

## Project SMOsSys

### Cutting-monitoring-system for self-propelled forage harvesters

Duration of project

09/2017 – 09/2020

#### Problem Statement / Approach to Solution

Modern self-propelled forage harvesters are equipped with various assistance systems for smooth operation. These include sensors and electronics, which are used, for example, to adjust the cutting gap. In order to ensure a constant quality of the cutting process, the driver needs a robust determination of the wear of the cutting edges. The goal of the project is to develop and construct a grinding assistance system, which enables an automatic evaluation of the degree of wear of the knives based on acoustic signals. The basis is formed by findings from the predecessor project "EMiL" as well as current results from test bench tests, field tests, optical measurement of the cutting geometry with machine evaluation and image analysis of shredded material samples.

#### Grant Information

Supported by funds from the special-purpose assets of the Federal Government:

Project volume: 254,471.24 €

Application number: 836 594

#### Keywords / Technology

- Acoustic real-time monitoring
- Measurement and analysis technology
- Grinding assistance system
- Automated classification
- Microcomputer system
- Complementary measurement methods

#### Project Partners

University of Kassel, Ecological Agricultural Science, Department of Agricultural Engineering

Georg-August-Universität Göttingen, Crop Science, Department of Agricultural Engineering

CLAAS

Self-propelled harvesting machines GmbH

#### Project Sponsors

Landwirtschaftliche Rentenbank

German Innovation Partnership Agriculture (DIP Agrar)

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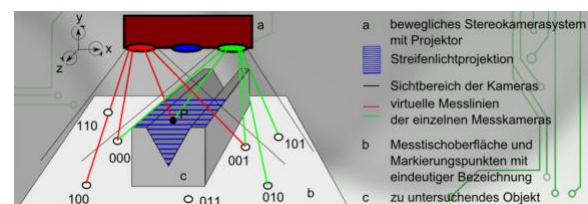


Figure 1: Schematic representation of the 3D scanning of a knife impression with strip light projection