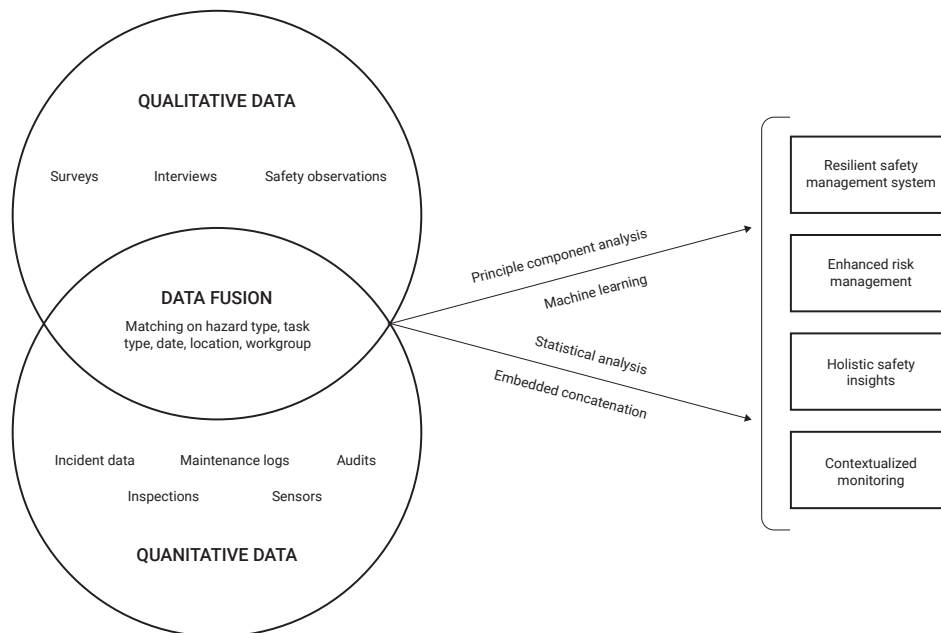


## WHAT IS DATA FUSION, AND HOW DO WE USE IT?

### DRIVING SMARTER SAFETY DECISIONS THROUGH DATA FUSION

Data fusion integrates information from multiple sources by matching on hazard type, task type, location, date, workgroup) to produce valuable insights that cannot be achieved using a single data source. We combine qualitative data (surveys, interviews) and quantitative data (inspections, incidents, maintenance logs, sensors, etc.) to identify additional leading indicators. This integration captures not just numbers, but also valuable human insights that might signal system weaknesses and emerging risks.

After data fusion, we analyze the merged data using various quantitative and semi-quantitative methods. As operations within organizations become more connected, using data fusion can be critical to building safer, resilient, and efficient safety management systems. This enables faster decision-making, fewer unplanned deviations, and enhances risk management for employees, the environment, and infrastructure. For operational leaders, this means holistic safety insights, contextualized monitoring, and more efficient resource use.



Using our expertise in risk, strategy, and machine learning; decades of operational, regulatory, and research experience in energy, mining, construction, and transportation with serious incidents and fatalities, we:

- Insightfully combine advanced data analytics and machine learning, process safety and risk management methods, and strategy and human factors analysis.
- Leverage data fusion techniques to analyze your existing data from various sources – inspections, incidents, operational performance, employee surveys – and use theory-informed machine learning methods to ‘see’ missing leading indicators (the weak signals) to help you understand and improve your risk management systems.
- Currently we offer these as a service, but can help automate data cleaning, analysis, data-fusion, and visualization processing pipelines, so that these can be offered as a product and bundled with MS Power BI or ERP software.

To discuss how you can analyse the gaps in your company’s risk management system, contact us:

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**780.951.3455 or [lianne.lefsrud@insightrisksystems.com](mailto:lianne.lefsrud@insightrisksystems.com)**