

Surface Safety Portfolio

A Goal of Zero Close Calls

The U.S. aviation system is the safest in the world, but one close call is one too many.

In February 2023 the FAA moved swiftly to address concerns and issued a Safety Call to Action to take a critical look at the U.S. aerospace system's structure, culture, processes, systems, and integration of safety efforts.

The FAA and the aviation community are pursuing a goal of zero serious close calls by examining a combination of technical and human factors. An independent safety review team is also examining ways to enhance safety and reliability in the nation's air traffic system. This same approach was used for U.S. commercial airlines, and it virtually eliminated the risk of fatalities aboard U.S. carriers. Since 2009, U.S. carriers have transported more than the world's population with no fatal crashes.

Safer on the Surface

In an effort to address specific safety concerns on the airport surface, the FAA has fast tracked three initiatives as part of its Surface Safety Portfolio:



Surface Awareness Initiative

The **Surface Awareness Initiative (SAI)** will deliver capabilities to improve controller situational awareness and reduce runway incursions.

The challenge with surface awareness is ensuring the controllers have vision of all the activity on that surface. SAI provides timely and accurate depictions of both aircraft and vehicles on the surface movement areas of an airport in all weather conditions.

Currently there are airports where tower controllers do not have visibility of all areas of the airport surface. By deploying the SAI capability to the tower cab, controllers will have the awareness necessary to proactively address any potential safety concerns.

The FAA released a Screening Information Request (SIR) in December 2023 to solicit proposals from industry to identify a list of best solutions and, from that list, select capabilities for deployment based on the operational uniqueness of a given airport location. The SAI team worked to ensure the solutions proposed by industry met requirements and needs of ATC to improve their surface situational awareness. Four initial sites are successfully operational with SAI as of June 30, 2024, and a second block of 14 sites are expected to be operational by December 30, 2024. The FAA is finalizing a plan to install SAI systems at additional airports in fiscal year (FY) 2025.



Approach Runway Verification

There are also opportunities to improve the functionality of existing systems to address the challenge.

The **Approach Runway Verification (ARV)** is a function within the FAA's terminal automation system known as STARS. When aircraft are approaching the airport, the controller issues a landing clearance to a specific runway. The pilot may believe they are aligned with the proper runway but could actually be lined up with an adjacent runway or even a taxiway. The ARV will alert ATC of an aircraft that is not aligned with the runway surface as instructed.

The STARS software baseline that is now available for national deployment includes the underlying ARV functionality. Site specific adaptations based on runway configuration and procedures are developed before ARV can be utilized for a given airport.

As of August 29, 2024, ARV is monitoring 45 airports (i.e., Air Traffic Control Towers); the Program Management Organization is working towards providing ARV monitoring to over 50 airports by the end of FY 2024.

The goal is to have ARV available for identified airports within all STARS facilities.



Runway Incursion Device

The **Runway Incursion Device (RID)** is a capability used by Air Traffic Control to provide additional situational awareness of occupied and closed runways.

RID provides an audible and visual alert to controllers when a runway is not available for departing or landing aircraft. This is yet another tool in the toolbox for controllers to use in order to continue to provide the safest surface environment.

The goal of the RID program is to replace all RID units with the objective of standardization and supportability of a National Airspace System (NAS) device at approximately 64 airports throughout the NAS.

In November 2023, the program received Joint Resource Council approval to proceed with implementation. RID devices will be installed at five airports for an operational evaluation beginning in November 2024, with deployments to 64 airports starting in January 2025.

Safety is not a static destination—it is the relentless pursuit that requires continuous improvement. These initiatives represent important improvements, but they are just a small part of a much larger and integrated effort and philosophy. The FAA will continue to analyze the data and make thoughtful and holistic recommendations to advance safety in the NAS.



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