



Protecting social benefits
Get better program outcomes
with AI-powered tools

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01

Looking at improper payments in a new light

The complexity of fraud, waste and abuse that is occurring within public programs is quickly evolving and demanding new strategies for investigating and preventing improper payments.

Trust is a core element of everything citizens want from their government. This is especially true for social programs that are centered on improving their wellbeing. When payments go out that should not have been made or were made in the incorrect amount, citizens lose confidence in their government's ability to manage their money and be fiscally responsible.



The United States (US) Department of Labor shows a three-year overpayment rate, including fraud, that exceeds \$26 billion in unemployment insurance.

More than 340 cases of fraud against the US Paycheck Protection Program (PPP) have been brought with alleged intended losses of over \$700 million.¹

The US Department of Justice has seized over \$1 billion in Economic Injury Disaster Loan (EIDL) program loan proceeds.²

In the United Kingdom (UK),³ the Department for Work and Pensions (DWP) overpaid (FY 2021–2022) an “eye-watering” £8.6 billion across benefits, with £6.5 billion of that figure due to fraud.⁴

Guardia di Finanza (Italy) reported that 48,392 fraudsters were identified from 2019 to 2023, and they unduly received or requested social welfare benefits that amounted to €505,721,704.⁵

Tight budgets and limited resources are major strains on governments. Fraud schemes and scams are more sophisticated, and new ones pop up every day. Even if governments can add headcount, protecting their constituents' money from fraud, waste, and abuse is challenging.

From individuals who either purposefully or unintentionally breach the rules of the system to international organizations conducting multidimensional organized fraud, bad actors have taken advantage of fast-evolving technologies and newly available methods.

With the advent of immense and infinitely scalable cloud computing power and artificial intelligence (AI) capabilities, fraud has become a growing threat. To stay ahead, agencies and governments must deploy technologies that enhance human enforcement capabilities like never before. They also need to maintain vigilance during times of disruption and economic or social turmoil. That calls for modern systems to accelerate decisions and respond faster.

The partnership between SAS® and Microsoft uses hyperscale cloud paired with AI-powered analytics that can help spot suspicious practices faster and stop more improper payments before the money goes out the door. In this e-book, we'll highlight the evolving tactics used to compromise benefit programs and introduce you to the transformative technology created by the partnership between the SAS® Payment Integrity for Social Benefits™ solution and Microsoft Azure.

02

A new field guide to today's borderless risks

Abuse, errors, and fraud occur at all levels of public assistance. Erroneous payments not only siphon off critical resources, but they also undermine public trust in governmental institutions. The following examples illustrate the complexity and ingenuity of the risks today.

1. Individuals: Opportunistic exploiter

At the individual level, fraud and abuse often manifest through false claims and misrepresentation of personal circumstances. For public programs, individuals make claims to benefits to which they are not entitled. For instance, the US Social Security Administration reports a 9.3% rate of improper payments in the Supplemental Security Income (SSI) program for fiscal year 2023. While that includes all errors, from fraud to improperly filled out forms to agent error, it still shows the imperfections in a vastly complicated system.⁶

Many agencies are understaffed – and fraudsters use that to their advantage. Resource limitations inhibit an agency's ability to immediately investigate and stop illegal activity.

Another example may be an individual who collects benefits in multiple programs, possibly in various locations, under the same or different names. These problems partially arise due to a lack of a 360-degree view of the individual, lack of interagency and interjurisdictional coordination and data silos.



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2. Criminal rings: Organized deceivers

More organized and insidious are the criminal rings that orchestrate large-scale frauds against government programs. These rings often involve multiple individuals collaborating to exploit stolen identities, create false identities or steal benefits through electronic fraud.

Millions of people worldwide who sought financial relief for unemployment during the pandemic may have been wrongfully denied benefits. Why? Criminal rings had already used their identities to obtain the benefits they were supposed to get. Governments were unsure which applicants were the real people and often responded slowly – leaving taxpayers in need without the services they should have received.

These criminal rings can create synthetic identities that blend key data from real people with fake data. Once a fake person or company is created, the synthetic identity is used to apply for benefits, loans, and other services. This is how these rings have committed fraud in the banking and finance sectors for years. But now, the money can be transferred out of the country and become unrecoverable within hours of government payments being made.



Often, social benefit programs often issue income support and food assistance using debit cards or Electronic Benefits Transfer (EBT) cards. Organized crime rings simply use old banking fraud tricks to steal directly from the beneficiaries using card skimmers. A skimmer is attached to an ATM or fuel pump and collects the swipe card data and PIN. Sometimes, within a few hours, the thieves drain the account. For food assistance in the US, part of the federal Supplemental Nutrition Assistance Program

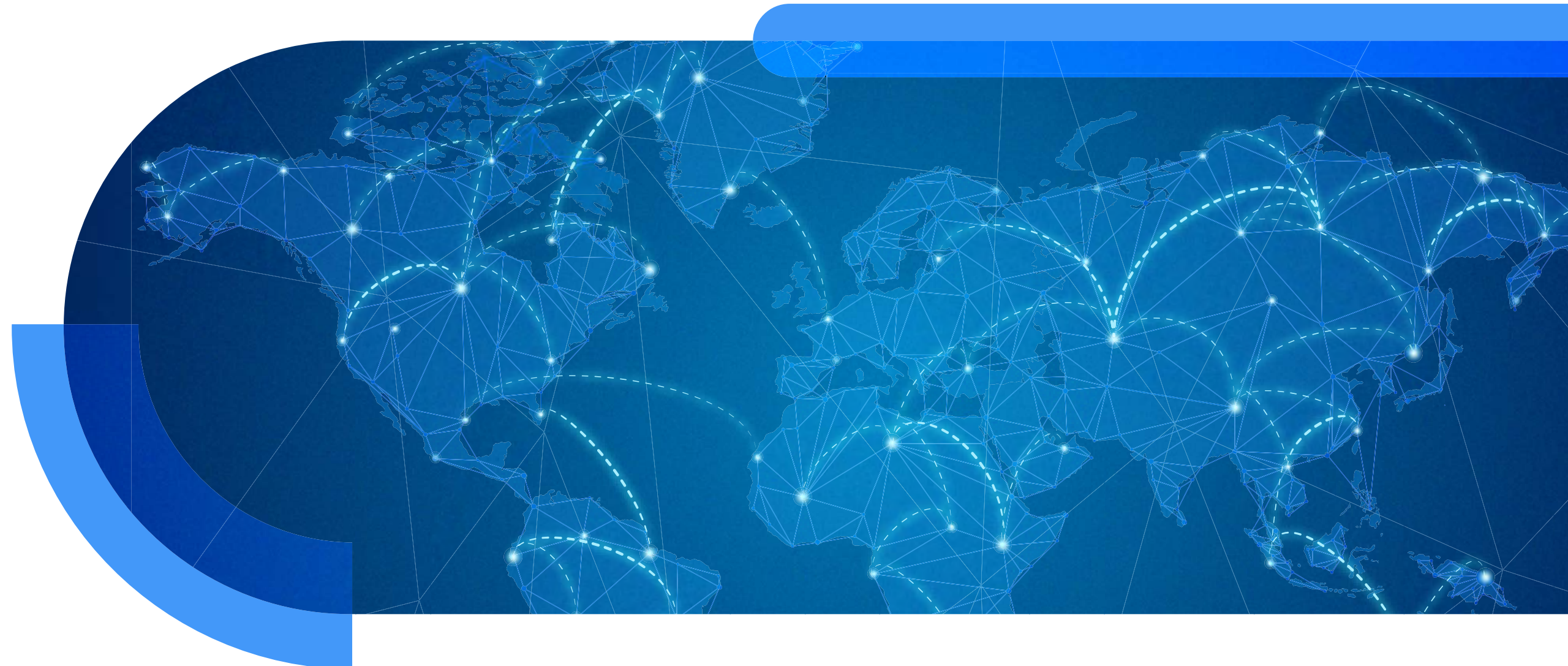
(SNAP), the card must be used with a grocery retailer to purchase food, but these food benefits can be drawn at a grocery store hundreds of miles and several states away.

Unfortunately, many states lack policies to replace stolen electronic benefits, leaving beneficiaries struggling to feed their children. These criminal rings work collusively to commit fraud at scale and with unbelievable speed, sometimes literally stealing food out of the mouths of children.

3. International fraud without borders

The money from these schemes also takes on a more sinister, international dimension than organized crime with a simple motive: profit. The object of international fraud is to fund other criminal enterprises and organized crime networks – taking on more significant and dangerous implications. Terrorist organizations and international fraud rings have been known to exploit government programs to funnel funds for illicit activities. Human trafficking rings exploit undocumented people and others to fuel “paper mills” of fraudulent claims, identities and benefits.

Criminals take advantage of the lack of international coordination among aid programs and the availability of government aid. This illicit activity could be used to fund international terrorism – a severe threat that not only drains financial resources but also poses a direct risk to national security.



03

The three essential views to address today's risks

The level of sophistication that can now go into producing documentation, identifying the counterfeit claimants among the truly needy is less like finding a needle in a haystack than it is finding a needle in a stack of identical needles. To identify, prevent and prosecute these evolving methods of fraud, agencies must develop new ways of thinking about detection. We need innovative approaches to visualize and uncover fraudulent activity among the tidal wave of data. Let's look at the three modern types of fraud.

1. Longitudinal data

Examining data over long periods of time—longitudinal data—is vital to detecting patterns and trends that signify fraud. Say there's a person who has been working for a software company for 23 years, but suddenly she's laid off from a construction job and claiming unemployment benefits. That's a red flag.

In this situation, agencies can use that historical data in new ways by applying analytics to uncover hidden fraudulent activities that might not be evident in a shorter time frame or in isolated data sets. Using longitudinal data views, we can identify anomalies, such as a person claiming unemployment benefits while also receiving income, indicating they are not eligible for benefit payments.

This type of analysis is particularly effective in exposing long-term fraud schemes, such as in disability or pension fraud, where individuals or groups may manipulate and abuse the system over several years. Longitudinal data analysis also helps in understanding the evolution of fraudulent tactics, allowing agencies to adapt their strategies proactively.



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2. Access to multiple programs, states, regions and countries

It's understandable that different jurisdictions don't commonly share data for security, privacy, and regulatory reasons. However, these silos present one of the significant challenges in fraud detection.

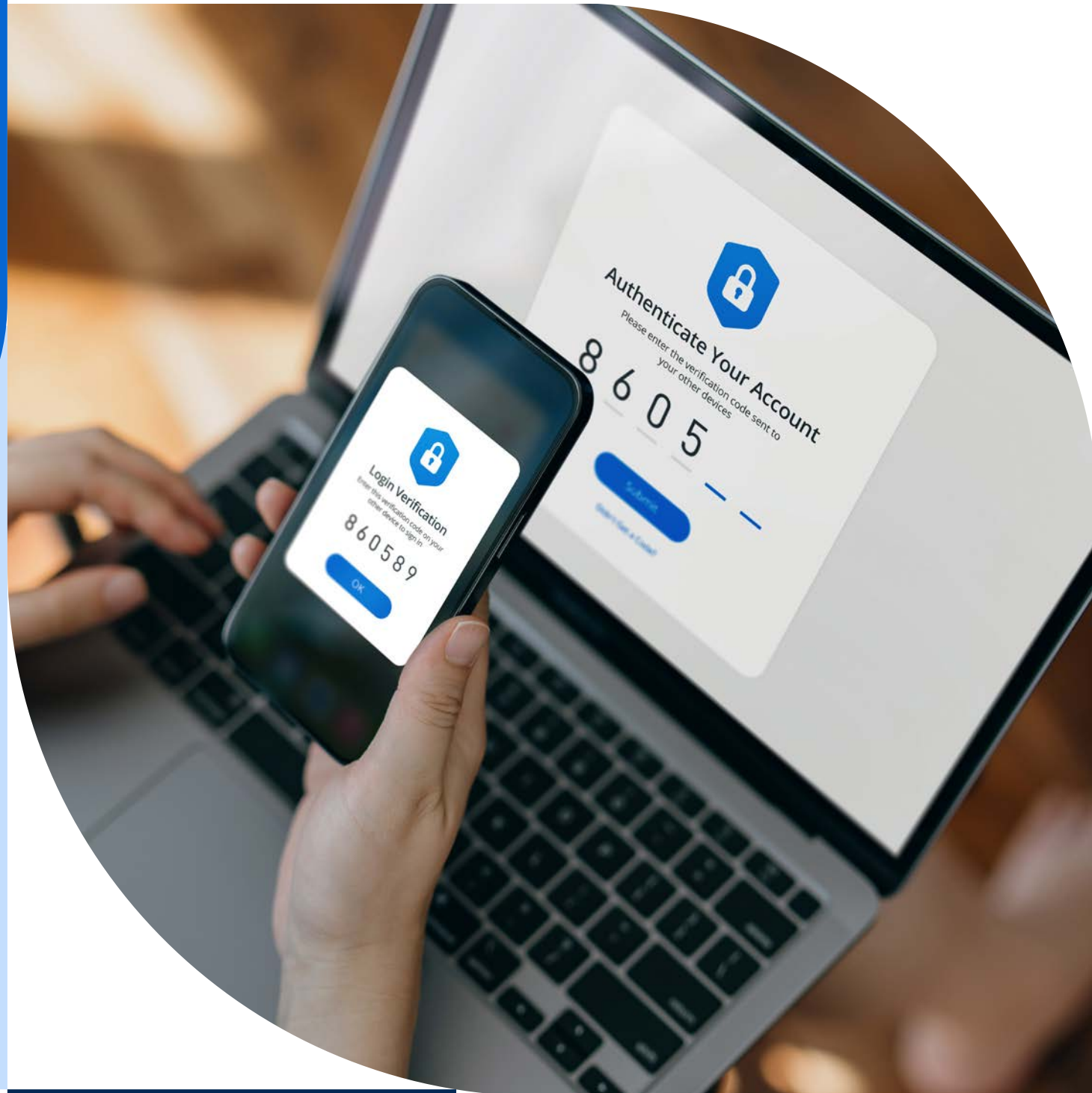
Agencies can break down barriers by integrating data from various sources, including different benefit programs, across boundaries like states, regions and countries. Access to data enables efficient collaboration and allows for a holistic view of potential fraud. That's what you can achieve with SAS and Microsoft Azure.

From a global perspective, a person might be receiving social benefits in a region or another country while working in another – a suspicious act that would be hard to detect without cross-referencing data from both programs.

In the US, assistance with income, food and health care is awarded in the state of residence. However, beneficiaries sometimes apply in multiple states without detection, as states often do not directly share program eligibility records. Sharing data with the federal government is a requirement, but differences between state eligibility systems and data standards may make it difficult for the federal government to effectively resolve beneficiary identities and spot fraud, abuse and errors.

Likewise, states don't often share data records on income (such as wage records) from employment. So, a person may be working in one state and receiving social benefits in another by claiming to be low-income or indigent. It is exactly these stories that undermine the citizens' confidence in their government to safeguard tax dollars.





3. Identity data

How does an agency know if a person is really who they say they are? Identity data analysis has always played an important role in fraud detection. SAS takes identity data analysis to the next level with tools designed to flag inconsistencies and unusual patterns, which are often indicative of errors and suspicious activities. This capability is particularly useful in detecting identity theft, a common tactic used in financial fraud and benefit fraud. For instance, inconsistencies in social security numbers or addresses across different applications can signal fraudulent activity.

Identity data analysis also helps uncover synthetic identities, a complex fraud where perpetrators create entirely new identities using a combination of real and fabricated information. Additionally, this analysis can reveal instances of “ghosting,” where fraudsters use deceased individuals’ identities to claim benefits or conduct illegal transactions.

Modern tools such as AI, cloud computing, and confidential computing are all key to finding those anomalies in identity.

Let's look at how SAS and Microsoft take fraud detection into the new age.

04

Getting the right money to the right person on time

Ensuring the right money goes to the right person for the right reasons is more complicated than ever. The new tools available to agencies not only take a quantum leap in their ability to detect fraud, waste and abuse, but also improve efficiency and can help citizens receive the benefits they are entitled to more efficiently.

Improve targeting of programs that make an impact with a versatile advanced analytics platform

SAS® Payment Integrity for Social Benefits™ helps solve the validation of benefits eligibility, increases payment accuracy, and reduces improper payments. It combines more data from more sources to get as close as possible to a 360-degree view of the person, vendor, or provider. It pulls data from various programs, timelines and localities and puts them in a simple, consumable format that staff can understand and act on. This can be hugely useful in a number of use cases across public services.

Use cases for SAS® Payment Integrity for Social Benefits™

Detects and prevents fraud at every stage of the benefit claims process.



Leverage data and AI technology for better program outcomes.

04

Deliver better decisions from data.

SAS Payment Integrity for Social Benefits runs on SAS® Viya® on the Microsoft Azure cloud, enabling governments to fight fraud and abuse with the fastest, most productive AI and analytics available. Agencies can see data in real time or batch, not just sample, using multiple techniques like:

- Anomaly detection for outliers.
- Machine learning and AI.
- Predictive modeling.
- External data set matching.
- Business rules.
- Network link analysis and more.

These combined methods can help uncover more suspicious activity faster with greater accuracy and ensure missed benefit opportunities in legitimate claims. SAS pulls together an unprecedented range of disparate data from multiple sources and transforms them into a comprehensible and manageable format for action. That enables you to identify linkages among seemingly unrelated claims with a unique visualization interface.

Identify new threats faster with social network diagrams and sophisticated data mining capabilities.

Gain a comprehensive and holistic 360-degree view that automatically links key data sources to quickly identify networks with suspicious activity and discover discrepancies.

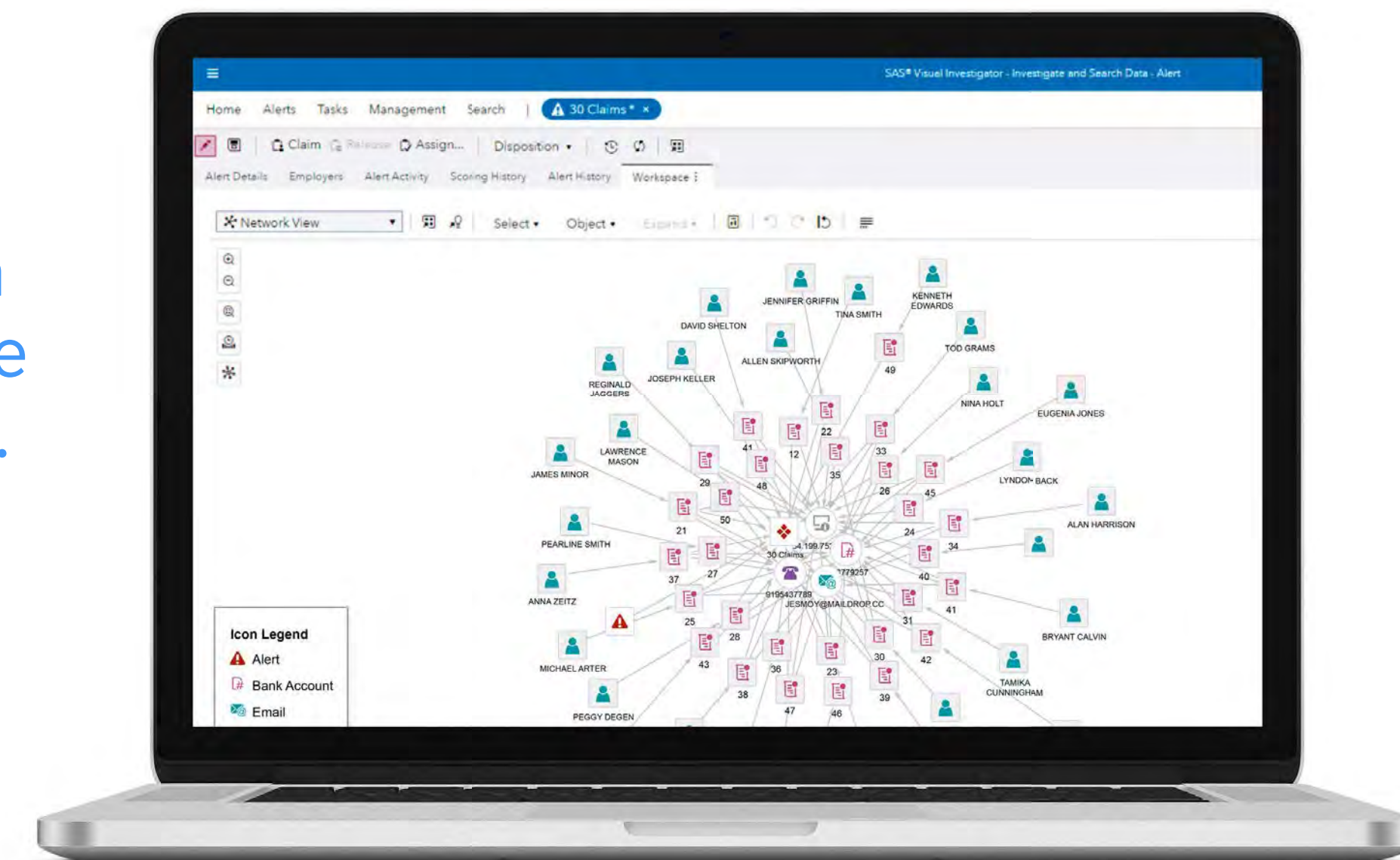
Reduce false positives, ensure proper payment of benefits, and improve targeting of benefit programs that have a positive impact.

Apply risk- and value-based scoring models to accurately score and prioritize alerts before they go to analysts and investigators.

With the time saved, valuable personnel can work more cases with greater efficiency and focus on higher-value networks that generate a better return on investment (ROI).

Icon Legend

- | | | | |
|--|--|--|--|
|  Alert |  Email |  Person |  UI Claim |
|  Bank Account |  IP Address |  Phone |  UI Cluster |



05

Improve your program effectiveness with SAS

A comprehensive solution from SAS can thwart sophisticated fraud schemes, target payment issues and help contain costs. We provide software and services to help you:

Enhance interoperability and information credibility.

- Seamlessly integrate any enterprise data source across systems, regardless of format (for example, notes in claims files).
- Apply embedded data quality techniques to improve accuracy and spot more complex clusters.
- Create a holistic view of a recipient or provider to better detect anomalies or discrepancies across government programs or systems.

Accelerate decision making with analytics and AI.

- Apply AI-based risk scoring and automation to make eligibility decisions faster while helping to identify the next best action.
- Quickly build models to distinguish real claims from those that are fraudulent and process payments for people whose claims got stuck in manual processes for months.
- Combine anomaly detection, rules, and predictive modeling to identify fraud, waste, and abuse earlier than traditional methods by applying business rules and network link analysis.

Use sophisticated visualizations and analytic reporting.

- Analyze many accounts and claims simultaneously to spot clusters of identity theft and fraud.
- See claim characteristics holistically to uncover vulnerabilities in the system.
- Explore data across programs through dashboards to discover relationships, trends, outliers and clusters to identify areas of concern.

Collaborate in an effective, flexible way.

- Leverage flexible analytics for all skill levels. With SAS, users can more easily collaborate to get insights from the data – from business analysts to data scientists or machine learning engineers.
- Onboard users quickly with our explainable, repeatable, and fast cloud-native solution. It works with virtually all programming languages, including open source.
- Ensure compliance across jurisdictions with 47 compliance certifications and attestations.⁷ Azure is the most compliant hyperscale cloud on the planet.



Mini case study from the US

A big return on investment

When a state department of labor turned to SAS technology, they realized:

- 90% reduction in time spent to triage leads.
- 100% rise (doubling) of dollars retrieved per case.
- 25% drop in time spent on each case.
- 92% hit rate on cases.

Result: These all add up to an ROI of 30:1.

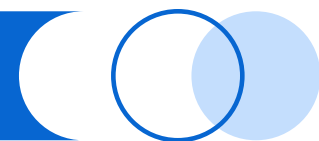
Detect more fraud, reduce losses and optimize payments.

Protecting the public interest has never been more complex or challenging. Fortunately, you have more advanced tools at your disposal. SAS Payment Integrity for Social Benefit and Microsoft Azure offer you the premier analytics and cloud technologies available today for an unprecedented level of integration and flexibility.

Together, they make advanced analytics and AI more accessible and easier to use, accelerating the speed to deployment and erasing the traditional friction points between data, insights and action.

Find out more about how we can help you maintain integrity, stop more attempted fraud, and bring the public the programs and services support they need.

[Request a demo](#)



Microsoft

Making a difference together





To learn more, please visit **SAS[®] Payment Integrity for Social Benefits[™]**



To contact your local SAS office, please visit: sas.com/offices

¹ "2023 Improper Payments 3-Year Average Data (7/1/2020 – 06/30/2023)," US Dept. of Labor

² "Fact Sheet: Combatting COVID-19 Fraud," US Dept of Justice, March 10, 2022

³ "HMRC funding boost to pay for 700 extra debt officers," Jim Dunton, Civil Service World, Dec. 14, 2023, <https://www.civilserviceworld.com/professions/article/hmrc-funding-boost-will-pay-for-700-extra-debt-officers-perm-sec-says>

⁴ "HMRC funding boost to pay for 700 extra debt officers," Jim Dutton, Civil Service World, Dec. 14, 2023

⁵ Il Sole 24 Ore, August 3, 2023, <https://www.ilsole24ore.com/art/reddito-cittadinanza-frodi-505-milioni-denunciati-oltre-48mila-furbetti-AF64YyS>

⁶ <https://www.paymentaccuracy.gov/payment-accuracy-the-numbers/>, SSA, 2023 Fiscal Year, SSI Program

⁷ "Cloud innovations empowering IT for business transformation," Jason Zander, Microsoft Azure Blog, September 26, 2016, <https://azure.microsoft.com/en-us/blog/cloud-innovations-empowering-it-for-business-transformation/>