



BANCA POPOLARE
DI MILANO

Il futuro è di chi fa.

Credit Risk Management & Data Integrity

Challenges through modern risk management

*ABI - Unione Bancaria e Basilea 3 - Risk & Supervision 2016
June 2016*

Natale Schettini
Responsabile Credit Risk



Agenda

- **BCBS 239 – relevant issues and Credit Risk data needs**
- **Strengthening Risk Data Management**
 - **Data Quality Framework**
 - **Controls execution and Reconciliation framework**
 - **Controls output and reporting**
- **Looking ahead ... Credit Information Framework**

BCBS 239 – Risk data aggregation (RDA)

Reading between the lines

Principle 3

Accuracy and Integrity – A bank should be able to generate **accurate and reliable risk data to meet normal and stress/crisis reporting accuracy requirements**. Data should be aggregated on a largely automated basis so as to minimize the probability of errors.

Principle 4

Completeness – A bank should be able to capture and **aggregate all material risk data across the banking group**. Data should be available by business line, **legal entity**, asset type, industry, region and other groupings, as relevant for the risk in question, that permit identifying and reporting risk exposures, concentrations and emerging risks.

Principle 5

Timeliness – A bank should be able to generate aggregate and **up-to-date risk data in a timely manner** while also meeting the principles relating to **accuracy and integrity, completeness and adaptability**. The precise timing will depend upon the nature and potential volatility of the risk being measured as well as its criticality to the overall risk profile of the bank. The precise timing will also depend on the bank-specific frequency requirements for risk management reporting, under both normal and stress/crisis situations, set based on the characteristics and overall risk profile of the bank.

Principle 6

Adaptability – A bank should be able to generate aggregate risk data to meet a broad range of on-demand, **ad hoc risk management reporting** requests, including requests during stress/crisis situations, requests due to **changing internal needs** and requests to **meet supervisory queries**.

BCBS 239 – Risk reporting practices

Reading between the lines

Principle 7

Accuracy - Risk management reports should accurately and precisely convey aggregated risk data and reflect risk in an exact manner. **Reports should be reconciled and validated.**

Principle 8

Comprehensiveness - Risk management reports should **cover all material risk areas within the organisation**. The depth and scope of these reports should be consistent with the size and complexity of the bank's operations and risk profile, as well as the requirements of the recipients.

Principle 9

Clarity and usefulness - Risk management reports should communicate information in a clear and concise manner. Reports should be **easy to understand yet comprehensive enough to facilitate informed decision-making**. Reports should include an appropriate balance between risk data, analysis and interpretation, and qualitative explanations. Reports should include meaningful information tailored to the needs of the recipients.

Principle 10

Frequency - The board and senior management should set the frequency of risk management report production and distribution. Frequency requirements should reflect the **needs of the recipients, the nature of the risk reported, and the speed at which the risk can change**, as well as the importance of reports in contributing to sound risk management and effective and efficient decision-making across the bank. The frequency of reports should be increased during times of stress/crisis.

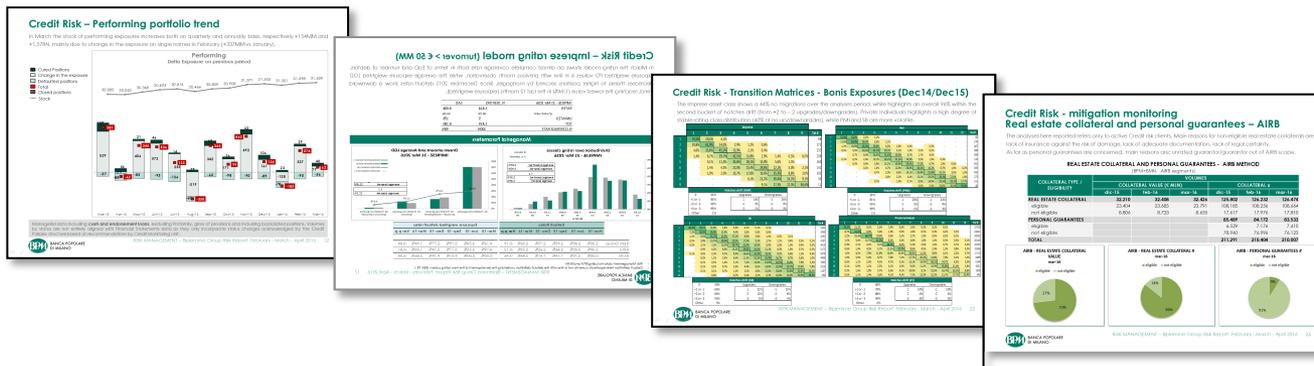
Main Credit risk «data intensive» activities

MODELING RELATED ACTIVITIES

- Models development / maintenance
- Models running in production & models monitoring
- Models backtesting



CREDIT RISK MONITORING & INTERNAL REPORTING



REGULATORY REPORTING, EU WIDE EXERCISES, EBA/ECB/BANKIT DATA REQUESTS

- ASSET QUALITY REVIEW / ON-SITE INSPECTIONS
- SHORT TERM EXERCISE (STE)
- STRESS TESTING EXERCISE
- QUANTITATIVE IMPACT STUDIES (QIS)
- ANACREDIT
- ...

... INTERNAL RISK DATA PROVIDING

Agenda

- **BCBS 239 – relevant issues and Credit Risk data needs**
- **Strengthening Risk Data Management**
 - **Data Quality Framework**
 - **Controls execution and Reconciliation framework**
 - **Controls output and reporting**
- **Looking ahead ... Credit Information Framework**

Strengthening Risk Data Management

Data Quality evolutions within the BPM Group

Since 2007

BEFORE

Data Quality function started within the Risk Management Department (Credit Risk):

- **Data quality overview**, with particular reference to Credit DWH
- **Data policy** definition
- **Tools** definition to perform controls and monitoring
- **Reporting** to the Risk Management Function in each quarter

Risk Management

Since 2014

NOW

In 2014, Data Quality stream started within AIRB Project in order to improve data quality related to IRB methods:

- **Governance**, roles and responsibilities
- **Process**, controls definition/evolution, controls execution, remediation and reporting
- **Controls**, new controls inventory deeply related to IRB components
- **Architecture**, evolving tools

AIRB Project

Since 2014

BPM DQM Model (Integrated DWH Project)

BPM Group defined the Data Quality Management (DQM) Model within Integrated DWH Projects:

- Data Governance Policy
- Operational and Process Model
- Architectural Model

Strengthening Risk Data Management

Data quality framework

As defined in the BPM Group Data Quality Framework, the Data Quality Management (DQM) is the set of **models, methodologies and tools** aimed at ensuring the reliability of the data and information stored and managed by the bank information system. The objectives and actions of the IRB Data quality stream are defined below

Objectives and areas of intervention

GOVERNANCE

- Definition of roles and responsibilities within IRB methods
- Identifying appropriate mechanisms of governance in line with the commitment expressed by top management on the DQM
- Alignment with the Integrated DWH Project related to the Data Quality perimeter
- DQM framework is in line with the Data Governance Policy

PROCESS

- It was produced the Process DQM Regulation, which defines the process of introducing new controls, carrying out the controls, monitoring the results.
- The Regulation also refers to the evaluation of anomalies' impacting on core strategic processes of the Bank, and the process of activating and overseeing remedial actions
- It contains definition of the information management and the process of reporting to other business structures

CONTROLS

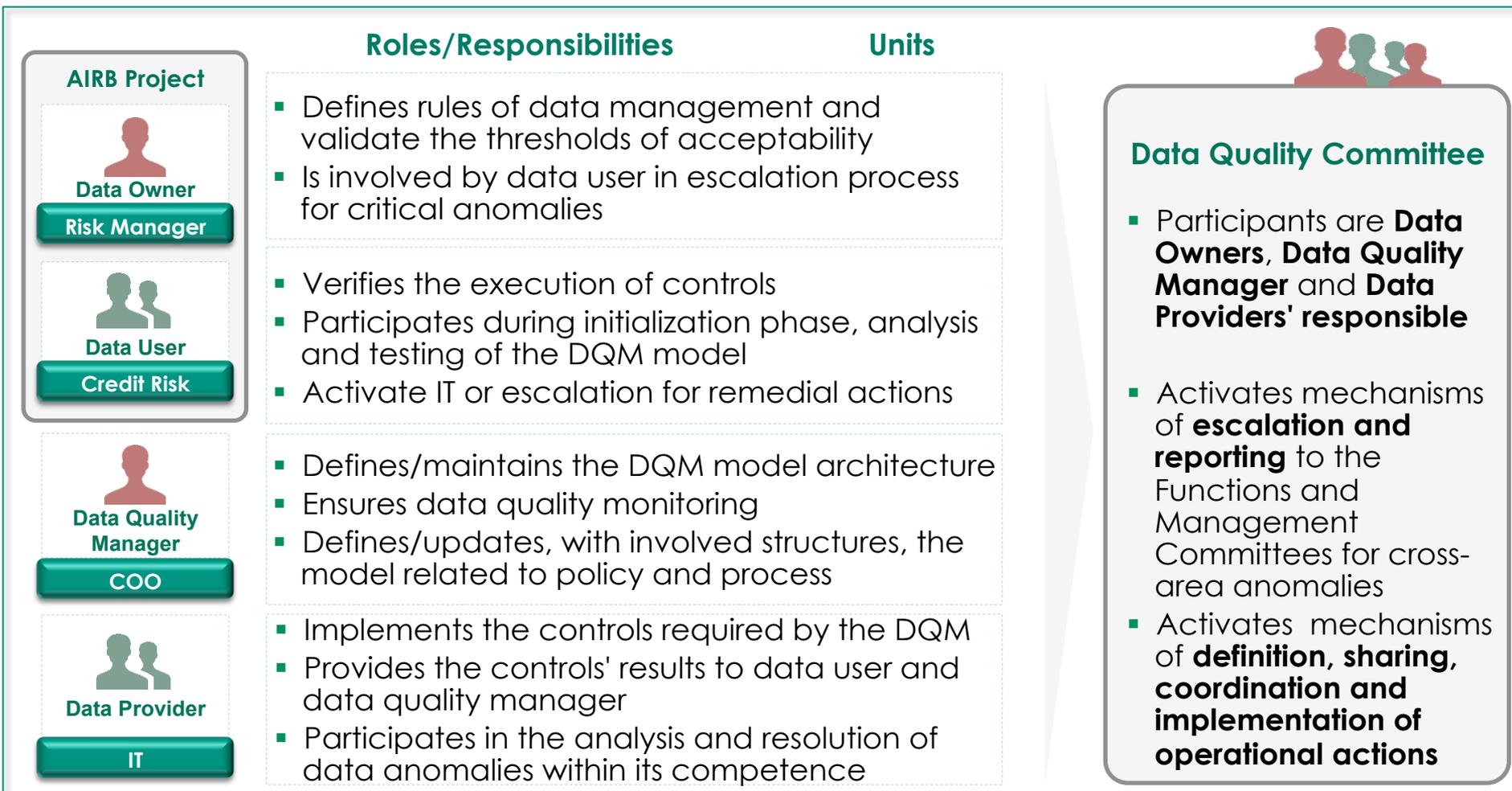
- To periodically evaluate the quality of information assets in AIRB scope it has been defined the new inventory of controls. More of 100 control areas implemented

ARCHITECTURE

- The new controls in AIRB scope have been implemented on SAS DataFlux (The reporting was contextual to the go live of controls)
- The Remediation process activated

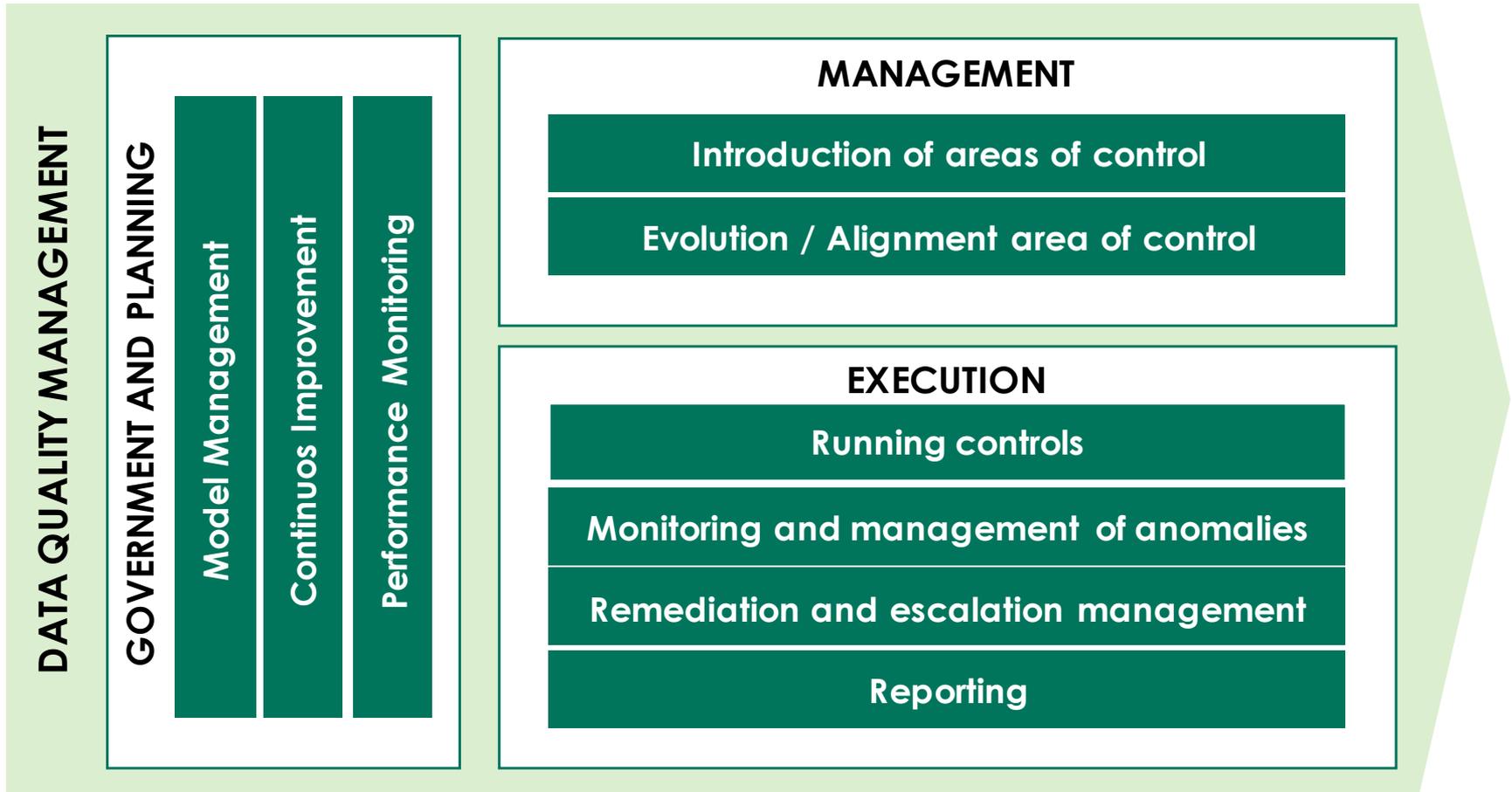
Strengthening Risk Data Management

Governance referred to Risk Management Area



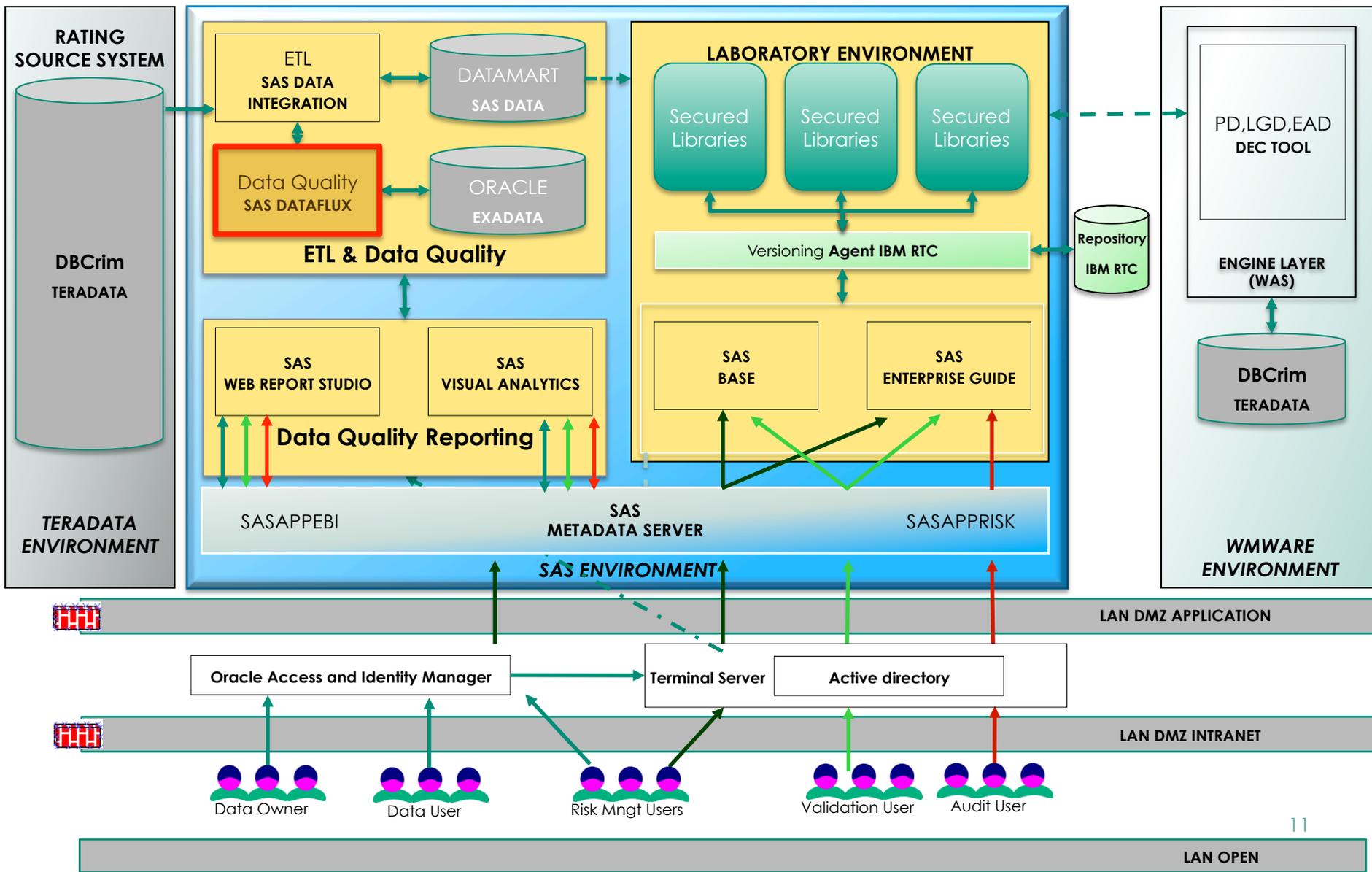
Strengthening Risk Data Management

Processes implemented by means of the management system



Strengthening Risk Data Management

Focus on Data Quality Architecture and Laboratory



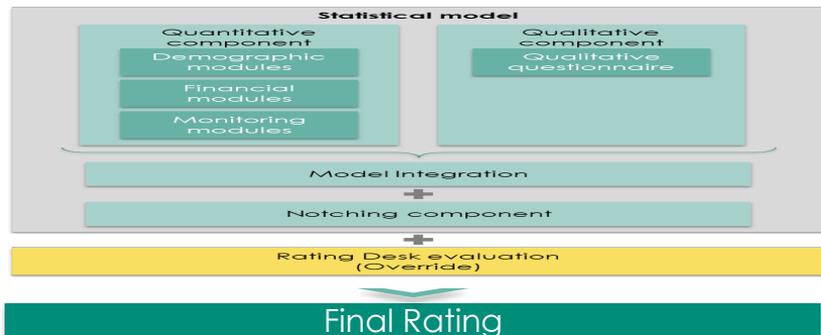
Agenda

- **BCBS 239 – relevant issues and Credit Risk data needs**
- **Strengthening Risk Data Management**
 - **Data Quality Framework**
 - **Controls execution and Reconciliation framework**
 - **Controls output and reporting**
- **Looking ahead ... Credit Information Framework**

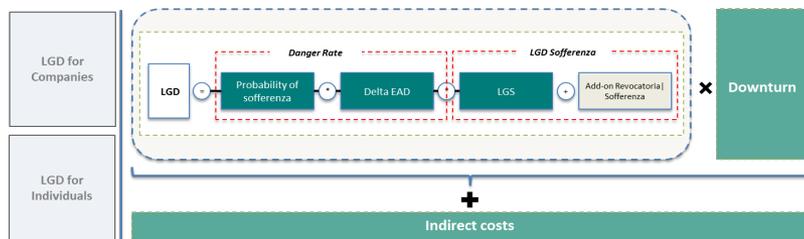
Strengthening Risk Data Management

Control s scope of application

- PD Rating Models**

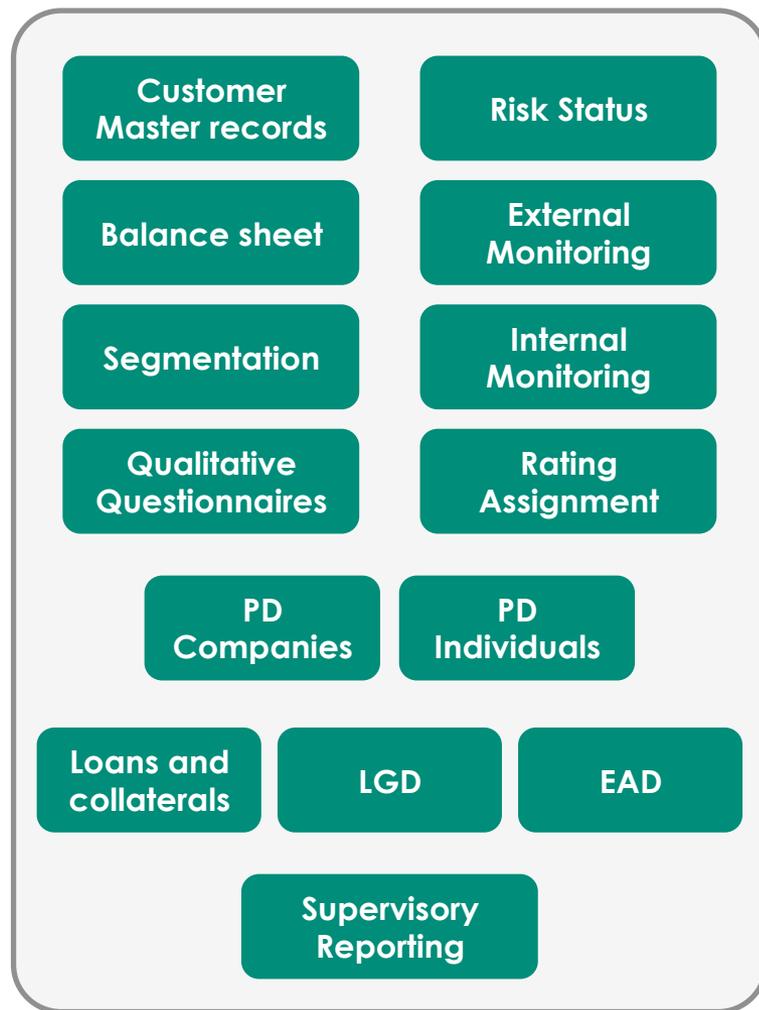


- LGD/EAD Models**



- Regulatory Reporting**

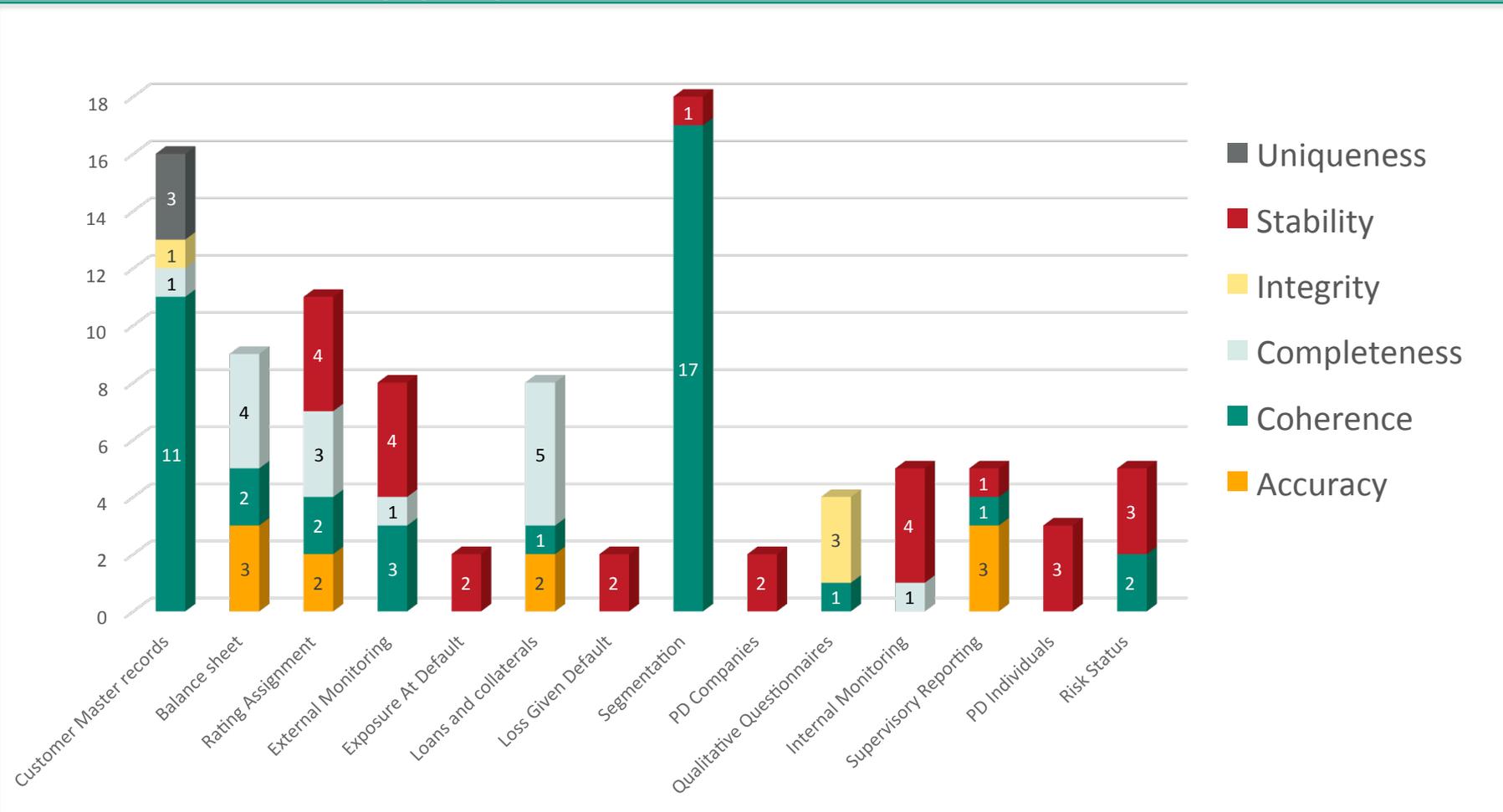
- Data Quality Controls Area**



Strengthening Risk Data Management

Controls scope of application

Breakdown of controls by quality dimension



Strengthening Risk Data Management

Reconciliation Connection points

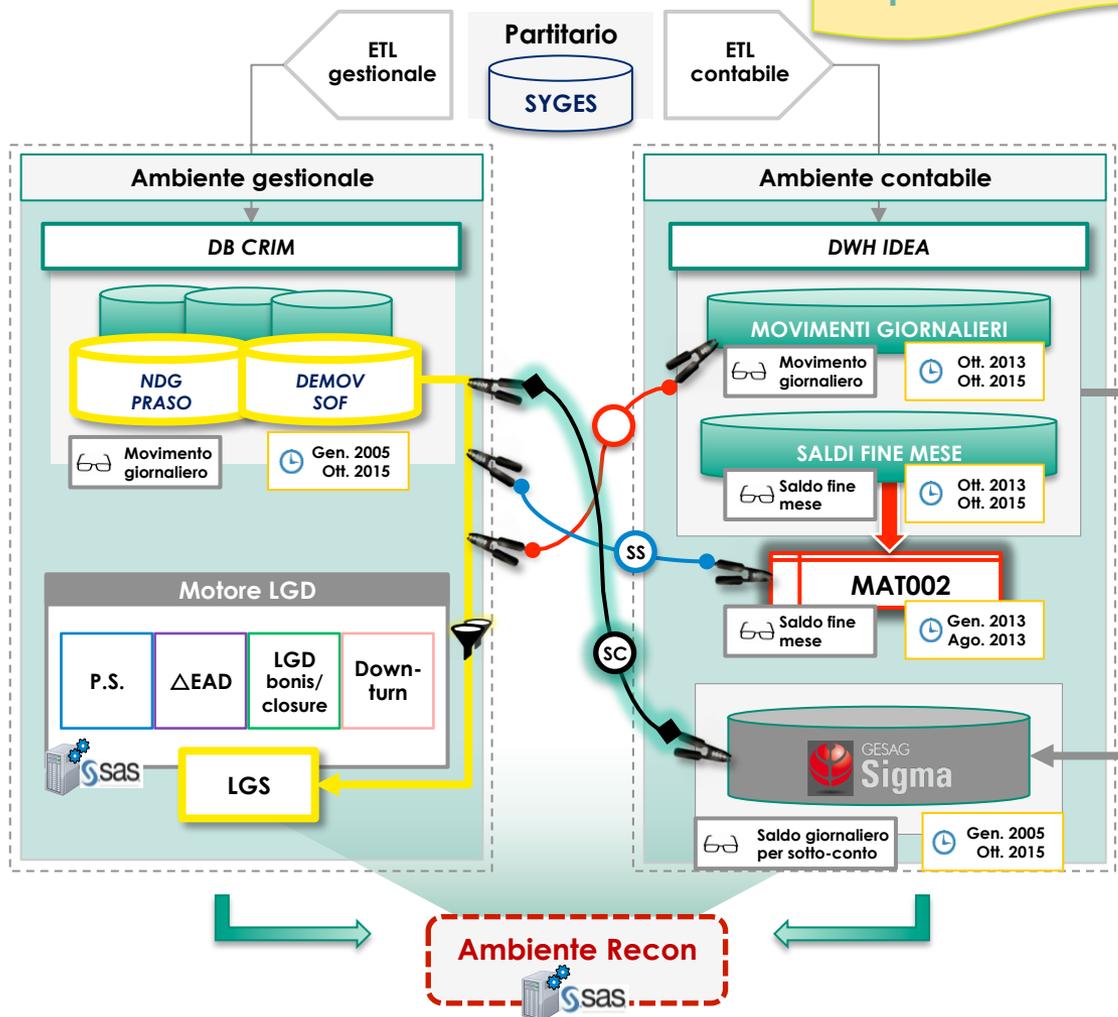
Within the AIRB project it has been highlighted the need of a specific reconciliation of the LGD input data.

Worth mentioning that this is, among others AIRB ones, the most data quality impacted models

- ▶ **MANAGERIAL DATA / LGS MODEL INPUT**
- ▶ **ACCOUNTING DATA ON RECOVERY AMOUNTS**

Data flow di sintesi

To be extended to other risk parameters



Strengthening Risk Data Management

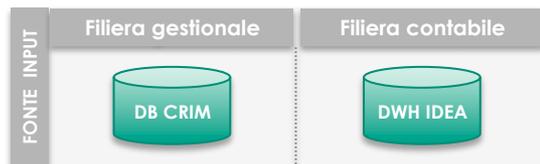
Several Reconciliation Approaches



- ▶ Reconciliation approach customized on the basis of the historical details availability of the data link between managerial with accounting data

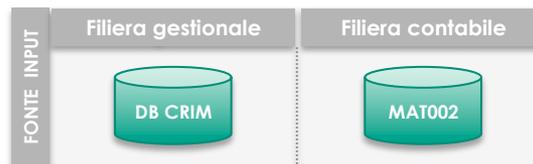
A - ANALYTICAL ITEM APPROACH

- ▶ Single daily movement based reconciliation



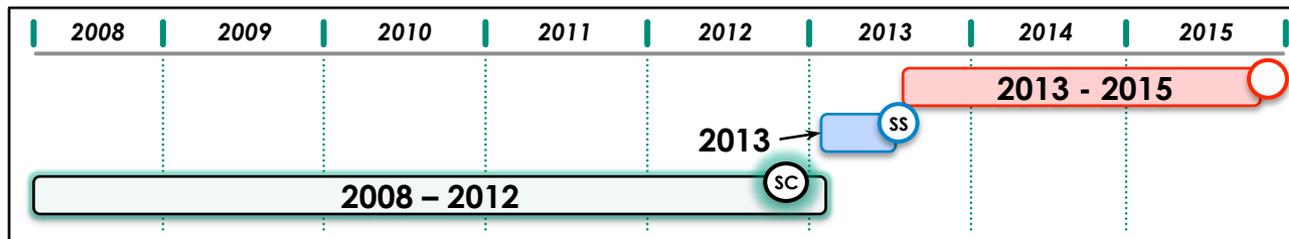
SS - INTERMEDIATE APPROACH

- ▶ Counterparty / facility monthly based reconciliation



SC - AGGREGATED ITEM APPROACH

- ▶ Aggregated daily balance based reconciliation



Agenda

- **BCBS 239 – relevant issues and Credit Risk data needs**
- **Strengthening Risk Data Management**
 - **Data Quality Framework**
 - **Controls execution and Reconciliation framework**
 - **Controls output and reporting**
- **Looking ahead ... Credit Information Framework**

Strengthening Risk Data Management

Output Examples of web-based cockpit

BANCA POPOLARE DI MILANO

BANCA
BANCA

AMBITO
CRIM

SUBJECT AREA
AR - ATTRIBUZIONE RATING

MODELLO RATING
MODELLO RATING

TIPO CONTROLLO
TIPO CONTROLLO

Tutto Data R... 2015

Score

100%
97,75%

80%
60%
40%
20%
0%

settembre 2015

SCORE

0,00% 97,96% 98,00% 100,00%

BANCA POPOLARE DI MILANO

Indice Report andamentale per Ambito Report andamentale per Dimensione Report andamentale per Controllo **Cruscotto per Subject Area** Cruscotto per Dimensione di qualità Cruscotto per Mod...

30 settembre 2015 DATA 31 dicembre 2015

01 dicembre 2015 31 dicembre 2015

Fra 01 dicembre 2015 e 31 dicembre 2015 inclusi

SCORE TOTALE

80,00%
92,61%
95,00%
100,00%

SCORE PER SUBJECT AREA

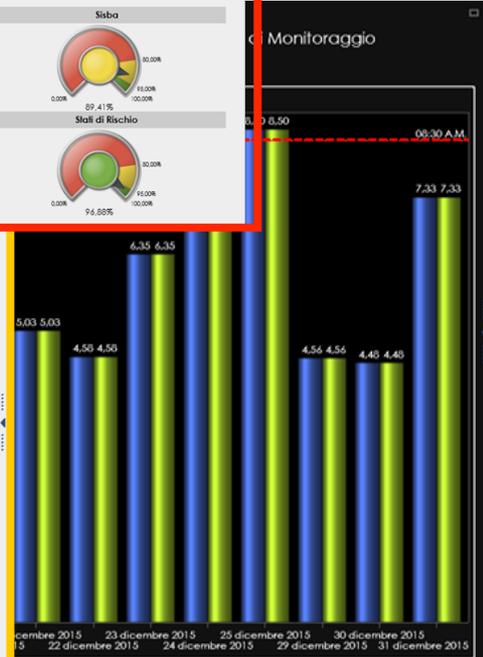
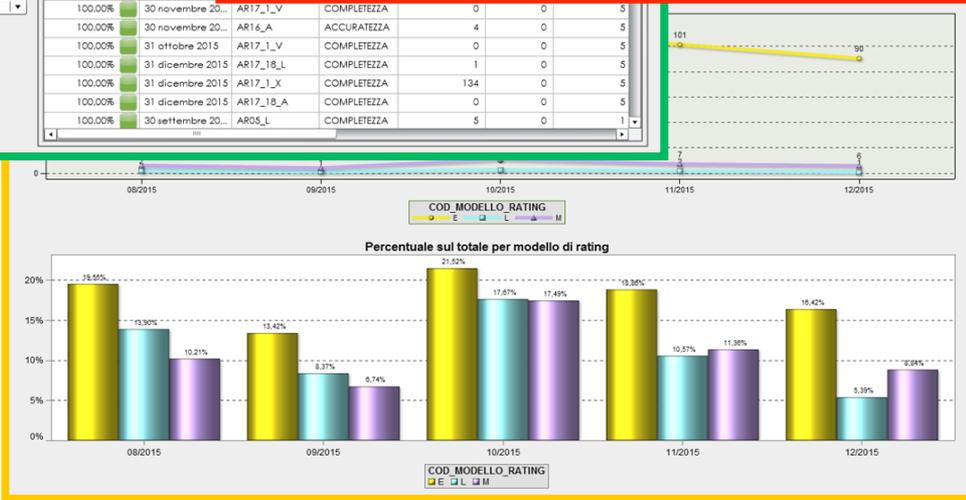
Anagrafe	Bilanci	Fidi e Garanzie	Siba
84,49%	84,18%	97,22%	89,41%
0,00%	0,00%	0,00%	0,00%
99,02%	85,34%	97,83%	94,68%

SCORE dell'og...

DATA	SCORE
31 dicembre 2015	100,00%
31 ottobre 2015	100,00%
31 dicembre 2015	100,00%
31 dicembre 2015	100,00%
30 novembre 2015	100,00%
31 ottobre 2015	100,00%
31 dicembre 2015	100,00%
31 dicembre 2015	100,00%
31 dicembre 2015	100,00%
31 dicembre 2015	100,00%
31 dicembre 2015	100,00%
30 settembre 2015	100,00%

Table Data:

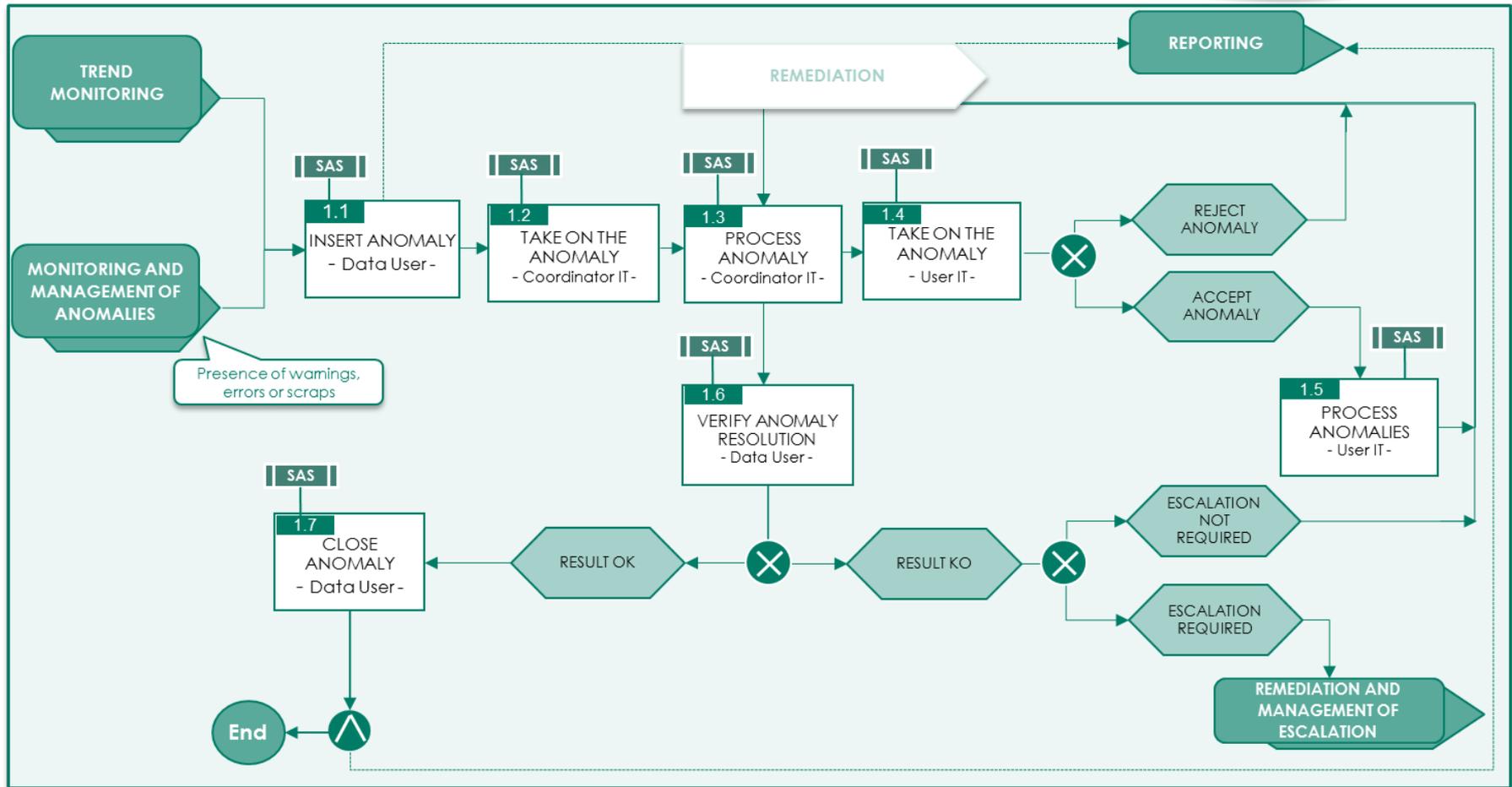
COD. MODELLO RATING	DESCRIZIONE	VALORE
AR17_1_V	COMPLETEZZA	0
AR16_A	ACCURATEZZA	4
AR17_1_V	COMPLETEZZA	0
AR17_18_L	COMPLETEZZA	1
AR17_18_X	COMPLETEZZA	134
AR17_18_A	COMPLETEZZA	0
AR05_L	COMPLETEZZA	5



Strengthening Risk Data Management



Simplified / illustrative



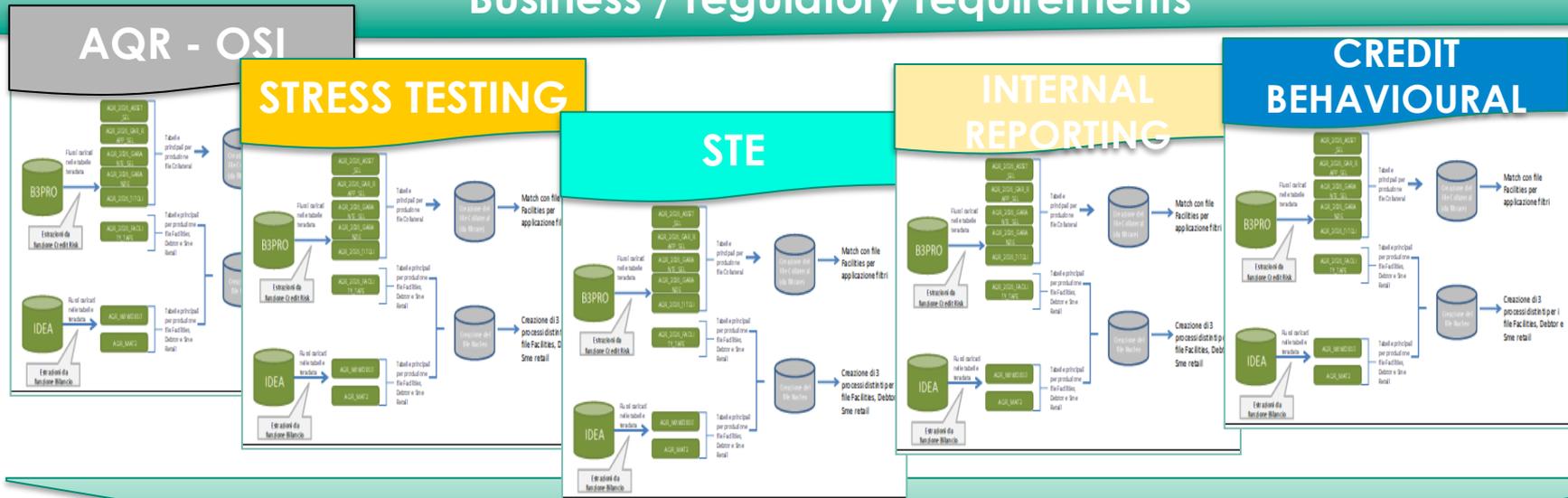
Agenda

- **BCBS 239 – relevant issues and Credit Risk data needs**
- **Strengthening Risk Data Management**
 - **Data Quality Framework**
 - **Controls execution and IT Architecture**
 - **Reconciliation framework**
 - **Controls output and reporting**
- **Looking ahead ... Credit Information Framework**

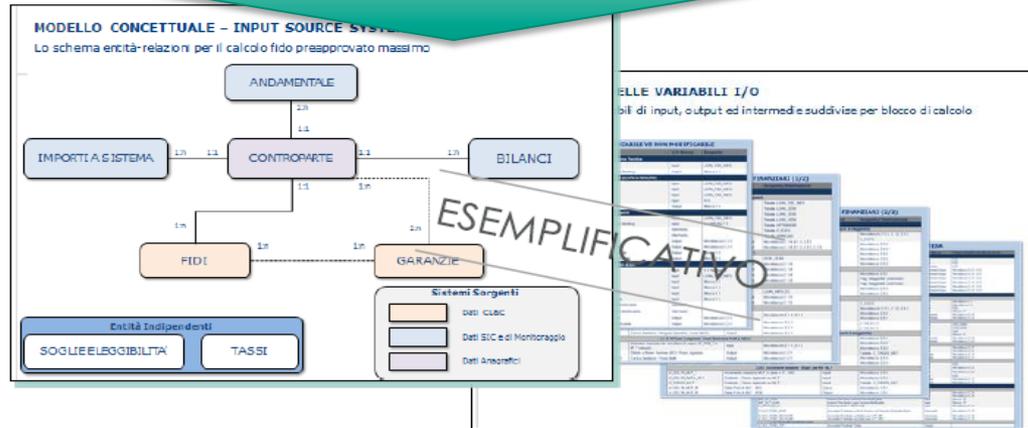
Looking ahead ... Credit Information Framework

A structural way to face the increasing challenge on data

Business / regulatory requirements



MODELLO E-R



**ANACREDIT
CONSISTENCY**

Thanks for your attention

Contacts:

Natale Schettini

Head of Credit Risk - BPM

email: natale.schettini@bpm.it

tel: +39/335.7896025