

Selfie Aligner

Calibrating a mobile robot to a workplace 20 times more precisely than tradition systems

A robot arm mounted on a mobile platform are well established component in production automation. But the lack of precision in the existing calibration systems reduces the use to only moving boxes. The Selfie Aligner calibrating a mobile robot to a workplace and makes it able to perform the same tasks as a stationary robot.

Selfie Aligner is a vision-based system for calibrating a mobile robot to a workplace. A mirror in the calibration tag let the camera see it self and align to the tag with an angular precision more than 20 times better than traditional systems.

A camera, on the robot arm, set up for part recognition or bin picking, can also be used for alignment. The Selfie Aligner works excellent with out of focus images and even lens distortion is not a problem.

With a calibration to the workplace within 1 mRad the precision of the robot is not lost to the angular error in the alignment. The mobile robot can take full advantage of its high precision in the robot arm and create more value.

The Selfie Aligner have been tested in a demonstration setup with a UR5 robot at the Smart Lab at Aalborg University. A test series show that the Selfie Aligner can align to the Mirror Tag with a repeatability of less than 0.1 mm and 0.3 mRad.

With the Selfie Aligner the mobile robot can become a true mobile manipulator and not only a mobile "box handler".

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The Selfie Aligner is protected by patent. The mirror in the tag is the key element. This mirror also makes it very easy to spot patent violation.



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This new technology will be a game changer for the use of mobile robots. With the ability to perform high accuracy tasks it will take AGV's with robots to the next level and can spark a breakthrough for mobile manipulators.

The patent and project for the Selfie Aligner have now been sold to a progressive company with high ambitions.

This company will market the Selfie Aligner worldwide in the near future.

Selfie Aligner demo video and more info:
<https://vimeo.com/908762499/798a04ae5b>
<https://www.toolchanger.eu/selfie-info/SelfieAligner.htm>

Company URL:
www.toolchanger.eu
www.4tech.dk

