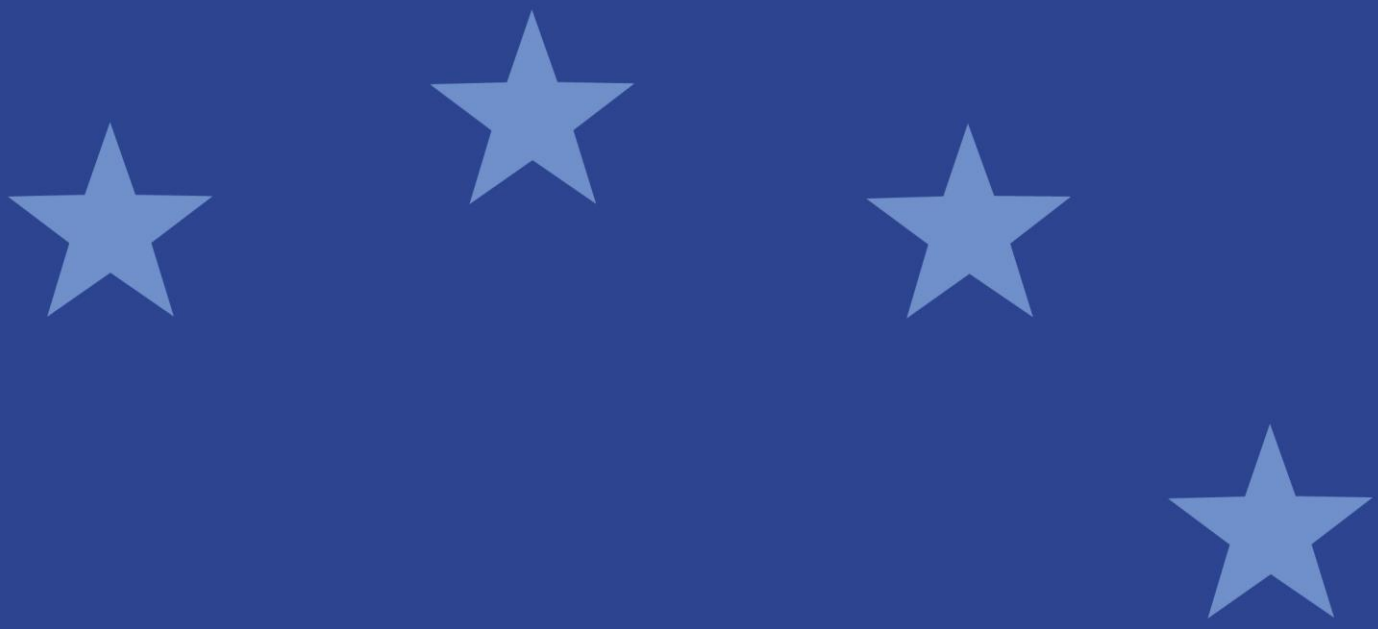
esma European Securities and Markets Authority

Final Report

Guidelines for position calculation by Trade Repositories under EMIR



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1 Executive Summary

Reasons for publication

The purpose of these guidelines is to set up a framework for TRs to calculate positions in derivatives in a harmonised and consistent manner in accordance with Article 80(4) of EMIR. High-quality position data is necessary for the assessment of systemic risks to financial stability by the relevant authorities.

ESMA has observed divergent and inconsistent approaches to position calculations by TRs, which hinder the successful aggregation of data across repositories for the purposes of monitoring systemic risks to financial stability. On 17 November 2017, ESMA published a Consultation Paper (CP) on Guidelines for position calculation under EMIR. The consultation closed on 15 January 2018. ESMA received 13 responses (including five confidential responses), mostly from trade repositories and central banks. The answers received are available on ESMA's website unless respondents requested otherwise. ESMA also sought the advice of the Securities and Markets Stakeholder's Group (SMSG).

The guidelines provide specific instructions on the aggregation of certain data fields and how those should be calculated by TRs prior to the provision of the data to relevant authorities.

The aim of the guidelines is to ensure consistency of position calculation across TRs, with regard to the time of calculations, the scope of the data used in calculations and the calculation methodologies. These guidelines will also ensure a consistent methodology is used to calculate collateral relating to positions.

Contents

The report proposes that four separate datasets of calculations are calculated, Position Sets, Collateral Position Sets, Currency Position Sets calculations and Currency Collateral Position Sets. The report first explains the existing situation in relation to position calculation and the purpose of the guidelines before explaining the feedback ESMA received to the consultation paper and how this has been considered in the final drafting of these guidelines. Finally, the Annexes refer to an analysis of the costs and benefits of the proposals and the guidelines in full.

Next Steps

Following the publication of this final report, the guidelines for position calculations by Trade Repositories under EMIR will become applicable on 3 December 2018 and will require an annual assessment of the TRs' compliance.

Legislative references and abbreviations

EMIR	European Market Infrastructures Regulation – Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories (the Regulation, hereinafter)
ISO	International Organization for Standardization
OTC	Over-the-counter
Q&A	Questions and Answers
SFTR	Regulation (EU) No 2015/2365 of the European Parliament and of the Council of 25 November 2015 on transparency of securities financing transactions and of reuse and amending Regulation (EU) No 648/2012
TR	A Trade Repository within the meaning of Article 2(2) of EMIR that has been registered or recognised by ESMA in accordance with Articles 55 and 77 of EMIR respectively
XML	Extensible Mark-up Language

Glossary of concepts and terms

1. "Positions" means the representation of exposures between a pair of counterparties that comprise Positions Sets, Collateral Position Sets, Currency Positions Sets and Currency Collateral Position Sets.
2. "Outstanding Derivatives" are those derivatives, including CCP-cleared derivatives, which are included under Article 5(4)(b) of the CDR on data access, as amended by Commission Delegated Regulation 2017/1800[1] (hereinafter "the amended CDR on data access") reported to a TR and have not matured or which have not been the subject of a report with action types "E", "C", "P" or "Z" as referred to in Field 93 in Table

[1] Commission Delegated Regulation (EU) 2017/1800 of 29 June 2017 amending Delegated Regulation (EU) No 151/2013 supplementing Regulation (EU) No 648/2012 of the European Parliament and of the Council OJ L259 7.10.2017 p. 14-17

2 of Commission Implementing Regulation (EU) No 2017/105[2] ('the amended ITS on reporting' hereinafter).

3. "Variables" are those values either taken directly from the EMIR reporting fields or derived from those fields that will be used by TRs to calculate positions.
4. "Authority" means one of the entities referred to in Article 81(3) of EMIR.
5. "Metrics" are variables used to quantify the different calculations. The fields used to define metrics (and dimensions) follow the nomenclature as per the amended ITS on reporting. For instance, T1F17 means field 17 of table 1.
6. "Dimensions" are variables related to derivatives that are used to group derivatives together into positions.
7. "Position Set" means (a set of) outstanding derivatives that are considered to be economically related according to their dimensions for a pair of counterparties. Position sets will contain derivatives that are mutually fungible and also those that are not mutually fungible yet have similar economic characteristics.
8. "Reference Date" – means the date the calculation refers to.

2 Current Situation

9. The existing data TRs make available includes inconsistent calculations of positions across TRs, thus making the aggregation of multiple positions not possible. This prevents authorities from being able to swiftly assess systemic risks to financial stability and quickly react in a crisis event.
10. The possibility for reporting counterparties to report their trades to different TRs poses a particular challenge for the establishment of a set of entity-level positions that is consistent, complete and coherent across entities and derivatives.
11. Specifically, each individual TR may only hold partial information on an entity's exposure with respect to any product and each of its counterparties. Hence, in some cases TRs can only calculate a partial *TR-level position* for any entity.

[2] Commission Implementing Regulation (EU) 2017/105 of 19 October 2016 amending Implementing Regulation (EU) No 1247/2012 laying down implementing technical standards with regard to the format and frequency of trade reports to trade repositories according to Regulation (EU) No 648/2012 of the European Parliament and of the Council on OTC derivatives, central counterparties and trade L17 OJ 21.1.2017 p.17-41

12. Therefore, the determination of an *overall entity-level position* requires an aggregation of the TR-level positions across several TRs. Overall entity-level positions should be determined by authorities and based on an aggregation of TR-level positions. Therefore consistency in TR-level position calculation is essential. TRs should use common conventions, rules, and methodologies for their EMIR trade reporting determinations and calculations.

2.1 Objectives

13. The guidelines will set up a framework for TRs to provide these calculations in a common format and following a consistent methodology and timeline.

14. The purpose of these guidelines is as follows:

    a) Ensure that relevant authorities are provided with consistent and harmonised positions in relation to derivatives; and

    b) Ensure that data made available to authorities in the form of aggregations carried out by TRs is of a high standard.

15. These guidelines also leverage on the requirement under Article 9 of EMIR, "*Counterparties and CCPs shall ensure that the details of their derivatives are reported without duplication*", and on the fact that reporting of CCP-cleared positions by counterparties follows Q&A TR 17[3] and that there is no double-counting between trade and position reports.

16. Having considered the purpose of position calculations, the guidelines require four datasets - the "Position Set", the "Collateral Position Set", the "Currency Position Set" and the "Currency Collateral Position Set". The Currency Position Set and the Currency Collateral Position Set must be produced for the relevant central banks of issue which should have access to data at position level under their mandates as issuers of relevant currencies.

17. The guidelines establish high-level principles that should be followed by the TRs. Those principles are complemented by specific procedures to be followed to ensure the timely and accurate reporting of positions by TRs.

[3] Questions and Answer - Implementation of the Regulation (EU) No 648/2012 on OTC derivatives, central counterparties and trade repositories (EMIR) and updated on a regular basis

2.2 ESMA Simulation

18. ESMA conducted a simulation exercise, using one day's historical trade state data from 2017 (which followed the previous version of the Commission Delegated Regulation on reporting[4]) to establish the size of the calculations TRs would produce using different dimensions to calculate positions.

19. This exercise allowed ESMA to better understand the approaches for aggregating derivatives using dimensions similar to those proposed in the consultation paper. The simulations showed ESMA how the data could be condensed into useful aggregations which could then be analysed by users looking to achieve the objectives of the calculations. The guidelines are based on these simulations.

3 General aspects on position calculation

3.1 Different data sets TRs should produce for authorities

20. The TRs are the market infrastructures underpinning the EMIR reporting and have a central function in ensuring accurate record keeping under EMIR as well as the calculation of positions for authorities.

21. To ensure the achievement of the objectives outlined in this report there is a need to establish a controlled and consistent process.

22. ESMA assessed the extent to which the various sets discussed later in this paper should be merged in a single set. One of the benefits of having a single calculation would be that an authority would have an immediate view of the exposures between a pair of counterparties. Nevertheless, ESMA is aware of the following:

a) Counterparties can collateralise on a portfolio level, i.e. the information for one collateral would be relevant for many derivatives;

b) Counterparties may not report the collateral information together with the rest of characteristics of the derivative; and

[4] Commission Delegated Regulation (EU) No 148/2013 of 19 December 2012 supplementing Regulation (EU) No 648/2012 of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories with regard to regulatory technical standards on the minimum details of the data to be reported to trade repositories, OJ L52, 23.2.2013, p.1-10

c) The currency positions might not be covered by the same collateral portfolio.

23. As a result, to ensure that authorities have access to data that can be analysed in an effective manner TRs should calculate different positions that include different information.

24. Despite some feedback calling for collateral reports to be aggregated in the same calculations as position calculations, with two rather than four datasets, ESMA feels that separate reports provide a clearer picture of the collateral and the positions.

25. These calculations can be linked using counterparty IDs and collateral portfolio codes which then allow for the analysis of exposures.

Guideline 1. TRs should calculate position data and make it available in four separate datasets − Position Set, Collateral Position Set, Currency Position Set and Currency Collateral Position Set. These datasets should be uniquely identifiable and labelled with the relevant reference date.

Guideline 2. Unless otherwise specified, all the guidelines apply to each calculation. This excludes the following guidelines which should be applied only to the following calculations:

- ***a. Guideline 19, Guideline 24, Guideline 25, Guideline 26, Guideline 31 and Guideline 32 are applicable to Positions Sets;***
- ***b. Guideline 20, Guideline 24, Guideline 25, Guideline 26, Guideline 31 and Guideline 32 are applicable to Currency Position Sets;***
- ***c. Guideline 21, Guideline 22, Guideline 23 and Guideline 30 are relevant to Collateral Position Sets;***
- ***d. Guideline 21, Guideline 22, Guideline 23, Guideline 30, Guideline 31 and Guideline 33 are applicable to Currency Collateral Position Sets;***
- ***e. Guideline 27 is only applicable to Position Sets and Currency Position Sets where the field Asset class (T2F2) is reported as "IR" and field Contract type (T2F1) is reported as "SW";***
- ***f. Guideline 28 is only applicable to Position Sets and Currency Position Sets where the field Asset class (T2F2) is reported as "CR";***
- ***g. Guideline 29 is only applicable to Position Sets and Currency Position Sets where the field Asset class (T2F2) is reported as "CO".***

Guideline 3. When calculating positions it is essential that information used is up to date and relevant. The information to be used for calculations is based only on the information available in Trade State data on outstanding derivatives.

26. All values reported in all the EMIR reporting fields for derivatives should be as up to date as possible. Feedback received from TRs supported the use of trade state data to create aggregations. Some feedback asked what this meant, and some responses suggested that 'end of day' trade state would be clearer. This will be the report provided to TRs the previous day (T+1), with the position calculation being conducted on T+2.

27. Some feedback to the consultation paper said that there was no existing requirement in EMIR for TRs to produce trade state reports. The amended CDR on data access states that TRs must provide authorities with access to the latest trade states of derivatives contracts that have not matured, or which have not been the subject of a report with Action type "E", "C", "P" or "Z" reported in T2F93.

28. The feedback referred to the difference between position reports and trade reports, and also the potential limitation in the event that the latest trade state report was reported in adherence to the original EMIR reporting technical standards.

29. ESMA expects positions to be calculated using the latest trade state reports to ensure that calculations are up to date. In the event that this report only includes the information reported in line with the pre November 2017 technical standards, then TRs will have to treat reports with required missing information in the same way they would for other derivative reports with missing required information, as defined in Guideline 13.

Guideline 4. TRs should calculate positions taking into account the latest trade state of the outstanding derivatives reported to them at the time of the calculation of the position.

3.2 Calculating positions

30. The size of the positions produced by TRs is important as it directly relates to how useful the position calculations are. The goal is to produce a calculation, which can be processed with ease and which is also granular enough to enable authorities to assess risks on a tailored basis.

31. To formulate a position set, derivatives with the same values for dimensions should be aggregated as explained later in this section.

32. The data fields and derived dimensions which are considered to be most appropriate to group derivatives into sets with similar characteristics are noted in the below guidelines.

33. EMIR defines and specifies the fields to be reported to TRs for trades. Position data is derived from these fields. Further clarification on the reporting requirements under EMIR is provided by ESMA's Q&A[5].

34. The variables used to determine the position sets are either the fields specified in the amended ITS on reporting or variables derived directly from those fields (defined in the relevant section below). The position calculation guidance does not consider, at this

[5] Questions and Answer - Implementation of the Regulation (EU) No 648/2012 on OTC derivatives, central counterparties and trade repositories (EMIR) and updated on a regular basis.

stage, the use of other external information, but on the possible use of the reconciliation status.

35. ESMA expects that the positions calculated by a TR are pertaining only to the derivatives reported to the TR. A position calculated by each TR, i.e. a TR-level position, reflects values that a TR derives from the trade state, i.e. the latest state, of outstanding derivatives reported under EMIR, for a particular entity and which form part of that entity's outstanding derivatives vis-à-vis another entity at a particular moment in time and for a particular *position set*. Entities are identified as the 'Reporting counterparty' or the 'Other counterparty' reported under EMIR. At the level of TRs the position should pertain to obligations between counterparty pairs within specific instrument categories and other factors as detailed in the guidelines.

36. A unique value should be calculated for each counterparty pair ($\boldsymbol{E_i}$, $\boldsymbol{E_j}$), where $\boldsymbol{i \neq j}$, and set of dimensions $\boldsymbol{Z_k}$ at time $\boldsymbol{t}$, where $\boldsymbol{t}$ is a specific (business) day.

37. It is important to ensure that TRs complete calculations in a consistent manner regardless of the manner in which the derivative to be included in the calculation is reported to the TR.

38. Calculations should not be impacted by whether the derivative is reported single or dual-sided or by the reconciliation status of the report.

Guideline 5. TRs should calculate positions consistently irrespective of whether the derivative reported is single or dual-sided and consistently irrespective of the reconciliation status of the report.

39. It is important to ensure that TRs include all derivatives in positions they calculate on an accurate basis.

40. When ESMA consulted on the positions TRs must produce, a number of respondents called for trade state data to be provided in place of positions in derivatives. According to the Regulation, trade state data is transaction level data, whereas position calculations represent aggregations of the trade states of the relevant derivatives pertaining to that position. These guidelines explain how TRs should calculate positions in a way which takes trade state data and groups together similar derivatives and collateral to provide meaningful calculations which can be used to represent where potential exposures exist and the size of the exposures on an aggregated basis.

41. This requires TRs to first determine the counterparties of each derivative, then all activity to create the trade state data and then to consider the dimensions appropriate to a position calculation to calculate the position. It is also important to ensure that derivatives included in calculations are those which have not reached maturity. Feedback to the ESMA consultation highlighted the importance of including in calculations not only effective derivatives but also those executed and not yet effective. This will ensure that future exposures are represented in the position calculations.

42. Some feedback indicated that it would be useful to include an additional aggregation of derivatives that will become effective in the future, and another separate calculation which aggregated those trades which are already effective. ESMA has not included a requirement for these calculations as it was agreed that aggregating together effective and not yet effective positions would be useful for authorities to understand complete potential exposures.

43. When calculating positions TRs should include all information available on the date of the calculation, whether the derivative has been reconciled or not. This approach will ensure that calculations are up to date with as much information for authorities as possible.

Guideline 6. TRs should determine outstanding derivatives, including (i) the counterparties to a trade and (ii) the trade state data in order to calculate the set of outstanding derivatives pertaining to a position.

Guideline 7. TRs should include all relevant derivatives reports held by a TR pertinent to a position of a particular Reporting counterparty ID (T1F2) in the relevant position calculation. TRs should include derivatives irrespective of whether they are or are not reconciled, paired or matched.

Guideline 8. TRs should calculate positions on a "best available information" basis. TRs should include all information, as available at the date of the position calculation, conforming to common validation rules in the position calculation, irrespective of the reconciliation state.

3.3 Reporting timeline

44. Calculations need to be conducted according to a timeline that provides authorities with up-to-date information. Feedback to the consultation paper called for more detail around the actual steps TRs should follow when calculating positions. ESMA has adjusted the guidelines to better reflect this, Guideline 9 explains how a TR is expected to calculate a position.

45. Some respondents indicated that daily position calculations would be overly burdensome for TRs. Feedback from authorities to the consultation paper was in favour of the calculations being conducted by TRs every business day. This will ensure that authorities have access to positions which are as up to date as possible.

46. To achieve this objective, TRs should ensure that data used in calculations relates to the most recent trade state data that is available on the day of each calculation. For example, if a report is submitted to a TR on T+1, then that calculation should be carried out on the following day (T+2), capturing all the trade state data submitted the previous day. This will allow authorities to access data swiftly in the event of a crisis when the information on potential exposures would be of use.

Guideline 9. TRs should ensure that the calculations relate to the most recent full day's set of trade state data. Calculations should be updated on each business day. TRs should also make the position available to authorities on the day of the calculation in line with the following steps:

	Event	Day/time
1	End of trading day T	Day T
2	Retrieve appropriate FX reference rates on day T for purposes of converting for derivatives where T1F17 (Value of contract) should be converted, to be applied when calculation is performed on day T+2. (Guideline 16)	Day T 16:00 UTC (17:00 CET)
3	Reporting entities to provide reports to TRs on derivatives traded on day T	From Day T - Day T+1 23:59 UTC
4	Deadline for submitting reports to TRs on derivatives traded on day T	Day T+1 23:59 UTC
5	TR calculation of positions based on the latest trade state of outstanding derivatives as of end of day T+1	Day T+2 00:00 UTC - 12:00 UTC (13:00 CET)
6	Position reports based on trading day T are made available by the TR to the relevant authorities.	Day T+2 12:00 UTC (13:00 CET) onwards.

3.4 Errors by TRs when providing access to data

47. TRs should ensure that they provide access to positions in a consistent manner, following the format laid out in the guidelines so that authorities are able to analyse data that is accurate and presented in a consistent fashion.

48. When a mistake has been made by a TR in a position calculation, including instances when a calculation was incorrect because of incorrect reporting to TRs by counterparties, the TR should ensure that subsequent calculations do not contain the same error.

49. Some feedback to the consultation paper indicated that amending historical calculations that were incorrect would be burdensome for TRs. Some respondents indicated that ESMA should set a timeframe for how far in the past TRs should be required to make amendments when calculations were incorrect. With this in mind ESMA has considered other feedback which proposed an alternative approach, that still ensures historical calculations are recalculated, providing authorities with correct positions, but not as frequently as for all incorrect calculations indefinitely. ESMA proposes that positions which were not correct historically should be re-calculated if they occurred in the last two years, but on a weekly basis, i.e. not every single calculation, rather just one calculation for each week during the period for which mistakes were made.

50. In the event that a reporting counterparty's incorrect report has caused the error in the position calculation, some feedback to the consultation paper suggested TRs should not go back and recalculate all positions. Some feedback proposed that TRs should provide authorities with a log of corrected observations and make the reports available to authorities upon request. This approach appears proportionate, as it would mean that calculations do not need to be re-run unless an authority specifically requested it.

Guideline 10. When TRs provide an authority with access to erroneous data, and the TR has caused the error itself, the data should be updated by the TR so that it is corrected as soon as it is possible and the erroneous calculations for the previous two years, as of the last working day of each week, should be re-reported correctly. When a mistake by a reporting counterparty, rather than the TR, has led to an incorrect calculation by a TR, all authorities should be notified, and given the opportunity to request an amended version of each calculation that was incorrect from the relevant TR.

51. Based on Guideline 10 it will be necessary to require TRs to maintain all the positions calculations that they have conducted for a given time period. Respondents to the consultation paper requested ESMA provided guidance on this matter. Guideline 11 confirms the requirement.

Guideline 11. TRs should maintain a record of all the position calculations which they have calculated for at least two years.

52. Some feedback to the consultation paper asked for an explanation of how the guidelines would interact with ESMA's portability guidelines under EMIR. In the event that a counterparty requests to migrate its data to a different TR, then all data related to that counterparty held by the TR will be migrated. This will allow for the new TR to calculate positions going forward, whilst the old TR should continue to maintain the calculations it previously made up to the moment of transfer for the time period required in Guideline 11. In case that the counterparty requested the transfer of all derivatives, including the terminated ones or in the case of withdrawal of registration, the new TR should keep the previously calculated positions by the old TR for at least 2 years and follow Guideline 11 prospectively.

Guideline 12. TRs which receive data in line with the portability guidelines should keep the previously calculated positions transferred from the old TR for at least two years and follow Guideline 11 prospectively.

3.4.1 Erroneous reports submitted by counterparties to TRs which do not include data for fields which are metrics or dimensions

53. There will be occasions when counterparties misreport to TRs and the data that TRs use to calculate positions is inconsistent and therefore not useful for authorities. These derivatives may have been in line with the validations rules, however if they are still missing information then there is a risk that including the derivatives in a calculation will create inaccurate position sets. This is particularly problematic in the case of the metrics where a missing value would not allow the calculation of a given aggregate value. The consultation paper proposed that reports with missing information for the required dimensions or metrics should be excluded from calculations, regardless of whether the report passed the validation rules.

54. The question on this topic in the consultation paper received a number of responses. Some proposals suggested the inclusion of an NA category in each dimension to compensate for this limitation, others advocated creating a separate exclusions report for authorities which referred only to reports which did not include all required information for dimensions.

55. Other responses referred to TRs calculating mean/median figures for missing dimensions in reports, and then treating those derivatives as if they included the mean/median entry in the relevant field when calculating a position.

56. Some respondents felt they were not in favour of TRs excluding the data but did not propose a solution to the problem.

57. Based on the feedback received to the consultation and the complexity involved ESMA proposes that TRs exclude any reports from calculations that do not include data for required metrics or dimensions.

58. This approach will ensure that the calculations available to authorities include all the information relevant to the derivatives in the calculation. If reports with missing values are still in line with validation rules, TRs should still exclude those reports from the calculations.

Guideline 13. TRs should exclude derivatives that have missing data for one of the required metrics or dimensions from all relevant calculations. TRs should do this even in instances where the reported derivative is in line with the validation rules.

3.5 Identification and treatment of outliers

63. TRs should ensure that the data they aggregate is of sufficient quality to allow for useful analysis by authorities. As part of the obligations to ensure accuracy of data and compliance with the Regulation's reporting requirements, reporting counterparties should ensure that incorrect reports are corrected. TRs should put in place their own checks for identifying outliers ahead of conducting the position calculations. The soft checks could be calibrated for specific asset classes.

59. Feedback to the approach TRs should use to identify outliers was mixed with a number of respondents not agreeing with the ESMA consultation paper proposal in relation to the use of standard deviations, and also indicating that they felt ESMA should set minimum standards for outlier detection and treatment which should then be adopted by TRs.

60. No respondents proposed a specific approach to detecting outliers. ESMA will supervise the methods implemented by TRs to detect outliers and work towards the definition of a common approach to determining outliers.

61. When counterparties report derivatives which TRs recognise as outliers it is important that TRs have a consistent procedure to follow to address these mistaken derivative reports. Guideline 14 will ensure that the usability of the calculations is not impacted by outliers.

Guideline 14. A TR should have in place a robust procedure to identify abnormal values, i.e. outliers, relating to the derivatives it receives from counterparties. For a given position, a TR should calculate positions according to the metrics which exclude reports with outliers, and also the metrics which include all reports which meet the dimensions for each calculation.

3.6 Format of the data

62. ESMA has undertaken substantial work to ensure the harmonisation and standardisation of the reporting requirements by counterparties and the provision of data to authorities for EMIR, MIFID II/MIFIR, SFTR and MAR.

63. ISO 20022 is widely used for other reporting regimes such as MiFID II/R, SFTR and MAR and for provision of access to data under EMIR. Authorities have gained very valuable experience working with these formats.

64. Furthermore, ESMA understands that in order to use pre-existing channels and infrastructures and minimise the impact on TRs, the rest of the specificities related to the operational aspects of access to data that are defined in Articles 4 and 5 of the CDR on data access should also be applicable for the provision of position data to authorities.

65. XML templates are used for access to data through ESMA's TRACE project. Their use for position calculations will:

    a) Ensure consistent and harmonised provision of the data and eliminate any potential barriers to entry stemming from the use of proprietary formats;

    b) Reduce processing costs for both the old and the new TR in the case of transfer of data; and,

    c) Preserve the quality of the data provided to authorities.

66. As a result, ESMA proposes that the format of the files used by the TRs to provide position data to the relevant authority should be the XML format and template defined in the amended CDR on data access. Feedback to the consultation paper was in favour

of this approach. It will ensure that the costs of providing such calculations are kept to a minimum for trade repositories and the costs for accessing the calculations for authorities are also minimised (they will not need to develop schemas in multiple formats).

Guideline 15. **TRs should provide access to positions to the relevant authorities by using an ISO 20022 XML template and following the operational standards defined in Articles 4 and 5 of the CDR on data access.**

3.7 Currency used to present Value of contract in positions

67. Derivatives exist in multiple currencies and could be collateralised using different currencies. The information made available to authorities should be useful so the potential exposures are straightforward for users to quantify. Therefore where derivatives included in a position set are valued (field value of contract (T1F17)) in different currencies to the notional currency or the related collateral value currency, the TR should convert the values of the derivatives to one currency (Euros).

68. This is in line with the approach taken for valuations of Public Data.

69. Feedback to the consultation paper acknowledged the need for such conversions. Feedback also flagged that on occasions some foreign exchange rates are not present on the ECB website. In such cases, ESMA would expect TRs to conduct conversions, using an appropriate alternative reference rate.

70. Feedback also flagged the need for TRs to use a standard practice for the precise timing of the exchange rate, particularly when there is high volatility in markets. As positions are representations of end of day states, the guidelines have been drafted with conversions carried out based on the ECB rates available at the reference date of the calculation of the position.

Guideline 16. When notional currency or buyer-side or seller-side value does not match currency of collateral, TRs should convert all the metrics which are valued in currencies to Euros. This should be done by the TR using the relevant foreign exchange rate published on the ECB website on the reference date. If the required rate is not published then an appropriate alternative reference rate should be used by TRs.

3.8 Algorithms used in calculations

71. It is important that TRs are consistent in their approach to calculations and that the guidelines for calculations are interpreted in the correct manner. ESMA should be able to easily access the procedures followed by TRs when calculating positions at all times. This will help ESMA quickly understand any potential inconsistencies or significant outliers in overall calculations.

72. It is therefore necessary for TRs to be able to provide (upon request) a version to ESMA of the procedures and relevant algorithms used to create the calculations described in these guidelines. Some feedback to the consultation suggested that ESMA should provide the algorithms for TRs to use to calculate positions. TRs use different software and one set of algorithms may not be appropriate for all TRs. Therefore ESMA has provided clear guidelines explaining what TRs are required to do to calculate positions. In the event that ESMA needs to review the approach taken by a TR to calculate positions, algorithms should be made available.

73. There was also feedback to the consultation paper's proposal requesting ESMA provide practical examples of what the calculations produced by the guidelines should look like or provide calculation formulas. ESMA has not included examples of the required calculations. The purpose of the guidelines is not to give examples but rather to clearly explain the steps TRs should follow to conduct calculations as necessary.

Guideline 17. Upon request from ESMA, a TR should have available at all times the calculation algorithms they use as well as the procedure(s) which they follow to produce each of the four datasets relating to the position calculations described in these Guidelines.

3.9 Dimensions and metrics of position calculations

3.9.1 Metrics used to aggregate and quantify positions

74. Metrics are the variables used to quantify the exposures that exist in relation to derivatives between counterparties. As previously explained each metric in these

guidelines is an EMIR reporting field. Metrics are also used to quantify collateral positions (explained in section 6.2).

75. Metrics are quantitative characteristics that allow for the aggregation of different exposures to counterparties. By comparing Position Sets with Collateral Position Sets, authorities will be able to determine net exposures as part of their monitoring of financial stability. Feedback noted that there will be slight deviations in the calculations because of the date that collateral is exchanged, i.e. on T+2, which may mean a position's collateral will not be represented in the same day's collateral calculation. However, considering this feedback ESMA deems this approach to be the most effective way to allow for exposures to be reviewed. If necessary the following day's collateral position calculations will need to be compared to a position calculation.

76. TR level positions should be calculated separately based on the counterparty side. This approach will enable authorities to calculate gross and net exposures for each counterparty.

77. Feedback to the consultation paper often asked whether calculations should be completed on a gross or net basis. The metrics included in the guidelines clarify that calculations should be made gross, on both the buyer and the seller side of each transaction. The difference between the approach required under MiFID II/R and EMIR to calculate positions resides in the fact that under EMIR the gross notional is understood as a better estimate of the systemic risk borne by the counterparties. Whilst position reporting under MiFID serves to enable supervision of compliance with position limits where the actual, in the case of options, delta-adjusted size of the position held at a given point in time is the relevant parameter. The position limits under MiFID II/R are set at the level of the underlying commodity derivative and the limit applies to the aggregation of futures and options positions. ESMA's calculation of positions by TRs under EMIR requires separate positions per derivative contract types, e.g. options and futures are part of separate positions.

78. Derivatives grouped in sets because they have the same dimensions will have different values. There is a possibility that derivatives which have matching dimensions have different values and also different signs, i.e. one derivative has a negative mark to market value and it is has the same dimensions as another derivative with a positive mark to market valuation.

79. Therefore TRs should make available calculations, on a gross basis. One position will represent similar derivatives that have a negative value, and separately another set will represent similar derivatives with a positive value. This should be done separately, for both the buyer side and the seller side of a derivative.

80. End users of the calculations then may aggregate the calculations, and Position Sets to Collateral Position Sets to determine the extent to which exposures are collateralised.

81. ESMA's guidelines include both mark to market/mark to model value and also notional value in the required metrics to be quantified in the positions. This approach is in line with feedback ESMA received which was strongly in favour of aggregating mark to market/mark to model valuations, but also recognised of the limitations of this indicator. The limitation will arise when a type of derivative contract is not reported with a mark to market/mark to model valuation, and hence the notional value is the most appropriate value that can be attributed to the derivative to ensure it is represented in the position calculations for authorities.

Guideline 18. Figures included in calculations should not be rounded but the calculated position should be rounded to an appropriate figure;

Guideline 19. The TRs should calculate and quantify positions on a gross basis by aggregating according to the following quantitative metrics When the position does not include outliers it is referred to as "clean", when it does include outliers it is referred to as "total".

a. Total number of trades used for calculating the Buyer-Side position: This refers to the number of trades contained in the position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14);

b. Total number of trades used for calculating the Seller-Side position: This refers to the number of trades contained in the position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14);

c. Total Buyer-Side Negative Notional: Aggregations of all Negative values in the field Notional (T2F20) for all derivatives pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14). The notional amount should be expressed in terms of amount and in the reported Notional Currency 1 (T2F9);

d. Total Buyer-Side Positive Notional: Aggregations of all Positive values in the field Notional (T2F20) for all derivatives pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14). The notional amount should be expressed in terms of amount and in the reported Notional Currency 1 (T2F9);

e. Total Seller-Side Negative Notional: Aggregations of all Negative values in the field Notional (T2F20) for all derivatives pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14). The notional amount should be expressed in terms of amount and in the reported Notional Currency 1 (T2F9);

f. Total Seller-Side Positive Notional: Aggregations of all Positive values in the field Notional (T2F20) for all derivatives pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14). The notional amount should be expressed in terms of amount and in the reported Notional Currency 1 (T2F9);

g. When Asset Class (T2F2) is "Credit", then the notional amount metric (Guideline 19(c), (d), (e) or (f)) should be multiplied by the Index Factor (T2F89);

h. ***Total Buyer-Side Negative Value: Aggregations of all Negative Values of the derivative (T1F17) for all derivatives pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14). The negative value should be expressed in terms of amount and in the reported Currency of the value (T1F18);***

i. ***Total Buyer-Side Positive Value: Aggregations of all Positive Values of the derivative (T1F17) for all derivatives pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14). The positive value should be expressed in terms of amount and in the reported Currency of the value (T1F18);***

j. ***Total Seller-Side Negative Value: Aggregations of all Negative Values of the derivative (T1F17) for all derivatives pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14). The negative value should be expressed in terms of amount and in the reported Currency of the value (T1F18);***

k. ***Total Seller-Side Positive Value: Aggregations of all Positive Values of the derivative (T1F17) for all derivatives pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14). The positive value should be expressed in terms of amount and in the reported Currency of the value (T1F18).***

l. ***Clean number of trades used for calculating the Buyer-Side position with all outliers removed: This refers to the number of trades contained in the position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14);***

m. ***Clean number of trades used for calculating the Seller-Side position with all outliers removed: This refers to the number of trades contained in the position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14);***

n. ***Clean Buyer-Side Negative Notional: Aggregations of all Negative values in the field Notional (T2F20) for all derivatives (except those deemed to be outliers by the TR) pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14). The notional amount should be expressed in terms of amount and in the reported Notional Currency 1 (T2F9);***

o. ***Clean Buyer-Side Positive Notional: Aggregations of all Positive values in the field Notional (T2F20) for all derivatives (except those deemed to be outliers by the TR) pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14). The notional amount should be expressed in terms of amount and in the reported Notional Currency 1 (T2F9);***

p. ***Clean Seller-Side Negative Notional: Aggregations of all Negative values in the field Notional (T2F20) for all derivatives (except those deemed to be outliers by the TR) pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14). The notional amount should be expressed in terms of amount and in the reported Notional Currency 1 (T2F9);***

q. ***Clean Seller-Side Positive Notional: Aggregations of all Positive values in the field Notional (T2F20) for all derivatives (except those deemed to be outliers by the TR) pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14). The notional amount should be expressed in terms of amount and in the reported Notional Currency 1 (T2F9);***

r. ***When Asset Class (T2F2) is "Credit", then the notional amount metric (Guideline 19(n), (o), (p) or (q)) should be multiplied by the Index Factor (T2F89);***

s. ***Clean Buyer-Side Negative Value: Aggregations of all Negative Values of the derivative (T1F17) for all derivatives (except those deemed to be outliers by the TR) pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14). The negative value should be expressed in terms of amount and in the reported Currency of the value (T1F18);***

t. ***Clean Buyer-Side Positive Value: Aggregations of all Positive Values of the derivative (T1F17) for all derivatives (except those deemed to be outliers by the TR) pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14). The positive value should be expressed in terms of amount and in the reported Currency of the value (T1F18);***

u. ***Clean Seller-Side Negative Value: Aggregations of all Negative Values of the derivative (T1F17) for all derivatives (except those deemed to be outliers by the TR) pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14). The negative value should be expressed in terms of amount and in the reported Currency of the value (T1F18); and***

v. ***Clean Seller-Side Positive Value: Aggregations of all Positive Values of the derivative (T1F17) for all derivatives (except those deemed to be outliers by the TR) pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14). The positive value should be expressed in terms of amount and in the reported Currency of the value (T1F18).***

3.9.2 Metrics used to aggregate and quantify Currency Positions

82. EMIR requires TRs to make available information on derivative positions to the ECB and other members of the ESCB in the currency that they issue in line with their mandate as central banks of issue.

83. TRs must make a single report available to each central bank of issue with a calculation of the Currency Position Set for all derivatives where the currency of that issuing bank is referred to in any of the dimensions mentioned in the dimensions section of this report for a reported derivative.

84. Given that this information could be different from the information included in the trade state data for the given member of ESCB, the TRs should filter out the additional transactions to calculate the currency positions from the full trade state data, i.e. the one available to ESMA and ESRB.

85. A calculation produced for the ECB and other members of ESCB on a daily basis will provide an aggregated view of potential exposures in specific currencies relevant to the central bank of issue. Guideline 20 confirms the metrics that TRs should use to aggregate these calculations.

Guideline 20. TRs should use the metrics listed in Guideline 19 to aggregate currency positions on a gross basis which should be made available to the central bank issuing that currency.

3.9.3 Metrics used to aggregate and quantify Collateral Position Sets and Currency Collateral Position Sets

86. The Collateral Position Set allows authorities to assess the extent to which derivatives represented in position sets are collateralised.

87. This calculation will establish the value of the collateral exchanged between the different counterparties. It will include the necessary information to link the calculation the Position Set, so authorities can infer the net credit risk among different counterparties.

88. Collateral may be posted or received by counterparties to cover:

    a) Net rather than gross positions;

    b) one or more derivatives; or

    c) different types of transactions, such as derivatives, SFTs and cash transactions.

89. Authorities will then be able to carry out an additional calculation of net collateral positions in order to obtain a more accurate representation of counterparty credit risk.

90. As with the metrics used to aggregate and quantify Position Sets (described in Guideline 16), metrics will quantify collateral positions. TRs should aggregate and quantify collateral positions using the following metrics which are taken from the EMIR reporting fields. These metrics will be relevant to all types of derivative. Information should be expressed in the original currency of collateral reported under the relevant field.

91. Authorities will be able to take the aggregations represented in these calculations and compare them to the positions and calculate exposures.

92. TRs should also calculate collateral for the derivatives included in the relevant currency position sets. This section includes the relevant guidelines for these calculations.

93. These calculations will be useful for central banks looking to understand the approach to collateralisation taken by counterparties to different derivatives in currencies for which they are the issuer. This is essential in order to allow the central banks to monitor

any potential risks stemming from under or non-collateralisation of positions in their currency of issue.

94. The following metrics should be used by TRs to quantify Collateral Position Sets and Currency Collateral Position Sets.

Guideline 21. The following metrics should be used to quantify all Collateral Position Sets and Currency Collateral Position Sets. When outliers are removed from the position the calculation is referred to as "clean", if outliers are included the position is referred to as "total":

a. ***Total Number of reports used for calculating the Set.***
b. ***Total Initial margin posted (T1F24).***
c. ***Total Variation margin posted (T1F26).***
d. ***Total Initial margin received (T1F28).***
e. ***Total Variation margin received (T1F30).***
f. ***Total Excess collateral posted (T1F32).***
g. ***Total Excess collateral received (T1F34).***
h. ***Clean Number of reports used for calculating the Set, outliers removed.***
i. ***Clean Initial margin posted (T1F24), outliers removed.***
j. ***Clean Variation margin posted (T1F26), outliers removed.***
k. ***Clean Initial margin received (T1F28), outliers removed.***
l. ***Clean Variation margin received (T1F30), outliers removed.***
m. ***Clean Excess collateral posted (T1F32), outliers removed.***
n. ***Clean Excess collateral received (T1F34), outliers removed.***

3.9.4 Metrics used to aggregate and quantify collateral in the case of Collateral Portfolios

95. There are two possible methods to populate the EMIR reporting fields related to the value of the collateral exchanged between counterparties. The two approaches have been analysed with the following summaries.

96. When collateralisation is performed on a portfolio basis (T1F22), the reporting fields (T1F23) that represent the reported value of the collateral are provided at portfolio level by reporting entities. So one portfolio code will be reported on numerous occasions for different positions, the same total value of that portfolio should be reported unless it

has changed. This will have an impact when positions with the same dimensions (including counterparty and other counterparty) are aggregated together.

97. Therefore, aggregation of those portfolio values, in line with the metrics proposed in Guideline 21, will not provide a useful indicator as the same collateral will be incorrectly included in calculations more than once.

98. If multiple reports are submitted which refer to the same collateral portfolio code, the collateral value may vary in each report due to reporting errors. If this occurs, TRs should take the median of the values across the reports sharing a portfolio code as the value of the collateral displayed in the Collateral Position Set.

99. Some respondents to the consultation paper were not in favour of this approach. However following ESMA's review of feedback received in relation to this proposal it is apparent that the median is the most accurate indicator of the actual value of a collateral portfolio when the value is reported inconsistently by reporting entities. By taking an alternative indicator, such as the mean value reported as the value of a collateral portfolio, there is a greater risk that collateral values will be inaccurately skewed by reports that include erroneous values. Taking the median value will reduce this risk.

Guideline 22. When collateralisation is performed on a portfolio basis and derivatives share a collateral portfolio code (T1F23), TRs should aggregate collateral by taking the median of all the collateral values listed in Guideline 21 across the reports which share the code, as the value of that collateral portfolio for the purpose of the Collateral Position Set.

100. Feedback to the consultation paper in relation to aggregating positions not collateralised on a portfolio basis was limited. One respondent suggested that aggregations should be calculated according to derivative transaction type, another respondent asked for clarity as to how the aggregations should be conducted. ESMA confirms that collateral should be aggregated so that it can be compared to positions as explained in Guideline 23.

Guideline 23. When collateralisation is not performed on a portfolio basis, the variables that represent the value of the collateral only apply to an individual derivative and so where possible TRs should provide an aggregation of those collateral positions on the basis of the Metrics listed in Guideline 21.

3.9.5 Dimensions used to calculate positions across asset classes and contract types

101. This section provides information on the specific dimensions TRs should use to create the calculations, grouping together derivatives and collateral with similar characteristics.

102. Regarding the information to use and the timeline for making the calculations available, the same provisions apply for each of the calculations, however each set (Position Set, Collateral Position Set, Currency Position Set, Currency Collateral Position Set) uses different dimensions.

103. When calculating the sets, it is necessary to consider all the dimensions included in the guideline for each calculation, so that the calculations that TRs produce for authorities encompass all relevant derivatives.

104. TRs should aggregate derivatives with asset class as one of the dimensions. Given the specific characteristics of different asset classes and contract types, specific dimensions which are relevant only to certain types of asset class are included in the guidelines. Where the dimensions are not relevant to the asset class being reported, the fields will be empty and therefore authorities will be able to disregard those trades in the calculations.

105. Feedback was mixed with regard to the usefulness of including Master Agreement Type as a dimension. Some respondents were in favour of the proposal however other respondents felt the field was not reported accurately to TRs, potentially because it is a free text field. However ESMA proposes to maintain this dimension because of the importance it brings for discerning specific criteria in relation to the positions being calculated.

106. In the consultation paper ESMA also asked respondents whether the field “Intragroup” should be included in the dimensions for position calculations. Feedback was generally in favour of including this dimension and so it has been added to Guideline 24.

Guideline 24. All derivatives reported to TRs should be aggregated with derivatives with identical entries in the following fields representing dimensions of the derivatives grouped together in position sets to specify counterparties to derivatives:

a. ***Reporting Counterparty ID (T1F2)***
b. ***ID of the other Counterparty (T1F4);***
c. ***Currency of the value (T1F18);***
d. ***Collateralisation (T1F21);***
e. ***Collateral Portfolio code (T1F23) if applicable;***
f. ***Contract type (T2F1);***
g. ***Asset class (T2F2);***
h. ***Underlying identification type (T2F7);***
i. ***Underlying identification (T2F8);***
j. ***Notional Currency 1 (T2F9);***
k. ***Notional Currency 2 (T2F10) if applicable;***
l. ***Deliverable Currency (T2F11);***
m. ***Deliverable Currency 2 (T2F12) if applicable;***
n. ***Master Agreement Type (T2F30);***
o. ***Master Agreement Version (T2F31);***
p. ***Cleared (T2F35);***
q. ***Intragroup (T2F38)***
r. ***Exchange Rate basis (T2F64);***
s. ***Option type (T2F78), when applicable.***

3.10 Aggregating derivatives with similar times to maturity

107. In addition to the above data fields, the EMIR reporting data field which relates to 'Value of Time to maturity' should also be used to derive a set of 'buckets/dimension values' within which derivatives with similar times left to maturity are grouped in calculations. This approach was one that consultation paper respondents generally agreed with. However feedback also stressed the need for the guidelines to be very clear as to the method of calculation of maturity buckets and hence in which bucket a derivative should be included. ESMA has accommodated this feedback in the final guidelines in relation to maturity buckets.

108. A derived variable (dimension) called 'Time to maturity' will be used and it will be calculated according to the number of calendar days between the reference date and the field Maturity Date (T2F27). Derivatives with similar times left to maturity should be grouped in each bucket.

Guideline 25. TRs should use the following buckets to aggregate derivatives with similar values for 'Time to Maturity'. Time to Maturity should be calculated as the difference between a derivative's Maturity Date and the reference date, based on a Gregorian calendar.

Difference between Maturity Date and reference date	Value of Time to maturity
One month or less	"T01_00M_01M"
More than one month but no more than three months (inclusive)	"T02_01M_03M"
More than three months but less than six months (inclusive)	"T03_03M_06M"
More than six months but less than nine months (inclusive)	"T04_06M_09M"
More than nine months but less than 12 months (inclusive)	"T05_09M_12Y"
More than twelve months but less than 2 years (inclusive)	"T06_01Y_02Y"
More than 24 months but less than 3 years (inclusive)	"T07_02Y_03Y"
More than 36 months but less than 4 years (inclusive)	"T08_03Y_04Y"
More than 48 months but less than 5 years (inclusive)	"T09_04Y_05Y"
More than 5 years but less than 10 years (inclusive)	"T10_05Y_10Y"
More than 10 years but less than 15 years (inclusive)	"T11_10Y_15Y"
More than 15 years but less than 20 years (inclusive)	"T12_15Y_20Y"
More than 20 years but less than 30 years (inclusive)	"T13_20Y_30Y"
More than 30 years but less than 50 years (inclusive)	"T14_30Y_50Y"
More than 50 years	"T15_50Y_XX_Y"
Maturity date is blank (open ended contract)	"T16_BL"
Maturity date is NA	"T17_NA"

Guideline 26. In the event that a derivative has a maturity date which does not exist in the month of the reference date (i.e. 29, 30, 31 month dependent), the decision for which maturity bucket that derivative should be included in should be made by treating that derivative in the same way as if the calculation were being made on the maturity day for the month of the reference date. For example if a derivative calculation has a reference date of 31 January and the derivative matures on 28 February, that derivative should be included in the 'One month or less' maturity bucket. If a reference date is on 31 January and the maturity date is 1 March then that derivative should be included in the 'More than one month but no more than three months' maturity bucket. If a calculation's reference date is on 30 April, and the derivative matures on 31 May then that derivative should be included in the 'One month or less' maturity bucket.

3.11 Dimensions specific to asset classes

109. The following guidelines are not applicable to all classes of derivative, and instead should be used to group derivatives with specific asset class, as specified.

110. Where the following dimensions are not relevant to the reported derivative, the field will be empty and therefore authorities will be able to disregard those derivatives.

3.11.1 Dimensions specific to interest rate swaps

111. 'Type of IRS' is a derived variable that uses the reported values according to the specifications below based on the information provided in the fields Fixed rate of leg 1 (T2F39), Fixed rate of leg 2 (T2F40), Floating rate of leg 1 (T2F55) and Floating rate of leg 2 (T2F58).

112. The table below explains the value of variables which should be used to group similar interest rate swaps in Positions Sets and Currency Position Sets.

113. The column entitled 'Value of variable Type of IRS' in Guideline 27 shows the different values for dimensions to be used for the interest rate swaps.

114. If there is a mistake in the counterparty's reporting of fixed/float then TRs should enter NA as the value of the variable.

Guideline 27. IRS derivatives should also be grouped together according to their type. With reference to whether Leg 1 and Leg 2 are fixed or floating, the below table explains how 'type of IRS' should be discerned and how IRS derivatives should be grouped:

Fixed rate of leg 1	Fixed rate of leg 2	Floating rate of leg 1	Floating rate of leg 2	Value of variable Type of IRS[6]
P	B	B	P	FIX-FLOAT
B	P	P	B	FIX-FLOAT
P	P	B	B	FIX-FIX
B	B	P	P	BASIS

P= Populated, B=Blank

3.11.2 Dimensions relating to credit derivatives

115. The following dimensions are for calculating Position Sets and Currency Position Sets in credit derivatives reported to TRs and should be used in addition to those dimensions referred to in Guideline 24 through to Guideline 26.

116. The dimensions are taken directly from the reporting fields and will be populated when a credit derivative is reported to a TR. Aggregating credit derivatives in line with these additional dimensions will ensure that derivatives with similar characteristics are included in the same sets, providing authorities with useful data for further analysis.

117. Guideline 28 states the dimensions to use only for asset class "credit" derivatives.

[6] In the event that Fixed rate of leg 1 is populated with the value 1.00 and the Floating rate of leg 1 is populated with the value "EURI", the variable Type of IRS will be populated with the value "FIX_EURI". In the case that fixed legs are not populated but in Floating rate of leg 1 the value "LIBO" is provided and in the Floating rate of leg 2 the value "EURI" is provided, the variable Type of IRS will be populated with the value "EURI_LIBO"

Guideline 28. For credit derivatives, TRs should use the following dimensions to group together derivatives for Position Sets and Currency Position Sets in addition to those dimensions referred to from Guideline 24 to Guideline 26:

a. Seniority (T2F83), when reference entity is populated in field 'Reference entity';

b. Tranche (T2F90), when index is populated in field 'Underlying identification'(T2F8).

3.11.3 Dimensions relating to commodity derivatives

118. Commodity derivatives require counterparties to report commodity base and commodity details. This Position Set will enable authorities to understand potential exposures to commodity types across the markets. The guidelines will allow for the aggregation of derivatives which are related to the different types of commodities.

119. The dimensions will provide authorities with an acceptable level of aggregation and ensure that positions are useful and not overly granular.

120. The variable can be left blank (when non-applicable) or it can have a value for Other when the information cannot be classified.

121. The types of Commodity are listed in Guideline 29 which describes the additional dimensions that should be used to calculate positions in commodity derivatives. This guideline should also be applied to Currency Position Sets when the asset type is commodity.

Guideline 29. For commodity derivatives, a TR should aggregate metrics for classes of commodity derivatives in accordance with the dimensions referred to in Guideline 24 to Guideline 26 of this paper as per each of the following details reported in T2F65 and T2F66 of the amended ITS on reporting:

- ***a. metals – "commodity base" field reported as 'ME'.***
- ***b. oil products – "commodity details" reported with 'OI'***
- ***c. coal – "commodity details" reported with 'CO'***
- ***d. gas – "commodity details" reported with 'NG'***
- ***e. power – "commodity details" reported with 'EL' or 'IE'***
- ***f. agricultural products – "commodity base" reported with 'AG'***
- ***g. other commodities including freight and C10 – "commodity base" reported with 'FR' or 'IN' or 'EX' or 'OT' or "commodity details" reported with 'WE'***
- ***h. derivatives on emission allowances – "commodity details" reported with 'EM'***
- ***i. not specified - when the derivative is a commodity under Asset Class (T2F2) but does not follow the previous extractions***
- ***j. blank, when the derivative is not within the commodity Asset Class (T2F2)***

3.12 Dimensions used to calculate Collateral Position Sets

122. The Collateral Position Set should be based on a set of dimensions that group together derivative reports with similar characteristics in relation to collateral used for that derivative.

123. Feedback to the consultation paper considered whether it was useful to convert collateral positions in different currencies into a common currency (Euros). Generally respondents agreed this would be useful for comparison purposes.

124. Therefore Guideline 16 also applies to the Collateral Position Sets.

Guideline 30. TRs should use the following dimensions to group together derivatives using the same collateral. When each of the below dimensions match for two or more reports of collateral with Action Type 'V', those should be grouped together as a Collateral Position Set:

a. ***Reporting Counterparty ID (T1F2)***
b. ***ID of the other counterparty (T1F4)***
c. ***Collateralisation (T1F21), and***
d. ***Collateral Portfolio (T1F22)***
e. ***Currency of the initial margin posted (T1F25)***
f. ***Currency of the variation margin posted (T1F27)***
g. ***Currency of the initial margin received (T1F29)***
h. ***Currency of the variation margin received (T1F31)***
i. ***Currency of the excess collateral posted (T1F33)***
j. ***Currency of the excess collateral received (T1F35)***

3.13 Dimensions used to calculate Currency Position Set

125. To ensure Currency Position Sets provide authorities with useful information the dimensions to group the relevant derivatives differ to those of other position calculations.

126. A TR should provide each central bank which issues a currency which is included in the below dimensions, access to those Position Sets. TRs should convert these sets into Euros in line with Guideline 16 to allow for comparisons by authorities as necessary.

Guideline 31. TRs should determine the relevant Currency Position Sets for authorities where the counterparties have reported the currency of issue of that authority for one of the below dimensions.

a. ***Notional Currency 1 (T2F9);***
b. ***Notional Currency 2 (T2F10), or***
c. ***Deliverable Currency (T2F11),***
d. ***Delivery currency 2 (T2F61), when applicable.***

Guideline 32. TRs should provide a Currency Position Set to authorities determined in accordance with Guideline 31 and based upon all the dimensions included from Guideline 24 through to Guideline 26. Guideline 27, Guideline 28 and Guideline 29 should also be applied to Currency Position Sets when appropriate.

3.14 Dimensions used to calculate Currency Collateral Position Sets

127. As described earlier in this report, these sets will calculate collateral on a currency basis. The below guideline should be followed to create the calculations. The feedback to the consultation paper did not raise any specific matters in relation to the currency collateral position sets.

Guideline 33. TRs should aggregate the collateral pertaining to the Currency Position Sets determined in accordance with Guideline 31 and using the dimensions referred to in Guideline 30.

4 Annexes

4.1 Annex I - Cost-benefit analysis

128. As indicated in sections 1 and 4 of this final report, these guidelines establish a consistent and harmonised approach and a comprehensive procedure to carry out position calculations as required in accordance with EMIR Article 80(4). The guidelines cover the procedures TRs should follow to calculate the four different datasets which ESMA has proposed are necessary for authorities to monitor financial stability.

129. ESMA is including a reduced cost-benefit analysis outlining the qualitative assessment of the impact of the guidelines to TRs. Included in this analysis are costs which were fed back from consultation paper respondents. These guidelines provide clear instructions to TRs who are legally required to produce position calculations. They leverage off the trade state information, which the TRs are already required to produce. This reduces any potential additional costs of calculating positions.

130. The guidelines also build on already existing requirements for TRs such as ISO 20022 XML file format, SFTP channel for data transmission, data cut-off time used to produce trade state data and ECB currency conversion rates.

131. On the data availability and record-keeping side, the incremental costs for TRs are also minimal, as ESMA's simulation exercises indicated that the additional burden in terms of the volume of records that a TR will produce will increase by 4%, not a significant amount.

132. In terms of frequency of the calculation of positions, ESMA considered to what extent reduced frequency, e.g. weekly, would be useful instead of daily. While setting up a calculation process at the TRs is probably the most costly part of a project, the frequency of a calculation module is not considered to be a significant cost driver. In addition, it was concluded that in crisis situations having a week old position of the exposures of a given entity or to a given product or market would not be desirable and would diminish the relevance of the position data.

133. It is acknowledged that there will be implementation costs for TRs. Consultation paper feedback provided varying figures as to the potential sizes of these costs (varying from a one off cost of €220,000 to over $1mn). In the event that TRs decide to increase their fees to help cover these costs, it will be a small increase for reporting entities and

will be to fund the useful calculations which will in turn help authorities monitor financial stability in the EU.

134. The guidelines provide multiple benefits for authorities in that they will ensure that TRs are able to fulfil their legal obligation to provide positions in derivatives in a fashion that is consistent across EU markets.

135. Therefore the benefits will be wide-reaching, notably enhancing the ability for EU authorities to monitor systemic risks to financial stability in EU markets through the use of helpful named aggregate data which authorities can use in their daily monitoring activities or in crisis situations.

4.2 Annex II - Opinion of the Securities and Markets Stakeholder Group

In accordance with Article 16 of Regulation (EU) No 1095/2010 ESMA requested the opinion of the ESMA Securities and Markets Stakeholder Group. The SMSG decided not to provide an opinion.

4.3 Annex III Guidelines for position calculation by Trade Repositories under EMIR

I. Scope

Who?

1. These guidelines apply to trade repositories (TRs) registered or recognised by ESMA.

What?

2. The adopted guidelines provide information to ensure harmonisation and consistency in relation to:

   a) the calculations carried out by TRs pursuant to Article 80(4) of Regulation (EU) No 648/2012 (EMIR)[7];

   b) the level of access to positions provided by TRs to the entities included in Article 81(3) of EMIR with access to positions in line with Article 2 of Regulation (EU) No 151/2013[8] (hereinafter, "the CDR on data access"); and

   c) the operational aspects for access to position data by the entities included in Article 81(3) of EMIR.

When?

3. These guidelines apply as of 3 December 2018.

II. Legislative references, abbreviations and concepts

4. Unless otherwise specified, terms used in EMIR have the same meaning in these guidelines. In addition the following concepts and terms apply.

Legislative references and abbreviations

EMIR	European Market Infrastructures Regulation – Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories (the Regulation, hereinafter)

[7] Commission Delegated Regulation (EU) No 648/2012 of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories, OJ L201, 27.7.2012, p. 1-59

[8] Commission Delegated Regulation (EU) No 151/2013 of 19 December 2012 supplementing Regulation (EU) No 648/2012 of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories with regard to regulatory technical standards on the minimum details of the data to be reported to trade repositories and operational standards for aggregating, comparing and accessing the data, OJ L52, 23.2.2013, p.33-36

ISO	International Organization for Standardization
TR	A Trade Repository within the meaning of Article 2(2) of EMIR that has been registered or recognised by ESMA in accordance with Articles 55 and 77 of EMIR respectively
XML	Extensible Mark-up Language

Glossary of concepts and terms

5. "Positions" means the representation of exposures between a pair of counterparties that comprise Positions Sets, Collateral Position Sets, Currency Positions Sets and Currency Collateral Position Sets.

6. "Outstanding Derivatives" are those derivatives, including CCP-cleared derivatives, which are included under Article 5(4)(b) of the CDR on data access, as amended by Commission Delegated Regulation 2017/1800[9] (hereinafter "the amended CDR on data access") reported to a TR and have not matured or which have not been the subject of a report with action types "E", "C", "P" or "Z" as referred to in Field 93 in Table 2 of Commission Implementing Regulation (EU) No 2017/105[10] ('the amended ITS on reporting' hereinafter).

7. "Variables" are those values either taken directly from the EMIR reporting fields or derived from those fields that will be used by TRs to calculate positions.

8. "Authority" means one of the entities referred to in Article 81(3) of EMIR.

9. "Metrics" are variables used to quantify the different calculations. The fields used to define metrics (and dimensions) follow the nomenclature as per the amended ITS on reporting. For instance, T1F17 means field 17 of table 1.

10. "Dimensions" are variables related to derivatives that are used to group derivatives together into positions.

11. "Position Set" means (a set of) outstanding derivatives that are considered to be economically related according to their dimensions for a pair of counterparties. Position

[9] Commission Delegated Regulation (EU) 2017/1800 of 29 June 2017 amending Delegated Regulation (EU) No 151/2013 supplementing Regulation (EU) No 648/2012 of the European Parliament and of the Council OJ L259 7.10.2017 p. 14-17

[10] Commission Implementing Regulation (EU) 2017/105 of 19 October 2016 amending Implementing Regulation (EU) No 1247/2012 laying down implementing technical standards with regard to the format and frequency of trade reports to trade repositories according to Regulation (EU) No 648/2012 of the European Parliament and of the Council on OTC derivatives, central counterparties and trade L17 OJ 21.1.2017 p.17-41

sets will contain derivatives that are mutually fungible and also those that are not mutually fungible yet have similar economic characteristics.

12. “Reference Date” – means the date the calculation refers to.

III. Purpose

Legal Provisions

13. Article 81(1) of EMIR provides that a TR shall regularly, and in an easily accessible way, publish aggregate positions by class of derivatives on the contracts reported to it.

14. Furthermore, in accordance with Article 16(1) of Regulation (EU) No 1095/2010[11], the objectives of these guidelines are to establish consistent, efficient and effective supervisory practices within the European System of Financial Supervision and to ensure the common, uniform and consistent application of the following EMIR provisions:

    a) Article 80(4) of EMIR which provides that TRs shall calculate positions by class of derivative and by reporting entity based on the details of the derivative contracts reported in accordance with Article 9 of EMIR; and,

    b) Article 81(3) of EMIR which provides that a TR shall make the necessary information available to authorities to enable them to fulfil their respective responsibilities and mandates.

Purpose

15. The purpose of these guidelines is as follows:

    a) Ensure that relevant authorities are provided with consistent and harmonised positions in relation to derivatives; and

    b) Ensure that data made available to authorities in the form of aggregations carried out by TRs is of a high standard.

    c) These guidelines also leverage on the requirement under Article 9 of EMIR, “*Counterparties and CCPs shall ensure that the details of their derivatives are*

[11] Regulation (EU) No 1095/2010 of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Securities and Markets Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/77/EC OJ L 331, 15.12.2010, p. 84–119.

reported without duplication", and on the fact that reporting of CCP-cleared positions by counterparties follows Q&A TR 17[12] and that there is no double-counting between trade and position reports.

IV. Guidelines for position calculation for Trade Repositories under EMIR

Guideline 1. TRs should calculate position data and make it available in four separate datasets − Position Set, Collateral Position Set, Currency Position Set and Currency Collateral Position Set. These datasets should be uniquely identifiable and labelled with the relevant reference date.

Guideline 2. Unless otherwise specified, all the guidelines apply to each calculation. This excludes the following guidelines which should be applied only to the following calculations:

a. Guideline 19, Guideline 24, Guideline 25, Guideline 26, Guideline 31 and Guideline 32 are applicable to Positions Sets;

b. Guideline 20, Guideline 24, Guideline 25, Guideline 26, Guideline 31 and Guideline 32 are applicable to Currency Position Sets;

c. Guideline 21, Guideline 22, Guideline 23 and Guideline 30 are relevant to Collateral Position Sets;

d. Guideline 21, Guideline 22, Guideline 23, Guideline 30, Guideline 31 and Guideline 33 are applicable to Currency Collateral Position Sets;

e. Guideline 27 is only applicable to Position Sets and Currency Position Sets where the field Asset class (T2F2) is reported as "IR" and field Contract type (T2F1) is reported as "SW";

f. Guideline 28 is only applicable to Position Sets and Currency Position Sets where the field Asset class (T2F2) is reported as "CR";

g. Guideline 29 is only applicable to Position Sets and Currency Position Sets where the field Asset class (T2F2) is reported as "CO".

Guideline 3. When calculating positions it is essential that information used is up to date and relevant. The information to be used for calculations is based only on the information available in Trade State data on outstanding derivatives.

Guideline 4. TRs should calculate positions taking into account the latest trade state of the outstanding derivatives reported to them at the time of the calculation of the position.

Guideline 5. TRs should calculate positions consistently irrespective of whether the derivative reported is single or dual-sided and consistently irrespective of the reconciliation status of the report.

[12] Questions and Answer - Implementation of the Regulation (EU) No 648/2012 on OTC derivatives, central counterparties and trade repositories (EMIR) and updated on a regular basis

Guideline 6. TRs should determine outstanding derivatives, including (i) the counterparties to a trade and (ii) the trade state data in order to calculate the set of outstanding derivatives pertaining to a position.

Guideline 7. TRs should include all relevant derivatives reports held by a TR pertinent to a position of a particular Reporting counterparty ID (T1F2) in the relevant position calculation. TRs should include derivatives irrespective of whether they are or are not reconciled, paired or matched.

Guideline 8. TRs should calculate positions on a "best available information" basis. TRs should include all information, as available at the date of the position calculation, conforming to common validation rules in the position calculation, irrespective of the reconciliation state.

Guideline 9. TRs should ensure that the calculations relate to the most recent full day's set of trade state data. Calculations should be updated on each business day. TRs should also make the position available to authorities on the day of the calculation in line with the following steps:

	Event	Day/time
1	End of trading day T	Day T
2	Retrieve appropriate FX reference rates on day T for purposes of converting for derivatives where T1F17 (Value of contract) should be converted, to be applied when calculation is performed on day T+2. (Guideline 16)	Day T 16:00 UTC (17:00 CET)
3	Reporting entities to provide reports to TRs on derivatives traded on day T	From Day T - Day T+1 23:59 UTC
4	Deadline for submitting reports to TRs on derivatives traded on day T	Day T+1 23:59 UTC
5	TR calculation of positions based on the latest trade state of outstanding derivatives as of end of day T+1	Day T+2 00:00 UTC - 12:00 UTC (13:00 CET)
6	Position reports based on trading day T are made available by the TR to the relevant authorities.	Day T+2 12:00 UTC (13:00 CET) onwards.

Guideline 10. When TRs provide an authority with access to erroneous data, and the TR has caused the error itself, the data should be updated by the TR so that it is corrected as soon as it is possible and the erroneous calculations for the previous two years, as of the last working day of each week, should be re-reported correctly. When a mistake by a reporting counterparty, rather than the TR, has led to an incorrect calculation by a TR, all authorities should be notified, and given the opportunity to request an amended version of each calculation that was incorrect from the relevant TR.

Guideline 11. TRs should maintain a record of all the position calculations which they have calculated for at least two years.

Guideline 12. TRs which receive data in line with the portability guidelines should keep the previously calculated positions transferred from the old TR for at least two years and follow Guideline 11 prospectively.

Guideline 13. TRs should exclude derivatives that have missing data for one of the required metrics or dimensions from all relevant calculations. TRs should do this even in instances where the reported derivative is in line with the validation rules.

Guideline 14. A TR should have in place a robust procedure to identify abnormal values, i.e. outliers, relating to the derivatives it receives from counterparties. For a given position, a TR should calculate positions according to the metrics which exclude reports with outliers, and also the metrics which include all reports which meet the dimensions for each calculation.

Guideline 15. TRs should provide access to positions to the relevant authorities by using an ISO 20022 XML template and following the operational standards defined in Articles 4 and 5 of the CDR on data access.

Guideline 16. When notional currency or buyer-side or seller-side value does not match currency of collateral, TRs should convert all the metrics which are valued in currencies to Euros. This should be done by the TR using the relevant foreign exchange rate published on the ECB website on the reference date. If the required rate is not published then an appropriate alternative reference rate should be used by TRs.

Guideline 17. Upon request from ESMA, a TR should have available at all times the calculation algorithms they use as well as the procedure(s) which they follow to produce each of the four datasets relating to the position calculations described in these Guidelines.

Guideline 18. Figures included in calculations should not be rounded but the calculated position should be rounded to an appropriate figure;

Guideline 19. The TRs should calculate and quantify positions on a gross basis by aggregating according to the following quantitative metrics When the position does not include outliers it is referred to as "clean", when it does include outliers it is referred to as "total".

a. Total number of trades used for calculating the Buyer-Side position: This refers to the number of trades contained in the position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14);

b. Total number of trades used for calculating the Seller-Side position: This refers to the number of trades contained in the position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14);

c. Total Buyer-Side Negative Notional: Aggregations of all Negative values in the field Notional (T2F20) for all derivatives pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14). The notional amount should be expressed in terms of amount and in the reported Notional Currency 1 (T2F9);

d. Total Buyer-Side Positive Notional: Aggregations of all Positive values in the field Notional (T2F20) for all derivatives pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14). The notional amount should be expressed in terms of amount and in the reported Notional Currency 1 (T2F9);

e. Total Seller-Side Negative Notional: Aggregations of all Negative values in the field Notional (T2F20) for all derivatives pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14). The notional amount should be expressed in terms of amount and in the reported Notional Currency 1 (T2F9);

f. Total Seller-Side Positive Notional: Aggregations of all Positive values in the field Notional (T2F20) for all derivatives pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14). The notional amount should be expressed in terms of amount and in the reported Notional Currency 1 (T2F9);

g. When Asset Class (T2F2) is "Credit", then the notional amount metric (Guideline 19(c), (d), (e) or (f)) should be multiplied by the Index Factor (T2F89);

h. Total Buyer-Side Negative Value: Aggregations of all Negative Values of the derivative (T1F17) for all derivatives pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14). The negative value should be expressed in terms of amount and in the reported Currency of the value (T1F18);

i. Total Buyer-Side Positive Value: Aggregations of all Positive Values of the derivative (T1F17) for all derivatives pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14). The positive value should be expressed in terms of amount and in the reported Currency of the value (T1F18);

j. Total Seller-Side Negative Value: Aggregations of all Negative Values of the derivative (T1F17) for all derivatives pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14). The negative value should be expressed in terms of amount and in the reported Currency of the value (T1F18);

k. Total Seller-Side Positive Value: Aggregations of all Positive Values of the derivative (T1F17) for all derivatives pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14). The positive value should be expressed in terms of amount and in the reported Currency of the value (T1F18).

l. Clean number of trades used for calculating the Buyer-Side position with all outliers removed: This refers to the number of trades contained in the position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14);

m. Clean number of trades used for calculating the Seller-Side position with all outliers removed: This refers to the number of trades contained in the position set for

which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14);

n. Clean Buyer-Side Negative Notional: Aggregations of all Negative values in the field Notional (T2F20) for all derivatives (except those deemed to be outliers by the TR) pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14). The notional amount should be expressed in terms of amount and in the reported Notional Currency 1 (T2F9);

o. Clean Buyer-Side Positive Notional: Aggregations of all Positive values in the field Notional (T2F20) for all derivatives (except those deemed to be outliers by the TR) pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14). The notional amount should be expressed in terms of amount and in the reported Notional Currency 1 (T2F9);

p. Clean Seller-Side Negative Notional: Aggregations of all Negative values in the field Notional (T2F20) for all derivatives (except those deemed to be outliers by the TR) pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14). The notional amount should be expressed in terms of amount and in the reported Notional Currency 1 (T2F9);

q. Clean Seller-Side Positive Notional: Aggregations of all Positive values in the field Notional (T2F20) for all derivatives (except those deemed to be outliers by the TR) pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14). The notional amount should be expressed in terms of amount and in the reported Notional Currency 1 (T2F9);

r. When Asset Class (T2F2) is "Credit", then the notional amount metric (Guideline 19(n), (o), (p) or (q)) should be multiplied by the Index Factor (T2F89);

s. Clean Buyer-Side Negative Value: Aggregations of all Negative Values of the derivative (T1F17) for all derivatives (except those deemed to be outliers by the TR) pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14). The negative value should be expressed in terms of amount and in the reported Currency of the value (T1F18);

t. Clean Buyer-Side Positive Value: Aggregations of all Positive Values of the derivative (T1F17) for all derivatives (except those deemed to be outliers by the TR) pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "B" in the field Counterparty Side (T1F14). The positive value should be expressed in terms of amount and in the reported Currency of the value (T1F18);

u. Clean Seller-Side Negative Value: Aggregations of all Negative Values of the derivative (T1F17) for all derivatives (except those deemed to be outliers by the TR) pertaining to a position set for which the Reporting Counterparty ID (T1F2) has reported "S" in the field Counterparty Side (T1F14). The negative value should be expressed in terms of amount and in the reported Currency of the value (T1F18); and

v. Clean Seller-Side Positive Value: Aggregations of all Positive Values of the derivative (T1F17) for all derivatives (except those deemed to be outliers by the TR) pertaining to a position set for which the Reporting Counterparty ID (T1F2) has

reported "S" in the field Counterparty Side (T1F14). The positive value should be expressed in terms of amount and in the reported Currency of the value (T1F18).

Guideline 20. TRs should use the metrics listed in Guideline 19 to aggregate currency positions on a gross basis which should be made available to the central bank issuing that currency.

Guideline 21. The following metrics should be used to quantify all Collateral Position Sets and Currency Collateral Position Sets. When outliers are removed from the position the calculation is referred to as "clean", if outliers are included the position is referred to as "total":

a. Total Number of reports used for calculating the Set.

b. Total Initial margin posted (T1F24).

c. Total Variation margin posted (T1F26).

d. Total Initial margin received (T1F28).

e. Total Variation margin received (T1F30).

f. Total Excess collateral posted (T1F32).

g. Total Excess collateral received (T1F34).

h. Clean Number of reports used for calculating the Set, outliers removed.

i. Clean Initial margin posted (T1F24), outliers removed.

j. Clean Variation margin posted (T1F26), outliers removed.

k. Clean Initial margin received (T1F28), outliers removed.

l. Clean Variation margin received (T1F30), outliers removed.

m. Clean Excess collateral posted (T1F32), outliers removed.

n. Clean Excess collateral received (T1F34), outliers removed.

Guideline 22. When collateralisation is performed on a portfolio basis and derivatives share a collateral portfolio code (T1F23), TRs should aggregate collateral by taking the median of all the collateral values listed in Guideline 21 across the reports which share the code, as the value of that collateral portfolio for the purpose of the Collateral Position Set.

Guideline 23. When collateralisation is not performed on a portfolio basis, the variables that represent the value of the collateral only apply to an individual derivative and so where possible TRs should provide an aggregation of those collateral positions on the basis of the Metrics listed in Guideline 21.

Guideline 24. All derivatives reported to TRs should be aggregated with derivatives with identical entries in the following fields representing dimensions of the derivatives grouped together in position sets to specify counterparties to derivatives:

a. Reporting Counterparty ID (T1F2)

b. ID of the other Counterparty (T1F4);

c. Currency of the value (T1F18);

d. *Collateralisation (T1F21);*

e. *Collateral Portfolio code (T1F23) if applicable;*

f. *Contract type (T2F1);*

g. *Asset class (T2F2);*

h. *Underlying identification type (T2F7);*

i. *Underlying identification (T2F8);*

j. *Notional Currency 1 (T2F9);*

k. *Notional Currency 2 (T2F10) if applicable;*

l. *Deliverable Currency (T2F11);*

m. *Deliverable Currency 2 (T2F12) if applicable;*

n. *Master Agreement Type (T2F30);*

o. *Master Agreement Version (T2F31);*

p. *Cleared (T2F35);*

q. *Intragroup (T2F38)*

r. *Exchange Rate basis (T2F64);*

s. *Option type (T2F78), when applicable.*

Guideline 25. TRs should use the following buckets to aggregate derivatives with similar values for 'Time to Maturity'. Time to Maturity should be calculated as the difference between a derivative's Maturity Date and the reference date, based on a Gregorian calendar.

Difference between Maturity Date and reference date	Value of Time to maturity
One month or less	"T01_00M_01M"
More than one month but no more than three months (inclusive)	"T02_01M_03M"
More than three months but less than six months (inclusive)	"T03_03M_06M"
More than six months but less than nine months (inclusive)	"T04_06M_09M"
More than nine months but less than 12 months (inclusive)	"T05_09M_12Y"
More than twelve months but less than 2 years (inclusive)	"T06_01Y_02Y"
More than 24 months but less than 3 years (inclusive)	"T07_02Y_03Y"
More than 36 months but less than 4 years (inclusive)	"T08_03Y_04Y"
More than 48 months but less than 5 years (inclusive)	"T09_04Y_05Y"
More than 5 years but less than 10 years (inclusive)	"T10_05Y_10Y"
More than 10 years but less than 15 years (inclusive)	"T11_10Y_15Y"

More than 15 years but less than 20 years (inclusive)	“T12_15Y_20Y”
More than 20 years but less than 30 years (inclusive)	“T13_20Y_30Y”
More than 30 years but less than 50 years (inclusive)	“T14_30Y_50Y”
More than 50 years	“T15_50Y_XX_Y”
Maturity date is blank (open ended contract)	“T16_BL”
Maturity date is NA	“T17_NA”

Guideline 26. In the event that a derivative has a maturity date which does not exist in the month of the reference date (i.e. 29, 30, 31 month dependent), the decision for which maturity bucket that derivative should be included in should be made by treating that derivative in the same way as if the calculation were being made on the maturity day for the month of the reference date. For example if a derivative calculation has a reference date of 31 January and the derivative matures on 28 February, that derivative should be included in the ‘One month or less’ maturity bucket. If a reference date is on 31 January and the maturity date is 1 March then that derivative should be included in the ‘More than one month but no more than three months’ maturity bucket. If a calculation’s reference date is on 30 April, and the derivative matures on 31 May then that derivative should be included in the ‘One month or less’ maturity bucket.

Guideline 27. IRS derivatives should also be grouped together according to their type. With reference to whether Leg 1 and Leg 2 are fixed or floating, the below table explains how ‘type of IRS’ should be discerned and how IRS derivatives should be grouped:

Fixed rate of leg 1	Fixed rate of leg 2	Floating rate of leg 1	Floating rate of leg 2	Value of variable Type of IRS[13]
P	B	B	P	FIX-FLOAT
B	P	P	B	FIX-FLOAT
P	P	B	B	FIX-FIX
B	B	P	P	BASIS

P=Populated, B= Blank

Guideline 28. For credit derivatives, TRs should use the following dimensions to group together derivatives for Position Sets and Currency Position Sets in addition to those dimensions referred to from Guideline 24 to Guideline 26:

a. Seniority (T2F83), when reference entity is populated in field ‘Reference entity’;

[13] In the event that Fixed rate of leg 1 is populated with the value 1.00 and the Floating rate of leg 1 is populated with the value “EURI”, the variable Type of IRS will be populated with the value “FIX_EURI”. In the case that fixed legs are not populated but in Floating rate of leg 1 the value “LIBO” is provided and in the Floating rate of leg 2 the value “EURI” is provided, the variable Type of IRS will be populated with the value “EURI_LIBO”

b. Tranche (T2F90), when index is populated in field 'Underlying identification'(T2F8).

Guideline 29. For commodity derivatives, a TR should aggregate metrics for classes of commodity derivatives in accordance with the dimensions referred to in Guideline 24 to Guideline 26 of this paper as per each of the following details reported in T2F65 and T2F66 of the amended ITS on reporting:

a. metals – "commodity base" field reported as 'ME'.

b. oil products – "commodity details" reported with 'OI'

c. coal – "commodity details" reported with 'CO'

d. gas – "commodity details" reported with 'NG'

e. power – "commodity details" reported with 'EL' or 'IE'

f. agricultural products – "commodity base" reported with 'AG'

g. other commodities including freight and C10 – "commodity base" reported with 'FR' or 'IN' or 'EX' or 'OT' or "commodity details" reported with 'WE'

h. derivatives on emission allowances – "commodity details" reported with 'EM'

i. not specified - when the derivative is a commodity under Asset Class (T2F2) but does not follow the previous extractions

j. blank, when the derivative is not within the commodity Asset Class (T2F2)

Guideline 30. TRs should use the following dimensions to group together derivatives using the same collateral. When each of the below dimensions match for two or more reports of collateral with Action Type 'V', those should be grouped together as a Collateral Position Set:

a. Reporting Counterparty ID (T1F2)

b. ID of the other counterparty (T1F4)

c. Collateralisation (T1F21), and

d. Collateral Portfolio (T1F22)

e. Currency of the initial margin posted (T1F25)

f. Currency of the variation margin posted (T1F27)

g. Currency of the initial margin received (T1F29)

h. Currency of the variation margin received (T1F31)

i. Currency of the excess collateral posted (T1F33)

j. Currency of the excess collateral received (T1F35)

Guideline 31. TRs should determine the relevant Currency Position Sets for authorities where the counterparties have reported the currency of issue of that authority for one of the below dimensions.

a. Notional Currency 1 (T2F9);

b. Notional Currency 2 (T2F10), or

c. Deliverable Currency (T2F11),

d. Delivery currency 2 (T2F61), when applicable.

Guideline 32. TRs should provide a Currency Position Set to authorities determined in accordance with Guideline 31 and based upon all the dimensions included from Guideline 24 through to Guideline 26. Guideline 27, Guideline 28 and Guideline 29 should also be applied to Currency Position Sets when appropriate.

Guideline 33. TRs should aggregate the collateral pertaining to the Currency Position Sets determined in accordance with Guideline 31 and using the dimensions referred to in Guideline 30.