EUREX

Excessive System Usage Fee

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1. List of abbreviations

This section lists all the abbreviations used to describe the Excessive System Usage Fee (ESU Fee).

Abbreviation	Description
ALV	Allianz Option
AMM	Advanced Market Maker
CRE	Common Report Engine
DMM	Designated Market Maker
ESU Fee	Excessive System Usage Fee
FDAX	DAX® Futures
FESX	EURO STOXX 50® Index Futures
FGBL	Euro-Bund Futures
HFT	High-frequency trading
MM	Market Maker
MMPM	Market Maker performance measurement
OESX	EURO STOXX 50® Index Options
PMM	Permanent Market Maker
QP	Quote performance
SQ	Spread quality
T7	Eurex Exchange's trading architecture
VI	Volatility Indicator

Table 1 : Abbreviations

2.   Calculation of Excessive System Usage Fee

In order to encourage a responsible attitude towards the use of the T7 system resources, Eurex Exchange defines limits for the number of transactions sent by each Participant. If a Participant exceeds the defined limits, then a fee for Excessive System Usage (ESU) may apply.

The transaction limit is calculated per Participant, per product, per trading day, and per limit type. There are three types of transaction limits: a transaction limit for standard orders, a transaction limit for transactions which do not lead to a market data update as well as order modifications which lead to a cancellation without a trade[1] and a transaction limit for all transactions.

- **Transaction limit for standard orders:** This limit is applicable only to standard orders. The orders which carry the "recoverability flag" are marked as standard orders by T7. The activation of the recoverability flag for an order allows retrieval of the complete history of the order in the trading system. Such orders are called standard orders. Their opposites are lean orders which allow a higher throughput and reduce latency. The latter consume less system resources. Therefore, the use of lean orders over the use of standard orders is preferable in case of sending thousands of orders per product.

  Further information is available in the Eurex Enhanced Trading Interface Manual which is available on the Eurex website https://www.eurex.com:

  Support > Initiatives & Releases > T7 Release 11.0 > Trading Interfaces

- **Transactions without market data update:** This limit is applicable to transactions which reach the matching engines, but either have no market data impact (i.e. failed IOC orders) or are order modifications which result in an order deletion without a contract being traded (such transactions are for example the modification of a resting order into an aggressive Book or Cancel order, which will lead to a deletion of the resting order).

- **Transaction limit for all transactions:** The term "all transactions" describes every message that reaches the matching engine of T7. These include standard orders and non-standard orders, quotes, and inquiries. Messages that are rejected at the gateway are excluded.

Generally, "standard orders" as well as "transactions without market data update" are a subset of "all transactions". The relationship is shown in Figure 1.
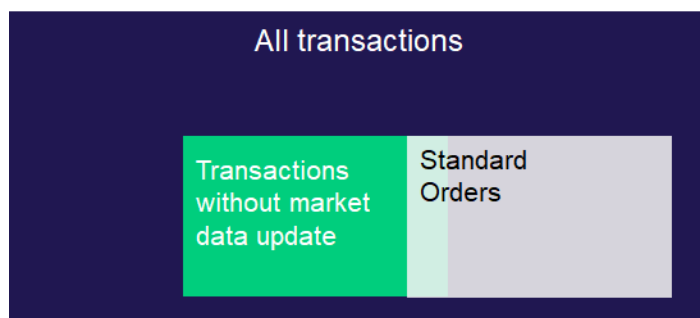
Figure 1 : Relationship between standard orders, transactions without an orderbook update and all transactions

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[1] In the following, we refer to these transactions as "transactions without market data update".

Every day, for each Participant, the actual transactions are counted per product. If this transaction count exceeds the predefined transaction limit, then such instance is considered as a violation of the limit.

There are two types of violations:

- **Accidental violation:** A violation of the limit is considered "accidental" if a limit is exceeded <u>less than four times</u> for a product in a calendar month. Accidental violations are not subject to the ESU Fee.

- **Systematic violation:** A violation of the limit is considered "systematic" if a limit is exceeded <u>more than three times</u> for a product in a calendar month. Systematic violations are subject to the ESU Fee. Thus, the ESU Fee is not only applied from the fourth violation onwards, but also applies to all the earlier violations in that particular month.

It is important to note that violations are <u>counted per product across the three limit types</u>. Suppose there were two violations in the limit type "all transactions" and two violations in the limit type "standard orders" in the product DAX® Futures (FDAX) in a particular month. This is considered as a systematic violation. The ESU Fee is calculated for the four violations separately and the total fee for that Participant will be the sum of the individual ESU Fees for each limit type. Please note, in case there are violations against multiple limit types in a product on a day, it will be counted as one violation.

The ESU Fee is calculated using Equation 1.

$$\text{ESU Fee} = [\text{Transaction count} - \text{Transaction limit}] \times \text{Fee (€)}$$

Equation 1 : Total ESU Fee

A transaction is defined as a system message that reaches the matching engine and yields a response. A transaction can be identified by inspecting the system response. If the response contains a time stamp from the matching engine, that message is added to the daily transaction count of the Participant for the respective product.

Technically, the time stamp from the matching engine can be found in the structure ResponseHeaderME or NRResponseHeaderME in the field TrdRegTSTTimeIn. Table 8 in the appendix provides technical examples of transactions.

An order, a quote and a mass quote; each of these is counted separately as one transaction.

2.1   General remarks

<u>**Minimum Quotation Requirements**</u>

The Minimum Quotation Requirements reflect the parameters from the commercial Liquidity Provider schemes. The parameters are defined along the three dimensions of the commercial schemes:

1. Spread requirements (e.g. 10% of the bid price, or 2 ticks)
2. Size requirement (e.g. 10 lots)
3. Time requirement (e.g. 8.5 hours for 140 option strikes, or 8 hours for the front month futures contract)

However, there are some differences if the quotation requirements do not restrict on a specific instrument or a specific timeframe throughout the day.

In case there are multiple commercial Liquidity Provider Schemes in a product, the Minimum Quotation Requirements create a synthetic scheme for this particular product, along the weakest requirement within the three dimensions, e.g.:

1. The size requirement is from the scheme which requires the smallest size
2. The spread requirements are from the scheme with the widest spreads
3. The time requirement is from the scheme with the smallest required time

Eurex Exchange Minimum Quotation Requirements necessitate that a participant quotes at a high frequency for various instruments, which means that participants generate higher transaction counts compared to those participants that do not engage in quotation of products (even if a Participant barely fulfills the Minimum Quotation Requirements).

Therefore, in case the participant fulfills the Minimum Quotation Requirements, the limit needs to be raised to a much higher level. Eurex Exchange does not want to discourage participants from quoting more instruments than the required ones.

2.2 Transaction limit

Figure 2 provides an overview of the different factors that affect the calculation of a transaction limit. The transaction limit consists of three components: (i) volume component, (ii) floor and (iii) volatility factor.
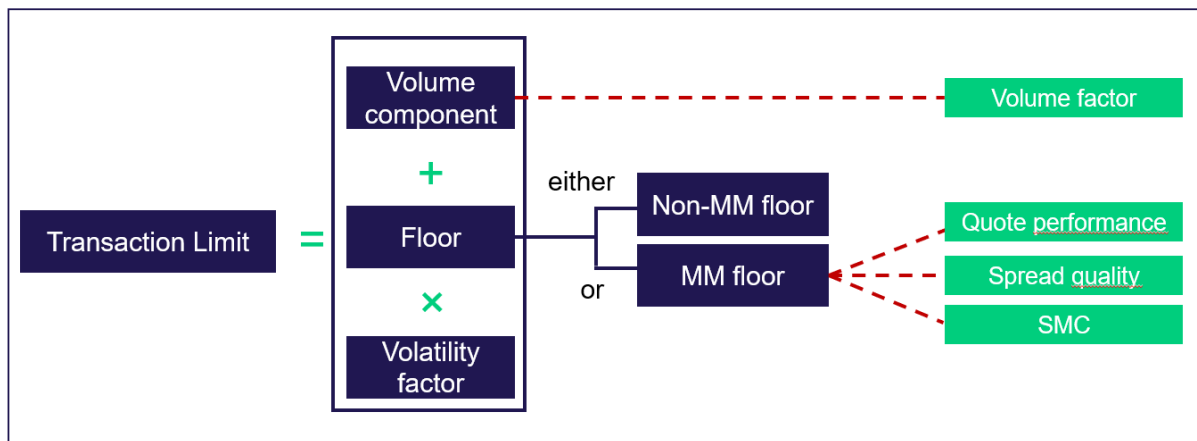
Figure 2 : Overview of factors affecting the transaction limit used for the ESU Fee

The volatility factor is defined based on the value of the volatility indicator. The rationale for this factor is that if the volatility is increasing, then more quote updates are required to reflect the changes in the market price. Depending on the volatility indicator, values of the volatility factor change. Table 2Table 3 shows example values for the volatility factor per volatility indicator (VI).

VI	Volatility factor
VI <= 8.0	1.00

8.0 < VI <= 12.0	1.50
12.0 < VI <= 20.0	2.00
20.0 < VI	4.00

Table 2 : Volatility indicator and Volatility factor for volume based OTR for product type OINX

Please note: The term Market Maker in the context of the ESU Fee refers to Participants fulfilling the Minimum Quotation Requirements[2]. A trading participant acting as liquidity provider who signed the Liquidity Provider Agreement and fulfilled the defined requirements of the so-called Stress Presence Building Block on a day with Stressed Market Conditions, is according to the General Supplement of the Liquidity Provider Agreement, eligible for an increased Market Maker base by 10% on that day. For all rights and duties of the liquidity provider, the provisions of the Liquidity Provider Agreement apply.

2.2.1 Volume component

The volume component is proportional to the traded order book volume. A volume component is calculated by multiplying the order book volume by the predefined volume factor. A higher order book volume increases the volume component. The bigger the volume component, the higher the transactions limit. A typical value of a volume factor for "all transactions" is 50.

Example: Suppose the following factors on a particular day for a particular product

- Order book volume generated by a Participant = 2,000 and
- Volume factor = 50

This results in

$$\text{Volume Component} = \text{Order Book Volume} \times \text{Volume Factor}$$
$$\text{Volume Component} = 2,000 \times 50 = 100,000$$

2.2.2 Floor

As shown in Figure 2, there are two types of floor components.

- **Non-Market Maker floor (Non-MM floor):**
  For each Participant per day, per product and for each type of a transaction limit, a minimum floor is set regardless of any traded volume in the order book. The values for the Non-Market Maker floor are predefined depending on the product.

- **Market Maker floor (MM floor):**
  This component is used in case of products where Market-Making is applicable (i.e. the Minimum Quotation Requirements are defined) and for the Market Makers that satisfy the condition shown in Equation 2. The grace factor allows Market Maker with a quote performance lower than the quote performance of the Market Maker performance requirement to be eligible for the Market Maker floor. Equation 3 shows the formula to calculate the Market Maker floor.

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[2] See definition in 2.1

Foremost, it is necessary to decide whether the MM floor is applicable. This decision is taken by checking whether the Market Maker meets the condition under consideration related to the quote performance described by Equation 2.
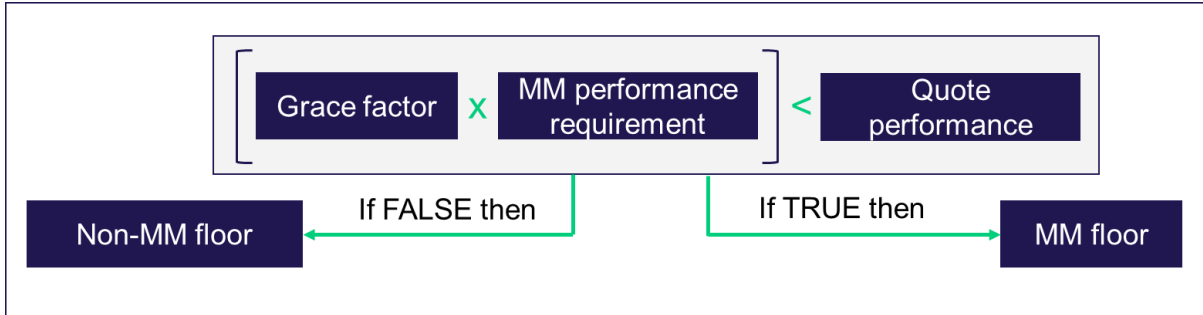
Equation 2 : Decision whether MM floor is applicable

The quote performance takes into consideration that different products (e.g. ALV or OESX) have different Market Maker performance requirements.

Example: Suppose for a certain product:

- Grace factor = 0.25
- Market Maker (MM) performance requirement = 0.85
- Quote performance of Market Maker A (QP_A) = 0.70
- Quote performance of Market Maker B (QP_B) = 0.20

<u>**Calculation:**</u>

$$Grace\ factor \times MM\ performance\ requirement\ for\ the\ given\ product = 0.25 \times 0.85 = \mathbf{0.2125}$$

Therefore:

Since 0.2125 is less than 0.70 (QP_A) ➔ MM floor will be applicable for Market Maker A

Since 0.2125 is greater than 0.20 (QP_B) ➔ Non-MM floor will be applicable for Market Maker B

The next step is to understand the calculation of MM floor. Equation 3 shows the formula to calculate the Market Maker floor.

Equation 3 : Calculation of the MM floor component for ESU Fee

The following text describes various factors shown in Equation 3.

- **Volatility Indicator (VI):**

The volatility indicator is solely calculated based on the best bid and ask prices on a fixed 5-minute time grid. The average of the bid and ask prices is called mid-quote and is below referred to as $price_{t,d}$ with grid-points $t \in \{0, 1, ..., n\}$ on day d. The first grid-point refers to the first observation on the fixed grid on day s (e.g. at 1:15 CET), and n refers to the last observation on day d (e.g. at 22:00 CET). In corner cases it may happen, that the orderbook is one sided (i.e. either the ask or bid side is empty) – in such cases only the available side is considered. Please note: Bid and Ask Prices refer to the public orderbook, hence resting market orders are ignored.

The volatility indicator Is calculated by the following steps:

1. Calculate the sum of 5 minute squared log-returns (intraday volatility for day d) over all n 5min intervals t of a trading day

$$\text{volatility}_{intraday,d} = \sum_{t=1}^{n} log \left(\frac{price_{t,d}}{price_{t-1,d}} \right)^2$$

2. Calculate the squared overnight log-return (in the same instrument) (overnight volatility)

$$\text{volatility}_{overnight,d} = log \left(\frac{price_{first,d}}{price_{last,d-1}} \right)^2$$

With

$price_{first,d} = price_{t-1,d}, with\ t = 1$

$price_{last,d-1} = price_{t,d-1}, with\ t = n$

3. Take the sum of intraday and overnight volatility and scale it to a 30day volatility by multiplying with $\sqrt{30} \cdot 100$ in the following this will be called RV_{Raw}

$$\text{RV}_{raw,d} = \sqrt{(\text{volatility}_{overnight,d} + \text{volatility}_{intraday,d})} \ \sqrt{30} \cdot 100$$

4. Take the average of the RV_{Raw} over the last m days (later on referred as Averaging Window), this term is called volatility indicator

$$Volatility\ Indicator_d = \max \left\{ \frac{1}{m-1} \sum_{t=1}^{m-1} \text{RV}_{raw,d-t}, \text{RV}_{raw,d} \right\}$$

- **Quote performance (QP):**

  The quote performance is the ratio of "covered time" to "required time".

  - Covered time: This is the total time in all possible instruments even beyond the strike price window of a product the participant actually quotes in a day. To calculate the covered time, only those quotes that satisfy the constraints regarding the maximum spread and minimum quote size are considered. The "covered time" used in this context is the sum of all-time intervals across all outright instruments in a given product where a participant has quoted according to the Minimum Quotation Requirements.

  - Required time: This is the total time in all possible series of the strike price window of a product the participant could quote in a day. A typical example is 7 strikes per expiration for 6 expirations for both put and call for time per day, yields to required time = $7 \times 6 \times 2 \times 8.5$ hours = 714 hours. Please note the time per day will be replaced with the

actual time for which the instruments were in continuous trading (i.e. removing the auctions, or in case of a system crash reducing the time)

The covered time is then set in relation to the required time of those outright instruments (i.e. an option strike) which need to be quoted to fulfil the Minimum Quotation Requirements. Therefore, the maximum quote performance is the relation of the number of outright instruments that have been listed in the entire product and the number of outright instruments that need to be quoted by participants. Please note, quotation activity in complex instruments is currently not considered.

For example, a participant is required to quote seven strikes (out of possible 15 in strike price window) to receive up to 100 percent (= 1.0) Market Maker performance (regarding the Minimum Quotation Requirements). If the participant quotes 15 series of the correspondence product, then this performance goes up to 214 percent (= 2.14). Thus, the quote performance is directly proportional to the amount of instruments a participant quotes. Another example: A participant is required to quote one futures expiration for 8.5 hours and he decides to quote this expiration for 20 hours. Hence, his quote performance will be 20 hours/8.5 hours = 2.35. *Thus, the larger the cover time a participant quotes for given products, the higher is the value of the quote performance.*

- **Spread quality (SQ):**

The spread quality is a performance measure based on the average spread in relation to the required spread calculated for all outright instruments quoted by a participant in a product for a day. The spread quality is applicable only to those quotes, which satisfy the constraints regarding the maximum spread and the minimum quote size as defined by the Minimum Quotation Requirements. It is calculated using the following formula on a tick by tick basis for each instrument and aggregated per day using time weighted averages,

$$SQ = \begin{cases} \frac{Max\ Spread\ Allowed\ -\ Quoted\ Spread}{Max\ Spread\ Allowed\ -\ Tick\ Size}, & if\ Max\ Spread\ Allowed > Tick\ Size \\ 1, & if\ Max\ Spread\ Allowed = Tick\ Size \end{cases}.$$

The rationale for this factor is that if the bid-offer spread becomes tighter, then more quote updates are required to reflect the changes in the market price. Depending on the spread quality, values of the MQ base factor change. Table 3 shows example values for MQ base factor per spread quality (SQ).

SQ	MQ base
SQ <= 0.2	250,000
0.2 < SQ <= 0.3	500,000
0.3 < SQ <= 0.4	750,000
0.4 < SQ	1,000,000

Table 3 : MQ base factor and spread quality for the ESU Fee

3. Parameters

3.1 Limit parameters

This section contains the values of the limit parameters per product type. <u>The limit is defined based on the product type of the product.</u> The product types are published in the product overview section on the Eurex website https://www.eurex.com:

Markets > Product Overview > Complete list of all Eurex products in csv format

The following parameters are used to calculate the ESU Fee:

Product group*	Product Type	Grace Factor	All transactions				Standard orders				Transactions w/o market data impact and order modifications which lead to an order cancelation			
			Volume Factor	Non-MM Floor	Spread Quality	MQ Base	Volume Factor	Non-MM Floor	Spread Quality	MQ Base	Volume Factor	Non-MM Floor	Spread Quality	MQ Base
					0	225,000			0	45,000			n/a	n/a
					0.2	450,000			0.2	90,000			n/a	n/a
					0.3	675,000			0.3	135,000			n/a	n/a
Equity Options	OSTK	0.25	50	350,000	0.4	900,000	10	45,000	0.4	180,000	10	225,000	n/a	n/a
					0	225,000			0	45,000			n/a	n/a
					0.2	450,000			0.2	90,000			n/a	n/a
					0.3	675,000			0.3	135,000			n/a	n/a
Single Stock Futures	FSTK	0.25	50	350,000	0.4	900,000	10	45,000	0.4	180,000	10	45,000	n/a	n/a
					0	375,000			0	75,000			n/a	n/a
					0.2	750,000			0.2	150,000			n/a	n/a
					0.3	1,125,000			0.3	225,000			n/a	n/a
Equity Index Futures	FINX	0.25	50	375,000	0.4	1,500,000	10	75,000	0.4	300,000	10	187,500	n/a	n/a
					0	375,000			0	75,000			n/a	n/a
					0.2	750,000			0.2	150,000			n/a	n/a
					0.3	1,125,000			0.3	225,000			n/a	n/a
Volatility Index Futures	FVOL	0.25	50	375,000	0.4	1,500,000	10	75,000	0.4	300,000	10	75,000	n/a	n/a
					0	375,000			0	75,000			n/a	n/a
					0.2	750,000			0.2	150,000			n/a	n/a
					0.3	1,125,000			0.3	225,000			n/a	n/a
Equity Index Dividend Options	OFIX	0.25	50	375,000	0.4	1,500,000	10	75,000	0.4	300,000	10	225,000	n/a	n/a
					0	1,500,000			0	75,000			n/a	n/a
					0.2	3,000,000			0.2	150,000			n/a	n/a
					0.3	4,500,000			0.3	225,000			n/a	n/a
Equity Index Options	OINX	0.25	50	1,500,000	0.4	6,000,000	10	75,000	0.4	300,000	10	750,000	n/a	n/a
					0	400,000			0	60,000			n/a	n/a
					0.2	450,000			0.2	90,000			n/a	n/a
					0.3	750,000			0.3	150,000			n/a	n/a
Fixed Income Futures	FBND	0.25	50	300,000	0.4	1,500,000	10	60,000	0.4	300,000	10	150,000	n/a	n/a
					0	400,000			0	60,000			n/a	n/a
					0.2	450,000			0.2	90,000			n/a	n/a
					0.3	750,000			0.3	150,000			n/a	n/a
Money Market Futures	FINT	0.25	50	300,000	0.4	1,500,000	10	60,000	0.4	300,000	10	60,000	n/a	n/a
					0	900,000			0	60,000			n/a	n/a
Options on Fixed Income Futures					0.2	1,350,000			0.2	90,000			n/a	n/a
Options on Money Market	OFBD				0.3	2,250,000			0.3	150,000			n/a	n/a
Futures	OFIT	0.25	50	450,000	0.4	4,500,000	10	60,000	0.4	300,000	10	225,000	n/a	n/a
					0	2,250,000			0	75,000			n/a	n/a
					0.2	3,000,000			0.2	150,000			n/a	n/a
					0.3	3,750,000			0.3	225,000			n/a	n/a
Foreign Exchange Futures	FCUR	0.25	50	750,000	0.4	4,500,000	10	75,000	0.4	300,000	10	n/a	n/a	n/a
					0	2,250,000			0	75,000			n/a	n/a
					0.2	3,000,000			0.2	150,000			n/a	n/a
					0.3	3,750,000			0.3	225,000			n/a	n/a
Foreign Exchange Options	OCUR	0.25	50	1,500,000	0.4	4,500,000	10	75,000	0.4	300,000	10	n/a	n/a	n/a
					0	1,500,000			0	75,000			n/a	n/a
					0.2	3,000,000			0.2	150,000			n/a	n/a
	New asset				0.3	4,500,000			0.3	225,000			n/a	n/a
New asset classes	classes	0.25	50	1,500,000	0.4	6,000,000	10	75,000	0.4	300,000	10	75,000	n/a	n/a

* Note: The table contains the main product group per product type and the list of product group names is not exhaustive.

Table 4 : Per product group, per transaction limit type, MM base values and spread quality as well as volume factor for the ESU Fee

A trading participant, acting as liquidity provider and fulfilling the defined requirements of the so-called Stress Presence Building Block on a day with Stressed Market Conditions, is eligible for an increased MM base by 10% on that day (c.f. section 2.2).

Product group*	Volatility Indicator				All transactions		Standard orders		Transactions w/o market data impact and order modifications which lead to an order cancelation	
	Product Type	Reference Product	Rollover Window	Averaging Window	Volatility Indicator	Volatility Factor	Volatility Indicator	Volatility Factor	Volatility Indicator	Volatility Factor
Equity Options Single Stock Futures Equity Index Futures Volatility Index Futures Equity Index Options Equity Index Dividend Options	OSTK FSTK FINX FVOL OINX OFIX	FESX	1	10	0.0 8.0 12.0 20.0	1 1.5 2 4	0.0 8.0 12.0 20.0	1 1.5 2 4	0.0 8.0 12.0 20.0	1 1.5 2 4
Foreign Exchange Futures Foreign Exchange Options	FCUR OCUR	FCEU	2	10	0.0 3 4 6.0	1 1.5 2 4	0.0 3 4 6.0	1 1.5 2 4	0.0 3 4 6.0	1 1.5 2 4
Fixed Income Futures Options on Fixed Income Futures	FBND OFBD	FGBL	2	10	0.0 3 5 10.0	1 1.5 2 4	0.0 3 5 10.0	1 1.5 2 4	0.0 3 5 10.0	1 1.5 2 4
Money Market Futures Options on Money Market Futures	FINT OFIT	FGBS	2	10	0 0.5 1 2	1 1.5 2 4	0 0.5 1 2	1 1.5 2 4	0 0.5 1 2	1 1.5 2 4
New asset classes	New asset classes	FESX	1	10	0.0 8.0 12.0 20.0	1 1.5 2 4	0.0 8.0 12.0 20.0	1 1.5 2 4	0.0 8.0 12.0 20.0	1 1.5 2 4

Table 5: Parameters for calculating the volatility indicator and the corresponding volatility factors

3.2 Fee parameters

This section includes the fee parameters that will be used to calculate the ESU Fee. The fee structure to calculate the ESU Fee is shown in Table 6. It is important to note that the sliding scale of the range mentioned in Table 6 is applied to the transactions which are in excess of the transaction limit. The percentage values in the range are relative to the individual transaction limit. It is worth to recollect the fact that transaction limits are predefined per Participant, per product and per day.

ESU Fee per exceeded transaction	With a violation of the transaction limit by
EUR 0.05	Up to 50%
EUR 0.10	50% - 100%
EUR 0.25	> 100%

Table 6 : ESU Fee structure

4.   Sample calculation of the Excessive System Usage Fee

The following example explains the calculation of the ESU Fee.

Observed Data:
For a particular product, for a registered liquidity provider, for a particular day
- Total number of transactions = 900,000
- Order book volume = 1,000
- Quote performance = 0.30
- Spread quality = 0.45
- Volatility Indicator = 2, hence Volatility Factor is given as 1.00
- Fulfilled the Minimum Quotation Requirements during Stressed Market Conditions

Predefined parameters for the same product are:
- Volume factor = 50
- Non-MM floor = 250,000
- Grace factor = 0.25
- MM performance requirement = 0.85

Calculations:
- Calculation to check whether MM floor is applicable (Equation 2):
  $Grace\ factor \times MM\ performance\ requirement = 0.25 \times 0.85 = 0.2125$
  0.2125 is less than the observed quote performance (= 0.30)
  ➔ MM floor is applicable in this case

- Calculation of volume component:
  $Volume\ component = Order\ book\ volume \times Volume\ factor$
  $Volume\ component = 1,000 \times 50 = 50,000$

- Calculation of MM floor (Table 3):
  For the spread quality value of 0.45, the corresponding value of the MQ base = 1,000,000.
  As the participant fulfilled the Minimum Quotation Requirements during Stressed Market
  Conditions the MQ base will be increased by 10%, therefore, MQ base = 1,100,000.
  Equation 3 shows the formula to calculate the MM floor.
  $MM\ floor$
  $= maximum\ (Non\ Market\ Maker\ floor, (Market\ Maker\ base \times Quote\ performance))$
  $= maximum\ (250,000, [\ 1,100,000 * 0.30\ ]) = maximum\ (250,000, 330,000)$
  $= 330,000$

- Calculation of transaction limit:
  Based on Figure 2,
  $Transaction\ limit\ = Volume\ component + Market\ Maker\ floor \times Volatility\ Factor$
  $Transaction\ limit\ = 50,000 + 330,000 \times 1.0$
  $Transaction\ limit\ = 380,000$

- Calculation of the ESU Fee:
  Number of transactions exceeding the limit $= 900,000 - 380,000 = 520,000$.
  Apply the fee structure from Table 6 to these transactions exceeding the limit. The calculations
  for that are shown in Table 7.

With a violation of the transaction limit by	ESU Fee per transaction	Number of transactions in the corresponding range	Fee (EUR)
Up to 50%	€ 0.05	$380{,}000 * 50\% = 190{,}000$	9,500
50% to 100% of transaction limit	€ 0.10	$380{,}000 * 50\% = 190{,}000$	19,000
> 100% of transaction limit	€ 0.25	$(520{,}000 - 190{,}000 - 190{,}000) = 140{,}000$	35,000
Total ESU Fee:			**63,500**

Table 7 : Sample ESU Fee calculation

5. Customer reports

Following reports will be made available on a daily* basis:
- TR102 Excessive System Usage Report
- CB069 Transaction Report
- TD954 Stressed Market Conditions
- TR104 Eurex Daily ESU Parameter
- TR105 Minimum Quotation Requirements
- TR107 Excessive System Usage Detailed Transaction Report

These reports are available for the Participants via the Common Report Engine. The Participants themselves have to query these reports from the Common Report Engine. Every day, the report for the previous trading day is available. The CRE stores the reports for the last 10 trading days.

* Additionally, intraday versions of the report CB069 are available every 30 minutes, starting at 1:30 CET (for T7 FX starting at 0:30 CET). **Please note:** The publication of the report every 30 minutes is an indication. Due to processing procedures to the CRE the reports can be delayed..

5.1 TR102 Excessive System Usage Report

- The report is generated on a daily basis
- This report contains the data per product per limit type for each elapsed trading day of the month
- The report provides information on the transaction limit, actual transaction count; If the limit is exceeded, then violation count along with the excess transactions are shown
- The value in the column 'headroom': indicates the distance from the limit
    - 0.0 ≤ Headroom ≤ 1.0
    - $Headroom = [\,1.0 - (\,transaction\ count\ /\ transaction\ limit)\,]$
    - If the number gets closer to 0, then it would be a matter of concern
- The values in the column 'feeEUR' indicate the ESU Fee in Euro; The purpose of this column is to show the ESU Fee for all violations that will have to be paid by a Participant in case the limit violation turns out to be a systematic one

5.2 CB069 Transaction Report

- If the values from TR102 for a particular product are observed to be so high that deeper investigation is necessary, then this report can be used to find out the further information at session ID level and/or trader ID level
- Intraday versions of this report are made available every 30 minutes and can be used by the Participants to track, for the respective trading day, number of transactions, ordered volume and traded volume – per product, per limit type, per session ID and per trader ID; The report data will provide an aggregate of the current trading day
- The intraday reports are available via CRE and will have the following name convention: 90RPTCB069EUREXYYYYMMDDHHMM
- The cut-off time for the intraday report is shown in the field **"rptPrntEffTim"**, i.e., all activities at this timestamp will be considered in the report.
- The intraday reports are available in the following formats: .csv and .xml.

- The number of orders and the ordered volume are shown in the columns 'Orders Count' and 'Ordered Volume'. The number of trades and the traded volume values are shown in the columns 'Trades Count' and 'Traded Volume' respectively.
- For the limit type 'Standard', the values of traded volume and ordered volume are not measured separately. "n/a" stands for not available.

The CB069 report consists of three parts:

❶ The first part provides the information on number of transactions, number of orders, ordered volume, number of trades and traded volume per product per limit type.

❷ The second part provides additional granularity of session ID level to the information from the first part. The column 'Session' contains session IDs.

❸ The third part provides additional granularity of trader ID level to the information from the first part. The column 'User' lists trader IDs.

```
Participant          Participant Long Name
-----------  ----------------------------------------
   XXXXX     XXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Product  Limit Type  Transactions Count  Ordered Volume  Orders Count  Trades Count  Traded Volume
-------  ----------  ------------------  --------------  ------------  ------------  --------------
FDAX     Standard                    60             n/a           n/a           n/a            n/a
FDAX     All                         60             250            60            50            130
FESX     Standard                     5             n/a           n/a           n/a            n/a
FESX     All                          5              60             5             5             60
```

```
   BU                  BU Long Name                  BU Identifier
--------  ----------------------------------------  --------------
XXXXX     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX               123

Session   Product  Limit Type  Transactions Count  Ordered Volume  Orders Count  Trades Count  Traded Volume
--------  -------  ----------  ------------------  --------------  ------------  ------------  --------------
90000001  FDAX     All                         20             100            20            40            100
90000001  FDAX     Standard                    20             n/a           n/a           n/a            n/a
90000001  FESX     All                          2              50             2             2             50
90000001  FESX     Standard                     2             n/a           n/a           n/a            n/a
90000002  FDAX     All                         40             150            40            10             30
90000002  FDAX     Standard                    40             n/a           n/a           n/a            n/a
90000002  FESX     All                          3              10             3             3             10
90000002  FESX     Standard                     3             n/a           n/a           n/a            n/a
```

```
   User    Product  Limit Type  Transactions Count  Ordered Volume  Orders Count  Trades Count  Traded Volume
-----------  -------  ----------  ------------------  --------------  ------------  ------------  --------------
TRD001     FDAX     Standard                    40             n/a           n/a           n/a            n/a
TRD001     FDAX     All                         40             150            40            10             30


   User    Product  Limit Type  Transactions Count  Ordered Volume  Orders Count  Trades Count  Traded Volume
-----------  -------  ----------  ------------------  --------------  ------------  ------------  --------------
TRD002     FESX     Standard                     2             n/a           n/a           n/a            n/a
TRD002     FESX     All                          2              10             2             2             10


   User    Product  Limit Type  Transactions Count  Ordered Volume  Orders Count  Trades Count  Traded Volume
-----------  -------  ----------  ------------------  --------------  ------------  ------------  --------------
TRD003     FDAX     Standard                    20             n/a           n/a           n/a            n/a
TRD003     FDAX     All                         20             100            20            40            100
TRD003     FESX     Standard                     3             n/a           n/a           n/a            n/a
TRD003     FESX     All                          3              50             3             3             50
```

Figure 3 : Structure of the daily CB069 report

5.3   TD954 Stressed Market Conditions

- The report is generated on a daily basis
- This report contains the data per product for each elapsed trading day of the month
- The report provides information of the fulfilment of the Minimum Quotation Requirement during Stressed Market Conditions for all trading days in the current month and the fulfilment month-to-date

5.4   TR104 Eurex Daily ESU Parameter

- The report is generated on a daily basis
- This report contains the current parameters per product and limit type
- It contains the daily data per product for all elapsed as well as the current trading day
- The reports are available via CRE and will have the following name convention: 90RPTTR104PUBLIYYYYMMDD
- The column 'limType' shows the type of the transaction limit (A = Transaction limit for all transactions, N = Transactions without market data update, S = Transaction limit for standard orders)
- The column 'graceFactor' shows the grace factor
- The columns 'floor' and 'volFactor' show the base limit volume and count
- As the name indicates, the column 'smcFactor' shows the stressed market factor for the OTR calculation

5.5   TR105 Minimum Quotation Requirements

- The report is generated on a daily basis
- This report contains the Minimum Quotation Requirements for each product (if applicable)
- It contains the daily data per product for all the elapsed trading days
- The reports are available via CRE and will have the following name convention: 90RPTTR105PUBLIYYYYMMDD
- The columns 'MinQuoteSize' and 'minQuoteSizeSMC' show the minimum quote size during normal and Stressed Market Conditions

5.6   TR107 Excessive System Usage Detailed Transaction Report

- This report combines the information from the TR102 and the CB069 to ease the identification of user IDs / session IDs which causes ESU violations and cases close to a violation
- The report is generated on a daily basis and is available via CRE and will have the following name convention: 90RPTTR107EUREXYYYYMMDD
-

Detailed information on the structure of all the reports is available on the Eurex website
www.eurex.com:

Support > Initiatives > T7 Releases > Choose the current T7 Release > System Documentation > Under "Reports" you will find the "T7 XML Report Reference Manual" for the respective release

Details and manuals on further T7 Releases can be found [here](.).

6. Billing

Eurex Exchange will generate a monthly invoice per Participant containing all systematic violations.

All Participants will receive the report CB197 containing the detailed information on the ESU Fee by the end of each month. The following diagram shows the structure of this report.

```
*******************************************************************
*                    EUREX                    *
*               C O N F I D E N T I A L        *
*         CB197 EXCESS TRANSACTION LIMIT FEES          *
*         XXXXX                                *
*         AS OF DATE:          99-99-99        *
*         RUN DATE  :          99-99-99        *
*******************************************************************

ClMbr ExMbr Curr
----- ----- ----
XXXXX XXXXX  XXX

Prod Prod Transaction Transactions   Transaction    Excess        LT Additional Info                    Fee Amount
Type ID   Date              Limit      Transactions
---- ---- ---------- --------------- --------------- -- --------------------------------------- -------------
XXXX XXXX 9999-99-99 XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX X XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX -
9999999999,99
  XXXX 9999-99-99 XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX  X XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX -
9999999999,99
  XXXX 9999-99-99 XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX  X XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX -
9999999999,99
----------------------------------------------------------------------------------------------------
Total per Product:                                        -9999999999.99

Prod Prod Transaction Transactions   Transaction    Excess        LT Additional Info                    Fee Amount
Type ID   Date              Limit      Transactions
---- ---- ---------- --------------- --------------- -- --------------------------------------- -------------
XXXX XXXX 9999-99-99 XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX X XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX -
9999999999,99
  XXXX 9999-99-99 XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX  X XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX -
9999999999,99
  XXXX 9999-99-99 XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX  X XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX -
9999999999,99
----------------------------------------------------------------------------------------------------
Total per Product Type:                                   -9999999999.99


Total per Trading Member:                                 -9999999999.99

Total per Clearing Member:                                -9999999999.99

                 * * * END OF REPORT * * *
```

Figure 4 : Structure of the CB197 report (excess transaction limit fees)

The column name "LT" is an abbreviation for "limit type". Three types of transaction limits are defined, namely, "all transactions", "standard orders" and "transactions without market data update".
The possible values in column "LT" will be either "A", "S" or "N". The letter "A" belongs to the transaction limit type for "all transactions". The letter "S" denotes that the information in that row is related to the limit type "standard orders" and the letter "N" indicates that the information in the corresponding row is related to the limit type for "transactions without market data update".

Detailed information on the structure of the report is available on the Eurex website www.eurex.com:

Clear > Support > Initiatives > C7 Releases > Choose the current C7 Release > System Documentation > Under "Reports" you will find the "Eurex Clearing XML Reports – Reference Manual" for the respective release

Details and manuals on further C7 Releases can be found here.

7. Appendix

Following table shows technical examples of transactions.

Flow	Request	Request Template ID	Response	Response Template ID
Add Complex Instrument	AddComplexInstrumentRequest	10301	AddComplexInstrumentResponse	10302
Cross Request	CrossRequest	10118	CrossRequestResponse	10119
Delete All Order	DeleteAllOrderRequest	10120	DeleteAllOrderResponse	10121
Delete All Order	DeleteAllOrderRequest	10120	DeleteAllOrderNRRResponse	10124
Delete All Order Complex	DeleteAllOrderRequest	10120	DeleteAllOrderResponse	10121
Delete All Order Complex	DeleteAllOrderRequest	10120	DeleteAllOrderNRRResponse	10124
Delete All Quote	DeleteAllQuoteRequest	10408	DeleteAllQuoteResponse	10409
Delete Order Complex	DeleteOrderComplexRequest	10123	DeleteOrderNRRResponse	10111
Delete Order Complex	DeleteOrderComplexRequest	10123	DeleteOrderResponse	10110
Delete Single Order	DeleteOrderSingleRequest	10109	DeleteOrderNRRResponse	10111
Delete Single Order	DeleteOrderSingleRequest	10109	DeleteOrderResponse	10110
Inquire MM Parameter	InquireMMParameterRequest	10305	InquireMMParameterResponse	10306
MM Parameter Definition	MMParameterDefinitionRequest	10303	MMParameterDefinitionResponse	10304
Mass Quote	MassQuoteRequest	10405	MassQuoteResponse	10406
Modify Order Complex	ModifyOrderComplexRequest	10114	ModifyOrderNRRResponse	10108
Modify Order Complex	ModifyOrderComplexRequest	10114	OrderExecResponse	10103
Modify Order Complex	ModifyOrderComplexRequest	10114	ModifyOrderResponse	10107
Modify Order Complex	ModifyOrderComplexRequest	10114	OrderExecResponse	10103
Modify Single Order	ModifyOrderSingleRequest	10106	ModifyOrderNRRResponse	10108
Modify Single Order	ModifyOrderSingleRequest	10106	OrderExecResponse	10103
Modify Single Order	ModifyOrderSingleRequest	10106	ModifyOrderResponse	10107
Modify Single Order	ModifyOrderSingleRequest	10106	OrderExecResponse	10103
Modify Single Order (short layout)	ModifyOrderSingleShortRequest	10126	ModifyOrderNRRResponse	10108
Modify Single Order (short layout)	ModifyOrderSingleShortRequest	10126	OrderExecResponse	10103
New Order Complex	NewOrderComplexRequest	10113	NewOrderNRRResponse	10102
New Order Complex	NewOrderComplexRequest	10113	OrderExecResponse	10103
New Order Complex	NewOrderComplexRequest	10113	NewOrderResponse	10101
New Order Complex	NewOrderComplexRequest	10113	OrderExecResponse	10103
New Single Order	NewOrderSingleRequest	10100	NewOrderNRRResponse	10102
New Single Order	NewOrderSingleRequest	10100	OrderExecResponse	10103
New Single Order	NewOrderSingleRequest	10100	NewOrderResponse	10101
New Single Order	NewOrderSingleRequest	10100	OrderExecResponse	10103
New Single Order (short layout)	NewOrderSingleShortRequest	10125	NewOrderNRRResponse	10102
New Single Order (short layout)	NewOrderSingleShortRequest	10125	OrderExecResponse	10103
Quote Activation	QuoteActivationRequest	10403	QuoteActivationResponse	10404
Request For Quote	RFQRequest	10401	RFQResponse	10402

Table 8 : Technical examples of transactions