STEAG looks to artificial intelligence

Photovoltaics subsidiary SENS presents software for predictive and earnings-optimized operation of solar installations

Essen/Munich/Würzburg. At the Intersolar Europe trade fair in Munich, STEAG Solar Energy Solutions GmbH (SENS), a subsidiary of the Essen-based energy company STEAG, is presenting new software which uses artificial intelligence to facilitate predictive monitoring of solar installations. In future, this will help plant operators to detect problems with plant operation in advance, to avoid problems or even damage, and in consequence to operate their PV systems more reliably and profitably.

The software package from SENS is called "Sensaia". It is based on proven algorithms from more than ten years of application experience – developed by experienced engineers from the STEAG Group. STEAG has been successfully using similar products, which also work on the principle of predictive maintenance, in wind energy and other power generation plants for some years now.

Detecting faults in advance

The way it works is very simple: the system continuously records operating data from the PV plant being monitored and learns to understand it better and better. The more data Sensaia has collected, the more precisely it can predict operating scenarios and plant behavior – and sound the alarm when undesirable developments become apparent. Thanks to a clear and intuitive user interface, Sensaia thus facilitates a completely new level of operating quality, efficiency and planning reliability in plant operation.

Collect, analyze, learn and predict

This is because the plant operating data, which is analyzed with the aid of artificial, continuously learning intelligence, provides very accurate predictions of possible sources of faults before they take effect and possibly result in a plant failure. That makes early action possible, reduces costly downtime, and calculates optimum maintenance schedules. The use of statistical process control also ensures increased fault validity, which means that service quality can be continuously optimized. For plant operators, this means in concrete terms that, thanks to trouble-free operation, they benefit from the highest possible energy yield from their PV plants worldwide.

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More than just monitoring software

"Sensaia is much more than just any monitoring software. Sensaia gives plant operators transparency and a basis for decision-making in the form of facts. In the future, our customers will benefit from number-based and condition-based recommendations for plant cleaning, the optimum time to replace components, and a continuous analysis of their assets. Sensaia relentlessly uncovers any deficiencies, and the SENS service team takes care of rectifying them. In this way, we get the maximum out of every system for our customers," says André Kremer, Managing Director of SENS.

Sensaia combines SENS's solar power expertise with STEAG's software skills

The idea behind the intelligent O&M software came from the PV experts' many years of experience in monitoring. "Previously, alarm signals were only transmitted after a fault occurred, and were not verified. That meant that the underlying problem had to be searched for and found before it could be fixed. In the age of artificial intelligence, we were sure there had to be a better solution. In the form of Sensaia, we together with STEAG have now developed software that provides us with valid alarms in a completely new workflow. This raises solar monitoring to a new level of quality," says Christian Franz, Head of Service at SENS, explaining the genesis of Sensaia.

Together with the parent company STEAG, implementation was commenced. From an existing STEAG software package for the smart operation of energy systems, the solar intelligence software Sensaia was then developed. Sensaia has a very close connection with the SENS brand. Indeed, the name Sensaia is composed of SENS, AI (Artificial Intelligence) and Application. This innovative solution can therefore be seen to benefit from the STEAG Group's expertise gained in many years of software development. For SENS, in turn, the solar intelligence software represents a further step towards innovation and digitalization.

Market launch in early 2022

Sensaia is currently in the final test phase with selected customers. From the beginning of 2022, the digital product is to be available to all interested customers with a spirit of innovation. Test customers will be able to help shape innovative features even before the product is released. In the further development of the solar intelligence software SENS is relying on close cooperation in order to continuously enhance this innovative, AI-based PV monitoring system.

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About STEAG

For over 80 years, STEAG has stood for efficient and reliable power generation, both in Germany and abroad. As an experienced partner, we support our customers comprehensively in all phases of power supply. We design, develop, implement, operate and market highly efficient energy solutions – from distributed generation facilities and those based on renewable sources to large central power plants. Together with customized solutions in the field of electricity and heat supply, we also provide a wide range of energy services – increasingly on the basis of renewables. Successfully so: Since 1990, STEAG has permanently reduced its own CO_2 emissions in Germany by approximately 85 percent.

About SENS

STEAG Solar Energy Solutions (SENS) is a service provider based in Würzburg, Germany, with international operations in the renewable energy sector. Its range of services includes the development and construction of turnkey solar farms, the operation and maintenance of photovoltaic plants and the implementation of energy solutions for commerce and industry. SENS has been part of the STEAG Group since July 2019, and employs around 270 people at nine locations.

Contact
Daniel Mühlenfeld
Press Spokesman

Tel. +49 201 801-4262
Fax +49 201 801-4250
Daniel.Muehlenfeld@steag.com
www.steag.com

STEAG GmbH
Rüttenscheider Strasse 1–3
45128 Essen
Germany
www.steag.com

Registered office in Essen
Registered at Essen Local Court
under number B 19649

Supervisory Board
Guntram Pehlke, Chairman

Board of Management
Joachim Rumstadt, Chairman
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Dr. Ralf Schiele
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