CLAIMS

1. An automated system in a computer readable medium for quoting option prices in option market making (100), comprising:

one or more options and futures orderbooks (11) on a processor having one or more ask orders and bid orders of a selected option contract in a financial product exchange;

an updating module (12) on the processor which communicates with the options and futures orderbooks for receiving and refreshing the options and futures orderbook (11);

a quoting module (13) on the processor which communicates with the updating module (12) for quoting option prices for the ask orders and the bid orders based on market prices when the orderbook (11) is refreshed;

a risk management mechanism for reducing risks of holding option positions, the risk management mechanism including a risk analysis module (15) which communicates with the updating module (12) for analysing asset risks from holding option positions, and a Greek system or position-reducing working control system (501) for defining such risks, wherein the Greek system includes Delta risk, Gamma risk, Theta risk, Vega risk, Rega risk, Sega risk, or functional equivalent, with corresponding risk shades (103) for reducing such risks; and

an ordering module (14) on the processor which communicates with the quoting module (13) and the options and futures orderbooks (11) for submitting or withdrawing an order on the exchange when the ask order or the bid order is filled,

characterized in that the selected option contract is selected based one or more strike prices and options expiries as determined by a user, and the quoting module (13) is configured to withdraw unfilled orders when the updating module (12) refreshes the options and futures orderbook (11), option expiries and option strike prices on a same underlying asset, wherein the order on the exchange is submitted and withdrawn at a benchmark level of margin extra fees set by the user.

2. The automated system in a computer readable medium for quoting option prices in option market making (100) according to claim 1, wherein the option price is quoted by the quoting module (13) based on bid and ask prices (201) from the orderbook, and a bid-ask spread (202) is adjusted based on market activeness or

futures liquidity (203), transaction fee (204), market fluctuation (205), equity or margin efficiency (206), profit requirement or target spread (207) of the user, and risk management consideration, and the quoting module (13) refresh the options and futures orderbooks (11) in communication with the updating module (12) to analyse asset risks from holding option positions.

3. The automated system in a computer readable medium for quoting option prices in option market making (100) according to claim 1, wherein a risk change is done by changing the risk shade (103) of the Greek system or by changing a position reduction quote (500) of the position reducing working control system (501) when an option risk exposure is out of a risk exposure range as determined by the risk analysis module (15) according to the user's preference settings (502, 503).

4. The automated system in a computer readable medium for quoting option prices in option market making (100) according to claim 3, wherein the risk shade (103) further comprises:

one or more first selections (301, 302) for reducing risks based on option risk exposures, expiries, strikes and holding amounts, and for modifying the quoted option price and the position reduction quote (500) according to the option risk exposure; and

one or more second selections (401) for deciding a shade amount and an adjustment amount based on the asset risk, target risk ranges for each risk shade (103) and a risk adjustment speed according to the user's preference.

5. The automated system in a computer readable medium for quoting option prices in option market making (100) according to claim 4, wherein bid and ask prices are increased when long the asset reduces the risk exposure according to the first selections (301, 302); and bid and ask prices are decreased when short the asset reduces the risk exposure, according to the first selections (301, 302).

6. The automated system in a computer readable medium for quoting option prices in option market making (100) according to claim 4, wherein the position reduction quote (500) is determined by the position reducing working control system

(501) based on the refreshed options and futures orderbooks (11) and the ask order or bid order quoted according to the first selection to change the asset risk, in which the ask order is quoted with an adjustment when the risk exposure is lower than preferred ranges, and the bid order is quoted with an adjustment when the risk exposure is higher than preferred ranges.

7. The automated system in a computer readable medium for quoting option prices in option market making (100) according to claim 1, wherein the risk management mechanism reduces the Delta risk using a dynamic Delta hedge (800) when a large Delta risk is determined by the risk analysis module (15), and is configured to balance hedging cost and time efficiency by adjusting hedging intensity and timing in response to defined risks,

8. The automated system in a computer readable medium for quoting option prices in option market making (100) according to claim 7, wherein the dynamic Delta hedge (800) is configured to balance between a cost and a time efficiency of the Delta hedge (800).

9. The automated system in a computer readable medium for quoting option prices in option market making (100) according to claim 1, further comprising a safeguard mechanism (16) for suspending quoting or modifying the option price when the asset risk is high as determined based on a high price fluctuation, a high margin cost, a low number of market participants and a high transaction frequency, or when the quoted option price is determined to be wrong based on a large discrepancy between the quoted price and a market mid-price, a delay in refreshing the options and futures orderbook (11), wrong data is received, or any combination thereof.