



DIAMOND

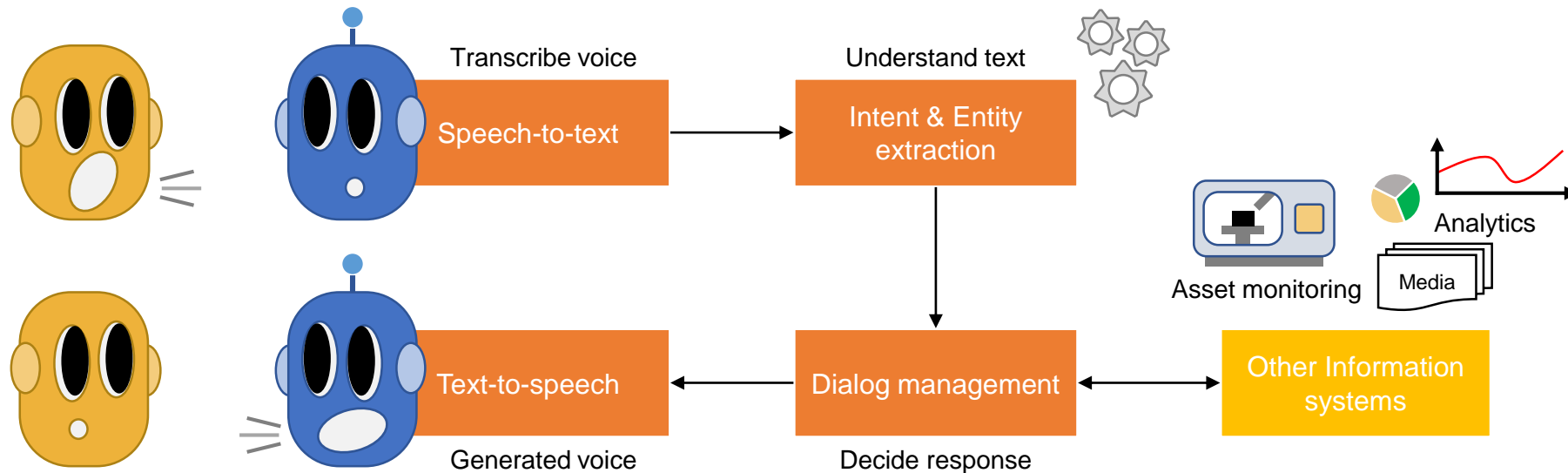
Digital Intelligent Assistant for Predictive Maintenance

EUROPEAN
MANUFACTURING
INNOVATION

- Predictive maintenance (PdM) is information-intensive
- Applying PdM requires employees with
 - data science skills and/or
 - competencies in using PdM software
- Acquiring skills and competencies is **costly**

• Digital Intelligent Assistant for Maintenance

- Employees interact with PdM software via **voice-first**
- **Fast, intuitive**, and potentially **hands-free**
- Split complex tasks into many simple tasks



1

BASIC FUNCTIONS

Help
Repeat
Capabilities
Paraphrase
Greet

For minimum use

2

UTILITY FUNCTIONS

Alerts
Timers
Stopwatch
To-Do Lists
Check lists

For frequent general tasks

3

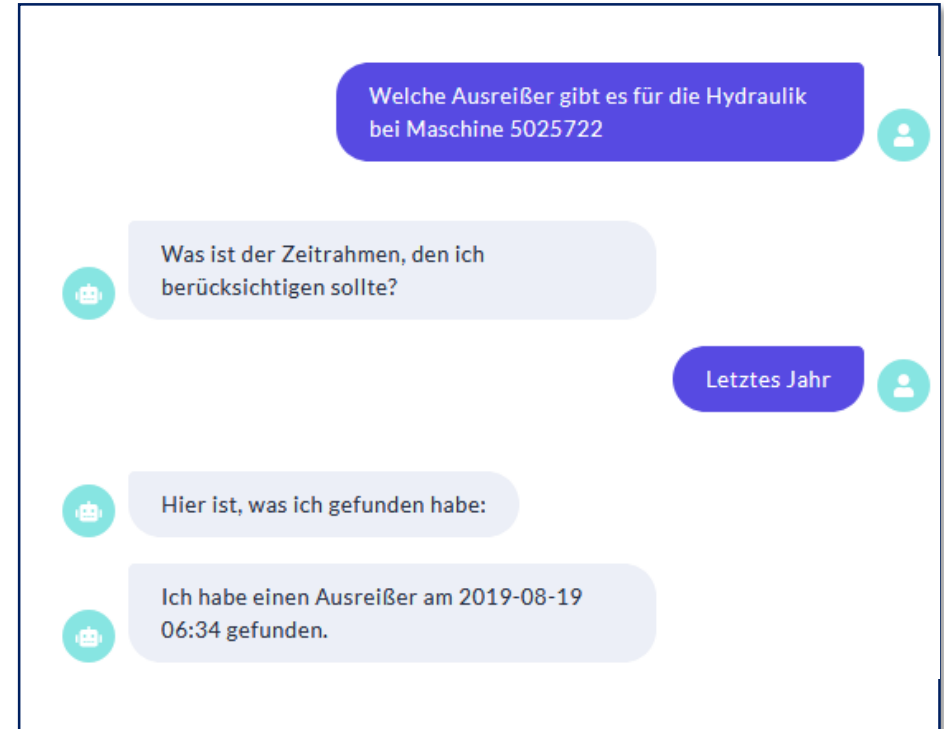
MAINTENANCE FUNCTIONS

Monitoring processes
Task execution
Reporting
Problem solving
Maintenance planning

For domain specific tasks

Machine fluid management

- Detect outliers in historic data
- Check if added volume is outlier
- Predict how much fluid to refill



The screenshot shows a chat interface with a user and a system. The user asks for outliers in hydraulic data for machine 5025722. The system responds with a time frame of 'Last year' and then provides a specific outlier found on 2019-08-19 at 06:34.

Welche Ausreißer gibt es für die Hydraulik bei Maschine 5025722

Was ist der Zeitrahmen, den ich berücksichtigen sollte?

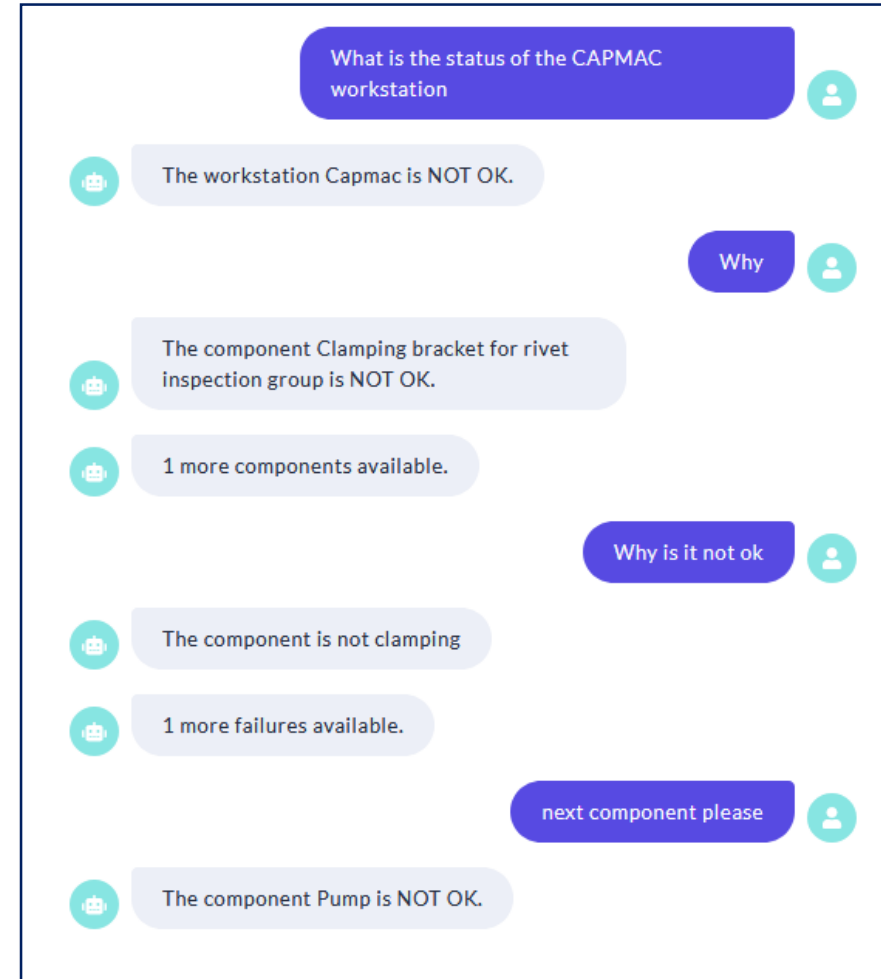
Letztes Jahr

Hier ist, was ich gefunden habe:

Ich habe einen Ausreißer am 2019-08-19 06:34 gefunden.

Root-cause analysis

- Check machine and part health
- Get maintenance documents



The screenshot displays a chat window with a white background and a dark blue border. The chat history shows a sequence of messages between a user (represented by a person icon) and a system (represented by a robot icon). The messages are as follows:

- User:** "What is the status of the CAPMAC workstation" (in a blue bubble).
- System:** "The workstation Capmac is NOT OK." (in a light blue bubble).
- User:** "Why" (in a blue bubble).
- System:** "The component Clamping bracket for rivet inspection group is NOT OK." (in a light blue bubble).
- System:** "1 more components available." (in a light blue bubble).
- User:** "Why is it not ok" (in a blue bubble).
- System:** "The component is not clamping" (in a light blue bubble).
- System:** "1 more failures available." (in a light blue bubble).
- User:** "next component please" (in a blue bubble).
- System:** "The component Pump is NOT OK." (in a light blue bubble).

- Reduces the time to access maintenance information
- Provide intuitive interaction with PdM software
- Usable by maintenance coordinators and technicians

Digital assistants matter!

Voice assistants and chat bots are among the fastest growing digital tools. They will play a substantial role for leveraging Artificial Intelligence at home and at work. Digital assistants offer potential to integrate less skilled employees in high-value, knowledge-intensive work.



In 2017, Accenture interviewed 352 CIOs and CTOs. Only 3% indicated they use chat bots in manufacturing



The market for Enterprise Digital Assistants will grow to 8.9B USD in 2025



74% of the 18-24 years old used a voice assistant