



# MEGaFiT

## Business opportunities

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# Intention at project start

## Further develop Fringe Projection Technique

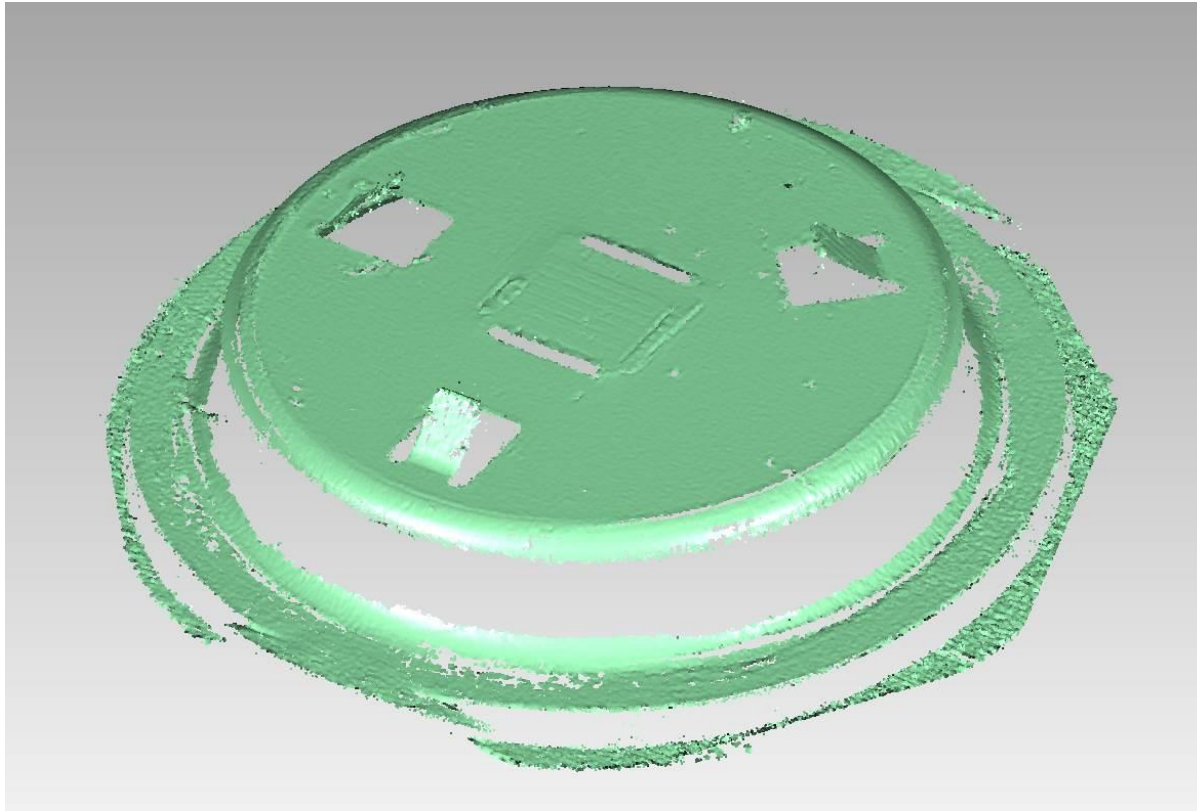
- applicable in production environment
- improve accuracy
- measurement of complex shapes and surfaces
- miniaturization of high-precision camera characterization techniques

# Interesting project results



Fringe Projection in Production Environment

# Interesting project results



Complex MF demonstrator shape measurable

# Interesting project results

## Vision Ray Camera Calibration for Small Field of View

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The miniaturization of deflectometry requires article, we present a requirements for conduc several centimeters.

## Improving the Generic Camera Calibration technique by extended model of calibration display

### 1 Introduction

Industrial quality control relies heavily on optical metrology systems. As the number of produced precision parts is increasing, measurement systems need to be av

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Generic camera calibration is a method to characterize vision sensors by describing a line of sight for every single pixel. This procedure frees the calibration process from the restriction to pinhole-like optics that arises in the common photogrammetric camera models. Generic camera calibration also enables the calibration of high-frequency distortions, which is beneficial for high-precision measurement systems. The calibration process requires data for calculating a line of sight for each pixel, active grids are used as calibration reference instead of static markers such as corners of chessboard patterns. A common implementation of active grids are

# Progress on high-precision camera characterization

# Use of results

- Development of commercial fringe projection systems for the industry
- Acquire research grants based on the achievements
- Integration at Philips in one or more production lines after having reduced the measurement time
- With Philips as pilot acquisition of other customers

# Future key research priorities

- Speed improvement  
(up to 100% in-line measurement)
- Easier recalibration of the setup
- Even further accuracy improvements



**MEG**a**FiT**

Thank you for your attention!