



THE USE OF FACIAL RECOGNITION TECHNOLOGY IN SOUTH AFRICA



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Facial recognition surveillance systems globally have been subject to intense debate and proposed regulation.

For example, the US Federal Trade Commission has launched a broadside against Facial Recognition Technology (FRT), declaring the technology dangerous and cautioning against its misuse.¹

Additionally, in the EU, Citizens Initiative was launched in 2021 to attempt to force a ban on biometric mass surveillance systems, with the European Parliament voting in favor of a total ban on live facial recognition in public spaces in June 2023.²

Within South Africa, the use of FRT in recent years has greatly expanded; however, public concern regarding the technology is nearly non-existent.³ Despite the public view that FRT and related surveillance technologies will bolster security, there are real concerns about their development and use.

In 2022, Karen Hao and Heidi Swart outlined the harms arising from FRT development in South Africa, which is especially prevalent as foreign companies, many of which originating in Switzerland, Sweden, and other European countries, “dump their AI technologies” into South Africa; “[t]he local security industry, forged under the pressures of a high-crime environment, embraced the menu of options. The effect has been the rapid creation of a centralized, coordinated, entirely privatized mass surveillance operation.”⁴

¹ FTC declares facial recognition surveillance tech dangerous, warns against federal privacy pre-emption, 12 Jan 2021, <https://www.biometricupdate.com/202101/ftc-declares-facial-recognition-surveillance-tech-dangerous-warns-against-federal-privacy-pre-emption>

² Face biometrics deployments increase as regulator and public push back <https://www.biometricupdate.com/202101/face-biometrics-deployments-increase-as-regulator-and-public-push-back>; EDPB adopts final version of Guidelines on facial recognition technology in the area of law enforcement https://www.edpb.europa.eu/news/news/2023/edpb-adopts-final-version-guidelines-facial-recognition-technology-area-law_en; Euroviews. The EU wants to make facial recognition history — but it must be done for the right reasons <https://www.euronews.com/2023/11/16/the-eu-wants-to-make-facial-recognition-history-but-it-must-be-done-for-the-right-reasons#:~:text=In%20June%202023%20C%20the%20European,us%20all%20as%20walking%20barcodes>

³ Facial recognition on the rise as businesses go touchless, <https://itecgroup.co.za/insights/press/facial-recognition-on-the-rise-as-businesses-go-touchless/>; Digital transformation, facial recognition technologies anticipated to grow despite slowing economic growth, 19 Apr 2023, <https://www.itweb.co.za/article/digital-transformation-facial-recognition-technologies-anticipated-to-grow-despite-slowing-economic-growth/KWEBbvylKPyqmRjO>

⁴ South Africa's private surveillance machine is fueling a digital apartheid, 19 Apr 2022, <https://www.technologyreview.com/2022/04/19/1049996/south-africa-ai-surveillance-digital-apartheid/>



Unfortunately, the new technologies are replicating patterns of colonial history, with “predominantly white people having the means to pay for surveillance, and predominantly black people ending up without a say about being surveilled.”⁵

As has already begun to play out in the United States,⁶ the risk of FRT false identifications is much greater for black people than white people; the risk further increases when footage is recorded outdoors under uncontrolled conditions.

Scholars have argued that the use of digital surveillance systems in South Africa replicates the apartheid-era internal passports, limiting black people’s physical movements.

To add to these concerns, the development of FRT and related surveillance technologies in South Africa has primarily occurred within the private sphere, effectively monetizing public spaces.

⁵ Ibid.

⁶ In every reported case where police mistakenly arrested someone using facial recognition, that person has been Black, 6 Aug 2023, <https://www.businessinsider.com/in-every-reported-false-arrests-based-on-facial-recognition-that-person-has-been-black-2023-8> (“[Porcha Woodruff] is now the sixth person to report a false accusation based on facial recognition technology — and every report that came before hers was filed by someone who is Black, according to the Times... a research paper from criminal justice experts Thaddeus L. Johnson and Nastasha N. Johnson demonstrated that facial recognition leads police departments to arrest Black people at disproportionately high rates.”)



Tech Use, Generally

It is clear that across public and private spheres FRT is being quickly developed and deployed throughout South Africa. While the general public is largely supportive of the technology, and its purported security benefits, journalists have detailed concerns of FRT's implementation in South Africa.⁷ Conversely, the South African Police Service ("SAPS") is interested in and has been actively developing and partnering with private companies to use FRT throughout South Africa. The Daily Maverick's 2021 article⁸ as well as MIT Technology Review's 2022 study⁹ lay out clear dangers of these technologies.¹⁰



Department of Home Affairs' Automated Biometric Information System ("ABIS")

1 ABIS Project

While much of the development and deployment of FRT in South Africa are primarily within the private sector, the South African government has been developing its own system for law enforcement use.¹¹

⁷ Face-off: South Africa's population register is on course to becoming a criminal database – with your mugshot, 3 Mar 2021, <https://www.dailymaverick.co.za/article/2021-03-03-face-off-south-africas-population-register-is-on-course-to-becoming-a-criminal-database-with-your-mugshot/>

⁸ Supra note 6.

⁹ Supra note 4 (e.g. "AI Surveillance, for example, wants to find clients in the US that will feed their CCTV footage to its control room and monitoring staff in Johannesburg. CEO Nichol thinks the cheaper local wages will give the company a competitive edge, as will its experience handling security in the South African market. "The US is more mature in the hardware and recording—there's more cameras and more footage stored," he says. "South Africa is more mature in the analysis of the feed and the dispatch—out of necessity... There are signs that the rest of the surveillance industry is moving toward a platform-based approach as well. Milestone, the video management tool that Proof 360 is built on, similarly allows anyone to build AI applications like facial and license plate recognition for its software. So does Axis Communications, which has offices in the US and South Africa and recently launched its own platform... This year NEC, the parent company of NEC XON, also plans to launch a new product known as NEC Nexus that allows government agencies to combine their watchlists in a way that echoes Vumacam's centralization of license plate databases. Nexus is currently being trialed in the UK, where NEC has the largest pilot of live facial recognition, and will soon be rolled out globally, although there are no current plans for its implementation in South Africa, Erasmus says.").

¹⁰ See also, Facial recognition technology could soon be everywhere – here's how to make it safer, 9 July 2023, <https://stuff.co.za/2023/07/09/facial-recognition-technology-could-soon-be/>; Future of facial recognition technology in Africa, 6 July 2020, <https://issafrica.org/iss-today/future-of-facial-recognition-technology-in-africa> ("Emerging biometric technologies have become ubiquitous across many parts of Africa, including facial recognition technologies in Zimbabwe, Uganda and South Africa. They're used to help combat identity theft, fraud and other threats, including terrorism. Much of the technology is being developed by the private sector as well as Chinese state entities as part of the drive to develop 'smart cities' across Africa."); Beijing's Big Brother Tech Needs African Faces, 24 July 2018, <https://foreignpolicy.com/2018/07/24/beijings-big-brother-tech-needs-african-faces/>

¹¹ National population register and its sub-systems, is a mammoth task and the main component of the modernisation of DHA systems. The replacement of these systems and integration with other systems in especially the immigration environment will speed up and secure both civic and immigration processes. SITA has appointed CSIR to undertake the review of the current system, gather the comprehensive requirements from all stakeholders and to develop system specifications. The new system will enable the full modernisation of the DHA (front and back-end systems)"



The ABIS project began in 2016 but has faced numerous delays in recent years. ABIS is intended to include the face of every resident and foreign visitor to the country; the DHA states ABIS's expected benefits include faster turnaround time for ID documents, faster client identity verification for banks, improved board control, and suspect identification matching latent prints against records on ABIS.

In 2018, Malusi Gigaba, then Minister of Home Affairs stated at a budget speech that, "ABIS will form the backbone of the future National Identity System (NIS), which will replace the National Population Register, EMCS and the National Immigration Identification System (NIIS).¹² The successful implementation of the NIS will substantially improve data management, reduce fraudulent transactions and enable e-Government and e-Commerce services."¹³ The ABIS project received funding from the Integrated Justice System and, as of 2024, is estimated to cost R30 million.¹⁴ DHA's current identification system, the Home Affairs National Identification System ("HANIS") has been in operation since 2002 and stores fingerprints and facial photographs.

The implementation of ABIS is intended to transfer the functionalities currently under the HANIS to the new platform as well as incorporate additional features and capabilities, including facial recognition, biometrics, iris, palm-print and infant footprint recognition, for enrollment, identification, verification, and latent searches. Additionally, while DHA's plans to advance their IT by moving from HANIS to ABIS, then Minister of Home Affairs, Dr Aaron Motsoaledi, stated HANIS is not obsolete and "when there is a problem [with ABIS], we run back to it."

The DHA states that all data migrated to ABIS will be in readily usable form, with no duplication of data and no compromise of data, and the system will be "deployed into production," meaning it will be usable by both Immigration and Civic Services as a backend system with new capabilities. As such, ABIS will interface with all systems to ensure a single view of the data of citizens and non-citizens. IDEMIA, a French multinational technology company, has been tasked with implementing ABIS. However, there have been significant delays since the project was first announced at the end of 2017. The first phase of ABIS was initially intended to be up and running within 12 months.

¹² Minister of Home Affairs Budget Speech, 16 May 2018, <https://pmg.org.za/briefing/26407/>

¹³ Minister of Home Affairs Budget Speech, 16 May 2018, <https://pmg.org.za/briefing/26407/>

¹⁴ DHA 2023-2024 Annual Performance Plan, 48, https://www.dha.gov.za/images/AnnualReports/DHA-APP-2023-V5_update2.pdf; see also, DHA Strategic Plan 2020-2025, https://www.dha.gov.za/images/FILES2/DHA_Strategic_Plan2020_25_WEB.pdf

Delays and Controversy

When the project was initially launched, the DHA had contracted with the tech group EOH.

However, in March 2021, after paying R224 million to EOH, the DHA ceded the contract to IDEMIA; as a result, EOH and the DHA went to arbitration over the matter.¹⁵

The DHA subsequently concluded a new agreement with IDEMIA for R191 million for the completion of the initial failed project, with 31 October 2021 set as the deadline, which IDEMIA failed to meet.

Further, in court papers filed in the South Gauteng High Court, NEC Africa, one of the five companies to bid for the contract in 2017 which is demanding the contract now held by IDEMIA be nullified. argued IDEMIA had failed to meet multiple deadlines and extensions “to deliver on the unlawfully ceded corruption-tainted EOH contract.”

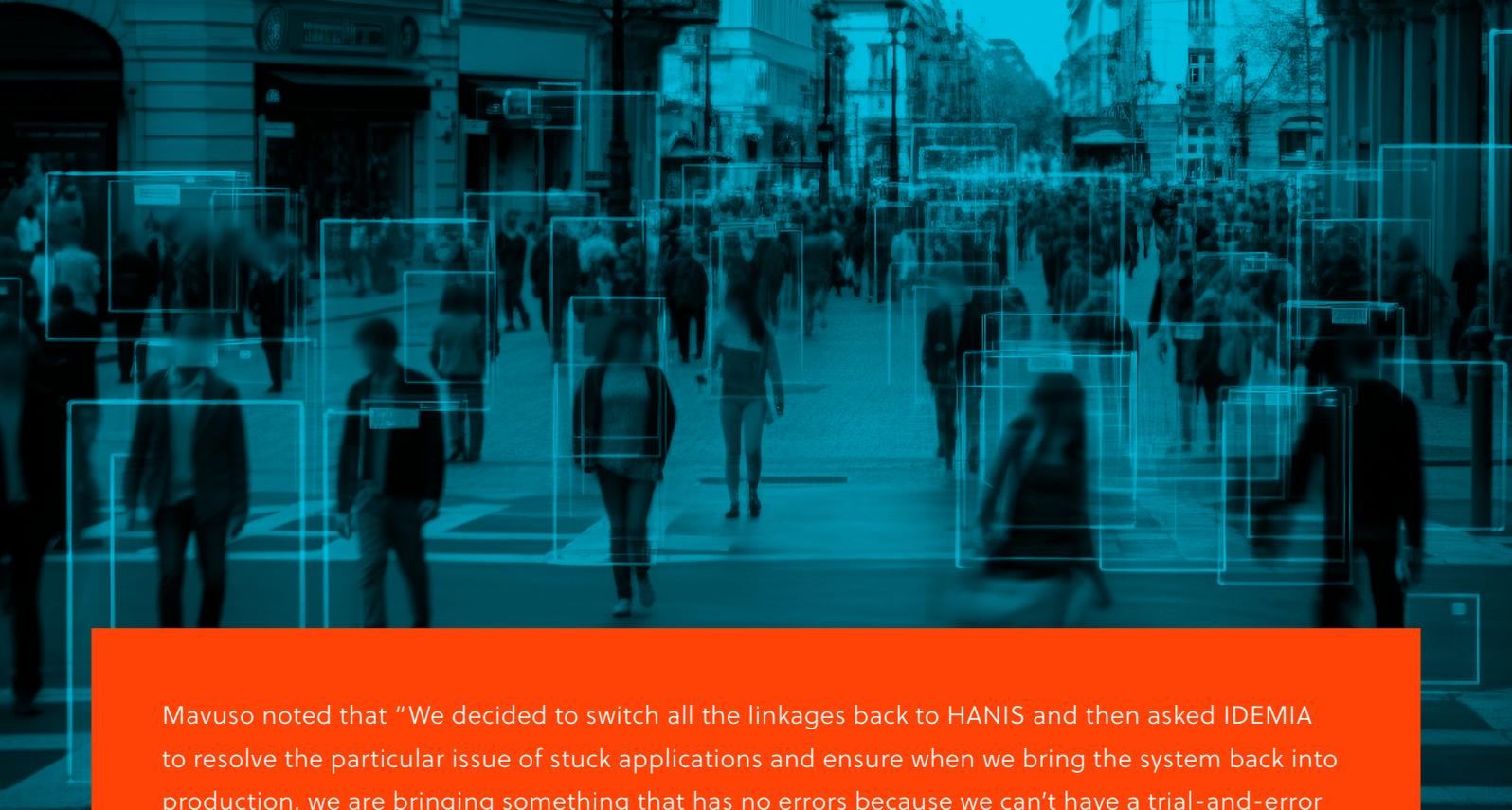
Further, the DHA began to note issues with ABIS between November 2022 and February 2023, including applications getting stuck in the system and misalignment of registered fingerprints between HANIS and ABIS.¹⁶

Due to these issues and delays in beginning phase two of the project, the DHA levied penalties against IDEMIA.

The DHA’s then deputy director-general Thulani Mavuso stated that while phase one of ABIS was supposed to be completed during the 2021/2022 financial year, it was still being completed in the 2022/2023 financial year; additionally, while ABIS phase two was intended to commence on 1 April 2023, this was delayed due to the failure to complete phase one by 18 March 2023.

¹⁵ EOH, home affairs face off over R400m contract, Apr 2022, <https://www.itweb.co.za/article/eoh-home-affairs-face-off-over-r400m-contract/lwrKxv3YGGdMmg1o>

¹⁶ MPs blast delays in biometric identification project, 10 May 2023, <https://www.itweb.co.za/article/mps-blast-delays-in-biometric-identification-project/KWEBb7yLK4OvmRjO>



Mavuso noted that “We decided to switch all the linkages back to HANIS and then asked IDEMIA to resolve the particular issue of stuck applications and ensure when we bring the system back into production, we are bringing something that has no errors because we can’t have a trial-and-error situation,” and that ABIS phase two will only commence once the results are positive.

As of 10 May 2023, the proposed timeline to begin the second phase of the ABIS project was 19 May 2023. In May 2023, the Portfolio Committee on Home Affairs released a media statement outlining their concerns regarding the persistent delays from HANIS to ABIS.¹⁷

The committee noted that despite the delays and problems with data migration between the two systems, they still “support the use of an upgraded system with innovative technological functionalities, such as facial recognition and palm biometric modalities, which will create further confidence in the population register.”¹⁸

Additionally, with regard to the Biometrics Movement Control System (“BMCS”), the committee similarly raised concerns about teething challenges, such as inadequate bandwidth and the impact of load shedding at some ports of entry, which impact on the system’s functionality.

The committee urged the DHA to find workable solutions to these challenges to ensure a fully functional movement control system, “as this has a direct impact on securing [RSA’s] borders.”

In September 2023, then Deputy Minister Njabulo Nzuza of the DHA provided updates on ABIS’s progress.¹⁹ Nzuza confirmed ABIS phase two commenced in May 2023 and is estimated to conclude by April 2024.

¹⁷ Media Statement: Home Affairs Committee Disappointed With Lack of Progress in Migrating to Automated Biometric Identification System, 10 May 2023, <https://www.parliament.gov.za/press-releases/media-statement-home-affairs-committee-disappointed-lack-progress-migrating-automated-biometric-identification-system>

¹⁸ Supra note 15.

¹⁹ Automated Biometric Information System (ABIS) update; IEC Commissioner Vacancy & salary increase; with Deputy Minister, 12 Sept 2023, <https://pmg.org.za/committee-meeting/37466/>



3

Current Functionalities

During the September 2023 committee meeting, Mavuso stated that ABIS's current functionalities are facial recognition, fingerprints, and latent search.²⁰

The project consists of three phases:

- On completion of Phase One, ABIS should be fully functional and the migration of the HANIS biometric data will be 100% complete and in a usable format. Fingerprints, facial recognition, and latent search functionality should be fully operational and in production as well.
- Phase Two entails the Enhancement of ABIS functionality by implementing Iris, Palmprint, and Infants Footprint biometrics.
- And finally, Phase Three involves the addition of any other biometric modalities as required by DHA such as DNA, and system maintenance and support.

Mavuso further noted that on a recent test on the FRT, there was only one case where the facial recognition was rejected in which somebody who was a naturalized citizen was applying for a passport; that matter was allegedly looked into so that ABIS does not reject naturalized citizens going forward.

Committee members posed questions about ABIS functionality, data migration from the previous system (HANIS), system integrity, support for integration, project costs, payments to contractors, prosecutions related to corruption, data security, and staff training.

²⁰ Supra note 14.



Subsequently, the DHA provided responses, shedding light on the history of HANIS and ABIS, data migration progress, hardware warranties and its commitment to addressing corruption. The DHA clarified that ABIS had become the primary system, and its stability was being observed. Regarding the data transfer, Mavuso stated the HANIS data had been transferred but 71,000 records were found in another HANIS subsystem and are currently being requested and analyzed before they can be transferred.

Deputy Minister Nzuzo said that the DHA is currently running on ABIS as the primary platform and they are now observing the system's stability, indicating the system is working. The DHA stated they are "very strong when it comes to fighting corruption and that "having a senior counsel is also a direct indication of how seriously the DHA takes these cases."

Moreover, Mavuso assured the committee that the integrity of the data within ABIS had been verified and that while SAPS does not yet have access to latent search, the functionality was tested successfully over the past weekend, and SAPS will be able to utilize latent search features soon. Finally, Mavuso states that when the project started, phase three was not scoped or costed saying "it was about support and maintenance, and other innovations such as DNA which is a very important biometric for a country to have." Mavuso acknowledged the ethical issues surrounding DNA collection but responded to concerns saying that research has been done to ensure all international protocols on DNA collection are being adhered to by DHA.

4 SAPS Biometric Interest and Lack of National Regulation

Every South African, as well as foreign national (upon entering the country legally), will have their biometric information captured in ABIS; South Africa already has a similar database to Interpol – a criminal database with a facial recognition system containing mugshots from 180 countries; South Africa's Automated Fingerprint Identification System ("AFIS") is only capable of fingerprint searches. AFIS lets SAPS take fingerprints from crime scenes (latent fingerprints) and do one-to-many identification searches with a database of convicts' fingerprints. However, AFIS cannot do anything if the suspect has no record. As a result, SAPS really wants direct access to the biometrics of all citizens and visitors.²¹

²¹ Bill to help SAPS establish collective fingerprints database, 10 Dec 2008, https://www.phfirms.co.za/kc/Data/Bill_to_help_SAPS_establish_collective_fingerprint_3205.asp; Government wants to 'track' all South Africans from birth – here's why, 30 Oct 2020, <https://businesstech.co.za/news/technology/444722/government-wants-to-track-all-south-africans-from-birth-heres-why/>



SAPS started advocating for access to citizen biometrics over a decade ago, resulting in the Criminal Law Amendment Act 6 of 2010.

The Act forces all government departments, and specifically DHA, to let police do “comparative” searches for investigative purposes against the fingerprints and facial photographs in all their databases.

DHA’s draft official identity management policy, released on 22 December 2020, confirms that ABIS will support biometric identification searches (to identify unknown people), and will be “expandable to include additional biometrics such as iris scans, palm and footprints and facial recognition.”²²

The DHA has stated they will ensure their FRT is in line with ISO 29794-part 5, the international standard for facial images to ensure they are of sufficient quality for facial recognition algorithms to work properly.²³

The Daily Maverick noted in 2021 that the current photographs in HANIS do not meet these specifications, nor do SAPS’ mugshots.²⁴

While the DHA continues to make plans for facial recognition, South Africa has no legislation regulating police use.

In a detailed study about biometric surveillance in South Africa and Kenya, ENACT found that regulations to oversee centralized government biometric databases like ABIS are non-existent in South Africa.²⁵

²² Draft Official Identity Management Policy, 22 Dec 2020, https://www.gov.za/sites/default/files/gcis_document/202101/44048gon1425.pdf

²³ Information Technology – Biometric Sample Quality, Part 5: Face image Data, 04 Jan 2010, <https://www.sis.se/api/document/preview/912124>

²⁴ Supra note 6.

²⁵ Cybercrime / Who’s watching who? Biometric surveillance in Kenya and South Africa, 11 Nov 2020, <https://enactafrica.org/research/research-papers/whos-watching-who-biometric-surveillance-in-kenya-and-south-africa>



Daily Maverick asked SAPS how they would regulate facial recognition searches, and SAPS responded only that they were legally allowed to “perform comparative searches against fingerprint or photographic image databases kept by any other government department for purposes of exclusion or inclusion.”²⁶

The DHA’s draft identity management policy recognizes “there are no documented and transparent guidelines” regulating how the DHA shares people’s identity data.

The policy further acknowledges that the DHA’s information systems security policy isn’t aligned with the Protection of Personal Information Act (“POPIA”).

The act regulates how government and private entities use citizens’ personal information, including biometrics. The DHA draft policy recognizes that POPIA isn’t fully enforced but recommends there should be independent oversight with legal powers to “ensure compliance” with the legislation.

Regarding policing, it states that the “use (of identity data) for enforcement-related activities must be noted in writing” to “promote accountability.”

It suggests any processing of identity data for “crime-related purposes” must be legally authorized, and that the DHA only discloses citizens’ information if there’s a court order.

However, the policy suggests that sharing biometric data should be excluded from the court order requirement, and that all personal information – including biometrics – can be disclosed “in the interest of national security on the approval of the director-general or delegated officials.”

²⁶ Supra note 6.

EMERGING SURVEILLANCE TECHNOLOGIES



1

Vumacam

In 2022, Gauteng Province Premier Panyaza Lesufi was reported saying he intended to launch a wide-ranging network of surveillance cameras.²⁷

In addition, the surveillance network would include 500 drones, a high-performance police car in every ward, and eight helicopters.²⁸

This project was an extension of Vumacam, a private-business project that as of 2022 had already installed 1,850 cameras throughout Johannesburg. At the time of its conception, the plan was first to be rolled out in townships as more affluent suburbs already had private security and neighborhood watches.²⁹

In June 2022, Vumacam invested an additional R60 million to expand their security camera network and rolled-out 350 cameras in Alexandra, Soweto, and Diepsloot.³⁰

At the same time, Vumacam also announced its support for the Eyes and Ears Initiative (E2) — a coordinated joint crime-fighting initiative between the South African Police Service, Business Against Crime South Africa, and the private security industry.

²⁷ Gauteng's big plan to fight crime — including 500 drones and cameras on every street, 6 Nov 2022, <https://mybroadband.co.za/news/security/467743-gautengs-big-plan-to-fight-crime-including-500-drones-and-cameras-on-every-street.html>

²⁸ Plans for biometric surveillance reach epic scales with off-putting implications, Nov 2022, <https://www.biometricupdate.com/202211/plans-for-biometric-surveillance-reach-epic-scales-with-off-putting-implications>

²⁹ Supra note 25.

³⁰ Vumacam invests R60 million to expand security camera network — including Alexandra and Soweto, 25 June 2022, <https://mybroadband.co.za/news/security/450236-vumacam-invests-r60-million-to-expand-security-camera-network-including-alexandra-and-soweto.html>



As of February 2024, Gauteng has now launched almost 7,000 surveillance cameras across the province that are equipped with FRT.³¹

This network is a partnership with Vumacam and uses the company's network of existing cameras, including over 6,000 Vumacam cameras in Gauteng and access to the company's 5,000 partner cameras across South Africa. The Gauteng Department of e-Government is another stakeholder in this partnership and has stated their mandate is to ensure that technology bolsters the immediate fight against crime, corruption, vandalism, and lawlessness.³²

According to Vumacam, the partnership builds on the success of its existing public sector collaborations which employ its advanced technology, including the Integrated Intelligence Operations Centre, which sees the group work with the Johannesburg Metro Police Department.

Vumacam stated, "[t]his partnership, which forms part of the Eyes and Ears Initiative between Business Against Crime South Africa and the South African Police Service has already delivered multiple successes in the fight against crime enabled by the SafeCity Initiative...", and, "[a]s a demonstration of the power of collaboration between municipal, provincial, national and private law enforcement, the partnership has seen over 400 interceptions registered across Gauteng monthly."

³¹ Gauteng Premier Panyaza Lesufi Launches Almost 7000 Facial Recognition Cameras , 13 Feb 2024, <https://briefly.co.za/south-africa/180039-gauteng-premier-panyaza-lesufi-launches-7000-facial-recognition-cameras/>; Expansive facial recognition surveillance coming to Hong Kong, Bahrain, South Africa, 12 Feb 2024, [https://www.biometricupdate.com/202402/expansive-facial-recognition-surveillance-coming-to-hong-kong-bahrain-south-africa#:~:text=Gauteng%2C%20South%20Africa%20has%20launched,suburbs%2C%20informal%20settlements%20and%20hostels](https://www.biometricupdate.com/202402/expansive-facial-recognition-surveillance-coming-to-hong-kong-bahrain-south-africa#:~:text=Gauteng%2C%20South%20Africa%20has%20launched,suburbs%2C%20informal%20settlements%20and%20hostels;); 'Big Brother' hits Gauteng streets as Lesufi, Vumacam roll-out 6,000 CCTV cameras to fight crime, 14 Feb 2024, <https://www.iol.co.za/news/big-brother-hits-gauteng-streets-as-lesufi-vumacam-roll-out-6000-cctv-cameras-to-fight-crime-b0e30a1e-4ad8-430b-a683-c3a0cb8d42aa>

³² Vumacam announces crime-fighting partnership with Gauteng government, 13 Feb 2024, <https://www.moneyweb.co.za/news/companies-and-deals/vumacam-announces-crime-fighting-partnership-with-gauteng-government/>; Gauteng taps into Vumacam's tech to fight crime, 14 Feb 2024, <https://www.itweb.co.za/article/gauteng-taps-into-vumacams-tech-to-fight-crime/KWEbB7yLPQLvmRjO>



More recently, Vumacam has stated it will require Gauteng public officials who view their CCTV cameras to undergo the same training and testing as their private security officers.³³

An investigation by Daily Maverick in August 2023 showed that the initial deployment of the Crime Prevention Wardens was unlawful, as it would have required a formal request and approval from the Minister of Justice.³⁴

Vumacam also reiterated that those appointed to monitor cameras are not able to access their feeds at any time. Vumacam has stated they use dark screen technology, which only brings up a camera feed when AI-powered systems detect an incident that triggers an alert.

Vumacam said in cases where a feed is requested to investigate a particular incident, the Gauteng Provincial Government must go through the same approval and submit the same documentation as private security companies.

Vumacam said, "This footage is then stored in a secure vault which may only be accessed by those with relevant need and approval to do so. Were any user to observe feed on one or more cameras without valid cause for doing so, this would be flagged by our systems."

In addition, Vumacam said it had rigorous controls and two-factor authentication to ensure that all system usage was regulated, monitored and audited, stating, "[i]f any system abuse was to take place, it would be flagged and immediately investigated. Any necessary legal recourse would follow."

³³ Vumacam training controversial Gauteng crime wardens, 6 Mar 2024, <https://mybroadband.co.za/news/security/527745-vumacam-training-controversial-gauteng-crime-wardens.html>

³⁴ Gauteng's Crime Prevention Wardens were set up unlawfully, risk abuse of police powers – experts, 29 Aug 2023, <https://www.dailymaverick.co.za/article/2023-08-29-gauteng-crime-prevention-wardens-set-up-unlawfully-experts/>



Vumacam added that its systems and technology were compliant with the Protection of Private Information Act and subjected to regular penetration testing, and “[w]hile nefarious attempts or abuse of a system are plausible on any systems or technology, Vumacam’s systems are the most advanced in terms of CCTV security and privacy in South Africa, if not the world.”³⁵

Vumacam has partnered with the Chinese company Hikvision and the Swedish company Axis Communications to provide the hardware while iSentry and Milestone, a popular Denmark-based video surveillance management tool, provide the software.³⁶

Vumacam has teamed up with private agencies patrolling wealthier residential areas and erected poles with high-definition cameras where they wanted on top of Johannesburg’s fiber network.

A Vumacam representative states that after 48 hours, if a license plate in the shared database still doesn’t have a case number, it’s automatically deleted.

However, there’s no transparency or mechanism for public accountability about how thoroughly this cleaning is done; nor is the same process applied to plates stored in each user’s private database, meaning any plate number could be added without any vetting. As a result, cars could be monitored and pulled over for erroneous or illegitimate reasons.

Vumacam says its approach aided in the detection of 97 vehicles and the arrest of 85 individuals in the Sandton Central Improvement District, a commercial area of Johannesburg, during the first seven months after its cameras were installed.

Vumacam CEO Ricky Croock said he was “not privy” to details about whether the arrests led to convictions.

³⁵ Supra note 31.

³⁶ Supra note 4.



2

CSIR

The Council for Scientific and Industrial Research (“CSIR”) is a leading scientific and technology research organization that researches, develops, localizes, and diffuses technologies to accelerate socio-economic prosperity in South Africa.³⁷

The CSIR states their cybersecurity capabilities are closely aligned to the National Cybersecurity Framework, and they typically serve as a decision-support partner to those with complex crime problems. Their interventions include countering cybercrime, such as identity theft; providing non-visual and visual crime-sensing systems; performing big data crime analysis; and undertaking the enhancement and/or integration of network communication systems.

The CSIR has begun to invest in and develop biometric identification systems.³⁸ CSIR has begun to roll out this technology for testing at the South African army headquarters.

The CSIR-developed system purportedly comprises independent recognition systems that can be integrated to collaboratively solve physical security and surveillance problems. It uses camera imaging technology, integrated with CSIR-developed modules for face and human body recognition, to address the challenges of access control to secure facilities or any other entrance or exit points where security measures are needed.

The CSIR first began testing these technologies at the SA army headquarters in October 2020, and it is unclear if they are still testing this technology or whether they have started implementing this outside of their pilot program.

³⁷ <https://www.csir.co.za/csir-brief>

³⁸ CSIR-Developed Face, Body and Number Plate Recognition System Tested by the SA Army, <https://www.csir.co.za/csir-developed-face-body-and-number-plate-recognition-system-tested-sa-army>



The CSIR has stated that they intend to roll out this technology nationwide and envisaged that the technology will be incorporated at facilities of the Department of Correctional Services for the identification of inmates and staff. The CSIR has also developed a contactless fingerprint biometric technology named VeristicPrint.³⁹ Finally, the CSIR is also in the process of developing biometric identification of minors.⁴⁰ CSIR researchers are investigating which biometric(s) – fingerprint, outer ear shape, or iris – would be best suitable for the recognition of minors as they age, and, having identified a suitable biometric, CSIR plans to develop software algorithms required to perform the recognition using the biometric.



3 Scarface

Bidvest Protea Coin group has developed an FRT software tool called Scarface with the stated goal of surveilling criminal activity.⁴¹ Scarface already uses a biometric database and is used to detect the presence of known illegal miners, or 'zama zamas', in some areas of South Africa.

According to Bidvest, the database, coupled with high-resolution cameras and the autonomous Scarface system, lets the group identify if there's a 'person of interest' in the area; the system is apparently quick, and accurate — though accuracy rates aren't mentioned.

Further, Bidvest does not explain how it will deal with false positives, where it gets its facial data from, how broadly the program will roll out, and how the data collected will be managed.

³⁹ CSIR offers contactless fingerprint biometric software to partners in South Africa, 19 Oct 2021, <https://www.biometricupdate.com/202110/csir-offers-contactless-fingerprint-biometric-software-to-partners-in-south-africa>; VeristicPrint Biometric Technology, <https://www.csir.co.za/veristicprint-biometric-technology>

⁴⁰ Biometric Recognition of Minors, <https://www.csir.co.za/biometric-recognition-minors>

⁴¹ Scarface is watching you – How the South African facial recognition system works, 22 June 2022, <https://stuff.co.za/2022/06/22/scarface-is-watching-you-how-the-south-african-facial-recognition-system-works/>



Bidvest has stated they developed the technology as an early warning system to identify threats and prevent attacks before they occur.⁴²

Bidvest has publicly commented that, “[s]ince we know that crime often involves scouting, which takes place over a period, Scarface stops that process at the early stages before it matures with detailed and often classified information, by allowing early detection and/or apprehension of transgressors. Overall, the system provides increased risk mitigation through a proactive approach to suspect identification.”



4 University of Johannesburg

The University of Johannesburg has become the first South African higher education institution to implement facial recognition technology in its registration system in a move aimed at bolstering secure and fraud-resistant registration. Unlike many other developments of FRT in South Africa, this system is one-to-one matching FRT.⁴³

The pilot program, implemented for first-time entering students, involves a process where applicants receive a personalized SMS and then take a selfie which is then verified against the Home Affairs database, eliminating the need for physical ID copies.

⁴² This South African security company is using a tool called ‘Scarface’ to track people – how it works, 21 June 2022, <https://businesstech.co.za/news/technology/598848/this-south-african-security-company-is-using-a-tool-called-scarface-to-track-people-how-it-works/>; see also https://www.linkedin.com/posts/bidvest-protea-coin_technology-innovation-security-activity-6907023413052100608-oKQ_/

⁴³ UJ implements Facial Recognition for a secure registration, a first for a South African university, 24 Jan 2024, <https://news.uj.ac.za/news/uj-implements-facial-recognition-for-a-secure-registration-a-first-for-a-south-african-university/>



Vumacam v JRA

While South African jurisprudence pertaining to FRT and related surveillance technologies is limited, a 2020 High Court case on biometric surveillance may be of relevance.

In *Vumacam (Pty) Ltd v Johannesburg Roads Agency and Others*, the Johannesburg Roads Agency (“JRA”), a minor governmental body, sought to stop Vumacam’s expansion of their camera network.⁴⁴

In *Vumacam*, JRA refused to issue easement for Vumacam’s poles as they had the right to prevent ropes, wires, and poles that could inhibit foot and vehicle traffic unless specific requirements were met. JRA claimed that Vumacam wanted to install the cameras to surveil the movements of “innocent people” and sell the “footage” to third parties.

JRA refers to surveillance as “spy footage” which is a tradeable asset in the hands of Vumacam. JRA further alleged that the prevention and detection of crime is not the primary reason for the installation of the cameras.

While JRA’s arguments were weak, and the High Court sided with Vumacam in their decision, given the road agency’s mandate did not cover what they alleged it did, the court left open a future privacy argument.

The judge ruled that the JRA’s job was to protect the integrity of road infrastructure, not human rights. But, acknowledging the matter’s complexity, the court refrained from issuing judgment on the alleged privacy infringement.

Since *Vumacam*, there has been no further litigation from civil society organizations, and no legislation specifically regulating surveillance cameras in public spaces or accompanying analytics like facial recognition.⁴⁵

⁴⁴ *Vumacam (Pty) Ltd v Johannesburg Roads Agency and Others* (14867/20) [2020] ZAGPJHC 186 (20 August 2020); see also, 2020 court fight in South Africa reveals dominance of biometric surveillance industry 21 Apr 2022, <https://www.biometricupdate.com/202204/a-2020-court-fight-in-south-africa-reveals-dominance-of-biometric-surveillance-industry>

⁴⁵ For further discussion on FRT caselaw in the UK and potential application in RSA, see Gordon BJ “Automated Facial Recognition in Law Enforcement: *The Queen (On Application of Edward Bridges) v The Chief Constable of South Wales Police*” PER / PELJ 2021(24) - DOI <http://dx.doi.org/10.17159/1727-3781/2021/v24i0a8923>

CONCLUSION



The increased usage and expansion of FRT in South Africa is a growing concern.

It should be emphasised that the proliferation of FRT as a recently expanding form of surveillance, identification and crime prevention seemingly without sufficient regulation and protections is a worrying trend for human rights in South Africa.

The public and private sector drive for increased FRT – evidenced by the statements of government officials and private corporation representatives – needs to be interrogated for its potential violations of respected constitutional rights such as human dignity, privacy and equality among many others.

This also requires greater testing of relevant government policy and partnerships to assess whether they pass constitutional muster.

As we move forward, we need to be increasingly aware of and ensure greater inspection in the use of FRT in South Africa.

This involves ensuring a balance between essential constitutional rights and the call for greater surveillance and enforcement for the sake of supposed public safety.

As with all technological developments, the law in South Africa should ensure that we analyse the operation of FRT through the lens of existing human rights protections.

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