

UBS ATS FAQs

October 2020

1. What is the UBS ATS?

The UBS ATS is an alternative trading system ("ATS") registered with the Securities and Exchange Commission ("SEC") that facilitates the matching of non-displayed orders in National Market System ("NMS") securities. The UBS ATS is wholly owned and operated by UBS Securities LLC ("UBS" or "Broker-Dealer Operator"), which is an SEC registered broker-dealer and member of FINRA, NYSE, SIPC and certain other self-regulatory organizations.

The UBS ATS will not match in a security until a transaction in such security has been executed on a national securities exchange, the UBS ATS has opened for trading, and Limit Up/Limit Down price bands ("LULD bands") for the security have been publicly disseminated. Please refer to Form ATS-N information on "Hours of Operations".

The UBS ATS is operated with the primary matching engines located in the Equinix NY5 data center located at 800 Secaucus Road in Secaucus, New Jersey and warm stand-by matching engines located in the Equinix NY4 data center located at 755 Secaucus Road in Secaucus, New Jersey.

The UBS ATS BCP (cold backup) site is located at Equinix CH1 data center located at 350 E Cermak Road in Chicago Illinois.

For more information about the UBS ATS please refer to the UBS Form ATS-N.

2. Where can I view the Form ATS for UBS ATS-N?

The UBS Form ATS-N is available by accessing and scrolling down the SEC Form ATS-N landing page at: <https://www.sec.gov/divisions/marketreg/form-ats-n-filings.htm>.

These FAQs are intended to provide helpful information in a summary format, but they are not a substitute for carefully reading the UBS Form ATS-N. Capitalized terms used in these FAQs are given the same meaning and definition as provided in the UBS Form ATS-N.

3. What is UBS PIN (US)?

The UBS Price Improvement Network in the US ("UBS PIN (US)") is a differentiated segment of liquidity operated within the UBS ATS. UBS PIN (US) facilitates interaction between any combination of UBS Retail Orders, UBS institutional algorithmic order flow, and UBS Principal Orders. Executed matches between Source Category 1 and Source Category 2 orders, or between two Source Category 2 orders, will include an identifier describing the execution as a "UBS PIN" execution from the UBS ATS. All other executions from the UBS ATS will not use this identifier.

Executions resulting from the UBS PIN (US) crossing functionality are identified to clients using the MIC code of "UBSP". UBS ATS crosses that are not executed using the UBS PIN (US) segment will be identified as "UBSA".

For more information please refer to UBS Form ATS-N information on "Trading Services, Facilities and Rules".

4. Does the UBS ATS use tiering or segmentation?

UBS ATS segments incoming order flow into different Source Categories. Upon order acceptance by the UBS ATS, orders are designated with a single Source Category. Source Categories are used by the UBS ATS when applying certain crossing restrictions.

For more information on Source Categories, the grading process used when assigning Source Categories, and the way crossing restrictions use Source Categories, please refer to UBS Form ATS-N information on "Segmentation; Notice".

5. What types of Subscribers have access to the UBS ATS and how do they access the UBS ATS?

The UBS ATS is made available to the types of Subscribers described in Part II, Item 5a of the UBS Form ATS-N. UBS ATS facilitates interaction among equity orders received from a broad range of clients and market participants, including institutional clients using UBS algorithms, broker-dealers, UBS trading desks, market makers, retail brokers, and active traders (sometimes referred to as High Frequency Traders or "HFT"). Interaction among Subscribers is subject to crossing restrictions, as described in the UBS Form ATS-N.

Access is provided on a controlled basis and all participants must undergo formal onboarding and a customary Know Your Customer ("KYC") process.

Subscribers may access the UBS ATS in two ways, via the industry standard Financial Information eXchange 4.2 ("FIX") protocol or via the UBS Binary Protocol ("UBP"). UBP is generally faster than FIX but latency may vary due to conditions. For more information on latency please refer to FAQ #21 below.

6. Do any UBS affiliates, internal trading desks, or internal market making desks act as principal to transactions executed in the UBS ATS?

Class A Direct Subscribers are the UBS trading desks (see Part II, Item 1 of the UBS Form ATS-N for more information) that are within the Broker-Dealer Operator, where the UBS trading desks route orders and trading interest to the UBS ATS using the Broker-Dealer Operator trading services and UBS makes the routing decision. This consists of UBS Algorithmic child orders and Conditional Indications from the UBS SOR routed on behalf of UBS clients, and also includes Principal flow from UBS trading desks and orders and Conditional Indications from RMM.

Class A Direct Subscriber orders include Affiliate Orders and may be routed to the UBS ATS as agency or principal through the UBS algorithms and Smart Order Router (SOR).

To avoid crossing with UBS Principal order flow in UBS ATS, Subscribers may send crossing restriction instructions as per the UBS ATS Specifications, which can be found at www.ubs.com/ats.

7. How are orders matched in the UBS ATS and what order types are supported?

The priority of an order is determined first by its effective price, and next by the time of receipt by the UBS ATS. The priority of a Conditional Indication (CI) is determined by its effective price, then by its quantity, and then by its time of receipt by the UBS ATS. For priority purposes, the effective price of an order or CI is defined based on its type:

- For Pegged Orders and CIs: The effective price is considered to be the less aggressive of the limit price (if provided) and the pegged price (near, mid, or far). For midpeg orders, there is an additional option, 'PeggedMidpointMode', which is described in the UBS Form ATS-N in the "Order Types and Attributes" section.
- For Limit Orders and CIs: The effective price is considered to be the limit price.

For more information please refer to UBS Form ATS-N information on "Order Types and Attributes".

8. Does the UBS ATS offer Conditional Indications (CIs)? Can firm orders generate invites to CIs? Will I know when an execution occurs as a result of a conditional interaction?

UBS ATS supports the use of Conditional Indications (CIs), which represent an intent to trade, specifying a security, a side (buy or sell), a price, a quantity and a minimum executable quantity. A CI will be held by the UBS ATS until cancelled or expired at the end of the day. CIs can only be sent to the UBS ATS via FIX 4.2 protocol.

The UBS ATS does not generate Invites on orders unless indicated to do so by a Subscriber. Senders of CIs are required to send an Invite Grade on each CI to indicate which contra CIs are eligible for Invites. CIs without an Invite Grade will be rejected.

Two (2) liquidity codes are available to indicate whether a UBS ATS execution resulted from a CI interaction. The 2 codes are Y (Add vs Conditional) and Z (Remove vs Conditional).

For more information on Conditional Indications please refer to UBS Form ATS-N information on "Conditional Orders and Indications of Interest" as well as the UBS ATS Specifications.

9. Does the UBS ATS send out Indications of Interest (IOIs)?

The UBS ATS does not send out traditional IOIs, however, as described above, the UBS ATS sends invite messages (Invites or Invitations) in connection with Conditional Indications.

For more information please refer to UBS Form ATS-N information on "Conditional Orders and Indications of Interest"

10. Does the UBS ATS route orders externally or to any trading desks at UBS?

No.

11. Does the UBS ATS aggregate minimum quantities or "bunch" orders on the book to satisfy a minimum quantity?

No.

12. What type of risk controls / trading limits exist in the UBS ATS?

The UBS ATS applies per order share and notional limits as well as aggregate trading notional limits for firm orders directed to the UBS ATS by certain Subscribers.

For more information please refer to UBS Form ATS-N information in "Order Sizes".

13. How is execution quality monitored in the UBS ATS?

The ATS Execution Committee, consisting of representatives from the ATS Desk, Quant/Analytics, and Compliance & Operational Risk Control, is the forum within the UBS Investment Bank responsible for overseeing execution quality of the UBS ATS. The ATS Execution Committee meets monthly and examines and evaluates the activity of Subscribers within the ATS, including, but not limited to Subscriber Source Category Segmentation, Subscriber Grading of Conditional Indications, and Reversion Based Subscriber Suspension.

For more information please refer to UBS Form ATS-N information on "Segmentation; Notice".

14. Can Subscribers opt out of executing during a locked market?

Yes, any Subscriber may instruct the UBS ATS to prevent the execution of its pegged orders during a locked market.

For more information please refer to UBS Form ATS-N information on "Counter-Party Selection".

15. Does the UBS ATS maintain direct market data feeds?

The UBS ATS consumes three functionally identical sources of direct market data for Nasdaq, Nasdaq PSX, Nasdaq BX, NYSE, and NYSE ARCA where, weather permitting, the third source uses a faster transport layer over wireless technology. All other exchange direct market data feeds are transmitted over landline only.

All events that require market data use the direct feeds when possible, but may alternatively use the Securities Information Processor (SIP) when necessary. As an example, the UBS ATS uses the SIP for the Limit-Up Limit-Down bands. Matches in the UBS ATS are priced based on a Best Bid Offer ("BBO") aggregated from the "top of book" quotations of all U.S. equities exchanges using direct market data feeds maintained by the UBS ATS. If quotations from one or more exchanges are not available from the UBS direct market data feeds for any reason, the UBS ATS will rely on quotation data from the SIP for the affected exchange feed(s) to calculate the BBO. For example, if UBS's direct market data feed from an exchange is not available, the UBS ATS will use the attributed quote for that exchange from the SIP.

For more information please refer to UBS Form ATS-N information on "Market Data".

16. Please provide information on the roles of individuals who have access to UBS ATS Subscriber confidential trading information (CTI). How does UBS monitor these individuals for the purpose of preventing their misuse of such information?

Please refer to UBS Form ATS-N information on "Activities of Service Providers" and "Protection of Confidential Trading Information."

17. Does UBS ATS support "contra blocking?"

The UBS ATS does not permit the individual blocking of Subscribers, but does allow Subscribers to restrict crossing against a specific Source Category.

For more information please refer to UBS Form ATS-N information on "Segmentation".

18. What post-trade information is available on UBS ATS executions?

UBS makes certain UBS ATS execution information available to users upon affirmative request. In particular:

- For individual executions, UBS will provide the self-calculated NBBO known by the UBS ATS at the time of the execution.
- For senders of Conditional Indications, UBS will provide (on or after T+1) an analysis of Conditional Indications sent (including the related Invitations and firm up orders). Such analysis typically includes information regarding timeliness, hit rate, and intervening changes to the NBBO.

- For a more comprehensive view, UBS will provide on request an aggregate summary that indicates whether UBS ATS executions occurred within the UBS PIN (US) segment or versus Source Categories 3, 4 or 5. The summary typically includes quantity traded, notional traded, short term reversions segmented by source category, time of execution, and peg type. UBS utilizes a default template for ease of production, although certain customizations may be available upon request.

19. Which activity is observed and analyzed when determining whether an ATS Subscriber's order flow is treated as Source Category 3, Source Category 4 or Source Category 5?

The grading process is performed on a monthly basis and is a quantitative review of reversion metrics for order flow eligible for grading for the prior 3 months of trading activity (the "Review Period"), where the primary, short term reversion metric is based on post-trade changes to the NBBO after trades occur in UBS ATS. The short term reversion metric is calculated as the notionally-weighted difference between the midpoint of the self-derived Best Bid Offer ("BBO") at time of execution and the midpoint of the BBO one (1) second after the time of the execution, expressed as a percentage of the spread at the time of the execution.

All Subscribers eligible for grading will be informed in writing when the Source Category or Score attributed to each flow (or subset of flow) originated by them, as the case may be, has been revised to a different Source Category or Score.

Any changes to Source Category or Score will be communicated via email, sent directly to the person(s) designated by the Subscriber. Changes to Source Category or Score cannot be contested.

For more information please refer to UBS Form ATS-N information on "Segmentation; Notice".

20. Can a Subscriber's order flow be suspended from executing in the ATS?

The UBS ATS will suspend/wholly exclude any flow (or subset of flow) that is eligible for grading if the associated reversion metric exceeds 100% reversion for three consecutive monthly reviews.

For more information please refer to UBS Form ATS-N information on "Exclusion from ATS Services"

21. What is the typical latency for UBS ATS to acknowledge a new order?

As of September 2019, the median time it took the UBS ATS to send an acknowledgment of a new order was as follows: (i) 86 microseconds when using the UBP protocol, and (ii) 111 microseconds when using the FIX protocol.

The protocol selected by a Subscriber may affect the latency experienced, and latency may vary due to conditions. The experienced latency for any individual order or CI may materially differ from the median times typically observed.

For more information please refer to UBS Form ATS-N information on "Means of Entry"

22. Does the UBS ATS advertise trades/executed shares?

The Broker Dealer Operator advertises Class A Indirect, Class B Direct, and Class B Indirect Subscribers' executed shares, through various advertising channels, in an aggregated and anonymized fashion on a per symbol basis at the end of each trading day.

Class A Direct Subscribers' executed shares will be advertised by the Broker Dealer Operator through various advertising channels, in an aggregated and anonymized fashion on a per symbol basis either in near real time or at the end of each trading day, but not both.

The UBS ATS allows Class A Indirect, Class B Direct, and Class B Indirect Subscribers to request that their transactions be excluded from the advertisement of aggregated and anonymous execution information. Subscribers can send an email to ats@ubs.com to opt out of advertising their execution information in an aggregated and anonymous manner.

For more information please refer to UBS Form ATS-N information on "Protection of Confidential Trading Information"

UBS ATS – Contact Information

1285 Avenue of the Americas

New York, NY 10019

Tel. +1-203-719-3775

ats@ubs.com

www.ubs.com/ats

DISCLAIMER

These materials have been prepared by UBS AG and/or a subsidiary and/or an affiliate thereof ("UBS").

These materials are for distribution only under such circumstances as may be permitted by applicable law. They have not been prepared with regard to the specific investment objectives, financial situation or particular needs of any specific recipient. They are published solely for informational purposes and are not to be construed as a solicitation or an offer to buy or sell any securities or related financial instruments or to participate in any particular trading strategy. Options, derivative products and futures are not suitable for all investors, and trading in these instruments is considered risky. The recipient should not construe the contents of these materials as legal, tax, accounting, regulatory, or other specialist or technical advice or services or investment advice or a personal recommendation. Foreign currency rates of exchange may adversely affect the value, price or income of any security or related instrument mentioned in these materials. No representation or warranty, either express or implied, is provided in relation to the accuracy, completeness or reliability of the information contained herein except with respect to information concerning UBS, nor is it intended to be a complete statement or summary of the securities markets or developments referred to in these materials or a guarantee that the services described herein comply with all applicable laws, rules and regulations. They should not be regarded by recipients as a substitute for the exercise of their own judgment. Any opinions expressed in these materials are subject to change without notice and may differ or be contrary to opinions expressed by other business areas or groups of UBS as a result of using different assumptions and criteria. UBS is under no obligation to update or keep current the information contained herein, and past performance is not necessarily indicative of future results. UBS, its directors, officers, employees or clients may have or have had interest or long or short positions in the securities or other financial instruments referred to herein and may at any time make purchases and/or sales in them as principal or agent. UBS may act or have acted as market-maker in the securities or other financial instruments discussed in these materials. Furthermore, UBS may have or have had a relationship with or may provide or have provided investment banking, capital markets and/or other financial services to the relevant companies. Neither UBS nor any of its directors, officers, employees or agents accepts any liability for any loss or damage arising out of the use of all or any part of these materials or reliance upon the information contained herein. Additional information may be made available upon request. Clients wishing to effect transactions should contact their local sales representative.

United Kingdom and the rest of Europe Except as otherwise specified herein, these materials are distributed by UBS Limited, a subsidiary of UBS AG, to persons who are eligible counterparties or professional clients (as detailed in the PRA and FCA Rules) and is only available to such persons. The Information does not apply to, and should not be relied upon by, retail clients. UBS Limited is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. **France:** Prepared by UBS Limited and distributed by UBS Limited and UBS Securities France S.A. UBS Securities France S.A. is regulated by the ACPR (Autorité de Contrôle Prudentiel et de Résolution) and the Autorité des Marchés Financiers (AMF). Where an analyst of UBS Securities France S.A. has contributed to this document, the document is also deemed to have been prepared by UBS Securities France S.A. Where an analyst of UBS Securities France S.A. has contributed to these materials, the materials are also deemed to have been prepared by UBS Securities France S.A. **Spain** Prepared by UBS Limited and distributed by UBS Limited and UBS Securities España SV, SA. UBS Securities España SV, SA is regulated by the Comisión Nacional del Mercado de Valores (CNMV). **Italy** Prepared by UBS Limited and distributed by UBS Limited and UBS Italia Sim S.p.A. UBS Italia Sim S.p.A. is regulated by the Bank of Italy and by the Commissione Nazionale per le Società e la Borsa (CONSOB). **Germany** Prepared by UBS Limited and distributed by UBS Limited and UBS Europe SE. UBS Europe SE is regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin). **Poland:** This material is distributed by UBS Limited (spółka z ograniczoną odpowiedzialnością) Oddział w Polsce regulated by the Polish Financial Supervision Authority only to institutional investors in Poland. The information contained herein does not apply to, and should not be relied upon by retail clients. **Turkey** Prepared by UBS Menkul Degerler AS on behalf of and distributed by UBS Limited. **Russia:** Prepared and distributed by UBS Bank (OOO). **South Africa** UBS South Africa (Pty) Limited (Registration No. 1995/011140/07) is an authorised user of the JSE and an authorised Financial Services Provider (FSP 7328). **Switzerland** These materials are intended for distribution in Switzerland by UBS AG to qualified investors pursuant to Art.10 of the Swiss Federal Act on Collective Investment Schemes (CISA) as e.g. institutional investors only. **United States** These materials are distributed by UBS Securities LLC (member NYSE, FINRA and SIPC) or by UBS Financial Services Inc. (member FINRA and SIPC), both of which are subsidiaries of UBS AG, or solely to US institutional investors by UBS AG or by a subsidiary or affiliate thereof that is not registered as a US broker-dealer (a "non-US affiliate"). Transactions resulting from materials distributed by a non-US affiliate must be effected through UBS Securities LLC or UBS Financial Services Inc. **Canada** These materials are distributed by UBS Securities Canada Inc., a registered investment dealer in Canada and a Member of the Canadian stock exchanges & Canadian Investor Protection Fund, or by another affiliate of UBS AG which is registered to conduct business in Canada or otherwise exempt from registration. **Japan:** These materials are distributed in Japan by UBS Securities Japan Co., Ltd., a registered financial instruments business operator, or by UBS AG Tokyo Branch, a licensed bank. For further details of our local services, please call your regular contact at UBS in Japan. **Hong Kong** The materials relating to equities and other securities business and related research, are distributed in Hong Kong by UBS Securities Asia Limited. The material relating to corporate finance, foreign exchange, fixed income products and other banking business and related research are distributed in Hong Kong by UBS AG Hong Kong Branch. **Singapore** These materials are distributed in Singapore by UBS Securities Pte. Ltd or UBS AG Singapore Branch. **Asian jurisdictions (excluding HK, Singapore & Japan):** This material is not to be construed as a solicitation or an offer to buy or sell any securities, related financial instruments or services. Please also note that the products have not been intended for marketing to the public. **Malaysia** These materials are authorized to be distributed in Malaysia by UBS Securities Malaysia Sdn. Bhd (253825-x). **Australia** These materials are distributed by UBS AG (ABN 47 088 129 613 and holder of Australian Financial Services Licence No. 231087) and/or UBS Securities Australia Ltd (ABN 62 008 586 481 and holder of Australian Financial Services Licence No. 231098) to persons who satisfy the definition of wholesale investor for the purposes of the Corporations Act 2001 (Cth) and not intended for distribution to any retail clients. UBS AG, Australia Branch is a foreign Authorised Deposit-taking Institution ("foreign ADI") under the Banking Act 1959 (Cth) and is supervised by the Australian Prudential Regulation Authority. However, it is important for recipients to note that should a deposit be made with UBS AG, Australia Branch in connection with the services UBS provides, that deposit will not be covered by the provisions in the Banking Act 1959 (Cth) for the protection of depositors, as these provisions do not apply to foreign ADIs including UBS AG, Australia Branch. For example, depositors with foreign ADIs do not receive the benefit of the following protections: (i) Deposits are not covered by the financial claims scheme and are not guaranteed by the Australian Government; (ii) Deposits do not receive priority ahead of amounts owed to other creditors. This means that if a foreign ADI was unable to meet its obligations or suspends payment, its depositors in Australia would not receive priority for repayment of their deposits from the foreign ADI's assets in Australia; (iii) A foreign ADI is not required to hold assets in Australia to cover its deposit liabilities in Australia. This means that if the foreign ADI was unable to meet its obligations or suspends payment it is uncertain whether depositors would be able to access the full amount of their deposit. UBS Securities Australia Ltd is a subsidiary of UBS AG. However, it is not an authorised deposit-taking institution under the Banking Act 1959 (Cth). The obligations of UBS Securities Australia Ltd do not represent deposits or other liabilities of UBS AG, and UBS AG does not stand behind, support or guarantee UBS Securities Australia Ltd in any way. **New Zealand** These materials are distributed in New Zealand by UBS New Zealand Ltd. UBS New Zealand Ltd is not a registered bank in New Zealand. You are being provided with this UBS publication or material because you have indicated to UBS that you are a "wholesale client" within the meaning of section 5C of the Financial Advisers Act 2008 of New Zealand (Permitted Client). This publication or material is not intended for clients who are not Permitted Clients (non-permitted Clients). If you are a non-permitted Client you must not rely on this publication or material. If despite this warning you nevertheless rely on this publication or material, you hereby (i) acknowledge that you may not rely on the content of this publication or material and that any recommendations or opinions in such this publication or material are not made or provided to you, and (ii) to the maximum extent permitted by law (a) indemnify UBS and its associates or related entities (and their respective Directors, officers, agents and Advisors) (each a "Relevant Person") for any loss, damage, liability or claim any of them may incur or suffer as a result of, or in connection with, your unauthorised reliance on this publication or material and (b) waive any rights or remedies you may have against any Relevant Person for (or in respect of) any loss, damage, liability or claim you may incur or suffer as a result of, or in connection with, your unauthorised reliance on this publication or material. **Korea** Distributed in Korea by UBS Securities Pte. Ltd., Seoul Branch. This document may have been edited or contributed to from time to time by affiliates of UBS Securities Pte. Ltd., Seoul Branch. **India** Prepared by UBS Securities India Private Ltd. (Corporate Identity Number U67120MH1996PTC097299) 2/F, 2 North Avenue, Maker Maxity, Bandra Kurla Complex, Bandra (East), Mumbai (India) 400051. Phone: +912261556000 SEBI Registration Numbers: NSE (Capital Market Segment): INB230951431, NSE (F&O Segment) INF230951431, BSE (Capital Market Segment) INB010951437. **Dubai** These materials are distributed by UBS AG Dubai Branch (regulated by the DFSA) and are intended for Professional Clients only and are not for further distribution within the United Arab Emirates. **Saudi Arabia** These materials have been issued by UBS AG (and/or any of its subsidiaries, branches or affiliates), a public company limited by shares, incorporated in Switzerland with its registered offices at Aeschenvorstadt 1, CH-4051 Basel and Bahnhofstrasse 45, CH-8001 Zurich. This publication has been approved by UBS Saudi Arabia (a subsidiary of UBS AG), a Saudi closed joint stock company incorporated in the Kingdom of Saudi Arabia under commercial register number 1010257812 having its registered office at Taweer Towers, P.O. Box 75724, Riyadh 11588, Kingdom of Saudi Arabia. UBS Saudi Arabia is authorized and regulated by the Capital Market Authority to conduct securities business under license number 08113-37. **Brazil** Except as otherwise specified herein, this material is prepared by UBS Brasil CCTVM S.A. to persons who are eligible investors residing in Brazil, which are considered to be: (i) financial institutions, (ii) insurance firms and investment capital companies, (iii) supplementary pension entities, (iv) entities that hold financial investments higher than R\$300,000.00 and that confirm the status of qualified investors in written, (v) investment funds, (vi) securities portfolio managers and securities consultants duly authorized by Comissão de Valores Mobiliários (CVM), regarding their own investments, and (vii) social security systems created by the Federal Government, States, and Municipalities. **Israel** UBS AG and its affiliates incorporated outside Israel are not licensed under the Investment Advice Law. These materials are being issued only to and/or are directed only at persons who are Sophisticated Investors within the meaning of the Israeli Securities Law and these materials must not be relied or acted upon by any other persons.

UBS specifically prohibits the redistribution or reproduction of these materials in whole or in part without the written permission of UBS and UBS accepts no liability whatsoever for the actions of third parties in this respect. © UBS 2020. The key symbol and UBS are among the registered and unregistered trademarks of UBS. All rights reserved.