

# Identify high-risk travelers faster and more accurately through better analysis of PNR data



## Business Impact

"... border security administrations face ... a need to cooperate ever more closely with an expanding range of external agencies to process rising levels of legitimate trade and travel in declining intervention time frames at the border while responding to increasingly well-informed and agile criminal activity."

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## Challenges

- **Passenger volume.** Globalization has increased traveler volume, creating the need to access more data from outside agencies, countries and open sources.
- **Data explosion.** Agencies will continue to add data sources, while the speed at which data is transferred across states or countries will increase as well.
- **Reduced resources.** Government agencies are losing employees from attrition, resulting in a shrinking workforce.
- **Security, convenience and cost.** In efforts to be thorough and accurate, border control agencies are taking a long time to process passengers. Agencies must increase efficiency to reduce inconveniences for lawful travelers.

Soft-target incidents of terrorism. Drug smuggling. Human trafficking. While globalization increases the volume and diversity of passengers traveling across borders, countries need to bolster security at their borders to mitigate threats. To improve safety through a common approach, the European Union has implemented a passenger name record (PNR) data directive to better track passengers and gauge the risk they present to a country prior to entry.

An effective PNR system can quickly and more accurately screen passengers to ensure tighter border control and provide more advanced detection and prevention of terrorist threats for national security, human trafficking, migrant smuggling and the import/export of contraband, including drugs. By analyzing the increasing amount of PNR data, agencies can identify persons who were previously unsuspected of involvement in terrorism or in serious crime for further examination by the authorities.

## Our Approach

SAS offers a broad PNR data system for border management and security that supports continuous management and evaluation of high-risk passengers based on their pattern of activities, watch lists and other data while helping to expedite the smooth movement of legitimate travelers. SAS® encompasses data management, watch-list processing, entity resolution, risk assessment and investigation management using big data processing tools, advanced analytics, machine learning and artificial intelligence.

- **Identify entities and link data sources.** Identify people who pose a risk based on an objective analysis of all available data – especially PNR. You not only get more accurate results, but also reduce the potential for inefficiency and annoyances that can result from more rudimentary forms of traveler screening.
- **Apply multiple analytics methods.** SAS provides a set of approaches for a more comprehensive strategy: rules-based profiling, social network analytics, text analytics, investigation support, real-time decisioning and machine learning.
- **Reporting.** Issue strategic and tactical reports to decision makers, analysts and other critical stakeholders.
- **Investigation management.** Support your investigators by providing a clear picture of risks and all data needed to make assessments. Foster collaboration and exchange of best practices.

## The SAS® Difference

SAS big data analytics capabilities enable quick decisions about whether to stop passengers to reduce disruption and delays for the majority of travelers. Regardless of data speed, quantity or source, SAS helps investigators trigger processes based on defined patterns and relevant data and alert stakeholders in real time about escalating threats or other priority issues.

- **View data from multiple sources, including PNRs.** Improve success in targeting illegal or high-risk travelers by incorporating intelligence from internal and external data sources that may have a bearing on illicit or high-risk movements.
- **Process data in real time.** Sort huge volumes of clean data and focus on the critical issues through high-powered analytics. SAS makes it easy to understand what your data has to tell you by interactively exploring billions of rows of data from diverse sources in seconds.
- **Do fuzzy matching and entity resolution.** Identify and link entities in multiple documents and data sources.
- **Apply advanced analytics.** Combine risk rules, analytics, machine learning and social network analysis technology to learn from historical data and find previously unknown risk behavior. Social network analytics uncovers previously unknown links between entities.
- **Scan watch lists.** SAS processes watch lists that serve to identify high-risk travelers who should be questioned, detained or treated differently.

## Border Control Case Study

### Situation

The agency's goal: To balance convenience and freedom of movement for legitimate passengers against the need to keep national borders secure while keeping costs in check.

The range of offenses can include drug smuggling, human trafficking, illegal immigration and terrorist activity. A sample data set may include 3.3 billion passengers, 50,000 routes and 149 passengers per lane per hour.

### Solution

- **Watch list management**
  - In multiple country locales.
  - Flexible scoring for reduced false positives.
- **Risk-based profiling/scoring**
  - Business rules.
  - Anomaly detection.
  - Data mining.
  - Network analysis.
- **Data management**
  - Connect data from various travel operators.
  - Combine data to form a complete picture.

### Results

- Dynamically identify high-risk passengers based on their pattern of activities and proximity to entities on watch lists while facilitating the passage of legitimate passengers.
- Identify previously unknown passengers engaging in criminal activities such as drug smuggling, illegal immigration and terrorism.

- Support border officers during operational actions and investigations by providing them with the right information at the right time.
- Monitor the performance of all agency operational activities.

## What if you could...

- Automatically sift through multiple, diverse data sources and watch lists to uncover a traveler's true identity for real-time decisioning?
- Pre-link all information and automatically score resolved entities so your investigators can focus on assessing behavior risk and making decisions?
- Improve your hit rate by combining and analyzing all information based on risk rules and advanced analytics?
- Apply an advanced analytics model that learns from every new piece of information and automatically captures and adapts to new risk behaviors?

You can. SAS gives you  
**THE POWER TO KNOW®.**

## SAS Facts

- SAS has more than 40 years of experience working with big data analytics challenges for public safety and security agencies around the world.
- SAS is used by more than 170 public safety and security clients across six continents.
- SAS solutions for public safety and security have been developed with domain expertise from law enforcement and intelligence professionals.

Learn how SAS helps border security at [sas.com/security](https://sas.com/security).

To contact your local SAS office, please visit: [sas.com/offices](https://sas.com/offices)

