

Using CA Aion for Risk-Based AML Detection

Espen Green

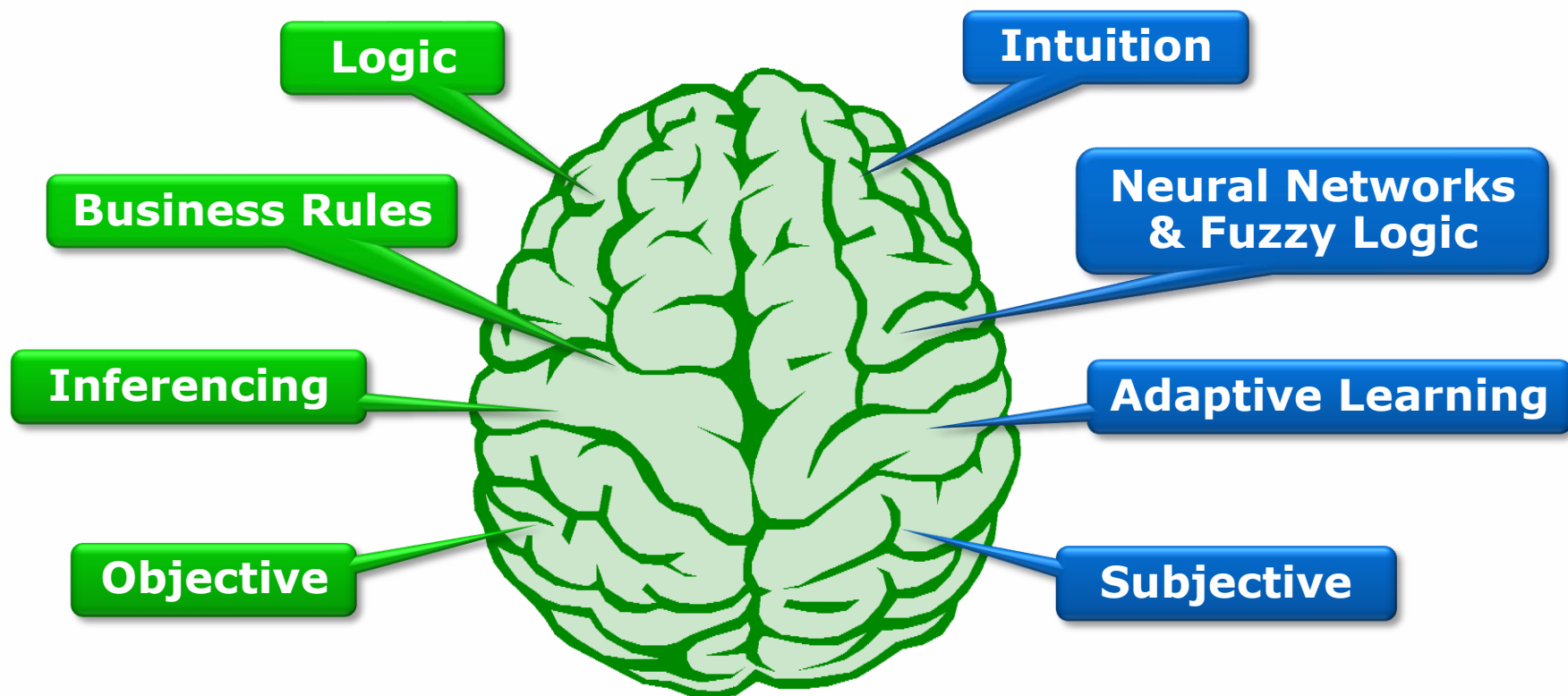
CA Norway

Agenda

- > The technology
- > Recommended use of the technology in AML
- > Example of implementation

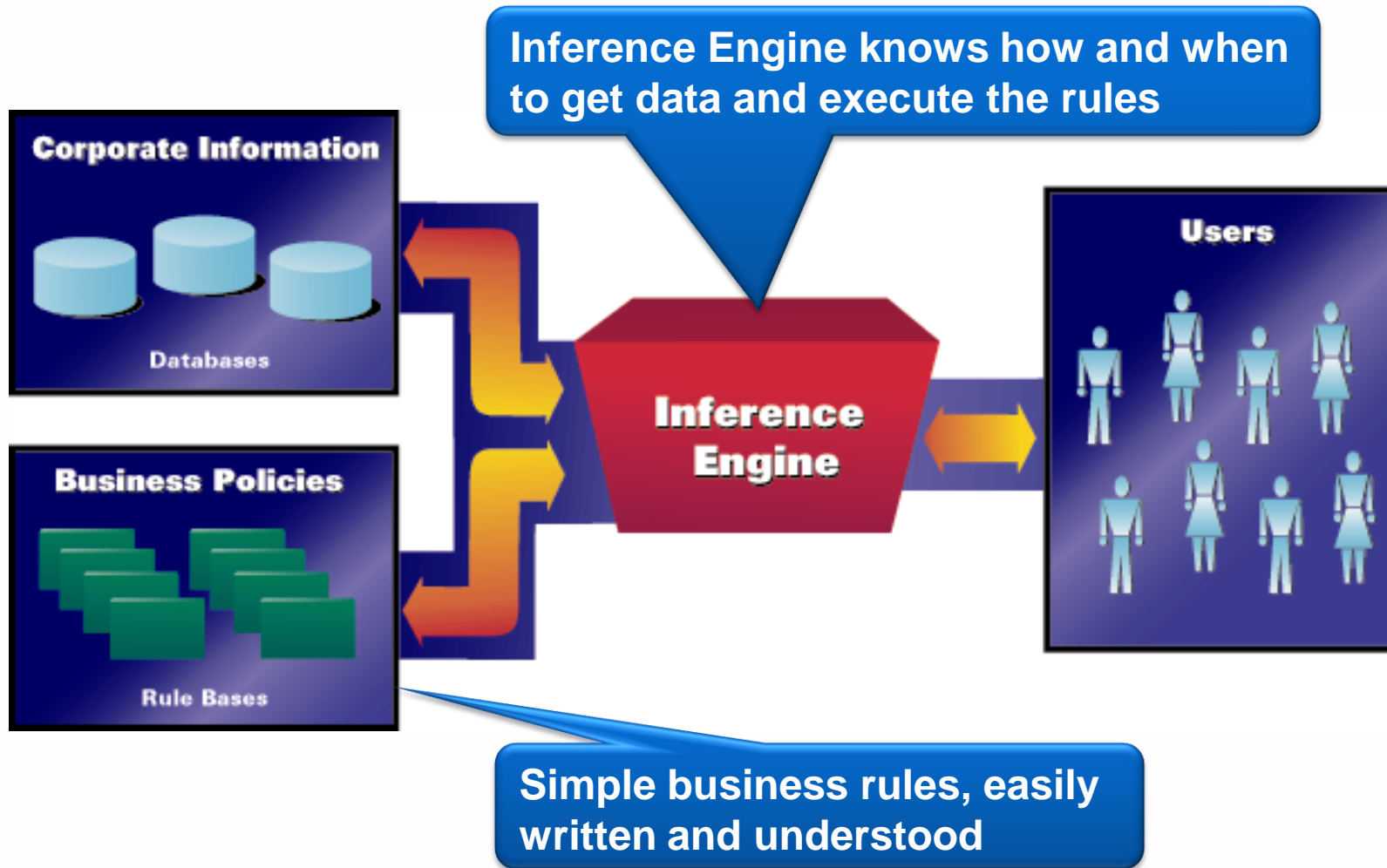


First some science...



CA Aion can cover both hemispheres

What is CA Aion?



Howto Rules – Decision Tables

IF Account is dormant in last 6 months AND Customer net worth ≤ 10000 AND Amount received in 3 days < 100000 THEN AML Rule Score = 0

ELSEIF Account is dormant in last 6 months AND Customer net worth ≤ 10000 AND Amount received in 3 days BETWEEN 100000 AND 500000 THEN AML Rule Score = 20

ELSEIF Account is dormant in last 6 months AND Customer net worth ≤ 10000 AND Amount received in 3 days $>= 500000$ THEN AML Rule Score = 25

ELSEIF Account is dormant in last 6 months AND Customer net worth > 10000 AND Amount received in 3 days < 100000 THEN AML Rule Score = 10

ELSEIF Account is dormant in last 6 months AND Customer net worth > 10000 AND Amount received in 3 days BETWEEN 100000 AND 500000 THEN AML Rule Score = 15

ELSEIF Account is dormant in last 6 months AND Customer net worth > 10000 AND Amount received in 3 days $>= 500000$ THEN AML Rule Score = 8

ELSEIF Account is not dormant in last 6 months AND Customer net worth ≤ 10000 AND Amount received in 3 days < 100000 THEN AML Rule Score = 15

ELSEIF Account is not dormant in last 6 months AND Customer net worth ≤ 10000 AND Amount received in 3 days BETWEEN 100000 AND 500000 THEN AML Rule Score = 20

ELSEIF Account is not dormant in last 6 months AND Customer net worth ≤ 10000 AND Amount received in 3 days $>= 500000$ THEN AML Rule Score = 25

Is account dormant in last 6 months?	Customer Net Worth	Amount received in 3 days	AML Rule Score	Suspicious Transaction Reasons
True	≤ 10000	< 100000	0.00	
		≥ 100000 .. < 500000	20.00	More than 100 thousand...
		≥ 500000	25.00	More than 500 thousand...
	> 10000 .. ≤ 20000	< 100000	0.00	
		≥ 100000 .. < 500000	10.00	More than 100 thousand...
		≥ 500000	15.00	More than 500 thousand...
> 20000	< 100000	0.00		
	≥ 100000 .. < 500000	5.00	More than 100 thousand...	
	≥ 500000	8.00	More than 500 thousand...	
False	≤ 10000	< 100000	0.00	
		≥ 100000 .. < 500000	15.00	More than 100 thousand...
		≥ 500000	20.00	More than 500 thousand...
	> 10000 .. ≤ 20000	< 100000	0.00	
		≥ 100000 .. < 500000	10.00	More than 100 thousand...
		≥ 500000	15.00	More than 500 thousand...
> 20000	< 100000	0.00		
	≥ 100000 .. < 500000	5.00	More than 100 thousand...	
	≥ 500000	10.00	More than 500 thousand...	

Inferencing

**IF *Months since last deposit* > 6
AND *Months since last withdrawal* > 6
THEN *Account dormant last 6 months***

Conditions			Actions		
Account dormant last 6 months	Customer Net Worth	Amount received in 3 days	AML Rule Score	Suspicious Transaction Reasons	
TRUE	≤ 10000	< 100000	0		
		≤ 100000.. < 500000	20	More than 100 thousand	
		> 500000	25	More than 500 thousand	
	Net Worth Rule	Individual	< 100000	0	
			≤ 100000.. < 500000	5	More than 100 thousand
		Organizational	> 500000	10	More than 500 thousand
FALSE	≤ 15000	< 100000	0		
		≤ 100000.. < 500000	15	More than 100 thousand	
		> 500000	20	More than 500 thousand	
	> 15000	< 100000	0		
		≤ 100000.. < 500000	6	More than 100 thousand	
		> 500000	12	More than 500 thousand	

CA Aion inferencing cont.



Inference Technique	Key Feature
Forward Chaining	Data Driven
Backward Chaining	Goal Driven
Pattern Matching	Fires upon matching of set of criteria
Monitoring	Exception handling and alarms
Truth Maintenance (Retraction)	"What-if" reasoning
Dynamic Inferencing	Scenario-based business rules

CA Aion: Forward chaining

- > The engine runs data through all rules to see the consequences.
- > Forward chaining continues when new data become known i.e., as new attribute values are assigned by firing rules. Forward chaining is, thus, data-driven.
- > Used for risk scoring in the AML system



CA Aion: Backward chaining

- > Backward chaining starts with a goal, which is an attribute set by one or more of the rules. The engine only uses rules that lead to conclusions about the goal attribute.
- > Used for customer profiling in the AML system



CA Aion: Pattern matching

- > Pattern matching is a simple and powerful way to iterate over the instances of one or more classes.
- > Used to detect Structuring, Smurfing and other tactics employed by money launderers.



CA Aion: Truth maintenance

- > Truth maintenance allows “what-if” scenarios to be run, in which you can tentatively set attribute values, determine their consequences, and then retract the values.
- > This feature is used to find out that whether modifying an attribute of an account, like adjusting the “date of the transaction”, would cause it be suspicious or not.

Neural Networks: Discover knowledge from Data

Create Rule: Select Rule Builder or Data Source (Step 2 of 5)

Back Next Finish Cancel

Home > Forward Inc Insurance Fraud > Sample Rules From Data > Create Rule: Step 2 of 5

Create Rule: Select Data Columns (Step 3 of 5)

Back Next Finish Cancel

Home > Forward Inc Insurance Fraud > Sample Rules From Data > Create Rule: Step 3 of 5

Create Rule: Customize Data and Rule Settings (Step 4 of 5)

Back Next Finish Cancel

Home > Forward Inc Insurance Fraud > Sample Rules From Data > Create Rule: Step 4 of 5

Create Rule: Map Data Columns to Terms (Step 5 of 5)

Back Next Finish Cancel

Home > Forward Inc Insurance Fraud > Sample Rules From Data > Create Rule: Step 5 of 5

Rule Set Details: Sample Rules From Data

Duplicate Delete Done

Home > Forward Inc Insurance Fraud > Rule Set Details: Sample Rules From Data

Contents

Properties

Approval

Sharing

Location

Rules Test Cases

Search Rule Set:

Go

Advanced

Rules

Create Rule

Select and: Compare

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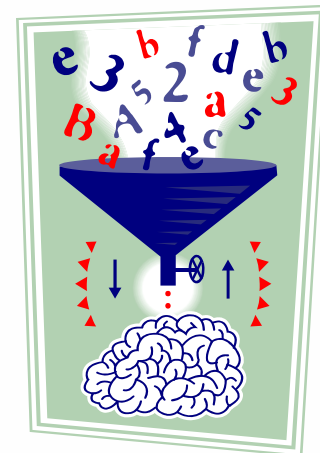
Select	Title ▲	Description	Type	Actions
<input type="checkbox"/>	Data Rule 0		If/Then Rule	UnLock ▼ Go
<input type="checkbox"/>	Data Rule 1		If/Then Rule	UnLock ▼ Go
<input type="checkbox"/>	Data Rule 10		If/Then Rule	UnLock ▼ Go
<input type="checkbox"/>	Data Rule 11		If/Then Rule	UnLock ▼ Go
<input type="checkbox"/>	Data Rule 12		If/Then Rule	UnLock ▼ Go
<input type="checkbox"/>	Data Rule 13		If/Then Rule	UnLock ▼ Go
<input type="checkbox"/>	Data Rule 14		If/Then Rule	UnLock ▼ Go
<input type="checkbox"/>	Data Rule 2		If/Then Rule	UnLock ▼ Go
<input type="checkbox"/>	Data Rule 3		If/Then Rule	UnLock ▼ Go
<input type="checkbox"/>	Data Rule 4		If/Then Rule	UnLock ▼ Go

Risk-based AML Scanning

> Risk Profiling

- Geographical Locations
 - High risk countries
- Customer Risks
 - Professions (e.g. lawyers, accountants, etc).
- Industries / Products & Services
 - High risk industries (e.g. casinos, precious metal trading, etc)

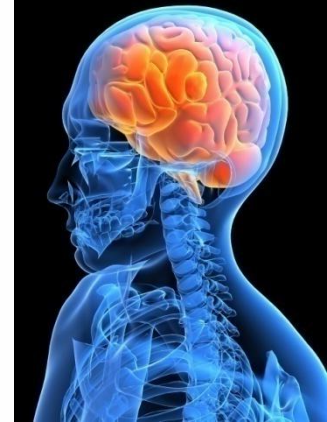
> Provide risk score for each customer and alert



AMLS Overview and Features

> Exhaustive screening by multiple methods

- Filter list
 - PEP list
 - UN & FATF lists
 - Black/White list (user add)
- Rules
 - Structuring – multiple small amount transactions
 - Smurfing – using different names for the interest of one
 - Etc.....
- Advanced Risk based profiling of customer (KYC and transactions history) vs statistical limiting



CA Aion: AMLS implementation

- > AMLS development using CA Aion is completely object-oriented.
- > All aspects of AMLS scanning—from the user interface to data access can be created from the class libraries shipped with CA Aion.
- > Rules are also treated as objects in CA Aion. This enables rules to benefit from the protection of data encapsulation and reuse made possible by inheritance and polymorphism.

CA Aion: AMLS implementation

- > CA Aion automates and streamlines business functions and processes.
- > Transforms complex business logic and knowledge into manageable rules.
- > High-performance rules inference engine to execute rules in real time.
- > Enables business users to create and manage rules and automates discovery of rules from data using advanced analytics.

KYC: CDD and EDD

> Customer Due Diligence (CDD):

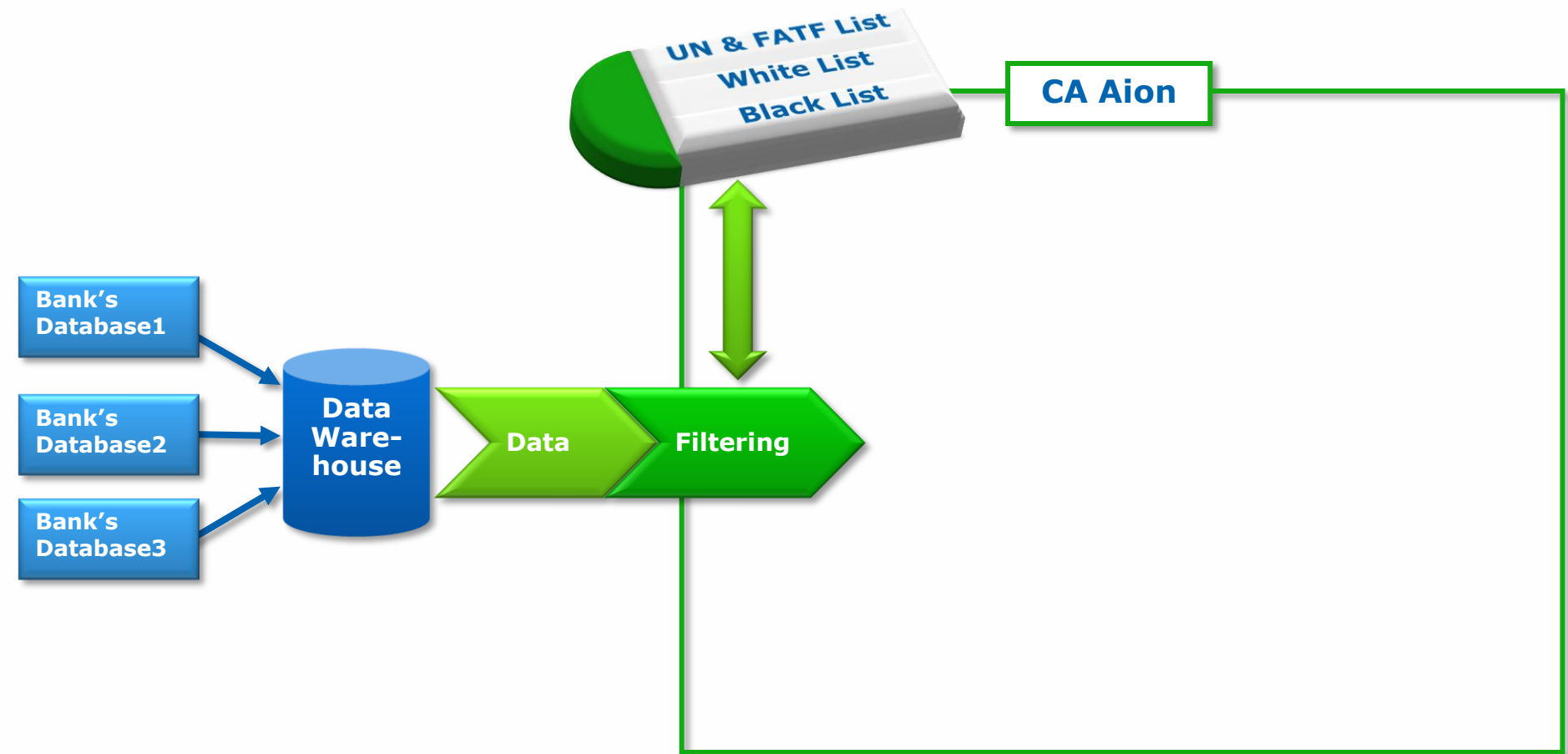
- Standard level of due diligence applied to all customers
- Scan for missing standard customer fields
- Risk profiling to flag out high risk customers

> Enhanced Due Diligence (EDD)

- Increased level of CDD applied to higher risk customers
- Scan increased number of customer fields

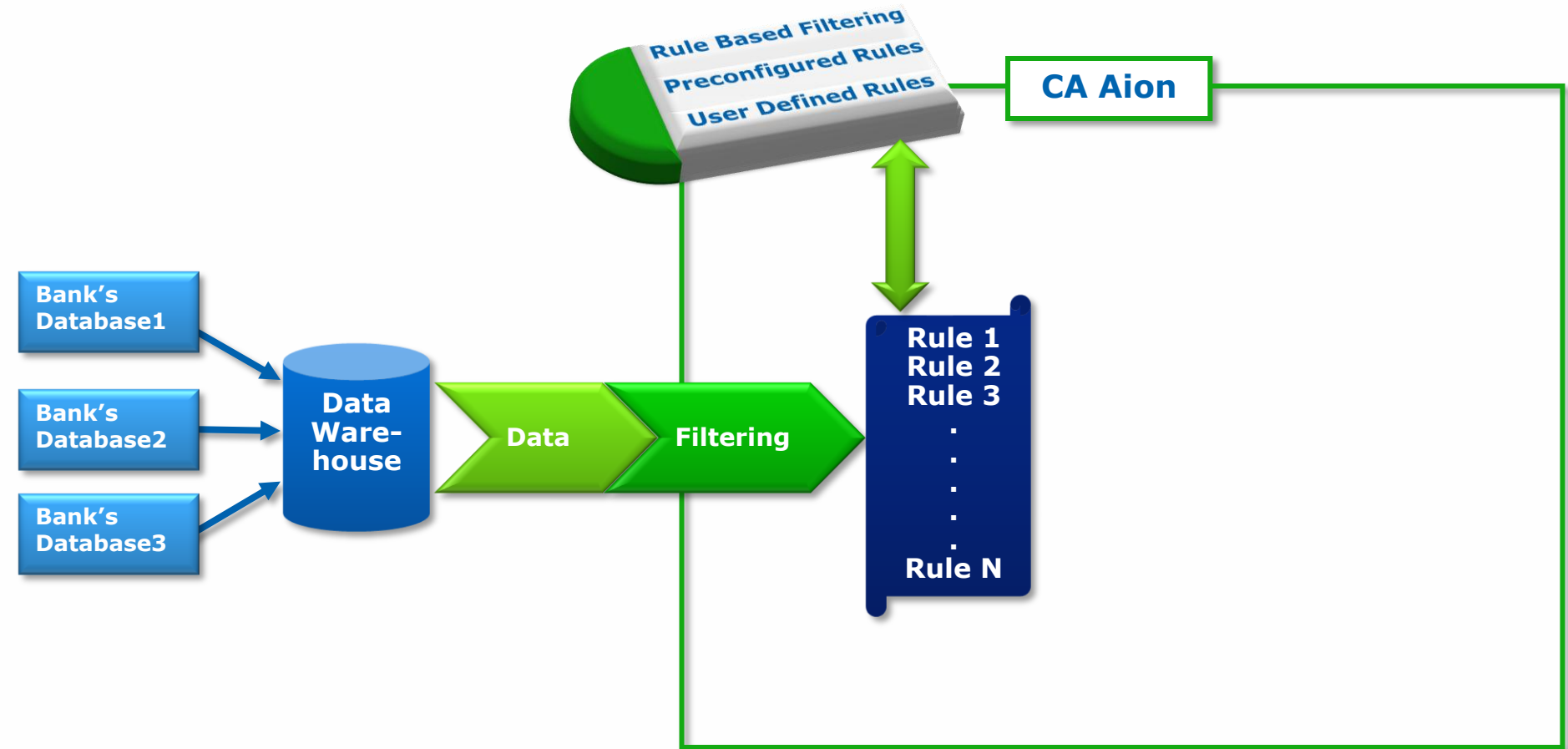
Intelligent Expert System Engine

> CA Aion for transactions checking



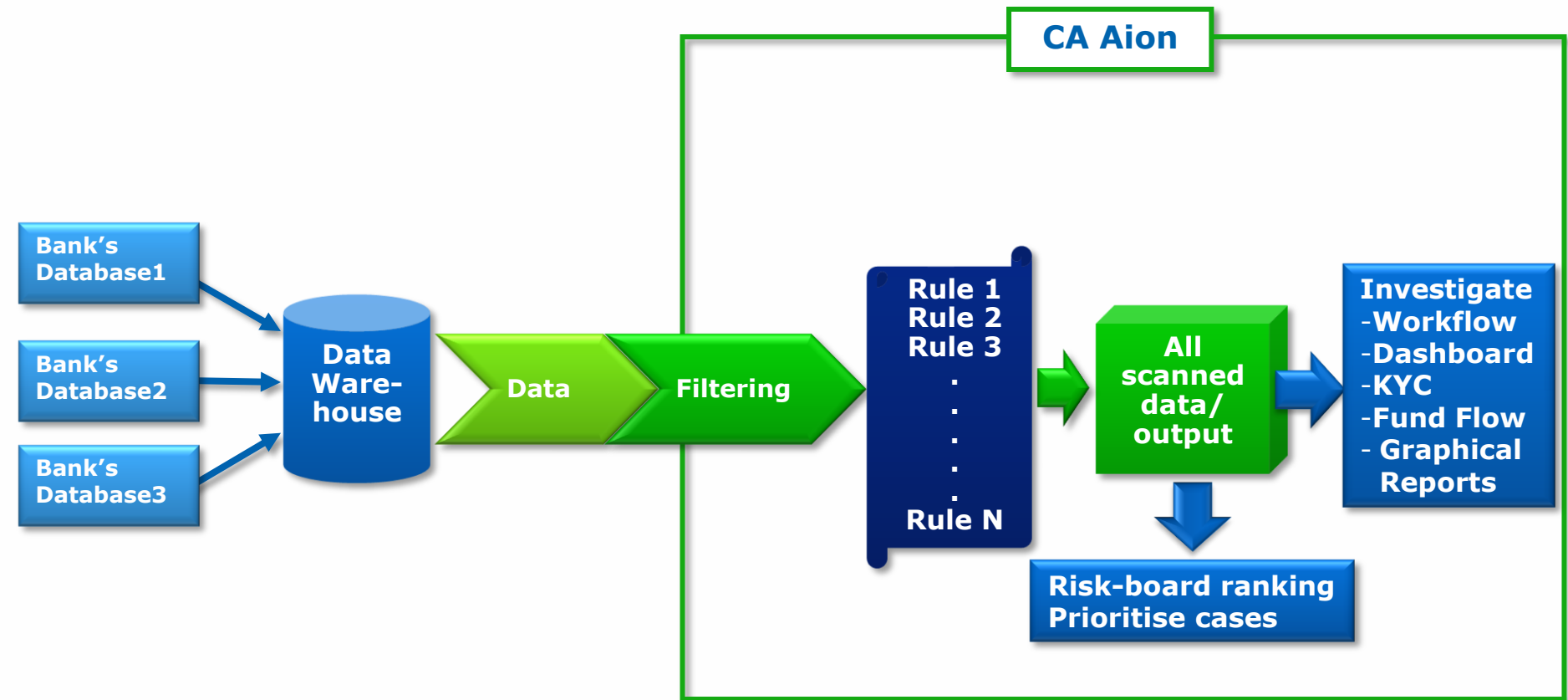
Intelligent Expert System Engine

> CA Aion for transactions checking



Intelligent Expert System Engine

> CA Aion for transactions checking



Why use CA Aion for AML?

> Move your best knowledge into the solution

- Knowledge maintained by the subject experts
- Rules can be dynamically changed on runtime
- Fragmented knowledge automatically connected
- Easy to use maintenance interface
- Documents investigation results

> High performance

- Runs on all major platforms

> Industry proven solution

- Off-the-shelf solution from iCo-op.net

