Delta Neutral/Volatility strategies on LIFFE CONNECT®

Introduction
A Delta Neutral (or Volatility) trade in LIFFE CONNECT® is a strategy trade involving one or more Options legs, and one "underlying" leg.

The underlying leg may be the relevant underlying stock or Future, as applicable. In some cases, it may be a related Future which is not the actual underlying of the Option: for instance, Delta Neutral trades are allowed between the AEX Option and AEX Future.

Procedure
Delta Neutral trades in LIFFE CONNECT® are traded in a strategy market, in broadly the same way as other Options strategies. In order to perform a Delta Neutral trade, it is therefore first necessary to create a strategy market with the desired parameters; unless it has already been created.

1. Create strategy
A Delta Neutral strategy market is created through the LIFFE CONNECT® API in the same way as other strategy types. A Delta Neutral strategy market has the following attributes:

- Strategy type
- Option class
- Option leg details (note there may be multiple options legs)
- Underlying class
- Underlying price
- Whether the underlying is being bought or sold
- Delta of the option[i]

For strategy types involving multiple options legs, the deltas of the individual legs must be combined to determine an overall delta for the options element of the strategy.

The strategy creation will be validated to ensure that:

- The underlying is valid for the option class;
- The strategy type is allowed for this class; and
- The delta is within a valid range of the current theoretical delta for the option leg(s), as calculated by AQS

Note that the specified underlying price is not validated at the time the strategy market is created.

None of these attributes can be revised. If the delta or the underlying price need to be changed, then a new strategy market must be created; and if orders exist in the strategy market and are desired to be modified, they would have to be pulled and then resubmitted in the new strategy market.

It should be noted that the Trading Procedures prohibit the creation of a Delta Neutral strategy which is very similar to an existing one, in such a way as to avoid trading with any resting orders within the existing market.

2. Submit Order
The normal LIFFE CONNECT® order types available in Options strategies are also applicable to Delta Neutral strategies, with the exception that GTC orders do not persist overnight and so orders are only valid on the day they are submitted.

To submit an order, the trader must specify:

- The relevant strategy market, as created above
- The option price (premium)
- The volume of the options leg

For strategies with multiple options legs, the price and volume will be handled in the same manner as for a regular options strategy with the same legs. For instance, for a spread versus underlying, the price of the order will represent the difference between the prices of the bought and sold options legs.

In addition to the normal order validation, the following checks will be performed:

- The underlying price of the strategy (defined when the strategy market was created) is checked to ensure it is within a certain range of the current underlying price. This check only applies for underlyings where LIFFE CONNECT® has a source for the price: this includes all stocks traded on Euronext cash market, but not London equity options
- The delta of the strategy (defined when the strategy market was created) is checked again against the theoretical delta calculated by the system.

If any of these validations fail, the order will be rejected. This means that, if the underlying moves far enough from the value specified in a Delta Neutral strategy, that strategy market will effectively be blocked from trading.

The widths of the validation ranges are controlled by Euronext.liffe Market Services.

3. Trade matching

As for other non-implied strategy types, orders in Delta Neutral strategies will trade only with other orders in the same strategy market. There is no interaction between the Delta Neutral market and either the outright option markets or the underlying market.

When a trade occurs in a Delta Neutral strategy market, the host will again check that the market's underlying price and delta remain valid. It will then calculate the quantity of the underlying to be traded, using an algorithm according to:

- the number of options traded;
- the option lot size;
- the underlying lot size (for a cash leg, this is always 1); and
- the Delta of the strategy (as specified when the market was created).

For instance: Amsterdam stock options have a lot size of 100, so if the Delta was 30% (0.30), each lot of an Option Delta Neutral trade would trade 30 underlyings.

Fills are sent to the relevant clearing system(s). For stock contingent trades against stocks traded on the Euronext cash market, the stock legs are reported to CLEARING 21 Cash via TCS. For such trades, derivatives members need not be members of the securities market in their own right: they may instead trade through a separate cash broker. In this case, the cash broker details are recorded in the trading system, and the trade is booked directly to the cash broker's account (via TMF code and Origin). Since the trade is not automatically booked to the derivatives member's account, the Derivatives member must ensure order fields (e.g. Trader Card Reference) contain sufficient detail to identify the origin of the trade for the benefit of the cash broker.

4. Additional Notes

- Delta Neutral strategy markets do not persist overnight; therefore GTC orders placed in Delta Neutral strategies will be cancelled at the end of the trading day.
- Delta Neutral strategies always trade Price/Time.
- Where the ratio of Options lot size to underlying lot size is less than 100, it becomes possible for the calculated underlying volume to have a fractional element. In this case, the Trading Procedures dictate that orders must be submitted in multiples of the necessary volume to ensure that the resultant strategy is Delta Neutral.
    - For instance: LIFFE STIR Futures and Options both have a lot size of 1. If the Delta was 20%, a STIR Option Delta Neutral trade would have to be entered in multiples of 5 lots, in order to ensure that a round number of Futures was allocated.

5. Available Delta Neutral strategy types

Descriptions of the various strategy types are included in the Trading Procedures Annexe Two, on the LIFFE web site at http://www.liffe.com/products/strategies/, and also in this booklet: http://www.liffe.com/about/publications/strategies.pdf.

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[i] The Delta is submitted to the API as a fraction to 2 decimal places (so a delta of 31% = 0.31). This is multiplied by 1000 so as to be submitted to the API as an integer, but this detail would typically be hidden from the user by their front end software.