

Digital lignite surface mine for RWE Power AG with SAMABUESA

Case:

Within the RWE group, RWE Power AG is responsible for electricity generation from lignite, hydropower and nuclear power. RWE Power AG's plants feed a total capacity of around 16 gigawatts into the grid.

RWE Power AG operates three opencast lignite mines in the Rhineland. These are mainly used to supply the company's own power plants, but the lignite mined is also processed to produce solid fuels and refined into filter materials. In what is Europe's largest lignite mining complex with an area of 130 square kilometres and an output of around 90 million tonnes per year, 19 Bucket-wheel excavators and 17 spreaders are operating 24 hours a day. The belt conveyors that transport the extracted materials have a total length of 260 kilometres; approx. 20 coal trains transport the coal to its destinations.

The processes in the opencast mines are already highly digitized today. An important system bears the name SAMABUESA, which was jointly developed with RWE Power AG. Core functions of the system are:

- a 3D representation of the mining model, updated in real time,
- a satellite-based, high-precision position tracking system for conveyor and spreading machinery,
- a complete tracking of the entire material flow in real time.

Today, the SAMABUESA system is the basis for effective and efficient planning, for flexible production, high productivity and for meeting constantly growing quality standards.

The functionality of the SAMABUESA system is continuously being extended, adapted to current requirements and optimized. The SAMABUESA system has to meet the highest demands for continuous 24-hour operation, especially in the following areas:

- Availability
- Handling of large amounts of data from location and terrain information
- Minimum error tolerances
- Extensibility
- Maintainability

Process:

The SAMABUESA system had to be integrated into an existing, complex IT infrastructure with a network of distributed systems.

For several years now, Macrix GmbH has been a competent and reliable partner for RWE Power AG in the development of SAMABUESA. Macrix GmbH is responsible for the IT design, the integration of solutions into the existing IT infrastructure, the transfer of production requirements into software solutions, software development, commissioning of the software and its support.

Macrix GmbH uses modern agile development methods, current standard frameworks and its own software solutions such as the ProconTEL application framework that allows integrating newly developed modules seamlessly into the running operation without interruptions.

SAMABUESA is constantly being developed and refined according to the SCRUM method by a joint team consisting of representatives from production, the specialist department and the experts from Macrix GmbH.