Volatility Interrupters

- **Volatility Interrupter Mechanism** is supported only in:
  - The Main market
- Protect market participants from violent price movements, as a result of erroneous orders or market abuse actions.
- During Continuous Trading:
  - when a new order entered into the system may cause a trade in a price that exceeds some specific price thresholds set by ATHEX, a **halt** in the continuous trading of this security is triggered, leading to the activation of a **pre-call** phase followed by an **auction**.
- During any Auction's Pre-call phase:
  - under specific conditions, there is no auction event, but an **extension of the Pre Call phase.**

Volatility Interrupters during Continuous Trading

The triggering of Volatility interrupters during continuous trading (CAMM) is due to the violation of the static or dynamic price range. The trading of the security is automatically hallted and a pre call phase of 5 min starts, followed by an auction.

Type of Price range	Reference Price	Triggered when:
Static Price range = **Static Reference price ± 10%**	**Static Reference price = Last Auction price** If there is no price from the last auction, then as reference price is used the price of the previous auction or the start of day price which is equal to the previous day's closing price after any corporate action	**Potential execution price > Static Reference price + 10%** **Or** **Potential execution price < Static Reference price - 10%**
Dynamic Price range = **Dynamic Reference price ± 3%**	**Dynamic Reference price = Last trade price** The last trade before the start of execution of an order is taken into consideration. If there are no previous trades then the first trade of the order under examination is used	**Potential execution price > Dynamic Reference price + 3%** **Or** **Potential execution price < Dynamic Reference price - 3%**

Volatility Interrupters during Pre Call

- When the Volatility Interrupter mechanism is triggered during an auction event after a Pre call phase, then there is no auction event, but an **extension of the Pre Call phase**

- Extension of the Pre Call phase of an auction for a specific security, when:
  - the potential auction price lies outside the **Price Tolerance Range: Price Tolerance Rule**
  - the potential auction volume is less than the volume of **MKT and ATO orders** on either side**: MKT/ATO Order Rule**

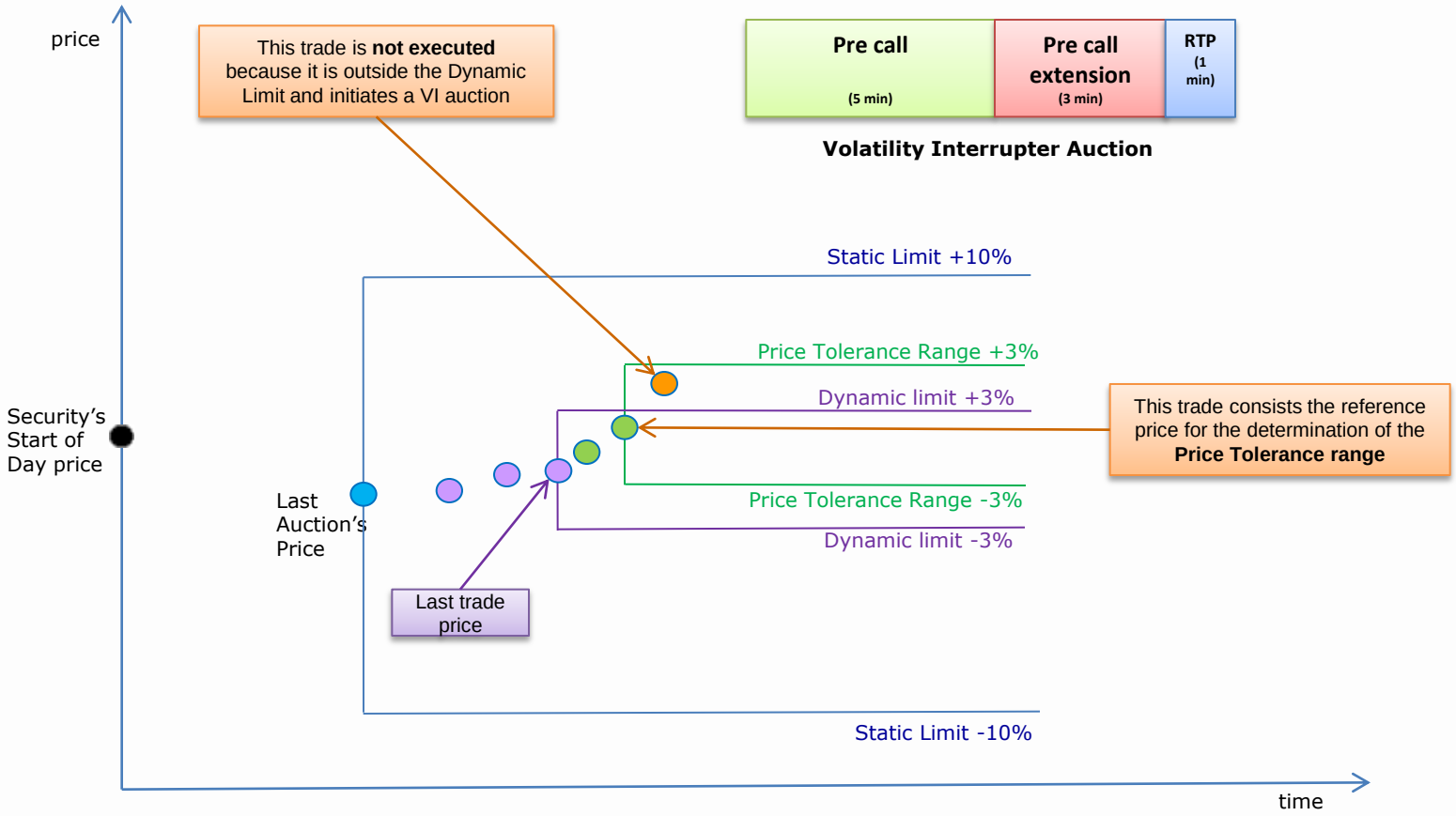
- The extension period is 3 min with a random time period of 1 min

Vol Interrupters during Pre Call: Price Tolerance Rule

- The Price Tolerance Range is **30%** of the Static Price range

Auction Type	Reference Price for Price Tolerance Range	Checking for the triggering of Volatility Interrupter during Auctions
Opening Auction	Security's start of day price	Potential auction price deviates more than 3%
Intraday Auction, Closing Auction, or Volatility Interrupter Auction	Last trade. If there is no trade, then the security's start of day price	Potential auction price deviates more than 3%

Volatility Interrupter in Graphics



Vol Interrupters during Pre Call: MKT/ATO order rule

The MKT/ATO order rule applies when the potential auction volume is less than or equal to the total volume of the available buy or sell Market and ATO orders. I.e., when the potential auction volume comes only from orders without limit prices

MKT/ATO order rule:

Auction Volume ≤ Σ (Volume of Buy MKT Orders Before Auction + Volume of Buy ATO Orders Before Auction)

or

Auction Volume ≤ Σ (Volume of Sell MKT Orders Before Auction + Volume of Sell ATO Orders Before Auction)

Closing Auction & Closing Price

- The closing auction's pre call phase, as any pre call phase, can be extended if:
  - The candidate auction price deviates by more than 3% (Price Tolerance range)

  or
  - The candidate auction volume comes entirely from Market and/or ATO orders (MKT/ATO order rule)

- The extension period is 3 min followed by a random time period of 1 min

Closing Auction & Closing Price cont.

However, at the end of the extension period of the closing pre call phase, **the system performs 2 more checks in order to calculate the closing price:**

- **If** the projected auction price deviates by more than 3% (**Price Tolerance range**) **and** the projected auction volume is less than 30% (**Volume min rule**) of the daily traded volume for that stock

OR

- **If** the total projected volume of the auction comes from Market and/or ATO orders (MKT/ATO order rule)

Then:

The closing price is calculated as the volume-weighted average price of the last 30% of the trades that have taken place till that moment*

****alternative closing method***

Closing Auction & Closing Price cont.

When the closing price is calculated based on the **weighted average volume** of the last 30% of trades:

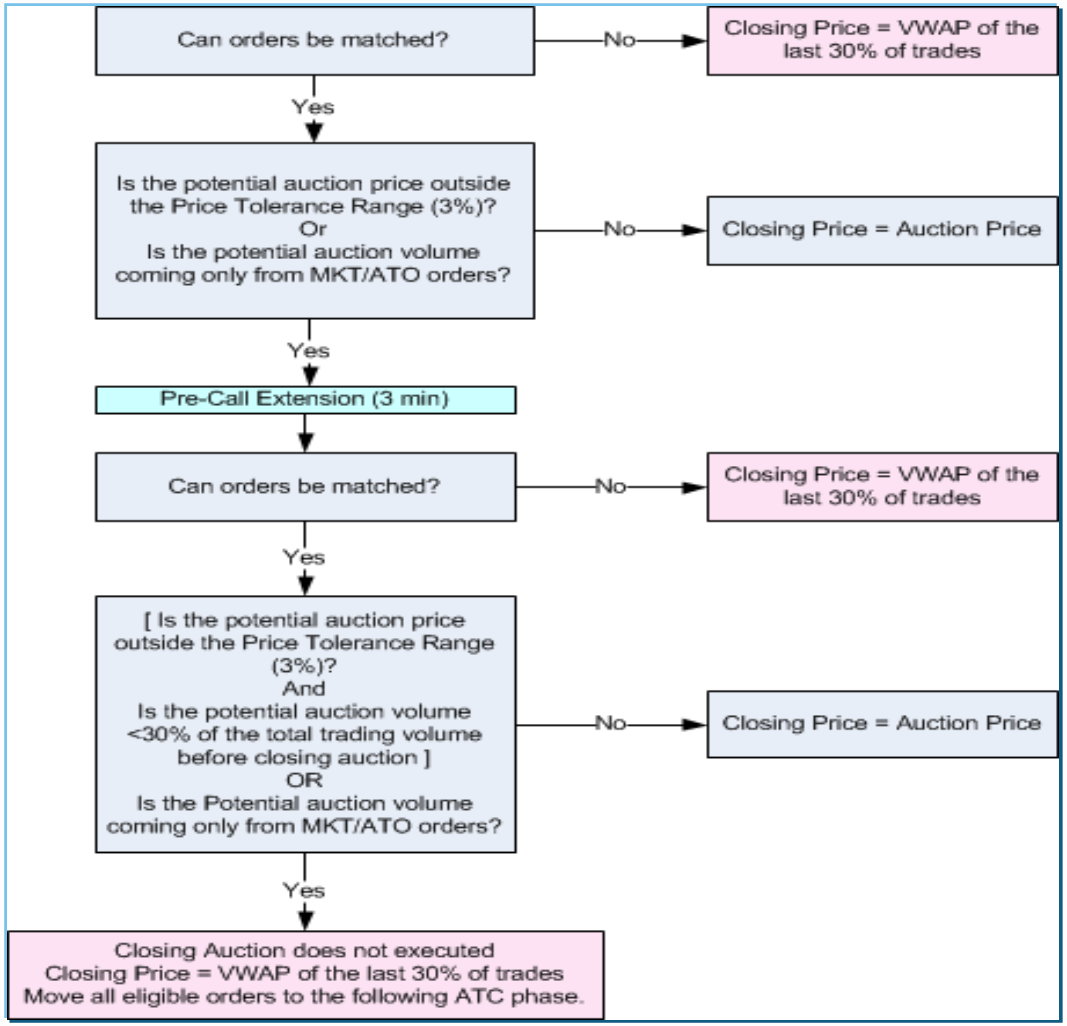
- The Buy orders with a price equal to or greater than the closing price, and
- The Sell orders with a price equal to or less than the closing price

are executed at the closing price, as previously calculated, based on price-time priority

In the **A**t **T**he **C**lose (ATC) phase, the following orders participate:

- Orders remaining from the previous phases with price better than the closing price
- At The Close (ATC) orders

Summary: Closing Auction & Closing Price



Volatility Interrupters and Orders' behaviour

Market orders

- If the order that triggers the Volatility Interrupter is a Market order and is partially executed, then the unexecuted part of this order participates into the Pre call phase of the Volatility interrupter auction with a limit price equal to the last trade executed before the triggering of Volatility Interrupter
- If the Market order that triggers the Volatility Interrupter is not executed at all, then it is transferred with the indication "Market" into the Pre call phase of the Volatility Interrupter auction in order to participate to the auction

Fill Or Kill (FOK) orders

- If the order that triggers the Volatility Interrupter is of type FOK, then the entire order is cancelled (because it cannot be partially executed), without activating the Volatility Interrupter

Immediate Or Cancel (IOC) orders

- If the order that triggers the Volatility Interrupter is of type IOC, then the unexecuted part of the order is cancelled and as a result it doesn't participate into the Pre call phase of the Volatility Interrupter auction

STOP orders

- STOP orders can also participate in the Pre call phase of the Volatility Interrupter auction, if their STOP condition is activated based on trades performed before the triggering of the Volatility Interrupter auction

Volatility Interrupters parameters

According to Resolution 22 of the ATHEX BoD:

Volatility Interrupters Parameters	
During Continuous Trading	
Static Price Range	±10%
Dynamic Price Range	±3%
During Pre call period of Auction	
Price Tolerance Range	30% of the Static Price range
Volume Minimum Rule (Vmin rule)	30%
Volatility Interruption Auction	
Volatility Interrupter Pre call phase	5 min
Volatility Interrupter Extension	3 min
Random Time Period (RTP)	1 min

Further Information

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