

HKEx Information Services Limited

(A wholly-owned member of Hong Kong Exchanges and Clearing Limited Group)

Guiding Note for Audit Metering System

Securities and Derivatives Market Data
(for real-time data vendors)

Audit Objectives

To ensure integrity, validity, accuracy and completeness of the Metering System that log fee-liable accesses (Per Quote and/or Per Unit Time basis) and the remittance reports generated from the information vendor's (IV's) Metering System. The audit should cover the entire end-to-end process within the IV system (that is, from the point of the Exchange feed or where the IV first receives the Exchange data through to how the transaction ends up in reporting and payment to HKEx-IS).

The audit should investigate and report whether there are adequate controls over:

- The reliability of the Access logging program;
- The accuracy, security and integrity of the log; and
- The security of the networking environment where the logging program and the log reside.

An additional consideration is on ensuring the continual existence of reliable, adequate and effective audit trail within the IV's systems in maintaining the subscriber records as required by HKEx-IS and the Market Data Vendor Licence Agreement.

Audit Guiding Note to IVs and auditors

1. The audit must be performed and submitted **within the first 90 days of service** and **on an annual basis thereafter** by an external audit firm acceptable to HKEx-IS.
2. The logging program should be able to log all accesses (Accesses).
3. An Access is defined as :
 - ◆ For Per Quote Service: a static quote pertaining to only one single security/ issue/ trading instrument of the Securities and/or Derivatives market.
 - ◆ For Per Unit Time Service: time access to streaming real-time Securities and/or Derivatives market information by a single Subscriber Unit rounded up to the nearest minute for each access.

Both types of Access shall contain only allowed information contents as stipulated in the Memorandum of Permitted Purpose (MOPP) of the Market Data Vendor Licence Agreement.

4. Information of any Securities and/or Derivatives market instruments delayed by less than 15 minutes (effective 2 April 2007) is considered as real-time data. The metering system shall cover all trading sessions, namely Pre-opening, Morning, Extended Morning and Afternoon sessions. For details of the trading hours for a) the iShares stocks as ETF traded under Pilot Programme and b) the remaining stocks, please refer to "Product - Exchange Traded Funds" and "Trading Information – Trading hours" section respectively of Securities Market under HKEx web-site at www.hkex.com.hk.
5. The audit should ensure that the IV's systems can properly perform the following functions:
 - a) Recognise and count all Accesses (Per Quote and/or Per Unit Time basis) in accordance with the service application as approved by HKEx-IS.
 - b) Verify that the metering system has properly logged all Accesses with information content

limited to those specified in the MOPP of the Market Data Vendor Licence Agreement and in accordance with the service application as approved by HKEx-IS.

- c) In situations where static quote of more than one security/ issue/ instrument are packaged and disseminated together as a basket portfolio, within a page or as market reminder service, each real-time quote for each security/ derivatives/ issue/ instrument should be logged as a separate quote and subject to the fee as specified in the MOPP of the Market Data Vendor Licence Agreements. (For example, a portfolio containing fee-liable quotes of five stocks displayed simultaneously should translate into 5 individual quotes for each request)
 - d) For Charge Per Unit Time service, the logging program should be able to log and round up the access time to the nearest minute for each access and the total usage time for every subscriber unit for month end reporting.
 - e) Confirm the security of network environment where the logging program and the log reside.
 - f) Confirm that the metering system is counting all Accesses duly and exclusively in accordance with HKEx-IS approved service application, requirements, guiding notes and the MOPP of the Market Data Vendor Licence Agreement.
 - g) Validate that the IV's systems is able to generate detailed reports on each individual Access, and that these report totals are consistent with the actual Accesses captured.
 - h) Generate valid, accurate and complete remittance reports for the calculation of licensee fee to HKEx-IS as specified in the MOPP of the Market Data Vendor Licence Agreement on a consistent and reliable basis.
 - i) Verify that there were pre-requisite technical mechanisms implemented a) to disallow concurrent access and no bundling of usages for more than one subscriber unit for entitlement to claim monthly capping charge at HK\$250 (and/or the monthly minimum charge at HK\$50 for Charge Per Unit Time service) per subscriber unit; and b) to bottom-up to the monthly minimum redistribution fee of \$6,000 per 3rd party website.
 - j) Confirm that there was continual existence and maintenance of reliable, adequate and effective audit trail as defined in Clauses 5.5 and 5.6 of the Market Data Vendor Licence Agreement and in accordance with HKEx-IS approved service applications.
6. The IV's systems mentioned above should cover the end-to-end process (that is, from the point of the Exchange feed or where the IV first receives the Exchange data through to how the transaction ends up in reporting and payment to HKEx-IS).
7. Audit Reports to be submitted to HKEx-IS at the completion of the audit is expected to include information in detailing the audit period covered, the names of services with service types under review, the audit works performed together with samples details and the conclusion if the audit objectives as stated above have been achieved. Here below is an extract of the recommended audit conclusion:

(Sample format regarding Conclusion)

~~EXAMPLE~~

Conclusion

With the details of audit works performed with samples as incorporated in the report, we hereby certify that for the period from ___ to ___, vendor XYZ achieved all the audit objectives with no exceptions noted for those services, namely _____ with service type of Per Quote Access I as mentioned in the MOPP.

This document intended to set forth the scope and requirements of IV audit on Metering Systems and may not be exhaustive. For questions and doubts on interpretation of the above information, please contact Mr. Raymond Lo on (852) 2840-3024 or raymondlo@hkex.com.hk.

This guiding note supersedes any version previously sent and HKEx-IS reserves the right to change any information in this Guiding Note at any time without prior notice.