

Frequently asked questions (FAQs) relating to algorithmic trading and high-frequency trading (Update: 17 July 2019)

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Question 1:

What are the consequences for a trading participant if they grant an indirect participant access to a German organised market or a multilateral trading facility but this indirect participant does not have the authorisation required for trading for own account?

In this case, the trading participant would be considered to be involved in the initiation or conclusion of a financial service without the required authorisation as referred to in section 37 (1) sentence 3 of the German Banking Act (Kreditwesengesetz – KWG). BaFin may then demand that the trading participant granting access cease its business activities immediately and that the unauthorised business be wound up without delay.

Further information may also be found in ESMA’s Q&As on MiFID II and MiFIR market structures topics (Direct Electronic Access (DEA) and algorithmic trading, Q&A 24).

Question 2:

When is a trading participant no longer required to meet the follow-up requirements under the KWG if the participant has ceased to engage in high-frequency trading?

The follow-up requirements (e.g. capital requirements, reporting requirements and organisational requirements) are applicable to credit and financial services institutions within the meaning of the KWG (“institutions”). Under section 1 (1) sentence 1 and section 1 (1a) sentence 1 of the KWG, institutions are undertakings that conduct banking business or provide financial services for others commercially or on a scale which requires commercially organised business operations. This means that undertakings are institutions if and as long as

they are conducting such activities. The follow-up requirements cease to apply if an institution stops conducting activities that are subject to the authorisation requirement and informs BaFin of this in writing. The obligation to pay contributions continues to apply until the end of the year in which the authorisation is cancelled or revoked. In addition, the undertaking is also required by BaFin to demonstrate that the business activities subject to the authorisation requirement have been wound up and to provide audited annual financial statements as a basis for calculating the contributions.

Question 3:

Are trading participants required to apply for authorisation if they exceed the thresholds under Article 19(1) of Commission Delegated Regulation (EU) 2017/565 in the relevant calculation period and then decide to stop engaging in high-frequency trading?

No, trading participants are not required to apply for authorisation if they exceed the threshold in the relevant calculation period and then cease to engage in high-frequency trading.

Further information may also be found in ESMA's Q&As on MiFID II and MiFIR market structures topics (Direct Electronic Access (DEA) and algorithmic trading, Q&A 30).

Question 4:

When is a system considered to determine the initiation, generation, routing or execution of orders without human intervention for individual transactions or orders?

Under Article 18 of Commission Delegated Regulation (EU) 2017/565, a system is to be considered as having no or limited human intervention where, for any order or quote generation process or any process to optimise order execution, an automated system makes decisions at any of the stages of initiating, generating, routing or executing orders or quotes according to pre-determined parameters. It depends on whether the system makes decisions independently on the initiation, generation, routing or execution of orders. A system is considered to be making decisions if the system reacts to algorithms or individual parameters of an algorithm of other systems and initiates, generates, routes or executes orders without further human intervention.

However, systems are not considered to be making decisions if human intervention is required before the initiation, generation, routing or execution of orders. For instance, if algorithms are used only for the purpose of making traders aware of a particular situation and the traders then have to independently make a decision on the initiation, generation, routing or execution of orders, the use of such algorithms does not require authorisation. To give another example, the use of chart software programmed to always give an acoustic or visual signal when the price of a trading instrument crosses a moving average without

automatically reaching further decisions on the placement, modification or cancellation of orders does not require authorisation either.

Further information may also be found in ESMA's Q&As on MiFID II and MiFIR market structures topics (Direct Electronic Access (DEA) and algorithmic trading, Q&A 8).

Question 5:

What constitutes a high message intraday rate?

Under Article 19 of Commission Delegated Regulation (EU) 2017/565 and ESMA's Q&As on MiFID II and MiFIR market structures topics (Direct Electronic Access (DEA) and algorithmic trading (Question 30 in particular)), a high message intraday rate is to be calculated for each trading venue using the Market Identifier Code under ISO 10383 and for each participant.

The message rate is to be determined on the basis of the last twelve months.

Question 6:

Are there exemptions from the authorisation requirement?

Undertakings from EEA member states that have been granted authorisation in their home country but do not have a "European passport" under MiFID II may be granted an exemption under section 2 (4) of the KWG.

For general information on how to obtain an exemption, please refer to BaFin's notes regarding the licensing for conducting cross-border banking business and/or providing cross-border financial services of April 2005.

However, third-country undertakings are not eligible for an exemption under section 2 (4) of the KWG.

Question 7:

What is meant by algorithmic trading within the meaning of section 80 (2) of the WpHG?

This question is to be answered on the basis of the objective of the provisions under section 80 (2) of the WpHG, taking into account Article 18 of Commission Delegated Regulation (EU) 2017/565 and ESMA's Q&As on MiFID II and MiFIR market structures topics (Direct Electronic Access (DEA) and algorithmic trading (Questions 1 to 3, 8 and 9 in particular)). Investment services enterprises engaged in algorithmic trading must structure their trading systems in a way that ensures that they do not disrupt the market.

Algorithmic trading within the meaning of section 80 (2) of the WpHG comprises:

- algorithms that automatically determine individual order parameters (price, volume, timing of execution, cancellation where applicable or whether human intervention is needed etc.) and
- algorithms that automatically generate orders and/or decide to execute them (the basis for such buy/sell orders is the automatic analysis of market data or news that is automatically translated into orders and used in the trading system).

For instance, if algorithms are used only for the purpose of making traders aware of a particular situation and the traders then have to independently make a decision on the initiation, generation, routing or execution of orders, the use of such algorithms does not trigger the requirements under section 80 (2) of the WpHG. To give another example, the use of chart software programmed to always give an acoustic or visual signal when the price of a trading instrument crosses a moving average without automatically reaching further decisions on the placement, modification or cancellation of orders does not fall under the requirements of section 80 (2) of the WpHG either.

Question 8:

Are trading venues in Germany required to notify BaFin of any members using a bandwidth of 10 gigabits per second?

If BaFin requests such information on the basis of the law, German trading venues must submit the information to BaFin.

Question 9:

Who qualifies as an indirect trading participant on a German trading venue?

Under section 2 (8) sentence 2 of the German Stock Exchange Act (Börsengesetz – BörsG), indirect trading participants are persons who electronically transmit orders to a trading participant that are then routed to the stock exchange by trading participants with limited or no human intervention (“order routing”) or who use direct electronic access. Under section 2 (30) of the WpHG, direct electronic access means an arrangement where a participant, member or client of a German trading venue permits a person to use its trading code so the person can electronically transmit orders relating to a financial instrument directly to the trading venue, other than the cases specified in Article 20 of Commission Delegated Regulation (EU) 2017/565.

As regards the authorisation requirement for indirect trading participants, ESMA's Q&As on MiFID II and MiFIR market structures topics (Direct Electronic Access (DEA) and algorithmic trading (Question 24 in particular)) are to be taken into account.

Question 10:

Are there exemptions from the thresholds that determine a high message intraday rate in the case of volatile markets (see Article 19(1) of Commission Delegated Regulation (EU) 2017/565)?

No. As the thresholds are based on the average message rate, an exemption is not required for volatile phases.

Question 11:

At what point does a trading participant's authorisation expire if the participant ceases to engage in high-frequency trading?

If a trading participant ceases to engage in high-frequency trading, BaFin may revoke its authorisation in accordance with section 35 (2) no. 1 of the KWG if high-frequency trading has not been conducted for over six months. If a trading participant is not engaged in any high-frequency trading after being granted authorisation, the authorisation will expire in accordance with section 35 (1) sentence 1 of the KWG if it has not been used within a year of the date on which the authorisation was granted.

Question 12:

When is a trading participant required to apply for authorisation if they exceed for the first time the thresholds under Article 19(1) of Commission Delegated Regulation (EU) 2017/565 which determine a high message intraday rate?

Trading participants are required to immediately seek authorisation as soon as they realise that the threshold will be exceeded. The application for authorisation is to be submitted without delay, at the latest when the threshold is exceeded.

Further information may also be found in ESMA's Q&As on MiFID II and MiFIR market structures topics (Direct Electronic Access (DEA) and algorithmic trading (Questions 5 and 6 in particular)).

Question 13:

What qualifies as infrastructure designed to minimise latency?

Such infrastructure includes, for example, co-location, proximity hosting and high-speed direct electronic access.

Co-location is where market participants place their computer systems in direct proximity to a trading venue's computer which matches orders (matching engine).

Proximity hosting is the provision by third parties of computer systems directly proximate to a trading venue's matching engine.

High-speed direct electronic access means connections that allow the transmission of messages within fractions of a second, including messages to initiate, change or cancel orders.

With regard to infrastructure designed to minimise latency, two criteria are crucial based on the latest technology and information available:

- the distance between the trading venue's matching engine and the server on which the algorithms run, and
- the volume of data that is being transferred via the connection per second (bandwidth)

Based on the latest technology and information available, BaFin therefore assumes that infrastructure designed to reduce latency is used if the server on which the algorithms initiate, generate, route or execute orders is in direct proximity to the trading venue's matching engine and a bandwidth of 10 gigabits per second is used.

Based on the latest technology and information available, infrastructure designed to minimise latency is not considered to be used if an algorithm runs on a server that is located far away from the matching engine (e.g. in another city or town).

Question 14:

What is a high-frequency algorithmic trading technique?

Under section 1 (1a) sentence 2 no. 4 (d) of the KWG, a high-frequency algorithmic trading technique is characterised by:

- the use of infrastructure designed to minimise latency, particularly co-location, proximity hosting, or high-speed direct electronic market access,

- system determination of order initiation, generation, routing or execution without human intervention and
- high message intraday rates in the form of orders, quotes or cancellations.

A high-frequency algorithmic trading technique can only be deemed to exist if all three of the above-mentioned criteria are met (cumulative criteria).

Question 15:

Who is not subject to the authorisation requirement?

Investors in foreign investment funds are, as investors, not subject to the authorisation requirement for high-frequency trading under section 1 (1a) sentence 2 no. 4d of the KWG since they are not themselves members of a German organised market or multilateral trading facility.

Clients of a broker that have reached agreements with the broker on the provision of principal broking services by the broker to the client are not subject to the authorisation requirement for high-frequency trading if they are not themselves a member or a direct participant on a German organised market or multilateral trading facility.

Question 16:

Do asset management companies and self-managed investment stock corporations fall under the scope of the KWG due to the reference in section 28 (1) of the KAGB to section 80 (2) and (3) of the WpHG?

No, the reference is to be understood in the sense that the organisational requirements set out in section 80 (2) and (3) of the WpHG for asset management companies and self-managed investment stock corporations are to be applied accordingly. These companies are subject to the applicable provisions of the German Investment Code (Kapitalanlagegesetzbuch – KAGB), the German Regulation on the Rules of Conduct and Organisational Rules Pursuant to the Investment Code (Kapitalanlage-Verhaltens- und Organisationsverordnung – KAVerOV) and the Minimum Requirements for the Risk Management of Asset Management Companies (Mindestanforderungen an das Risikomanagement von Kapitalverwaltungsgesellschaften – KAMaRisk).

Question 17:

How is the high message intraday rate calculated?

Every new order or quote, every change in an order or quote, and every cancellation all count as messages.

Messages originating from a technical process where the trader has no influence (e.g. matches) do not count as messages.

The provisions of Article 19(1) of Commission Delegated Regulation (EU) 2017/565 and ESMA's Q&As on MiFID II and MiFIR market structures topics (Direct Electronic Access (DEA) and algorithmic trading (Question 30 in particular)) are to be considered when calculating the high message intraday rate. Trading days on which a member/trader has not sent any messages are to count as zero messages if the venue was open for trading on that day.

In the case of bulk transactions, messages count individually. If a participant's direct membership on a trading venue is terminated, messages no longer need to be counted unless trading is continued as an indirect participant.

Trading participants that use a high-frequency algorithmic trading technique and that have not been granted authorisation under section 32 of the KWG or an exemption under section 2 (4) of the KWG are required to keep and have available information on their message rates.

Question 18:

Do algorithms that meet the requirements under section 82 of the WpHG (best execution) as systems that can be used only for the purpose of routing orders to one or more trading venues or for the confirmation of orders fall outside the scope of section 80 (2) and (3) of the WpHG?

Yes. If the place of execution is not specified in an order and the algorithm is used only to fulfil the provisions relating to the best execution of client orders under section 82 of the WpHG, the algorithm does not fall under the scope of section 80 (2) of the WpHG. All other smart order routing systems which determine the course of an order beyond the best execution policy prescribed by law fall under the scope of section 80 (2) and (3) of the WpHG.

Further information may also be found in Recital 22 of Commission Delegated Regulation (EU) 2017/565 and ESMA's Q&As on MiFID II and MiFIR market structures topics (Direct Electronic Access (DEA) and algorithmic trading (Question 3 in particular)).

Question 19:

Are market makers exempt from the requirements under section 80 (2) and (3) of the WpHG?

No. There are no exemptions for market makers under section 80 (2) of the WpHG.

Question 20:

Are investment services enterprises required to keep records on algorithms?

Under section 80 (3) of the WpHG, investment services enterprises must keep adequate records on the matters referred to in section 80 (2) of the WpHG. Investment services enterprises should therefore be able to prove to BaFin how an algorithm worked at a particular point in time in the past during inspections. Moreover, the records of investment services enterprises using a high-frequency algorithmic trading technique must in particular be time-sequenced and include all orders they have placed, including cancellations of orders, executed orders and quotations on trading venues.

Question 21:

How long does this information have to be kept for?

The information must be kept for five years.

Question 22:

What information has to be kept?

Any information needed to answer questions on how an algorithm that has been used worked at a specific point in time in the past. Under section 6 (4) of the WpHG, BaFin may require an investment services enterprise to describe, in particular, the algorithmic trading strategies, details of the trading parameters and the limits to which the system is subject. In addition, BaFin may also require a description of the key procedures in place to assess the risks and ensure compliance with the requirements of section 80 of the WpHG, and details of the testing of its systems.

Question 23:

To what extent is an investment services enterprise granting its clients direct electronic access to algorithmic trading required to monitor compliance with the requirements under section 80 (2) of the WpHG?

Section 77 of the WpHG lays down organisational requirements for investment services enterprises offering direct electronic access to a trading venue. In addition to the obligation to assess the suitability of clients, the investment services enterprise is also required, under section 77 (1) no. 4a of the WpHG, to monitor trading by the clients in order to ensure that trading complies with the requirements under Regulation (EU) No 596/2014, the provisions of the WpHG and the rules of the trading venue.

This does not cover retail clients that place their orders using the online systems of banks (in the area of online banking in particular) provided that the orders are transmitted to the bank via the Internet exclusively and their content is not changed.

Question 24:

Does section 80 (2) of the WpHG offer exemptions for algorithms if the order is processed after its submission with limited human intervention?

No. In addition to other factors such as timing and price, section 80 (2) sentence 2 of the WpHG defines how orders are managed with human intervention, as order parameters. This clarifies the fact that an algorithm that determines whether a human is to intervene prior to an order's execution on the basis of other parameters after the entry or automatic creation of the order is deemed to be an algorithm within the meaning of sentence 1.