

Global Aeronautical Distress Safety System (GADSS) Q&A

Q: What are the GADSS Related Global Aircraft Tracking Initiatives?

A: After the MH370 and AF447 tragedies, the ICAO Council (The International Civil Aviation Council, a UN Specialized Agency) reviewed worldwide flight tracking best practices and has issued [Standards and Recommended Practices \(SARPs\)](#) for **normal aircraft tracking** and the location of an **aircraft in distress** (ADT – Autonomous Distress Tracking).

The **SARP for normal aircraft tracking** establishes a) the air operator's responsibility to track its aircraft throughout its area of operations at a time interval of 15 minutes, b) requirements for data retention to assist search and rescue (SAR) in determining the last known position of the aircraft and c) when an air operator needs to report missing aircraft position information.

The **SARP for ADT** establishes the requirement for an aircraft to autonomously transmit information from which a position can be determined at least once every minute when in a 'distress condition'. An aircraft is considered to be in a distress condition when it is in a state that, if the aircraft's behavior, or an event, is left uncorrected, could result in an accident.

Q: When do the SARPs go into effect?

A: The SARPs for normal aircraft tracking became effective on March 20, 2016 and will be applicable on November 8, 2018. The SARPs for ADT became effective on July 11, 2016 and will be applicable on January 1, 2021.

Q: How does ACARS Manager enable my airline to comply with the normal aircraft tracking SARP?

A: Sabre ACARS Manager is a robust aircraft communications management solution that is able to receive position reports from all Data Link providers. This gives airlines the flexibility to choose the solution appropriate to their specific route structure. This could potentially include a combination of providers based on the applicable areas of coverage.

For example, a long-haul carrier may rely on ACARS (Aircraft Communications, Addressing and Reporting System) position reports over VHF (Very High Frequency Radio) for the majority of their operating area, augmenting with SATCOM (Satellite Communication) based position reports for their Oceanic and Polar operations.

Position reports can be accessed through the Message Browser, graphically displayed on a Gantt chart in the Movement view, and on a map in the Aircraft Positions view.

Q: If my airline operates in remote areas not covered by ground based networks (ACARS, ADS-B), will space based ADS-B be my cheapest option?

A: Not necessarily. Space based ADS-B (Automatic Dependent Surveillance – Broadcast) utilizes the same basic communications methods as SATCOM via Inmarsat and Iridium. Setting up ACARS Manager to receive ACARS position reports *as needed* via those providers could prove to be more cost effective than relying on space based ADS-B.

Q: How can ACARS Manager enable my airline to comply with the Autonomous Distress Tracking (ADT) SARP?

A: ACARS Manager has the ability to manage the position report interval and forward information, at specific intervals, based on specific triggers. These triggers could include maintenance reports, diversion reports, medical reports, and many others. Airlines are empowered to base a forwarding rule (Recipient + format) on the specific data content of the incoming message, providing for tailored alerting for key personnel in their operation.

Q: How does Flight Explorer enable my airline to comply with the normal aircraft tracking SARP?

A: Flight Explorer goes beyond 'flight tracking', incorporating multiple data feeds, dynamic weather overlays, situational alerts and predictive weather and air traffic tools to make FE Professional an essential flight operations management tool. Flight Explorer combines multiple position data feeds along with environmental observational and forecast overlays for a seamless operational picture. Worldwide operational coverage is enabled by combining government feeds from the FAA, EuroControl, Airservices Australia (for AUS based operators only), and Airways New Zealand, along with ADS-B from our partner PlaneFinder.net, and airline forwarded data from their ACARS and SATCOM/Iridium subscriptions.

Alerts can be custom-tailored by the operator to notify for gaps in position report coverage greater than 15 minutes, with the ability to alert for time since last position report at four different thresholds: Info, Watch, Warn, and Critical.

Flight Explorer also lets operators control how they want to be alerted. Emails can be sent to specific groups or individuals. The plan can be tagged, centered upon, followed, or

marked. And the flight can be added to an event list with the option to highlight the alert in a specific color and require acknowledgement of reading the alert.

All position report data can be logged and managed by the airline, giving them complete control on how to archive and share the position data.

Q: How can Flight Explorer enable my airline to comply with the Autonomous Distress Tracking (ADT) SARP?

Flight Explorer gives operators precise control over selecting the events that they define as in a state that could result in an accident, and select the specific alert actions to be taken for each event. The Flight Alert Event Manager is used to select these settings, providing management of alerting methods and configuring the specific thresholds and settings. The Aircraft Irregular Operations events are enabled through 3PDI (third party data interface) to the operator's flight plan data, and are defined as Diversion, Extra stop, Over-fly/no-stop, return to field, or return to gate. Other events include destination changes, route deviations¹, route distance changes², route ETE (estimated time en-route) changes, holding, and emergency beacon code.

By adding optional integration to an ACARS management system, users can request a position report or change the default position update period directly for a flight through the interface at any time based on their criteria.

Q: How does having the integrated solutions ACARS Manager & Flight Explorer enable my airline to comply with the normal aircraft tracking SARP?

A: By combining ACARS Manager and Flight Explorer, operations are empowered with an operational view that goes well beyond the basic SARP.

Flight Explorer's comprehensive event based alerting provides the ability to set an alert threshold of 15 minutes for gaps in position reports, and automatically makes a request for a position report to the aircraft via ACARS Manager. This works hand in hand with Flight Explorer's multiple position data feeds so that no one feed is relied on. In addition, position report requests can be made via the Flight Explorer GUI, so the user is not limited to only the preconfigured settings.

Q: How does having the integrated solutions ACARS Manager & Flight Explorer enable my airline to comply with the Autonomous Distress Tracking (ADT) SARP?

A: By combining Flight Explorer's extensive event based alerting with ACARS Managers flexible trigger settings, operators are able to customize the events where they define the aircraft as being in distress in Flight Explorer, and automatically have ACARS Manager request a position report at 1-minute intervals from the aircraft. These events could also

¹ Requires flight plan data via the 3PDI interface

² Requires flight plan data via the 3PDI interface

trigger messages to other people and systems via email, or other industry standard messaging formats to notify them of the event.

For example, a transponder code of 7700 for emergency is received by Flight Explorer for a transpacific flight currently 1014nm NNW from PHOG (Kahului Airport, Hawaii). Based on preconfigured settings in Flight Explorer and ACARS Manager, the position report interval is automatically reduced to 1 minute from 15 minutes, SMS and email alerts are sent to key stakeholders, and the position report data is passed to Flight Explorer. Based on the transponder code event settings for this operator, Flight Explorer provides an alert in the Event List that is highlight in bright pink and must be acknowledged by the user, zooms in to the flight with a unique marker to identify it, provides a tag with information regarding the flight including the reported fuel on board, and plays a voice through the PC stating, "Emergency declared".

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