

Prevent, Investigate, Solve

How biometric technology
can save time and money
for law enforcement agencies

Today's challenges: complexity of threats coupled with budget and time constraints

The law enforcement community is doing an incredible job of keeping citizens and cities safe. However, at times of an increasingly complex threat landscape and limited resources and budgets, this task gets more difficult every day. It is hard to focus on protecting the community when officers are busy with paperwork and manual processes. According to a 2018 survey from Nuance in the US, over 50% of an average shift is spent on paperwork.¹

The sheer amount of potential sources of evidence, thanks to video surveillance for instance, offer a great way to solve crimes, but often also mean hours and hours of manual assessment. Time is a valuable commodity that police officers do not have. Increased pressure to solve the high number of crimes quicker adds to this challenge.²

But, what if there was a solution that supports law enforcement agencies in their challenging jobs? What if there were tools capable of expediting certain tasks and supporting officers by combining speed and accuracy in their work?

The solution: biometrics and automation

The use of biometrics in crime solving is not new. Be it fingerprint, face, DNA, scars or tattoos, biometric data is the safest, most accurate way to identify an individual. Once combined with automation technology and artificial intelligence that process multiple biometrics automatically, the required verification and identification steps can be done much faster and with the same precision, but also with ease.

As the global leader in biometrics, IDEMIA has over 40 years' experience in working alongside the world's leading law enforcement agencies. Together we will overcome the challenges of the digital world and embrace the opportunities it offers.

1. https://www.nuance.com/content/dam/nuance/en_us/collateral/dragon/brief/bf-dragon-role-of-tech-in-police-paperwork-report-en-us1.pdf

2. <https://www.telegraph.co.uk/news/2018/11/06/police-risk-losing-public-trust-warns-policing-minister/>

“Define your strategy
to get ready”

Securing public spaces and keeping the community safe

Crime prevention forms the very basis for ensuring safe citizens and cities. In times of growing terrorism, assessing the threat level of individuals is crucial in order to prevent attacks. Law enforcement agents need tools that can speed up the decision-making process on whether to act or not. Security can only be achieved by making sure that every citizen follows the law.

Securing public spaces

One of the top priorities for a police officer is to safeguard the community. Today it is difficult for them to execute that mission efficiently. Robberies and

other less serious crimes are on the rise. In 2017 in France alone, an estimated 569,000 households fell victim to burglary or attempted burglaries according to the National Institute for Advanced Studies in Security and Justice (INHESJ).³ This is an increase of 21% over 2016. At the same time, the administrative burden and processes have not been sufficiently adjusted.

An important step to overcome this challenge is to provide officers with advanced mobile tools

and equipment that will help them conduct identification on the beat. Many countries have already invested in mobile technology, mainly smartphones and

laptops, to allow officers more flexibility on where to work. Some forces even have their own development team for applications that give them access to systems and files. With additional tools that can be connected to the smartphone, some teams can already verify identities on patrol. IDEMIA has developed a solution that uses the camera of a phone to identify a suspect by matching the fingerprints or face of the suspect automatically against a central law enforcement database. Instead of having to carry a second tool, the smartphone thereby becomes even more useful. Adding more biometric solutions to smartphones will save police officers valuable time and effort.

Artificial intelligence and deep learning algorithms constitute a rather sizeable progress in securing public places. Many countries already use video surveillance to keep citizens and visitors safe. In the case of a missing or disoriented person, for example, real-time video analytics could support officers to quickly re-unite family members even in dense urban environments.

With IDEMIA's next-generation video analytics platform, the notion of preventing a crime before it happens also becomes a feasible possibility if video footage is matched against a watchlist to protect citizens and visitors. Not only can video analytics platforms be used in a context of securing political summits or sports events, the technology is also useful for the day-to-day securing of particularly vulnerable parts of a city.

Preventing road-related crimes and offenses

The World Health Organization estimated that 1.35 million people died in road-related accidents in 2016.⁴

A strict enforcement of traffic regulations is vital to keep cities and citizens safe. Speed limits are put in place to lower the risk of accidents and save lives. However, ensuring that these rules are respected can be difficult as many of the speed cameras deployed today are technologically insufficient. Furthermore, road safety requires more than merely enforcing speed limits. It also entails, among others, being able to prevent red-light running, forbidden overtakes, tailgating, and illegal turns, as well as stopping uninsured vehicles. All of these road-related offenses and crimes can have devastating effects.

This is why IDEMIA offers sophisticated traffic law enforcement systems that

contribute to preventing reckless driving and significantly reducing the number of road accidents. We offer the latest technologies needed for advanced behavior monitoring that work in the toughest conditions.

3. https://inhesj.fr/sites/default/files/ondrp_files/publications/pdf/rapport_CVS_2018.pdf

4. <https://apps.who.int/iris/bitstream/handle/10665/277370/WHO-NMH-NVI-18.20-eng.pdf?ua=1>

In 2018, the Federal Police of Argentina turned to IDEMIA to provide them with a real-time video analytics solution based on face recognition to secure the first G20 summit which took place in South America.



“Ready to face new challenges”

Saving time in lead identification for efficient investigations

Despite the best effort and even with the best technology and intelligence available, crimes will continue to happen. This is why police forces need solutions that support them to investigate most efficiently.

Automating tasks to speed up investigations

Forensic examiners must have solutions capable of automating certain tasks in order to speed up processing times. At the very heart of these solutions is a biometric search engine that can accurately alert officers if a potential culprit's biometric data is already in the database. This decreases processing costs and improves the cost/efficiency ratio. Today's innovative biometric search engines can process a multitude of biometric data, which gives investigators a more accurate and detailed profile of the individual.

If a multitude of traces (fingerprints or DNA) are found at the crime scene, it is time-consuming for investigators to distinguish between a latent that could potentially belong to a criminal and a latent that belongs to individuals connected to the victim. At IDEMIA, we

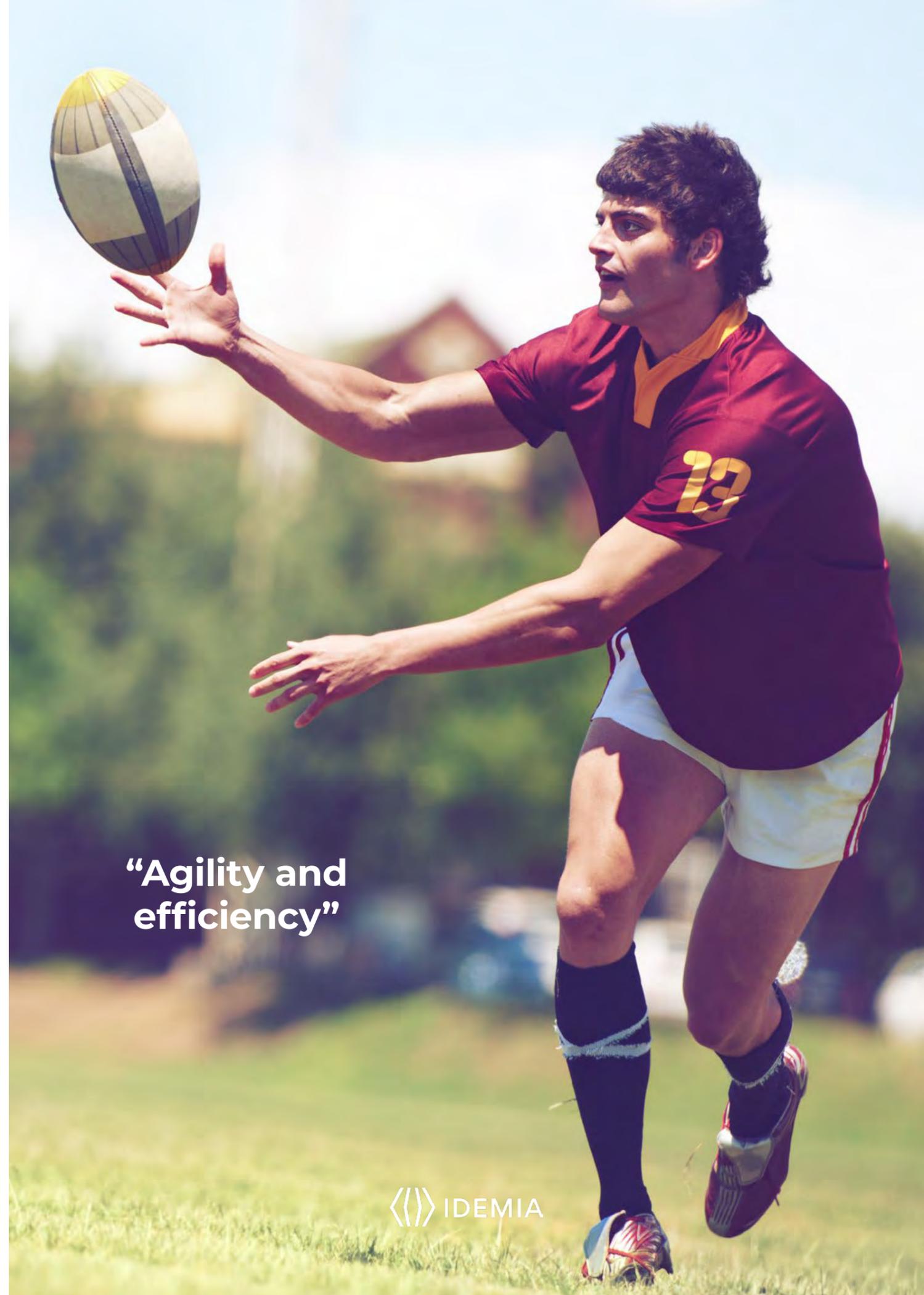
have developed a solution capable of eliminating the victim's close family and friends in order for investigators to solely focus on the relevant latents. This drastically reduces the time spent at a crime scene and improves the chances of solving a crime.

Automation is also the key technology behind IDEMIA's multi-biometric booking stations allowing police officers to significantly speed up the enrollment phase. Once the suspect's biometric and alphanumeric information is in the system, police officers will be able to run background checks as well as suspect verification and identification with great accuracy and within seconds.

IDEMIA's solution helps finding answers. From our multi-biometric search engine and identification system to our familiar latent elimination tool, we provide significant support to police officers to fight criminality.



Spending less time on fingerprint evidence means that police staff will be able to process more latents and increase the number of matches. A police station that used IDEMIA's solutions in 2016 saw their number of matches increase by 283% compared to 2015 (from 1,338 hits to 3,796 hits).



“Agility and efficiency”

Closing the case

Once an individual of interest has been identified, another critical aspect is still to be considered: ensuring the case can be solved with evidence that holds up in court.

Experts have a duty to prove to a jury that the latent they found on a crime scene is the same as that of the suspected individual. This operation called “charting” is often laborious and time-consuming. Any technical solution involved should automatically generate similarities to support experts in this task. To support experts, a methodology, widely adopted and referred to as ACE-V (Analysis, Comparison, Evaluation and Verification) provides a structured approach to fingerprint examination, and some degree of protection against errors and incorrect results.

IDEMIA's ABIS ensures continuity and traceability of the evidence as the ACE-V methodology is integrated by design.

Although it is not yet considered as conclusive evidence, video footage is one of the preferred, highly valuable intelligence sources. For the information to be indisputable the analytical process also needs to be well-documented and the operators need to report on any adjustments made. A technical solution should therefore not only automate the analysis of the video footage, but at the same time document every action taken by the forensic expert.

IDEMIA's video analytics solution helps to solve a case ten times faster than by manually reviewing the footage. It is a multi-object detector, tracker, and identifier that exploits a large number of elements. Our facial recognition algorithms, highly ranked by NIST, have a demonstrated ability to perform accurately under demanding real-life circumstances. Our powerful matching and reporting functionalities assist investigators in closing the case.

Connecting different systems to solve crimes faster

The world we live in today is more connected and open than ever before. Police officers must have the technologies and tools to keep up with this increased mobility.

Solving crimes faster implies having systems that co-exist and interoperate. System interconnection is key to creating a safer and better environment – whether between regions or different agencies such as border control entities and intelligence units. If, for example, a criminal is fleeing a crime scene in a car, the car's license plate number could be fed into a video analytics platform and then be followed in real-time through speed cameras. Having two interoperable systems enables law enforcement agencies to set up a network of connected objects that supports the investigation to an unprecedented degree.

At IDEMIA, we do not develop stand-alone products. We develop comprehensive solutions and think beyond each use case to help police forces stay one step ahead. This way we ensure our systems are scalable, interoperable, and tailored not only to the current needs of the law enforcement agencies, but also to upcoming challenges.

IDEMIA's experience

Argentina successfully secures G20 summit

The challenge:

In 2017, it was decided that Argentina would host the next G20 summit at the end of November 2018. The Federal Police of Argentina (or PFA) thus looked for an innovative solution that would help them secure one of the most important meetings in the world.

IDEMIA's solution

IDEMIA supported the PFA by providing its market-leading video analytics platform to protect the gala dinner in the center of Buenos Aires. HD cameras were connected to computing power running IDEMIA's system capable of real-time matching of individuals based on facial recognition. More than 10,000 portraits from different watchlists were uploaded into the system. IDEMIA trained PFA's local team to operate the system. The security perimeter that was set up naturally also included civil houses and apartment buildings and the organizers wanted as little disruption for the residents as possible. Therefore, the fingerprints of these residents were enrolled in a local database and a mobile identification device called RapID allowed easy and quick access for verified individuals.

The outcome

Argentina was able to successfully secure the G20 members. The nation stood out as a reliable, trustworthy country that has the potential and the technology to host highly anticipated political events.

IDEMIA facilitates Edmonton's Vision Zero road safety strategy

The challenge:

In 2006, the city of Edmonton, Canada, adopted Vision Zero as a federal strategy, declaring a zero tolerance policy on all road traffic accidents and fatalities. The city needed a solution that was efficient, reliable and sustainable in spite of its extreme weather variations.

IDEMIA's solution

In 2017, Edmonton selected IDEMIA's MESTAfusion, a cutting-edge solution based on a Doppler system in an external standalone tower, providing very high quality picture capabilities in all environmental conditions. Edmonton road tested the product for a year to ensure the solution met all their expectations.

The outcome

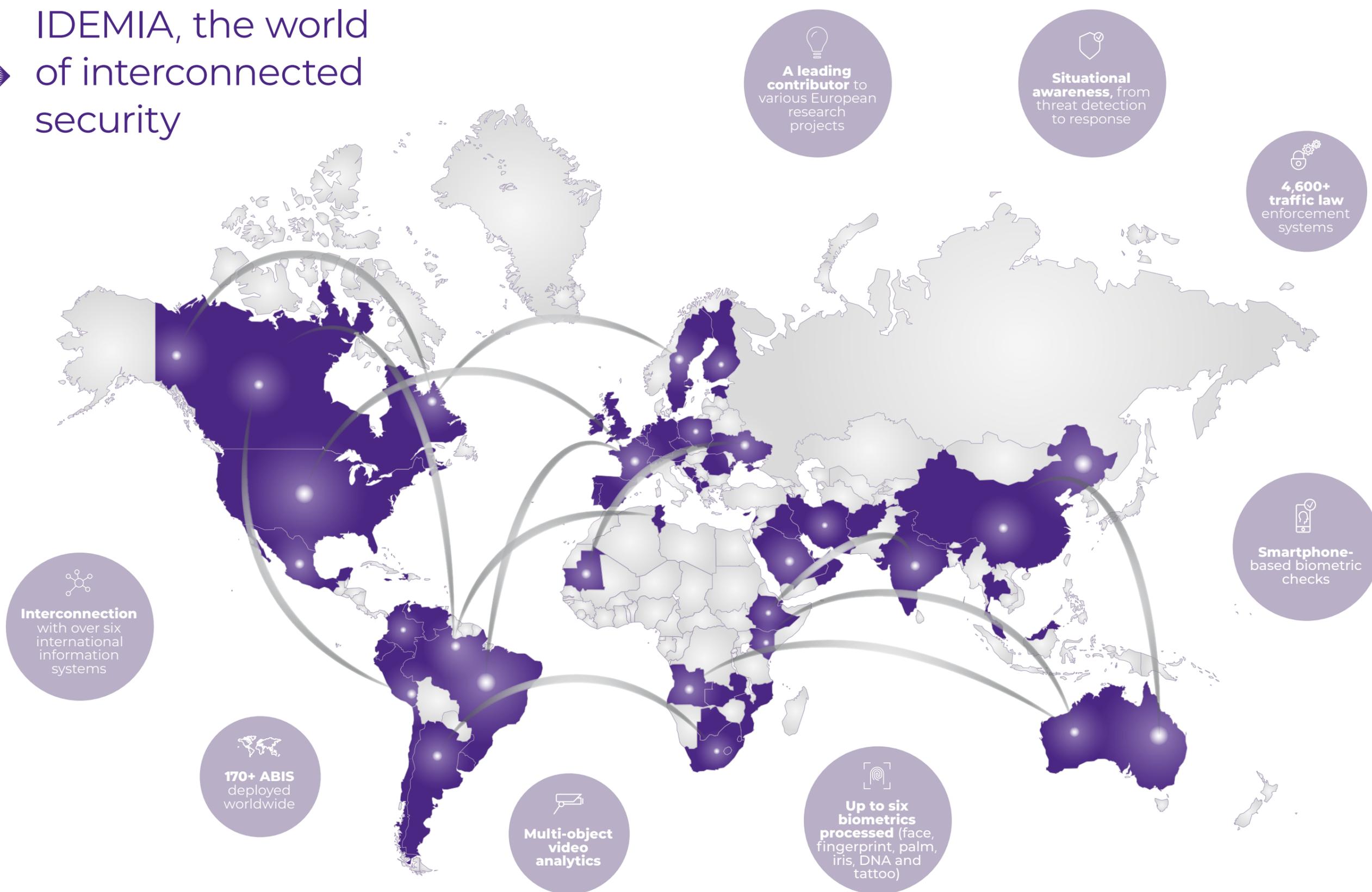
By 2018, the number of injuries and fatalities had decreased by 60%. This implementation is clearly viewed as a success and Edmonton is an example for the rest of Canada.



“Mission accomplished”



IDEMIA, the world of interconnected security





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