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SIOPEIA AML Anti-Money Laundering System

An intelligent system for investigation and detection of money-laundering in Finance Entities.

Description

Globalisation of financial services, the increase of electronic banking and the exponential growth of transactions, among other factors, have made it difficult to provide efficient management of mechanisms for the investigation and detection of money-laundering within Finance Entities.

The regulatory bodies stipulate standards and recommendations for detection of potential money-laundering operations. They make particular mention of the implementation of **automatic tracking systems**, in order to align the various Finance Entities into policies for monitoring and eradication. This automatic tracking systems are up against a number of complexities such as **innovative activity** on the part of potential money-launderers, the **changing context** and the **partial view** of the problem faced by the Finance Entities. Specifically:

- There is a **large amount of information to be taken into consideration**; this represents a large volume of data and few money-laundering operations (although impact is severe).
- The **money-laundering methods are complex and increasingly innovative**. What is needed is an approach which detects emerging methods in addition to the traditional methods.
- We need techniques for **rapid detection of anomalies**. Prior detection.
- We need an **economic view of the problem**. Processes of investigation and detection of money-laundering require human operatives. A tracking and supervision system must take account of this factor in order to reduce human activity to a bare minimum, i.e. **determine what are the real indications considered as relevant** for detailed investigation to be carried out.

Artificial Intelligence and various Expert Systems for investigation and detection in relation to money-laundering are platforms with sets of **integrated knowledge to carry out detection of the traditional methods of money-laundering and those which are now emerging**. They are pragmatic tools which may be adapted to regulations and to any new courses of action which must be taken into consideration.

The Solution

The **SIOPEIA AML (Anti-Money Laundering) System** provides mechanisms for **differential investigation and detection based on Artificial Intelligence, which can give context to the operations analysed, and weight the gravity or propensity of a customer or contract or commercial department** with respect to money-laundering. These processes can deal with large amounts of information, and their new methodologies make the **SIOPEIA AML** system a reference which can obtain significant results from small amounts of information.

The **SIOPEIA AML System** provides two scenarios in connection with the Finance Entity: the **detection of pre-defined patterns** in relation to money-laundering operations, and transaction-tracking for **detection of emerging forms of money-laundering** by analysis of behavioural deviations with respect to the pattern for each individual or group of individuals.

Moreover, **SIOPEIA AML** adds to the Entity's unique view of customers, contracts and commercial departments, providing the standard which best illustrates the behavioural pattern, and considering, if required, individual characterisation, depending on the Customer-Entity interaction channel used. This completes the KYC (know your customer) system.

The **SIOPEIA AML System** imitates the routine operations carried out by an expert in investigation and detection in relation to money-laundering in Finance Entities through **joint analysis of Customers, the contracts associated with the Customers and the Commercial Departments covered.**

Functions

SIOPEIA AML gives the Finance Entity analytical capacity to investigate and detect operations which could involve money-laundering:

- **Collection of transaction and descriptive information** and time-space analysis of activities observed in the transactions of the Finance Entity. **SIOPEIA AML constitutes an open configurable platform** for standardisation and collection of the required information.
- **Calculation of behaviour patterns** for each Customer, contract and Commercial Department. The **SIOPEIA AML System** generates time patterns in volumes, which are differentiated by channels and other factors.
- **Detection of pre-defined behaviour patterns.** Detection of known methods and / or methods which the Finance Entity wishes to detect explicitly. **SIOPEIA AML can connect to detection applications for Black Lists or In-house Lists belonging to the Finance Entity.**

- **Detection of emerging potential money-laundering methods (anomalous behaviour)** by Customers, contracts and Commercial Departments.
- **Generating alerts and anomalies.** Spontaneous generation of warnings which make this solution a pro-active tool in relation to the activities carried out, when such activities deviate from "normal" operations and / or when they obey pre-defined patterns. **Calculation of the propensity to launder money for Customers, contracts and Commercial Departments.**
- **Explanation of the alerts.** **SIOPEIA AML** is an auditable solution which allows subsequent analysis of why the warnings have been activated – an explanation of the anomaly, together with the factors which caused it.
- **Analysis of Links.** The tool assists the expert with the various processes of investigation of the indications observed. More specifically, it performs an analysis of links to the flows of money arising between the various contracts and the persons involved in these contracts (Customers).

The recommendations of the regulatory bodies are geared towards the entire Organisation (central services, commercial network etc.) to solve the problem of detection and prevention. **SIOPEIA AML** is both configurable and scaleable, and the solution may be adapted to a number of different contexts and specific criteria. Specifically, the system also provides the following:

- **Back-up for the work flows established.** Dealing with the **status** of the warnings arising within the detection process and any other flows which must be taken into consideration.
- **Mechanisms for Operational Exceptions.** Exceptions in relation to "abnormal" behaviour patterns which may be caused by the peculiar aspect of the customer or contract.
- **Monitoring of activities.** Monitoring the operations carried out in connection with a Customer or contract to analyse and arrange specific investigation. Access to detailed information.
- **Simulation of scenarios in order to carry out "what-if? analyses".** The system has a facility for examination and auto-evaluation of the tool's detection abilities.
- **Knowledge Base for questions.** The **SIOPEIA AML** platform has an Information repository in connection with the behaviour of Customers, Accounts and other Entities, and with the alarms activated. Generation of **reports and lists**, which may be configured by the Finance Entity.
- **Connection to other Information Systems.** The **SIOPEIA AML** system allows information to be exchanged with other Information systems using standard connections. Specifically, from the point of view of **Marketing focusing on the Customer**, this provides information relating to the profile or pattern of behaviour observed in a Customer which could considerably enhance the unique image of the Customer from the point of view of the Entity.

We must make separate examinations of the tool's functional and technological scaling ability. The System grows and progresses together with the Entity's need for information and knowledge, and allows the origins of activity to be phased in.

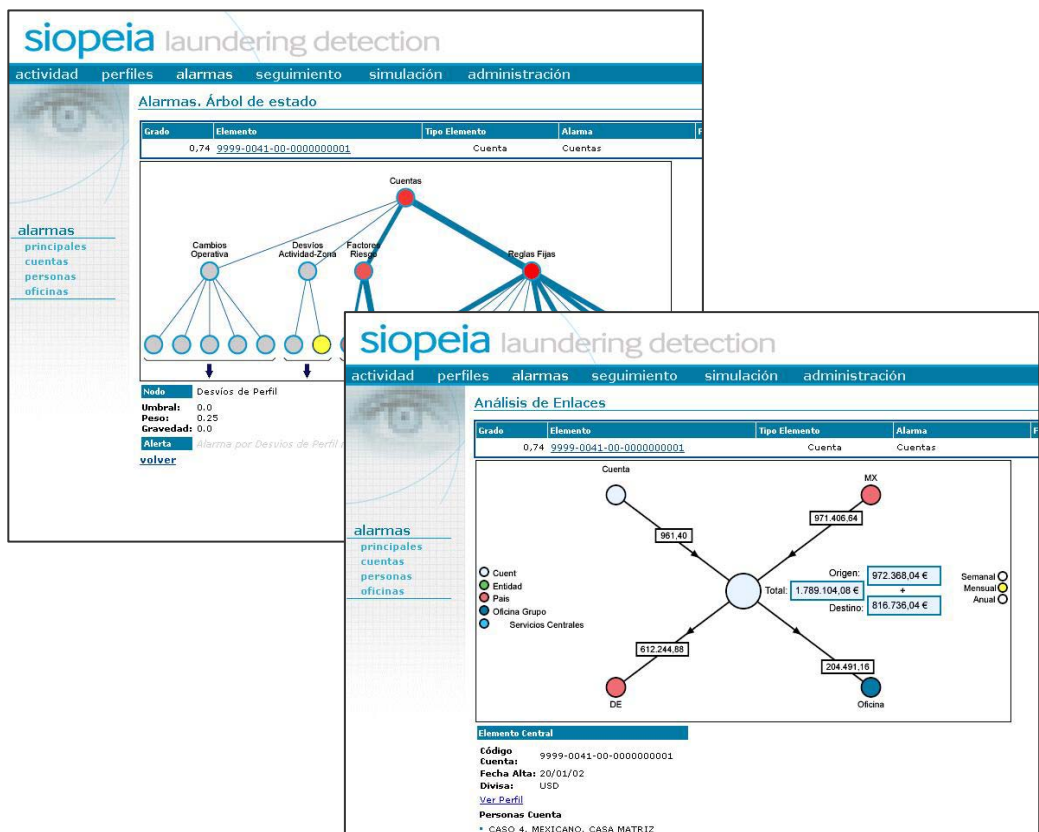
Operations

SIOPEIA AML observes the transactional information being covered in the analysis. When it detects an abnormal situation, it stops to study more carefully certain aspects of the operation, and in this way it evaluates unusual behaviour patterns.

The system is assisted in this task by the concepts / knowledge available. More specifically, there must be certain behaviour patterns associated with the type of operation and its origins. Faced with a deviation in behaviour patterns, the system will qualify the operation as normal or abnormal. **SIOPEIA AML** adapts to changes in behaviour by recalculating behaviour patterns on a regular basis.

Any abnormal operation (anomaly) will be processed in a more precise and detailed fashion in an attempt to ascertain, despite the fact that an anomaly has arisen, whether or not this is important. The result is a value measuring the seriousness of the anomaly and information for the User (an alert, if this is the case).

The User will check the alerts identified by the System – these are presented in a simple user-friendly way as potentially fraudulent operations.



Technology

The **SIOPEIA AML** system has been developed in-house by the **AIA Group**, the result of its experience, its technological capacity, its innovation and its consultancy work in the field of Artificial Intelligence, applied as solutions to complex problems. The system forms part of its line in Intelligent Observation Systems or Knowledge Discovery.

Intelligent Observation Systems (**IOSs**) imitate human knowledge patterns. Abstraction of our knowledge tells us that **stimuli which come to us from our surroundings activate low-level sensors which, when arranged together, provide us with comprehensive information** relating to our environment. IOSs are intelligent systems based on the definition of **hierarchised concepts set out in arborescent structures**, taking account of normal and abnormal behaviour in relation to the concept defined. **Detection of anomalies trips confirmation devices**, and this allows us to determine if the anomaly is an exception or, on the other hand, if it constitutes an emergency. IOSs are a **plausible and tested alternative** to other technological systems:

- They make the detection processes **flexible**. Systems based on rules or decision trees or rules divide the space to be searched in dichotomic fashion. The IOSs **can detect fractioning naturally**, and can also detect operations just below thresholds.
- IOSs are a better alternative with respect to neuronal networks. The main feature of an IOS is its **auditability**. The system submits its knowledge and explanations in an explicit fashion, and its capacities are known at all times.

From the platform point of view, the **SIOPEIA AML** solution is an environment which is **in line with the latest technology**, providing a number of different customisable integrations for the Finance Entity.

