



DIRECTORATE GENERAL STATISTICS

16 November 2020

Reporting instructions for the electronic transmission of
Short-Term European Paper (STEP) statistics

Version 2.1

OBJECTIVE

This document provides guidance for the reporting scheme which will be applied to the transmission of daily STEP data. These reporting instructions focus on the price and volume-related STEP data, which are necessary to produce aggregated price and volume statistics and individual issuer volume statistics.

All STEP labelled programmes and securities shall be contained in the STEP statistics. The statistics encompass all securities issued with a valid ISIN code for programmes that have received the STEP label from the STEP Secretariat. The programme issuer(s) shall have agreed to the transmission of all data relevant for statistical purposes to the ECB by dealers, agents and other intermediary entities on the issuer's behalf.

ORGANISATION AND NATURE OF THE DATA PROVISION

The data providers are eligible securities settlement systems, national central banks or other institutional entities. The involved entities will be deemed eligible as regards statistical data provisioning when they are able to fully comply with the present reporting instructions and provide the issuers which issue STEP securities via their systems, the technical means for provisioning STEP related data as per these reporting instructions. The ECB will assess the data providers on the basis of their capacity to fulfil these reporting instructions and include new data providers subject to the approval of the STEP Market Committee.

Each data provider covers all STEP issues which are settled in its system or are deposited in a domestic securities settlement system for which the data provider has complete data coverage.¹ The depository location of the securities is reflected in the security ISIN code.

Should multiple settlement systems be deemed eligible to report issues for a given market, each settlement system acting as a data provider transmits those issues which it has settled in its system. In the case of securities settled in multiple systems (such as on the Euro Commercial Paper market), each SSS shall report the settlements of primary market transactions in their respective system. They shall also report the outstanding amounts deposited with them (in the case of bridge transactions).²

¹ It is expected that STEP programmes are included in the daily data set as of the day when the STEP label was granted. In exceptional cases, for example when the label is granted only late in the afternoon, the data will be included as of the following business day.

² Because of bridge transactions between SSSs or secondary market transactions, the outstanding amounts of a security held in a given SSS might deviate from the total amount issued in that SSS.

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Only STEP issue-related volumes and price data shall be transmitted to the ECB. STEP data shall be reported on a daily basis using the Extended Markup Language (XML) and a predetermined reporting scheme, which will be made available to the data providers by the ECB. The reporting of STEP data based on the XML reporting scheme ensures data consistency. The reporting framework can also be easily developed via the rollout of future versions of the reporting scheme.

The ECB will maintain and distribute the relevant code lists, data dictionary and reporting scheme to be used for reporting purposes to the data providers. The data provider will report all available records for existing settlements. In case mandatory variables are not available, the data provider shall outline the causes for which these variables have not been reported.

The XML reporting scheme specifies all data fields as required whereas data content remains optional. Thus, if a variable for a record is not available or not applicable, the variable shall be populated with a “Not Specified” or “Not Applicable” value where relevant within transmitted XML data files, in accordance with the XML reporting scheme and code lists. Estimations may be utilised for reported variables when they can accurately serve as proxy estimations of the actual value as further defined per variable in Table 1.

TYPE OF STATISTICAL DATA TO BE PROVIDED

The STEP data consists of primary issuance market volumes, primary market price data broken down per ISIN and data concerning the issuer and the STEP programme. The volumes data shall consist of transactions and outstanding amounts. The individual transactions shall be expressed in nominal amounts, denominated in the currency in which the security is originally denominated – irrespective of the currency in which the transaction is actually settled. The outstanding amount for each ISIN shall likewise be reported and expressed in the same original currency denomination of the issue, irrespective of the currency in which the settlement is actually carried out.³

Each individual settlement (transaction) and the related price information shall be reported in those instances when such settlements have taken place in the data provider’s settlement system. Transactions on the secondary market or bridge transactions between settlement systems shall not be transmitted to the ECB to exclude the inclusion of non-primary market transactions or double-counting. The aforementioned transactions will not be part of the published STEP statistics.

³ In case of multiple currency programmes, i.e. programmes under which securities with different currencies of denomination may be issued, each transaction and the outstanding amount for each security is to be reported using the currency in which the security is originally denominated. The accounting currency and settlement currency variables which are used within the reporting scheme should both refer to the original currency of denomination for a given ISIN.

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The primary market issue price is expressed as a percentage of the nominal principal amount and the percentage primary market issue yield based on the primary market issue price received by the issuer. The data provider shall transmit the percentage primary market issue yield if both the price and the yield are available in the proprietary system but only values for one variable would be transmitted to the ECB. The price would be reported with “NaN” values in such cases.

The XML reporting scheme classifies STEP data into objects as per the following classes:

- a. Issuer: includes the name of the issuer and the issuer sector.
- b. Issue Programme: includes information concerning the programme ID, the programme issuer(s).
- c. Program Status: includes information concerning the programme credit rating and the date as of which it was available.
- d. Issuer Mapping records: hold the universal Issuer ID used by the STEP Secretariat and the locally used Issuer IDs used by the dynamic data providers. The Issuer Mapping records should only be transmitted by the static data provider.
- e. Program Mapping records: hold the universal STEP ID used by the STEP MC and the locally used STEP IDs used by the dynamic data providers. The Program Mapping records should only be transmitted by the static data provider.
- f. Instrument (security) records: includes information regarding the instrument interest rate type, final maturity date, the benchmark reference rate and maturity. Linked to each instrument are the records for individual transactions and outstanding amounts.
- g. Settlement Transaction records: hold the transaction amount, the price and/or yield information, the trade date, the settlement date and final maturity date; the settlement currency and the flow type.
- h. Instrument Status (Outstanding amount) records: hold the aggregated outstanding amount per ISIN and the accounting currency per accounting date.

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The XML reporting scheme requires the following to be reported as header items:

1. a code identifying the data provider;
2. a datetime stamp to indicate when the data was extracted from the data provider's data base.

All data shall be transmitted within two files.

The first file will contain:

- i. the transaction records related to the new issuance volumes, regular redemptions and early redemptions which have taken place on the reference day;

The second file shall contain:

- ii. the outstanding amount records, including the latest outstanding amounts per instrument ISIN, as at the close of the latest accounting day.

A confirmation that no transactions have not been reported during the latest reporting day and/or that no outstanding amounts are currently outstanding may be transmitted by the data provider to the ECB_STEP1@ecb.int email address.

Another separate file shall contain deletions of previously sent data for the purposes of managing revisions. The deletion file shall have the same header as the regular XML reporting scheme, specifying, however, that the records listed will be deleted. The deletion records apply to previously reported transactions, outstanding amounts, programmes or issuers.

REPORTING FREQUENCY, TIMELINESS AND TIME RANGE

The reporting frequency of STEP data to the ECB is daily and shall be transmitted by the STEP data provider to the ECB by 9.30 a.m. on the first business day after the reference date. The reference date always refers to the settlement date for transactions and the accounting date to the outstanding amounts.

The reference times for the volumes and price statistics are as follows:

- All new issues, early and regular redemptions per ISIN which were undertaken during the reference date. Regular redemptions shall be transmitted to the extent available to the data provider. All individual primary market transactions per settlement leg shall be included in the reported transactions in order to ensure the reporting of all different primary market prices.

- The outstanding amounts per ISIN as per the end of the accounting (i.e. reference) date for (all) securities which have not expired. Securities which have been fully redeemed as originally scheduled or which have expired during the same reference day shall not be reported. The reported outstanding amounts shall be transmitted on a daily basis also for days where the outstanding amounts volumes have not changed.

No historical transactions or outstanding amounts prior to the reference date shall be reported, except for revisions of previously transmitted records or in the case of the late reporting of records which may have reached the data provider after the reference date for periods up to 90 days prior to the reference date.

The ECB reserves the right not to process revisions which apply for data points that have occurred more than 90 calendar days prior to the date of receiving the latest transmissions.

THE VARIABLES

29 statistical variables have been specified for uniquely identifying each record for the STEP statistics. The statistical variables are open ended or closed ended. Variables which are open ended include variables such as issuer names, issue volumes, prices and settlement and redemption dates. Variables which are closed ended can only take a specific value from a corresponding previously specified code list (CL). Similarly, only ISO compliant values can be specified when an ISO standard has been indicated for a variable.

The variables listed aim at minimising system development costs for the private data providers where transaction volumes and outstanding amount volumes are reported, using separate fields.

Each variable has a number of attributes, e.g. descriptions of the variable values, the format and possible reporting method for the sake of ensuring consistency among the data providers. Each variable has furthermore been specified as regards whether it will (or might) be published, will not be published or will be published in an aggregated form. By way of example, the programme ID is a proprietary code for some of the data providers and will therefore not be published.⁴

To ensure that the data provider has complete coverage in their data transmission and avoid erroneously omitted variables, the ECB will automatically check the completeness of the variables included in each file. In case variables are not reported, a completeness check will flag omitted variables and the file will not be loaded.

⁴ This does not rule out that the programme ID as used by the STEP Secretariat might be published.

Notes:

AN = Alphanumeric; [AN..10] means “up to 10 characters”; [AN10] means “exactly 10 characters”.

All numerical values shall be reported with absolute (i.e. non-negative) values except for V13 Issue Yield Annual Pct and V17 Floating Rate Spread Annual Pct. “NaN” represents “not applicable” or “not available” values for numerical fields.

Codes are case sensitive.

Table 1 STEP Variables to be reported by eligible data providers

	Dynamic variables	Description	Format/Comments
V1	DATA PROVIDER	This variable contains the identifying code of the data provider.	<p>[CODE]</p> <p>[AN..7]</p> <p>CL_DATA_PROVIDER</p> <p>This variable will be reported as a header item within the XML reporting scheme and is not repeated with each settlement or outstanding amount.</p> <p>A code will be allocated to each eligible data provider and this variable code list will therefore be expanded.</p> <p>This variable will not be published.</p>
V2	EXTRACTION DATETIME	This variable represents the date and time when the data transmitted were extracted from the database.	<p>[ISO]</p> <p>[AN..25]</p> <p>The extraction time stamp is used for quality assessment and management of revisions. It is primarily used for identifying the more recent data transmissions.</p> <p>This variable will not be published.</p>

<p>V3</p>	<p>SETTLEMENT ID</p>	<p>Unique reference number or code referring uniquely to each settlement transaction that has been transmitted.</p>	<p>STRING</p> <p>[AN..20]</p> <p>The settlement ID is a unique record identifier. It is generated by the data provider for each settlement ever reported. It may be a number or other proprietary code, as long as it is unique. The settlement ID can, for example, be produced by the data provider by automatically counting all records upwards, within each transmission, in an “unintelligent” manner and prefixing them with the transmission date to distinguish between settlements from different days. Alternatively, a unique internal reference number may be transmitted.</p> <p>Blank spaces within the settlement id shall be avoided by the data provider.</p> <p>This variable will not be published.</p>
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V4	ISIN	International securities identification number developed by ISO.	<p>[ISO 6166]</p> <p>STRING [AN12]</p> <p>This variable represents the security ISIN code allocated upon issue. The ISIN codes consist of 12 alphanumeric characters as per the ISO 6166 standard. The ISIN code includes a country prefix of two characters. The prefix “XS” represents international issues which are settled by the international clearing and settlement systems. The valid country codes are defined as per ISO 3166.</p> <p>A security may only possess one ISIN code. However, at national level, ISIN codes may be reused, reused only after some time or never reused. A unique identification of a security will consist of at least the ISSUER ID and the ISIN CODE.</p> <p>Blank spaces within the ISIN shall be avoided by the data provider.</p> <p>This variable will be published.</p>
V5	ISSUER NAME	Name of the issuer.	<p>STRING [AN ..100]</p> <p>This variable contains the issuer name as recorded by the data provider. Where available and possible, the name shall reflect the name used for official registration and include the legal form.</p> <p>This variable will be published.</p>

<p>V6</p>	<p>ISSUER ID</p>	<p>Number or code for identifying programme issuer. It must be unique for each data provider.</p>	<p>STRING [AN..14]</p> <p>CONSTRAINT: the ISSUER ID shall not contain any white space characters.</p> <p>This variable represents the issuer ID, which may be a proprietary code, and which is available separately in the system used by the data provider.</p> <p>The issuer ID can be the same as the programme ID (the STEP ID) for markets on which no multiple issuer programmes exist and where the issuers always have only one programme. The Issuer ID shall also in those cases be sent in this variable.</p> <p>If the data provider maintains separate issuer identifiers which differ from the programme ID, the separate issuer identifier is transmitted in this variable.</p> <p>This variable will not be published.</p> <p>Blank spaces within the ISSUER ID shall be avoided by the data provider.</p> <p>The variable ISSUER_ID may be referred to multiple times for multiple issuer programmes within the field ISSUER_ID_REF. The multiple</p> <p>ISSUER IDs shall be separated with blank spaces in such cases within the ISSUER_ID_REF field.</p>
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<p>V7</p>	<p>STEP ID</p>	<p>Number or code for identifying the STEP programme.</p>	<p>STRING [AN ..14]</p> <p>This code shall preferably reflect the ID number granted by the STEP Secretariat. This code may, however, reflect the proprietary code for programmes which already exist within the systems used by the data provider if agreed with the ECB.</p> <p>This variable (in particular proprietary programme codes) will not be published.</p> <p>Blank spaces within the STEP ID shall be avoided by the data provider.</p> <p>The variable STEP_ID may be referred to multiple times for the Program Mapping object (ref Table 2) reported by the static data provider.</p> <p>The multiple STEP IDs shall in such a case be separated with blank spaces within the STEP_ID_REF field. This is only relevant and applicable for the static data provider.</p>
<p>V8</p>	<p>SETTLEMENT CURRENCY</p>	<p>ISO code of the original currency in which the issue is denominated.</p> <p>This currency shall be used in conjunction with the NOMINAL AMOUNT (V9) of any transaction (new issue or redemption).</p>	<p>[ISO 4217]</p> <p>STRING [AN3]</p> <p>This variable represents the currency in which the reported nominal amount of the transaction is expressed.</p> <p>The settlement currency shall be equal to the accounting currency for a given ISIN.</p> <p>This variable will be published.</p>

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V9	NOMINAL AMOUNT	Nominal amount of the new issue or redemption expressed in the original currency in which the issue is denominated.	<p>[IEEE] NUMBER [9 DECIMALS]</p> <p>CONSTRAINT: This variable value is non-negative.</p> <p>This variable represents the nominal amount of the transaction at ISIN code level which has been settled during the reference date.</p> <p>This variable will be published.</p>
V10	TRADE DATE	Date on which the trade takes place and the conditions (e.g. the value date and the price) are agreed.	<p>[ISO] DATE [AN10]</p> <p>This variable represents the date on which the pricing of the actual issue is determined. If this date is not available to the data provider, it may be estimated. Acceptable methods include a) the ISIN creation date or b) the date on which the transaction information was received by the data provider.</p> <p>This variable will be published.</p>
V11	SETTLEMENT DATE	Actual date of payment.	<p>[ISO] DATE [AN10]</p> <p>CONSTRAINT: Equal to or later than the TRADE DATE.</p> <p>This variable represents the date on which the settlement transaction has been executed.</p> <p>This variable will be published.</p>

<p>V12</p>	<p>ISSUE PRICE PCT</p>	<p>Price at issue on the primary market.</p>	<p>[IEEE] NUMBER [9 DECIMALS]</p> <p>CONSTRAINT: This variable value is non-negative.</p> <p>The issue price represents the market price at primary issue. The issue price is expressed as a percentage value based on the nominal amount and excludes any fees that may have been paid by the investor in addition to the issue amount.</p> <p>An issue price of for example 99% shall be transmitted as “99”within this field.</p> <p>The market price as reported by the dealer or issuer reflects the price received by the issuer (meant to exclude any fees or other additional costs that may have been paid by the investors).</p> <p>The issue price is not reported for early or regular redemptions.</p> <p>Only actual values (as opposed to estimated or default values) shall be reported for this variable.</p> <p>The data provider shall transmit the issue yield if only one variable – either the ISSUE PRICE PCT or the ISSUE YIELD ANNUAL PCT – can be transmitted.</p> <p>This variable will be published in aggregated form.</p>
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V13	ISSUE YIELD ANNUAL PCT	<p>Annualised percentage yield calculated based on the price paid to the issuer.</p> <p>The calculation shall be based on the formulae specified below and actual/360 day count conventions.</p>	<p>[IEEE] NUMBER [9 DECIMALS]</p> <p>This variable represents the annualised primary market issue yield date at the date of the new issue. This yield is specific for the date of issue and shall not be reported for any secondary transactions.</p> <p>This value will be computed and transmitted by the IPA/dealer to the SSS/NCB acting as a data provider to the ECB, based on the STEP Market Convention.</p> <p>An issue yield of for example 3% shall be transmitted as “3” within this field. Only actual values (as opposed to estimated or default values) shall be reported for this variable.</p> <p>The data provider shall transmit the issue yield if only one variable of either the ISSUE PRICE PCT or the ISSUE YIELD ANNUAL PCT can be transmitted.</p> <p>This variable will be published in aggregated form.</p>
V14	MATURITY DATE	Originally agreed final maturity date.	<p>[ISO] DATE [AN10]</p> <p>CONSTRAINT: This variable value is equal to or later than the TRADE DATE and SETTLEMENT DATE.</p> <p>The final maturity date represents the originally agreed final maturity date at the time of the new issue.</p> <p>This variable will be published in aggregated form.</p>
V15	FLOW TYPE	This variable flags whether the data transmitted represent a new issue, a regular redemption or an early redemption.	<p>[CL_FLOW _TYPE] CODE [AN1]</p> <p>This variable will be published.</p>

<p>V16</p>	<p>INTEREST RATE TYPE</p>	<p>(1) Discount including zero coupon instruments.</p> <p>(2) Fixed coupon.</p> <p>(3) Variable (priced via spread against benchmark index).</p> <p>(4) Unspecified.</p>	<p>[CL_INTEREST_TYPE]</p> <p>CODE [AN1]</p> <p>This variable represents the coupon payment type of the security.</p> <p>Discount instruments cover instruments which do not pay coupons. This category includes securities for which the accrued interest value is included in the principal redeemed on the final maturity date.</p> <p>Fixed coupon instruments cover instruments which pay one or more coupons during the life of the security, the values of which are known at issuance. Stepped-up coupons shall also be reported within this category.</p> <p>Variable rate instruments cover instruments which pay one or more coupons linked to a benchmark index or a reference rate, where future index rates are not known at the time of issuance.</p> <p>If no information regarding the coupon payment profile is available, this field is reported as being unspecified.</p> <p>This variable will be published.</p>
<p>V17</p>	<p>FLOATING RATE SPREAD ANNUAL PCT</p>	<p>For variable interest notes, this variable holds the spread against a benchmark index or reference rate.</p>	<p>[IEEE]</p> <p>NUMBER [9 DECIMALS]</p> <p>This variable represents the margin expressed as a percentage above or below the floating base rate to be paid by the STEP issuer. This value may be negative.</p> <p>A floating rate spread of, for example, 10 basis points shall be transmitted as “0.10” within this field.</p> <p>This variable will be published in aggregated form.</p>

V18	FLOATING RATE BASE MATURITY	This variable represents the maturity band of the benchmark rate or index which is used for coupon payments for floating rate instruments.	<p>[CL_BASE_MATURITY]</p> <p>CODE [AN..4]</p> <p>If the benchmark rate maturity is unknown or the indicated maturity band categories do not match the actual benchmark rate, this variable is reported as unspecified.</p> <p>This variable will be published in aggregated form.</p>
V19	FLOATING RATE BASE	Benchmark index or reference rate against which the floating rate is priced.	<p>[CL_BASE_RATE]</p> <p>CODE [AN..5]</p> <p>This variable represents the reference index or benchmark interest rate relative to which the variable interest rate is paid. The coupon base indicates the benchmark type of rate only.</p> <p>This variable will be published in aggregated form.</p>
V20	PROGRAM CREDIT RATING	The programme credit rating level.	<p>[CL_CREDIT_RATING]</p> <p>CODE [AN1]</p> <p>This variable represents the short-term credit rating level of the STEP programme. In the event that multiple STEP programme credit ratings from different sources exist, the lowest credit rating is communicated.</p> <p>Issuers are required via the STEP Market Convention to provide information on rating changes for further communication to the ECB.</p> <p>Long-term programme credit ratings or issuer credit ratings are not covered by this variable.</p> <p>This variable will be published. If for contractual reasons data providers are not in a position to share this information, a “No rating available” value shall be reported in line with the code list for Program Credit Ratings.</p>

<p>V21</p>	<p>ISSUER SECTOR</p>	<p>This variable represents the STEP issuer sector.</p>	<p>[CL_ISSUER_SECTOR]</p> <p>CODE [AN4]</p> <p>The STEP issuer sectors have been defined according to the European System of Accounts 1995 and correspond to the issuer sectors outlined in the ACI STEP Report in conjunction with V25 (COLLATERAL TYPE).</p> <p>For each data provider the ECB will provide a sector mapping key upon request for their existing sector classifications, which will indicate the code to be employed for each existing internal sector classification.</p> <p>This variable will be published.</p>
<p>V22</p>	<p>OUTSTANDING AMOUNT</p>	<p>The aggregated outstanding amount per security, i.e. at ISIN level, net of any reclassifications, revisions or other changes that may have occurred in addition to reported transactions.</p>	<p>[IEEE]</p> <p>NUMBER [9 DECIMALS]</p> <p>The outstanding amount variable represents the aggregated outstanding amount per security (i.e. ISIN).</p> <p>Experience with other datasets has shown that it is useful to directly obtain the outstanding amounts in addition to transactions data for validation purposes. The outstanding amounts may be estimated by the data provider based on the transmissions of new issues, early redemptions and redemptions.</p> <p>The outstanding amounts under a specific ISIN code shall equal the accumulated new issues under this ISIN code less regular and early redemptions.</p> <p>No outstanding amounts shall be transmitted for securities which have expired.</p> <p>Should a security be redeemed early and in full, the outstanding amount shall be treated as 0 for an ISIN. The ISIN code may still exist within a settlement system until the originally agreed final maturity date.</p> <p>In such instances, the data provider may continue to report the outstanding amount of the security as 0 until the final maturity date.</p> <p>This variable will be published.</p>

<p>V23</p>	<p>ACCOUNTING CURRENCY</p>	<p>ISO code of the currency for the outstanding amount.</p> <p>This variable takes its value from the ISO 4217 code list and represents the currency in which the security is originally denominated and in which the outstanding amount shall be reported. The ECB converts the reported currency into euro based on the ECB reference rates as per the end of the reference day.</p>	<p>[ISO 4217]</p> <p>STRING [AN3]</p> <p>This variable will be published.</p> <p>The accounting currency shall be equal to the settlement currency for a given ISIN.</p>
<p>V24</p>	<p>ACCOUNTING DATE</p>	<p>This variable represents the date at the end of which the reported outstanding amounts are calculated. The outstanding amounts are reported by ISIN.</p>	<p>[ISO]</p> <p>DATE [AN10]</p> <p>This variable will be published.</p> <p>The reported accounting date shall not be a weekend date.</p>
<p>V25</p>	<p>COLLATERAL TYPE</p>	<p>This variable represents the type of security underlying the programme for the purposes of identifying asset-backed commercial paper programmes.</p>	<p>[CL_COLLATERAL_TYPE]</p> <p>STRING [AN1]</p> <p>If the provider of dynamic data knows that a programme is asset-backed and issued by an other financial intermediary (OFI), this variable shall be reported with an A (please refer to code list).</p> <p>This variable is not intended to be used to collect detailed information about the specific type of securitised collateral from the providers of dynamic data.</p> <p>If this variable is not available to the data provider, an “X” value shall be transmitted</p> <p>This variable will be published.</p>

V26	PROGRAM CEILING	This variable represents the maximum outstanding amount in the STEP program which has been indicated in the STEP information memorandum.	[IEEE] NUMBER [9 DECIMALS] This variable represents the maximum aggregated outstanding amount per STEP programme as outlined in the STEP information memorandum. If the Program Ceiling is not available to the data provider, “NaN” values shall be transmitted. This variable will be published.
V27	PROGRAM CEILING CURRENCY	ISO code of the currency for the programme ceiling.	[ISO 4217] STRING [AN3] This variable represents the currency in which the reported programme ceiling is expressed. This variable will be published. If this data is not available, the data provider shall indicate as a dummy data value “XXX”.
V28	PROGRAM NAME	Name of the programme	STRING [AN ..100] This variable contains the STEP programme name as recorded by the data provider. Where available and possible, the name shall reflect the name used for official registration or in the STEP information memorandum and include the legal form. If this data is not available to the data provider, “Unknown” data values shall be transmitted. This variable will be published.
V29	PROGRAM CREDIT RATING ASSESSMENT DATE	This variable represents the latest date as of which the latest available programme credit rating was issued, changed or updated.	[ISO] DATE [AN10] This variable will be published. If this data is not available, the data provider shall indicate as a dummy data value “9999-12-31”.

ECB-PUBLIC

The ECB will calculate zero coupon yields based on the transmitted price and time to maturity for zero coupon issues where yields are not transmitted.⁵

The zero coupon yield equals the **annualised yield**:

$$\text{IssueYieldAnnualPCT}(V13) = \frac{\left(1 - \frac{\text{Issue PricePCT}(V12)}{100}\right)}{\frac{\text{Issue PricePCT}(V12)}{100} \times (\text{MaturityDate}(V14) - \text{SettlementDate}(V11))} \times 360 \times 100$$

Fixed rate yields shall be calculated by the issuer or the IPA/Dealer whenever feasible and practical on the issuer's behalf, based on the following formulae:

$$P = \sum_{i=1}^n \frac{K}{E_i} + \frac{C}{E_n}$$

Where:

P : price

K : coupon payment

C : redemption value

$$E_i = \left(1 + y \times \frac{t_i}{360}\right)$$

with:

$y = \text{IssueYieldAnnualPCT}(V13)/100$, (i.e. $y=0.03$ for a yield of 3%)

t_i : days from settlement date to coupon i payment date

n : numbers of coupons

t_n : days from settlement date to final maturity.

⁵ See e.g. ISMA (International Securities Markets Association), Formulae for yield and other calculations, second edition 1992, chapter 10, Money Market Instruments.

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In order for the STEP Secretariat to prepare the creation of the static database as early as possible, static variables have been included in the XML reporting schemes, without their having any implications for the providers of dynamic data in terms of data content: the dynamic data providers are not required to collect these static variables but are encouraged to do so on a best effort basis. When they cannot provide the requested data, they would indicate that the information is not available, using the corresponding values from the variables' code lists.

It should be highlighted that multiple different STEP IDs and/or ISSUER IDs may exist which would need to be tracked in the static database. The static data variables listed below may also be extended for the purposes of producing enhanced breakdowns, subject to bilateral agreements between the STEP Market Committee and the ECB.

The static database will contain metadata concerning the issuer and programme. The COLLATERAL TYPE code list specifies the underlying type of collateral. The dynamic data providers are not required to provide any detailed information about the collateral type. Furthermore, it is sufficient if either A or N is transmitted for this variable in order to identify ABCP programmes.

The variable values C (Mortgage backed) and E (Other collateral) are breakdowns of the variable value A and is expected to only be available for extraction from the static data collected from the STEP Secretariat. The static data will furthermore contain information about the programme ceiling and the currency in which the programme ceiling is denominated.

XML REPORTING SCHEME

Each update is reported to the ECB using the 29 variables outlined above. Each update record consists of a set of variables that include specific information (technical and conceptual) on the item reported.

The ECB stores all reported data in its database, so only new data, revisions to the present data and deletions must be communicated.

The following paragraphs detail the information associated with each of the previously mentioned objects (Issuer, Issue Programme, Program Status, Issuer Mapping, Program Mapping, Instrument, Settlement Transaction, Instrument Status). All attributes are mandatory within each reported element.

Table 2 Object overview

Issuer
<pre><Issuer ISSUER_ID="64559" ISSUER_NAME="CDC FINANCE BANK" ISSUER_SECTOR="12A0" /></pre> <p>An issuer may have multiple STEP programmes which may have different collateral and/or other characteristics. In addition, a programme may have multiple issuers from different sectors.</p>
Program Mapping
<pre><ProgramMapping STEP_ID="64559" SENDER_ID="XS_CLS" STEP_ID_REF="64559"/></pre> <p>It is assumed that a programme may have different STEP_IDs by different data providers. The Program Mapping element allows for a global mapping of all locally used STEP_IDs for consolidation purposes. The ProgramMapping element should only be transmitted by the static data provider.</p>
Issuer Mapping
<pre><IssuerMapping ISSUER_ID="64559" SENDER_ID="XS_CLS" ISSUER_ID_REF="64559"/></pre> <p>It is assumed that issuers may have different local Issuer_IDs by different data providers. The Issuer Mapping element enables a global mapping of all locally used Issuer_IDs for consolidation purposes. The Issuer Mapping element should be transmitted by the static data provider.</p>
Programme
<pre><Program STEP_ID="64559" PROGRAM_NAME = "UNKNOWN" COLLATERAL_TYPE="X" PROGRAM_CEILING = "NaN" PROGRAM_CEILING_CURRENCY= "XXX" ISSUER_ID_REFS="64559" /></pre> <p>The variable ISSUER_ID_REFS lists the ISSUER_IDs of all issuers which participate in the programme. The underlying collateral will be a feature of the STEP programme and all ISIN codes which are issued under a given STEP programme will be assumed to have the same collateral type. If the Program Ceiling and the Program Ceiling Currency is expressed is not available, the dynamic data provider should report the Program Ceiling with “NaN” and the Program Ceiling Currency with “XXX” values respectively.</p>
ProgramStatus
<pre><ProgramStatus STEP_ID="64559" ASSESSMENT_DATE="2005-12-31"</pre>

`PROGRAM_CREDIT_RATING="X" />`

It is assumed that a program may have different credit ratings over time as the initial credit rating may be changed by the rating agency. The Assessment Date refers to the latest date when the credit rating changed or was confirmed. If this date for the latest credit rating is not available, a default dummy value of “9999-12-31” shall be transmitted.

Instrument

`<Instrument ISSUER_ID="64559" ISIN="FR0179814801" STEP_ID_REF="64559" MATURITY_DATE="2005-10-15" INTEREST_RATE_TYPE="V" FLOATING_RATE_BASE="LIR"`

ISSUER_ID and ISIN together identify an instrument. This joint identification is necessary because the issuers are not required to coordinate the assignment of ISINs.

STEP_ID_REF refers to the STEP_ID of the relevant STEP programme.

The FLOATING_RATE_BASE attribute shall be specified in the case of INTEREST_RATE_TYPE=“V”, i.e. for variable coupon instruments from code list CL_BASE_RATE in the annex I below. If it is not known whether the instrument is a variable coupon rate instrument, “ZZZ” shall be reported, representing not applicable.

Instrument status

`<InstrumentStatus ISSUER_ID="64559" ISIN="FR0179814801" ACCOUNTING_DATE="2005-08-15" OUTSTANDING_AMOUNT="35120000" ACCOUNTING_CURRENCY="EUR" />`

The instrument status report holds information about the outstanding amounts.

The three variables ISSUER_ID, ISIN and ACCOUNTING_DATE act as coordinates to identify the outstanding amount for a given instrument on a certain date. The amount must be stated in the specified currency. Exponential notation is allowed and will typically be used when amounts are high.

Settlement transaction

`<SettlementTransaction ISSUER_ID="64559" ISIN="FR0179814801" SETTLEMENT_ID="2" TRADE_DATE="2005-08-14" SETTLEMENT_DATE="2005-08-15" FLOW_TYPE="N" NOMINAL_AMOUNT="434253" SETTLEMENT_CURRENCY="EUR" FLOATING_RATE_BASE_MATURITY="P1M" FLOATING_RATE_SPREAD_ANNUAL_PCT="0.10" ISSUE_YIELD_ANNUAL_PCT="NaN" ISSUE_PRICE_PCT="NaN"/>`

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The ISSUER_ID, ISIN and SETTLEMENT_ID together identify the settlement. The SETTLEMENT_ID is an identifier internally generated by the system used by the data provider. Its format is up to the data provider. The only requirement is that it is used uniquely for the transaction in question.

ISSUER_ID_REF and ISIN refer to the ISSUER_ID and ISIN of the security concerned. Together, they identify the instrument which is the object of the transaction.

FILE FORMAT OF STEP STATISTICS DATA FILE

The daily data transmission is sent via PGP-secured email to the ECB unless agreed otherwise with the ECB. The file format is XML, based on a STEP XML scheme. No other format can be accepted without the prior consent of the ECB or for contingency reasons.⁶

The XML files must be submitted to an application-specific e-mail address (to be specified later) as attachments to e-mail messages. The attachments must be signed and encrypted according to the OpenPGP standard.

The XML file consists of a header section, which contains data about the transmitted file, and the dataset section, which holds the actual data records. The following paragraphs discuss the content of the header. Please consult the XML Scheme and example files as provided by the ECB.

Header element

Element	Description	Example
ID	Message identifier. Used by humans to quickly refer to a file. The IREF (internal reference) and the six digit code is an automatic non-repeating counter of all files sent by the data provider in order to uniquely refer to any given file in a bilateral communication.	<ID>IREF012345</ID>
Test	This is a flag to highlight a message as test data only (“true”) or actual data to be really used (“false”).	<Test>>false</Test>

⁶ The transmission channel may be expanded to include the secure ESCB net.

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Name	A title for the message (optional). This is intended for humans only. Using xml:lang, various language versions of the title can be added.	<Name>A STEP file</Name>
Prepared	The preparation timestamp indicates when the file was created. This typically equals the extraction timestamp (V2 – EXTRACTION DATETIME), but in principle it could also be later.	<Prepared>2005-08-26T16:24:05+02:00</Prepared>
Sender	Holds information about the data provider. The only mandatory entry here is the attribute “ID”. It holds the data provider ID. More information can be added optionally. This is useful for human contacts in case of problems.	<Sender id=”FR_BDF”/>
Receiver	Similar to the Sender element, this element contains information about the intended receiver. This is entirely optional.	<Receiver id=”EU_ECB”/>
DataSetAgency	This is fixed: ECB. It specifies the organisation coordinating the definition of the dataset.	<DataSetAgency>ECB</DataSetAgency>
DataSetID	This is fixed: ECB_STEP. It specifies the dataset to which the data should be sent.	<DataSetID>ECB_STEP</DataSetID>
DataSetAction	“Update” or “Delete”. This tells the application receiving the file what activity should be performed on the database tables.	<DataSetAction>Update</DataSetAction>
Extracted (holds the EXTRACTION DATETIME=V2)	The extraction timestamp indicates when the data contained in the file was extracted from the data provider’s system. It thereby qualifies how up-to-date the data contained therein is. The ECB needs this field to	<Extracted>2005-08-26T14:55:23+02:00</Extracted>

	resolve overlaps in coverage between different files.	
ReportingBegin	This optional element expresses a promise that the file only contains outstanding amounts and settlements calculated or settled at or after the stated time. This is useful for humans to assess quickly whether two files cover different data.	<ReportingBegin>2005-07-01T00:00:00+00:00:00</ReportingBegin>
ReportingEnd	This optional element expresses a promise that the file only contains outstanding amounts and settlements calculated or settled before the stated time. This is useful for humans to test quickly whether two files cover different data.	<ReportingEnd>2005-08-01T00:00:00+00:00:00</ReportingEnd>

USE CASES

The XML file exchanges can contain one of three types of content:

- new data;
- revisions to previously reported data;
- deletions of previously reported data.

The new data and revisions look very much the same and can be combined into one file if so desired.

New data

The header holds the field <DataSetAction>Update</DataSetAction>. The DataSet element contains elements as presented in Table 2. As many attributes as available shall be entered. All variables are obligatory for each type of XML element that is transmitted. Some variables identify the element in case of future revisions. For example, the following element could be used to report a new outstanding amount:

```
<InstrumentStatus          ISSUER_ID="CADECOS"          ISIN="FR0179814800"
ACCOUNTING_DATE="2005-06-20"          OUTSTANDING_AMOUNT="87.23433E6"
ACCOUNTING_CURRENCY="EUR" />
```

Revisions

The header contains the field <DataSetAction>Update</DataSetAction>.

If data need to be revised, the originally reported elements containing this data shall be included in the DataSet element. However, these elements must contain all variables, including the variables to be revised. For example, the element below could be used to revise the above statement of the outstanding amount.

```
<InstrumentStatus          ISSUER_ID="CADECOS"          ISIN="FR0179814800"
ACCOUNTING_DATE="2005-06-20"          OUTSTANDING_AMOUNT="88.112536"
ACCOUNTING_CURRENCY="EUR" />
```

Deletions

The header contains the field <DataSetAction>Delete</DataSetAction>. All variables shall be sent also for the element to be deleted. For example, the following element would completely erase a record for an outstanding amount:

```
<InstrumentStatus          ISSUER_ID="CADECOS"          ISIN="FR0179814800"
ACCOUNTING_DATE="2005-06-20"          OUTSTANDING_AMOUNT="87.23433E6"
ACCOUNTING_CURRENCY="EUR" />
```

It is expected that deletions will be rare and will be followed by a revision e.g. a new corrected transmission of a record. In most cases, revisions will result in a change of a variable value, not erase a whole record.

Caveat: If an object is deleted, depending objects will also be deleted. For example, the deletion of an Instrument object ISIN will also mean that related reporting for outstanding amounts and settlements is also deleted. Deletions shall only be used to correct fundamental mistakes, such as mistyping an ISIN.

Intraday revisions are not envisaged during the course of the reporting day. In case the data file the same day contains significant data errors, a retransmission of a correct file shall be undertaken before noon on the reporting day. The ECB reserves the right not to process revisions which apply for data points that have occurred more than 90 calendar days prior to the date of receiving the latest data transmissions.

The data provider shall ensure that the header field Extracted (=EXTRACTION DATETIME) of the revision or deletion holds a more recent datetime than the datetime stamp of the original report in order to ensure that the ECB STEP database always contains the most recent data.

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Typically, SSSs among the data providers will not send deletions, since deleted settlements will not appear in the data transmitted to the ECB. SSSs may, however, report reverse transactions in case of erroneous settlements.

Outstanding amounts as of the latest available accounting date shall be transmitted on a daily basis following the inclusion of a programme in the STEP programme population.

The outstanding amount file shall apart from the header include the following objects;

- Program
- ProgramStatus
- Issuer
- Instrument
- InstrumentStatus

Transactions shall similarly be transmitted on a daily basis following the inclusion of a programme in the STEP programme population.

The settlement transactions file shall apart from the header include the following objects;

- Program
- ProgramStatus
- Issuer
- Instrument
- SettlementTransaction

Object records shall be written horizontally with each object record written out on one line when opened in a text editor.

Definitions, acronyms and abbreviations

Term	Definition
ACI	European Financial Markets Association
ECB	European Central Bank
ECP	European Commercial Paper
ESCB	European System of Central Banks. The ESCB comprises the ECB and the national central banks (NCBs) of all EU Member States, whether they have adopted the euro or not.
IEEE	Institute of Electrical and Electronics Engineers
SSS	Securities settlement systems
STATS	Technical group established for the implementation of the STEP statistics, established by the Statistics Committee of the ESCB.
STEP	Short-Term European Paper

APPENDIX I: CODE LISTS. CODES ARE CASE SENSITIVE. ALL NUMERICAL VALUES SHALL BE REPORTED WITH ABSOLUTE (NON-NEGATIVE) VALUES EXCEPT FOR V13 AND V17.

SHORT-TERM EUROPEAN PAPER: VARIABLES CODE LIST		
Variable	Code list identifier	Code list value explanations
DATA PROVIDER (V1)	CL_DATA_PROVIDER	DESCRIPTION
		The list will be expanded or shortened depending on the institutions eventually selected for providing data.
	XS_EUC	Euroclear Bank (Belgium)
	XS_CLS	Clearstream Banking (Luxembourg)
	DE_CLS	Clearstream Banking (Frankfurt)
	FR_BDF	Banque de France
	BE_NBB	Nationale Bank van België/Banque Nationale de Belgique
	AT_DPF	Oesterreichische Kontrollbank (Austria)
	FI_DPF	NCSD APK (Finland)
	ES_DPF	AIAF (Spain)
	IT_DPF	Monte Titoli (Italy)
FLOW TYPE (V15)	CL_FLOW_TYPE	FLOW TYPE
	N	New issue
	R	Regular redemption
	E	Early redemption
INTEREST RATE TYPE (V16)	CL_INTEREST_RATE	INTEREST RATE TYPE
	F	Fixed rate
	V	Floating rate
	Z	Zero coupon
	X	Not specified
FLOATING RATE BASE MATURITY (V18)	CL_BASE_MATURITY	FLOATING RATE BASE MATURITY
	P1D	Overnight

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	P7D	1 week
	P14D	2 weeks
	P21D	3 weeks
	P1M	1 month
	P2M	2 months
	P3M	3 months
	P4M	4 months
	P5M	5 months
	P6M	6 months
	P7M	7 months
	P8M	8 months
	P9M	9 months
	P10M	10 months
	P11M	11 months
	P1Y	12 months
	XXX	Not specified
	ZZZ	Not applicable
FLOATING RATE BASE (V19)	CL_BASE_RATE	FLOATING RATE BASE
	EST	€STR
	EON	EONIA
	EOS	EONIA swap
	EPO	EUREPO
	EIR	EURIBOR
	LIR	LIBOR
	XXX	Not specified
	ZZZ	Not applicable
PROGRAM CREDIT RATING (V20)	CL_CREDIT_RATING	CREDIT RATING
	1	A1+, A1, P1, F1
	2	A2+, A2, P2, F2
	3	A3+, A3, P3, F3

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	O	Other
	X	No rating available
ISSUER SECTOR (V21)	CL_ISSUER_SECTOR	SECTOR
	12A0	Monetary financial institution (National Central Bank or corporate bank)
	1100	Non-financial corporation (corporate non-bank)
	1230	Other financial intermediary (special purpose vehicles)
	1250	Insurance corporation or pension fund
	1300	General government
	2000	Supranational/international organisation
	XXXX	Non specified
COLLATERAL TYPE (V25)	CL_COLLATERAL	COLLATERAL TYPE
	A	Asset backed
	C	Mortgage backed
	E	Other collateral
	Z	Not applicable
	X	Non specified
CURRENCY	CL_CURRENCY⁷	CURRENCY
	ALL	Albanian lek
	ARS	Argentine peso
	ATS	Austrian schilling
	AUD	Australian dollar
	BAM	Bosnia-Hezergovinian convertible mark
	BEF	Belgian franc
	BEL	Belgian franc (financial)
	BGN	Bulgarian lev
	BRL	Brazilian real

⁷ The XML reporting scheme includes additional currency codes for multiple currencies which are not envisaged to be used by the dynamic data providers at the outset of the STEP production. Legacy currencies in the ISO 4217 standard are similarly not envisaged to be commonly used.

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CAD	Canadian dollar
CHF	Swiss franc
CNY	Chinese yuan renminbi
CSD	Serbian dinar
CYP	Cyprus pound
CZK	Czech koruna
DEM	German Mark
DKK	Danish krone
DZD	Algerian dinar
EEK	Estonian kroon
ESP	Spanish peseta
EUR	euro
FIM	Finnish markka
FRF	French franc
GBP	UK pound sterling
GRD	Greek drachma
HKD	Hong Kong dollar
HRK	Croatian kuna
HUF	Hungarian forint
IDR	Indonesian rupiah
IEP	Irish pound
ILS	Israeli shekel
INR	Indian rupee
ISK	Iceland krona
ITL	Italian lira
JPY	Japanese yen
KRW	Korean won (Republic)
LKR	Sri Lanka rupee
LTL	Lithuanian litas
LUF	Luxembourg franc
LVL	Latvian lats

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MAD	Moroccan dirham
MKD	Macedonian denar
MTL	Maltese lira
MXN	Mexican peso
MYR	Malaysian ringgit
NLG	Netherlands guilder
NOK	Norwegian krone
NZD	New Zealand dollar
PHP	Philippine peso
PLN	Polish zloty (new)
PTE	Portuguese escudo
ROL	Romanian leu
RON	Romanian leu (new)
RUB	Rouble (new)
SAR	Saudi riyal
SEK	Swedish krona
SGD	Singapore dollar
SIT	Slovenian tolar
SKK	Slovak koruna
THB	Thai bhat
TRL	Turkish lira
TRY	Turkish lira (new)
TWD	New Taiwan dollar
USD	US dollar

APPENDIX 2: SAMPLE RECORDS

[DATA PROVIDER NAME SPECIFIED AS HEADER ITEM]

	2005-08-16	2005-08-16
EXTRACTION DATETIME	11:45:55+02:00	11:45:55+02:00
SETTLEMENT ID	1	2
ISIN	FR0179814800	FR0179814801
ISSUER NAME	CAISSE DE DEPOTS	CDC FINANCE BANK
ISSUER ID	58243	64559
STEP ID	58243	64559
SETTLEMENT CURRENCY	EUR	EUR
NOMINAL AMOUNT	14077000	434253
TRADE DATE	2005-08-15	2005-08-14
SETTLEMENT DATE	2005-08-15	2005-08-15
ISSUE PRICE PCT	NaN	NaN
ISSUE YIELD ANNUAL PCT	2.50	NaN
MATURITY DATE	2005-09-15	2005-10-15
FLOW TYPE	N	N
INTEREST RATE TYPE	F	V
FLOATING RATE SPREAD ANNUAL PCT	NaN	0.10
FLOATING RATE BASE	ZZZ	EIR
FLOATING RATE BASE MATURITY	ZZZ	01M
PROGRAM CREDIT RATING	1	2
ISSUER SECTOR	12A0	12A0

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OUTSTANDING AMOUNT	87234330	35120000
ACCOUNTING CURRENCY	EUR	EUR
ACCOUNTING DATE	2005-07-31	2005-07-31
COLLATERAL TYPE	X	X
PROGRAM CEILING	NaN	NaN
PROGRAM CEILING CURRENCY	XXX	XXX
PROGRAM NAME	Unknown	Unknown
PROGRAM CREDIT RATING ASSESSMENT DATE	9999-12-31	9999-12-31