

# Fully Automated Milking Rotary AMR™

## Development of a new milking technique

The use of automatic milking systems now holds even in very large dairy herds with up to 1,000 cows sustainable catchment. Thus, the proportion of automatic milking systems, all by the year 2011, realized and planned milking project in the farms is around 50 % (LASSEN und SCHIERHOLZ, 2011). The world's first fully automated milking rotary AMR™ combines the advantages of fully automatic milking in the VMST™ single box and the conventional rotary milking. So the first modular AMR™ automates udder preparation, attaching the milk cups and the teat dipping / -spraying in a rotary milking system.

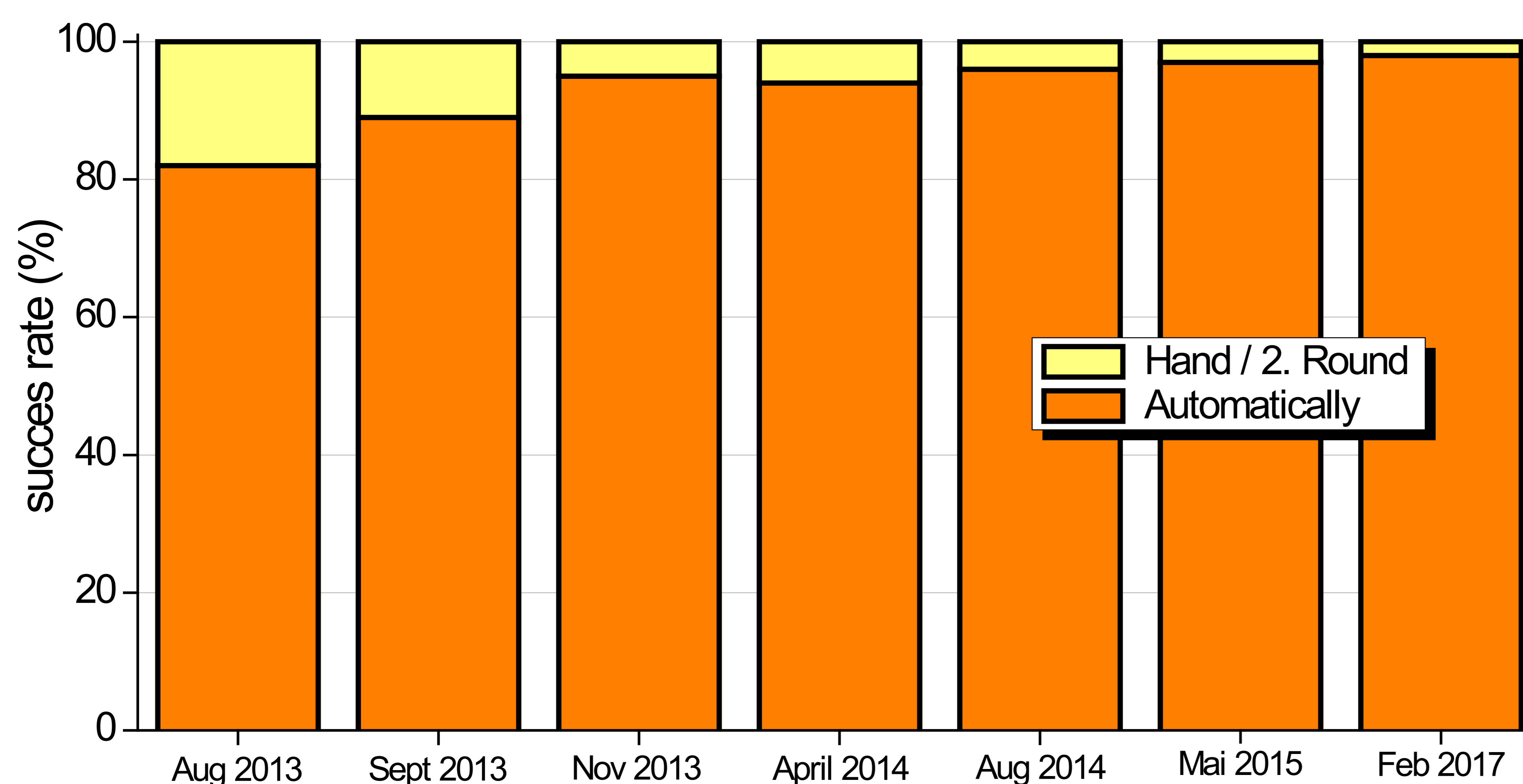


Figure 1: Success-rate of cup-attachment at different observation times in farm 1 (Source: Scholz, H., 2017)

## Results

Through three different robot modules – preparation and cupping module in double- the individual steps are carried out. With the current state of technology can be automatically milked per hour to 90 cows.

At farm 1 the success rate by the robot was evaluated at regular intervals starting up in August 2013. With the change of the visual-system to TOF-cameras (Time Of Flight) in October 2013 the success rate of attaching teats could be increased to more than 97 % (figure 1). The remaining 5 % of not attached teats could either be attached manually by the supervisor or those cows are sorted back to the rotary for an additional turn, but this may reduce the real throughput somewhat.

The first results show that the fully automatic milking in a rotary has arrived in practice with a success rate in attaching of more than 97 %. The teat condition remains via lactation constant at a good to very good level. The results of SCC sampling also show that no adverse effect occurs by the use of this novel milking equipment.



Förderinitiative Ländliche Entwicklung in Thüringen  
Europäischer Landwirtschaftsfonds für  
die Entwicklung des ländlichen Raumes

### Projekttitle

„Entwicklung eines neuen  
Verfahrens zum automatischen  
Melken (AMR 24)“

### Projektlaufzeit

01.11.2011 - 31.10.2013

### Zuwendungsempfänger

Erzeuger- und Handels-AG LAPROMA  
Weimarische Straße 33  
99195 Schloßvippach  
www.laproma.de

### Weitere Projektpartner

IAK Agrar Consulting GmbH, Leipzig |  
Professor-Hellriegel Institut e.V. (PHI) an der  
Hochschule Anhalt, Bernburg  
Prof. Dr. Heiko Scholz |

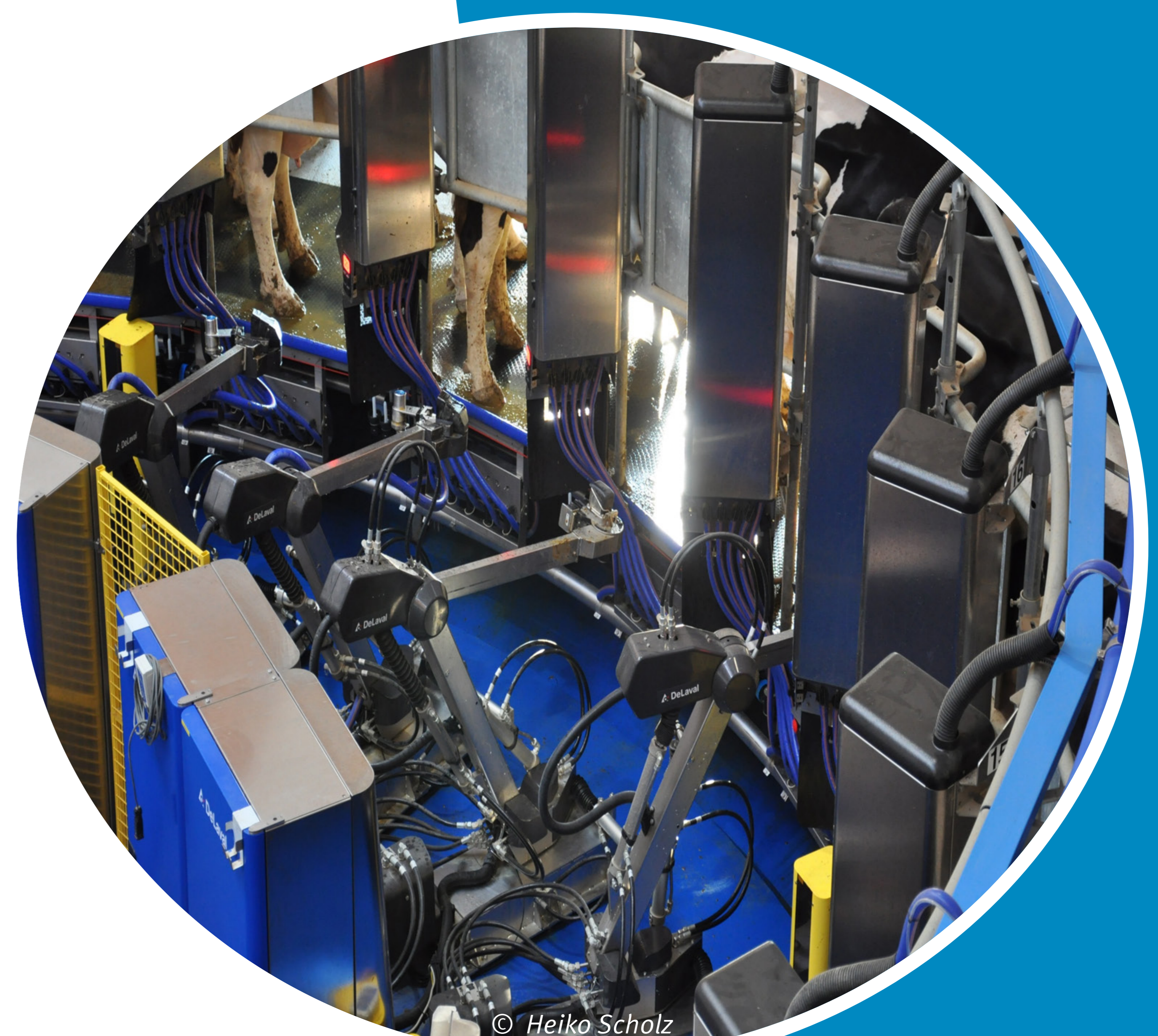


Figure 2:  
The world's first fully automated  
milking rotary AMR™