Press Release

TÜV SÜD and atlan-tec Systems

21 April 2021

Add safety and operational excellence with HAZOP+

Leverkusen. Safety, integrity and economic efficiency are critical factors in the operation of production facilities in the chemical and process industries. TÜV SÜD and atlan-tec Systems have now brought HAZOP, Operational Excellence (OPEX) and AI-based methods together in HAZOP+, thus creating an innovative approach for using synergies in the continual improvement of production processes and plant safety.

HAZOP, a systematic technique for hazard analysis and evaluation of possible preventive and mitigation measures, is designed to improve the safety and operability of plants and equipment and enhance their service life and reliability. Central objectives of the Operational Excellence (OPEX) framework are to increase productivity, reduce costs and improve process and product quality.

"Organisations tend to address HAZOP and OPEX separately", says Rainer Semmler, HAZOP expert at TÜV SÜD Chemie Service GmbH. "However, linking HAZOP studies to OPEX studies and complementing them with additional AI-based methods can leverage significant synergies." With this in mind, the two expert companies, TÜV SÜD Chemie Service and atlan-tec Systems, set out to develop HAZOP+. This synergistic and data-based process-safety approach also covers regulatory requirements and relevant codes and standards, including VDI standard 3714 "Implementation and operation of big data applications in the manufacturing industry" and the Smart Industry Readiness Index (SIRI).

Approach to continual improvement in compliance with legal requirements

The experts from TÜV SÜD Chemie Service and atlan-tec Systems work with their customer's operations teams to prepare the HAZOP+ study and complete tasks including compilation of the required documentation. "In the OPEX 4.0 project, we use operating data from previous years to produce a statistical model that captures the interdependencies between the relevant operating parameters and assesses them with the help of artificial intelligence", explains Thomas Froese, CEO of

atlan-tec Systems. With the help of a digital twin, the optimum mode of operation for a plant or equipment is determined and aligned to a defined target value such as EBIT per hour. TÜV SÜD Chemie Service provides certification of the OPEX project in accordance with VDI standard 3714, thereby providing the required certainty that the applied methods are in compliance with legal requirements.

The operating data used in the OPEX 4.0 project also deliver additional information for the HAZOP study. Using the data from “good” and “bad” periods of plant and equipment operation, experts can determine more precise limits for safety devices and define safe limits for the optimisation of operational processes. “This not only gives us more room for optimisation; it also improves the safety of the plant in real terms“, emphasises Dr Hans Volkmar Schwarz, TÜV SÜD Chemie Service, who initiated the cooperation with atlan-tec Systems. As a result, HAZOP+ offers a solution for legally compliant and continual automated process optimisation of plants and equipment, combined with improved economic performance and enhanced plant safety and integrity.

Further information about HAZOP+ is available at https://www.tuvsud.com/en/industries/chemical-and-process or Email: vertrieb.chemieservice@tuvsud.com.

Note for editorial staff: The press release and high-resolution photo are available on the Internet at https://www.tuvsud.com/newsroom.

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