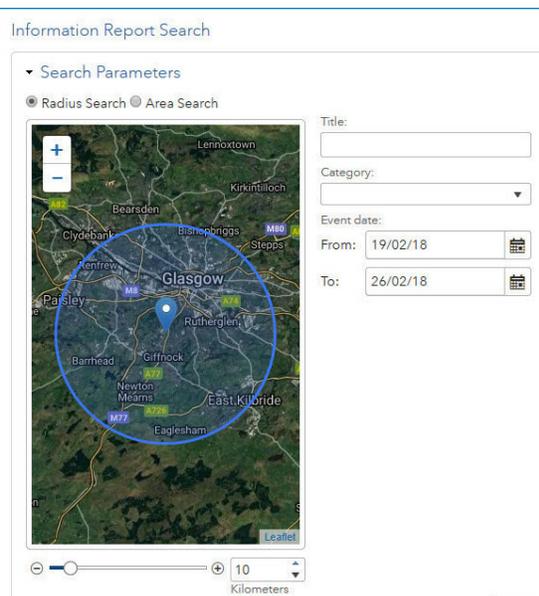


# SAS® Intelligence and Investigation Management



To be effective in their operations, law enforcement, public security and intelligence agencies engaged at all levels of government must make full use of disparate and diverse data sets. But these massive and ever-increasing quantities of data can strain limited operational resources. Without the appropriate investigative focus, the risk of failing to identify areas of increasing threat multiplies.

The challenge for agencies is further intensified by the need to adhere to mandatory legislative processes. To succeed in this environment, agencies need modern tools capable of joining and interpreting huge quantities of data, generating effective alerts, and detecting anomalies while supporting officers through the rigors of due process.

SAS supports end-to-end operational processes, combined with enterprise data management, analytics and alert triage, in one solution for intelligence and investigation on one cohesive platform. It provides mechanisms to identify and explore complex networks (e.g., criminal and terrorist connections) across multiple data sources, and over variable time periods. Collaborative workspaces let law enforcement professionals apply traditional investigative and intelligence

## What does SAS® Intelligence and Investigation Management do?

For justice and public safety agencies conducting investigations, the SAS offering capitalizes on our experience providing data management, advanced analytics and operational solutions to gather and manage intelligence, conduct complex investigations, and improve overall investigative workflows and processes, including both tactical and strategic activities.

## Why is SAS® Intelligence and Investigation Management important?

The volume, variety and velocity of data facing investigators is increasing rapidly; information is usually of poor quality and held in disparate data stores. Making sense of this data and quickly understanding the underlying connections are critical for any investigation or intelligence development activity. SAS provides a platform that merges large data sets so your users can gain a single view of the truth and analyze any given entity with industry-leading and automated capabilities.

## For whom is SAS® Intelligence and Investigation Management designed?

The solution is intended for anyone from operational police officers to executive-level officials at local, state, national and cross-border agencies. This may include front-line officers, investigators and intelligence professionals at national security, police and intelligence agencies. In addition, analysts can identify entities at a glance and better understand their data.

practices – seamlessly interwoven with SAS software’s advanced analytical capabilities.

Diverse operational activity is supported where officers have access to powerful capabilities to search and gain insight through enhanced data access. Specialist intelligence and investigatory roles can exploit integrated visualization and analytical tools to develop hypotheses and create custom reports. The solution, which can be integrated with real-time event streams, alerts investigators and analysts on significant patterns within their data or patterns indicative of escalating risk.

Role-based access permissions ensure the appropriate levels of access so that information is kept secure. The solution is highly configurable, capable of supporting numerous organizational disciplines through the creation of multiple record types and their associated workflows.

## Benefits

- **Data integration.** SAS makes it easier to handle big data rapidly and accurately and to process, analyze and access large volumes of complex data in many different formats. This means officers can take all

available information into account in a timely way when planning and executing operations.

- **More effective enterprise intelligence.** By reaching across the enterprise, SAS facilitates operational effectiveness and the sharing of information for a wider pool of intelligence. While immediate access to information brings benefits in all areas, it can be invaluable in gaining “fast time intelligence” when dealing with a live and ongoing incident.
- **More efficient use of officer time.** This is a single, end-to-end solution covering operational areas of intelligence and incident and investigation management, with the ability to generate operational reports. SAS runs data through rigorous, established processes to create interrelated entities. The solution makes these entities available immediately to those who need access – within security permissions – and reuses them in subsequent reports to reduce officer data entry time.
- **Advanced analytics.** Because SAS is the leader in advanced analytics, it’s not an optional extra or add-on, but an integral component of our solution. Professionals

working within the operational environment (e.g., recording, managing and investigating crime) can gain valuable insights and develop investigative streams through an easy interface to use analytics in the form of social network analysis, timelines and text analytics, to name a few.

- **Designed from domain expertise.** SAS has more than 30 years of experience delivering solutions to law enforcement, security and intelligence agencies. Our own industry professionals, with many years' experience in policing and intelligence agencies, designed this solution with input from our global customer base.

These subject-matter experts work closely with our R&D teams to ensure that our software is current, intuitive, and addresses your difficult and emerging challenges.

## Capabilities

### Search and discovery

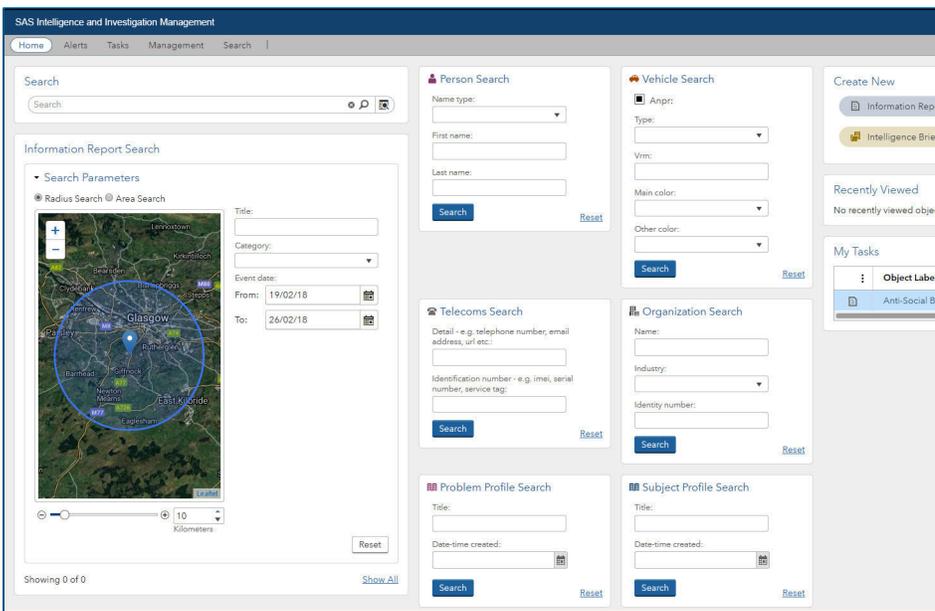
The speed and flexibility of the search process enables users to gain a full view of the information relating to a subject, leading to quicker and more effective investigations. One of the key features of the search technology is its ability to provide real-time results to users, based on the most up-to-date information.

Fast and accurate searches across a wide range of formats are possible with our end-to-end solution. Subject to security permissions, users can search across the entire enterprise or only specified areas, e.g., intelligence and incident records. The solution supports many types of search – including structured, unstructured and geospatial – across all data (from internal and external sources.) Filter and visualize search results in different ways to aid investigations and discover pertinent information about entities, resolved entities and relationships. Initiate actions such as adding results to investigation workspaces for further analysis.

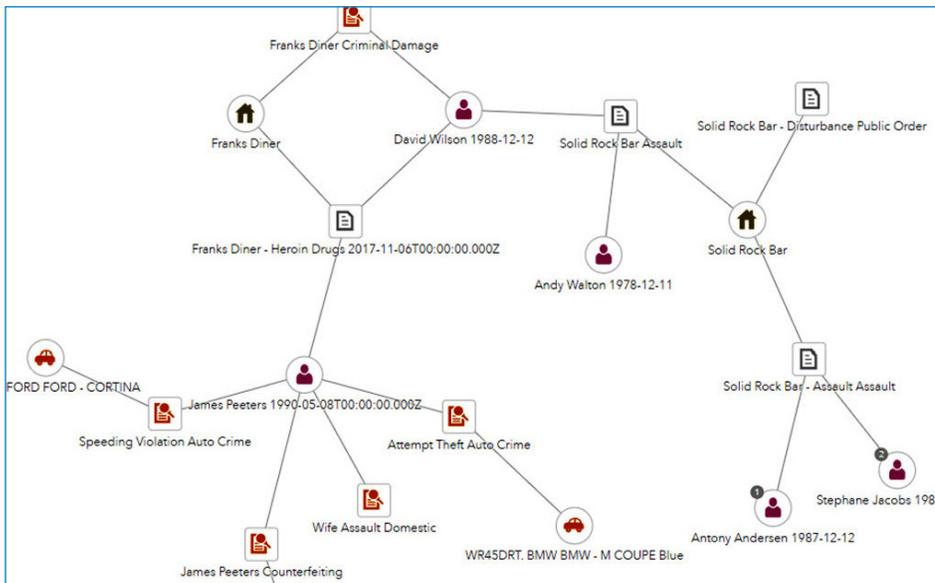
### Analytic impact

Our solution offers valuable capabilities that allow you to implement analytics across your agency – from front-line to high-level officers – to improve workflow and case management and triage alerts for fast results.

As a complete, unified operational law enforcement platform, SAS Intelligence and Investigation Management avoids the complexity and integration problems associated with maintaining multiple systems. Operating a single system removes the need to input information separately into multiple locations, thereby reducing the time officers spend on data input. Distinct areas of business can share the same set of entities (e.g., person or location entities); the resulting relationship model reveals insights across the enterprise and facilitates interdepartmental sharing.



A typical SAS Intelligence and Investigation Management homepage, depending upon the user's job description.



Network diagram displaying the links within a typical criminal organization.

We offer:

- **Intelligence management.** Gain access to the full range of functions required in a modern intelligence environment, compliant with internationally recognized best practices. Workflow processes and associated entities support all levels of activity, from basic input to complex intelligence development, while integrated alert generation allows for the triage and prioritization of workload. Analysts can use powerful SAS visualization capabilities to develop deep analytical insights and build intelligence products incorporating network link diagrams, timelines, map views and more.
- **Incident and crime recording.** The solution accommodates incident recording, management and investigation processes. Highly configurable, it can be tailored to meet your data collection and business process requirements. Secure your information with a role-based model that ensures only

appropriate data access. Where there are operational activities peripheral to the main incident, SAS provides the necessary entities and workflow to support these processes. Integrated tasking and notifications streamline operational processes, and analytical alert generation highlights patterns of significance and anomalies within operational data. Image support provides users with the ability to add, remove and annotate images relating to an object.

- **Investigation management.** You can work with a full range of investigation types, from low-level crime inquiries to complex major incident response. We provide industry-informed best practice methodology, including the creation of policy/decision logs, risk assessments and the application of action plans. Where necessary, the role-based access model provides a hierarchical structure that allows a senior investigating officer to allocate responsibilities to others while maintaining oversight of all the associated activity. Where significant documents are collated (e.g., witness accounts), text analytics aids investigators to isolate the relevant entities and link those to a set of unique records. This way, investigators can quickly gain insight into the significant networks and relationships. Through visualization workspaces, you can simultaneously manage multiple investigation streams and develop hypotheses through the generation of network link diagrams, timelines and map views.
- **Automated report generation.** The solution includes the ability to generate a range of standardized operational reports for use internally or for sharing with partner agencies. The process is designed to ensure quality and completeness by taking multiple records and collating them into the relevant case entities (e.g., incident reports, investigation updates, person records), while the content is used to populate print templates.
- **Record linking.** With an overview of the structure of networks, analysts and investigators can quickly gain an understanding of how people, objects and locations are connected and develop insights that can be vital when responding to an incident or in progressing lines of inquiry. As a core component, a best practice substantiation model ensures that records don't

## Key Features

### Search and discovery

- Free-text search to discover data pertinent to an investigation.
- Refine search results using interactive filters and facets.
- Perform a field-based, form search for a specific entity type – such as first name/surname for an individual or registration/license plate number for a specific vehicle.
- Fuzzy searching, proximity searching and field boosting available while restricting searches to specific entity types, fields, comments or insights.
- Inspector Pane to preview and refine details of search results interactively.
- Selection tools to highlight and collate objects for further investigation.

### Analytic impact

- Intelligence management: workflow processes, alert management and visualization.
- Incident and crime recording: operational activities, entities, workflow, integrated tasking and notifications, and analytical alert generation.
- Investigation management: best practice methodology, text analytics, networks and relationships, visualization workspaces and multiple investigation streams.
- Automated report generation: a range of standardized operational reports.
- Record linking: understanding of how people, objects and locations are connected with a substantiation model.

### Alert and intelligent case management

- Visualize alerts in different views to gain context.
- Enhance alerts by adding entities and integrating and connecting data.
- Escalate by routing alerts or changing their priorities.
- Apply autodisposition options.
- Designate an alert to prompt a deeper investigation.
- Management overview of disposition activity.

### Entity analytics and resolution

- Network viewer/node link diagram to visualize and interactively explore networks and network layout, develop communities, and identify unapparent relationships.
- Visualize complete networks and relationships through multilevel link expansion.
- Network analytics identifies areas of interest and centrality within the network by showing entity closeness, betweenness, influence, etc.
- Node decorators help to understand network data by highlighting useful information on the node icon view; for example, use an indicator to differentiate customer accounts held at different banks.

### Surveillance

- Author scenarios using rule builder, decision table or SAS code.
- Restrict defined scenarios for parameter adjustment by role.
- Perform scenario testing.
- Creation of score based on scenario(s).
- Batch or on-demand execution.

### Investigative workspaces

- Interactive visualization and search.
- Take static clips of visualizations and add them to Insights module.
- Ad hoc data imports, analysis, indexing and data visualization with self-service features.

exist in isolation and are always linked to one or more entity types, e.g., a person may be linked to one (or many) incident records.

## Entity analytics and resolution

SAS is set apart by interactive entity resolution capabilities that help analysts get the most accurate picture of complex relationships. We offer a powerful, configurable entity extraction and resolution capability; when no connection has been made between entities, the system can, based on record characteristics, automate the links. The automation of this process greatly reduces user workload and helps you discover and visualize complex networks and associations.

SAS entity analytics supports and directs intelligence analysts by showing entity closeness, betweenness and influence to highlight areas of potential interest. Seeing the complex network of relationships between people, places, things and events over time and across multiple dimensions helps analysts identify relationships that aren't obvious, traverse and query complex relationships, and uncover patterns and communities interactively.

Analysts can also interact through the network viewer to see entire social networks. They can expand or trim the network as required, explore communities and individual relationships, and manipulate the network layout. Finally, they can take snapshots and clips of the insights that they develop, collaborate with other investigators and document their findings. Finally, they can take snapshots and clips of the insights that they develop, collaborate with other investigators and document their findings.

## Alert and intelligent case management

SAS provides a comprehensive decision management function that triggers alerts and discovers events of interest through the deployment of advanced analytic models, business rules, scenarios or integration with third-party systems (communicating back and forth).

## Key Features (continued)

### Product configurability

- An open data model to meet different and evolving business requirements and situations.
- Configure and manage alerts and events with a streamlined, easy workflow.
- Dynamic page designer and viewer.
- Configuration import/export component makes it easy to develop, maintain and deploy solutions.
- Workflow engine allows you to model and enforce business processes within the solution, ensuring compliance with relevant best practices or regulatory requirements.
- Role-based access controls, security and auditing ensure that data is only accessible by authenticated and authorized users.
- Audit trail provides a detailed view of activities performed on the system by other users.

### Surveillance

Using an intuitive user interface, you can author scenarios that generate alerts in the appropriate queue for analyst review. Advanced SAS users can create rules using SAS code.

Tripwire functionality enables an object to be tagged in such a way that whenever anyone views, edits or deletes it then an email is sent to users who have registered an interest in it. Tripwires can be configured to display a message to the user viewing the object.

### Investigative workspaces

The investigative workspaces offer analysts collaboration, compliance and efficiency. The interactive visualization and search components help analysts build, gather, explore, visualize and manipulate data that's pertinent to their investigation or research. They can take static clips of visualizations and add them to the Insights module to narrate maps, timelines, networks and other content.

In addition, users can perform ad hoc data imports, analysis, indexing and data visualization with self-service features. Users can also print the Insights they create.

### Product configurability

All aspects of the system - including the data model, forms used to display data, workflows, alerting strategy and security model - are entirely configurable using a powerful web-based interface. Organizations can take advantage of the solution's flexibility to respond to different business needs or evolving trends. We support an open data model and provide a straightforward mechanism for administrative configuration - including designing interfaces, components and screens used to display and work with data.

You can use Page Builder to drag and drop standard controls such as text boxes, calendar controls and maps onto a form to present data to the user in the most suitable manner. With the Workflow Administrator, you can model best practices by developing business process diagrams in an easy-to-use graphical interface. This means your agency can adapt the solution to adjust to changing business needs or legislation.

A custom control code editor enables an administrator to easily make changes to the map lookup and markup control configurations.

To learn more:  
[sas.com/intelligence-investigation](https://sas.com/intelligence-investigation)

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

