



Notes to Assist with Interpretation of the Delayed Market Data (“DMD”) Files

Viewing in Excel

The DMD files are semi colon delimited. It is possible to view the files in Excel, by highlighting column A and then selecting “Data”, “Text to Columns”. However, if using this method, please be aware that Excel truncates some fields, i.e. does not display all of the data that is actually present in the underlying DMD files, as follows:

- Post Trade DMD Files
 1. Column C, Instrument id is truncated.
- Pre Trade DMD Files
 1. Column A, Timestamp is truncated but will display correctly if a custom format of hh:mm:ss.000 is used
 2. Columns E and F are truncated.

General Notes on the Content of the Files

- All timestamps, both in the name of the files and on the messages within the files, are in UTC.
- The messages within the DMD files are similar to the messages that were published on LSEG’s real time feeds, but there are three differences:
 1. pre trade DMD files contain certain messages not included in the real time data, and omit a number that are included in the real time data - this is to account for the fact that DMD pre trade files relate to the top 5 price levels only;
 2. messages within the DMD files are abridged and so only contain a subset of the fields that are published in the real time feed; and
 3. the DMD files are published after a delay of 15 minutes.
- The user can consult the GTP technical specifications on the LSEG web site <https://www.lseg.com/areas-expertise/technology/group-technology/group-ticker-plant> for a fuller explanation of the meaning of the fields within the files than is given here.

Notes Specific to Pre Trade Files for LSE plc and Turquoise UK

- For LSE, the first file published each day will show the opening order book, which contains the orders brought forward from the previous business day. This is published on the real time feed at 05:00 local UK time (in the summer 04:00 UTC, in the winter 05:00 UTC). For Turquoise the first file will contain orders published on the real time feed at 07:59 when order entry becomes permitted, as no orders are brought forward from the previous day.
- The pre trade files show incremental messages only therefore, in order to establish the status of the order book for a particular instrument at any given time, it is necessary to process all messages for that instrument between the start of day and that time.



- The pre trade files show messages that relate to the top 5 price levels only. This means that if an order at price level 6 is entered, even though it will be sent out on the real time feed immediately, there will be no entry in the pre trade files. Similarly, if at a later time, $t+1$, this order is deleted, the deletion will be sent out on the real time feed immediately, but there will be no entry in the pre trade files. However, if at time $t+1$, rather than being deleted the order is promoted to level 5 (because, for example, an order with a better price, say level 4, is deleted) then at time $t+1$ no messages for this order will be sent on the real time feed, whereas in the pre-trade DMD file there will be an add order message showing the details of the order as at time $t+1$. A similar consideration applies when orders are relegated out of the top 5 – in these cases there will be a deletion message in the DMD files that is not in the real time feed.
- Every instrument is assigned to a Market Data Group, and the DSS id shows the order in which messages relating to that Market Data Group must be processed. This ordering will generally be consistent with the message timestamps. Note that the DSS id has gaps (relating to messages in the real time feed that are for orders outside the top 5 price levels as described in the previous bullet) and duplicates (where messages can be processed in either order as they relate to the same underlying event).
- A RecNo has been added to the DMD pre trade files as a unique identifier for each of the records they contain in order to give customers a means of ensuring they have processed all of the data. It is not disseminated by GTP in the real time feed.