Brightsite

Transforming industry

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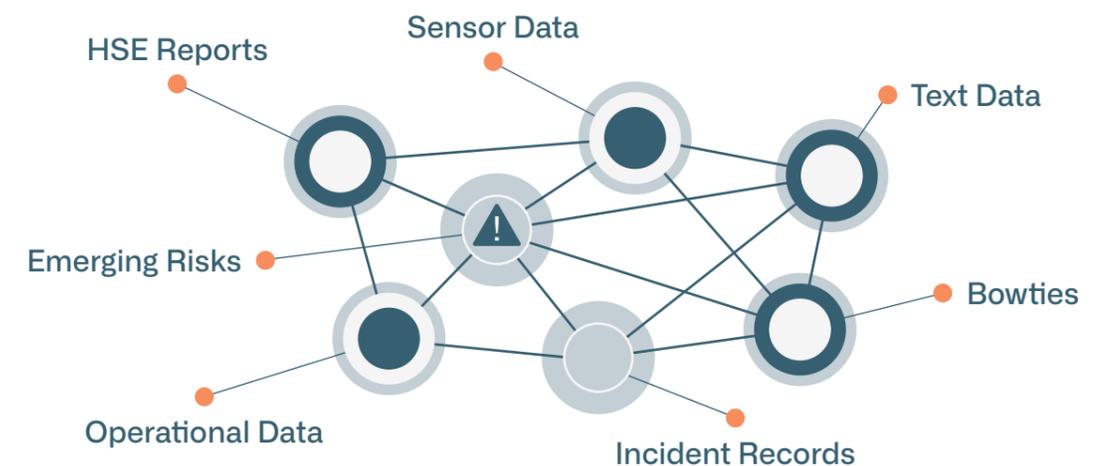
A game-changer in the field of HSE management

We are convinced that predictive modeling, using Artificial Intelligence (AI) and Machine Learning (ML), offers opportunities that will enable significant safety improvements in the chemical industry. We are developing a promising predictive model for process safety. It will become a game-changer in the field of HSE management.

Predicting in advance instead of explaining afterward

The chemical industry is investing heavily in robust HSE (Health, Safety and Environment) management systems, as well as in initiatives that will bring about a continuous increase in process safety. In the years to come, HSE management will be faced with major challenges due to the increasing complexity resulting from digitalization and the emergence of new technologies. This changing situation means that conventional HSE management systems may no longer be suitable as a means of identifying and assessing risks forehanded. At the same time, production facilities are generating large amounts of data, but at the moment, we are utilizing only a fraction of that data and that's a missed opportunity.

Brightsite focuses on various projects about 'safety and society'. The development of a predictive model for process safety is one of the projects we are focusing on as part of this program line. The predictive model can be used to identify hidden patterns in sets of safety data, which can't be identified just by human operators. It enables companies to perform advanced analysis on various types of HSE-related data, to get greater insight into how incidents occur, which will in turn enable companies to trace developing incidents and rectify any situations that deviate from the requirements. A model of that type will provide companies with additional information and insights that are not available to them at the moment. The fact that they will be able to rely on predictive factors will enable designers to design process plants with increased safety and security in mind, and operations can intervene earlier in developing incidents.

About Brightsite

Brightsite is a partnership between Sitech Services, TNO, Maastricht University and Brightlands Chemelot Campus. A collaboration based on an open character, which uses an expertise network to realize a transformation in the chemical industry. Brightsite's aim is to make the Chemelot site climate neutral while retaining employment. By 2025, Chemelot will be the safest, most competitive and most sustainable chemical and materials site in Western Europe. By 2050, Chemelot will have successfully implemented and maintained the most stringent safety standards.

Brightsite's program line 'Securing integral process safety and societal acceptance', known as Safety and Society for short, which focuses on securing integrated process safety and societal acceptance, will contribute toward this. In order to comply with our goals and continue to do so in a changing environment, we work on several sub-themes within three main themes: Behavior & Leadership, Governance & Processes and Asset Design & Operation.

More information

Our aim is that within two years from now, we will have developed a model that is capable of identifying potential risks in advance. The first steps toward the development of our predictive model have already been made and the time has now come to train and further develop the model, in collaboration with partners from the chemical industry.

Would you like to know more about predictive modeling and/or work with us to develop and apply the model on a practical level? If so, please get in touch with us.

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