



Elevating Operational Resilience with DTN Risk Communicator

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A changing operational landscape





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Resurgence in Air Travel

After a few very challenging years marked by shifting travel patterns and operational strain, airports are once again seeing strong passenger growth. In the United States alone, hundreds of millions of travelers pass through more than 500 commercial airports each year, with global air traffic projected to increase steadily in the coming decade.

The Unpredictable Force of Weather

Weather remains one of the most disruptive forces affecting airport operations. From winter storms and high winds to severe thunderstorms and icing, adverse conditions can cause major delays, safety concerns, and significant financial setbacks for airports and airlines alike. With rapidly changing weather patterns, the urgency to find more targeted forecasting and communication solutions has never been greater.

Limitations of Traditional Forecasts

Traditional weather forecasts, while essential, often lack the operational specificity required for effective decision-making. As extreme weather events grow in both frequency and intensity, the need for advanced weather risk communication strategies becomes increasingly pressing. Many airports are now seeking tailored, real-time insights to better prepare for and respond to incoming weather threats.

Introducing DTN Risk Communicator

This is where DTN Risk Communicator comes into play, delivering highly customized, real-time meteorological insights that enable airports to anticipate, plan, and act with greater precision. By providing location-specific data and continuous updates, it empowers airports to streamline operations, minimize disruptions, and improve overall resilience against weather-related challenges.





The growth of extreme weather



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A Surging Threat

The extreme weather landscape continues to evolve, bringing heightened operational challenges for airport authorities and aviation partners. While recent years have varied in terms of hurricane activity, 2023 and 2024 both recorded a historic number of billion-dollar U.S. weather disasters, with 2023 reaching a record-setting twenty-eight events. These included destructive hurricanes, severe tornado outbreaks, widespread wildfires, and persistent atmospheric river storms that caused major disruption, especially on the West Coast.

Record-Breaking Heat and Cold

Extreme heat is a growing concern for airport operations, with 2023 registering as the hottest year on record globally and 2024 following with prolonged heatwaves affecting ground crews, runway conditions, and aircraft performance. Meanwhile, abrupt cold snaps and powerful winter storms complicate deicing operations, staffing, and flight schedules, putting additional strain on airports already grappling with resource and staffing challenges.

Adapting to a Changing Climate

These weather shifts align with long-term climate trends, as rising global temperatures amplify both the frequency and severity of disruptive events. While forecasting and risk mitigation tools have improved, airport operators must continue evolving their protocols to keep pace with the growing intensity and unpredictability of extreme weather.





DTN Risk Communicator to the rescue





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DTN Risk Communicator enhances standard forecasting by combining hyper-local weather intelligence with real-time operational decision support. Through close collaboration with airport operations teams, it helps define risk thresholds, streamline communication, and deliver continuous updates before, during, and after disruptive weather events. Because each airport faces unique challenges—like ice accumulation, strong winds, or ground crew safety, a generic forecast isn't enough. DTN tailors its guidance to each location's specific vulnerabilities, supporting more confident decisions on staffing, runway closures, and passenger flow. This tailored support unfolds across three key phases: planning, decision-making, and post-event evaluation.





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Phase 1: Prepare

Every airport contends with its own unique set of weather-related challenges, making generalized forecasts insufficient for effective disruption management. For instance, a light winter weather event might cause major concern at one airport, while another—more experienced with winter conditions—may be more focused on high-impact crosswinds. DTN Risk Communicator equips each airport with insights tailored to its specific vulnerabilities, supporting smarter decisions around staffing adjustments, runway availability, and ground operations. As part of the process, DTN develops a detailed weather-risk summary and actionable plans, including a customized trigger chart that initiates response protocols. A clear communication framework is also established to ensure every stakeholder understands their responsibilities before, during, and after a weather event.

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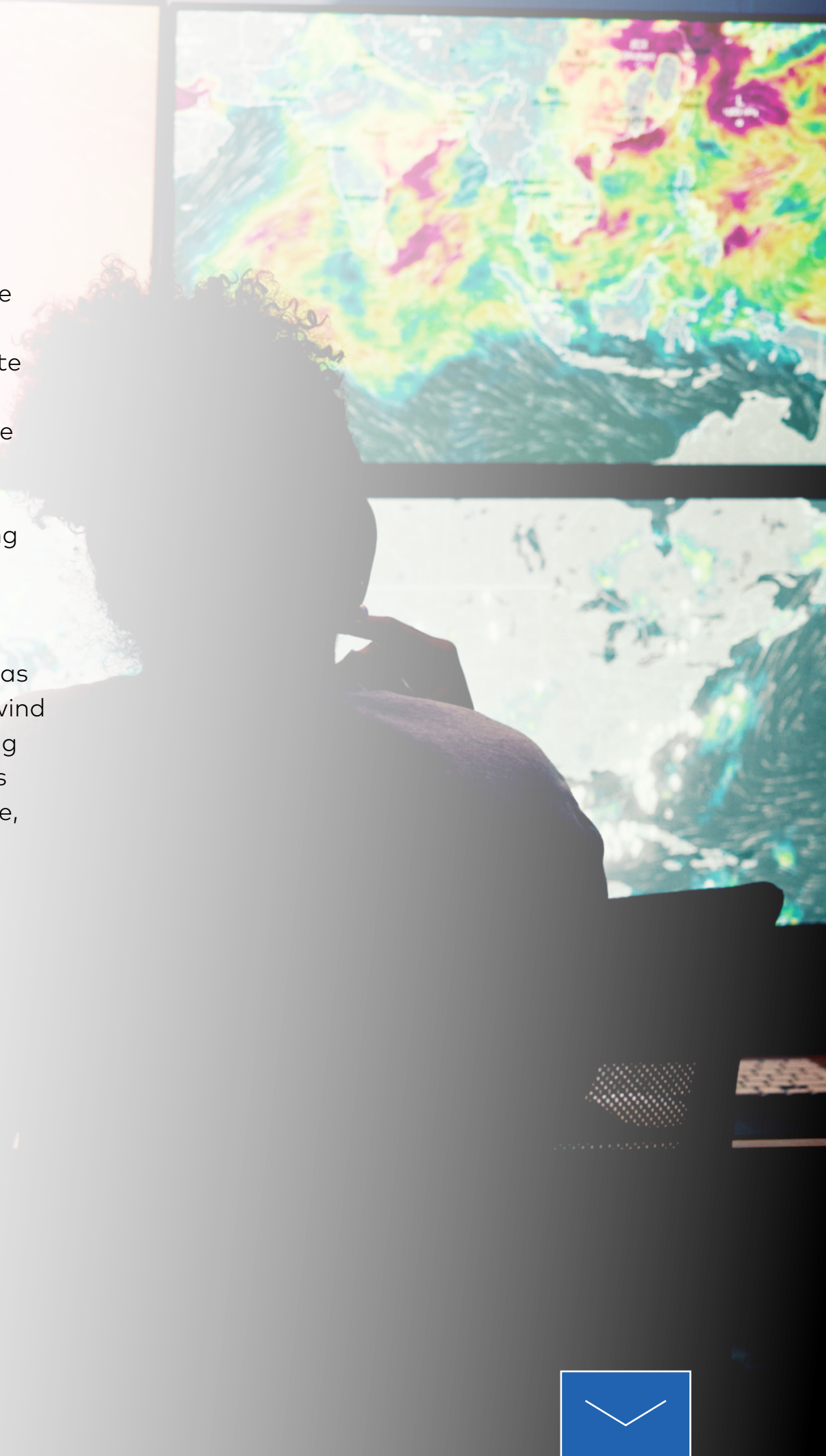
Phase 2: Activate

During this phase, the plan is put into action, and the DTN Risk Communicator serves as decision support, working together with the airport operations team and other primary stakeholders during the high-impact weather event. They actively monitor weather updates and brief the team through a variety of formats, which can differ based on roles and responsibilities.

Communication formats may include:

- Live or pre-recorded daily briefings
- Weather-impact guidance, as needed
- Active monitoring updates
- Stakeholder briefings, which could include emergency management, executive leadership teams, event participants and attendees, and others

High-quality data and forecasts are essential, but when there is the opportunity for multiple response scenarios, it is vital to communicate forecast confidence quickly so operations personnel can make the best-informed decisions possible. DTN Risk Communicators plays a crucial role in nowcasting, providing continuous real-time updates as conditions evolve during an event. This is particularly important for short-fused weather events, such as severe thunderstorms or sudden wind shifts, where rapid decision-making is required. By having direct access to customized weather intelligence, airport operations staff can make quick adjustments to maintain efficiency and safety.



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Phase 3: Evaluate

A critical aspect of DTN Risk Communicator is post-event analysis, which allows airports to assess the effectiveness of their response strategies and identify areas for improvement. Some airports conduct formal post-event reviews to refine their protocols, ensuring that lessons learned from previous storms or disruptions are incorporated into future planning. This continuous improvement cycle is a key differentiator of DTN Risk Communicator, offering not just weather intelligence but a strategic approach to operational efficiency.

The DTN Risk Communicator will create a post-event report that addresses many important questions. Was the risk assessment accurate? Did it help prepare for the weather event and prevent significant impacts? Was there an unexpected risk? Was the preparedness plan executed as agreed upon, or were there gaps? The knowledge gleaned from these post-storm evaluations helps airport operations team better prepare for future weather threats. It adds to the risk communication body of knowledge that supports other industries and the public.

By integrating DTN Risk Communicator into their operations, airports can move beyond reactive weather responses and embrace a proactive, intelligence-driven approach that enhances resilience, minimizes disruptions, and ultimately delivers a better experience for passengers, airlines, and staff alike.





Anticipate, plan and act with greater precision. Elevate your operational resilience with highly customized, real-time meteorological insights.

Learn more

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