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| Data Management–Assessment 1  TU060 : Ethics, Data Governance, and Data Privacy Issue in Watchlist Management Software (Commercial) | |
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# Introduction

## What Is Commercial Watchlist Management (WLM)?

The majority of Financial Intuitions operating in the modern global marketplace are bound by compliance regulations and/or legislation to prevent *money-laundering* being transacted through their systems.

A simplistic definition of *Anti-Money Laundering* (AML) practices in a Financial Institution could be determined as any integrated set of processes and automated systems to detect, prevent, and report *restricted* activity in a financial network.

The term ‘restricted’ can be considered not just suspected criminal or terrorist related transactions, but also activity by ‘Politically Exposed Persons’ (P.E.P) who may be the subject of multi-government sanctions.

A major characteristic of AML systems is the use of various internal and external **Watch Lists**. These are data stores that identify specific individuals, or companies, and are used to influence decisions made by Financial Institutions.

This infographic from **Chartis** **Research[1]**, a leading provider of research and analysis for financial risk technology, describes the high-level process, and the dependency on Watch Lists and Watch List Management (WLM) systems.

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*Figure – AML/WLM Process Overview*

This report focuses on the use of these Watch Lists by Financial Intuitions through AML systems, and the associated data management challenges.

Section 1.2 describes the general ethical/legal issues in the AML/WLM domain.

Section 2 provides a more in-depth view of a vendor product operating in this space – the BAE Systems Digital Intelligence ***NetReveal*** WLM system.

## WLM: What Are The Key Ethical and Legal Issues?

Taking GDPR regulations as an example, inclusion of an individual on a Watch List is, by definition, the recording of special category data.

In general, the use of Watch Lists in AML systems is permitted by international law and controlled by a number of governmental (and non-governmental) authorities. For example, Article 6 of GDPR legislation includes the basis for collection and processing personal data for AML purposes [2].

In fact, it would be more correct to say that Financial Institutions are nearly always *obliged* by law to regularly scan their client base and transaction records to proactively detect money-laundering activities.

This obligation can be seen as a global deontologically driven ethical imperative that financial markets operate in a fair and ethical manner.

However, the implementation of these Watch List systems generates a number of data management challenges, such as those described in the sub-sections below.

### WLM: Ethics

It is good for society as a whole to prevent Financial Institutions from facilitating *immoral* business transactions, and to punish those institutions that deliberately, or carelessly, allow such practices [3].

However, the use of Watch Lists often deliberately runs contrary to many of the recent safeguards introduced for individuals and how their personal data is stored.

It goes without saying that individuals rarely ask to be added to a Watch List or give their consent. Many individuals may be unaware of their presence on a Watch List and legislation such as GDPR or the Irish Data Protection Act 2018 give very limited options to uncover inclusion on an EU Watch List, let alone provide a facility to be removed.

In addition, name matching is not always an exact science. Therefore, companies must constantly ensure that ***Fuzzy*** matching algorithms [4] minimise both false positive and false negative matches [5].

### WLM: Data Governance

WLM systems developers and controllers/processors must ensure (from the C-level downwards) that established, continuous, and evolving policies are in place to keep Watch Lists up to date [6].

Every Financial Intuition must have named staff that can interpret why internal WLM software (vendor supplied or bespoke) flagged an individual or a transaction against a given Watch List [6].

A named individual, or group of individuals, within a Financial Intuition must hold responsibility for the reporting of suspicion activity to the relevant regulatory authority. This group must also be aware of the penalty for the Financial Intuition of failure, by inaction or inability, to comply with these regulations.

### WLM: Data Privacy

Access to Watch Lists must be restricted to those with appropriate clearance, both within a Financial Institution and within the vendor company supplying the WLM software [7].

Watch List data must not be used outside of the intended purpose of preventing money laundering or the funding of illegal activity [8] (a Use Limitation Principle applies).

As mentioned above, AML processes will use Watch Lists in ways that differ from the rights that individuals would be guaranteed, or expect, in other domains. For example, GDPR Article 17 contains legislation on the *right to be forgotten*. However, the EU’s 4AMLD (4th AML Directive) takes precedence and a Financial Intuition must record history of suspected suspicious activity for five years [8]. Also, GDPR allows data to be preserved to comply with a *legal ruling*, which make it difficult for an individual to be removed from an EU based Watch List.

# Product: BAE Digital Intelligence NetReveal WLM

## General Overview

The BAE Systems Digital Intelligence NetReveal (NR) AML/WLM solution is one of the key offerings from vendors in this compliance space for Financial Institutions. *(*[*https://www.baesystems.com/en-financialservices/solutions/banking-compliance*](https://www.baesystems.com/en-financialservices/solutions/banking-compliance)*)*

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*Figure – NetReveal – Compliance Solution (including WLM)*

The product is aimed at Tier-1 Financial Institutions that generally favour an on-site deployment on company premises. The client base for this product remains relatively resistant to cloud-based solutions, so the NR WLM system generally fits into an existing ecosystem of in-house company applications that monitor daily business transactions [9].

The primary geographical locations for NR WLM deployments are in North America, EMEA and the Asia Pacific region.

Taking the example of EU based clients, Article 28 of GDPR states that data controllers (Financial Institutions) must appoint data processors, like BAE Systems Digital Intelligence, who can offer and demonstrate “sufficient guarantees” of GDPR compliance – in the area of AML/WLM in this case.

Since the NR WLM system processes personal data (in Watch Lists) for each institutional client, the GDPR compliance guarantees must be set out in advance in the vendor product terms of service agreements.

It is important to note that NR AML/WLM solutions, in common with most similar vendor solutions, do not limit name matching to just *names*. Other identifiers can, and must, be used in the matching process, for example DOB, country of birth, names of known associates, etc.

The NR WLM name screening process provides all the functionality, and associated challenges, as described in Section 1 of this document. A key characteristic of the NR system is that it must perform the name matching as effectively as possible, but *the actual end result of this process is dictated by client themselves*. This can result in a decision to generate a Suspicious Activity Report (SAR), flag a transaction for investigation, or even to automatically block a payment from being authorised [10].

# First Principles Ethics Test: NetReveal Watchlist Management

## Purpose of the test

A First Principles Ethical Test for the NetReveal Watch List Management product will attempt to answer this question;

* *Do the WLM processes facilitated and supported by this product contribute positively to ‘the good’, or the positive preservation of human rights?*

We have already seen in this report that many of the usual data rights and expectations that individuals would have under legislation such as GDPR is heavily tempered by complimentary legislation that seeks to prevent money laundering (or related) criminal activity within a Financial Institution.

This test seeks to determine if the correct balance of ethics applies, and what the associated risks may be.

## Outcome of the test: NR Watchlist Management

### Does it preserve or enhance human dignity?

Section 1.2.1 of this document makes a brief reference to the challenge faced by all WLM products, including NetReveal, in that they must match a name on a new transaction as accurately as possible against a published Watch List.

(In the supporting PowerPoint presentation to this report there are some examples of these types of challenges and the impact they can have).

The need for AML systems to prevent crimes that will have a determinantal impact on society is described in Section 3.2.4 below. However, a false match against a Watch List can cause an unfair disruption in service, which can range from a mild delay to outright refusal. For example, a legitimate SEPA transfer for payment of goods may be blocked because the individual has a very similar name and profile to an exposed person on a given Watch List. Stories of an innocent party named *O. Bin Laden* being unable to transact legal business affairs internationally are not unknown.

The NR WLM product employs an algorithm that works as intensively as possible to avoid such *false positive* situations with Watch List matches. To the credit of the vendor, ongoing refinement of this process is a key element in the product roadmap.

Accidental matches can, and do, happen but the product works to eliminate these as much as possible to preserve the entitlement to fair treatment for honest individuals using a Financial Intuition for business transactions.

### Does it preserve the autonomy of the human?

It is probably fair to say that there are few individuals who would actually consent to inclusion on a Watch List, but this is a choice that is deliberately denied to them.

As mentioned in Section 1.2.1, legislation such as Section 60 of the Irish Data Protection Act 2018 lists many clauses under which an individual can be prevented from finding out about their inclusion on a Watch List.[11].

Reasons to refuse such confirmation/deletion requests from an individual can be;

* Ongoing criminal investigations
* National security or other threats to public safety
* Economic obligations to the European Union

However, legislation such as GDPR does strongly recommend that Personally Identifiable Information (PII) on Watch Lists is not excessive and is limited to a reasonable set of identifiers.

There are strong guidelines from the European Data Protection Supervisor (EDPS) on what constitutes a ‘reasonable’ set of identifiers. The NR WLM product follows these principles by **not** using the following types of characteristics in the name matching process;

* Ethnicity
* Sexual Orientation
* Religion

The product scores well in intent in this part of the test, but in practice it falls a little short. Passport names and nationality can usually infer ethnicity. The WLM name matching process also tracks known associates, who may be facilitating corruption or tax avoidance with a PEP. It is not unheard of for politicians in certain regimes to transfer funds illegally through wives and mistresses, which strongly implies the likely sexual orientation of the official.

On balance, the product works as well as might be expected to obey the letter of the law but may occasionally overstep the bounds of what the EDPS considers fair in terms of commercial WLM processing.

### Is the processing necessary and proportionate?

The necessity of WLM systems in Financial Institutions is mandated, in almost all jurisdictions, by law. Therefore, the necessity for such Watch List processing is clear, and companies can be fined severely if appropriate systems are not in place [12].

Again, this overlaps with the points in Section 3.2.4 below, as the purpose of these AML/WLM process is to reduce criminal activity that has a negative impact on society as a whole.

In terms of ‘proportionate’ the product largely passes this section of the test because;

* The NR WLM processes only explicitly use a recommended sub-set of PII data in the name matching process. However, Section 3.2.2 does call out some shortcomings in this approach.
* Watch Lists are updated within a Financial Institution as soon as a Watch List provider issues a notification of a change. The NR WLM application has a series of well tested API routines to automatically pull down these revisions and apply into live production systems as quickly as possible. Therefore, name matching never takes place against *stale* list data and the actions decided upon by the Financial Institution are always based on the most current Watch List content.

### Does it uphold the common good?

This is arguably the biggest driver for the implementation of WLM systems such as NetReveal and the matching of named individuals (or companies) against the data stores of PII listed in published Watch Lists.

As we see in Section 3.2.2 an individual on a Watch List can have very little say about their personal information being part of these particular data stores. However, global society enforces these AML process to reduce the following activities;

* **Illegal transfer of criminal funds**. Activity such as the sale of narcotics or human trafficking are an obvious societal ill. Any reasonable person would deem these practices as ethically repugnant.
* **Funding of terrorist activity**. This is an obvious threat to public safety.
* **Activities by P.E.Ps (Politically Exposed Persons).** Recent studies show that Africa loses nearly as much in the illegal expatriation of funds and non-payment of taxes, as it takes in through international aid. Therefore, the funding of public services in some countries is negatively impacted by the selfish actions of corrupt officials and should be prevented by the global Financial Markets. The restriction of financial activity by political figures close to the Putin regime in the aftermath of the invasion of Ukraine is another example of a desirable and ethical response to war crimes.

NR WLM scores well here in that is an effective tool in policing good, and moral, financial practice.

### Does the outcome violate any of these four points? Can the risk be mitigated?

*Preserving Human Dignity*

WLM name matching is not perfect and the NetReveal system is no exception.

This product is under a strong onus to continually improve the name matching algorithms to avoid these undesirable scenarios;

* False positives, when the innocent party is mistaken for another individual on a Watch List. This denies access to fair service and creates a significant overhead for a Financial Institution as they must investigate each match and remove incorrect matches from their systems.[12]
* False negatives, when a criminal or restricted activity is not captured by a Financial Institution. This can lead to societal harm, impacting on the victims of crime.

New advances in name matching techniques, through the use of sophisticated Machine Learning models, is an emerging trend to help reduce incorrect name matching [13]. This is a cornerstone of the future NR WLM Product Roadmap.

*Preserving Autonomy of the Human*

It is not easy to find sympathy for those placed on a commercial Watch List. By definition, they have been judged to be associated with some form of criminality.

However, even the *guilty* are not entirely without rights and the NR WLM system mush limit itself to appropriate PII data. This is current practice for the NR WLM Product but must continue to remain a consideration in the future product roadmap.

# NetReveal WLM: Data Management Approach

## NR: Data Governance Characteristics

* The client data and transactions being monitored by a Financial Intuition for AML purposes is never transferred to an externally hosted service for name matching by NetReveal. Watch List data is only imported *into* the Financial Services systems by NR.
* Every time the NR WLM application matches a name against a Watch List it generates a *score* that reflects system confidence that the match is correct. These algorithms use ‘Fuzzy’ matching techniques to catch misleading variants in names, such as the use of abbreviations or ethnic spellings. Alerts for investigators will be generated based a given score threshold, and this will determine the eventual response.
* It is essential that the Watch Lists in use by the NR WLM deployment within a client are kept as up to date as possible [12]. The NR product uses a number of inbuilt API routines to download updates from providers such as Dow Jones, BOE, etc. as soon as they are available.

## NR: Data Ethics + Privacy Characteristics

* Every new NR product release delivers refinements to name matching algorithms to reduce false positive and false negative results. This cycle of innovation is essential because:
  + A false positive result generates unnecessary, and expensive, workloads for company investigators and may unfairly block or delay a service to a customer. For this reason, Tier-1 Financial Institutions often have a global workforce of AML/Fraud investigators that number in the tens of thousands. False red flags for AML can be very labour intensive to assess manually.
  + The much greater ethical concern is a false negative that fails to capture restricted activity for which the Financial Institution is legally, and morally, bound to intercept. Aside from the ethical imperative to intercept illegal transfer of funds, the fines for a company that fails to implement reasonable AML safeguards can run into the millions (or billions) of Euros.
* In line with GDPR recommendations, NR WLM algorithms do not include ethnicity, sexual orientation, or religion in the name matching process.
* GDPR legislation requires that access to PII is restricted to only those with a legitimate need to process the data. It is the subject of current debate that this may restrict the activity of software engineers and testers who develop NR WLM software. This is an EU industry wide challenge, for which a definitive ruling has not yet been made.

**Graphical user interface, application

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*Figure – A Name Matching Screen in the NR WLM application.*

## NR WLM: Data Management Recommendations

Looking over the brochureware provided by BAE Systems Digital Intelligence, along with general industry and ethical concerns about commercial Watch List management processes, I would suggest the following recommendations for the NR WLM product;

* Fuzzy name matching algorithms have become increasingly sophisticated in the last decade, but the rate of false positives generated by systems such as NR WLM is a constant concern for Financial Institutions. Advances in Machine Learning techniques for scoring name matches look to be delivering increased accuracy, and the NR product needs to continue to incorporate these types of innovations.
* GDPR critics have complained that applications like NR make it relatively easy to infer restricted PII data such as ethnicity or sexual orientation from their WLM processes. There is a balancing act involved in ensuring that the criteria for a name matching score is clearly understood, but not also allowing peripheral assumptions to be made about the individual being investigated. This is a requirement that NR WLM Product Owners should attempt to address in later versions of the product.
* The NR WLM application, along with supporting deployment consultants and services engineers, acts as a processor of Watch List data but does not control the end result of the name matching process. This is an arrangement that must remain in place to avoid ambiguity around who is ultimately responsible for the final decisions made by an AML process.
* Although GDPR does allow a Financial Intuition to configure the NR system to make automatic decisions based on a Watch List match, it must always remain clear that the client company (and named people within that company) is responsible for the actual end decisions made.
* The content of the Watch Lists, including supported internal watch lists, must remain the responsibility of the provider – not the vendor (NR in this case). This ensures there is no ambiguity as to where the responsibility for the inclusion of individuals on a Watch List resides.

# Conclusions

One could argue that the key data management dilemma with Watch Lists, and systems that interpret this information, is that the rights of the individual are very much pushed into the background in favour of societal value.

This report has specifically focused on the use of Watch Lists in a commercial setting, by global financial intuitions and, in the opinion of the author, this considerably simplifies the ethical and governance questions.

The use of Watch Lists to implement ‘No-Fly’ restrictions in countries like the United States is fraught with controversy, as the decision to add an individual can be heavily politicised and far from impartial or accountable [14].

However, in a commercial setting Watch Lists attempt to prevent the transfer of funds involved in serious crime, or by those who abuse their political status. The process to add individuals to a Watch List is not transparent, and individuals who have been added may not have been actually convicted by a recognised court of law. However, there is a collective responsibility by governments, banks, and law enforcement to try and reasonably protect society by restricting the flow of ‘dirty money’.

The ethical pluralist could pick apart the motivation for using Watch Lists and determine that the process is driven by;

* The deontological ideal that crime is ‘always wrong’ and should be prevented.
* Utilitarianism, in preventing the criminals (‘the few’) from accumulating wealth at the expense of the ‘good’ (the vast majority).
* Virtue, in that a moral person should act in a way to prevent money laundering from taking place.

In any case, it would appear that the ethical trade-off in this situation is very heavily skewed towards the value of using financial Watch Lists to protect society. Judicial cases often consider what a ‘reasonable person’ would consider fair, and in this case, it would be hard to imagine that many would object to eastern oligarchs losing their anonymity to allow international sanctions be applied to their businesses.

# References

[1] Research Staff, C. (2019). Financial Crime Risk Management Systems: AML and Watchlist Monitoring: Market Update and Vendor Landscape 2019 - Chartis Research. Retrieved 22 February 2022, from <https://www.chartis-research.com/financial-crime/anti-money-laundering-aml/financial-crime-risk-management-systems-aml-and-watchlist-monitoring-2019-10741>

[2] Frasher, M. (2021). Data protection and the EU's anti-money laundering regulation. Retrieved 23 February 2022, from <https://iapp.org/news/a/data-protection-and-the-eus-anti-money-laundering-regulation/>

[3] Armitage, H., & Blood, C. (2021). What should data ethics mean to Financial Service providers. Retrieved 23 February 2022, from <https://www.baesystems.com/en-financialservices/insights/blog/what-should-data-ethics-mean-to-financial-service-providers>

[4] Nino, R., Medina, R., & Sison, A. (2019). Development of Fuzzy Risk Score Assessment Framework for Sanctions Screening. *International Journal Of Engineering Research And Technology*, *12*(4), pp. 554-562. Retrieved from <http://www.ripublication.com/irph/ijert19/ijertv12n4_15.pdf>

[5] Del Mundo, C. (2019). How Countries Seek to Strengthen Anti-Money Laundering Laws in Response to the Panama Papers, and the Ethical Implications of Incentivizing Whistleblowers. *Northwestern Journal Of International Law & Business*, *40*(1 Fall), 112 - 114. Retrieved from <https://scholarlycommons.law.northwestern.edu/njilb/vol40/iss1/3/>

[6] Central Bank of Ireland. (2021). *Anti-Money Laundering and Countering the Financing of Terrorism Guidelines for the Financial Sector* (pp. pp 55-65). Dublin: Central Bank of Ireland. Retrieved from <https://www.centralbank.ie/docs/default-source/regulation/amld-/guidance/anti-money-laundering-and-countering-the-financing-of-terrorism-guidelines-for-the-financial-sector.pdf?sfvrsn=9>

[7] Art. 5 GDPR - Principles relating to processing of personal data - GDPR.eu. (2020). Retrieved 28 February 2022, from <https://gdpr.eu/article-5-how-to-process-personal-data/>

[8] Managing AML Challenges Under GDPR. (2021). Retrieved 23 February 2022, from <https://complyadvantage.com/insights/anti-money-laundering/gdpr-aml/>

[9] Transform your Sanctions and PEP Screening processes. (2021). Retrieved 26 February 2022, from <https://www.baesystems.com/en-financialservices/solutions/banking-compliance/sanctions-and-pep-screening>

[10] Transform your transaction filtering processes. (2021). Retrieved 26 February 2022, from <https://www.baesystems.com/en-financialservices/solutions/banking-compliance/transaction-filtering>

[11] Data Protection Act 2018, Section 60. (2018). Retrieved 28 February 2022, from <https://www.irishstatutebook.ie/eli/2018/act/7/section/60/enacted/en/html>

[12] Checklist for Global AML Watchlists: Are Your Systems Proficient?. (2016). Retrieved 1 March 2022, from <https://www.trulioo.com/blog/checklist-global-aml-watchlists>

[13] Alkhalili, M., Qutqut, M., & Almasalha, F. (2021). Investigation of Applying Machine Learning for Watch-List Filtering in Anti-Money Laundering. *IEEE Access*, *9*, 18481-18496. doi: 10.1109/access.2021.3052313

[14] U.S. Government Watchlisting: Unfair Process and Devastating Consequences. (2022). Retrieved 23 February 2022, from <https://www.aclu.org/other/us-government-watchlisting-unfair-process-and-devastating-consequences>