Transforming Policing: Technology-Enabled Solutions for Safer Communities

AKKODIS

Akkodis in Public Safety & Justice

Protecting communities, fostering trust and providing justice for victims of crime is fundamental to the role of law enforcement.

The opportunity to apply modern technology to traditional crime-solving methods is transforming policing, providing new ways to address longstanding challenges.

Collaborating with law enforcement across Australia for over a decade, Akkodis proudly co-creates cutting-edge technology solutions to support modern policing challenges, ethically and effectively. Our mission is to help law enforcement navigate the complexities of providing safety and wellbeing for front line officers, and the people and communities they serve.

This paper provides an overview of Akkodis' latest innovations for law enforcement including AWARE (Analytics for Widespread Awareness & Risk Evaluation), the responsible frameworks and principles required to safely deploy them, and how to get started with us.

Akkodis Technology as an Enabler of Safety and Justice

Over the past two decades, technology has become an invaluable tool for law enforcement, enhancing safety and justice across many operations. By automating processes, technology increases speed and accuracy, freeing up resources for the frontline and investigative work.

Bail Kiosk, an Attendance Recognition System developed by Akkodis is an example of process automation. Using facial ID matching technology, it allows individuals on bail to check in at a self-service kiosk at a police station, rather than manually at a police counter, saving police time and valuable resources.

Analytics, Artificial Intelligence (AI) and Machine Learning (ML) are also revolutionising law enforcement by processing vast datasets at remarkable speeds, uncovering patterns and insights beyond the scope of human analysis.

These technologies enable agencies to make data-driven decisions, enhancing both the accuracy and efficiency of investigative work in ways previously unattainable. For example, Söze – an advanced digital investigation platform, developed by Akkodis - enables investigators to quickly integrate, analyse and visualise large datasets from various digital sources, expediting the speed of investigations and supporting effective case-building and prosecutions.

During this data-driven evolution, law enforcement agencies have leveraged data, analytics, and AI to enhance crime mapping, predictive policing, and resource allocation, allowing identification of potential crime risk factors and deploy officers and assets more effectively.

Additionally, AI-driven tools such as Söze support investigative work by analysing digital evidence, detecting patterns in criminal behaviour, and also assisting in cold case investigations. Ultimately, enabling more efficient and informed decision-making processes in policing helps increase the velocity of justice to victims and communities.

Akkodis Research and Leadership

Our commitment to understanding and addressing the core challenges of law enforcement and the broader Public Safety & Justice (PS&J) sector is supported by our research.

Re-thinking human experience in Public Safety and Justice research was developed in partnership with Edith Cowan University. This study examined how aligning technology and mission through a human-centred approach can improve operational outcomes, reduce stress and improve wellbeing for first responders and the communities they serve.

The application of analytics to prevent Family and Domestic Violence (FDV) in Australia research explored the application of analytics to uncover risk factors and patterns of human behaviour and was the basis for our AWARE (Analytics for Widespread Risk Evaluation) methodology.

In 2024 Akkodis worked with Avon and Somerset Police to implement Söze to support Operation Soteria Bluestone. This program was developed in the UK in response to national concern around the investigation of rape and serious sexual assault offences (RASSO).

AKKODIS – WORKING WITH POLICE, FOR POLICE

AWARE – Part of the solution to FDV in Australia

Partner with Akkodis

Our research and experience have repeatedly demonstrated it is possible using data analytics to analyse FDV data to undercover hidden patterns and triggers in human behaviour. Knowledge and fore-warning of these patterns and triggers can enable law enforcement, government departments, not-for-profits, and community organisations to intervene and potentially prevent an FDV event from occurring.

Unlocking the potential of data analytics to inform agencies of escalating risk is enabled when this model is applied to a secure, efficient and effective data platform, enhancing collaboration and supporting informed decision-making.

By leveraging modern data platforms, advanced technology, robust security measures, and tailored training, we help agencies work together more effectively - strengthening public safety and delivering justice across jurisdictions.

Akkodis looks forward to working with law enforcement to scale AWARE across Australia and beyond.

Break the Cycle of Family and Domestic Violence

After 30 years in law enforcement, Rohan Cramsie is an advocate of technological support for police in solving crime and keeping people safe. He has spent the last seven years as a Senior Commander, Superintendent with NSW Police Force, leading busy metropolitan commands. Previously he held roles in covert surveillance, uniformed response and specialist investigations in serious and complex crime.

During this time, Rohan has also been the Sydney metropolitan corporate sponsor for initiatives targeting family and domestic violence (FDV) and it is an area of policing he is very passionate about.

> "The involvement of law enforcement in FDV can disrupt the cycle of violence, but as many police know, it doesn't eliminate the risk of violence occurring again. In fact, experience tells us there's many indicators along the way to suggest this violence will escalate and unfortunately, sometimes result in domestic homicide."

Rohan Cramsie, Industry Lead
Public Safety and Justice, Akkodis Australia

In accordance with our commitment to work 'with police, for police', Rohan joined Akkodis in June 2024. As a subject matter expert, he works with our teams to develop solutions for addressing the key challenges facing law enforcement. He has a singular commitment to breaking the cycle of domestic violence before a homicide occurs.

Data Analytics to Identify Risk Factors that Lead to Further Violence

According to the Australian Institute of Health and Welfare's (AIHW) latest report into FDV, released in October 2024, there were 46 female domestic homicide victims and 38 male victims in 2022–23. Among these most females were killed by an intimate partner – 3 in 4 female victims (74%), with about 1 in 10 males killed by an intimate partner (11%). In accordance with this, one woman is killed every eleven days by an intimate partner[1].

Citing national and international research risk factors in the behaviour of the perpetrator include:

- a history of sexual violence
- mental and physical health problems
- death of significant family members
- separation between victim and offender
- breech of bail conditions
- animal abuse
- use or access to weapons
- attempted strangulation
- traumatic life events such as war, homelessness, incarceration and/or childhood trauma
- ongoing family court proceedings

Disrupting the Cycle of Violence

In Rohan's police experience he has recognised that involvement of law enforcement often provides a temporary interruption in the cycle of domestic violence, but it doesn't eliminate the risk to victims.

While law enforcement intervention can respond and disrupt the cycle of violence, various and complex factors such as the psychological and behavioural conditions of both the perpetrator and victim significantly affect the long-term outcome.

Perpetrators may continue exhibiting dangerous behaviours that, while not criminal, indicate a heightened risk of escalating violence. If not identified and disrupted, these behaviours can result in domestic homicide, a preventable tragedy. If the right indicators are known, assessed, and acted upon early, lives can be saved.

Perpetrators can have contact with other agencies, such as health services and mental health clinicians, demonstrating behaviours that increase risk of continued threat to victims. If law enforcement is not privy to this information they cannot act and intervene to protect the victim.

> What is the opportunity to use and share data across law enforcement and other agencies to prevent domestic homicide?

The Potential of Information Sharing to Disrupt the Cycle of FDV

Imagine a system where every agency involved with a perpetrator could share real-time triggers on risk factors, allowing for continuous updating of the escalating risk and an assessment of the danger to victims. Such a system would enable proactive interventions, helping to prevent violence before it escalates, disrupting further harm to the victim.

For example, if a perpetrator who had been arrested for domestic violence subsequently sought treatment for substance abuse or mental health issues, this information could automatically trigger an updated risk assessment. Law enforcement and support agencies can then take pre-emptive action to prevent or disrupt further violence, such as:

- Reinforcing bail conditions or Apprehended Violence Orders (AVOs) to the perpetrator

- Safety reassessment for the victim including target hardening

- Conducting proactive compliance checks

- Proactive breath testing the perpetrator

- Prioritising the perpetrator for law enforcement attention if they breach legal orders or have outstanding warrants

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Identifying Patterns of Perpetrator Behaviour

Every officer working with family and domestic violence cases knows there are common patterns in perpetrator behaviour leading up to a potential homicide. While not all these behaviours are criminal, identifying them early allows for interventions that can help de-escalate the situation before it turns deadly.

AWARE (Analytics for Widespread Awareness & Risk Evaluation)

Using data analytics, Akkodis has identified it is possible to analyse FDV data to undercover hidden patterns and triggers in human behaviour. Knowledge and fore-warning of these patterns and triggers can enable law enforcement, government departments, not-for-profits, and community organisations to intervene and potentially prevent an FDV event from occurring.

Using the latest technologies in data storage, compute, AI and ML, AWARE examined 55 years of police data to identify patterns. The higher the volume and variety of data analysed, the more patterns emerge.

AWARE uncovered a seven-day pattern of activity spikes following a breach of bail conditions

As seen in Figure 1, following an FDV event, on every 7th day after a breach of bail there is a notable spike in criminal activity (including FDV events).

On police-supplied data **prediction was accurate 80 times out of 100, two weeks in advance of an event.**

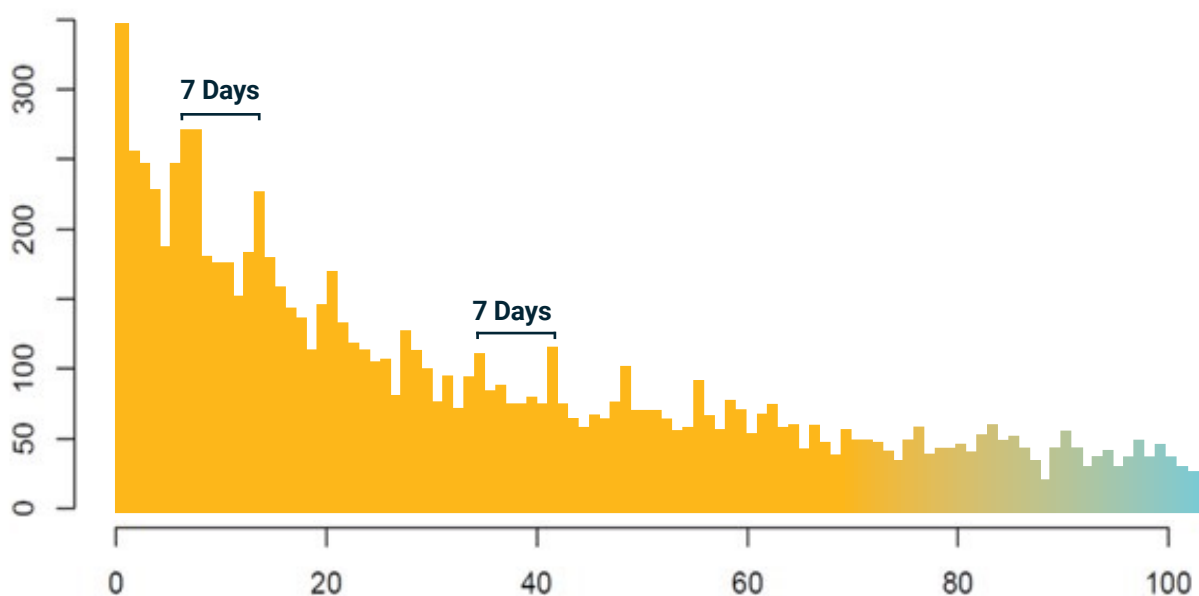**Histogram for BREACH OF BAIL Time between Charges**

Figure 1 - Descriptive analysis showing FDV activity spikes every 7 days after breach of bail events.

Improving Accuracy Through Data Diversity

The analysis used multiple data sources including police and weather data. Using several analytics methods, Akkodis analysed thousands of data points and identified 450 potentially relevant factors. Of these 450 factors, 18 were determined as being significant in their ability to predict an FDV event.

Location proximity for possible offenders/victims were identified as critical factors for investigation and action. Other factors in this list of interest (Figure 2) are rainfall at location, and phase of the moon. These stand out because they can be interpreted as an external trigger; something from the environment that might invoke undesirable behaviour.

Rohan passionately believes this information could be utilised to prevent an FDV event from occurring.
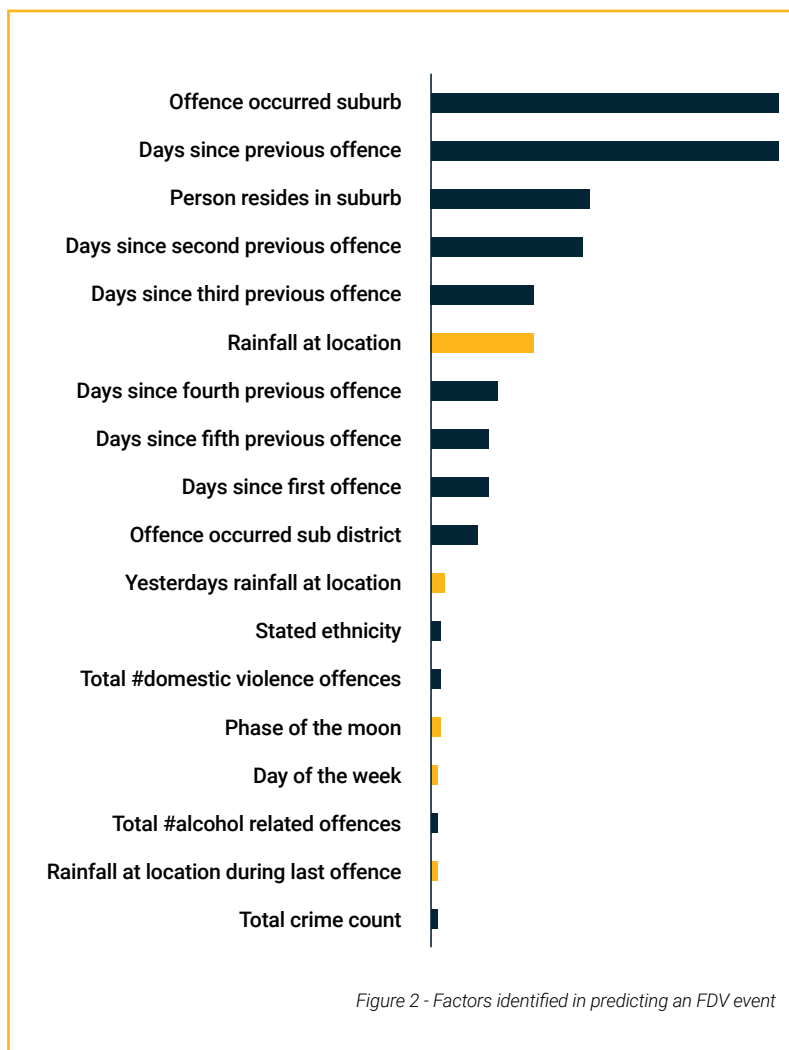

Factor
Offence occurred suburb
Days since previous offence
Person resides in suburb
Days since second previous offence
Days since third previous offence
Rainfall at location
Days since fourth previous offence
Days since fifth previous offence
Days since first offence
Offence occurred sub district
Yesterdays rainfall at location
Stated ethnicity
Total #domestic violence offences
Phase of the moon
Day of the week
Total #alcohol related offences
Rainfall at location during last offence
Total crime count

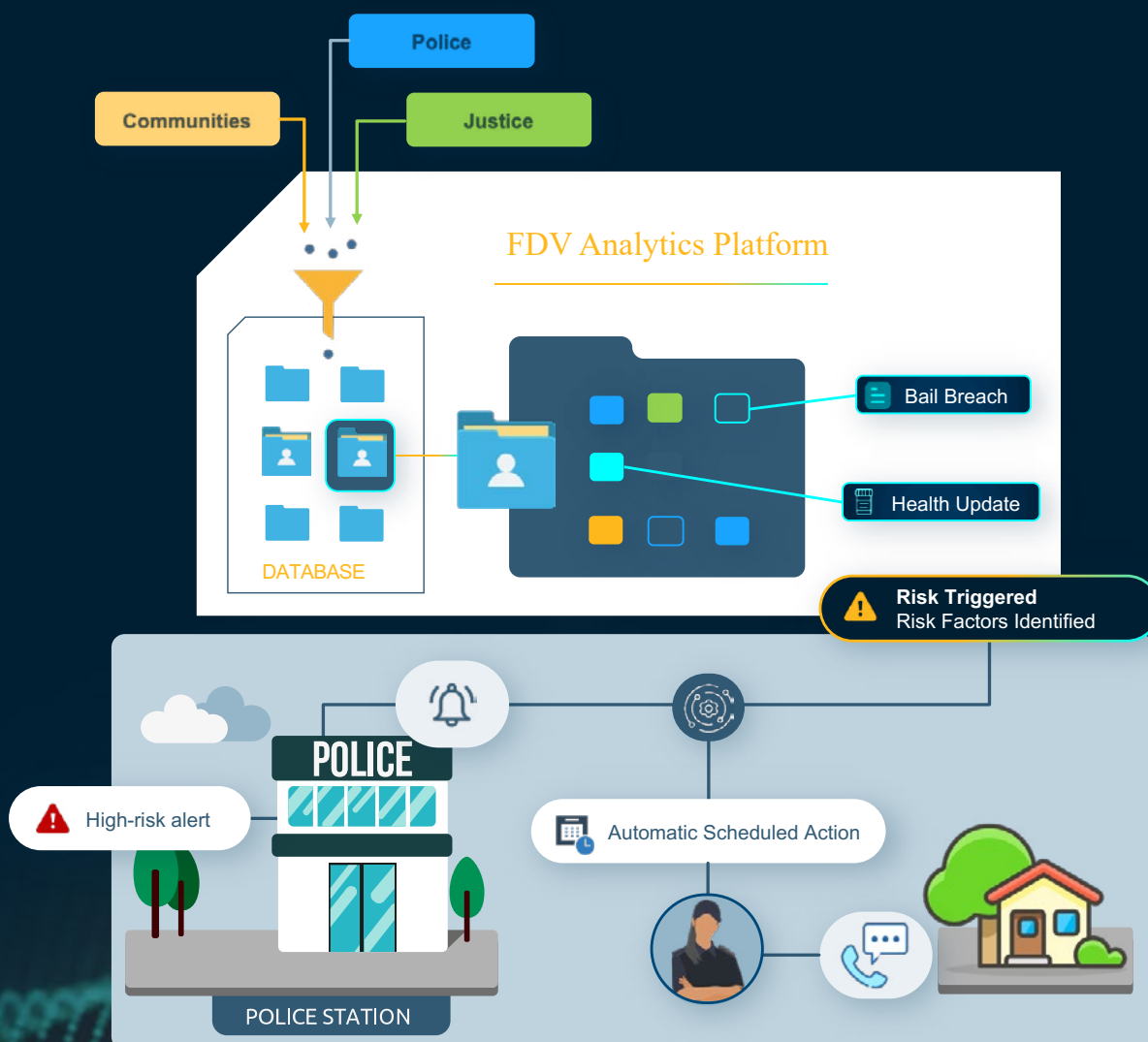*Figure 2 - Factors identified in predicting an FDV event*

Becoming AWARE

Example of information sharing to trigger risk alert:

- An FDV Analytics Platform receives a regular supply of data from Communities, Police and Justice systems

- The FDV Analytics Platform recognises a breach-of-bail event, creates a high-risk alert, and notifies caseworkers for action on a specific day (or days)

- Leveraging this pattern a caseworker contacts that person at a more pertinent time, such as a day before the likely event, to discuss and reinforce behaviour modification strategies that could prevent the FDV event from occurring

- The caseworker also contacts the family of the offender and ensures they have an appropriate safety plan in-place to avoid the event or minimise the severity of the event

AWARE in Action

Akkodis Responsible AI Framework and Guiding Principles

At Akkodis, we understand that using AI responsibly is essential to supporting law enforcement's mission to protect communities, build trust, and deliver justice.

Our Responsible AI Framework is designed to ensure that AI and technology solutions serve these goals ethically and effectively.

With a focus on data governance, risk management, culture, training, and technical readiness, we empower police agencies with the right tools while safeguarding community trust and safety.

1. **Data Governance and Ethics**

   Managing data with integrity is our top priority. Akkodis helps police organisations establish clear data management practices that prevent bias and ensure secure data handling. We collaborate closely with agencies to develop AI systems that comply with ethical standards, respecting privacy and societal impact.

2. **Building a Culture of Responsible AI**

   AI adoption requires more than just technology—it requires a shift in how organisations operate. Our approach includes integrated risk management assessment and processes and change management to help law enforcement teams adjust to new AI-driven workflows, focusing on risk mitigation, user education, engagement, and continuous improvement.

3. **Training and Skills Development**

   Effective use of AI in law enforcement depends on training officers and staff to understand and work with these systems. Through our Akkodis Academy, we offer targeted training programs to provide AI literacy to upskill teams, empowering them to use AI confidently and responsibly in their daily roles.

4. **Ensuring Technical Readiness**

   We implement AI solutions that are adaptable, secure, and compliant with global standards, allowing law enforcement agencies to safely use them in a range of situations. Akkodis deploys systems that prioritise data privacy and security, meeting the unique needs of law enforcement.

Our Responsible AI Framework gives law enforcement agencies confidence to integrate advanced technology in ways that strengthen public trust and align with the core values of safety and justice.

How Akkodis Can Help

With over a decade of experience working with law enforcement organisations, Akkodis understands the unique responsibilities and challenges you face.

We have built a comprehensive range of cost-effective solutions with police for police. Our team of specialists offers valuable insights and technical expertise, helping agencies address current and emerging challenges.

We work with law enforcement to understand your needs. We co-create strategic solutions and implement effective technology outcomes to support the safety and wellbeing of people and communities.

Our empathy-led approach ensures we focus on real user needs, ensuring your solutions are aligned with the day-to-day realities and challenges of policing.

Our unique frameworks, accelerators and solutions speed innovation, delivering value quickly and effectively. We co-develop solutions with you that deliver operational and organisational impact.

Akkodis law enforcement capabilities:

- Research and thought leadership including risk-based FDV, role-based FDV, and the role of human-centric technology design in supporting the effectiveness and wellbeing of first responders

- Advisory services, strategy, digital transformation, integrated risk management & change and adoption services

- Data strategy, governance, management, & analytics

- Integrated communications & situational awareness solutions

- Process automation, case & incident management

- AI & ML for object detection, entity relationships, speech/audio transcription & translation

- Generative AI for natural language processing (NLP) & Microsoft CoPilot experiences

- Evidence, intelligence & investigation solutions

- Development of online registries (e.g. firearms)

- Technical training and certification via Akkodis Academy

- Virtual & augmented reality training

Akkodis Law Enforcement Solutions:

- **Söze –** data analytics to drive improved investigative outcomes at scale

- **Yarning Mobile App –** improves Aboriginal community communication and engagement

- **Critical Incident Response –** increases officer safety through intelligent officer support, situational awareness & location management

- **Small Assets Register –** reduces administrative overheads in day-to-day police asset distribution

- **'Bail Kiosk' Attendance Reporting System –** self-service check-in kiosks to streamline bailee reporting and free up police resources

- **Listening Device Plus (LD+) –** standalone audio transcription & translation services across listening device data to fast-track post recording analysis & verification by officers

- **Intelligent Triage System –** AI enabled 'triage' system to quickly analyse and prioritise high-risk cases ensuring swift intervention by reducing case classification from up to 60 minutes down to seconds

- **AWARE Readiness Assessment** is a capability available from Akkodis designed to support law enforcement agencies in enhancing their IT systems and processes and data management capabilities, specifically to address the complex and urgent needs surrounding domestic and family violence (FDV) cases with the ability to extend to other crime types

About Akkodis

Akkodis is a global digital engineering company and Smart Industry leader. We enable clients to advance in their digital transformation with Consulting, Solutions, Talent, and Academy services. Headquartered in Switzerland and part of the Adecco Group, Akkodis is a trusted tech partner to the world's industries.

We co-create and pioneer solutions that help to solve major challenges, from accelerating the clean energy transition and green mobility, to improving user and patient centricity. Empowered by a culture of inclusion and diversity, our 50,000 tech experts across 30 countries combine best-in-class technologies and cross industry knowledge to drive purposeful innovation for a more sustainable tomorrow. We are passionate about Engineering a Smarter Future Together.

Find out more

If you would like to know more about how we can help your organisation, please contact our team:

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Engineering
a Smarter Future
Together

Leveraging the power of connected data to
accelerate innovation and digital transformation.

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