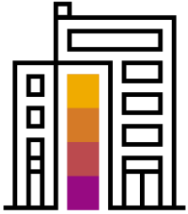




SAP® Innovation Awards 2020 Entry Pitch Deck

Eliminate production errors using augmented reality

WEG S.A.



Company Information

Headquarters	Jaraguá do Sul, Santa Catarina, Brazil
Industry	Energy generation, transmission, distribution, traction, automation and coatings.
Web site	https://www.weg.net/

- ❑ 5 business units (Motors, Automation, Transmission and Distribution, Energy and Paints)
- ❑ Company located over all continents with headquarter in Brazil (more than 50 countries)
- ❑ Production in 11 locations (Brazil, Argentina, Colombia, Mexico, USA, South Africa, Portugal, Germany, Austria, India and China)
- ❑ Sales, Distribution and Engineering Center in 16 locations (Chile, Peru, Equator, Argentina, US, Germany, Spain, France, UK, Belgium, Scandinavia, Italy, Malaysia, Singapore, Middle East and Australia)

Eliminate production errors using augmented reality

WEG S.A.



Challenge

Eliminate manufacturing error in the production line of the High Performance Motors using a innovative solution.

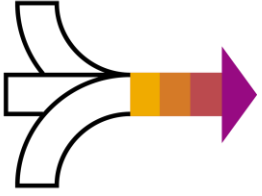
Solution

Using smart glass to perform photographic log and image processing, with artificial intelligence, to detect connection mistakes in the terminal box wires positioning.

Outcome

This is an innovation project and therefore does not have a calculated result. We consider eliminating errors on the production line and thereby improving productivity. One of the main goals is to be able to replicate the solution in other scenarios.



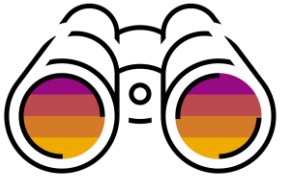


Business Challenges and Objectives

- Bring the SAP solution to the shop floor near the process using an innovative device such as Smartglass aligned with the IoT concept and the Industry 4.0 strategy.

- AR technology development
- Improve knowledge
- Eliminate operational errors
- Be prepared to expand and deliver innovation to the company.



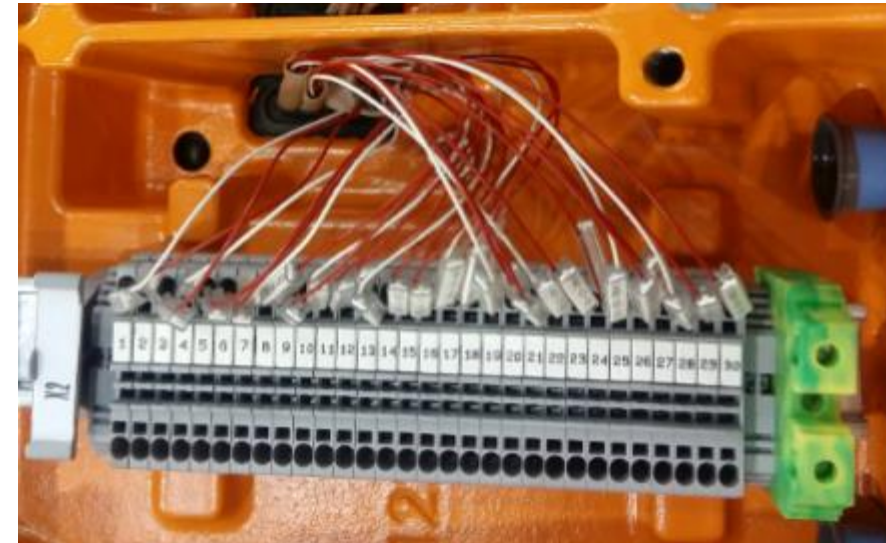


Project or Use Case Details

The system was designed to prevent the employee from performing a wrong assembly, causing waste and increasing production costs.

At the same time the solution supports the execution of activities through online system queries, which can be performed using features such as OCR or Natural Language through voice commands.

The fault identification feature, utilizing computer vision associated with machine learning and artificial intelligence, helps the operator to perform his activities effortlessly.



Terminal box and wires



Benefits and Outcomes

Business or Social

- Eliminate manufacturing errors in the production line of High Performance Motors
- Improve the productivity on High Performance Motors
- Production line optimization

IT

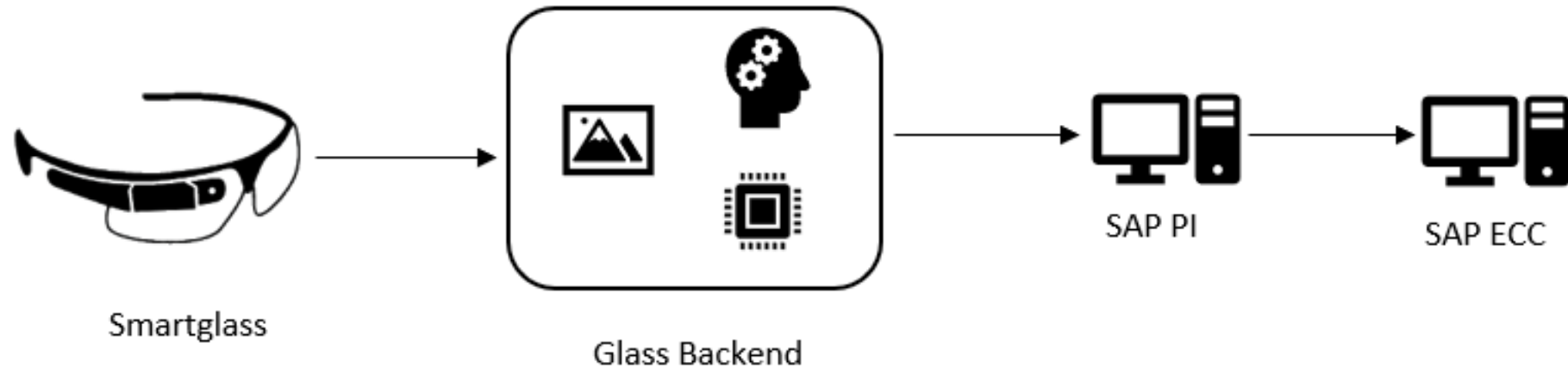
- New Technology Experimentation
- SAP Production Process Optimization

Human Empowerment

- Effort Reduction
- Ergonomic Improvement
- Productivity Improvement



Architecture



Responsible for bringing the employee with an immersive environment to guide the assembly of wires in the terminal box. Provides audio and video on a single screen.

Responsible for processing the images, identifying assembly errors, listing SAP orders and operations, the correct connection sequence and interface for factory communication features.

SAP Process Integration and SAP ERP Central Component are responsible for delivering production orders to the backend system, and saving the order status when the employee completes the task.



Deployment

Deployment status Proof of Concept

Date 01/11/2019 Number of users 3

SAP technologies used:

	SAP product	Deployment status (live or proof of concept [POC])	Contribution to project
1	SAP ERP Central Component	LIVE	Main Company ERP
2	SAP Process Integration	LIVE	Main Enterprise Service Bus
3			
4			
5			

If you have used one of the services or support offerings from SAP Digital Business Services during the implementation or deployment phase, please select with ☒ one or more of the following offerings:

- ☐ SAP MaxAttention™
- ☐ SAP ActiveAttention™
- ☐ SAP Advanced Deployment
- ☐ SAP Value Assurance
- ☐ SAP Model Company
- ☐ Others:
- ☐ SAP Innovation Services
- ☐ SAP Innovative Business Solutions



Advanced Technologies

The following **advanced technologies** were part of the project.

	Technology or use case	Yes or No	Contribution to project
1	Machine learning or AI	Yes	We will use ML and AI to analyze and identify wiring connection errors at the terminal boxes.
2	Robotic process automation	Yes	RPA will be used to automate the process of closing production order operations.
3	Conversational AI	Yes	At the project, we will use Voice Conversational AI to assist the production operator with his operational procedures, giving the ability to invoke commands and ask for help with an specialist.