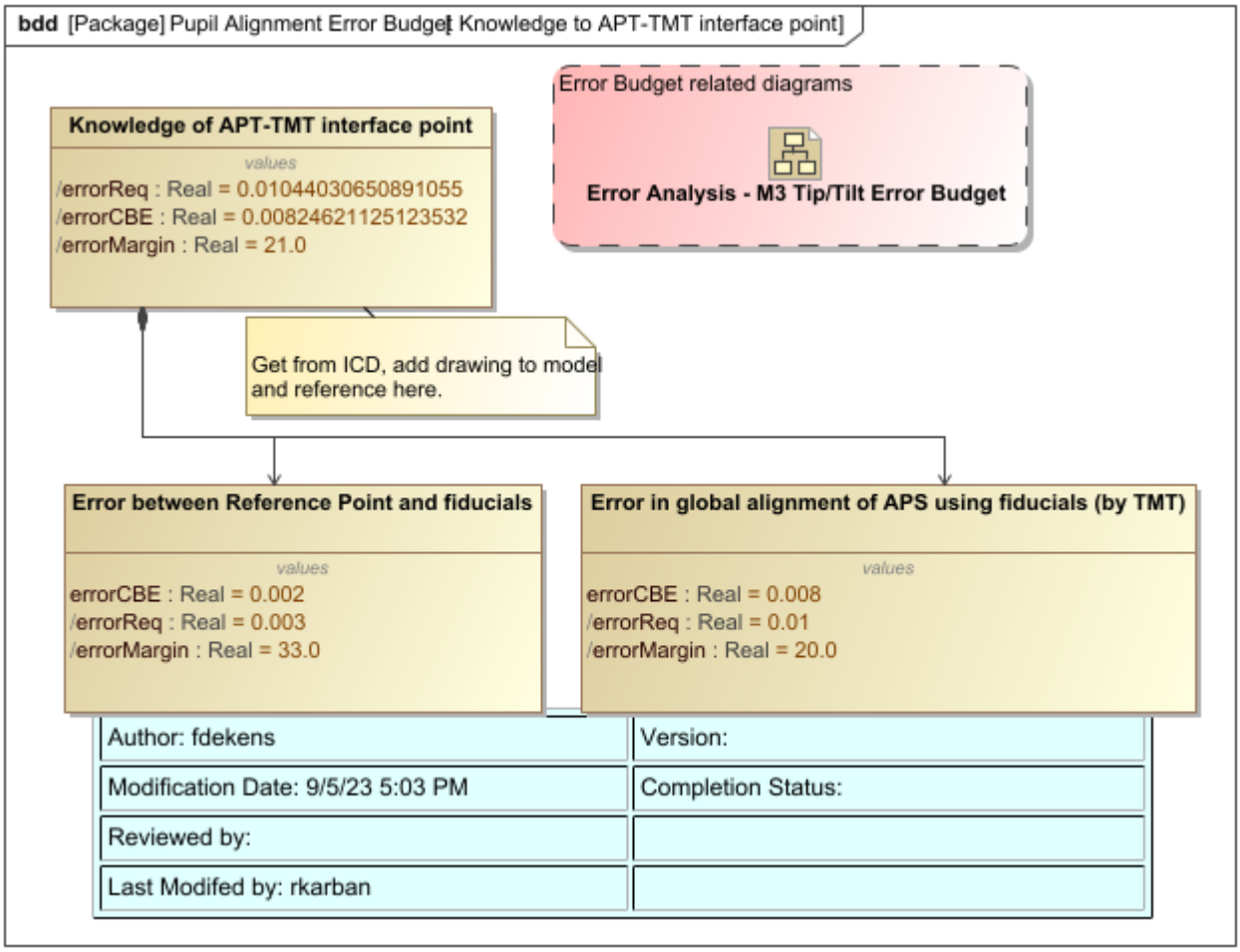

This is the top of the M3 alignment error budget that ties the requirement to the top of the error budget tree.

## K-Mirror Offset Error Budget




The K-Mirror Offset is one of the larger contributors to this error and needs to be calibrated out using the stimulus. This will be done by rotating the stimulus pupil along with the K-Mirror in order to remove any error that the rotation of the K-Mirror mount might introduce, and thereby calibrating that error out. The remaining error in this part of the error budget is expected to be due to the pupil shift in the stimulus mount, since that will become an error in the calibration.

**Knowledge to APT-TMT interface point**




The error in the reference point is where we need clarification of the requirement. We need to understand how this error will be applied to other instrument, because if this error is in absolute terms the global knowledge of the APS bench will need to be well known; whereas, if the error is relative on only used to correct for elevation angle the knowledge can be known less accurately.