

Assurance Group

Audit of New Zealand Police's use of Automatic Number Plate Recognition (ANPR) platforms

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PURPOSE

This report summarises findings from a baseline audit which sought to verify that authorised New Zealand Police staff are accessing externally-provided ANPR data in appropriate ways.

CONTEXT

For several years, New Zealand Police has been able to source vehicle number plate data which are made available using ANPR technology; either through its own small number of ANPR-capable cameras, or by requesting such information from third parties. The predominant mode of access is through two vendor systems. Individual system audits have been conducted by these partner companies on a semi-regular basis, using in-built transaction log auditing capability to build confidence it is being used as expected. Registered Police users of the external platforms sign up to terms and conditions, and they are warned the purposes of any ANPR inquiries must be aligned to Police's policies and *Code of Conduct*.

While the operational benefits of police accessing and using ANPR data are significant, to guard against any potential for misuse, an audit and assurance framework has been designed to cover Police employees' interactions with ANPR-capable platforms. Interest in the robustness of Police's procedures to ensure appropriate use of ANPR platforms has also been shown by external stakeholders, such as the Office of the Privacy Commissioner.

Against this backdrop, while some basic ANPR usage statistics were generated for FY2021/22, it was considered timely to include a baseline-setting ANPR audit in Police's *Audit and Assurance Work Plan 2022/23*. Such an audit would more comprehensively interrogate available transaction logs and cross-check against relevant Police datasets; offering reassurance that vendor systems are being used as intended by those in Police entrusted to do so.

APPROACH

Using specialised data mining and analytics, the audit spanned a combined 350,000+ transactions by Police staff from 2018 through to October 2022. Cross-matching allowed for identification of any staff queries that did not intuitively appear part of a Police-related event, as well as queries of vehicles owned by, or related to, the Police staff member making the query. Dip sampling and other checks were also applied to validate staff's use of automated alerting capabilities.

MAIN FINDINGS

At the time of the audit, there were approximately 6,150 registered Police users of the vehicle search functions available on the two main ANPR systems, and close to 990 authorised users of automated alerting (which effectively allows for a vehicle of interest to be tracked in real time).

Use of the platforms by Police staff has grown markedly, averaging in the range of 10-15,000 searches per month. Use of automated alerting is much less frequent (albeit also recently trending up), averaging fewer than 200 'tracking' requests per month.

Overall, from data matching conducted during the audit, an estimated 120 Police users were found to be linked to transactions that may involve their own vehicles. Of note, further investigation could demonstrate these ANPR requests were, in fact, entirely legitimate (for example, the ANPR requests were entered for training purposes).

Of the 350,000+ transactions reviewed in the audit, four cases (0.001%) - involving five Police staff - were assessed as warranting specific follow-up by the National Integrity Unit (NIU). Referrals to the NIU were made in each case.

Lastly, from an assurance perspective, the audit identified several opportunities to strengthen system controls (e.g., ensuring independent authorisation is properly recorded for certain requests). Strengthening these controls will make it easier for staff to adhere to the right process and improve the ability to detect/correct anomalies.

Key conclusions

This baseline-setting audit has helped to:

- build a more comprehensive picture of ANPR data Police staff can access from two external platforms currently being used
- validate that the audit and assurance framework designed to cover Police employees' interactions with the platforms works to flag up any potentially improper use
- successfully identify a very small number of cases that, at face value, warrant specific follow-up.

Introduction and background

In October 2022, Police's Deputy Chief Executive: Insights and Deployment commissioned a baseline audit to provide reassurance about the use that Police employees make of third-party platforms with ANPR capability.

By way of background, as in other jurisdictions, ANPR has long been used in New Zealand to support crime prevention and resolution activities, as well as to contribute to staff safety. ANPR is a critical tool which can help achieve Police's outcomes, and Police presently uses two externally-provided platforms with ANPR capability. Both systems have in-built controls and auditing capability, but until the October 2022 audit the effectiveness of these controls had not been put to the test by Police. Commissioning a baseline-setting audit was designed to help develop a deeper understanding of how Police staff are interacting with ANPR data, as well as to check that the audit and assurance framework covering employees' interactions with ANPR platforms would allow any potentially inappropriate access or use to be flagged up.

Methodology

The audit was led by a specialist data scientist, supported by various other senior Assurance Group personnel. Throughout the exercise, the audit team applied file encryption and adopted other appropriate privacy and security protocols.

Using vehicle registration plates as the basic unit of analysis, the following data mining, analytical and auditing steps were taken:

- Extracting aggregate raw data files for individual queries of vehicles by Police users of each vendors' system;
- Extracting and matching other data available in Police's National Intelligence Application (NIA) – including NIA alerts, Police file numbers, and warrant information - to produce a dataset associated with who has shown a NIA-related interest in the vehicles;
- Obtaining a minimum dataset from Police's human resources management information system (MyPolice) to obtain registered users' unique Police-issued identifier [QID] and their listed residential address details;
- Crossmatching NIA-related queries to vendor-supplied data of which Police staff (indexed by each user's QID and email) queried the system, filtering out those who did not match;
- Crossmatching 'query owner' to the actual owner of vehicles by surname.

This allowed for the identification of:

- queries that do not intuitively appear to be part of a Police-related event
- queries of vehicles owned by, or related to, the Police staff member making the query.

Dip sampling and other checks were also applied to validate Police staff use of automated alerting capabilities. Subject to stringent controls, Police use of this active detection capability effectively allows for a vehicle of interest to be tracked in real time, with notifications sent to the requesting Police staff member whenever there are ANPR 'hits' on the listed vehicle.

Every Police use of ANPR tracking functionality was audited, from the earliest availability of these capabilities on the respective platforms (2018) through until the end of October 2022.

Informed by detailed spreadsheets and audit workings, this report summarises findings from the baseline audit.

So what did the audit find?

As noted earlier, the key objective of the audit was to verify that authorised New Zealand Police staff are accessing externally-provided ANPR data in appropriate ways. As a use case to test that the audit and assurance framework designed to cover Police employees' interactions with vendor systems works to flag up any potentially improper use, a series of data matching cross-checks were conducted to look for vehicles owned by, or related to, the Police staff member submitting the query for ANPR data.

An important caveat is that data extraction and matching, on its own, does not allow judgements to be formed about proper or improper uses. The aim is to show that an audit capability can augment other actions (notably, follow-up inquiries; new or improved 'front-end' controls, etc.) to improve the use of the systems by Police staff.

Use of vehicle search functions

Consistent with increases in the number of Police users who are registered to search for vehicles using ANPR – rising from low hundreds of authorised users four years ago, to approximately 6,150 registered Police users in October 2022 – there has been a steady increase in the use of ANPR vehicle search functionality by Police. After an initial uptake that grew to some 1,500 combined vehicle searches per month, by mid-way-through 2022 vehicle search requests by Police staff have begun to average in the range of 10-15,000 searches each month.

The audit found some 120 Police employees who have searched one of the vendor systems for a vehicle they match to as the registered owner; most plausibly because they have used their own vehicle details to test the capabilities of the system, as part of becoming familiar with how the platform works, or their own vehicles have been stolen.

These data require further refinement because some surnames are highly likely to match to registered owners (involving common surnames, like Scott, Singh or Smith) and users can elect to register a username that provides just their initial as a surname (in one case, the letter A). Such idiosyncrasies contribute 'noise' to data matching, requiring extra work to resolve. Such secondary analysis has not been completed at this point, as the emphasis is on validating whether the audit and assurance framework successfully flags up potential anomalies; and also to gain a sense of scale of questionable transactions, from the 350,000+ transactions reviewed during the audit.

Use of vehicle tracking functions

The audit found automated alerting is used less frequently – ranging from an average of 8.8 times per month in 2018 to an average of 193.8 times per month in the second half of 2022. As at the time of the baseline audit, there were close to 990 authorised users of automated alerting functions offered by the two vendor systems.

The audit found two examples of Police employees who used automated alerting for a vehicle that they own. Both instances are amongst a total of four cases - involving five Police staff – which were assessed as warranting specific follow-up by the National Integrity Unit (NIU), in Police's Integrity and Conduct Group. Referrals to the NIU have been made in each case.

Estimated rate of potential misuse

The audit team was also asked to consider the number of users and hence the rate of potential deliberate misuse which could be identified as part of the audit. Based on the combined number of individually-registered Police users of both ANPR systems, the rate of apparent potential misuse detected via data matching is relatively small: around 1 in every 1000 users.

What happens next?

Even as the audit was underway, progress was being made to strengthen the control settings which apply to Police staff interacting with the two vendors' platforms. Some system enhancements have already been made, helping to make it clearer and more intuitive what level of supporting information needs to be recorded, as well as reinforcing expectations around responsible usage.

The team which led the audit work also generated several ideas that could further boost confidence Police staff are consistently accessing externally-provided ANPR data in appropriate ways. Recommended actions which are best taken forward by the partner companies will be included in ongoing discussions with those vendors. Other ideas (e.g. considering specific training for Police staff on what to do – and what not to do – if they become victims of crime themselves) will be considered in the first instance by Police's ANPR Steering Group, before being referred to an Executive governance group for final decision-making. Acting on these opportunities holds out the prospect that Police can provide even greater confidence that any improper use of ANPR data is able to be prevented before it occurs; and swiftly detected and corrected if it does happen. The aim, as far as possible, is to design out the risk of any inappropriate use of these systems.

From an Assurance Group perspective, repeat audits of Police staff use of ANPR platforms are likely to be factored into Police's rolling programme of internal audit and assurance work (similar to how the present audit was included in Police's *Audit and Assurance Work Plan 2022/23*). Results from such auditing will be shared with scrutiny and governance groups, such as Police's independent Assurance and Risk Committee; made available on request to oversight and regulatory bodies, such as the Office of the Privacy Commissioner; and it may also be appropriate to proactively publish usage statistics and summaries of audit findings on Police's public-facing website (www.police.govt.nz).

Overall management comment in response to the audit findings

The audit process outlined in this document is an important part of ensuring compliance by all Police staff who use this tool appropriately and in line with our policy settings. We note the increase in use identified over a fairly short period.

This audit found Police's employees are for the most part using ANPR platforms in the way that is expected. Of the many thousands of transaction records reviewed during the audit, only a small handful of cases gave any cause for follow-up questions, where it appeared staff may have operated inconsistently with policy.

The very low rate of potential anomalies flagged up as part of the data matching work – which might well prove to be for legitimate use when investigated further - gives general confidence when Police employees are using external platforms to access ANPR data. That said, the chance to further strengthen compliance with policy and ensure a consistently high standard of use by all Police employees who use such platforms is one that will be enhanced by the outcomes of this audit.

The results of the audit will be used to drive a series of immediate and longer-term actions to create further improvement opportunities. This work will be enabled from the centre, helping our people across the country use ANPR data in the course of their duties.

Assistant Commissioner Mike Johnson
Interim Lead, ANPR Steering Group
Police National Headquarters