Target Alignment Guidelines for Laser Scanners

Overview

For best possible automatic detection of references you should take care of the following:

Checkerboard references

- The angle of incidence between the laser beam and the checkerboard reference should not be smaller than 45°.
- Depending on the chosen scanning resolution, the automatic detection of checkerboard references gets unreliable beyond a certain distance to the scanner. E.g. when using A4 checkerboard references and scanning with a resolution of 1/4, the distance to the scanner should not be greater than 15m.
- The distance between the scanner and the references should not be smaller than 1m.
- The checkerboard target should not be rotated by 45° in relation to the scanner’s axis.
- The checkerboard reference should not be attached to a curved surface.
- Print paper references with laser printers only.

Spheres

- The spheres should be completely visible in the scan. Make sure that they are not partly covered by other objects.
- The radius of fit operations in the “Match Sphere Settings” (Tools -> Options -> Matching -> Match Sphere Settings, see 18.1.4.1.8.3) should be set according to the radius of the used spheres in the scan.
- Depending on the chosen scanning resolution, the automatic detection of sphere references gets unreliable beyond a certain distance to the scanner. E.g. when scanning with a resolution of 1/4, the distance to the scanner should not be greater than 18m. The sphere should have at least 10-15 pixels in the scan.

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