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## Case Study

# How Jeppesen ForeFlight accelerates safe AI Risk Management with BowTieXP Enterprise



**Enablon** Bowtie Suite

# Summary



## The need:

**Jeppesen ForeFlight** needed a single, centralized way to analyze and manage risk across safety, quality and operations. With multiple risk assessment methods in use, the organization lacked a complete view of enterprise risk, especially as it began exploring the use of artificial intelligence (AI) in safety critical production processes.



## The solution:

**Jeppesen ForeFlight** implemented BowTieXP Enterprise as the foundation of its safety risk management approach. The solution consolidated safety risk assessments and quality root cause analyses into one clear enterprise-wide risk picture. They also have a patent-pending use case of BowTieXP Enterprise to assess the risk of utilizing AI to produce the navigational data airplanes need to fly safely.



## The results:

**BowTieXP Enterprise** significantly accelerated and improved risk assessments at **Jeppesen ForeFlight**. What once could have taken up to six months can now be completed in as little as two weeks—reducing the assessment timeline by more than 90% and enabling faster, more confident decision making. As the organization continues to mature its processes, Jeppesen ForeFlight aims to complete each risk assessment in no more than 32 hours, without compromising rigor, safety, or quality.

*“Instead of taking six or more months, we completed the assessment in a couple of weeks.”* - **Martin Plumleigh**, Aviation Safety Risk Management Leader at Jeppesen ForeFlight

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## About the customer

**Jeppesen ForeFlight** is an industry leader of innovative aviation software solutions serving the commercial, business, military, and general aviation sectors globally. By combining Jeppesen’s 90-year legacy of trusted aeronautical data with ForeFlight’s expertise in modern aviation technology, the company delivers digital solutions that enhance safety, improve operational efficiency, and sharpen decision-making.

For more than three years, Jeppesen ForeFlight has relied on BowTieXP Enterprise to visualize, analyze, and control risks across its operations. Recently, the organization has pioneered the use of BowTieXP Enterprise to assess the risks of applying AI in navigational data production. This methodology is currently pending a U.S. patent.

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## About Wolters Kluwer Enablon

**Enablon**, a Wolters Kluwer business, is the world’s leading provider of integrated risk management, operational risk management, EHS and sustainability software solutions. Bowtie Suite is the pioneer in barrier-based risk management solutions. It’s an off-the-shelf, intuitive, process safety software solution that supports your organization during every step of your safety journey to enable safe and efficient operations.



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## Challenges and reasons for adopting BowTieXP Enterprise

Prior to using BowTieXP, Jeppesen ForeFlight used several methods for analyzing and assessing risk – including failure modes and effects analysis (FMEA), Ishikawa, and traditional bowties. None provided a complete picture of enterprise risk. When the Boeing Company implemented BowTieXP, they centralized their methodology around a single process, making it efficient and clear, and providing solid plans to control and monitor risk.

By coupling BowTieXP to other EHS solutions, Jeppesen ForeFlight can provide analytics and even predictive metrics to leadership. BowTieXP helps Jeppesen ForeFlight see what events could happen, enabling them to prevent incidents instead of merely reacting to them.

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*“I would call [BowTieXP] the premier tool for managing safety risk in aviation software. It takes a simple, two-dimensional bowtie methodology for analyzing and assessing risk and expands it to three and even four dimensions, providing a picture for leaders and managers that goes beyond the norm. I have never seen anything else like it in the industry.”*

**Martin Plumleigh, Aviation Safety Risk Management Leader at Jeppesen ForeFlight**



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## Implementation and training in BowTieXP Enterprise

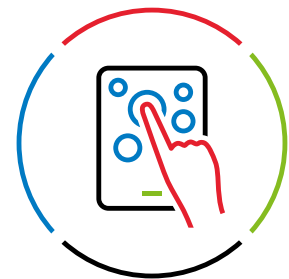


Jeppesen ForeFlight benefited from the earlier experience with BowTieXP while part of the Boeing Company. When Jeppesen ForeFlight became a standalone organization, they were already familiar with the BowTieXP solution, resulting in a smooth and efficient implementation process.

The rollout involved close collaboration between Jeppesen ForeFlight's internal IT team, the Enablon technical team, and the Enablon partner network. In addition to the prior BowTieXP administrator and user training, Jeppesen ForeFlight continues to work with the BowTieXP partner network to participate in super user training to deepen internal expertise and ensure the organization gets maximum value from BowTieXP Enterprise.



# Benefits of BowTieXP Enterprise at Jeppesen ForeFlight



With BowTieXP Enterprise, Jeppesen ForeFlight brings safety and quality data together in one place, creating a complete and consolidated picture of risk. Root cause analyses and safety risk assessments are now managed in a single solution, rather than in separate silos.

*"We were all over the place. It was chaotic, and none of the methods gave us a full picture. BowTieXP Enterprise brings it all together and focuses that risk picture for you. We bring all our data together in BowTieXP to get one coherent, very vibrant picture."*

The visualizations produced in BowTieXP Enterprise makes it quick and easy to see potential threats and the barriers they (should) have in place to prevent an incident and adverse consequences. The software supports targeted monitoring and risk control plans to prevent incidents from occurring, and to help the team at Jeppesen ForeFlight prioritize the highest risks.

*"With the data in BowTieXP Enterprise, you can build that in-depth look of risk. It's highly important we see the depth and breadth of our risk picture, and BowTieXP Enterprise does that so well visually. There's nothing I could think of that's any better than this."*

**Martin Plumleigh, Aviation Safety Risk Management Leader at Jeppesen ForeFlight**



# Innovative risk assessment of AI use for production



Jeppesen ForeFlight produces NavData®, the digital navigation data used by flight management computers on commercial and business airplanes. This critical data must be produced accurately and delivered on a strict 28-day cycle or airplane operators would be forced to rely on paper charts to plan their flight paths. To produce NavData® more efficiently and accurately, the team at Jeppesen ForeFlight explored the possibility of using AI to produce navigational data.

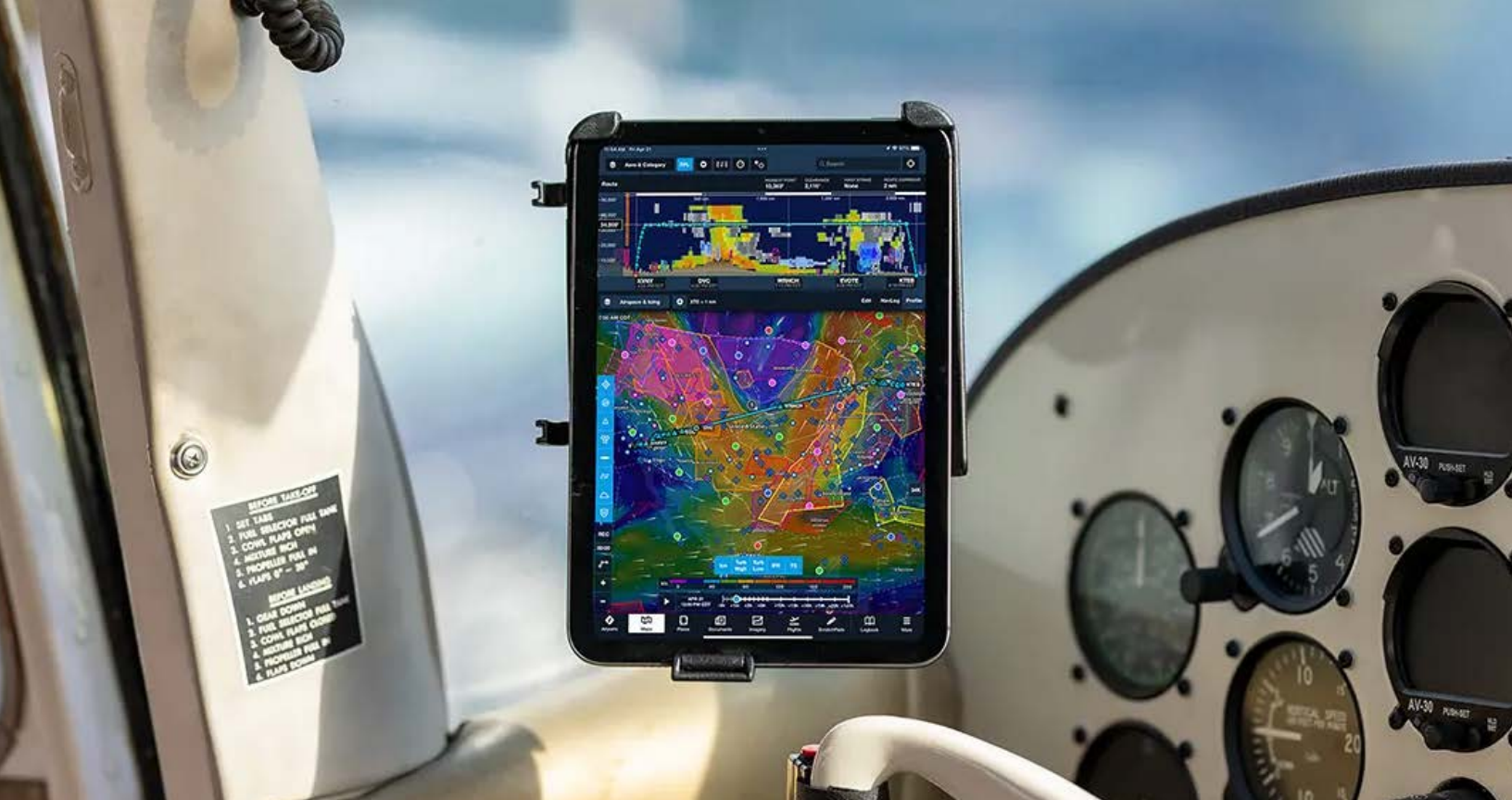
Knowing there are significant risks to using AI for critical data meant the Jeppesen ForeFlight team had to proceed cautiously. They convened experts from the NavData® software engineering and artificial intelligence teams to explore the use of BowTieXP Enterprise to visualize the threats of using AI in data production, understand potential consequences and to determine which barriers were required to prevent inaccurate data and catastrophic

events. Using BowTieXP Enterprise for this risk assessment process helped Jeppesen discover the gaps they needed to fill to use AI in a safe and qualified manner. Instead of taking six or more months to complete this process, the Jeppesen team completed the risk assessment in only two weeks achieving a 13x faster time-to-decision.

This use of BowTieXP Enterprise to proactively assess the risk of using AI in production is the one of the first known uses in the commercial aviation industry' perhaps in all industries, and is currently pending a U.S. patent. Jeppesen has expanded its production using AI in the U.S. and India, creating more data to feed AI and BowTieXP Enterprise, making both tools "smarter" over time. Moving forward, Jeppesen aims to complete risk assessments in no more than 32 hours by combining BowTieXP Enterprise and AI without compromising safety or quality.

*"[These assessments] need to be done quickly, accurately, and efficiently. I know BowTieXP Enterprise is the way to do it and AI speeds it up. The goose that laid the golden egg is BowTieXP Enterprise."*

**Martin Plumleigh, Aviation Safety Risk Management Leader at Jeppesen ForeFlight**



# The future with BowTieXP Enterprise at Jeppesen ForeFlight

Jeppesen ForeFlight looks forward to a continued partnership with the Enablon BowTieXP Suite team to visualize, analyze, and control risks in operations. They would recommend BowTieXP Enterprise to both start-up and mature companies across industries, describing it as the tool to have at the heart of a safety management system based on risk analysis and assurance.

As a company dedicated to safety, Jeppesen ForeFlight owes it to airplane operators and passengers to invest in the best safety software available, which is BowTieXP Enterprise. Investing in the right tools is one of the best ways to ensure the safety of Jeppesen ForeFlight, airplane passengers, and the aviation industry.

*"[BowTieXP Enterprise] gives you an absolute airtight, solid risk picture. You need this exact tool, not just something like it. If you're serious about [safety], get the best. BowTieXP Enterprise is the armor that helps us not only ensure the safety of our products and our business, but the safety of our customers and their customers."*

**Martin Plumleigh, Aviation Safety Risk Management Leader at Jeppesen ForeFlight**

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