Local Survey Relationships to System Calibration and Bias Identification

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PRIMARY THEMES

• Why Systems Relying on External Calibration Must Have Accurate Surveyed Target Distances (*Errors in Target Distance Correlate 1:1 in Range Bias*).

• How Ground Testing to Multiple Targets Can Provide Excellent Detection Capabilities of Potential Target / System Movements.

• Provide Historical Examples at Greenbelt, MD. USA where Calibration Piers have been found to shift by > 5mm.

• Provide Solutions to Maintain Accurate Target Distances.
Calibration Pier Network at Greenbelt Maryland, USA

Error in Target Distance Will Map 1:1 Into a Range Bias

1998 - “Old” Pier B Shifted 5.3mm in range to Station 7105
2001 - “New” Pier B Shifted 8.1mm

Calibration Targets at Greenbelt viewed from the mount Station 7105.
Agreements of less than 2mm indicate stability of target.

Mean Bias above 4mm between multiple targets indicates potential instability of target distance.

System Delay = Calibration TOF - 2*Target Range * Fn / C