

MILAN WORKSHOP AT BANCO BPM

2 OCTOBER 2019



AGENDA

15:00 WELCOME AND INTRODUCTION

- Francesco Villa, Banco BPM

15:10 REGULATORY UPDATE AND NEW EDITOR RELEASE

- Marco Angheben and Davide Piazza, European DataWarehouse

15:30 THE EXPERIENCE FROM THE FIRST ITALIAN STS ABS TRANSACTION: SUNRISE SPV Z70 S.R.L.

- Antonio Saba, Agos Ducato S.p.A.

15:45 STS CERTIFICATION: LATEST NEWS FROM PCS

- Ian Bell, PCS

16:00 ENERGY EFFICIENCY ROUNDTABLE

- Moderator: Marco Angheben, European DataWarehouse
- Daniela Antonini, Banco BPM
- Marco Biale, BPER
- Gabriele Possenti, UBI
- Eugenio Benetti, European DataWarehouse

17:00 CLOSING REMARKS

WELCOME AND INTRODUCTION

FRANCESCO VILLA, BANCO BPM

REGULATORY UPDATES AND NEW EDITOR RELEASE

MARCO ANGHEBEN & DAVIDE PIAZZA, EUROPEAN DATAWAREHOUSE

ESMA PUBLISHED THE XML SCHEMA AND VALIDATION RULES FOR SECURITIZATION REPORTING

On 17th July 2019, ESMA published the XML schema for the templates, along with accompanying technical reporting instructions and validation rules.

As set out in Article 4 of ESMA's draft disclosure implementing technical standard, reporting of data for all securitisations must be done using XML.

ESMA considers that this will ensure a level playing field and avoid issues of compatibility across data collection mechanisms.

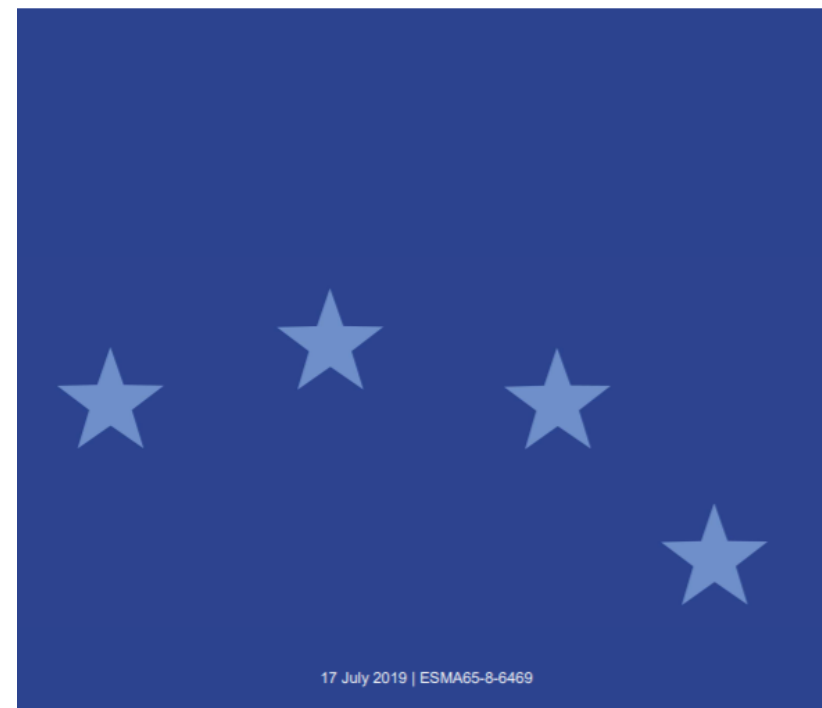
To accompany the XML schema, ESMA has also published a set of validation rules, which prohibit the submission of certain combinations of information that are logically incoherent.

*These published resources are subject to change should the actual delegated acts adopted by the European Commission contain changes that need to be reflected in the present documents. Furthermore, ESMA reserves the right to further adjust or update the Q&As, XML schema and validation rules at any time.



Reporting Instructions

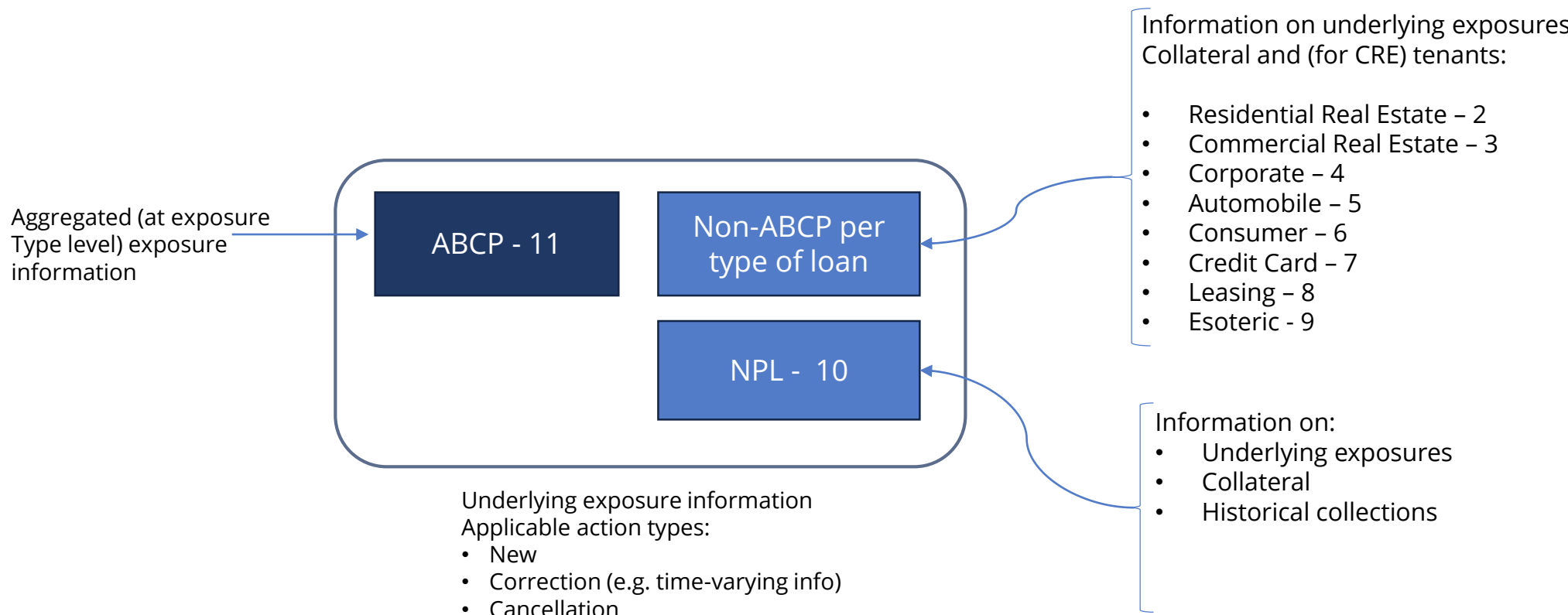
Securitisation – Disclosure messages



<https://www.esma.europa.eu/press-news/esma-news/esma-provides-updated-qas-xml-schema-and-validation-rules-securitisation>

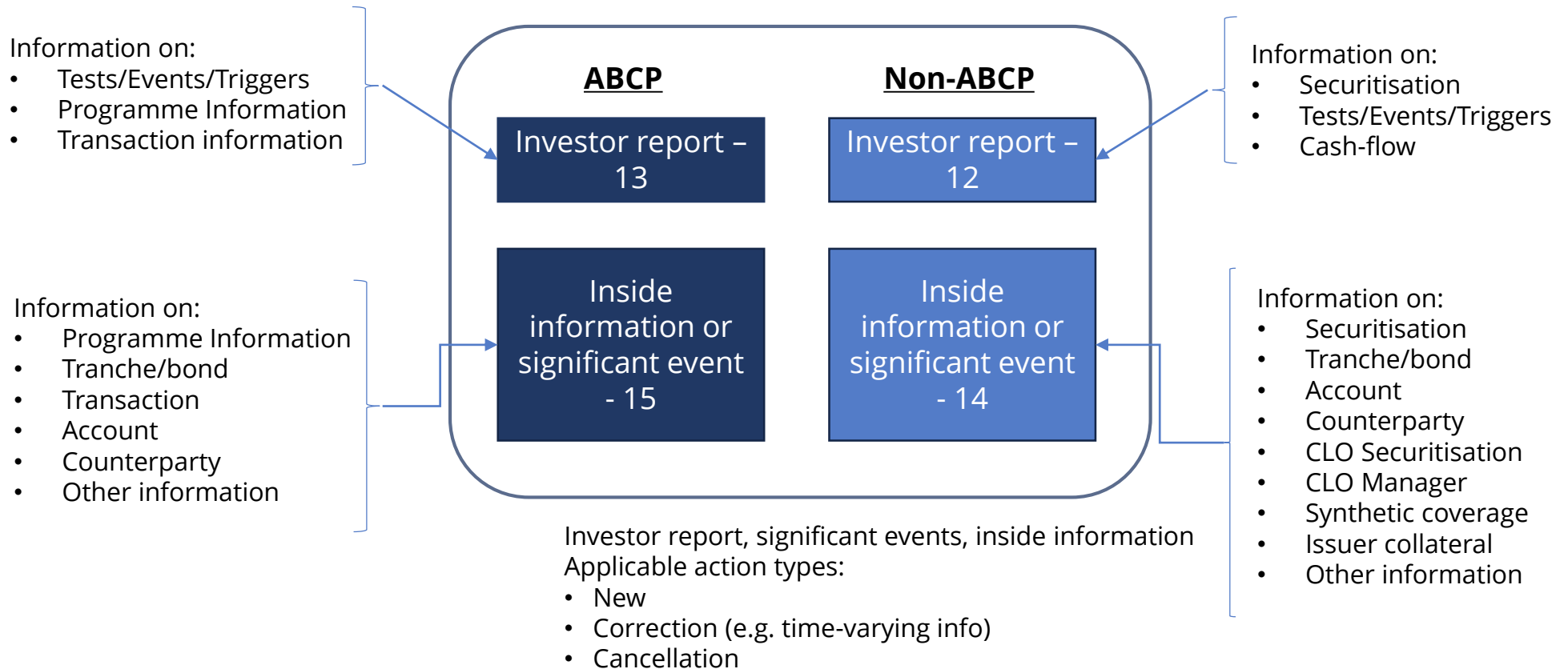
https://www.esma.europa.eu/sites/default/files/library/esma65-8-6469_securitisation_disclosure_templates_reporting_instructions.pdf

ESMA UNDERLYING EXPOSURES XML TEMPLATES



Source: https://www.esma.europa.eu/sites/default/files/library/esma65-8-6469_securitisation_disclosure_templates_reporting_instructions.pdf

ESMA INVESTOR REPORT & INSIDE INFORMATION OR SIGNIFICANT EVENTS

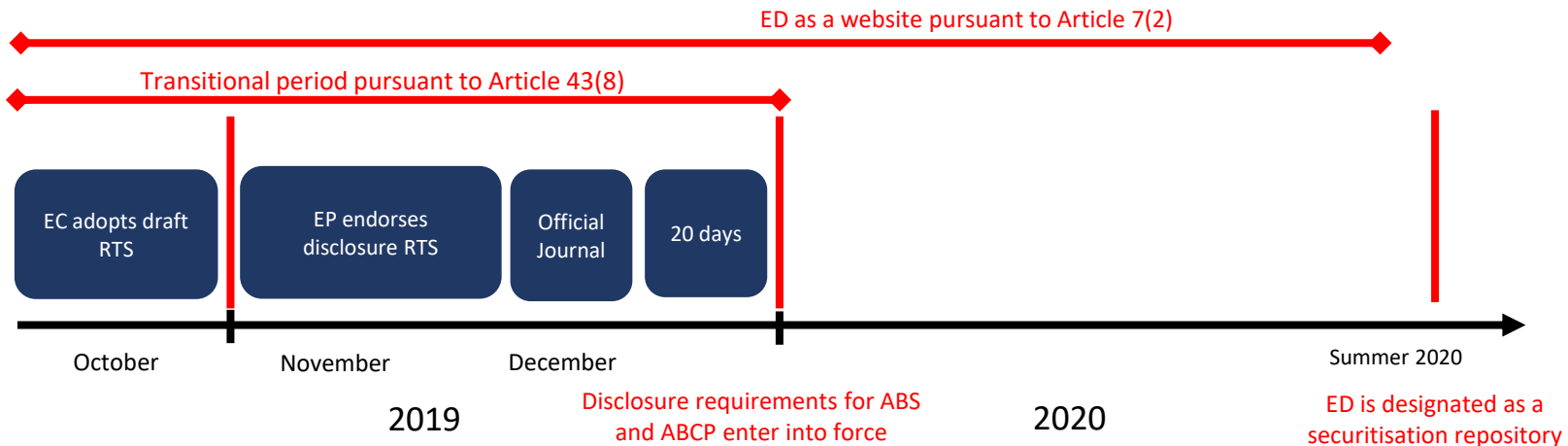


Source: https://www.esma.europa.eu/sites/default/files/library/esma65-8-6469_securing_disclosure_templates_reporting_instructions.pdf

REGULATORY TIMELINE IN 2019 / 2020

Last updated to reflect regulatory announcement from ESMA on 17 July 2019

Disclosure regime



EC: European Commission

EP: European Parliament

ESMA: European Securities and Markets Authority

Official Journal: Official Journal of the European Union – potential publication of the Level 2 of the RTS following the translation into the national languages of the European Union

RTS: Regulatory Technical Standards

EUROSYSTEM ELIGIBILITY CRITERIA TO CONVERGE WITH THE TRANSPARENCY REQUIREMENTS UNDER THE EU SECURITISATION REGULATION

On 22 March 2019, the European Central Bank announced that the **“transparency requirements of the EU Securitisation Regulation will be incorporated into the Eurosystem collateral framework”** *

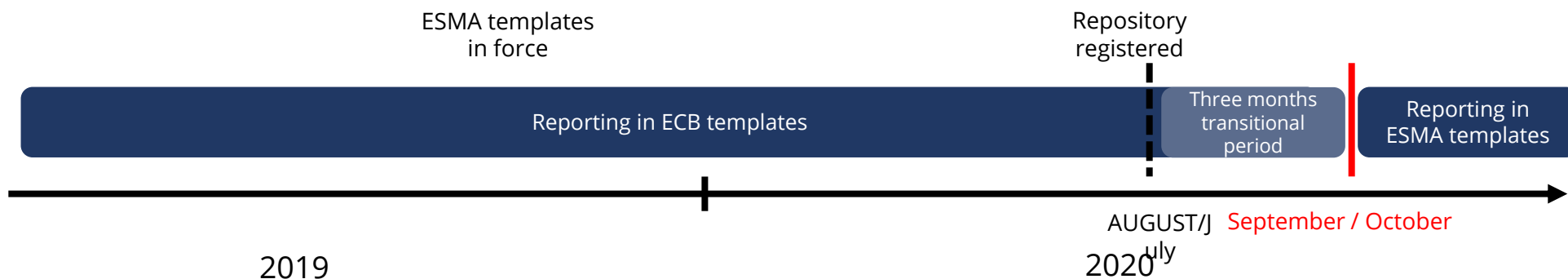
As part of this, the ECB has decided the following:

- The eligibility requirements for loan-level data reporting in the Eurosystem collateral framework will be adjusted to reflect EU Securitisation Regulation’s disclosure requirements
- The eligibility criteria for asset-backed securities will change at a future date, subject to the following two conditions being met:
 1. The ESMA templates adopted by the European Commission must have entered into force
 2. At least one securitisation repository must have been registered by ESMA
- The phasing-in of the new loan-level data requirements will be gradual

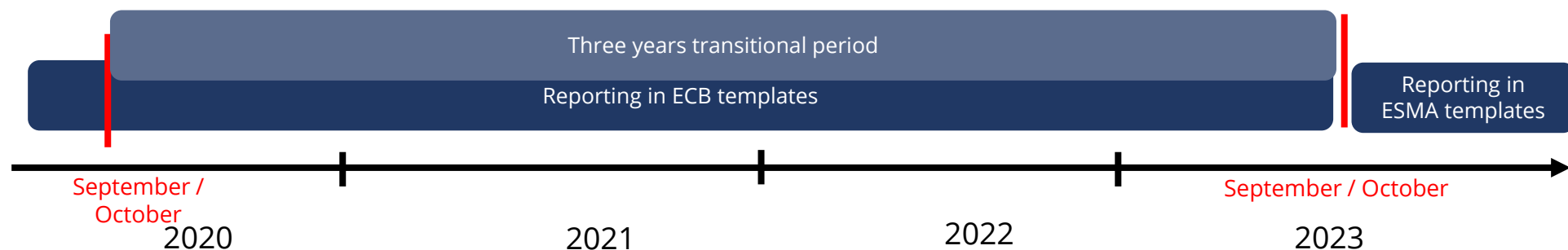
* The ECB press release can be found at the following link: <https://www.ecb.europa.eu/press/pr/date/2019/html/ecb.pr190322~1fdcdd3c43.en.html>

TIMELINES FOR THE EUROSYSTEM ABS ELIGIBILITY REQUIREMENTS

Reporting obligations for ABS issued in 2019



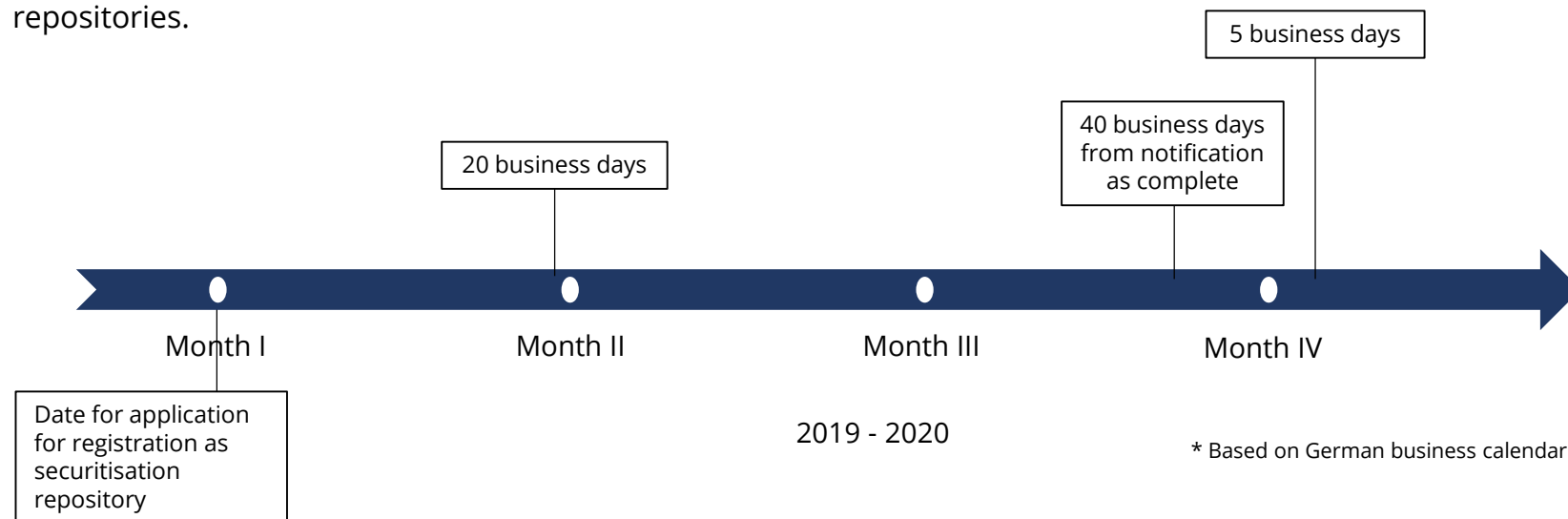
Reporting obligations for ABS issued prior to 2019



STATUS OF THE SECURITISATION REPOSITORIES REGISTRATION

SECURITISATION REPOSITORY – HYPOTHETICAL ROADMAP IN 2019*

On 12 November 2018, ESMA submitted to the EC the final draft RTS specifying the application procedures for repositories.



According to Article 7 (2) of the (EU) 2017/2402, **in the absence of an ESMA registered securitisation repository** the information should be made available to a website which meets the following requirements:

- A well-functioning data quality control system
- Appropriate governance standards
- Operational risk evaluation
- Protection and integrity of the information ensured by specific systems
- Record of the information for 5 years

Based on this, the reporting entities may already use the ED website, EDITOR (<http://editor.eurodw.eu>), in order to fulfill their regulatory reporting requirements prior to the ESMA registration.

** The timeline outlines our interpretation of how repositories could be operational in 2019 based on the current legislative text (Articles 10-13) and the political decision making process.*

PROXY DATA TO COMPLY WITH ARTICLE 22(1) FOR THE STS TRANSACTIONS

European DataWarehouse can help your organisation comply with relevant performance requirements

- With over 1300 transactions, ED offers solutions for the issuers/originators/SSPEs to comply with the STS Requirements relating to transparency
- ED can perform on-demand SQL queries to extract historical performance data from its database across asset classes for a period of at least five years. The performance data includes historical arrears, defaults for exposures similar to those being securitised.

L 347/62 EN Official Journal of the European Union 28.12.2017

Article 22

Requirements relating to transparency

1. The originator and the sponsor shall make available data on static and dynamic historical default and loss performance, such as delinquency and default data, for substantially similar exposures to those being securitised, and the sources of those data and the basis for claiming similarity, to potential investors before pricing. Those data shall cover a period of at least five years.

PERFORMANCE TABLES

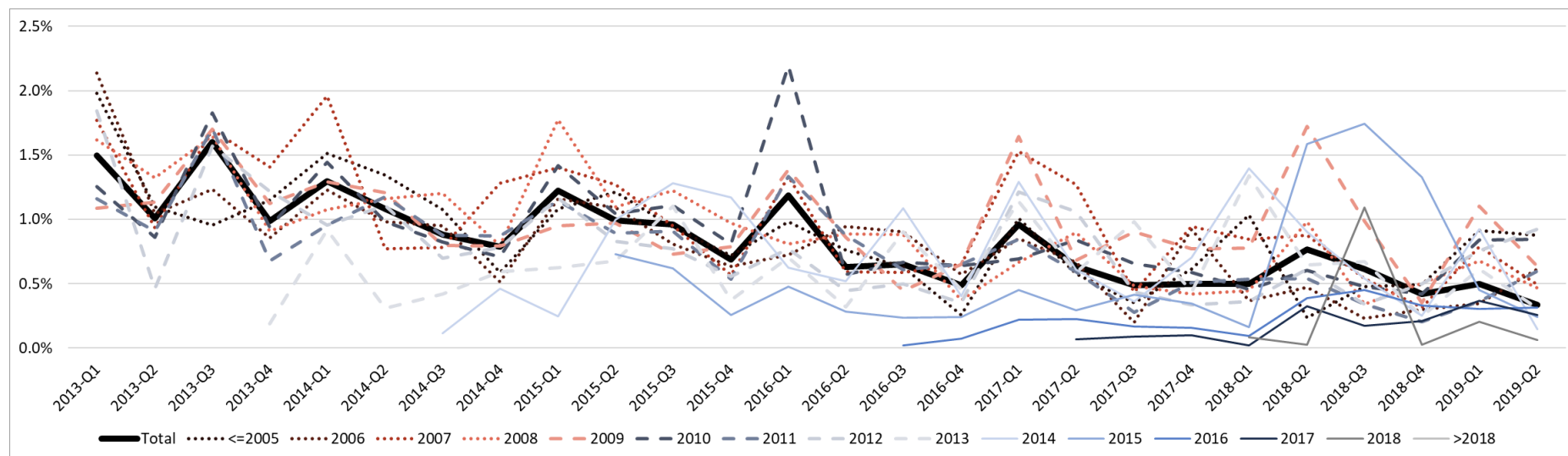
5 Years of Historical Arrears of a Sample of Substantially Similar Mortgage Receivables (Source: European DataWarehouse)

Date	Outstanding Balance	0-30 days	30-60 days	60-90 days	90-120 days	120-150 days	150-180 days	180+ days
31 March 2014	886,240,154	0.50%	0.12%	0.05%	0.02%	0.03%	0.02%	0.23%
30 June 2014	872,109,172	0.74%	0.27%	0.12%	0.14%	0.02%	0.02%	0.18%
30 September 2014	860,784,118	0.25%	0.10%	0.03%	0.00%	0.02%	0.00%	0.00%
31 December 2014	843,694,237	2.92%	0.23%	0.12%	0.06%	0.04%	0.02%	0.13%
31 March 2015	810,849,986	2.09%	0.21%	0.14%	0.01%	0.07%	0.03%	0.13%
30 June 2015	818,402,751	2.90%	0.28%	0.06%	0.03%	0.15%	0.04%	0.11%

UPCOMING ITALIAN SME INDEX (1)

- Provides a unique overview of the performance of securitised Italian SME loans
- Starting in Q1 2013, it now covers more than six years of performance
- As it uses loan-level data (LLD), performance can be shown for a subset of loans sharing particular characteristics (e.g. region, industry or vintage), which is not feasible when using investor report data
- The Excel version of the index will be very detailed and will allow an in depth understanding of the drivers of performance

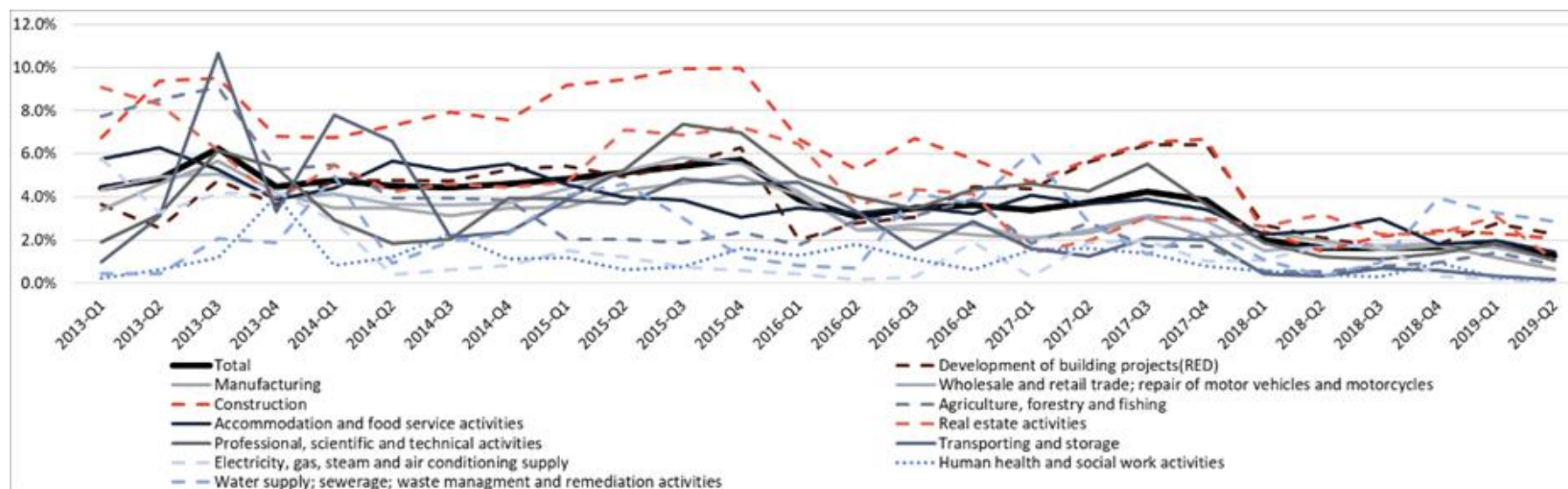
Delinquency 60-90 days as % of all active loans, per loan vintage



UPCOMING ITALIAN SME INDEX (2)

- Performance differs depending on loan vintage, region and industry
- Loans in the utilities and health sector have performed better than loans in the construction and real estate sector
- Delinquency peaked in 2013 Q3 and improved since.

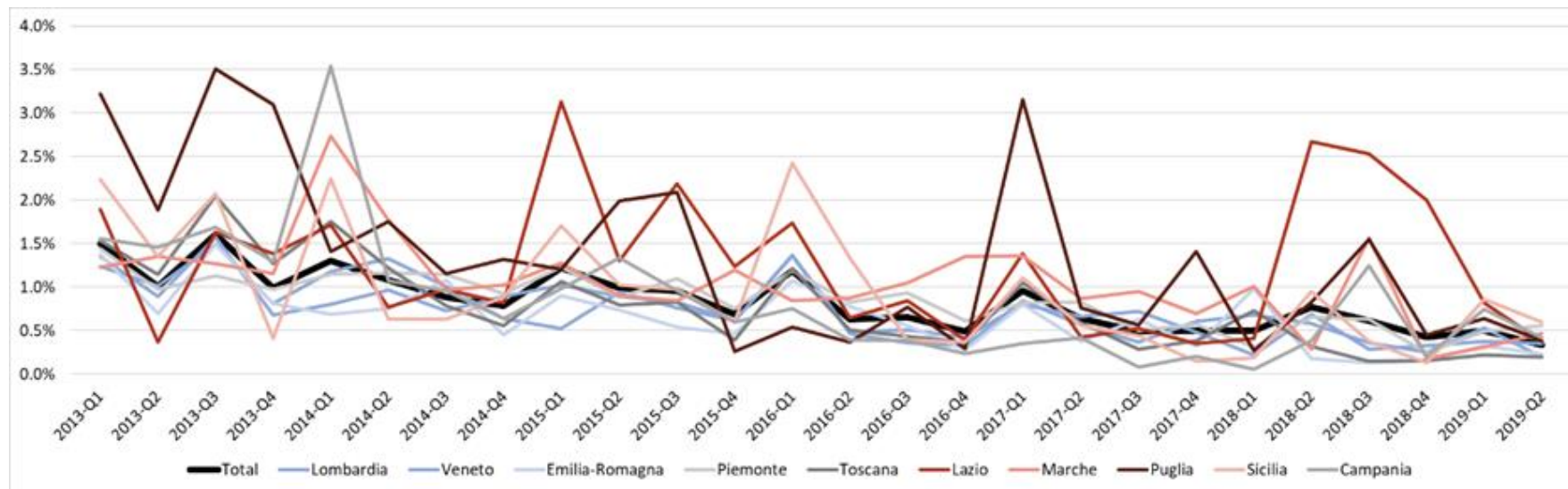
Delinquency 90-360 days as % of all active loans, per loan industry



UPCOMING ITALIAN SME INDEX (3)

- The 60-90 days index reacts faster to trends, but is also more volatile than the 90-360 days index
- In the 60-90 days index, we see what seems to be a seasonal pattern with delinquency spikes occurring in particularly in Q1
- Performance also differs depending on the region of origin of the loans. Loans in Lombardy have performed better than loans in economically weaker regions such as Puglia.

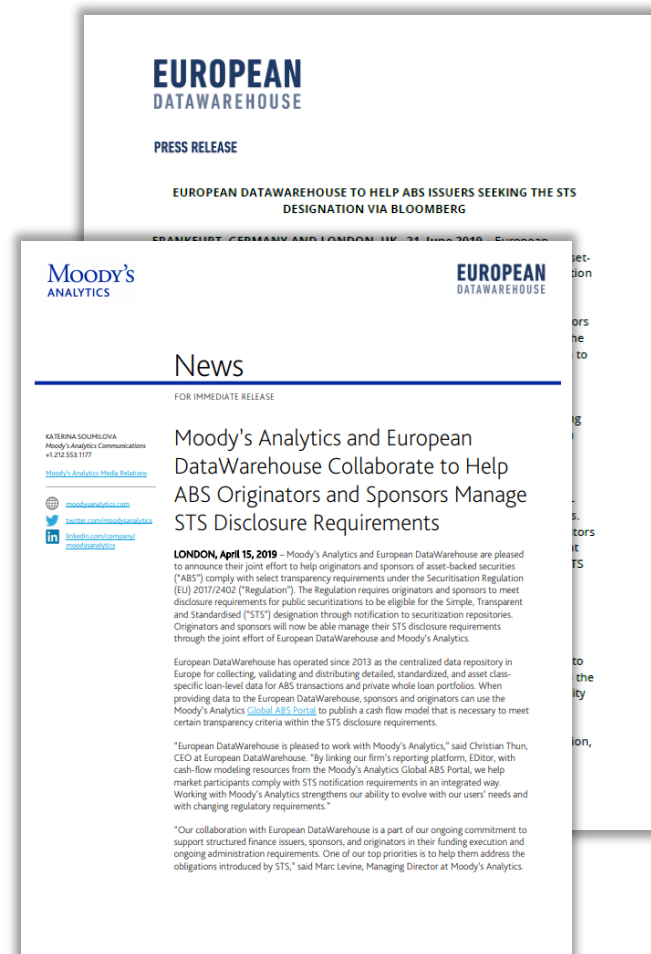
Delinquency 60-90 days as % of all active loans, per loan region



EUROPEAN DATAWAREHOUSE COLLABORATES WITH MOODY'S AND BLOOMBERG TO HELP ABS ORIGINATORS AND SPONSORS MANAGE STS DISCLOSURE REQUIREMENTS

“Our collaboration with European DataWarehouse is a part of our ongoing commitment to support structured finance issuers, sponsors, and originators in their funding execution and ongoing administration requirements. One of our top priorities is to help them address the obligations introduced by STS,”

- Marc Levine, Managing Director at Moody's Analytics.”



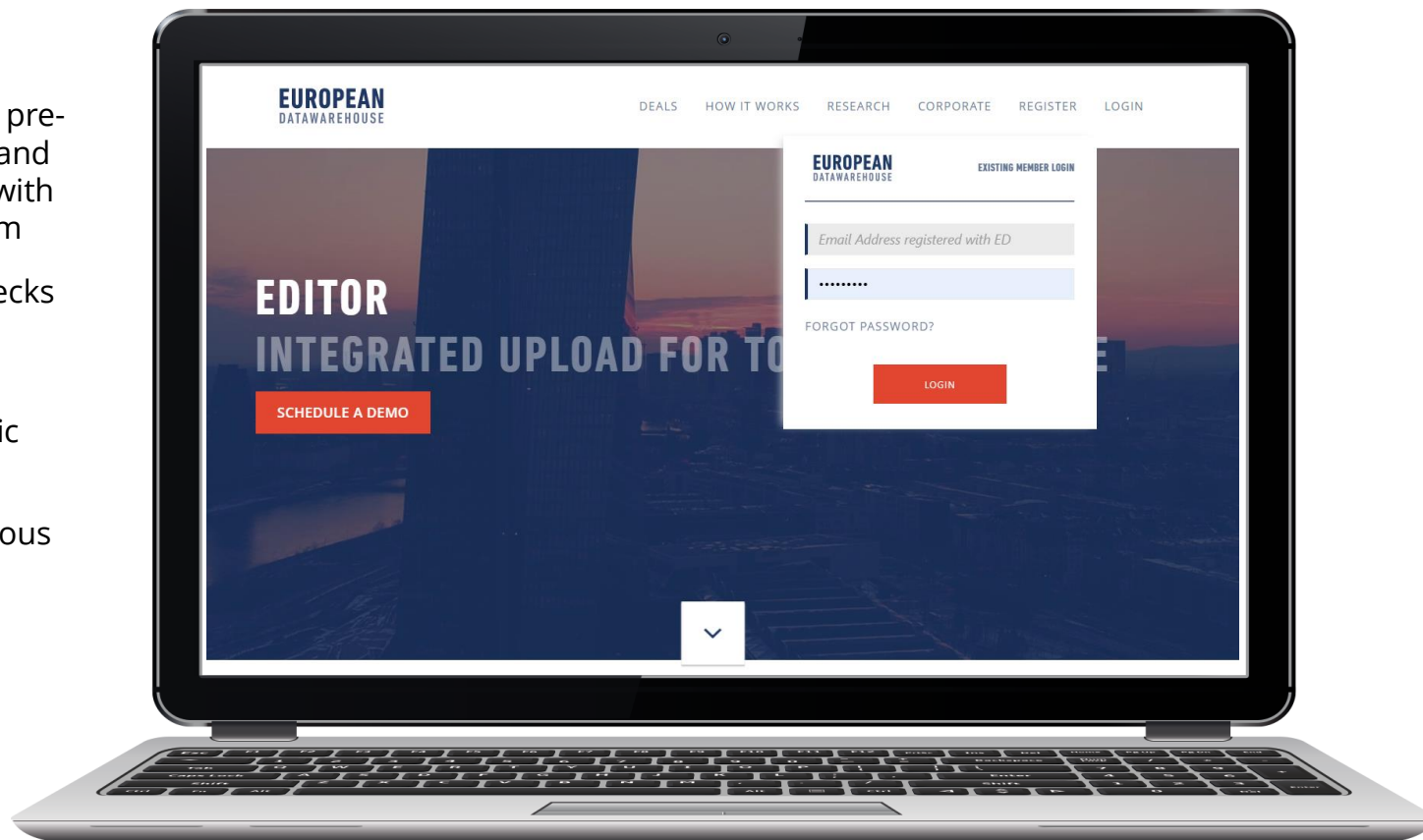
NEW EDITOR RELEASE

EDITOR

An integrated web application for the analysis and upload of loan level data (LLD) and documentation

Key Features:

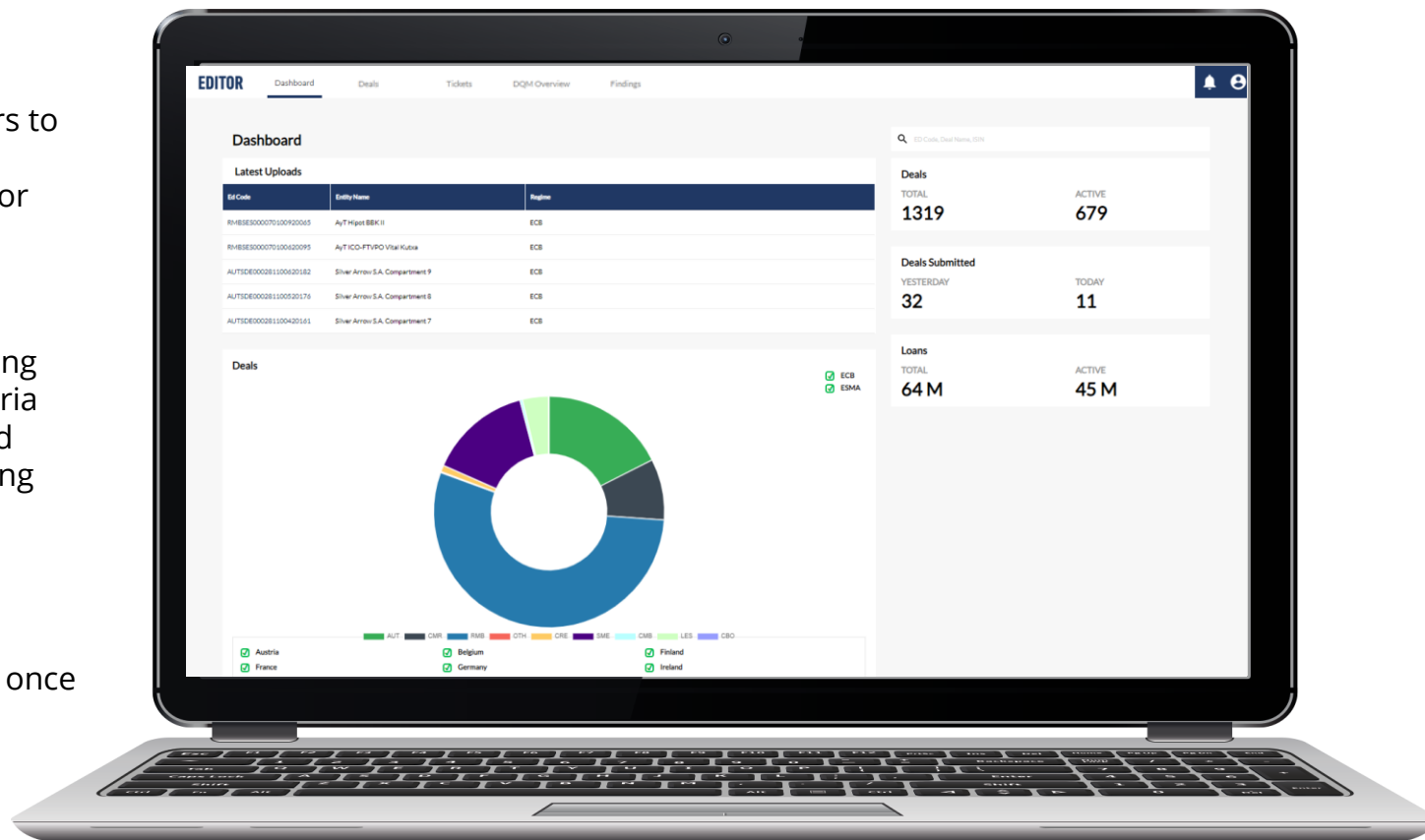
- Allows Data Providers to pre-screen and analyse LLD and upload it in compliance with the ESMA No Data system
- In-depth data quality checks using over 2,500 rules
- Centralised rule repository with automatic updates
- Comparability with previous submissions for stratifications
- Integrated Data Quality Tracking System (DQTS)



REPORTING REGIMES

Fulfil regulatory and eligibility reporting requirements under different regimes

- ECB repository for issuers to fulfil their Eurosystem eligibility requirements for ABS and ACC
- Dedicated website fulfilling the ESMA reporting criteria during the interim period under the CRA III reporting regime
- Plan to be a ESMA securitisation repository once the application process begins



UNDERLYING EXPOSURES SUBMISSION EXAMPLE IN ESMA

Selected PCD ⓘ : 29-Nov-2018 ▾

Upload New Publish Cancel Submission

Summary Results Download Summary Print

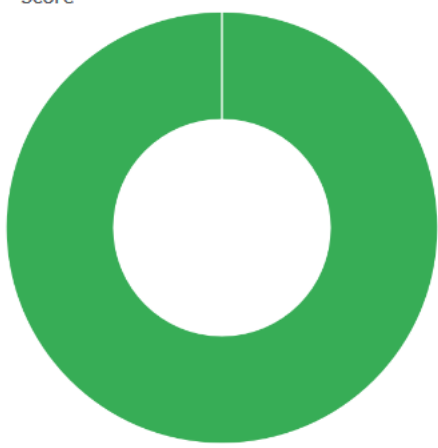
Overview ⓘ

A1

ESMA Score

NA

DQS1 ⓘ



■ PERF - Performing

Quick Statistics ⓘ

Comprehensive Report

Total Loans	5
Active Loans	5.00 (100.00%)
Inactive Loans	0.00 (0.00%)
Borrower ID (RREL4)	1
Sum of Original Balance (RREL29)	51.05
Sum of Current Balance (RREL30)	51.05
Total Collaterals (RREC3)	1
Total Cash-flow items (IVSF2)	1
Total Test Event Triggers (IVSR2)	1
Total NPE Loans (NPEL2)	5
Total NPE Collaterals (NPEC3)	1

Significant Event

Total Tranches (SEST1)	1
Total Accounts (SESA2)	1
Total Counterparties (SESP4)	1
Total CLO Managers (SESL2)	0
Total Protection Instruments (SESV2)	0
Total Collateral Instruments (SESI3)	0

Submission Status ⓘ

- ⊗ LLD+IR
 - ✓ Uploaded
 - ✓ Signature Validation
 - ✓ File Validation
 - ✓ Data Extraction
 - ⊗ PCD
 - ⊗ Reporting Entity
 - ✓ Quick Statistics Calculation
 - ✓ ESMA Score Calculation
 - ✓ Rule Validation
- ⊗ Significant Event
 - ✓ Signature Validation
 - ✓ File Validation
 - ✓ Data Extraction
 - ⊗ PCD
 - ✓ ISIN
 - ✓ Quick Statistics Calculation

- Editor performs validation checks. If any validation fails, it will be listed under the "Submission Status" section with the icon ⊗
- In the above case, "Publish" will be deactivated, which indicates the affected fields must be corrected and resubmitted
- A single submission related to the below contents can be cancelled if user clicks "Cancel Submission"
 - Underlying Exposure and Investor Report
 - Significant Event
 - Inside Information
- Data submission can be overwritten if re-uploaded with the same pool cut-off date.

ESMA DOCUMENT REPOSITORY

ESMA Regime - Item Types and Codes (only relevant for public deals)

Item Types & Codes required as part of the STS regulation
1 – Loan Level Data (Underlying Exposures)
2 – Investor Report
3 – Prospectus
4 – Asset sale agreement; any relevant declaration of trust
5 – Derivatives and guarantees agreements
6 – Servicing; backup servicing; cash management agreements
7 – Trust deed; security deed
8 – Inter-creditor agreements; derivatives documentation
9 – Any other underlying documentation essential for understanding of the transaction
10 – STS Notification
11 – Inside Information
12 – Significant Event
90 – General Private Documents
91 – Cash Flow

EDITOR – ROADMAP

Upcoming Release Details:

A mid-October release will...

- Introduce a common Create / Edit Deal Form covering all reporting requirements (ECB, ESMA)
- Enable both ECB and ESMA data & documentation to be accessed from the deal page
- Allow uploading ESMA data through Secure Machine-to-Machine File Transfer (SFTP)
- Revise roles & privacy standards
 - New Role – Individual Deal Access – to access specific public deals upon request (e.g. Potential Investor, Arranger, etc.)
 - Ability to easily invite users and manage permissions for all private deals
- Incorporate new templates
 - Independent CSV to ESMA Draft XML converter
 - ESMA Draft XML template support for RMB, AUT asset classes

Future releases (for ED to become an ESMA designated Securitization Repository) will...

- Introduce Integrated Score Computation & Data Quality checks (checks prescribed by ESMA + ED checks)
- Launch an in-built ED CSV to XML converter
- Provide utility to easily sign and encrypt files as per ESMA requirements

ESMA VALIDATION RULES FOR UNDERLYING DISCLOSURE TEMPLATES

ESMA has introduced a number of validation rules for each field in each underlying exposure template

Failure to comply with such ESMA validation rules will prevent the upload of the file in the repository

RTS Field code	RTS Field name	Validation rule
RREL18	Primary Income Currency	1) The currency field must contain a valid ISO currency code
RREL16	Primary Income	1) The numerical field must be equal to or greater than 0
RTS Field code	RTS Field name	Validation rule
RREL33	Total Credit Limit	1) The currency field must contain a valid ISO currency code
RREL33	Total Credit Limit	1) The numerical field must be equal to or greater than 0
RREL36	Principal Grace Period End Date	1) Must be greater than the Data Cut-off Date

FREE SANDBOX ENVIROMENT

Users can test their new CRA III or ESMA templates and processes in a dedicated testing facility

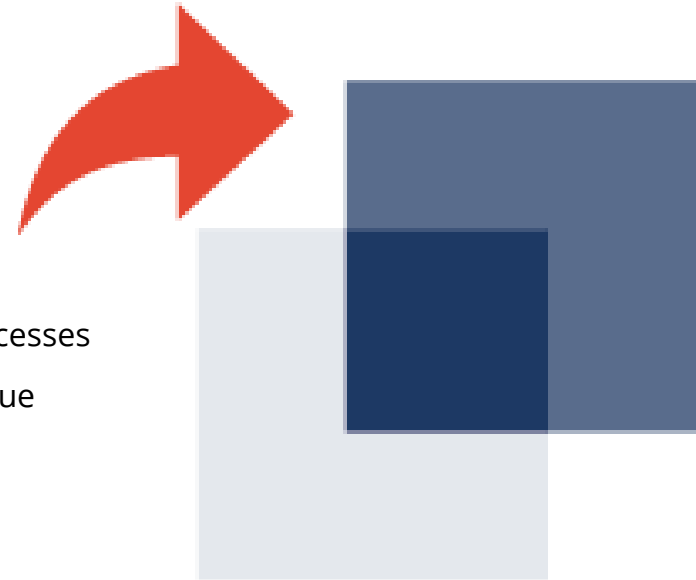
Key Features:

- Upload unlimited test files and create test deals
- Frequently updated to reflect regulatory developments

Testing Includes:

- Free Access to Editor for a limited period
- Data quality support, including access to Data quality rules and processes
- The testing began with Auto and RMBS, with further asset classes due when final XMLs are published by ESMA

Please send an email to enquiries@eurodw.eu for any requests



PRIVATE DEAL SOLUTIONS

EDITOR offers a dedicated website which allows private transactions to comply with the disclosure requirements under Article 7(1) of the Securitisation Regulation

- Includes features for the controlled transmission of the information to third parties
- Access to the relevant **data is fully managed by the Data Owner (DO)** (sponsor, originator or special securitisation purpose entity (SSPE)). DOs are responsible for authorising access to Data Users (DU).
- The same features in EDITOR that are used in the public area can also be used in the private area

Is the Entity Private? ⓘ

Yes No

ACCESSIBILITY: EASY
AND USER-FRIENDLY
WEB-BASED ACCESS

FLEXIBILITY:
ABILITY TO ADJUST
AUTHORISERS AND DEAL
STATUS (PRIVATE TO
PUBLIC), DEFINE ACCESS AT
DOCUMENT LEVEL

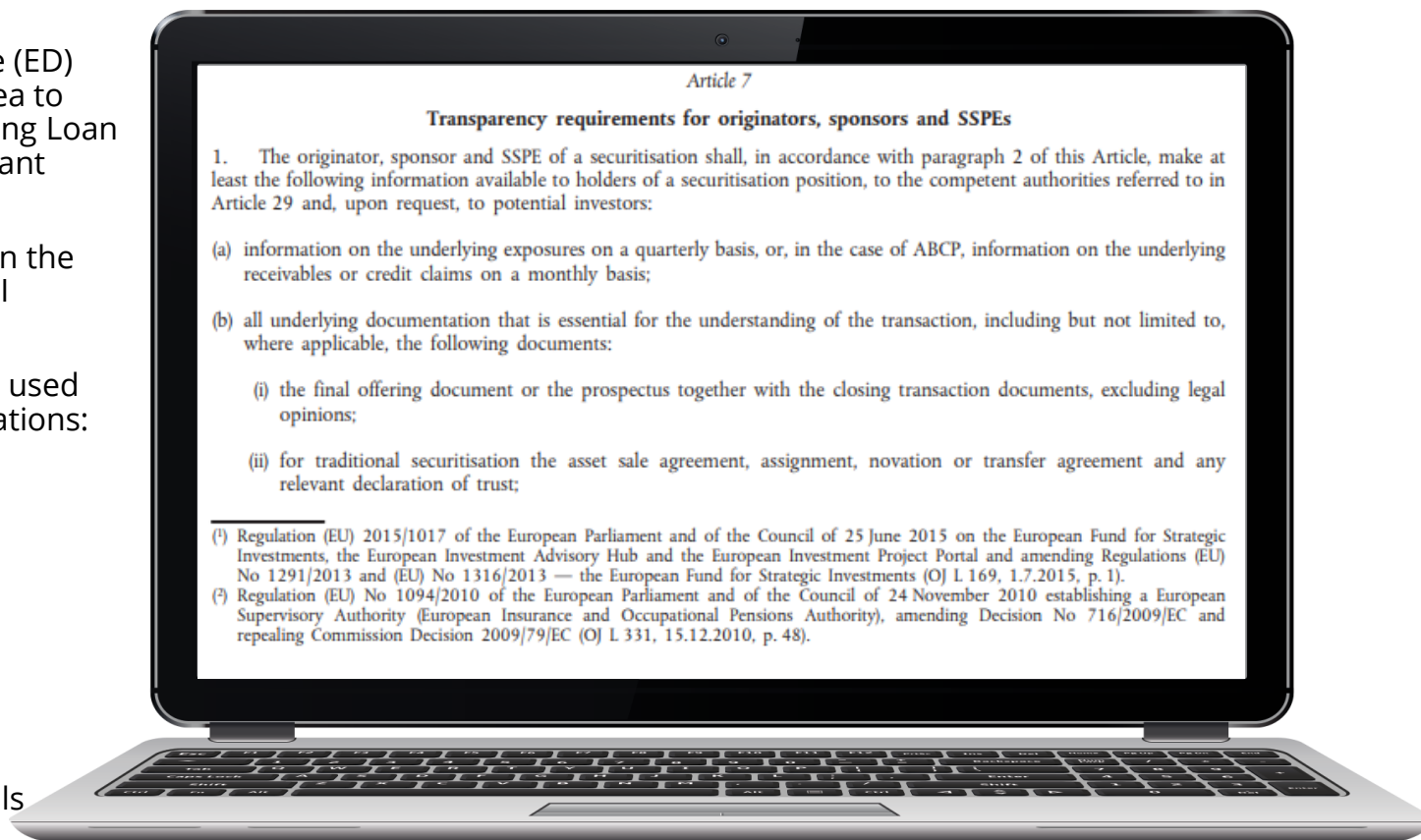
INTEGRITY: LEGAL
FRAMEWORK FOR
ACCESSING, UPLOADING
AND DOWNLOADING
INFORMATION

RELIABILITY: ROBUST
SOFTWARE WITH
ONGOING SUPPORT

PRIVATE AREA OVERVIEW

Private securitisation transactions use ED private area to comply with disclosure requirements under Art. 7 of the Sec. Reg.

- European DataWarehouse (ED) implemented a private area to collect information including Loan Level Data (LLD) and relevant documentation
- The data templates used in the private area are the CRA III templates
- The private area could be used for the following securitisations:
- ABCP
- Non-ABCP such as:
 - ABS
 - CLOs
 - NPL deals
 - Synthetic deals
 - Tranched cover deals



THE EXPERIENCE FROM THE FIRST ITALIAN STS ABS TRANSACTION: SUNRISE SPV Z70 S.R.L.

ANTONIO SABA, AGOS DUCATO



Sunrise 2019-1

Impact of New Securitisation Regulation

October 2019

- ✓ AGOS – Sunrise 2019-1 (SPV Z70)
- ✓ EU Securitisation Regulation 2017/2402 (Jan 2019)
- ✓ Lesson learned...



AGOS – Sunrise 2019-1 (SPV Z70)

May 2019



- **Overview:** This transaction is the 16th public securitization deal run by Agos and represents the **first Italian STS-compliant ABS transaction.**
- **Launch and execution process:** The volatility of the Italian market in **May 2019** had two consequences: the pricing discovery exercise was quite complicated, JLMs had to execute within the shortest timeframe possible with no roadshow, offering calls to investors on demand. The deal was **announced on May 8th** with IPTs released on May 15th. On May 16th the book was over 2x then we successfully **priced on May 17th.**
- **Distribution:** the deal was very well distributed across 37 accounts spread in different jurisdictions.

SUNRISE SPV Z70 S.R.L. <i>(incorporated with limited liability under the laws of the Republic of Italy)</i>
Euro 756,000,000 Class A Limited Recourse Consumer Loans Backed Floating Rate Notes due May 2044
Euro 113,800,000 Class B Limited Recourse Consumer Loans Backed Fixed Rate Notes due May 2044
Euro 101,900,000 Class C Limited Recourse Consumer Loans Backed Fixed Rate Notes due May 2044
Euro 139,200,000 Class M1 Asset-Backed Fixed Rate Notes due May 2044
Euro 100,000 Class M2 Asset-Backed Fixed Rate and Variable Return Note due May 2044

EU Securitisation Regulation 2017/2402 (Jan 2019)

General compliance with the new Securitisation Regulation

- Investor due diligence requirements (Art. 5)
- Risk retention (Art. 6)
- Disclosure and transparency (Art. 7)

FOCUS on new regime on Investor due diligence and Disclosure and transparency

- (i) documentation essential to understand the deal (draft and final)
- (ii) STS notification (draft pre-pricing, final once notified)
- (iii) template-based LLD and investor reporting
- (iv) template-based inside information and/or significant event disclosure

AGOS

- via EDW website (that meets requirements of the regulation)
- Link to data providers (cash-flow models)
- New LbL templates (*in progress*)

EU Securitisation Regulation 2017/2402 (Jan 2019)

Compliance with the STS regime (optional)

- STS criteria for non-ABCP (Art. 19-22)
- STS notification (Art. 27)
- Third party verification (Art. 28)

FOCUS STS criteria and Third party verification

- Check of all criteria to be meet
- Third party verification
- Pool audit (AuP)
- Historical data
- Cash flow model

AGOS

- Revision of the documentation
- Mandate to PCS for independent verification
- Increase of historical data on performances provided to investors (static/dynamic view)
- Review of usual Pool audit perimeter
- Cash flow model via Bloomberg / Intex

Lessons learned...

Based on the Sunrise 2019-1 experience:

- Investor due diligence could take more time than in the past
- Disclosure of all the transaction docs need to be timely and well organized with suitable tools (drafts and final version)
- Third party verification to be involved in good time

...Next steps: Loan Level Data reporting

STS CERTIFICATION: LATEST NEWS FROM PCS

IAN BELL, PCS

STS AND THIRD PARTY VERIFICATION

- I. EDW Workshop – Milan
 - II. 2 October 2019
-

Agenda

STS and Third Party
Verification

EDW Workshop
Milan

- Who are we?
- Introduction to the third-party verification regime
- Who does it help?
- How does it work?

Who are we?

STS and Third Party
Verification

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- PCS was founded in 2012 by the securitisation industry as an independent not-for-profit initiative to assist in bringing back a strong European securitisation market
- PCS remains a not-for-profit initiative
- PCS became a regulated third-party verification agent in March 2019
- PCS is based in London and Paris but operates across the European Union
- PCS has already verified 46 transactions and has been mandated on many others

- STS Regulation passed in December 2017, entered into force on 1 January 2017
- STS creates a new category of capital market instruments – STS securitisations (art.18)
- A *unique* feature of STS securitisation is that they are not – de facto – an objective status but require issuer certifications (art. 27)
- To help investors and reinforce the safety of the system, the Regulation provides for a new type of capital market actor: the third-party verification agent (art. 27)
- But the third-party verifications must be *independent* and *regulated* (art. 28)

Who does it help?

STS and Third Party
Verification

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- The third-party verification agency framework helps three actors:
 - Investors
 - Originators
 - Regulators

Who does it help?

Originators

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Verification

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- The third-party verification agency framework helps originators:
 - As an expert verification
 - Lowers recharacterisation risk
 - Adds to the internal compliance process
 - Brings cross-border, cross-asset class and regulatory knowledge to the table
 - As a mitigant to the threat of sanctions
 - 10% of worldwide turn-over
 - €5,000,000 personal fines
 - Requirement of deliberate act or negligence

Who does it help?

Investors

STS and Third Party
Verification

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- The third-party verification agency framework helps investors:
 - Socialises the cost of compliance (art.5.3.c)
 - Is the answer to the question of what lies between relying “to an appropriate extent” and not “solely or mechanistically” (art. 5.3.c)
 - Brings cross-border, cross-asset class and regulatory knowledge to the table
 - Produces a report that allows an investor to double-check either a factual assertion or an interpretation
 - The reports are public so available pre-pricing, at closing and in the secondary market

Who does it help?

Regulators

- The third-party verification agency framework helps regulators:
 - Criteria interpretations lies with NCAs
 - Third party verification agents, as regulated independent bodies, can have interpretation discussions for the whole market on a basis of trust
 - Risk of regulatory fragmentation undermining the European benchmark status of STS
 - Third party verification agents operating cross-border and cross-asset class can identify inconsistencies before they become a threat to the system

How does it work?

- PCS as a third-party verification agent operates as a “well informed and educated” investors:
 - PCS does not do underlying due diligence beyond what is available to a thorough investor (exception being the legal opinion and the AUP)
 - PCS goes through all the criteria requiring evidence of each point (there are 102!).
 - The evidence may be found in the prospectus, the documents, the AUP, the marketing materials
 - PCS uses its extensive experience of the STS criteria (some being copies of PCS’ own label) and the regulatory approach to provide interpretations
 - PCS publishes a pre-sale and a post-closing report
 - PCS’ staff are available, even years after the deal has been issued, to discuss the STS criteria

Contacts at PCS

STS and Third Party
Verification

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Milan

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admin@pcsmarket.org (for the label applications)

www.pcsmarket.org/contact-us

ENERGY EFFICIENCY ROUNDTABLE

- **MODERATOR: MARCO ANGHEBEN, EUROPEAN DATAWAREHOUSE**
- **DANIELA ANTONINI, BANCO BPM**
- **MARCO BIALE, BPER**
- **GABRIELE POSSENTI, UBI**
- **EUGENIO BENETTI, EUROPEAN DATAWAREHOUSE**

ENERGY EFFICIENCY DATA PROTOCOL AND PORTAL (EEDAPP) INITIATIVE

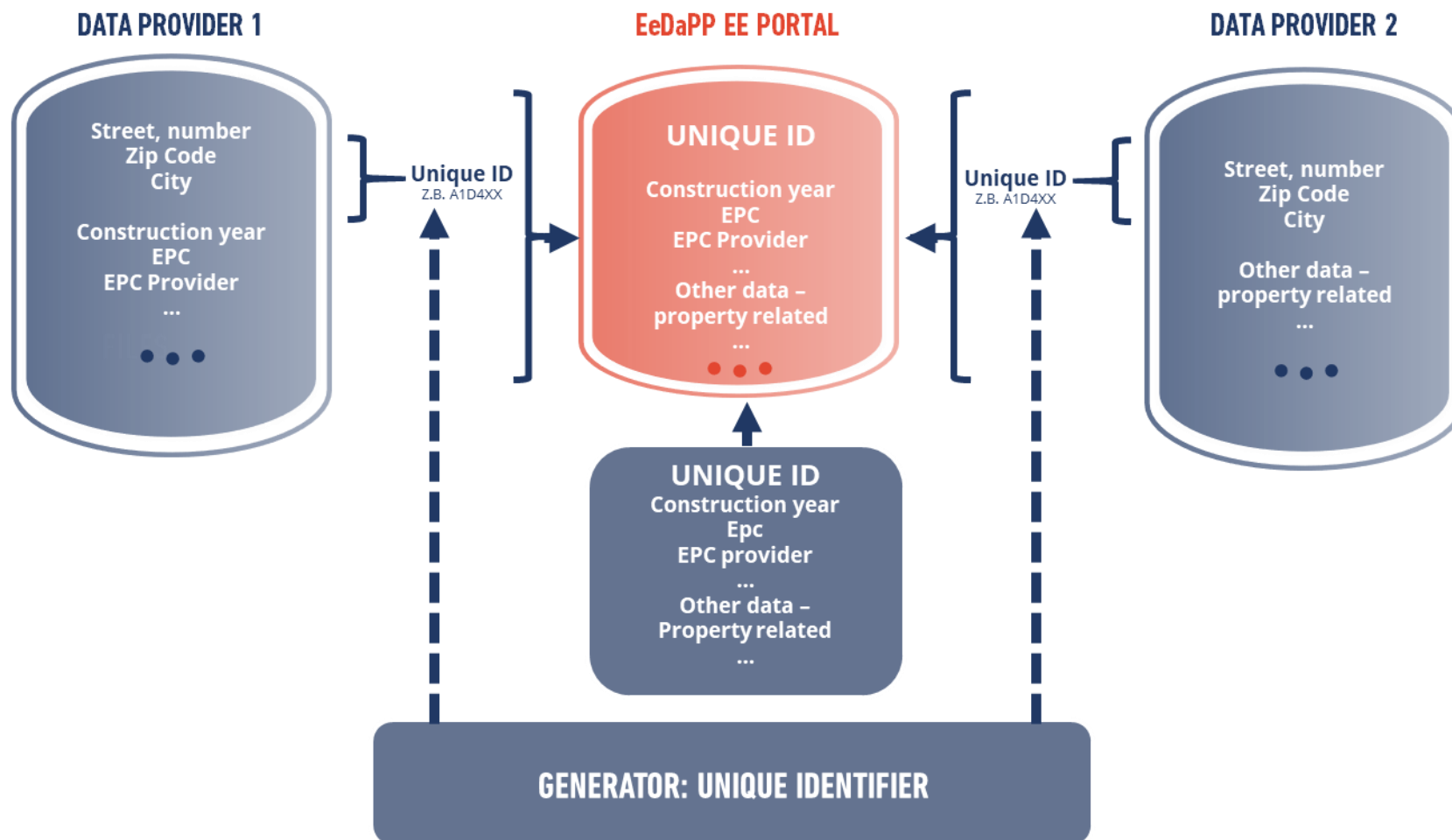
ED is participating in the **Energy efficiency Data Protocol (EeDaPP) Initiative** sponsored from the European Commission.

The objective of the Project is the **design of a market-led protocol**, which will enable the recording of energy efficient mortgage assets, **via a standardised reporting template**. The protocol will be accessed via a **common data portal**, allowing for the large-scale standardised gathering, processing and disclosing of the key characteristics and performance of the property, together with specific loan characteristics and the profile of the borrower.

The participants involved in the consortium are as follows:

- 1 European Mortgage Federation-European Covered Bond Council (coordinator)
- 2 Ca' Foscari University of Venice
- 3 CRIF S.p.A.
- 4 European DataWarehouse GmbH
- 5 Hypoport B.V.
- 6 TXS GmbH
- 7 SAFE Goethe University Frankfurt

HIGH LEVEL IT PROPOSAL FOR AN ENERGY EFFICIENCY (EE) PORTAL



PROPOSED UNIQUE IDENTIFIER FOR BUILDINGS

The unique identifier will contain a key set of characteristics that will enable users to query and extract information regarding certain buildings and the green credentials including the following details:

1. **Commercial or residential real estate type** (C or R);
2. **Property type** (Field RREC9 – Residential: RHOS, RFLT, RBGL, RTHS, MFHS and OTHR; Commercial: PCMM and BIZZ);
3. **Year of construction** (Field CREC25 – 1999, XXXX – unknown);
4. **Property/collateral identifier** (Field RREC3 – FC8FD726B204B331C0B90CA73C519D59);
5. **Location based on the Eurostat NUTS coding** (Field RREC6 – 60314, XXXXX - unknown);
6. **Other relevant information that can be updated/changed over time** (size of the property in square meters or other country specific elements);
7. **Incremental number for cases where all previous parameters are the same for two properties** (3 numeric, 001, etc.).

Practical examples of the unique identifier:

- | | |
|---|--|
| 1. R_RHOS_1965_FC8FD726B204B331C0B90CA73C519D59_60314_001 | . RHOS: House, detached or semi-detached |
| 2. R_MULF_1989_8B99558FF6EE0AEC63A236C11907FD7D_50939_001 | . RFLT: Flat or Apartment |
| 3. C_BIZZ_2001_779768F936327DCD723FD84EC105CA43_80636_001 | . RBGL: Bungalow |
| 4. C_BIZZ_2001_779768F936327DCD723FD84EC105CA43_80636_002 | . RTHS: Terraced House |
| | . MFHS: Multifamily House |
| | . PCMM: Partial Commercial use |
| | . BIZZ: Commercial or Business use |
| | . OTHR: Other |

“GIUDITTA” THE ENERGY EFFICIENCY SOLUTION

OPENDATA - DATI CENED+1.2



Property Address

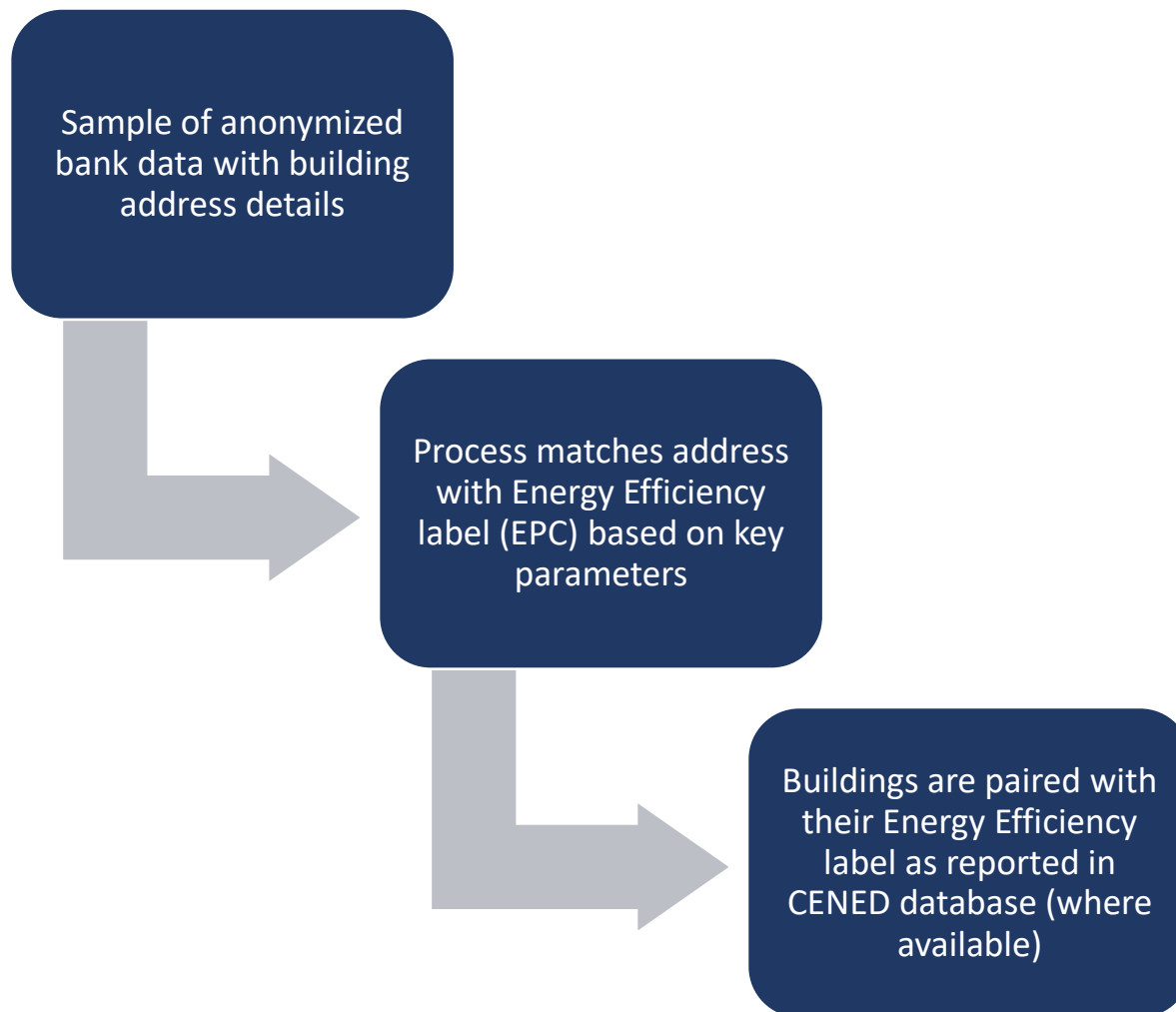


Giuditta is a dedicated solution designed from European DataWarehouse for matching energy efficiency data of buildings with the corresponding address. It offers the following functionalities:

- Retrieve and store energy efficiency data for buildings present in a geographical area
- Retrieve and store mortgage or other related loans granted to customers
- Use a third party infrastructure to match the two datasets in order to assess how many buildings in a portfolio have “green label” information available.
- Periodical addition of the energy efficiency information retrieved from external or internal databases using the European DataWarehouse private area solutions

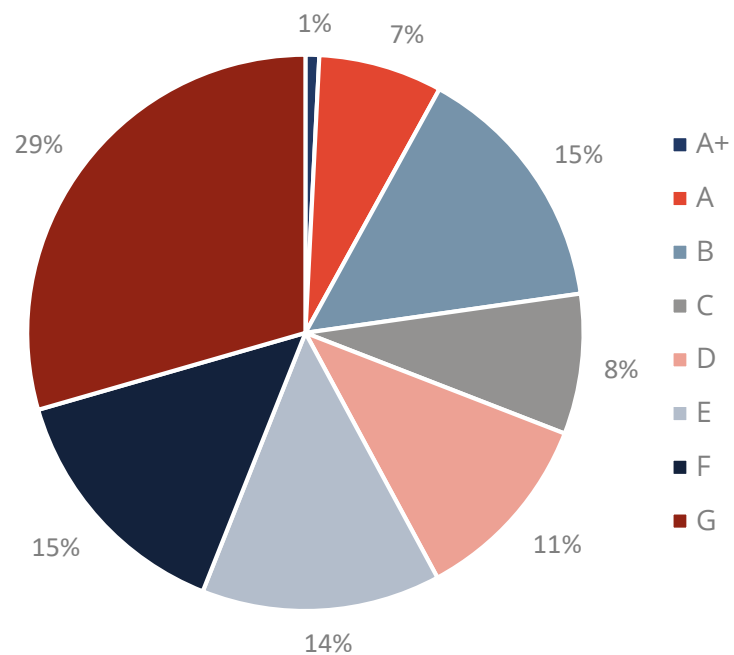
Source: Lombardia Region database with energy efficiency details available at www.cened.it

“GIUDITTA” WORKFLOW

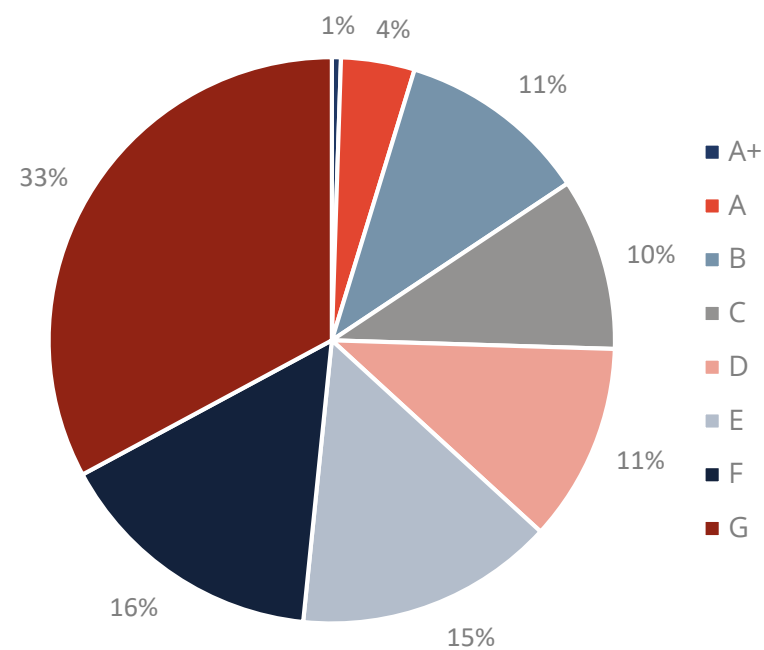


PRELIMINARY ENERGY EFFICIENCY RESULTS

Banco BPM



BPER Banca



Sources: Banco BPM, BPER, CENED, European DataWarehouse

COVERED BONDS

A total of 4 Covered Bonds have been uploaded to European DataWarehouse

BPER OBG1

Data Owner:
BPER Banca S.p.A.

ED Code:
CBOMIT000103100420115

Vintage:
2011

Country:
Italy

**Original Deal Size
(in millions):**
7000.0

BPER OBG2

Data Owner:
BPER Banca S.p.A.

ED Code:
CBOMIT000103100620151

Vintage:
2015

Country:
Italy

**Original Deal Size
(in millions):**
5000.0

UNICREDIT OBG S.R.L.

Data Owner:
UniCredit S.p.a.

ED Code:
CBOSIT000061101420129

Vintage:
2012

Country:
Italy

**Original Deal Size
(in millions):**
25000.0

UNICREDIT BPC MORTGAGE S.R.L.

Data Owner:
UniCredit S.p.a.

ED Code:
CBOSIT000061101520084

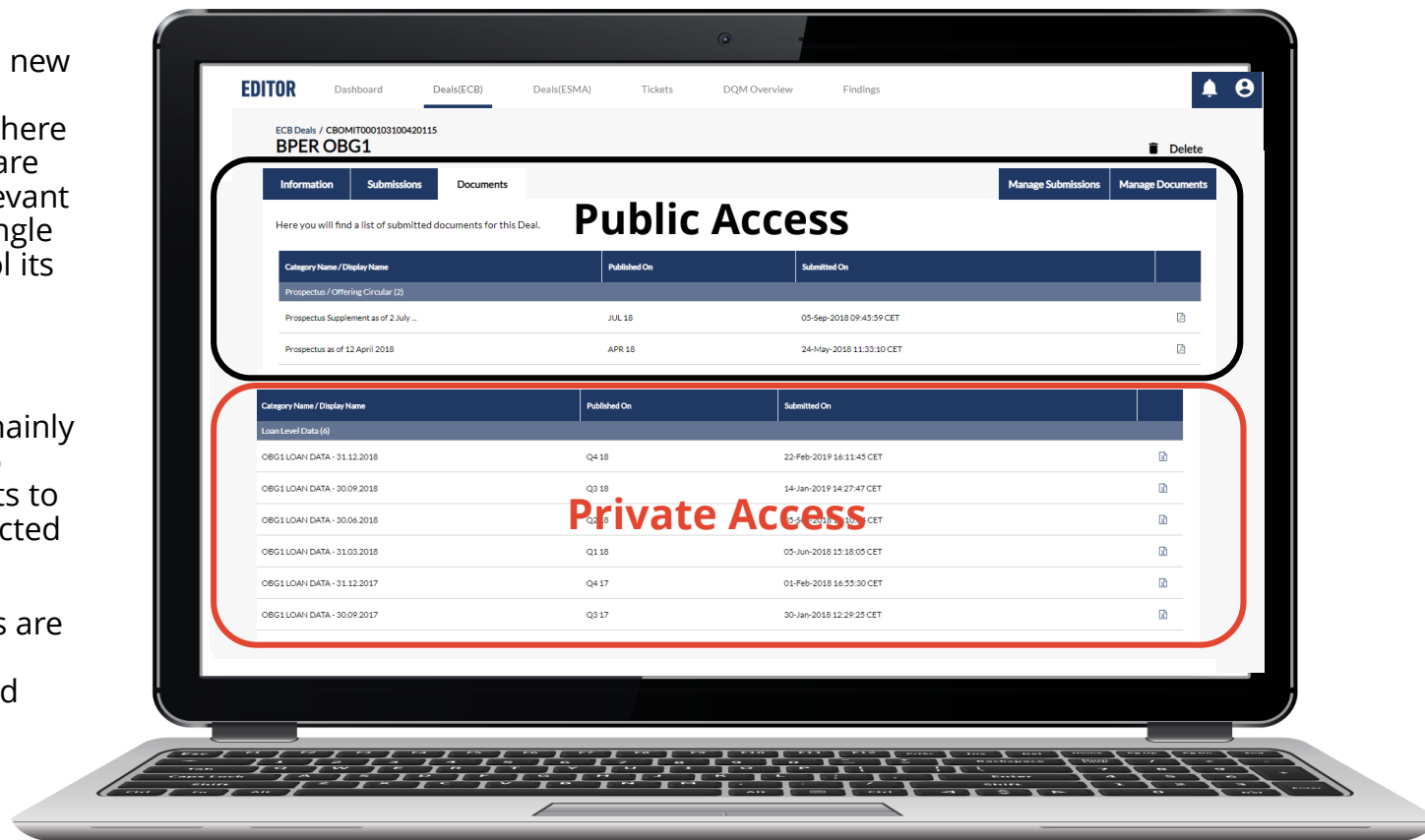
Vintage:
2008

Country:
Italy

**Original Deal Size
(in millions):**
35000.0

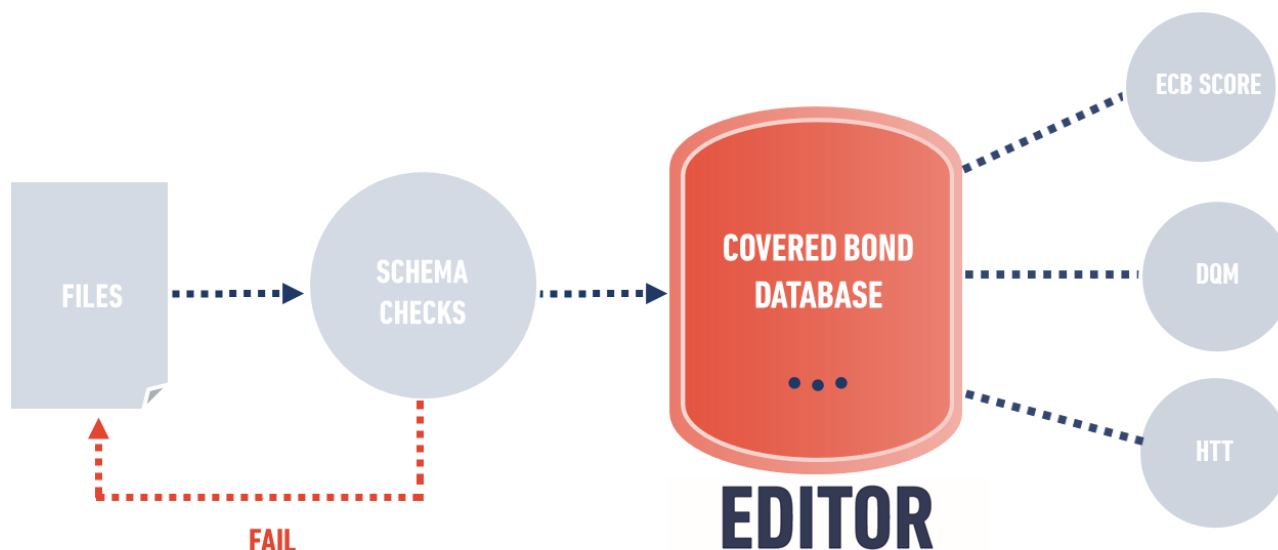
PRIVATE AREA SOLUTION FOR COVERED BOND PROGRAMS

- ED has implemented a new private area in our centralised platform where covered bond issuers are able to upload any relevant documentation to a single transaction and control its access by a simple private/public toggle button
- This solution is used mainly by issuers intending to disclose specific reports to rating agencies or selected relevant parties
- Currently some issuers are using the ECB RMBS Reporting template and taxonomy Version 28 launched in June 2013



CENTRALISED DATABASE

- EDitor enables storing all data from the covered bond pool in a centralised database
- The centralised database offers potentially further data processing, including remediation, reporting, score calculation or data aggregation
- Data remediation is carried out on request



THANK YOU//CONTACT US

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APPENDIX

DATA QUALITY SCORE UPDATE

EMAIL NOTIFICATION

EUROPEAN DATAWAREHOUSE

IMPORTANT UPDATE

Dear all,

As you may already be aware, European DataWarehouse (ED) has significantly improved the data quality of the files uploaded to our platform in the past several years. This evolution was possible because of valuable input from customers such as yourself, as well as our introduction of 'Data Quality Scores'. This progress has earned our team significant praise from Rating Agencies, National Central Banks, Competent Authorities, investors and other market participants.

After numerous customer conversations and in light of the new regulation with the corresponding ESMA templates, European DataWarehouse has decided to review its data quality process along with its extensive set of data quality checks. As a result, European DataWarehouse has:

- revised existing rules
- removed obsolete rules
- created new rule checks
- introduced a dynamic immateriality threshold
- considered if the related fields are likely to be relevant in the upcoming ESMA templates

Starting 1 August 2019, all deal analysis conducted by our team and consequent Data Quality Scores will be based on this updated and comprehensive rule set. ED has performed an extensive impact analysis with regards to score migration and potential new tickets. While we expect limited impact overall, please email enquiries@eurodw.eu with any questions, or join our [webinar on 22 August](#) for further explanation.

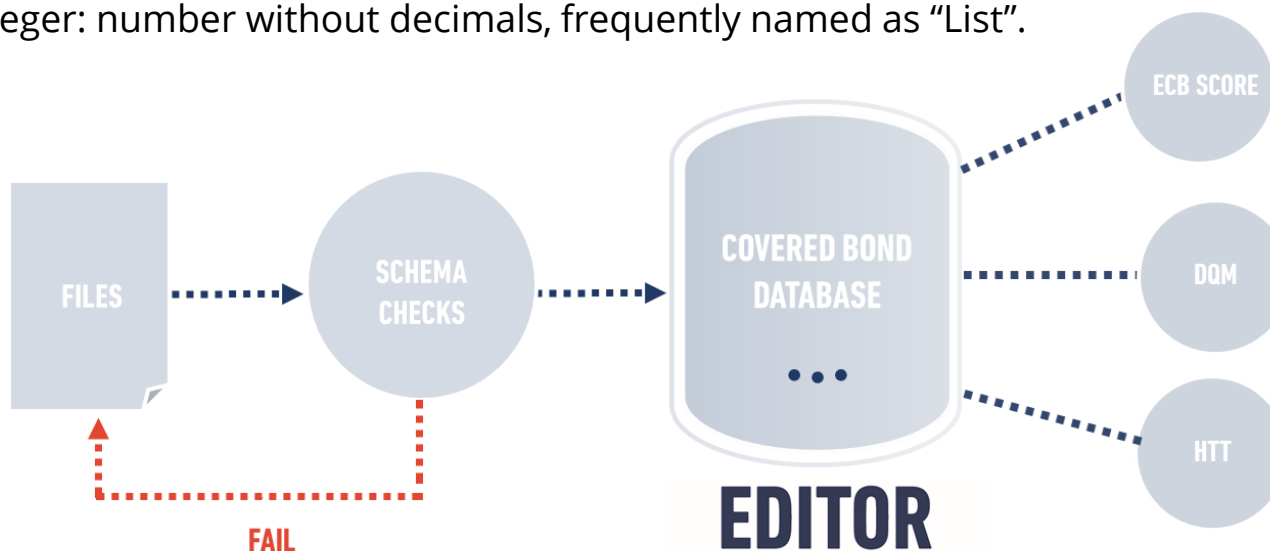
REGISTER NOW

WHY DID EUROPEAN DATAWAREHOUSE UPDATE THE RULESET?

1. To factor in industry feedback on different data quality (DQ) issues during the last five years
2. To factor in the impact expected by the introduction of the new ESMA templates
3. To focus on material DQ issues only, excluding those deemed inconsequential
4. To balance the treatment of DQ issues among all asset classes
5. To simplify descriptions of DQ issues for better understanding

SCHEMA CHECKS

- EDitor enables users to control accuracy of format in which the content of the file is submitted
- Files submitted to EDitor can be formatted in csv, xls(x) or XML.
- EDitor recognises the following formats:
 - String: free text
 - Date: formatting in YYYY-MM-DD
 - Numeric: number with decimals
 - Integer: number without decimals, frequently named as "List".



WHAT HAS EUROPEAN DATAWAREHOUSE CHANGED IN THE RULESET? (1/3)

1. We have decided to modify rules to reflect valuable feedback we have received regarding standard industry practices for reporting certain fields
 - i.e. Rule flagging Arrears Balance (AA65) equal to zero when the Account Status is in Arrears (AA65/CZ/A/01) now is classified as non-DQS1 as per the industry feedback: these cases arise when loans have fees in arrears and not their instalments.
2. We have focused on rules that maintain relevance in the upcoming ESMA templates, as well as in the ECB ones
 - i.e. we have limited the Inter-Submission rules scope, given that ESMA allows more flexibility and dynamic behavior of reported fields. Inter-Submission checks concerning Interest Rate Type, Valuation Date or Valuation Type have been removed (AR137/IS/A/01, AR107/IS/A/01...).

WHAT HAS EUROPEAN DATAWAREHOUSE CHANGED IN THE RULESET? (2/3)

3. We have introduced the immateriality concept regarding fields that:

- Are not performance-related and
- Fall below a certain failure threshold

ED identified performance-related fields across asset classes, i.e.:

Account Status, Arrears Balance, Default Amount and Cumulative Recoveries among others

Findings Breakdown	Percentage of findings	Comments
Total number of open and pending findings	100%	
Findings under 0.1 % (less than 1 out 1,000 loans impacted)	35%	
Performance-related fields and not DQS1	10%	ED keeps flagging
DQS1 and non- performance fields	10%	ED keeps flagging
DQS1 and performance-related fields	5%	ED keeps flagging
Total number of findings ED suggests to drop due to immateriality	10%	ED drops the finding

WHAT HAS EUROPEAN DATAWAREHOUSE CHANGED IN THE RULESET? (3/3)

4. We have streamlined the rules so that they flag the same DQ issues throughout all asset classes:
 - a. Parallel conditions: Same logic applied throughout the different templates
 - b. Same DQS1 treatment: Same rule is DQS1 or non-DQS1 for all asset classes
 - c. Same priority of flagging: Based on percentage of failures
5. We have updated the technical descriptions to be more user-friendly in order to allow issuers to have a better comprehension of the DQ problem.

i.e. Descriptions have gone from:

“AR143 | Current Valuation Amount | Count Zeros and AR179 = 0 or 'ND%' and AR67 > 0 and (AR122 is null or AR122 = ND%) for active loans”

to

“Current Valuation Amount (AR143) equal to zero when Sale Price Lower Limit (AR179) is not reported, Current Balance (AR67) is higher than zero and there is no Restructuring Arrangement (AR122 <> 'Y').”

GAP ANALYSIS

GAP ANALYSIS 3.0

A comprehensive comparison between the ESMA draft disclosure templates released in Aug 2018 and Jan 2019

European DataWarehouse GmbH (ED) has performed a comprehensive analysis of the draft European Securities and Markets Authority (ESMA) reporting templates published on 31 January 2019 as an Annex to the Opinion report on the Amendments to ESMA's draft technical standards on disclosure requirements under the Securitisation Regulation (EU) 2017/24021.

A field-by-field analysis can be found in the annexes of this document and are also available as separate Microsoft Excel files. Version 3.0 of the Gap Analysis, as of March 2019, has been performed with the information available on the ESMA website as of 1 February 2019.



ED GAP ANALYSIS V3.0 AND METHODOLOGY

Key points highlighted in the ED Gap Analysis v. 3.0 between the ECB ABS loan-level data templates and the proposed ESMA templates as of 31 January 2019

- Dropped fields
- New fields
- Changes to existing fields
 - **Changes in definition**
 - **No changes**
 - **Format changes**
 - **Changes in definition but same input**

FIELD TYPE	ECB RMB template	ESMA RMB UE template	ECB CORP template	ESMA CORP UE template	ECB AUT template	ESMA AUT UE template	ECB CMR template	ESMA CMR UE template	ECB LES template	ESMA LES UE template	ECB CRE template	ESMA CRE UE template
Mandatory	55	108	65	123	54	84	46	69	76	84	32	47
Optional	102	-	84	-	12	-	6	-	51	-	19	-
ECB mandatory fields that exist also in ESMA template	45	45	41	41	46	46	33	33	49	49	21	21
ECB optional fields that have changed to mandatory in ESMA template	20	20	21	21	6	6	3	3	7	7	3	3
Dropped fields	92	-	87	-	14	-	16	-	71	-	27	-
New fields	-	43	-	61	-	32	-	33	-	28	-	23
TOTAL	157	108	149	123	66	84	52	69	127	84	51	47

Source: ED Calculations

*The calculations exclude the bond section of the ECB ABS templates and the Amortisation Profile section of the ECB SME ABS template.

NO DATA OPTIONS

Current ECB “No Data” options:

“No data” options	Explanation
ND,1	Data not collected as not required by the underwriting criteria
ND,2	Data collected at application but not loaded in the reporting system at completion
ND,3	Data collected at application but loaded in a separate system from the reporting one
ND,4	Data collected but will only be available from YYYY-MM
ND,5	Not relevant at the present time
ND,6	Not applicable for the jurisdiction
ND,7	Only for CMBS loans with a value less than EUR 500 000, i.e. the value of the whole commercial loan balance at origination

Source: ECB website

<https://www.ecb.europa.eu/paym/coll/loanlevel/implementation/html/index.en.html>

New ESMA proposed “No Data” options:

No Data Option	Explanation
ND1	Data not collected as not required by the lending or underwriting criteria
ND2	Data collected on underlying exposure application but not loaded into the originator’s reporting system
ND3	Data collected on underlying exposure application but loaded onto a separate system from the originator’s reporting system
ND4-YYYY-MM-DD	Data collected but will only be available from YYYY-MM-DD (YYYY-MMDD shall be completed)
ND5	Not applicable

Source: ESMA

https://www.esma.europa.eu/sites/default/files/library/esma33-128-600_securitisation_disclosure_technical_standards-esma_opinion.pdf

SUMMARY OF CHANGES TO 'NO DATA' ALLOWANCE BY TEMPLATE

TEMPLATE CATEGORY	Total No. of fields	# fields allowing ND1-4			# fields allowing ND5			Fields where no ND options allowed
		Previous RTS	Amended RTS	Change	Previous RTS	Amended RTS	Change	
ANNEX 2: Residential Real Estate Underlying Exposures	97	38	59	21	56	71	15	8
ANNEX 3: Commercial Real Estate Underlying Exposures	227	65	75	10	158	174	16	17
ANNEX 4: Corporate Underlying Exposures	111	33	53	20	70	83	13	12
ANNEX 5: Automobile Underlying Exposures	78	32	41	9	44	55	11	7
ANNEX 6: Consumer Underlying Exposures	63	20	30	10	35	43	8	7
ANNEX 7: Credit Card Underlying Exposures	41	13	18	5	19	24	5	7
ANNEX 8: Leasing Underlying Exposures	78	32	42	10	45	55	10	8
ANNEX 9: Esoteric Underlying Exposures	76	28	61	33	55	68	13	7
ANNEX 10: Non-Performing Underlying Exposures (add-on)	63	62	62	0	63	63	0	0
ANNEX 11: ABCP Underlying Exposures	44	9	39	30	4	38	34	6
ANNEX 12: Non-ABCP Investor Report	52	0	2	2	13	20	7	32
ANNEX 13: ABCP Investor Report	16	0	3	3	3	9	6	7
ANNEX 14: Non-ABCP Inside Information or significant event information	185	N/A	N/A	N/A	102	106	4	80
ANNEX 15: ABCP Inside Information or significant event information	86	N/A	N/A	N/A	57	62	5	25
Total	1217	332	485	153	724	871	147	223

https://www.esma.europa.eu/sites/default/files/library/esma33-128-600_securitisation_disclosure_technical_standards-esma_opinion.pdf

SUMMARY OF KEY TECHNICAL ADJUSTMENTS BETWEEN THE TEMPLATES

	ECB 2013/2014	ESMA August 2018
ND Options	ND,1-ND,7	ND1-ND5
File format	XML	XML similar ISO 20022
Field Format	Numeric fields of varying lengths	Consistent (standardised monetary and percentage)
Loan Identifiers	Single field (original, new)	Separate fields for original and new IDs
Static/Dynamic Distinction	Yes	No
Data Sections	Loan, Collateral, Bond	Loan, Collateral, Investor Report, Inside Information, Significant Events, Non-Performing Exposures

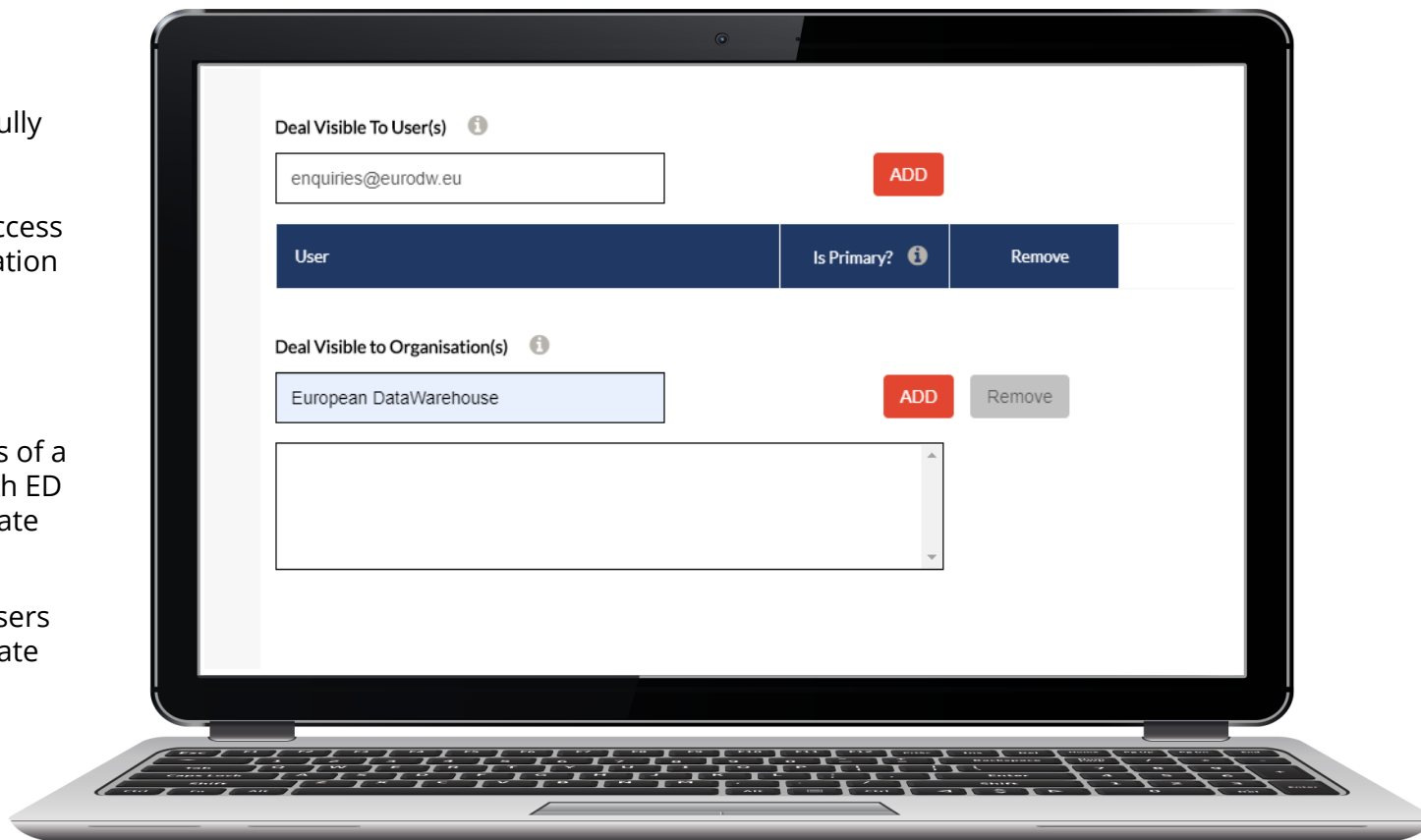
ACCESS RIGHTS FOR THIRD PARTIES

Data User Access

Access to the private area is fully managed by the originator, sponsor or SSPE who is responsible for authorising access to third parties. The authorisation can be modified regularly

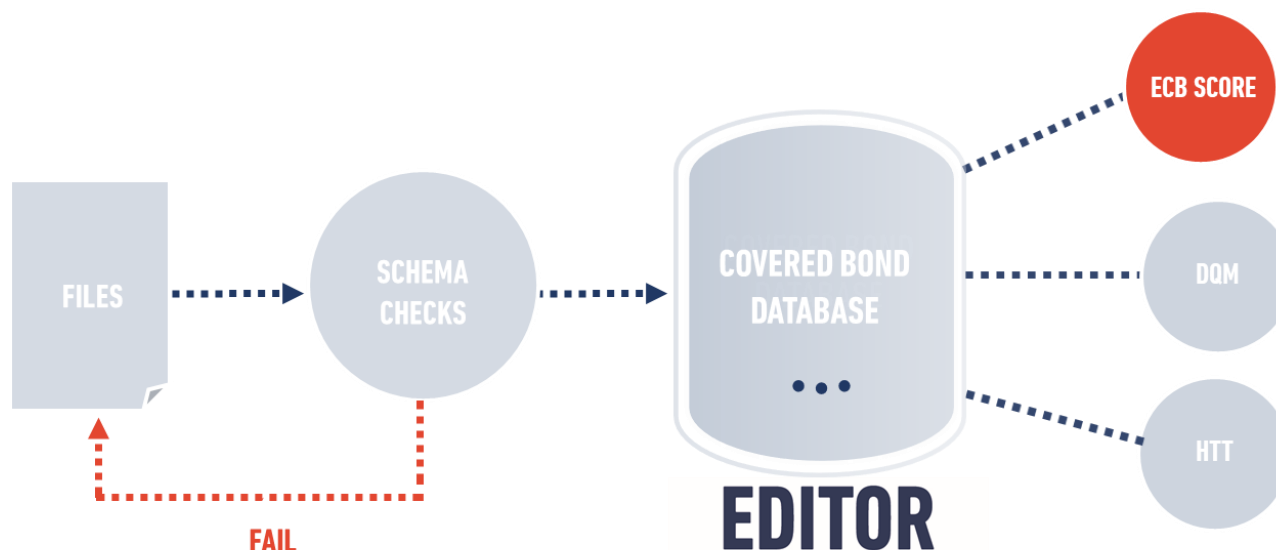
Access can be managed at different levels:

- Organisation level: all users of a registered organisation with ED will have access to the private deal and/or documents
- User level: only selected users will have access to the private deal and/or documents



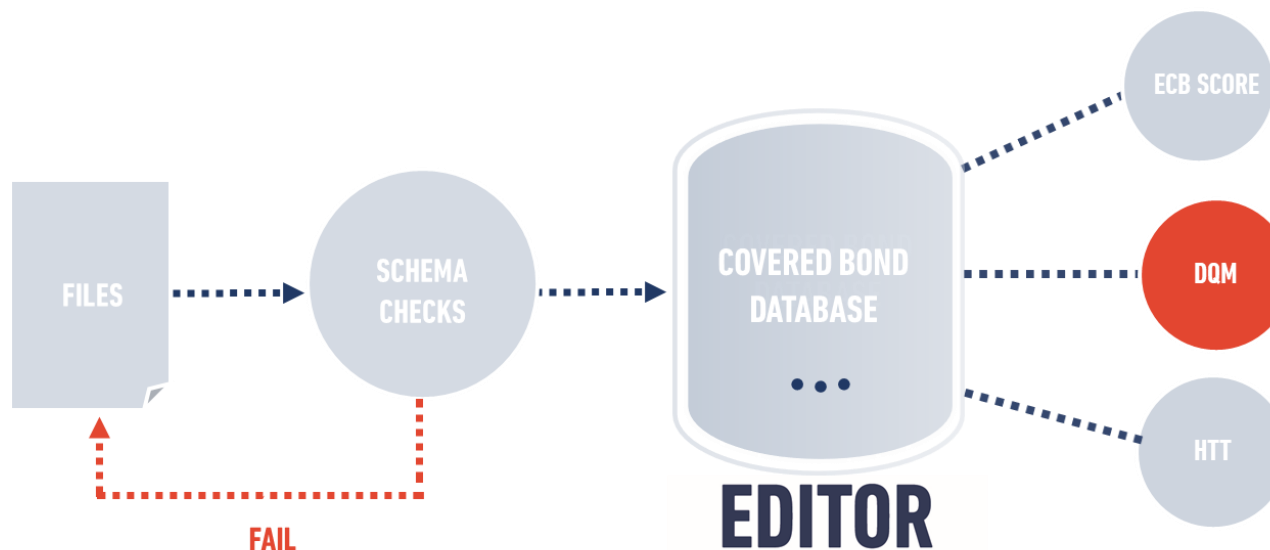
ECB COMPLETENESS SCORE

- Editor computes the ECB Completeness Score based on the availability of information in the ECB RMBS reporting template
- The ECB score reflects the amount of No Data (ND) for mandatory fields:
 - (i) reported as “ND,1” relative to the total number of mandatory fields and
 - (ii) reported as “ND,2”, “ND,3” or “ND,4” relative to the total number of mandatory fields.



DATA QUALITY MANAGEMENT (DQM)

- EDitor offers extension of data quality rules, currently available for ABS & private portfolios only.
- EDitor enables implementation of customised rules on data provider's request
- Rules that failed are displayed on a separate tab within EDITOR's front-end. Each rule displayed provides number or loans failed, percentage ratio of all loans, rule description and other more specific details on its result.
- Each failed rule listed allows a drill down: a quick display of full data for the loans with potential errors
- The rule results can be exported in an Excel spreadsheet



DATA REPORTING OPTIONS

- EDITOR's platform offers reporting of customised statistics, aggregations or compilation of other templates based on submitted data
 - EDITOR has a built-in function to generate overall data reporting
 - EDITOR enables implementation of add-ons including:
 - User defined aggregation templates
 - Generation of customised statistics
 - Generation of other templates such as the ECBC Harmonised Transparency Template (HTT)

