



WSE trading rules in GPW WATS system

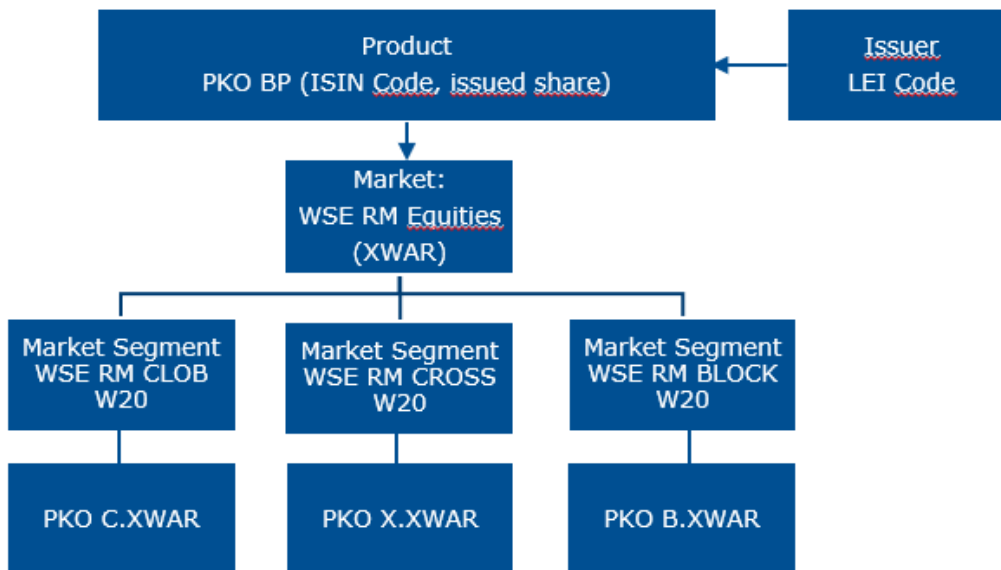
Comparison to UTP system

Workshop

Trading Department

1. Market Structure.
2. Trading schedule and phases.
3. Pre-trade controls.
4. Trade collars.
5. Special trades.
6. Market Maker System.
7. Market Makers obligations
8. Self-trade prevention
9. Migration and Rollback
10. Business Continuity Plan (BCP)
11. WSE WATS – system characteristics
12. WSE WATS documentation

The logic for creating instruments has changed. The previous normal and block segments have been replaced with CLOB (Central Limit Order Book), CROSS, and BLOCK segments. The instrument's ISIN has been placed at the Product level. Quote classes have been replaced with Market Segments, which are part of the Market Structure. Markets have been created based on available MIC types. Below is the current structure, using PKO BP shares as an example:



For HYBRID products (Market Maker System instruments i.e. warrants, structured products), only one HYBRID instrument is created (e.g., **RCTLGOLD13 H.WETP**).

There are also IPO and TENDER types. Tender instruments are assigned to existing Product

Taking into account that there will be more Market Operators in the WATS system (GPW, BondSpot, Benchmark), the following system for creating the designation has been introduced:

Market Operator		MIC		Market Model		Numer Market Segmentu
01 02 03 04	+	01 02 03 04 05 06 07 08 09 10 11 12 13 14 15	+	1 2 3 4 5 6 7 8	+	001 np. 001 - WIG20
01 - GPW		01 - XWAR (MO 1)		1 - NA		
02 - BondSpot		02 - XNCO (MO 1)		2 - CLOB		
03 - GPW Benchm.		03 - XGLO (MO 1)		3 - BLOCK		
04 -		04 - WBON (MO 1)		4 - HYBRID		
		05 - WMTF (MO 1)		5 - CROSS		
		06 - WDER (MO 1)		6 - IPO (MIC: WIPO, XOFF, XXXX)		
		07 - WETP (MO 1)		7 - TENDER (MIC: XWAR, XNCO)		
		08 - WBCL (MO 1)		8 - REDISTRIBUTION (MIC: TBSP)		
		09 - WIPO (MO 1)				
		10 - XOFF (MO 1)				
		11 - XXXX (MO 1)				
		12 - RPWC (MO 2)				
		13 - BOSP (MO 2)				
		14 - TBSP (MO 2)				
		15 - WIND (MO 3)				

[illegible]

- Replacing the Phases: Pre-Opening and Opening (UTP) with the Opening Auction Phase (WATS),
- Replacing the Phases: Pre-Closing and Closing (UTP) with the Closing Auction Phase (WATS),
- Adding a random opening time for all instrument types, except for instruments from the Market Maker System. A single logic was adopted:

a) +30 seconds for opening phases.

Example: for the cash market: individual random opening for each instrument from 09:00:00 to 09:00:30.

b) -30 seconds for closing phases.

Example for the cash market: individual random closing for each instrument from 16:59:30 to 17:00:00.

- Changes to the schedule for single-price auctions:
 - Extension of the Trading at last phase (post-auction phase) for the second auction in the single-price auction with two auctions, from 3:00 PM to 3:30 PM to 3:00 PM to 5:05 PM.
 - Extension of the Trading at last phase in the single-price auction system with one weekly auction, from 11:00 AM - 1:00 PM to 11:00 AM - 5:05 PM.
 - For debt instruments, Trading at last is being organized (in the UTP system, there was a pre-opening phase).

- Full order book is **not published**.
- TOP and TOV** are published and in the event that the book is divergent – the highest bid price and the lowest ask price and the total volume of orders at these levels are published, taking into account the total volume of the order with the iceberg condition.
- Order placed/modified/cancelled exactly at uncross is rejected.
- The following has been added to the rules used to determine the opening and closing price:
 - 2a) specifying a price at a level at which all buy orders with a price limit higher than this price and all sell orders with a price limit lower than this price are fully executed.

Tick: 1.00; Reference price:100

BUY			SELL				
Aggr. Vol	VOLUME	PRICE	VOLUME	Aggr. Vol	Auction Volume	Surplus	Pressure
100	200	102		300	100	-200	SELL
400	200	101		300	300	+100	BUY
400		100	200	300	300	+100	BUY
500	100	99	100	100	300	+200	BUY

- ❑ Organized for instruments for which a closing price was determined during the **closing auction phase**. Therefore, it is not displayed in the data stream as a scheduled phase.
- ❑ **Buy orders** with a price limit higher than the closing price and **sell orders** with a price limit lower than the closing price are accepted and adjusted by the system to a limit equal to the closing price. The order of execution is determined solely by the time the order is entered into the system.
- ❑ Orders remaining in the order book after the extra-time period, with a longer validity period, are entered into the Exchange system on the next business day at the client's original limit.
- ❑ Lasts for 300 seconds so depends on **random closing** – e.g. it can start at 4:59:30 PM and ends at 5:04:30 PM then.
- ❑ MO and MTL are allowed only with FOK or IoC condition.

- ❑ Organized for all instruments.
- ❑ **Buy orders** with a price limit higher than the closing price and **sell orders** with a price limit lower than the closing price are accepted and adjusted by the system to a limit equal to the closing price. The priority of execution is determined solely by the time the order is entered into the system.
- ❑ Orders remaining in the order book after the extra-time period, with a longer validity period, are entered into the Exchange system on the next business day at the client's original limit.
- ❑ MO and MTL are allowed only with FOK or IoC condition.
- ❑ VFC order placed in the single price auction with one auction per week won't be displayed in order book.

In the UTP system, pre-trade checks could be exceeded after the flag was confirmed. **This won't be possible in GPW WATS, so the limits have been increased accordingly.**

Order volume restrictions:

- ◆ cash market – a maximum of 2% of shares introduced to trading, however, if 2% of these shares constitute less than 1,000,000 shares, then 1,000,000 shares if at least that many shares are introduced to trading or the number of shares introduced to trading if less than 1,000,000 shares are introduced to trading
- ◆ Debt instruments– max. 10% of instruments introduced to trading.

Derivatives

Instrument	Max Volume:
◆ Index futures	500
◆ Shares futures	1 000
◆ Currency futures	10 000
◆ Options	500

Order value restrictions

- ◆ Cash market
 - ✓ 50.000.000 PLN – WIG20 index components, bonds, debut day
 - ✓ 30.000.000 PLN – mWIG40 index components
 - ✓ 10.000.000 PLN – other shares, investment certificates, ETF, ETN, ETC
- ◆ Derivatives
 - ✓ 75.000.000 PLN – Index, shares, currencies futures and options

Maximum price limits (relative to the reference price for static rate fluctuation limits)

- ◆ Cash market
 - ✓ 40%- WIG20,
 - ✓ 50%- mWIG40, other shares, investment
 - ✓ certificates, ETFs, ETN, ETC
 - ✓ -50%, +100% - debut day
 - ✓ 200%- subscription rights
- ◆ Derivatives
 - ✓ 40%- Indexes, currencies
 - ✓ 50%- shares

Additionally, to accommodate sudden market changes, a "maximum limit price expansion factor" of 2 has been introduced for all instruments, except derivatives. The value of permissible price limits during the opening auction, closing auction, and balancing phases is the multiplication of the limit value and the expansion factor.

In exceptional circumstances, the chairman of the session may change the reference price for price limits.

If trading is suspended under static or dynamic price threshold limits, the system switches to a primary balancing with a strictly defined duration, or to an additional balancing, where the chairman of the session decides when continuous trading will resume.

During this phase, the full **order book is not published**. Typically, the TOP and TOV are published.

1. Primary Balancing – new WATS rules, duration is strictly defined.
2. Additional Balancing – duration depends on decision of Session State Chairman

Two-stage volatility auction has been introduced: **primary balancing** (stage 1) and **secondary balancing** (stage 2).

In **primary balancing**, the system resumes trading after a strictly defined period. GPW WATS has introduced a coefficient for the maximum net number of changes in price fluctuation limits, calculated as an absolute value.

Any upward change is added, while any downward change is subtracted. If the net coefficient is exceeded, the system disables primary balancing for the rest of the session. This is replaced by secondary balancing, where the resumption of trading depends on the decision of the chairman of the session.

Reference price for static collars:

- ACP (Adjusted Closing Price) before end of Auction Opening phase.
- If transactions took place during the Opening Auction phase, the price of these transactions becomes the new reference price (derivatives excluded).
- If there was no transaction in the Opening Auction phase, the reference price for the static limits does not change and is not updated with the price of the first transaction.

Reference Price Shift Factor – allows you to shift the reference price by a percentage other than the basic limit. WATS retains the UTP setting in this respect, with the indicator set to 1. It is possible to set a separate factor for the opening auction phase and for other trading phases.

In GPW WATS below logic was adopted:

Basic (automatic) balancing has been disabled for derivatives and the ATS market. For the cash market, 1 net change in the indicator applies.

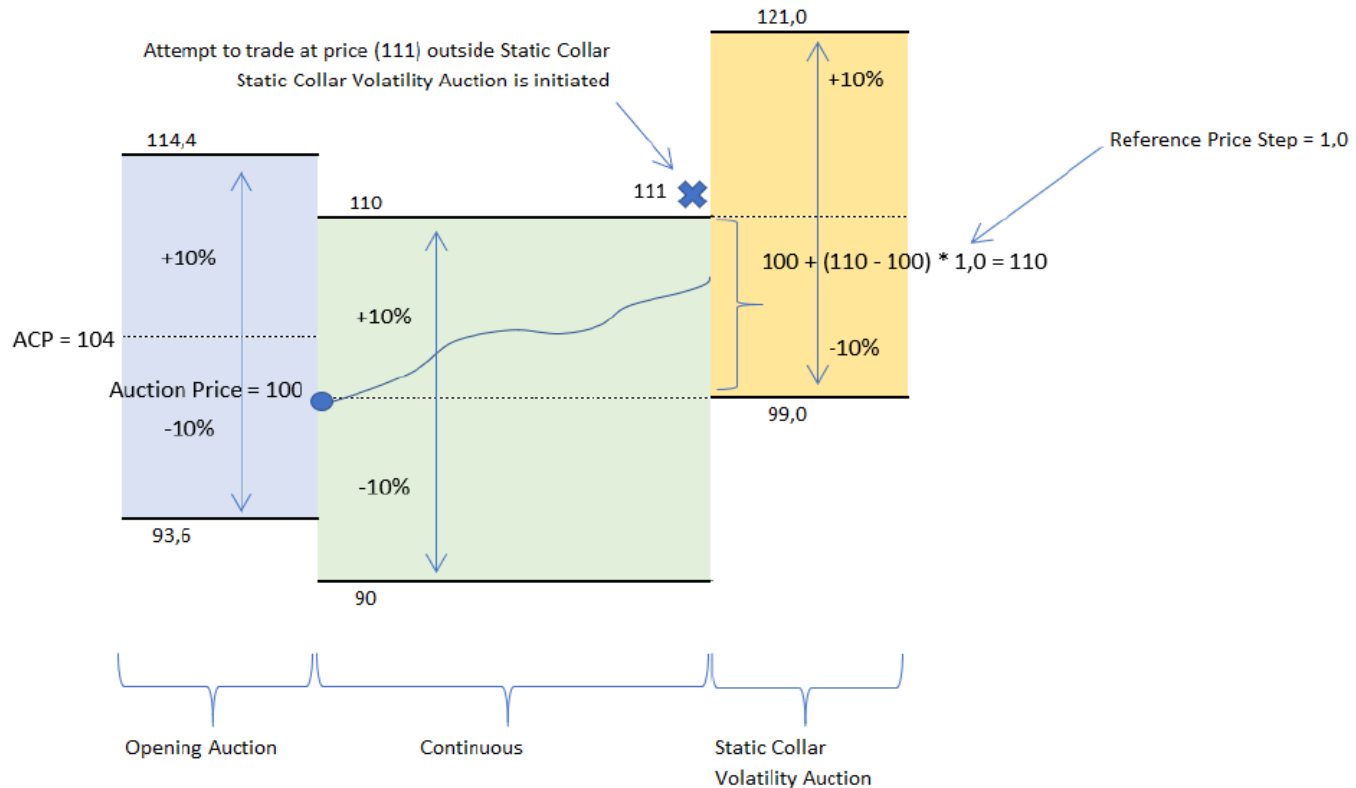
Primary rebalancing duration:

When the closing auction phase ends with primary balancing, a 1-minute volatility auction begins.

In other phases the volatility auction time is:

- 60 seconds –WIG20 index shares, shares in a single price auction system.
- 120 seconds –mWIG40 index shares, ETFs, ETNs, ETCs.
- 300 seconds – other shares, debt instruments.

Example:



There is also a **primary balancing** and a **secondary balancing**. The shift factor is replaced by an expansion factor.

The principle of the maximum net change factor for dynamic constraints is identical to that for static constraints.

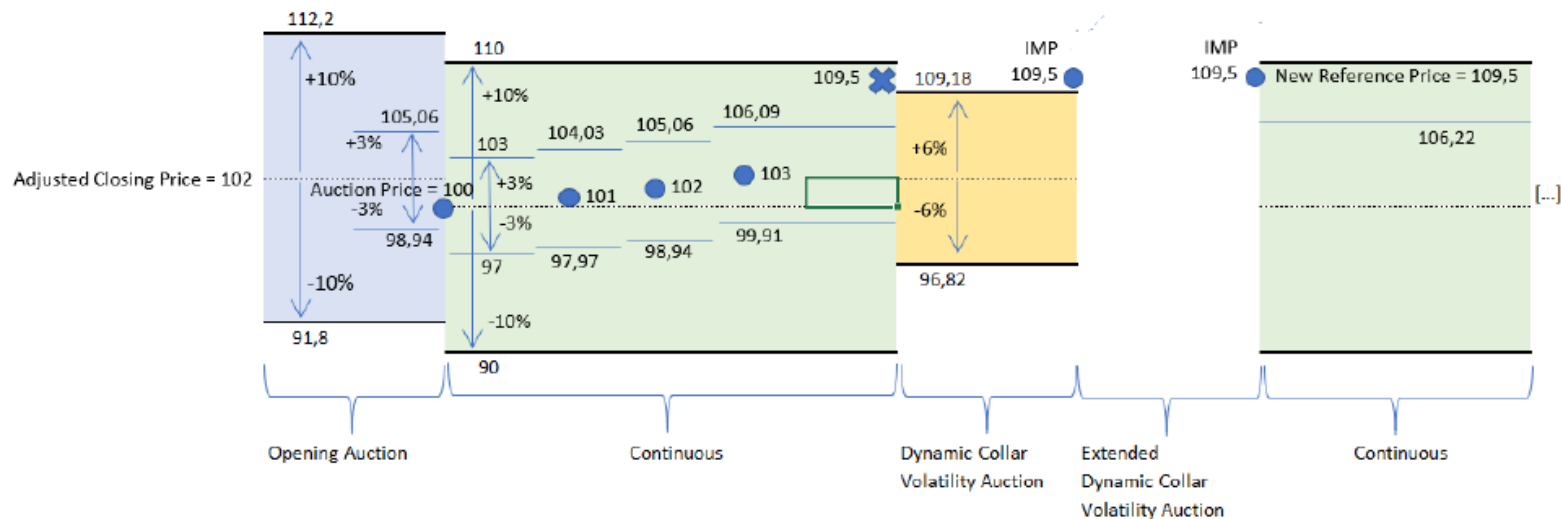
When dynamic collars are activated, the forks are expanded by the factor specified in the parameterization.

Expansion factor applied in the WATS regulations:

- 3 x expansion in Opening auction.
- 2 x expansion in other phases.
- 10 – maximum net dynamic thresholds change.
- 60 seconds – duration of primary balancing.

No dynamic thresholds in ATS system (guideline transferred from UTP).

Example:



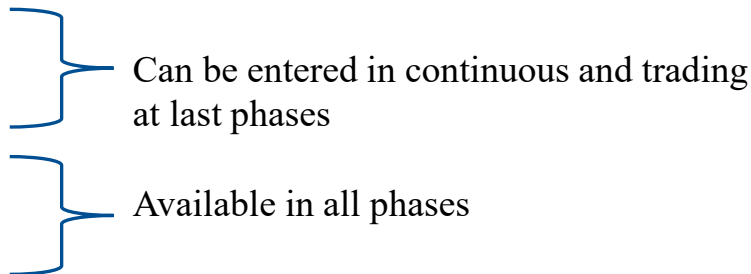
In the event of an extraordinary situation - a temporary suspension of trading across the entire market, the need to transfer a session to a backup facility, or the need to resume trading after a specific instrument has been suspended — an "unsuspension auction" phase has been introduced.

During this phase, **orders are accepted**, but **transactions are not executed**.

The **order book is not published**, but the TOP and TOV are displayed. Currently, the duration of this phase is set at 15 minutes.

Differences in MO in comparison to UTP:

- ◆ Limiting the possibility of placing MO orders only to the following additional validity:
 - Immediate or cancel (IoC)
 - Fill or kill (FoK)
 - Valid for auction (VFA)
 - Valid for closing (VFC)
- ◆ In case of partial execution during the opening/closing auction phase or after the end of balancing, the remaining part of the order becomes void.



MO order is forbidden in Market Maker System.

- The same rules apply to MTL as MO orders in WATS, with one difference: during continuous trading:
 - MO: is executed at the **best possible prices** of the opposite orders waiting in the order book.
 - MTL: is executed at the **best possible price** of the opposite orders waiting in the order book.
- No conversion to limit order after partial execution.

MTL is not accepted in Market Maker System.

Iceberg:

1. The order disclosure size cannot be lower than the minimum transaction unit size (usually 1).
2. Modifying the disclosure size results in a loss of time priority, regardless of whether the modification is aimed at increasing or decreasing the disclosure size.
3. In the GPW WATS system, the total volume of the order with the Iceberg condition is taken into account when calculating and publishing the TOP and TOV.
4. In the event of a single Iceberg order being executed with a pending opposite order with volume greater than the disclosed volume, the original disclosed volume is disclosed after the Iceberg order is executed.
5. In the event of partial execution of a Iceberg order as a result of the end of the auction phases, the original disclosed volume is disclosed in the order book.

Iceberg orders in Market Maker System are blocked.

The change for **Stop Limit** and **Stop Loss orders** in GPW WATS: Activation at the end of the closing auction phase results in a disclosure in the order book.

Important information regarding Stop Loss orders: the order may not be executed because, upon activation, the order is entered in the order book as a MO with the IoC designation. If there are no opposing orders in the order book, the order is canceled.

Stop Loss orders are not available in the MMS due to the disabled ability to enter MO orders.

Placing a Ioc or FoK order is executed within the applicable static and/or dynamic threshold limits. This means that, for example, a MO order with a FoK condition will never suspend trading and will be executed up to the upper/lower allowed price limits.

Order types no longer available in WATS



The following orders have been disabled in GPW WATS:

1. Order with a variable execution limit (**PEG**).
2. Order with a minimum execution quantity condition.

All types of order validity are maintained in the GPW WATS system.

1. Orders automatically expire after the end of the last trading day for shares with corporate rights.
2. Additionally, orders may still expire after the end of the last trading session of the calendar year.
3. No suspension with the ability to enter orders – e.g. no periodic report provided (regulatory suspension), suspension for trading security reasons (market operation suspension) - the order book is blocked for new incoming orders.

Orders remaining in the book may not be canceled by the chairman of the session; in such cases, they may be canceled by an Exchange Member.

Permitted order modifications:

- ♦ total quantity,
- ♦ initial disclosure quantity (only for Iceberg orders),
- ♦ price,
- ♦ trigger price (only for Stop orders),
- ♦ GTD expiration date (from one date to another), no modifications from a D order to a GTC,
- ♦ Short Code (to be used where business justification allows).

The validity of time expires when:

- ♦ increase or decrease in the order's disclosure quantity,
- ♦ increase in the order volume without a disclosure quantity condition,
- ♦ change in the limit price,
- ♦ change in the order's trigger limit.

No possibility to order type modification e.g. Limit to MO.

Cross trades have been excluded from the order book and are now executed in a dedicated market model.

Additional rules for executing cross transactions in comparison to UTP:

- ✓ The first historical transaction for the security has been concluded.
- ✓ It must be within the maximum price limit values (static thresholds are not taken into account) from CLOB.
- ✓ A cross transaction is concluded when the relevant transaction entry is recorded in the trading system based on the Trade Capture Report message.

1. VWAP values publication in WATS vs. UTP

System Information publication location	UTP	GPW WATS
Market Data stream messages: Trade Messages (transaction information)	n/a	After each transaction: separately for CLOB / CROSS / BLOCK
Market Data stream messages: Instrument Summary Messages	n/a	At the end of the session: separately for CLOB / CROSS / BLOCK
Market Data stream messages: • Session Summary Message (UTP XDP 561) • Product Summary Messages (WATS)	VWAP value including Cross transactions (at the end of the session)	VWAP value not including Cross transactions (based only on CLOB transactions) (at the end of the session)
OFFICIAL EXCHANGE BULLETIN	VWAP value including Cross transactions	Two VWAP values: • VWAP including Cross transactions • VWAP for CLOB transactions only (excluding Cross transactions)

- ✓ In GPW WATS VWAP will be published separately for CLOB/ CROSS/ BLOCK

- ◆ The order response time has been extended from 60 minutes to the end of the session.
- ◆ The reference price for after-session transactions is the closing price (in UTP, this was VWAP).
- ◆ Two schedules have been set: until 3:00 PM, transactions can be executed on D+0 at least, and from 3:00 PM onwards, the settlement date is at least D+1.
- ◆ After-session block trades with a wider price collars are possible from the end of trading on the CLOB instrument. This means that in the extreme case where the security has no closing price and the CLOB instrument enters Late Monitoring at 4:59:30 PM, after-session trades are possible then.

- ◆ **Buy-in or sell-out** transactions (BISO) are not available in WATS.
- ◆ It is not possible to submit a **indication of interest** of specific financial instruments.

- ❖ Orders are placed directly in the GPW WATS system.
- ❖ The condition for uncrossing the orderbook is that equal volumes are entered on the buy and sell sides by a specified time. The exchange has set a deadline for order entry by 2:00 PM.
- ❖ Individual orders or a bulk order can be entered. The exchange will only process a call phase on the day it is executed.
- ❖ Orders are placed only with the GTC condition.
- ❖ There is no obligation to initiate the session by entering a buy order. Sell orders are accepted from 8:30 AM.
- ❖ Entering a buy order initiates the sending of a BidOfferUpdate message to the buyer, informing the number of orders and the cumulative volume on the other side.
- ❖ The exchange may provide a Tender instrument in advance at the request of members, but orders cannot be entered into the WATS system before execution.

Special trades: IPO and SPO allotment

- ❖ IPO and SPO transactions are not covered by the Exchange Rules.
- ❖ The Exchange takes over the process of matching client buy orders with offer orders.
- ❖ The available allocation options are identical to those available at UTP, with a more extensive algorithmic mechanism for allocating not subscribed instruments.

Functionality		UTP	WATS
Allocation Algorithm	Nazwa		
Proportional Reduction			
volume translation max to min with mathematical rounding	VolMaxRoundMath	tak	tak
from volume min to max with standard rounding	VolMinRoundMath	tak	tak
from max to min volume rounded down to zero	VolMaxRound	tak	tak
from volume min to max rounded to zero	VolMinRound	tak	tak
from max to min volume with rounding using standard math priority and random priority for the next batch	VolMaxRoundMathRnd		
from volume min to max with rounding using normal rules with random priority for the next batch	VolMinRoundMathRnd	nie	tak
from volume max to min with rounding down to zero with random priority for the next tranche	VolMaxRoundRnd	nie	tak
from volume min to max with rounding down to zero with random priority for the next tranche	VolMinRoundRnd	nie	tak
		nie	tak

- ◆ Subscriptions may be accepted during offering period, with a trading session taking place on the allocation date. The Exchange provides for orders to be entered no later than 2:00 PM on allocation date.

- ❖ Discontinuation of calculating virtual sales orders.
- ❖ Disabling the option to use "Sales Order Only".
- ❖ The "Buy Order Only" phase is replaced with the "HybridBuyOnly" phase. Activating this phase by the market maker results in the cancellation of all other buy orders. During this phase, only the market maker's order can exist on the buy side.
- ❖ Disabling the RFQ "Quote Inquiry" functionality.
- ❖ During the HybridPreTrade or HybridPreTradeBuyOnly phase, client orders are not quoted and are placed in the "order queue." Only market maker orders are visible on the order book during this phase.
- ❖ In the Hybrid No Quotes phase, orders entered before initiating this phase are visible in the order book, while those entered after the market maker's offers have been removed are placed in the queue.
- ❖ The reference price for certificates is determined as the midpoint of the spread of the market maker's latest orders. In the "HybridBuyOnly" state, the reference price is the last market maker buy price.
- ❖ It is not possible to enter the following types of orders: MTL, MO, Stop Loss, Iceberg, or validities: FoK and IoC.

- ❖ Market making is mandatory 5 minutes before the earliest possible opening/closing of trading – for the cash market, from 8:55:00 AM and 4:54:30 PM.
- ❖ Contract terms are calculated relative to the market maker's buy order (price), e.g.:

	Presence on the order book	Minimum order value/volume	Maximum spread
WIG20 shares, pre-emptive rights and rights to shares	80%	25 000 PLN	1) 0.03 PLN – for a price ≤1 PLN 2) 0.05 PLN – for a price >1 PLN - ≤2 PLN 3) 2.0% - for a price >2 PLN

- ❖ Marking market maker orders:

	A	B	C	D	E	F	G	H	I
1	Field Name	Exchange Member		(Regular) Market Maker			(Issuer) Market Maker		
		Dealer	Client	Exchange Member	Client no 1 of Exchange Member	Client no 2 of Exchange Member	Exchange Member	Client no 3 of Exchange Member	Client no 4 of Exchange Member
2	InstrumentID	ExchangeSymbol	ExchangeSymbol	ExchangeSymbol	ExchangeSymbol	ExchangeSymbol	ExchangeSymbol	ExchangeSymbol	ExchangeSymbol
3	Capacity	2 = Principal	1 = Agency	2 = Principal	1 = Agency	1 = Agency	2 = Principal	1 = Agency	1 = Agency
4	mifidFields.flags	0b0000 None	0b0000 None	0b0101 LiquidityProvisionActivity+ MarketMakerOrSpecialist	0b0101 LiquidityProvisionActivity+ MarketMakerOrSpecialist	0b0101 LiquidityProvisionActivity+ MarketMakerOrSpecialist	0b0001 LiquidityProvisionActivity	0b0001 LiquidityProvisionActivity	0b0001 LiquidityProvisionActivity
5	mifidFields.client S.C.	No provided	111111	No provided	e.g. 222222	e.g. 333333	No provided	e.g. 444444	e.g. 555555

- ❖ Markers may only enter orders within the CLOB and BLOCK instruments.

Enables Exchange Members to avoid the unintended execution of their own client orders.

Key aspects:

- The STP ID can be assigned to orders with specified indicator, taking into account the role of **market maker** or **issuer LP**, or to orders entered or executed with a specified „**short code**“, etc. The number of keys created by a Member is unlimited.
- Applies exclusively to orders executed in **CLOB** and **HYBRID**.
- Not active during **auction phases** (opening, closing, volatility); it applies only during continuous trading and trade-at-last.
- Only one action logic is available: entering an aggressive order results in the cancellation of the client's **resting passive** order. The exception is an order entered via **IoC or FoK**. In such a case if the only resting order is a client order, the aggressive order is eliminated in order to maintain liquidity in the order book.
- The passive order is eliminated only when the aggressive order could be executed against it.
- The functionality does not apply to **negotiated transactions – cross trades and block trades**.

1. The Exchange has published the Business Continuity Rules for the WSE WATS System, applicable for 5 days from the implementation date: https://www.gpw.pl/pub/GPW/files/PDF/regulacje/ZCDS_GPW_WATS_pl.pdf
2. The trading session schedule for 5 October 2026 will be changed. Acceptance of orders for instruments in the CLOB and HYBRID segments will begin at 6:00 AM. The opening of trading in the continuous trading system will remain unchanged.
3. Block trades will not be available on D+0 with the exception of block trades in derivatives.
4. The first four trading days on WSE WATS are critical:
 - a) If the failure occurs on the first day, the Exchange will attempt to rectify the issue through Thursday. If unsuccessful, the Exchange will Begin the process of temporary return to UTP, using reference prices from the last closing on UTP system.
 - b) If a failure occurs on the second or subsequent day, the Exchange will similarly attempt to rectify the issue through Thursday. If unsuccessful, the Exchange will Begin the process of a temporary return to UTP, using reference prices from the last closing on GPW WATS System.

The process of migrating back to UTP would take place over the weekend (10-11 October), meaning that the session on 9 October would be cancelled. After receiving feedback from Members regarding their readiness to migrate back to UTP, the Exchange will announce the date on which trading in this system will commence.

The potential cancellation of orders will depend on the status of the WSE application/system. The Exchange will not perform any transaction cancellation.

Once the session on 5-8 October have been successfully completed, a return to UTP will no longer be possible.

WSE's procedure in the event of a transfer of operations to the backup center WA2:

- ❖ Loss of control over the primary center WA3 – notification to the market,
- ❖ Switching to center WA2. Notification to the market of the suspension of trading and the cancellation of the remaining orders in the order book,
- ❖ Determination of the last valid transaction and the last sequence number from the specified channels 1, 2, 3, and 4,
- ❖ Elimination of transactions incorrectly transferred to WA2,
- ❖ Issuance of emergency contract notes,
- ❖ Information about the possibility of connecting to center WA2,
- ❖ Information about the further course of trading: unsuspension auction phase and continuous phase (+15 minutes).

ATTENTION!

D+0 block trades entered during the loss of synchronization between the centers would not be reflected in WA2. The Exchange will publish information on the last valid transaction, which means that a block trade assigned the next transaction number must be reversed by the Exchange Member in coordination with KDPW_CCP.

WSE WATS – Key system features:

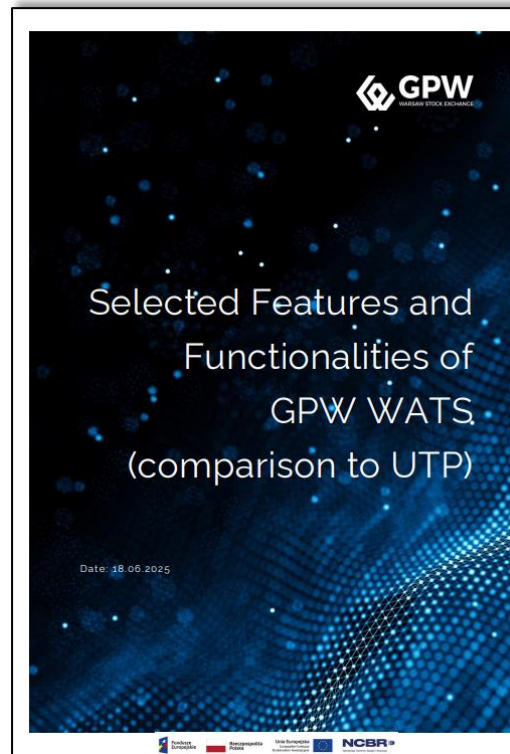
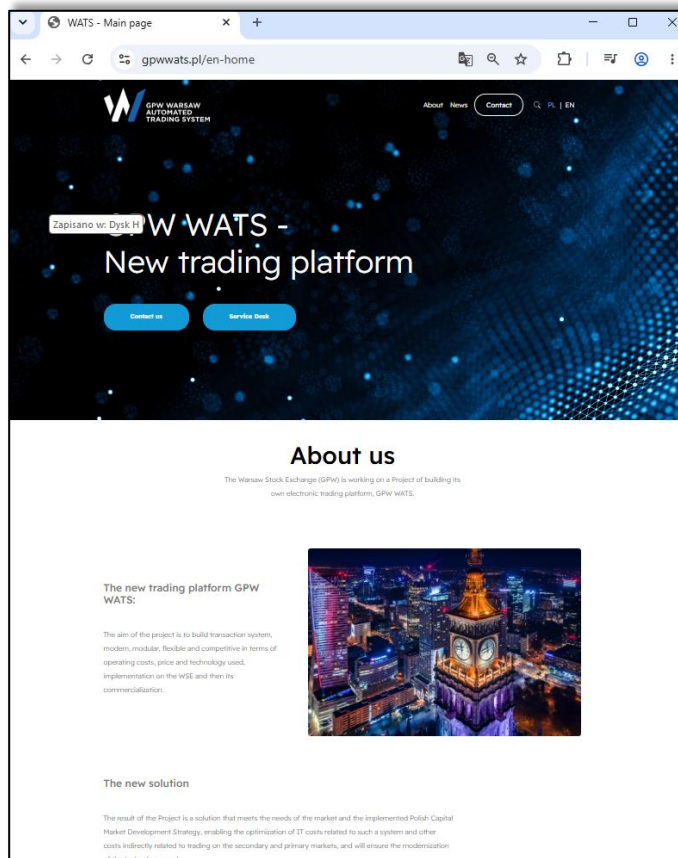
Increased performance – processing of 100,000 orders per second (WATS) vs 20,000 orders per second (UTP).

Proprietary protocols - trading protocols (Binary and FIX) for Exchange Members to execute trades, and a Binary Market Data protocol for accessing market data.

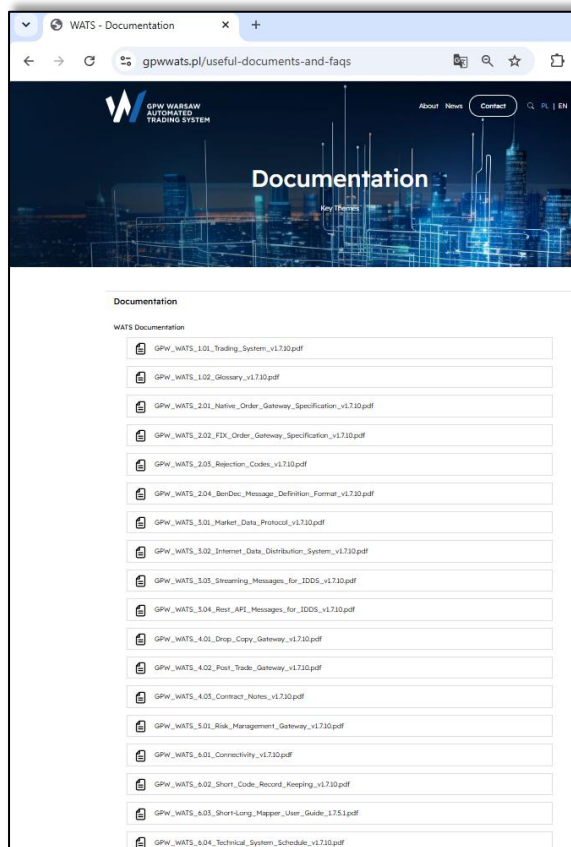
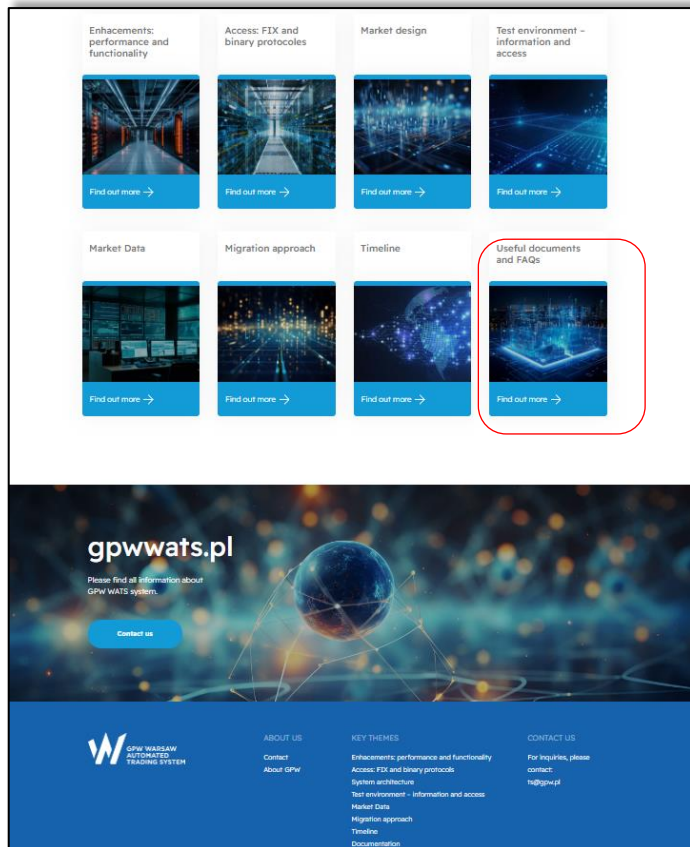
Introduction of Sponsored Access – a model in which an Exchange Member's client connects directly to the WSE system, without having to route orders through the Exchange Member's infrastructure.

Proprietary WATS Risk Management Access (RMA) tool: for managing pre- and post-trade limits. Mandatory for the Sponsored Access model and optional for other models.

Big Bang Go-Live – migration from the current Atman data center Equinix, a leading global infrastructure ecosystem for capital markets.



https://gpwwats.pl/pub/WATS/Dokumenty%20i%20pliki/18062025/Selected_Features_and_Functionalities_of_GPW_WATS_comparison_to_UTP_.pdf



Thank you for your attention.

Warsaw Stock Exchange

Trading Department contact:

Chairman of the session: (022) 537 76 42

mot@gpw.pl

Warsaw Stock Exchange

Trading Department contact:

Chairman of the session: (022) 537 76 42

mot@gpw.pl