

# BORDER MANAGEMENT TODAY

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## USA REPORT 2023



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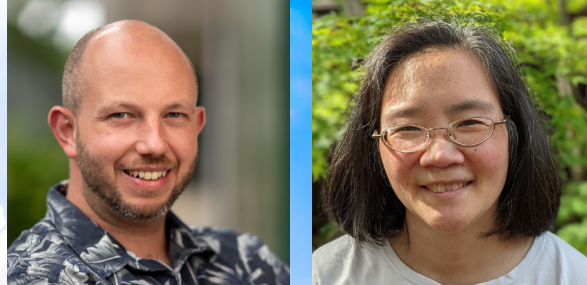
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By Declan Trezise with Tina Lieu

# AI for Streamlining Border Security and Fighting International Drug Rings

A container ship from Latin America docks in Antwerp, Belgium, with a cargo of bananas. Its paperwork lists the exporter, their company, the company address, and the cargo manifest, along with the ship's origin and destination. The trucker accepting the cargo must pass through truck registration. Every border checkpoint is an opportunity to stop the movement of bad actors or illegal cargo. Is the exporter on a watchlist? Is this a shell company? Who is the truck driver?

Belgian authorities estimate that between the Antwerp container terminal — the putative gateway for illegal drug trafficking from Latin America into Europe<sup>1</sup> — and the container terminal in Rotterdam, the Netherlands, only 10 percent of illegal cargoes are intercepted. It's a staggering thought, given that authorities in Antwerp seized 89.5 tonnes of illegal drugs in 2021 and 109.9 tonnes in 2022.<sup>2</sup> To put that in perspective, a kilogram of cocaine has a street value of USD 35,000. Thus, one tonne (1,000 kg) of cocaine

is worth USD 35 million, becoming 5 million doses of 0.2 grams.<sup>3</sup>

To combat the flow of illicit cargo, border agencies and law enforcement are adopting AI and natural language processing (NLP) technologies to automate name screening against watchlists and fully leverage captured intelligence.

## AI TO SPEED BORDER SCREENINGS

Major border security agencies, including U.S. Customs and Border Protection and the U.K. Home Office Borders, Immigration and Citizenship System, already embed AI-powered name matching into the systems that screen passengers against watchlists.

More accurate screening at every checkpoint makes it harder for international criminals to pass undetected. But not all name matching technologies are equal. Modern technologies accelerate screening in three ways:

1. With greater accuracy than traditional technologies that rely on rules, modern name

matching decreases false positives and false negatives. How? It simultaneously considers more than a dozen ways that names vary, such as nicknames, transliteration variations, initials, truncation, misfielded/out-of-order names, and the same names written in different languages.

2. Nuanced match scoring enables greater automation. Passport control can automatically approve non-matches — match scores below a certain threshold (say 85%) — and pick up those above a certain threshold (say 90%) for secondary screening. Human review can be limited to borderline cases — for example, those with an 86%-89% match to a watchlist entry.
3. Modern name matching also tackles specific issues of matching addresses and organizational names, which often differ by a synonym, such as “PennyLuck Drugs” versus “PennyLuck Pharmaceuticals.”

<sup>1</sup> Agence-France Presse (AFP) “Record cocaine seizures in Antwerp as Belgium battles drug gangs,” 10 January 2023, [france24.com/en/live-news/20230110-record-cocaine-seizures-in-antwerp-as-belgium-battles-drug-gangs](https://france24.com/en/live-news/20230110-record-cocaine-seizures-in-antwerp-as-belgium-battles-drug-gangs)

<sup>2</sup> Ibid

<sup>3</sup> Casert, Raf “Despite record cocaine seizures, drug cartels roil Europe,” 10 January 2023, AP News, [apnews.com/article/health-drug-crimes-belgium-europe-european-union-075e1cec66b439284ed58fc76747fbb1](https://apnews.com/article/health-drug-crimes-belgium-europe-european-union-075e1cec66b439284ed58fc76747fbb1)

## BREAKING UP DRUG TRAFFICKING NETWORKS

Catching illegal drugs is a significant challenge. More than 138 million tonnes of container cargo passed through Antwerp in 2021 alone.<sup>4</sup> Cracking encrypted messaging apps has been a key turning point for learning who the players are, where they will be, and what they are shipping.

In 2020, the Encrochat app was infiltrated by French and Dutch police agencies, giving them access to photos and millions of messages sent between criminals.<sup>5</sup> Most recently, Dutch police cracked the Exclu encrypted messaging app (which has 3,000 users), and read communications between organized criminals for five months. This resulted in widespread police raids in the Netherlands, Germany, and Belgium in February 2023.<sup>6</sup>

One of the biggest breakthroughs was when Belgian police services deciphered the Sky ECC encryption — a secure messaging app widely used by drug traffickers around Antwerp, where some 164,000 users were exchanging 1.5 million messages daily.<sup>7</sup> Cracking Sky ECC gave authorities access to 1 billion messages.<sup>8</sup> With the February 2021 breakthrough, Belgian police were capturing tonnes of cocaine at a time, instead of hundreds of kilos.<sup>9</sup>

The main obstacle to fully leveraging 1 billion messages was time. How quickly could the

authorities capitalize on the who, what, when, and where before setups and locations were changed?

According to Belgian federal prosecutor Frédéric Van Leeuw: “With a team of 40 police officers to read and contextualise all those messages, it would take 685 years to go through everything. Each message takes about five to six minutes. To read everything in one day, you need a team of 11 million Belgians.”<sup>10</sup>

Or, you turn to artificial intelligence powered by NLP, which can process megabytes of text in a minute. These are the technologies that are being deployed in government intelligence agencies today.

## QUANTUM LEAP OVER KEYWORD SEARCH

AI built on deep learning models automatically identifies the names of people, places, and organizations in free form text and determines which ones match its internal knowledge base of known criminals and associates. This process gets a boost from entity linking, which is NLP that looks at document context to determine if “Jean Dupont” is a known criminal or a legitimate businessperson.

Until recently, finding the important text meant performing a simple Boolean keyword search. But because it just looks for words, that method returns too many irrelevant results and misses vital information. Many words have

multiple meanings based on context. (Is “interest” about the price of a loan or a stake in an investment?) There are also many ways to express the same idea with different words. (A “cocktail” might be “whisky on the rocks,” “margarita,” or “booze.”)

NLP innovations replace the inaccuracies of keyword search with event extraction and search by meaning, called semantic search. Event extraction finds things like “cargo movement” and delivers the key event components: dates, shipper, recipient, destination, origin, and cargo. Semantic search fuzzily finds sentences that have similar meanings to “shipped the merchandise to Antwerp,” even if it is written as “sent your cargo via Antwerp” or “le produit est envoyé par Bruges.” (Translation: The product was sent via Bruges.)

The tireless computer speed of NLP, and AI’s ability to handle messy human-generated data, can strengthen borders and expedite cross-border investigations.

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