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**Thematic review of the Annual Self-Assessment and Validation Process across Firms undertaking Algorithmic Trading activity, as specified under Article 9 of RTS 6 of MiFID II.**

Dear CEO,

As you will be aware, the Central Bank of Ireland's (the "Central Bank") [multi-year Strategy](#) centres around four strategic themes - safeguarding, being future-focused, open and engaged, and transforming. These themes are our way of describing what is important for us as an organisation so that we can meet the challenges of a changing financial ecosystem, and deliver on our [mission and vision](#). The delivery of our statutory responsibility for regulation and supervision will continue to drive our approach to the supervision of firms undertaking algorithmic trading.

Recently, the Central Bank undertook a thematic review to assess how Investment Firms ("Firms") undertaking algorithmic trading have incorporated, within their risk management and control frameworks, the requirements set out in Commission Delegated Regulation (EU) 2017/589 ("RTS 6")<sup>1</sup>, supplementing Directive 2014/65/EU ("MiFID II")<sup>2</sup>. This assessment focused on the requirements of Article 9 of RTS 6 related to Firms' annual self-assessments, and validation, of compliance with all articles of RTS 6 relating to algorithmic trading activity. The purpose of this letter is to provide background to our assessment, highlight the key findings of this review and to outline the expectations of the Central Bank in relation to the self-assessment process and how this is embedded within governance and risk management frameworks that support algorithmic trading activity.

This assessment builds on the work conducted by the Central Bank across 2020 and 2021, which considered how Firms undertaking algorithmic trading have incorporated, within their

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<sup>1</sup> Commission Delegated Regulation (EU) 2017/589 of 19 July 2016 supplementing Directive 2014/65/EU of the European Parliament and of the Council with regard to regulatory technical standards specifying the organisational requirements of investment firms engaged in algorithmic trading. O.J. L87/417, 31.03.2017 - <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R0589>

<sup>2</sup> DIRECTIVE 2014/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU O.J. L173/349, 12.6.14 - <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0065&from=EN>



risk management and control frameworks, the requirements set out in RTS 6. This resulted in the publication of a 'Dear CEO' letter<sup>3</sup> on 11 May 2021 which highlighted:

- (i) an over-reliance on third party service providers with a lack of demonstrable autonomy at regulated entity level;
- (ii) insufficient formality with respect to key documentation; and
- (iii) a lack of clearly defined roles and responsibilities and, in particular, a lack of appropriate delineation between the three lines of defence.

The Central Bank has noted, in the majority of cases, an improvement across the aforementioned areas as Firms' algorithmic trading frameworks continue to mature.

### **Article 9 Self-Assessment**

This thematic review focused on five core key areas underpinned by the requirements set out in Article 9 of RTS 6 as they applied to both the self-assessment and validation process, as well as the supporting documentation referenced by Firms. The Article 9 self-assessment requirement is an important checkpoint for Firms to ensure that robust governance and risk management frameworks are in place. This in turn contributes to the mitigation of risks associated with this activity such as the transmission of shocks across multiple markets, exacerbation of market volatility and creation of disorderly market conditions with a view to boosting investor protection and the integrity of financial markets.

The self-assessment should be comprehensive and an accurate reflection of the governance and relevant controls, procedures and systems in the Firm, providing evidence that the Firm has:

- (i) a clear understanding of the trading systems, algorithms and associated risks;
- (ii) appropriate risk management and control frameworks in place to mitigate such risks; and
- (iii) a comprehensive suite of policies and procedures supporting the framework, that have been appropriately referenced within the self-assessment template.

### **Summary of Key Findings**

The Central Bank has noted positive practices and it is evident that, in a number of instances, appropriate consideration has been given to the feedback provided in the 2021 industry communication, with this being evidenced through a maturation across systems of control in addition to the governance and risk management frameworks pertaining to algorithmic trading activity. Areas where significant improvement has been noted include:

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<sup>3</sup> <https://www.centralbank.ie/docs/default-source/regulation/industry-market-sectors/investment-firms/mifid-firms/regulatory-requirements-and-guidance/thematic-assessment-of-algorithmic-trading-firms-compliance.pdf>



- (i) Formalised processes and controls in respect of the development, testing and monitoring of algorithms that clearly evidence second line oversight of algorithmic trading activity;
- (ii) Greater ownership at a local entity level evidenced through entity level policies and procedures; and
- (iii) A clear distinction of roles and responsibilities between the first and second lines of defence, and within the second line, between Risk and Compliance.

The Central Bank identified differing stages of maturity across the sample of Firms reviewed in terms of both the design and implementation of the self-assessment and validation process. Overall, certain Firms demonstrated compliance across the majority of assessment areas while clear deficiencies were identified in the practices of the other Firms. Specifically, concerns were noted regarding the governance, control and risk management frameworks, with these findings communicated directly to Firms. Detailed findings are noted in Appendix 1 of this letter, with a full list of the positive practices observed in Firms outlined in Appendix 2. The key concerns arising from the thematic review include:

- (i) Deficient governance frameworks, leading to the production of RTS 6 Article 9 self-assessments which lacked the level of detail required to demonstrate compliance with each article;
- (ii) A lack of formalised arrangements in place for the continuous training and development of staff;
- (iii) Failure to maintain sufficient record keeping of material changes and comprehensive procedures in respect of conformance testing;
- (iv) Insufficient procedure documentation around the assessment and escalation of market surveillance alerts; and
- (v) A lack of adequate business continuity arrangements (“Business Continuity Plans” or “BCP”) in place with clearly outlined procedures and associated training arrangements.

It is the expectation of the Central Bank that the self-assessment process be comprehensively documented, supported through formalised processes and arrangements and embedded within the risk management framework. This process should be underpinned by clear supporting documentation, that outline the steps undertaken to achieve compliance.

### **Action Required**

It is the expectation of the Central Bank that all Firms engaging in algorithmic trading activity consider the contents of this letter and undertake the following actions:

- Consider the findings and positive practices noted in this letter and adopt appropriate remedial actions to further develop governance and risk management frameworks that support algorithmic trading activity;
- Ensure appropriate control and oversight arrangements are in place with regard to the annual self-assessment process and the requirements of both Article 9 and RTS 6 more broadly;



- Consider existing templates for the RTS 6 Article 9 self-assessment against the findings outlined above to ensure sufficient detail is being compiled to adequately assess compliance with RTS 6; and
- Assess the current training and development programmes, particularly for existing staff, to ensure there is adequate training provided to ensure continuous professional development.

In addressing this letter to you, the Central Bank expects that Chief Executive Officers of Firms undertaking algorithmic trading activity take responsibility for the findings in this letter, ensuring that it is discussed, minuted and actioned through the performance of a gap analysis by their Boards before 31 March 2024. This includes follow up and remediation of any identified gaps. The Central Bank may have regard to the content and quality of such gap analysis and remediation plans in future reviews of a Firm's compliance.

Where the Central Bank identified material concerns that fall outside of our risk appetite due to the issues outlined above, formal supervisory requirements and outcome-focused actions have been imposed on the relevant Firms. In circumstances of non-compliance by any Firm with the requirements of any RTS article, the Central Bank may, in the course of future supervisory engagement, or when exercising its supervisory and/or enforcement powers in respect of such non-compliance, have regard to the consideration given by a Firm to the matters raised in the letter.

All findings detailed in this letter should be considered and actioned by all Firms based in Ireland undertaking algorithmic trading activity.

If you have any questions in relation to the content of this letter, please discuss with your supervisory points of contact.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Ray O'Connell'.

**Ray O'Connell**  
**Head of Function**  
**Investment Banking & Complex Investment Firm Supervision**  
**Investment Banks & Broker Dealer Division**



## Appendix 1

### Detailed Findings

As noted above, the Central Bank has identified a number of areas that require enhancement within the population of Firms undertaking algorithmic trading. Please note that the detailed findings set out below are not exhaustive and Firms should continually evaluate the effectiveness of their own control frameworks and associated governance.

The key findings arising from the review include:

#### **1. RTS 6 Self-Assessment Process (Article 9):**

- (i) There is a clear separation with respect to maturity within the sector, with a subset of Firms demonstrating best practice through the provision of a clear and detailed assessment of each article under RTS 6. These Firms have a robust process in place, with adequate supporting documentation and a clearly articulated governance framework to support the assessment.
- (ii) Underperformance was characterised through an incoherent governance framework undermined by (a) the quality and completeness of the self-assessment template, (b) a disparate and fragmented approach to the retention of pillar artefacts, (c) poorly referenced and incomplete supporting documentation, and (d) outdated policy documents.
- (iii) In certain instances, the quality and depth of the self-assessment process was not commensurate to the nature, scale and complexity of the Firms' operations, with minimal consideration being given to the need for stronger controls where a Firm has significant transaction volumes.
- (iv) Firms did not always provide a clear articulation of risk management and governance practices pertaining to Article 9 of RTS 6 and, in certain instances, there was no formalised documented policy in place in respect of the self-assessment process.

#### **2. General Organisational Requirements (Articles 1 – 4):**

- (i) In general, there are clear and formalised governance frameworks in place in respect of the development, testing and performance of algorithms, with clear roles and responsibilities outlined across the traders and the three lines of defence.
- (ii) For the majority of Firms, there is a clear training programme for new joiners, however, there is a lack of formality with respect to the provision of continuous training.
- (iii) Certain Firms would benefit from a more formalised training programme focused on the collective skillset of trading staff, in addition to individual training needs. Furthermore, it is not always clear how regulatory developments are communicated to staff.



### **3. Resilience of Trading Systems (Articles 5 – 8):**

- (i) Firms were found to have a robust end-to-end process for the development and/or updating of algorithms, however, further detail should be provided in respect of the record keeping requirements for new or updated algorithms.
- (ii) For the majority of Firms, conformance testing was supported through a strong governance process in accordance with trading venue requirements. In certain instances, supervisors are of the view that additional detail should be provided with respect to this process in order to evidence obligations under Article 6 are satisfied.
- (iii) All Firms confirmed compliance with the rules around setting clear pre-defined limits on their algorithms.

### **4. Post-Deployment Management (Articles 10 – 11):**

- (i) Across the population, Firms performed well in respect of stress testing requirements and the processes in place for the approval and deployment of material changes to algorithms. As such, there is no material concerns to report in this area.

### **5. Means to Ensure Resilience (Articles 12 – 18):**

- (i) Firms have strong surveillance systems in place to monitor orders and transactions for potential market manipulation. In some cases, additional documentation is required with a view to articulate the full extent of the alert review process.
- (ii) Firms generally have appropriate Business Continuity Plans (“BCPs”) and disaster recovery procedures in place. However, for certain Firms, the BCPs were not conducted on a sufficiently frequent basis and were either out of date or lacked detail across a number of key areas. Furthermore, formal staff training was not provided with respect to BCP arrangements.
- (iii) For some of the Firms, ownership of pillar documents (IT strategy and Cyber Security Policy) is at a group level, with no local responsibility with respect to ownership and oversight.



## Appendix 2

### *Positive Practices*

For Firms that performed well in the review, the following positive practices were identified:

- A strong understanding within Firms of how the algorithmic trading systems and trading algorithms in the Firm operate.
- In Firms where the RTS 6 Article 9 self-assessment process has been formalised, the process is strong, with clear roles and responsibilities assigned and robust review and challenge processes in place.
- There is greater clarity with respect to the role of internal audit in the self-assessment process.
- It was noted in the 2021 review, that there was limited ownership at a local level with respect to the development and testing and control environments in respect of algorithmic trading, the Central Bank has noted significant enhancements with respect to local autonomy within the Firms assessed.
- The testing methodology and environments are generally comprehensive and arrangements are in place to ensure the controlled deployments of algorithms.
- Generally, Firms have strong processes in place with respect to the stress testing of algorithmic trading systems, meeting the requirements of RTS 6.
- Firms were generally found to have clear processes and procedures in place with respect to updates or material changes to algorithms.
- Firms were found to have clearly outlined roles and responsibilities with respect to the activation of the kill switch.
- Penetration tests and vulnerability scans are conducted to simulate cyber-attacks.