

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

EBURY PARTNERS UK LTD.,
Petitioner,

v.

INTERCURRENCY SOFTWARE LLC,
Patent Owner.

Case No. IPR2026-00152
U.S. Patent No. 11,620,701 B1

**PETITION FOR *INTER PARTES* REVIEW
OF CLAIMS 1-16 OF U.S. PATENT NO. 11,620,701**

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LIST OF EXHIBITS

Exhibit #¹	Description
1001	U.S. Patent No. 11,620,701 to Jacky Benmoha (“the ’701 Patent”)
1002	Prosecution File History for the ’701 Patent
1003	Declaration of Marc Reid
1004	U.S. Patent App. Pub. No. 2002/0087454 A1 to Bea Calo et al. (“ <i>Calo</i> ”)
1005	U.S. Patent App. Pub. No. 2006/0095361 A1 to Michael Rude (“ <i>Rude</i> ”)
1006	U.S. Patent App. Pub. No. 2004/0236664 A1 to Lars-Ivar Sellberg et al. (“ <i>Sellberg</i> ”)
1007	U.S. Patent App. Pub. No. 2002/0023053 A1 to Ronald Szoc et al. (“ <i>Szoc</i> ”)
1008	U.S. Patent App. Pub. No. 2004/0267655 A1 to James Davidowitz et al. (“ <i>Davidowitz</i> ”)
1009	Original Complaint, <i>Intercurrency Software LLC v. Ebury Partners UK Ltd.</i> , No. 2-25-cv-01030 (E.D. Tex. Oct. 9, 2025), Dkt. 1
1010	Claim Listing of the ’701 Patent
1011	<i>Askeladden L.L.C. v. Intercurrency Software LLC</i> , IPR2024-00375, Paper 17 (PTAB July 1, 2025)
1012	<i>Askeladden L.L.C. v. Intercurrency Software LLC</i> , IPR2024-00376, Paper 16 (PTAB July 14, 2025)
1013	<i>Askeladden L.L.C. v. Intercurrency Software LLC</i> , IPR2024-00377, Paper 16 (PTAB July 14, 2025)
1014	<i>Askeladden L.L.C. v. Intercurrency Software LLC</i> , IPR2024-00378, Paper 17 (PTAB July 1, 2025)

¹ Citations to patents are made by column and line cite; citations to patent publications and Exhibit 1003 are made by paragraph number; citations to other exhibits are made to the page number of the document itself.

1015	Dagfinn Rime, <i>New Electronic Trading Systems in Foreign Exchange Markets</i> , New Economy Handbook, Chapter 21, pp. 469-504 (2003)
1016	Lawrence J. Gitman & Michael D. Joehnk, <i>Fundamentals of Investing</i> (5th ed. 1993)
1017	Peter Rosenstreich, <i>FOREX Revolution, An Insider's Guide to the Real World of Foreign Exchange Trading</i> 24-25 (1995). Library of Cong.: Cat. No. 2005921697
1018	Cornelius Luca, <i>Trading in the Global Currency Markets, An Insider's Guide to the Real World of Foreign Exchange Trading</i> (2005). Library of Cong.: ISBN 0-13-293424-8, HG3851.L83 1995.
1019	Traders Magazine, <i>OMS Solutions: The Buysides Key to the Trading Highway</i> , Editorial Staff, July 5, 2006

Ebury Partners UK Ltd. (“Petitioner”) submits this Petition for *Inter Partes* Review (“IPR”) of Claims 1-16 (the “Challenged Claims”) of U.S. Patent No. 11,620,701 (the “’701 Patent”). In IPR proceedings involving related patents, the Board found that the prior art relied upon herein rendered substantially similar claims obvious and unpatentable. *See, e.g.*, EX1011-EX1014. For analogous reasons, Petitioner requests institution of IPR and a finding that the Challenged Claims are unpatentable.

I. MANDATORY NOTICES

A. Real Party-in-Interest under 37 C.F.R. § 42.8(b)(1)

Ebury Partners UK Ltd. is the Petitioner.² Petitioner identifies Ebury Partners UK Ltd. and Ebury Partners US LLC³ as the real parties-in-interest. No other parties exercised or could have exercised control over this Petition; no other parties funded

² Ebury Partners UK Ltd is based in the United Kingdom, does not have a regular and established place of business in the U.S., and is not a trading company.

³ Ebury Partners US LLC is an inactive subsidiary of Ebury Partners UK Ltd. Although Petitioner does not believe that Ebury Partners US LLC is a real party-in-interest, Petitioner identifies Ebury Partners US LLC as such out of an abundance of caution.

or directed this Petition. See Office Patent Trial Practice Guide, 77 Fed. Reg. 48756, 48759-60 (Aug. 14, 2012).

B. Related Matters under 37 C.F.R. § 42.8(b)(2)

As of the filing date of this Petition, and to the best knowledge of Petitioner, the '701 Patent is involved in the following:

Intercurrency Software LLC ("Patent Owner") asserted the '701 Patent against Petitioner in a co-pending litigation, *Intercurrency Software LLC v. Ebury Partners UK Ltd.*, No. 2:25-cv-01030-JRG, in the Eastern District of Texas. The Original Complaint in that litigation was filed on October 9, 2025. See EX1009.

The '701 Patent is also at issue in the following pending cases in which Petitioner is not a party:

- *Intercurrency Software LLC v. Paysafe Grp. Holdings II Ltd.*, No. 2-25-cv-01143 (E.D. Tex. Nov. 21, 2025);
- *Intercurrency Software LLC v. Thunes Asia Pte Ltd.*, No. 2-25-cv-01029 (E.D. Tex. Oct. 9, 2025);
- *Intercurrency Software LLC v. Rapyd Payments Ltd.*, No. 2-25-cv-01031 (E.D. Tex. Oct. 9, 2025);
- *Intercurrency Software LLC v. bitFlyer Inc.*, No. 2-25-cv-01032 (E.D. Tex. Oct. 9, 2025);

- *Intercurrency Software LLC v. CoinJar Australia Pty Ltd.*, No. 2-25-cv-01033 (E.D. Tex. Oct. 9, 2025);
- *Intercurrency Software LLC v. Finastra Ltd.*, No. 2-25-cv-01027 (E.D. Tex. Oct. 8, 2025);
- *Intercurrency Software LLC v. Interpay Ltd. (d/b/a TransferMate)*, No. 2-25-cv-01022 (E.D. Tex. Oct. 7, 2025);
- *Intercurrency Software LLC v. The Currency Cloud Ltd.*, No. 2-25-cv-01023 (E.D. Tex. Oct. 7, 2025);
- *Nium Pte. Ltd. v. Intercurrency Software LLC*, IPR2025-01586 (PTAB Oct. 7, 2025);
- *Intercurrency Software LLC v. WorldRemit Ltd.*, No. 2-25-cv-00703 (E.D. Tex. July 10, 2025);
- *Intercurrency Software LLC v. Nium Pte. Ltd.*, No. 2-25-cv-00701 (E.D. Tex. July 9, 2025);
- *Intercurrency Software LLC v. CurrencyFair Ltd. et al.*, No. 2-25-cv-00083 (E.D. Tex. Jan. 28, 2025);
- *Intercurrency Software LLC v. TTT Moneycorp Ltd.*, No. 2-25-cv-00056 (E.D. Tex. Jan. 21, 2025);

- *Intercurrency Software LLC v. MoneyMovr Ltd.*, No. 2-24-cv-01012 (E.D. Tex. Dec. 9, 2024); and
- *Intercurrency Software LLC v. Gate Tech. Inc. d/b/a Gate.io*, No. 2-24-cv-00254 (E.D. Tex. Apr. 17, 2024).

The '701 Patent is related to U.S. Patent Nos. 10,062,107 (the "'107 Patent"), 10,776,863 (the "'863 Patent"), and 11,449,930 (the "'930 Patent"), each of which had all claims found unpatentable in other IPR proceedings based on the same prior art at issue here. *See* EX1012 (finding claims 1-18 of the '107 Patent unpatentable); EX1013 (finding claims 19-36 of the '107 Patent unpatentable); EX1011 (finding claims 1-12 of the '863 Patent unpatentable); and EX1014 (finding claims 1-15 of the '930 Patent unpatentable).

C. Lead and Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)

Petitioner provides the following designation of counsel.

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D. Service Information under 37 C.F.R. § 42.8(b)(4)

A copy of this entire Petition, including all Exhibits and a Power of Attorney, is being served by FEDERAL EXPRESS, costs prepaid, to the correspondence address of record for the '701 Patent at the USPTO: Joe Zheng, LogicPatents, LLC, 21701 Stevens Creek Boulevard, #284, Cupertino, CA 95015 United States; and to the address of the attorney of record for Patent Owner in the district court proceeding

regarding the '701 Patent: Christopher A. Honea, Garteiser Honea, 119 W Ferguson St, Tyler, TX 75702 United States.

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A Power of Attorney is filed concurrently herewith under 37 C.F.R. § 42.10(b).

II. REQUIREMENTS UNDER 37 C.F.R. § 42.104

A. Grounds for Standing

Petitioner certifies that the '701 Patent is available for IPR, and that Petitioner is not barred or otherwise estopped.

B. Identification of Challenge and Statement of Precise Relief Requested

Petitioner requests that the Board institute a trial for IPR and cancel Claims 1-16 of the '701 Patent in view of the following grounds:

Ground	'701 Patent Claims	Basis for Challenge under 35 U.S.C. §103(a)
1	1, 3-4, 6-9, 11-12, and 14-16	Obvious under §103 based on <i>Calo</i> ⁴ in view of <i>Rude</i> ⁵ and <i>Sellberg</i> ⁶
2	1, 3-4, 6-9, 11-12, and 14-16	Obvious under §103 based on <i>Calo</i> in view of <i>Rude</i> and <i>Szoc</i> ⁷
3	2, 5, 10, and 13	Obvious under §103 based on <i>Calo</i> , <i>Rude</i> , and <i>Sellberg</i> in further view of <i>Davidowitz</i> ⁸

This Petition is supported by the declaration of Marc Reid, a qualified technical expert. See EX1003, ¶¶7-10, App'x A.

III. OVERVIEW OF THE '701 PATENT

A. Subject Matter

The '701 Patent, titled “Platform for Trading Assets in Different Currencies,” relates to “a consolidated trading platform allowing traders to trade various assets in a preferred currency regardless [of] where and in what currency the asset is typically traded.” EX1001, 1:7-12. The patent proposes a “three-tier architecture” comprising:

⁴ U.S. 2002/0087454 A1 (“*Calo*”) (EX1004).

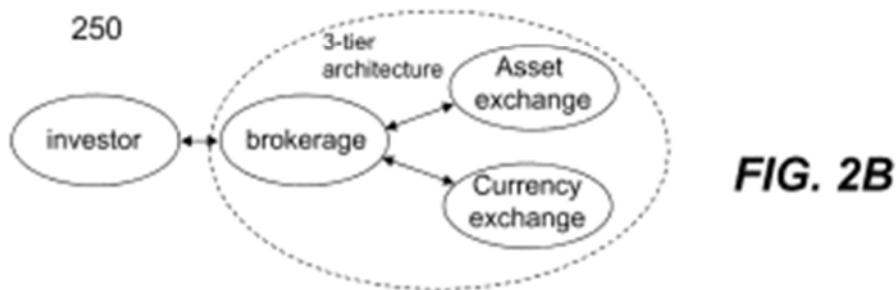
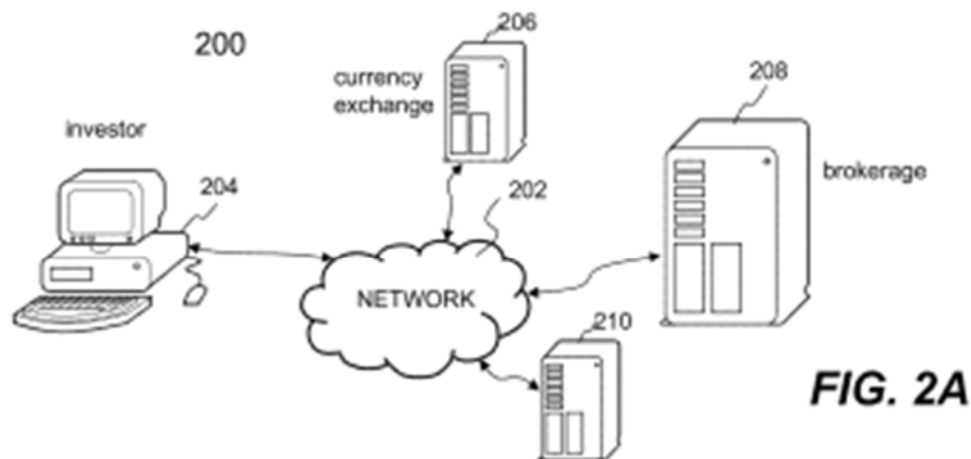
⁵ U.S. 2006/0095361 A1 (“*Rude*”) (EX1005).

⁶ U.S. 2004/0236664 A1 (“*Sellberg*”) (EX1006).

⁷ U.S. 2002/0023053 A1 (“*Szoc*”) (EX1007).

⁸ U.S. 2004/0267655 A1 (“*Davidowitz*”) (EX1008).

(1) “a brokerage,” (2) “a market exchange” where securities/assets are traded, and (3) “a currency exchange” where one currency is converted to another at prevailing rates. *Id.*, Abstract, Figs. 2A-2B, 2:10-49. As such, the ’701 Patent recognizes that “a trader always knows exactly what he/she may end up with [for] a transaction of an asset.” *Id.*, 2:33-34. Figure 2A-2B illustrates an example system configuration. *Id.*, 3:62-64; EX1003, ¶¶40-44.



The system includes network 202 (e.g., the Internet), with client machine 204 accessible by traders. EX1001, 4:44-49. Network 202 connects servers 206, 208, and 210: server 206 provides currency exchange rates, server 208 facilitates transactions for the trader, and server 210 represents the asset or market exchange. *Id.*, 4:66-5:6.

These elements “communicat[e] over a network” to provide “all transactions in a local currency” through “real-time transactional level currency conversion.” *Id.*, 5:21-27. To complete a transaction, “the currency exchange converts all settlements to the preferred currency per the prevailing exchange rate, as if the item has changed hands in the preferred currency.” *Id.*, 6:5-8. Because the system conducts transactional-level currency conversion, “a trader knows exactly what profits and losses he/she is going to get in the transaction, without being subject to uncertainty in currency conversion of another time.” *Id.*, 5:17-20. Figure 3 shows the process of conducting a transaction in a chosen currency other than a market currency:

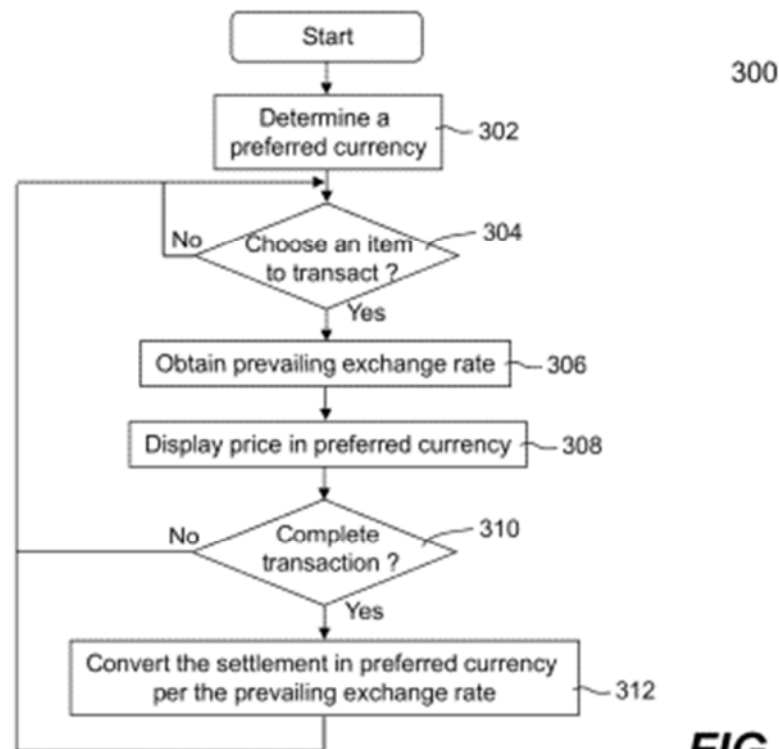


FIG. 3

Id., Fig. 3, 4:1-3; *see also id.*, 5:33-6:3.

Figure 4 adds a limit order (406), allowing traders to specify a price at which they are willing to buy or sell.

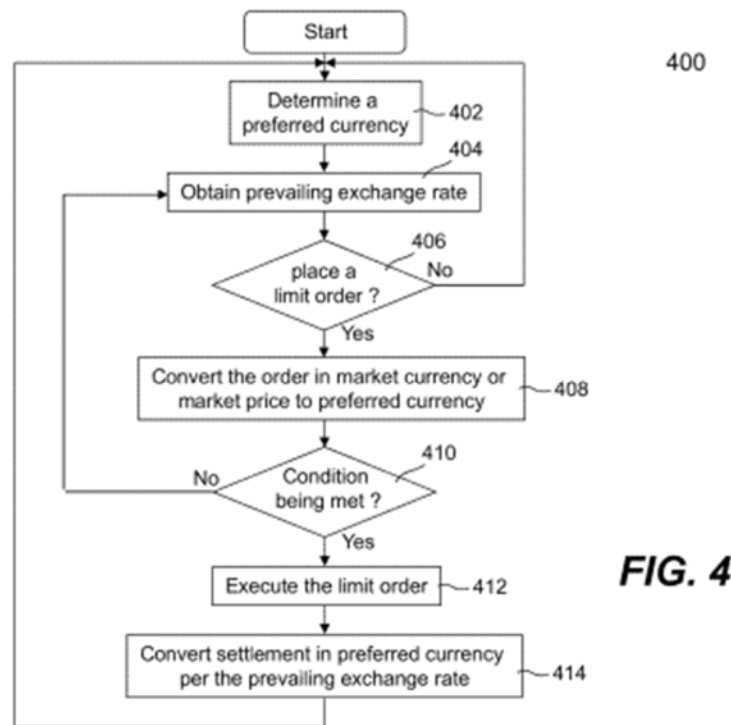


FIG. 4

EX1001, Fig. 4; *see also id.*, 6:56-7:2. Limit orders were well-known by 2007.
EX1003, ¶¶30-31, 44; EX1015, 470; EX1016, 45-46.

B. Prosecution History (EX1002)

The Examiner allowed the '701 Patent without substantive rejections.
EX1002, 12-14; EX1003, ¶51. The Examiner acknowledged that the individual elements were known in the art and allowed the claims based on the claimed

combination. *Id.* The Examiner did not consider *Calo*, *Davidowitz*, or *Szoc*. See EX1002; EX1003, ¶51; EX1001, Cover.

In the only Office Action before allowance, the Examiner issued a non-final rejection of all 15 claims based on non-statutory obviousness-type double patenting over claims 1-15 of the '930 Patent, claims 1-12 of the '863 Patent, and claims 1-36 of the '107 Patent. EX1002, 54-59; EX1003, ¶52. The Examiner determined that the pending claims were not patentably distinct because all claim sets were directed to methods and systems for providing a consolidated trading platform that facilitates asset trading in a preferred currency, with overlapping claim limitations. EX1002, 57-58; EX1003, ¶52. Additionally, the Examiner found that all limitations of the pending claims were substantially encompassed by the conflicting claims from the referenced and related patents. EX1002, 58; EX1003, ¶52.

The Applicant responded by making minor amendments to claims 1, 2, 4, 6, 8-10, 12, and 14, adding new claim 16, and filing a terminal disclaimer over the '930, '863, and '107 Patents. EX1002, 40, 45-52; EX1003, ¶53. A Notice of Allowance was subsequently issued. EX1002, 7; EX1003, ¶53.

On July 1 and July 14, 2025, the PTAB issued Final Written Decisions finding all claims of the related '930, '863, and '107 Patents unpatentable. See EX1011-1014; EX1003, ¶54. These are the same patent claims that the Examiner had

previously determined were not patentably distinct from the '701 Patent's claims. EX1002, 57-58; EX1003, ¶54.

C. Priority Date

The '701 Patent was filed on September 19, 2022, and claims priority through a series of continuation applications to U.S. Application No. 11/736,583, filed on April 18, 2007. EX1001, Cover. For this IPR, Petitioner assumes without conceding that the Challenged Claims are entitled to an April 18, 2007, priority date.

D. Level of Ordinary Skill in the Art

A person of ordinary skill in the art ("POSITA") as of April 18, 2007, would have had a bachelor's degree in computer science or a related study and two years of experience with financial-trading systems, or an equivalent combination of education and experience. EX1003, ¶¶45-46. The prior art also reflects this level of skill.

E. Claim Listing (EX1010)

Exhibit 1010 is a claim listing that enumerates each claim limitation. Petitioner refers to individual limitations with bracketed notations (*e.g.*, 1[a], 1[b]).

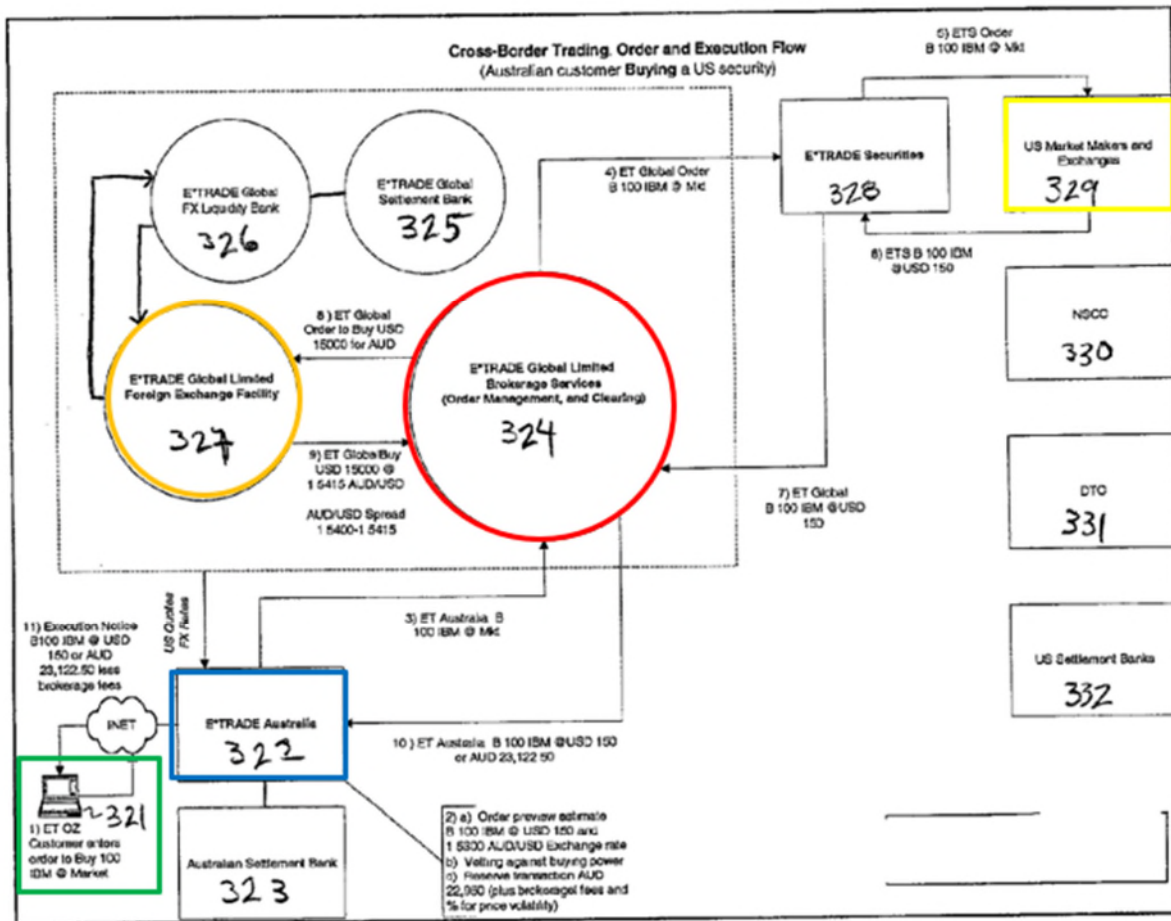
IV. SUMMARY OF PRIOR ART

Based on the assumed priority date, the Challenged Claims are subject to pre-AIA provisions.

A. *Calo* (EX1004)

Calo was filed on January 24, 2001, and published on July 4, 2002. *Calo* is prior art under at least pre-AIA 35 U.S.C. §§102(a)-(b), and 102(e).

Calo discloses “a globalized trading network that permits trading of stocks and other securities and commodities across international boundaries.” EX1004, [0003], [0009]; EX1003, ¶¶60-65. As Figure 3A shows, a cross-border trading order originates with customer 321 (green), is electronically transmitted through introducing affiliate 322 (blue) to Global Brokerage Service (hereinafter “GBS”) 324 (red) and then routed to both U.S. Market Exchange 329 (yellow) for execution and Foreign Exchange Facility 327 (orange), prior to settlement.



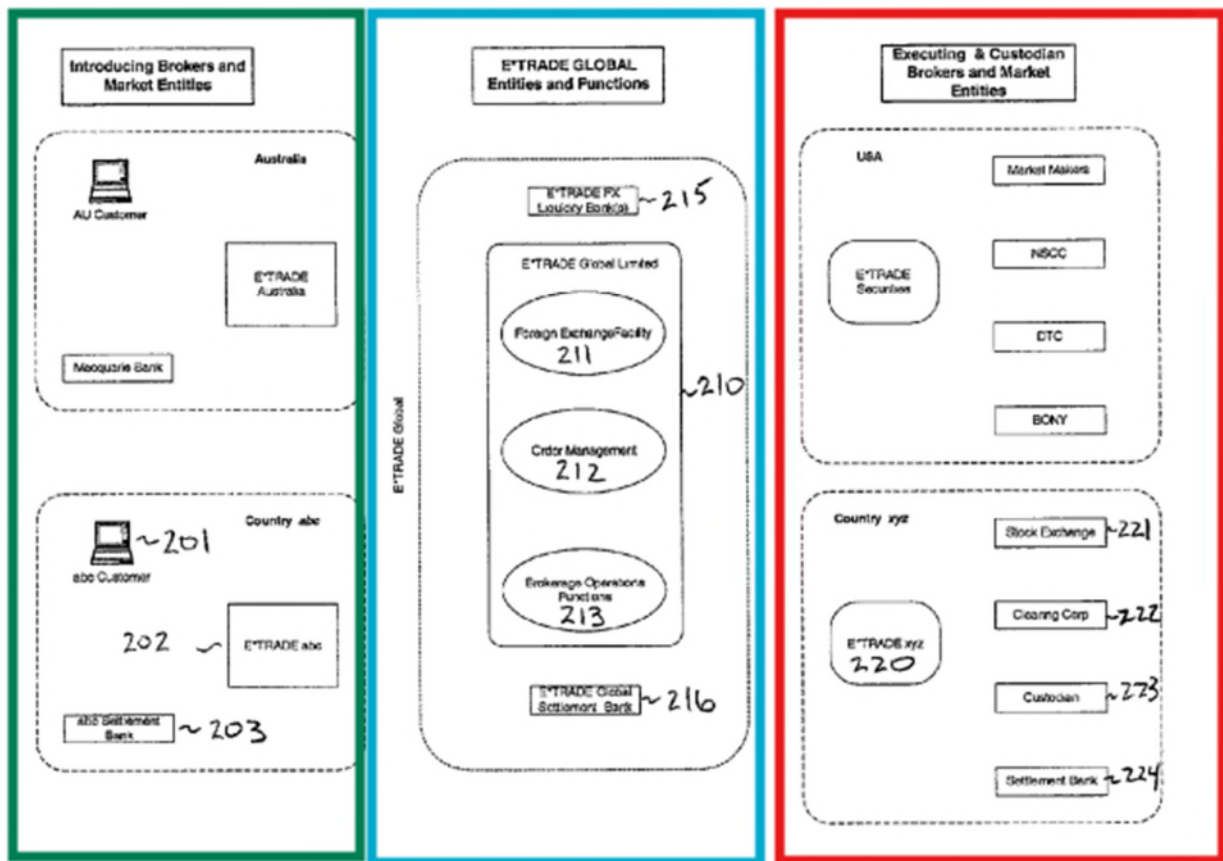
EX1004, Fig. 3A (annotated).

Calo describes providing a customer with a real-time preview of the price of a transaction (e.g., the purchase of a stock) in the target market currency and a customer’s native or preferred currency, while ensuring that all costs and exchange rates are locked in before finalizing the purchase—known as “settlement.” EX1004, [0030], [0038], [0057].

Calo explains that real-time price quotes and/or settlement amounts in the target market currency, including any applicable fees or commissions, are

automatically converted to the customer's preferred currency using foreign exchange rates obtained from E*TRADE Global. EX1004, [0030], [0057].

Figure 2 of *Calo* discloses an exemplary network architecture that includes a three-tier architecture similar to the '701 Patent, comprising: (1) the introducing broker; (2) the E*TRADE global system; and (3) the executing broker.



EX1004, Fig. 2 (annotating the introducing broker in green, the E*TRADE global system in blue, and the executing broker in red).

Before placing an order, the trader receives a preview price in the native currency, which is “based on both the real-time quote for price on the U.S. equity,

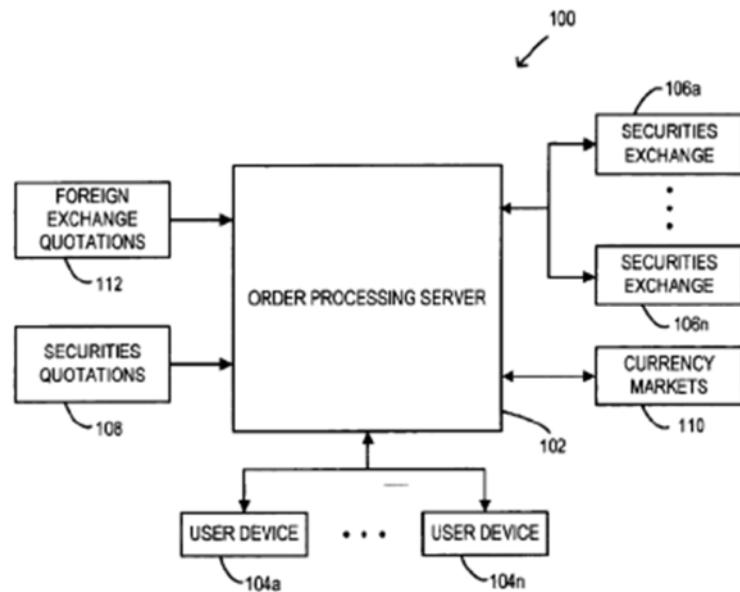
as well as a real-time conversion from the foreign exchange rates.” *Id.*, [0030]. Once the order is placed (step 301), a preview of the order is generated (step 302), reflecting “the current U.S. ask price, the Australian dollar (AUD) equivalent based on the current ask price for USD based on the USD principal amount,” estimated commissions and fees, and a reserve buffer for exchange rate fluctuations. *Id.* The order is then routed and executed on the appropriate market exchange. *Id.* “Preferably immediately after the equity order is executed and reported[,]” the GBS initiates a foreign exchange transaction to convert Australian dollars into U.S. dollars. *Id.*, step 307. At step 310, the GBS sends the user a trade confirmation that includes both the USD execution price and the “locked-in AUD value” of the trade, and commissions and fees. *Id.*

Calo supports limit orders, which guarantee execution at a specific price, requiring the system to align costs, including currency conversions, with trader-specified conditions. *Id.*, [0070].

B. *Rude* (EX1005)

Rude was filed on October 29, 2004, and published on May 4, 2006. *Rude* is prior art under at least pre-AIA 35 U.S.C. §§102(a)-(b), and 102(e).

Rude discloses systems for trading foreign securities in a user’s preferred currency. EX1005, [0002], [0029]; EX1003, ¶¶66-69. Figure 1 presents a block diagram of *Rude*’s system:



EX1005, Fig. 1.

An “order processing server” communicates with one or more currency (foreign exchange) markets, and one or more sources of foreign exchange price quotations. *Id.*, [0021]. The order processing server receives market condition data from the price quotation sources, including “current price quotations for securities to be traded via the trading system[.]” *Id.*, [0023]. “The quotations may be provided in the local currencies of the various securities exchanges[.]” *Id.*

Price quotations from a foreign securities exchange are “automatically converted to a trader’s operating currency” and displayed to the trader in that currency “rather than in the local currency in which the quotations are presented on the foreign securities exchange.” *Id.*, [0019]. When the trader places an order to trade foreign securities, the trading system sends the order to the foreign securities

exchange and the order is executed on the foreign securities exchange in the local currency. *Id.* *Rude*'s system establishes "a net settlement amount ... for the transaction, reflecting the execution price and expenses such as settlement fees and commissions." *Id.*

C. *Sellberg* (EX1006)

Sellberg was filed on May 23, 2003, and published on November 25, 2004. *Sellberg* is prior art under at least pre-AIA 35 U.S.C. §§102(a)-(b), and 102(e).

Sellberg discloses a trading platform that enables users to place orders in their preferred currency (*e.g.*, EUR) for financial instruments traded in another currency (*e.g.*, USD). EX1006, [0001], [0004], [0022]-[0023]; EX1003, ¶¶70-72. The system "repeatedly and automatically" receives updated exchange rates—*e.g.*, "several times a second"—from a market maker or currency market, ensuring availability of real-time, guaranteed rates for transactions. EX1006, [0024]-[0025]. When a trader submits an order in a non-market currency, the system uses the most recent exchange rate available at the time of order receipt—preferably, "the last received updated exchange rate"—to calculate the transaction amount. *Id.*, [0024]-[0025].

D. *Szoc* (EX1007)

Szoc was filed on April 4, 2001, and published on February 21, 2002. *Szoc* is prior art under at least pre-AIA 35 U.S.C. §§102(a)-(b), and 102(e).

Szoc discloses “providing real-time foreign exchange rate quotes, cross-border payments, and other financial information and services to clients over the Internet[.]” EX1007, [0005]; EX1003, ¶¶73-74. Szoc highlights the financial risk and uncertainty introduced by volatile foreign exchange rates, particularly in cross-border transactions. EX1007, [0009]. Szoc provides real-time foreign exchange rate quotes via an interface that displays a list of foreign exchange rates, retrieved from a quote server, relative to the client’s selected native currency. *Id.*, [0083]. The system features a scrolling quote bar that displays real-time, continuously updating exchange rates. *Id.*, Figs. 4A-4B, [0083].

E. Davidowitz (EX1008)

Davidowitz was filed on July 7, 2003, and published on December 30, 2004. *Davidowitz* is prior art under at least pre-AIA 35 U.S.C. §§102(a)-(b), and 102(e).

Davidowitz discloses a system for pairs trading across multiple markets, including foreign markets, with automatic foreign exchange hedging to mitigate currency risk. EX1008, [0003], [0007]; EX1003, ¶75. A trader’s workstation displays real-time market data, including security prices in foreign currencies, updated via a data feed providing exchange rates. EX1008, [0036], [0041]. A spread engine processes this data to initiate orders when market conditions meet predefined parameters, executing security trades and foreign exchange orders to hedge currency

exposure at transaction time. *Id.*, [0031]. The client-server architecture supports automated trading and dynamic data updates. *Id.*, [0008]; EX1003, ¶75.

V. CLAIM CONSTRUCTION

Petitioner interprets the claims “in accordance with the ordinary and customary meaning ... as understood by one of ordinary skill in the art.” 37 C.F.R. §42.100(b). The Board need not construe any term to find the Challenged Claims invalid. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Ltd.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

A. “prevailing exchange rate”

Claims 1-4, 6, 8-9, 11-12, 14, and 16 recite “prevailing exchange rate.” A POSITA would have understood the ordinary meaning of “prevailing exchange rate” to be “a selected current rate.” EX1003, ¶57. This is consistent with the usage in the specification. *Id.*; EX1001, 6:32-36. The only rates the specification describes using are a “forward” rate or a “spot” rate—in other words, a selected current exchange rate. EX1001, 6:32-36; EX1003, ¶57. In IPR2024-00378 concerning the related ’930 Patent, Patent Owner agreed that “prevailing exchange rate” means “a selected current exchange rate.” EX1014, 10.

B. “prevailing currency exchange rate”

Claims 2, 5, 10, and 13 recite “prevailing currency exchange rate.” This rate is the same as the prevailing exchange rate but specific to currencies. A POSITA

would have understood the ordinary meaning of “prevailing currency exchange rate” to be a selected current currency exchange rate (*e.g.*, a “spot” rate or a “forward” rate), both of which were well known in the art. EX1003, ¶58. In IPR2024-00378 concerning the related ’930 Patent, Patent Owner agreed that “prevailing currency exchange rate” means a selected current currency exchange rate. EX1014, 10.

VI. THE CHALLENGED CLAIMS ARE UNPATENTABLE

A. Ground 1: Claims 1, 3-4, 6-9, 11-12, and 14-16 are unpatentable as obvious over *Calo* in view of *Rude* and *Sellberg*.

1. Rationale and Motivation to Combine

A POSITA would have been motivated to combine *Calo*, *Rude*, and *Sellberg*. EX1003, ¶¶76-83. *Calo*, *Rude*, and *Sellberg* are analogous art. EX1003, ¶78. *Calo*, *Rude*, and *Sellberg* are in the same field of endeavor as the ’701 Patent: automated financial trading systems that facilitate cross-border transactions involving different currencies. *Id.*; EX1001, 1:6-12. *Calo* discloses a global trading system that enables clients to trade foreign securities in their native currency, using a centralized hub-and-spoke architecture. EX1004, [0008], [0026]. *Rude* describes systems for automatically settling trades in a trader’s preferred currency. EX1005, [0004], [0062]. *Sellberg* enables traders to place orders in a different currency than the instrument’s native currency, with automated currency conversion handled within the trading environment. EX1006, [0005]-[0007]. Each describes electronic trading platforms that automate transactions involving currency exchange. EX1003, ¶78.

Each also describes facilitating the preview and/or settlement of orders for stocks, securities, or other commodities in a trader's preferred currency, rather than that of the local market. EX1004, [0008]; EX1005, [0005]; EX1006, [0012]; *see also* EX1003, ¶78.

The references are also pertinent to problems the '701 Patent purportedly sought to solve, including that "currency conversion is not at a transactional level." EX1001, 1:61-62; EX1003, ¶79. Each recognizes that traders typically operate in a preferred (*e.g.*, native) currency that differs from the local currency in which a given security is traded. EX1004, [0006]; EX1005, [0002]; EX1006, [0003]-[0004]. Previously, such transactions required manually coordinating foreign exchange conversions, resulting in delays, increased costs, and uncertainty. EX1004, [0006]; EX1005, [0002]-[0003]; EX1006, [0003]-[0004]; *see also* EX1019, 8. *Calo* addresses this by previewing the trade in the trader's native currency and executing a corresponding foreign exchange transaction "[p]referably immediately" after trade execution. EX1004, [0030]. *Rude* automatically initiates a foreign exchange order upon trade settlement to convert the net settlement amount into the user's operating currency. EX1005, [0005]. *Sellberg* allows users to place orders in any specified currency while maintaining a single order book, enabling seamless cross-currency transactions. EX1006, [0007]-[0009]. Thus, each aims to reduce friction in trading by automating the currency exchange process. EX1003, ¶79.

A POSITA would have been motivated to combine *Calo*'s trading system with *Rude*'s mechanism that allows a user to indicate the user's preferred currency. EX1003, ¶80. *Calo* teaches trading in the user's preferred (*i.e.*, "native") currency, including displaying "[a] price in the native currency" before a trade. EX1004, [0030]. *Calo* therefore suggests that its system receives an indication of the user's native currency. EX1003, ¶80. A POSITA would have looked to *Rude* for implementation details to achieve that feature. *Id.* *Rude*'s user interface, in cooperation with its order processing server, allows users to indicate a preferred currency for pricing and settlement. EX1005, [0058]. Combining *Rude*'s currency indicator feature with *Calo*'s trading system would provide a mechanism for users to specify their native currency, aligning with *Calo*'s teachings of providing a preview price in a native currency and *Calo*'s goal of streamlining cross-border trading by ensuring predictable pricing in volatile cross-currency markets. EX1003, ¶80.

A POSITA would have expected success in combining *Calo* and *Rude*. EX1003, ¶81. Both use similar architectures—*Calo* with its GBS and *Rude* with its order processing server, both of which couple to user devices, securities exchanges, and currency markets. EX1004, [0026]-[0028]; EX1005, [0022]-[0024], [0027]; EX1003, ¶81. It would have been within a POSITA's skill to implement *Rude*'s currency indicator feature in *Calo*, such that *Calo*'s GBS receives an indication of

the user's preferred (*e.g.*, native) currency, at least because *Rude*'s similar system had already successfully implemented this feature. EX1005, [0058]; EX1003, ¶81. Only a straightforward modification to *Calo*'s system, which already discloses a user interacting with the system via a computer, would have been required to incorporate *Rude*'s functionality and this would have predictably resulted in a user's ability to indicate the user's preferred (*e.g.*, native) currency in *Calo*'s system. EX1004, [0027] (“[C]ustomer advantageously accesses the system through an electronic connection, such as with a computer.”); EX1003, ¶81.

A POSITA would also have been motivated to combine *Sellberg*'s exchange rate timing and display teachings with *Calo* (as modified by *Rude*). EX1003, ¶82. *Calo* discloses executing a foreign exchange transaction “[p]referably immediately” after trade execution without specifying when the rate is calculated. EX1004, [0030]. *Calo* recognizes the problem of exchange rate volatility. *Id.*, [0030], [0070]. *Sellberg* addresses this volatility problem. EX1003, ¶82. In *Sellberg*, the applied exchange rate is the “last received” rate before the transaction occurs, ensuring that the conversion reflects the most current market conditions at the time of execution. EX1006, [0024]-[0025]. *Sellberg* further discloses that “the trader may continuously follow the updated exchange rates[,]” highlighting that updated rates are not only received in real time, but are continuously displayed to the user. EX1006, [0031]. A POSITA would have understood that these features would give traders the most

accurate information at the trading time and increase transparency in volatile trading markets. EX1003, ¶82; EX1019, 25. *Sellberg*'s method of applying the most current exchange rate "at or just before execution" of a trade and displaying updated rates aligns with *Calo*'s and *Rude*'s objectives of minimizing volatility and improving pricing transparency and user control. EX1006, [0022]; EX1003, ¶82. A POSITA would have been motivated to combine *Sellberg*'s teachings with *Calo*'s system to minimize exposure to rate fluctuations, improve transparency and accuracy in cross-currency pricing, and reduce the need for reserve buffers. EX1003, ¶82.

A POSITA would have expected success in combining *Calo*, *Rude*, and *Sellberg* due to their similar architectures and aligned goals of facilitating automated, cross-border financial transactions. EX1003, ¶83. Each system is implemented on computer-based trading platforms designed to interoperate with existing infrastructure. EX1004, [0027], [0051]; EX1005, [0030], [0037]; EX1006, [0011], [0022]. *Sellberg* states that its methods are "easy to implement in existing trading systems[,] further supporting their compatibility with *Calo* and *Rude*. EX1006, [0010]; EX1003, ¶83. *Sellberg*'s system periodically receives updated exchange rates (*e.g.*, "from several times a second down to once an hour") from a market maker or currency market, ensuring availability of real-time, guaranteed rates for transactions. EX1006, [0024]-[0025]. Combining *Sellberg*'s teachings with an existing trading system like *Calo*'s, which already receives "real-time conversion"

rates, would function predictably and be technically feasible, as both systems already use components that retrieve and process external data feeds in real time. EX1004, [0030]; EX1003, ¶83.

2. Independent Claim 1

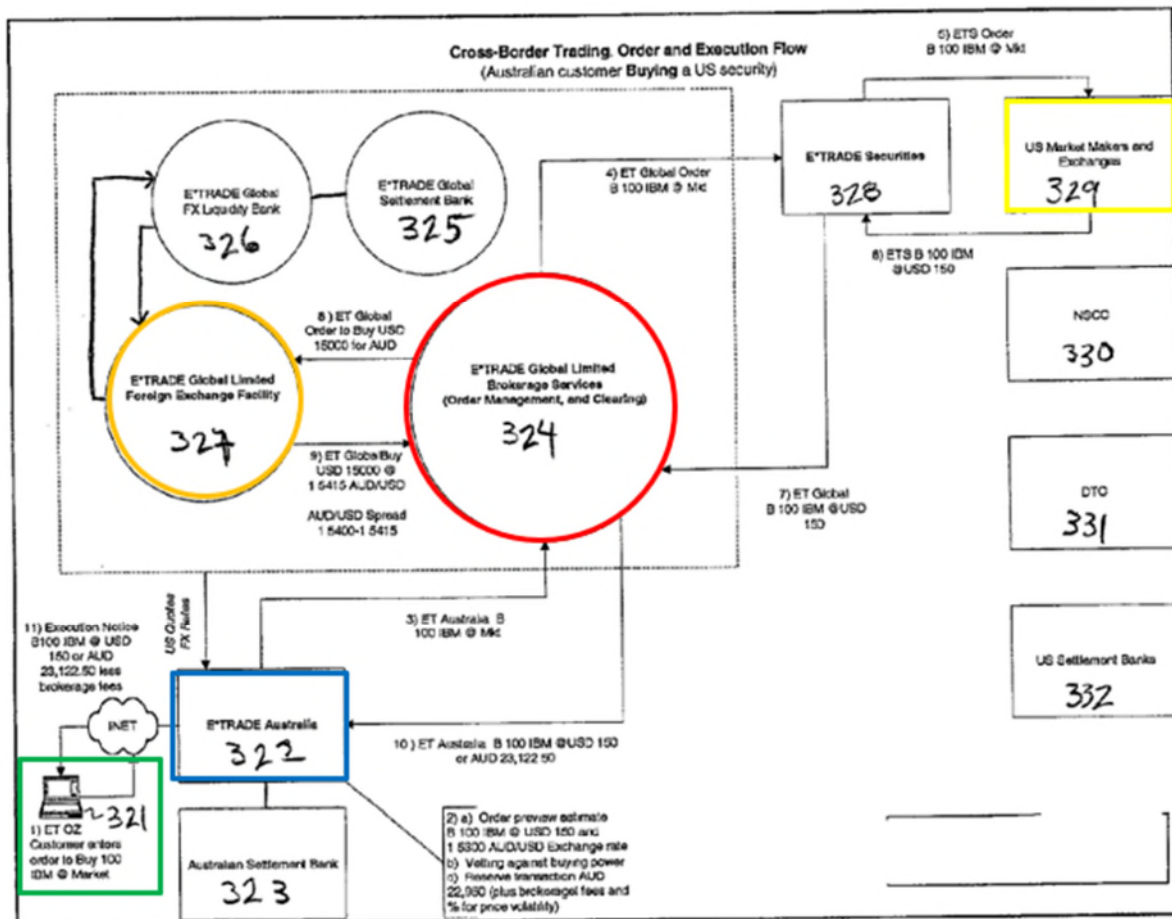
i. 1[p]: A platform for trading an asset, the platform comprising:

If the preamble is limiting, the *Calo-Rude-Sellberg* combination discloses preamble 1[p]. EX1003, ¶¶84-86. *Calo* discloses “a computerized system for trading securities and commodities[,]” including assets such as “stocks, options, mutual funds, and fixed income instruments[,]” organized in a “hub-and-spoke arrangement.” EX1004, [0007]-[0008], Abstract; EX1003, ¶85. *Calo*’s system includes various computerized systems, including introducing affiliates that handle “customer accounts” and “transaction orders[,]” executing affiliates that execute “trades in a local stock exchange[,]” and a global hub (a central computerized system) that “rout[es] orders” and manages “foreign exchange transactions.” EX1004, Abstract, [0008], [0012]. “[A]ll of these entities can be integrated into a single computer system **platform**.”⁹ *Id.*, [0051]. *Calo*’s networked system of computerized components to facilitate trading discloses a platform for trading an asset. EX1003, ¶86; EX1001, 1:7-12, 2:19-23.

⁹ All emphases are added unless otherwise noted.

- ii. 1[a]: a trading server, coupled to a client machine associated with a user, receiving an indicator of a first currency from the client machine,

Calo and *Rude* both disclose or at least render obvious limitation 1[a]. EX1003, ¶¶87-98. *Calo*'s "E*Trade Global Brokerage Service 324" ("GBS") corresponds to the claimed trading server. EX1003, ¶¶88-89. As Figure 3A shows, *Calo*'s centralized GBS (red) is coupled to "Foreign Exchange Facility 327" (orange) and "U.S. Market Makers and Exchanges 329" (yellow).

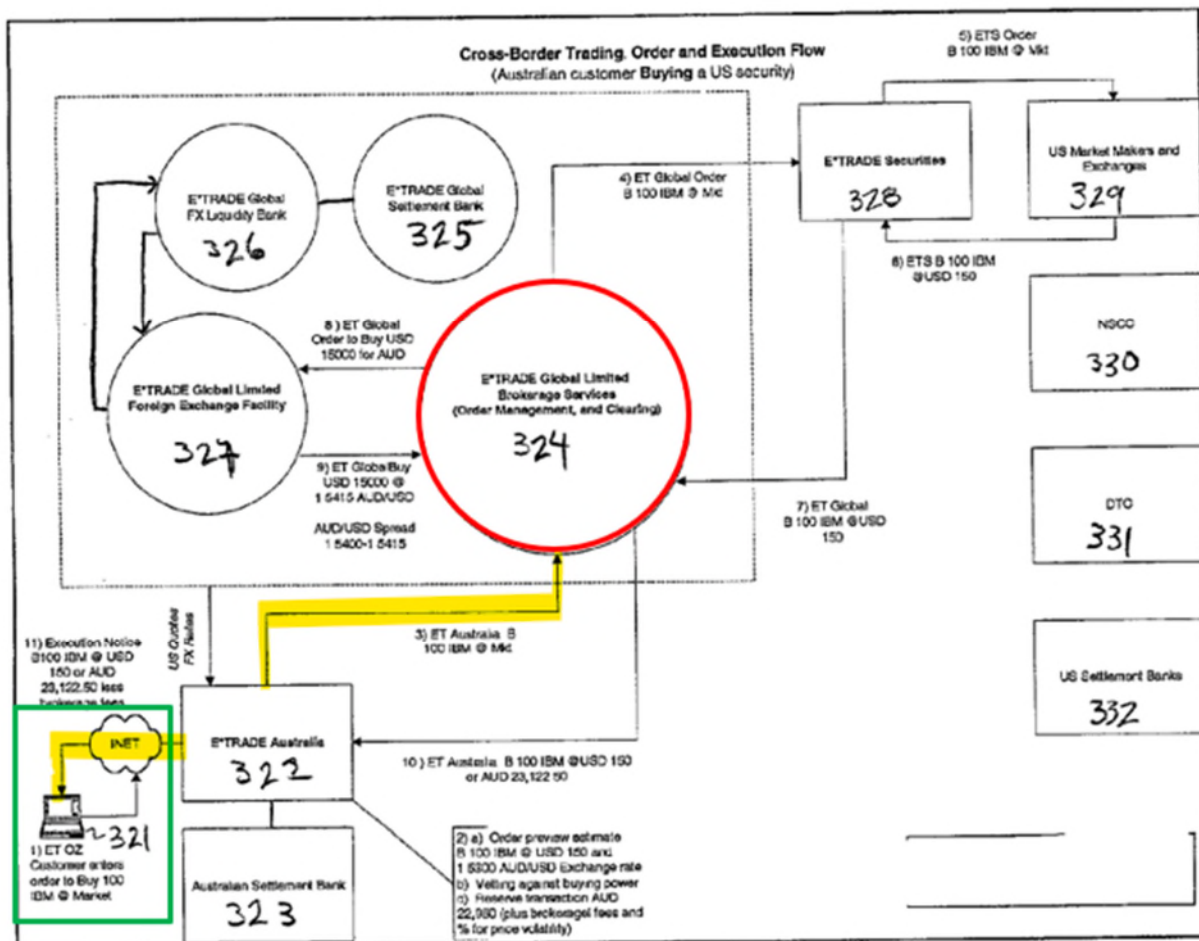


EX1004, Fig. 3A (annotated). A cross-border trading order originates with customer 321 (green), is transmitted through introducing affiliate 322 (blue) to GBS 324 and is routed to both U.S. Market Exchange 329 for execution and Foreign Exchange Facility 327, prior to settlement. *Id.* *Calo*'s GBS discloses or at least renders obvious the claimed "trading server" because it is responsible for routing orders between: (1) a client machine; (2) a currency exchange; and (3) a market exchange, consistent with the '701 Patent's trading server which "represents a brokerage" and is configured to "facilitate a transaction decided by a trader." EX1004, [0029], Figs. 9-10; EX1001, 5:3-4; EX1003, ¶89; *see also* EX1016, 34.

Calo's platform is "implemented [] on a system of computers or electronics with associated hardware" and uses servers in its platform (*e.g.*, "Web Server[s]"), which discloses or renders obvious a server. EX1004, [0028], [0052], Figs. 9-10; EX1003, ¶90. If *Calo* is found to not expressly disclose that GBS 324 is a "server," it would have been obvious to a POSITA to implement GBS 324 as a "server." EX1003, ¶¶27-38, 91; EX1016, 34; EX1019, 6. Servers were conventional and well known in the art and given *Calo*'s description of GBS 324 as a centralized "hub" that facilitates processing requests for trades received from client devices associated with users, it would have been obvious to a POSITA to implement GBS 324 with a server, particularly in view of *Rude*'s disclosure. EX1003, ¶91; EX1004, [0008]. *Rude* discloses an "order processing server 102" that performs substantially the same

functionality as *Calo's* GBS. EX1005, [0022]-[0023]; EX1003, ¶¶92. Thus, it would have been obvious to implement *Calo's* GBS as a “server” in view of *Rude* and the background knowledge of a POSITA. EX1003, ¶¶27-38, 91-92.

Calo's GBS is coupled to a client machine associated with a user. *Calo* discloses that a “customer advantageously accesses the system through an electronic connection, *such as with a computer*,” which is the claimed “client machine associated with the user.” EX1004, [0027]; EX1003, ¶¶93.

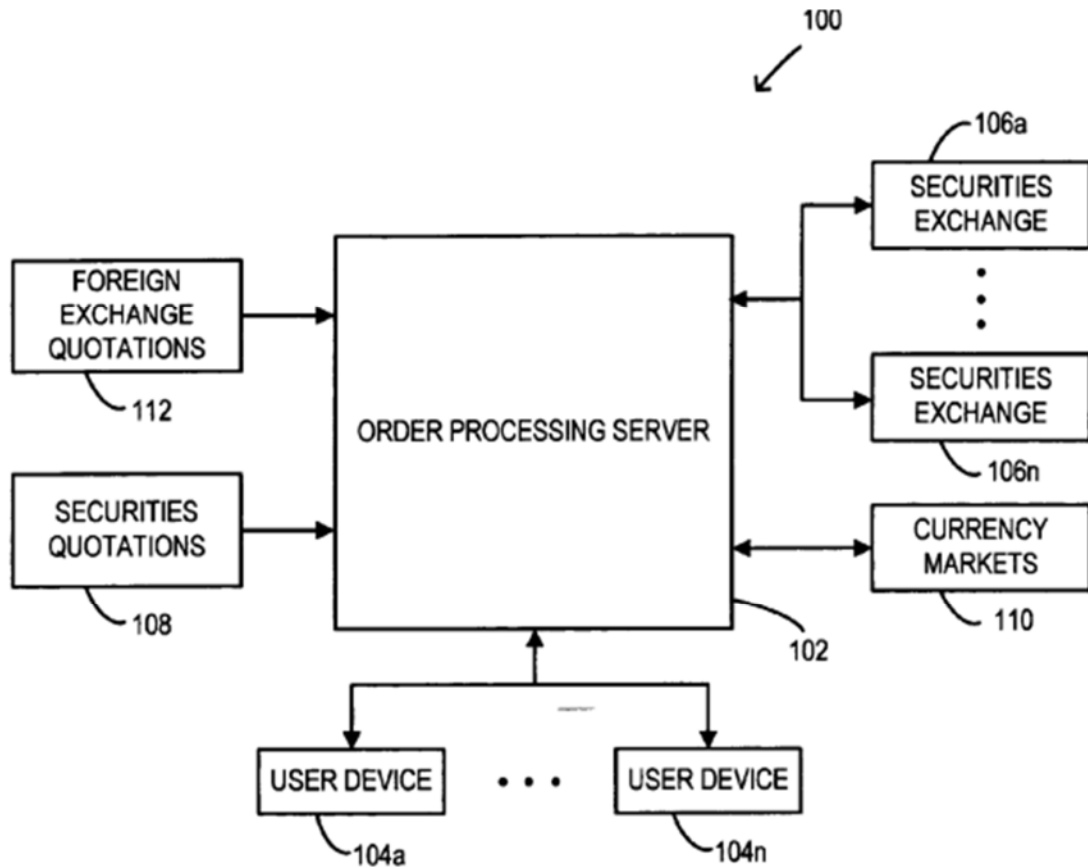


EX1004, Fig. 3A (annotated). The client machine (green) electronically couples to GBS 324 (red) through Australian introducing affiliate 322. EX1004, [0029]; EX1003, ¶94. Thus, *Calo* discloses a client machine associated with the user (*i.e.*, computer) that is electronically coupled to a trading server (*i.e.*, GBS). EX1003, ¶94.

Calo provides preview prices in “the currency of the target market in which the security trades” and the “**price in the native currency**[.]” EX1004, [0030]; EX1003, ¶95. Because price is displayed in the user’s native currency, and the “estimated prices are computed automatically through, by, or with information obtained from” the GBS, a POSITA would have understood that *Calo*’s trading server receives an indication of the user’s native currency (*e.g.*, from the client device) to enable the proper currency conversion and pricing display. EX1003, ¶95; EX1004, [0030]; *see also* EX1016, 34; EX1019, 6.

Moreover, *Rude* expressly discloses receiving an indicator of a first currency (*e.g.*, a user’s preferred currency) from a client machine. EX1003, ¶96. *Rude* discloses that “the user interface of the user device 104, in cooperation with the order processing server 102, may ... **permit the user to select ... whether foreign securities quotations are to be provided in an operating currency designated by the user** or in the local currencies in which the foreign securities trade.” EX1005, [0058]. A POSITA would have been motivated to combine *Rude* and *Calo* with an expectation of success. *Supra* §VI.A.1; EX1003, ¶¶77-83, 96.

To the extent Patent Owner argues that limitation 1[a] excludes intermediaries between client machine and trading server, it would have been obvious to couple *Calo's* client machine to the GBS without an intermediary. EX1003, ¶97. First, the arrangement is one of a finite number of identified, predictable solutions (coupling with or without an intermediary). *Id.* Second, such an arrangement would have been obvious in view of *Rude. Id.* *Rude's* order processing server 102 “operate[s] to receive and execute securities and foreign exchange trading orders on behalf of users of the user devices 104.” EX1005, [0022]; EX1003, ¶98. As Figure 1 illustrates, *Rude's* user devices couple to the order processing server (*i.e.*, trading server) without an intermediary.

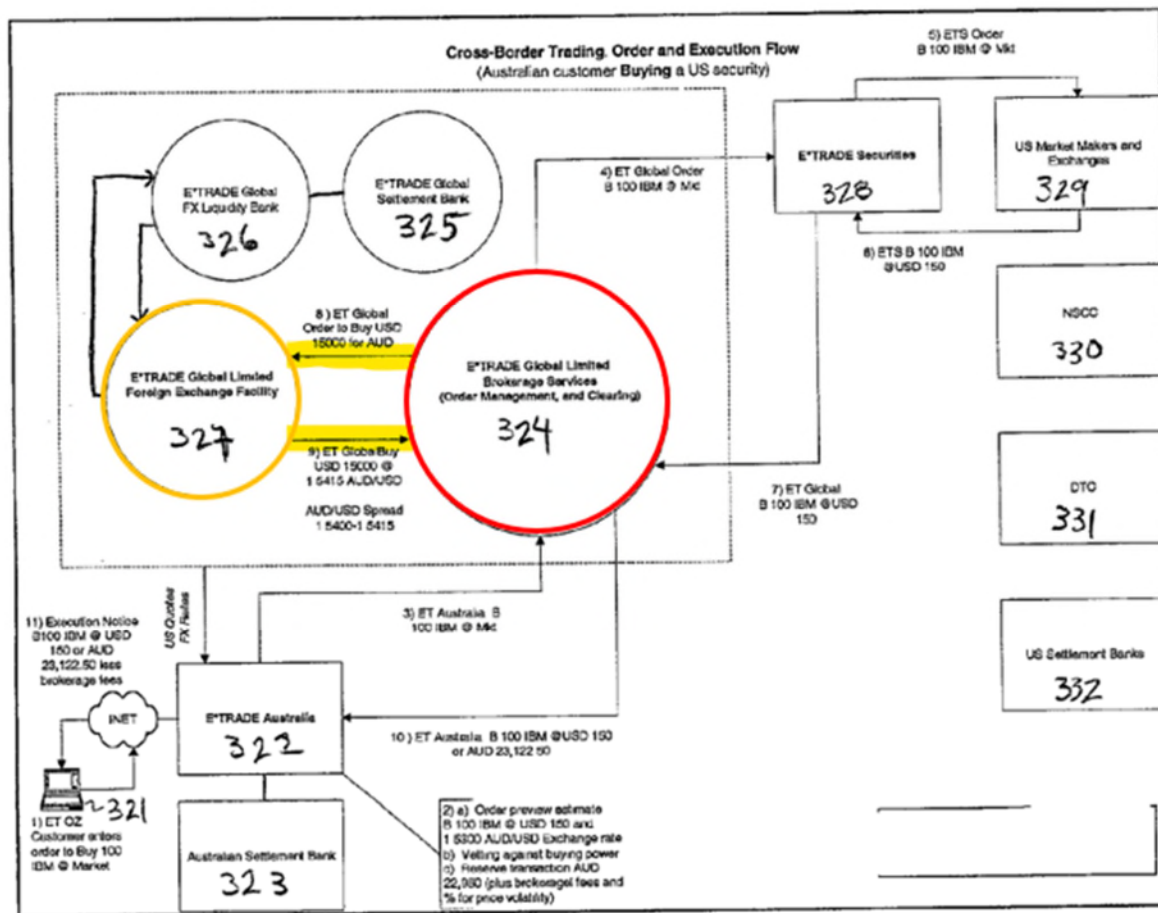


EX1005, Fig. 1; EX1003, ¶98.

- iii. 1[b]: wherein the trading server is configured to couple to at least one currency exchange server and at least one market exchange server,

Calo and *Rude* both disclose or at least render obvious limitation 1[b].

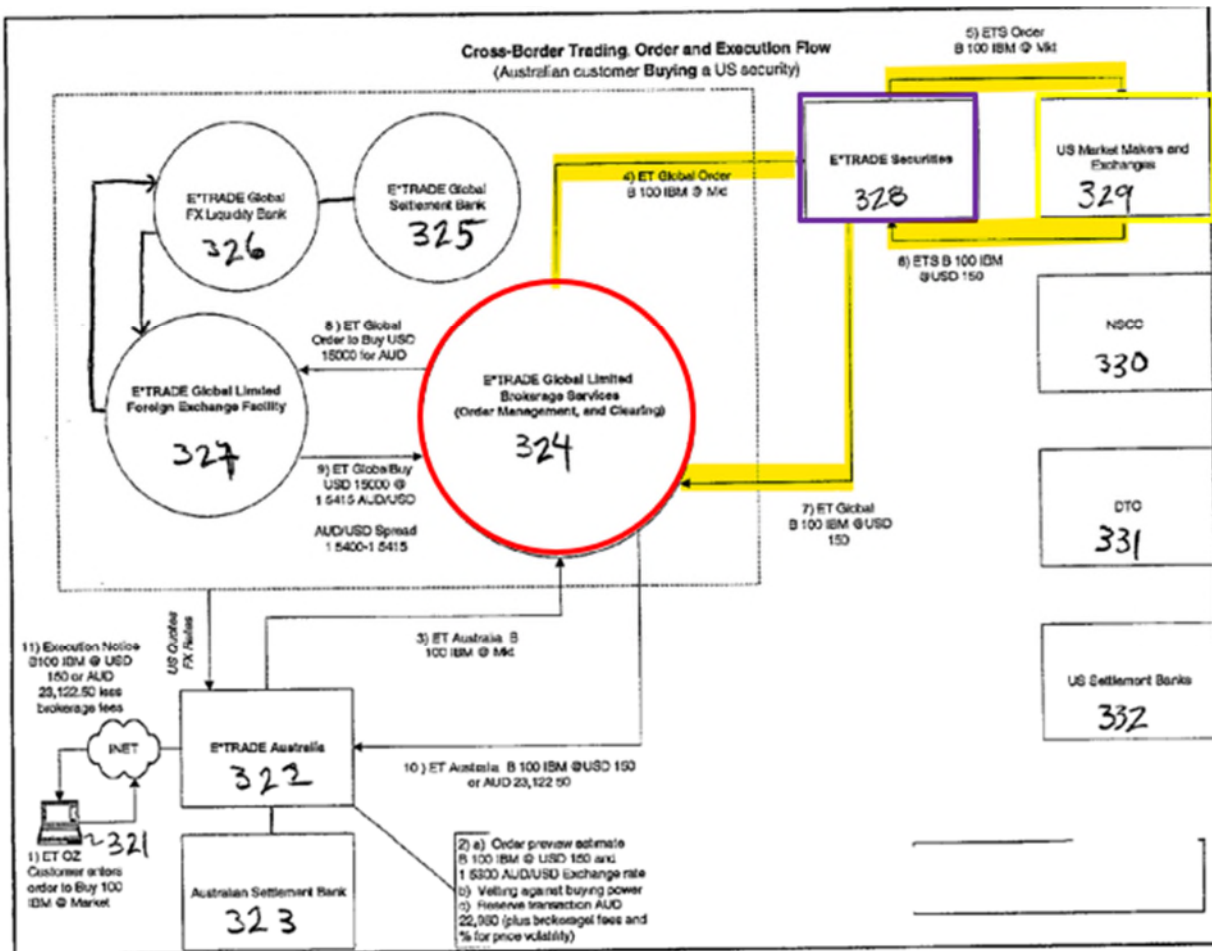
EX1003, ¶¶99-110. *Calo*'s trading architecture is similar to the '701 Patent:



EX1004, Fig. 3A (annotated); EX1003, ¶100. *Calo*'s GBS (red) corresponds to the claimed trading server and is configured to couple to "Foreign Exchange Facility 327" (orange) which "provides indicative foreign exchange rates" and executes currency conversions. EX1004, [0027], [0061], Fig. 3A. *Calo*'s "Foreign Exchange Facility" discloses or at least renders obvious the claimed "currency exchange server," because it supplies exchange rates used to execute transactions, consistent with the '701 Patent's description. EX1003, ¶101; EX1001, 3:5-8.

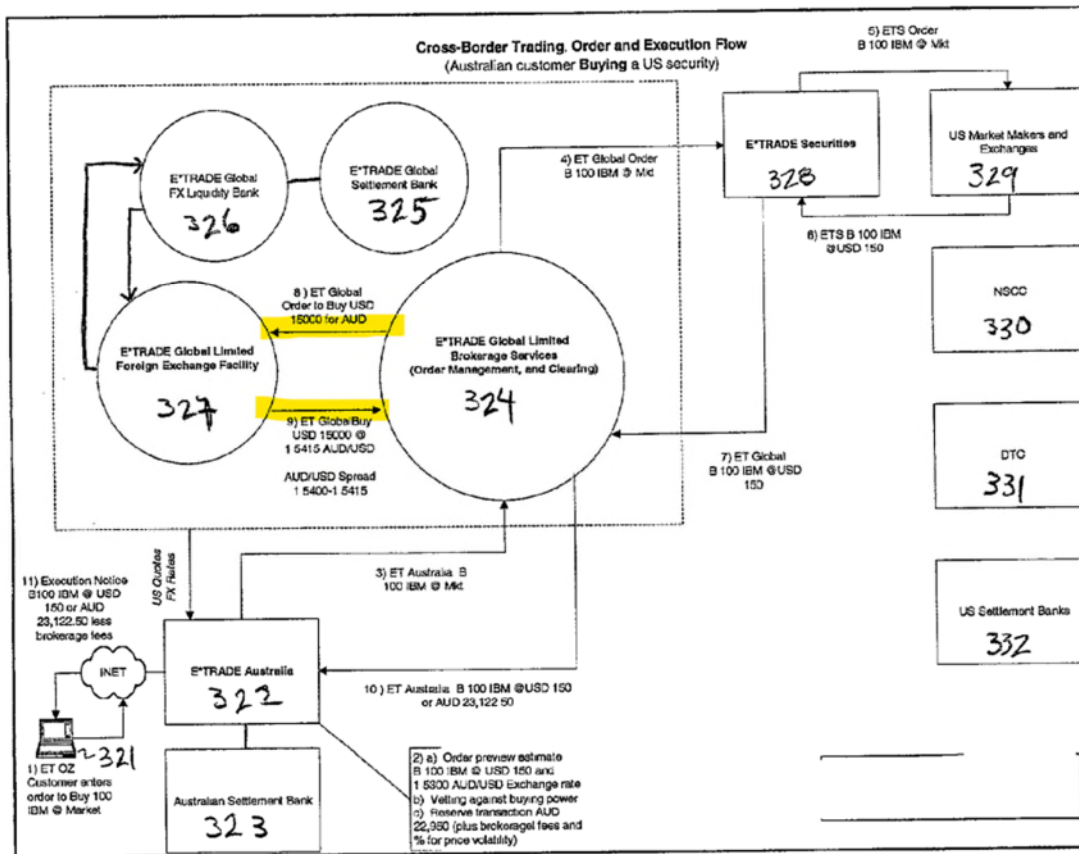
Similarly, *Calo*'s "U.S. Market Makers and Exchanges 329" (yellow)

interface with market exchanges such as “the Hong Kong Exchange [and] the London Stock Exchange.” EX1004, [0025]. This discloses or at least renders obvious the claimed “market exchange server” because when a customer places an order to buy U.S. stocks, the order is routed through the GBS to a U.S. executing affiliate 328, which places the order on a U.S. exchange such as the NYSE. EX1004, [0030], Fig. 3B, Step 305; *see also* EX1001, 5:4-6; EX1003, ¶¶102-104; EX1016, 27-29.

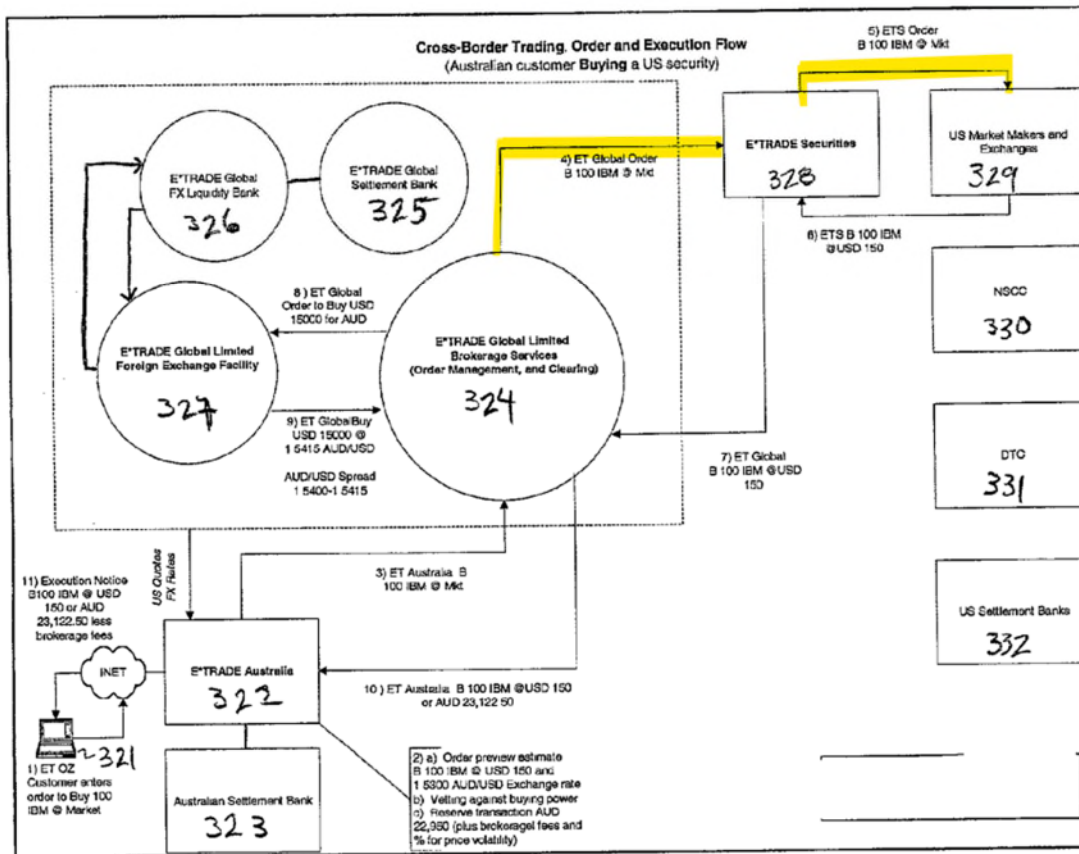


Id., Fig. 3A (annotated). Thus, *Calo*'s GBS is configured to couple to both a currency exchange server (*e.g.*, Foreign Exchange Facility) and a market exchange server (*e.g.*, NYSE). EX1003, ¶¶102-104.

Calo describes orders being “transmitted electronically,” evidencing a networked infrastructure. EX1004, [0008], [0051], Cls. 31, 44. From Figure 3A below, a POSITA would have understood that the Foreign Exchange Facility is electronically coupled to the trading server over a network, as exchange rates are “distributed throughout the global network and to the end user” using real-time data communication between the exchange rate source and the trading infrastructure. EX1004, [0061], Fig. 3A; EX1003, ¶105.



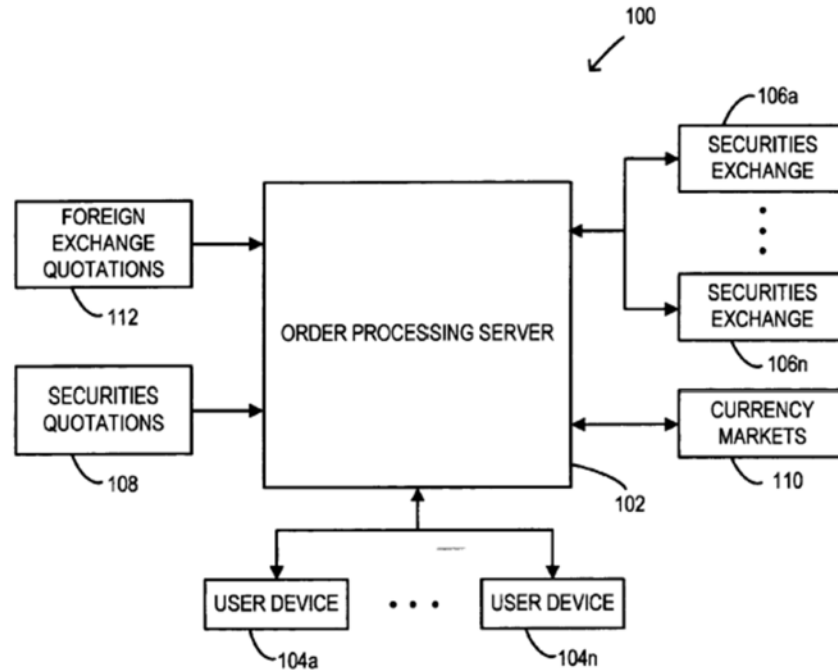
EX1004, Fig. 3A (annotated). Similarly, once an order is placed, “E*TRADE Australia transmits the order” to the GBS which “transmits the order to E*TRADE Securities (ETS), the U.S. local affiliate[] [and] places an order with an exchange member such as a U.S. market maker in a U.S. exchange.” EX1004, [0030]; EX1003, ¶106.



EX1004, Fig. 3A (annotating connection between GBS and Market Exchange).

To the extent Patent Owner argues that limitation 1[b] excludes intermediaries, it would have been obvious to couple *Calo's* GBS to the Foreign Exchange Facility and U.S. Market Makers and Exchanges without intermediaries, as discussed for 1[a]. EX1003, ¶107; *supra* §VI.A.2(ii). As Figure 1 illustrates, such an arrangement would have been obvious in view of *Rude*, where order processing server 102 (trading server) couples to currency market 110 (currency exchange

server) and securities exchanges 106 (market exchange server) without intermediaries.



EX1005, Fig. 1; EX1003, ¶¶108-109.

As discussed for 1[a], *Calo* implements its system “on a system of computers or electronics with associated hardware” and uses servers (*e.g.*, “Web Server[s]”) in its platform, which discloses or renders obvious servers. EX1004, [0028], [0052], Figs. 9-10; *supra* §VI.A.2(ii). To the extent *Calo* is found not to expressly disclose that the Foreign Exchange Facility and market exchanges are servers, it would have been obvious to implement them as servers in *Calo*’s “system of computers or

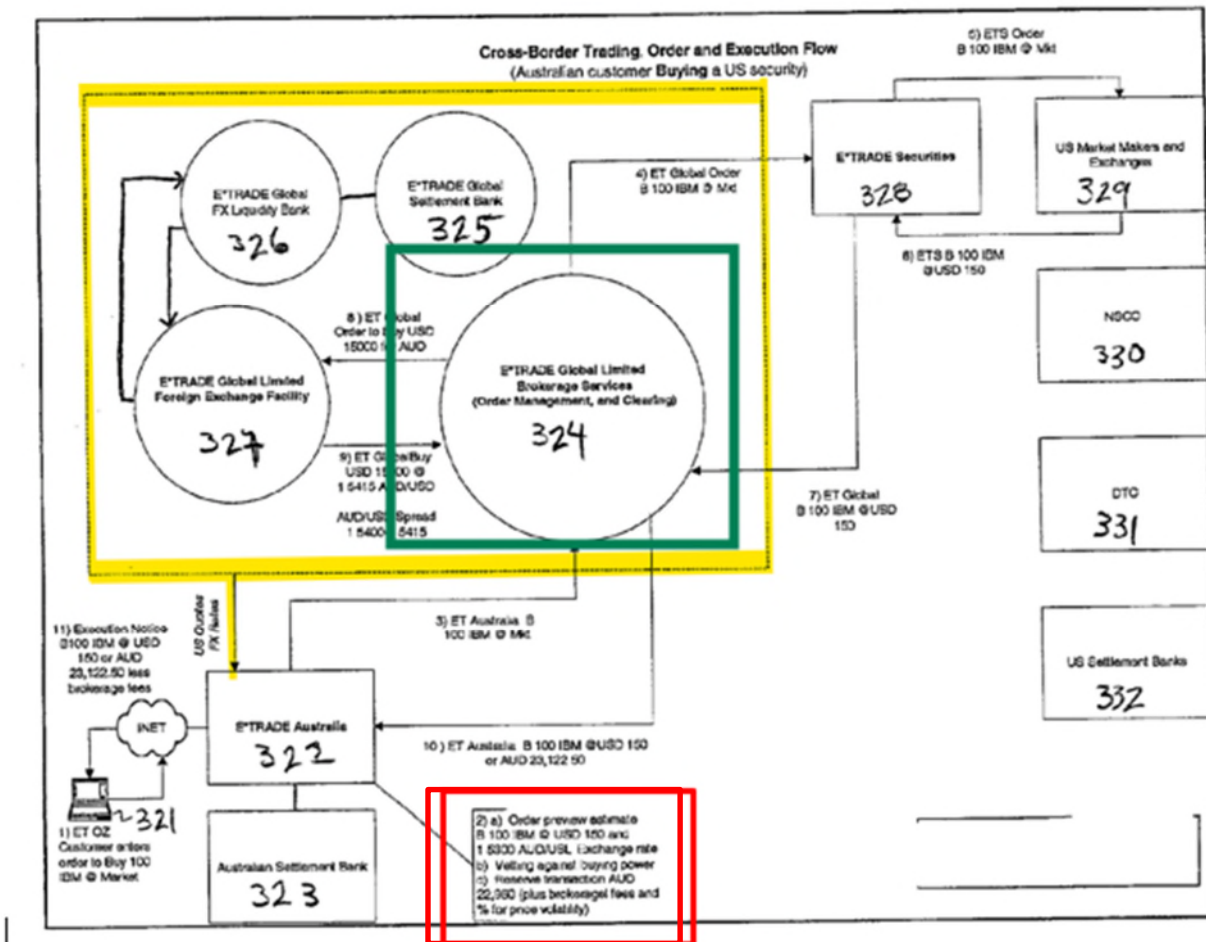
electronics with associated hardware” for the same reasons as the trading server.

EX1004, [0028]; *supra* §VI.A.2(ii); EX1003, ¶¶89-91, 110; *see also* EX1016, 6-9.

- iv. 1[c]: the trading server is further configured to calculate costs and fees in the first currency to own or sell the asset being traded in a second currency,**

Calo and *Rude* both disclose or at least render obvious limitation 1[c]. EX1003, ¶¶111-116. *Calo* describes that, before executing a trade (“such as to buy or sell a security”), a customer receives “a preview price on a real-time basis for a U.S. equity” (*e.g.*, USD). EX1004, [0008], [0030]; EX1003, ¶112. *Calo* also provides “[a] price in the native currency” (*e.g.*, Australian Dollars (AUD)). EX1004, [0030]. Once the customer places an order based on these cost estimates, but before the trade is executed, *Calo*’s system previews the order. *Id.*; EX1003, ¶113. The order preview reflects “the current U.S. ask price, the Australian dollar (AUD) equivalent based on the current ask price for USD based on the US principal amount, [and] the estimated commissions and fees for a cross-border trade.” EX1004, [0030]; *see also id.*, Fig. 3A. *Calo* also teaches calculating and displaying costs and fees before an order is placed by providing a customer “a preview of the order” that includes the principal amount in USD based on the current US bid price, the AUD equivalent, and “estimated commissions and fees” based upon which a customer decides whether to place an order. EX1004, [0038].

As Figure 3A shows, *Calo's* “estimated prices are computed automatically through, by, or with information obtained through” the GBS. *Id.*, [0030].



EX1004, Fig. 3A (showing that the order preview (red) is based off “U.S. Quotes and FX Rates” derived at least in part from the GBS (trading server) (green)); EX1003, ¶114.

Based on these disclosures, a POSITA would have understood that *Calo's* GBS (trading server) calculates the relevant costs and fees in the user's native currency, which corresponds to the claimed "first currency" (*e.g.*, AUD) for a trade

involving an asset priced in a “second” currency (*e.g.*, USD) to generate the preview prices. EX1003, ¶115. A POSITA would have understood that this includes not only foreign exchange conversions, but also commissions and fees in the native currency view. EX1003, ¶115; EX1004, [0030], [0038].

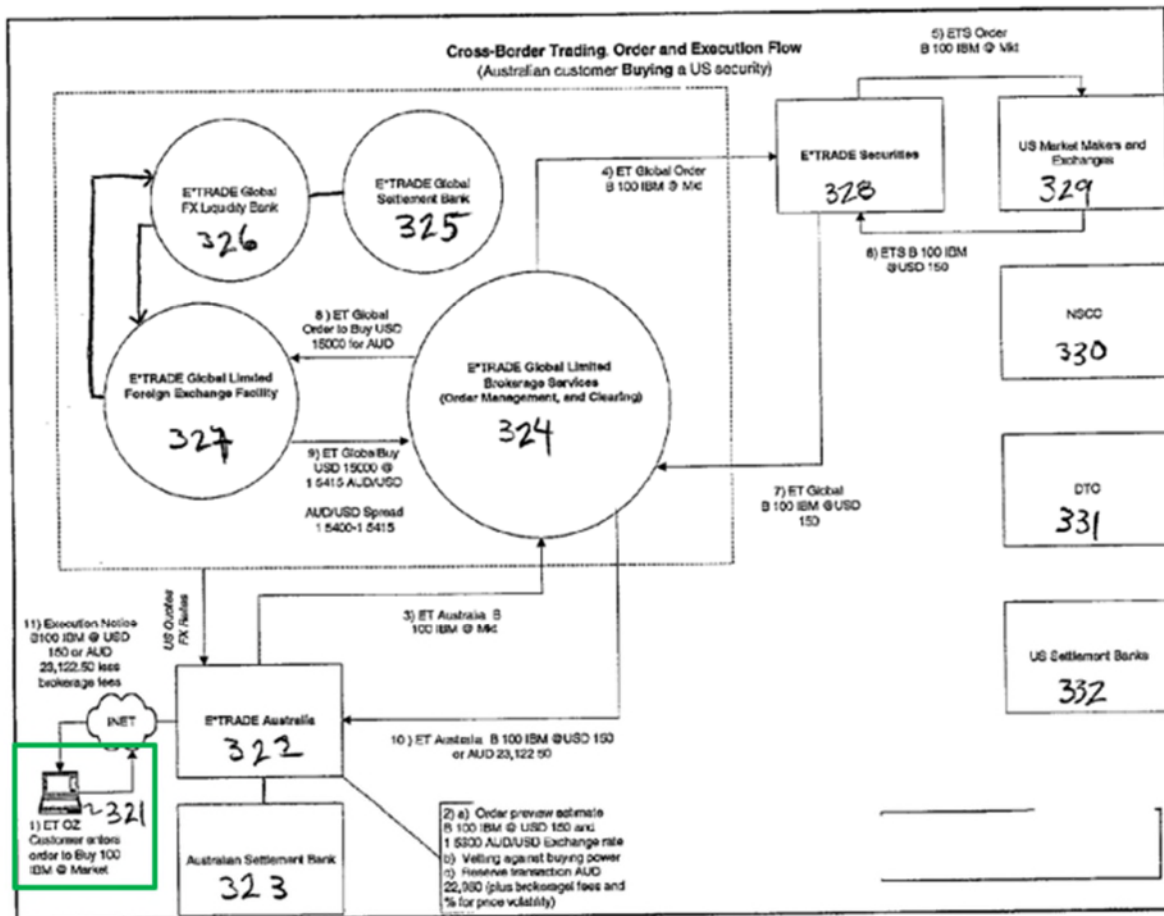
Additionally, and alternatively, it would have been obvious to calculate costs and fees in the first currency in view of *Rude*, which discloses that its “order processing server” (trading server) “determines a net settlement amount for the transaction, *which may reflect settlement fees, commissions, etc.* as well as the amount payable for or realized from the transaction.” EX1005, [0053]. Like *Calo*, *Rude*’s system displays the net settlement “in the user’s operating currency (instead of the local currency in which the security trades).” *Id.*, [0056]. Thus, the proposed *Calo-Rude-Sellberg* combination discloses or renders obvious a trading server configured to calculate costs and fees in the first currency to own or sell the asset being traded in a second currency as recited in limitation 1[c]. EX1003, ¶116.

- v. **1[d]: the costs and fees are caused to be displayed on a display device of the client machine and are dynamically changed in accordance with a first prevailing exchange rate between the first currency and the second currency, and even when a market value of the asset remains unchanged,**

Calo discloses or at least renders obvious limitation 1[d]. EX1003, ¶¶117-123. *Calo*’s “customer advantageously accesses the system through an electronic connection, such as with *a computer*.” EX1004, [0027]. The customer’s computer,

annotated in Figure 3A, includes a “display device” (*e.g.*, the computer’s monitor).

EX1003, ¶118.



EX1004, Fig. 3A (annotated).

Figure 3B illustrates a cross-border trading and execution flow (*e.g.*, for an Australian customer buying a U.S. security):

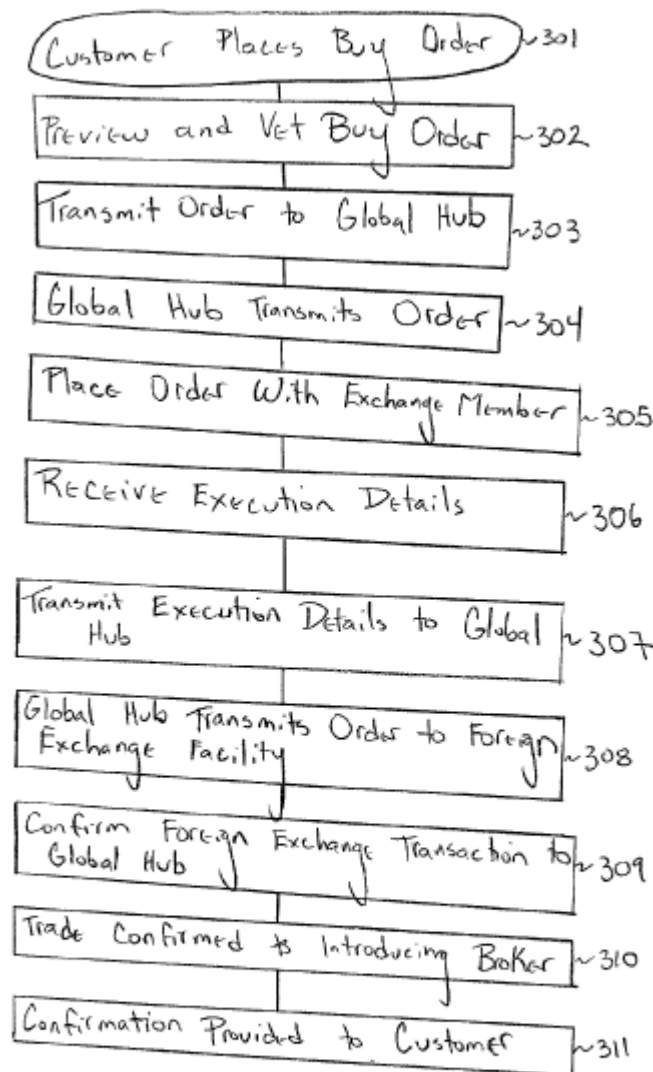


FIGURE 3B

EX1004, Fig. 3B; EX1004, [0029]; EX1003, ¶119. Before placing an order at step 301, the customer receives “**a preview price on a real-time basis**” to buy or sell a U.S. equity displayed in USD. EX1004, [0030]. *Calo* discloses that “[a] price in the native currency may also be provided, with this price being based on **both** the **real-**

time quote for price on the U.S. equity, as well as a *real-time* conversion from the foreign exchange rates.” *Id.* *Calo*’s Foreign Exchange Facility “provide[s] *round-the-clock access to realtime currency exchange* rates” and distributes them “to the end user to preview a securities trade.” *Id.*, [0061]. As discussed for limitation 1[c], *Calo* also teaches providing the customer with estimated commissions and fees before an order is placed. EX1004, [0038]. A POSITA would have understood that the preview prices and fees provided to the user are displayed on the display device of the user’s computer. EX1003, ¶120.

Because *Calo*’s preview prices and fees are provided on a “real-time basis” and are based on a real-time (*i.e.*, current) currency exchange rate from the Foreign Exchange Facility (*i.e.*, a first selected current exchange rate), a POSITA would have understood that the preview prices and fees dynamically change in accordance with a first prevailing exchange rate between the first currency and the second currency. EX1004, [0030]; EX1003, ¶121; *see also* EX1015, 476, 479-86, 496; EX1019, 6. Because *Calo*’s preview prices are also based on a real-time quote for the U.S. equity, a POSITA would have understood that the preview prices and fees dynamically change even if the asset’s market value remains constant (*e.g.*, due to changes in the first prevailing exchange rate). EX1003, ¶121.

To the extent Patent Owner argues that limitation 1[d] requires displaying the costs and fees separately, a POSITA would have understood that both costs and fees

are included in the preview prices shown to the user prior to placing the order. EX1003, ¶122; EX1004, [0030], [0038].

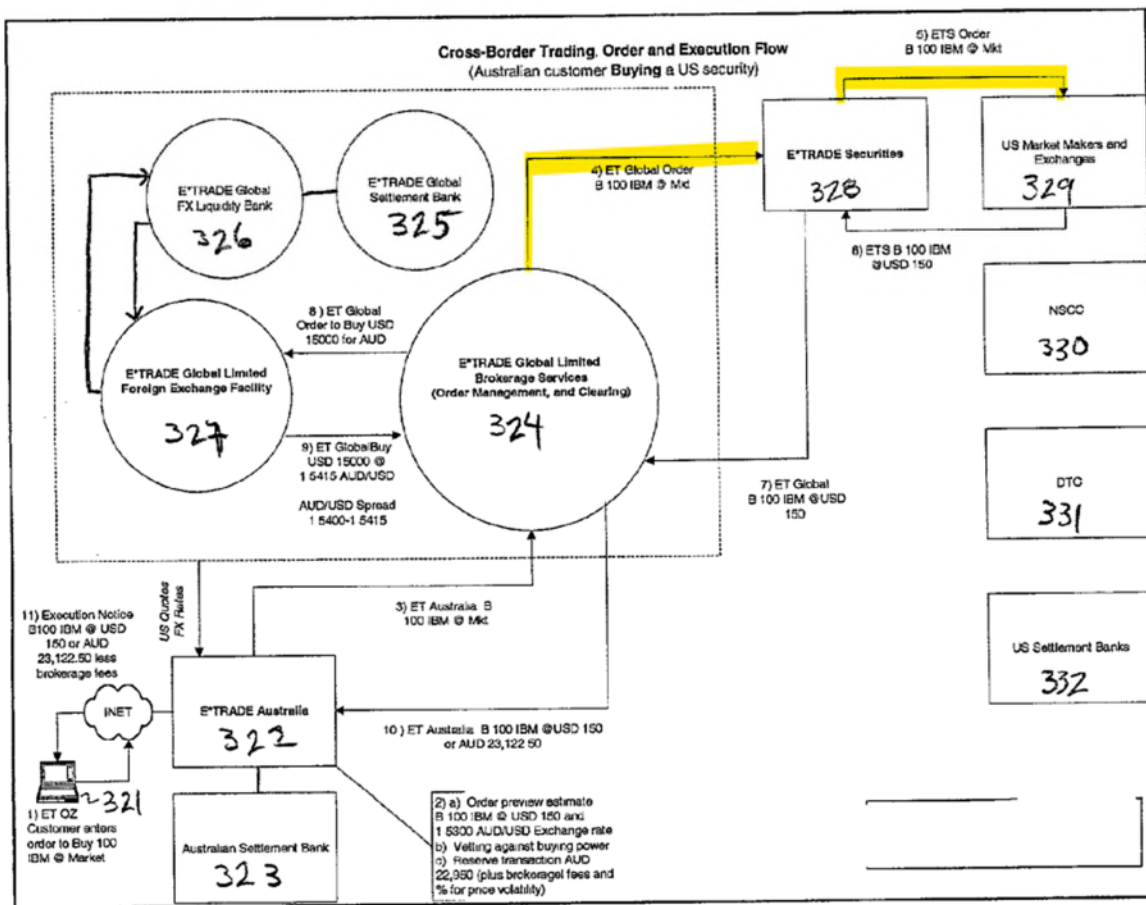
Moreover, it would have been obvious to a POSITA to itemize the costs and fees in displaying *Calo*'s preview price. EX1003, ¶123. *Calo* distinguishes between the asset cost and affiliate fees (EX1004, [0030]), providing the underlying data for itemization. EX1003, ¶123. Furthermore, it would have been obvious to a POSITA to display fees with the preview price in the native currency and dynamically update the costs and fees based on changes in the foreign exchange rate and/or asset price. *Id.* *Calo* already calculates “the estimated commissions and fees for a cross-border trade” to provide the order preview (which *Calo* teaches can be provided either before or after an order is placed). EX1004, [0030], [0035]; *see also* Fig. 3B. A POSITA would have been motivated, and found it obvious, to display estimated commissions and fees with the preview price in the native currency provided to the customer before a buy order is placed. EX1003, ¶123. A POSITA would have had reason to preview the estimated commissions and fees given *Calo*'s recognition that this information influences investor's decisions and changes in real time. *Id.*; *see also* EX1004, [0006] (describing how commissions and costs of buying and selling stocks influence investor behavior), [0061] (providing “**round-the-clock access to realtime currency exchange** rates” and distributing them “to the end user to preview a securities trade”). Doing so would have furthered *Calo*'s goal of offering a “real-

time system” that increases transparency and reduces “risks from price movement for both the customer and the party executing the trade.” EX1004, [0028]. Displaying fees with the preview price in the native currency would have required only routine interface programming, and a POSITA would have had a reasonable expectation of success given that *Calo* already teaches calculating commissions and fees and displaying this information prior to placing an order. EX1004, [0030], [0038]; EX1003, ¶123.

- vi. **1[e]: and wherein the trading server is configured to conduct a transaction of the asset by transporting a transaction request to the market exchange server upon receiving an order from the trader,**

Calo discloses or at least renders obvious limitation 1[e]. EX1003, ¶¶124-126.

Upon receiving an order (Fig. 3B, step 301), at step 304 *Calo*’s GBS “***transmits the order*** to E*TRADE Securities (ETS), the U.S. local affiliate.” EX1004, [0030]. Then, “[a]t step 305, ETS places an order with an exchange member such as a ***U.S. market maker in a U.S. exchange***, who then executes the trade” of the asset on the appropriate U.S. stock exchange (*e.g.*, NYSE). *Id.*, [0030]. As Figure 3A shows, the transaction flows from *Calo*’s GBS to ETS, and then back to GBS after the trade is executed on the appropriate market exchange.



EX1004, Fig. 3A (annotating order route); EX1003, ¶125.

A POSITA would have understood from *Calo*'s disclosure that upon receiving an order from a trader, the GBS conducts the transaction of the asset by transporting the transaction request to the appropriate market exchange server (*e.g.*, NYSE) for execution. EX1003, ¶126. ETS functions purely as a pass-through intermediary and does not interfere with the GBS's role in transporting the transaction request or conducting the transaction. *Id.*

- vii. **1[f]: and reach a settlement based on a second prevailing exchange rate as soon as the transaction of the asset is performed in accordance with conditions set by the trader,**

Calo discloses or at least renders obvious limitation 1[f]. EX1003, ¶¶127-130.

As discussed for limitation 1[e], once the order is placed (step 301), the order is routed and executed on the appropriate market exchange (*e.g.*, 100 U.S. shares of IBM stock on the NYSE). EX1004, Fig. 3B (steps 303-306); *supra* §VI.A.2(vi); EX1003, ¶128. *Calo* explains that “[p]referably immediately after the equity order is executed and reported,” the GBS initiates a foreign exchange transaction to convert Australian dollars into U.S. dollars (step 307), then sends the user a trade confirmation that includes both the USD execution price and the “locked-in AUD value” of the trade (step 310). EX1004, [0030].

A POSITA would have understood that this “locked-in AUD value” is the amount of Australian dollars required to settle the trade, calculated based on the prevailing exchange rate at the time of the foreign exchange transaction. EX1003, ¶129; EX1004, [0030]. The locked-in value is the result of applying a prevailing exchange rate at settlement, which a POSITA would have understood is different from the real-time rate used to provide the preview price in the native currency prior to placing the order (*e.g.*, due to fluctuations in the currency exchange rates). EX1003, ¶129. Thus, the prevailing rate used to determine the final locked-in AUD value corresponds to the claimed “second prevailing exchange rate.” *Id.* Because the

foreign exchange transaction is executed “immediately after the equity order is executed,” *Calo* discloses or at least renders obvious reaching a settlement “as soon as the transaction of the asset is performed” as claimed. *Id.*

Calo discloses or at least renders obvious performing the transaction in accordance with conditions set by the trader, because *Calo* discloses that customers place orders subject to conditions including a specific number of shares of a given stock (*e.g.*, “100 shares of IBM stock at the market price”) and customers can place limit orders, which “guarantee[] that an equity will be bought or sold only at a specific price.” EX1004, [0030], [0070]. This aligns with the ’701 Patent’s disclosure that “orders with conditions (*e.g.*, **a limit order**, or a stop order) are only executed when the conditions are met.” EX1001, 4:45-49. A POSITA would have understood that when a customer places an order in one currency to trade an asset priced in another currency, limit order execution accounts for *both* the equity price and the exchange rate because the effective cost to the customer in their local currency depends on the combination of the market price and the prevailing exchange rate. EX1003, ¶130; EX1015, 470; EX1016, 45-46. For example, *Calo* teaches one “means to reduce risk from limit orders is marking-to-the-market all open limit orders on a regular basis,” which is a well-known practice of valuing assets or liabilities based on their current market value or exchange rates. EX1004, [0070]; EX1003, ¶130; *see also* EX1015, 470; EX1016, 45-46.

viii. 1[g]: and wherein the second prevailing exchange rate is calculated from the at least one currency exchange server right before the transaction takes place,

The *Calo-Rude-Sellberg* combination discloses or at least renders this limitation obvious. EX1003, ¶¶131-134. As discussed for limitation 1[f], the *Calo-Rude-Sellberg* combination teaches a “locked-in AUD value” that a POSITA would have understood is the result of applying a second prevailing exchange rate calculated right before the transaction takes place. *Supra*, §VI.A.2(vii); EX1004, [0030]; EX1003, ¶¶127-132.

The '701 Patent does not describe any process for calculating the second prevailing rate from the at least one currency exchange server. EX1003, ¶133. Rather, the '701 Patent describes receiving or obtaining a rate from server data. EX1001, 3:30-34 (disclosing “receiving a prevailing currency exchange rate from the currency exchange server”); EX1003, ¶133. Similarly, *Calo*’s currency exchange rates are sourced from the Foreign Exchange Facility (*i.e.*, the currency exchange server). EX1004, [0061]. Accordingly, *Calo* discloses the second prevailing exchange rate is calculated from the at least one currency exchange server as described in the '701 Patent. EX1003, ¶133.

Additionally, and alternatively, it would have been obvious to a POSITA in view of *Sellberg* to configure *Calo*’s system to calculate the rate right before the transaction takes place to ensure rate accuracy and minimize customer exposure to

currency fluctuations. EX1003, ¶134. *Calo* emphasizes real-time pricing and discloses that the AUD value is locked in “[p]referably immediately after the equity order is executed.” EX1004, [0030]. *Sellberg* describes an automated system that receives exchange rate updates “repeatedly and automatically” from a currency market—sometimes several times per second—and performs currency conversion using the “last received updated exchange rate” at the time of trade execution. EX1006, [0024], [0025]. A POSITA would have understood that *Sellberg*’s rate, sourced from the currency market (currency exchange server), is calculated right before the transaction of the asset took place. EX1006, [0024]-[0025]; EX1003, ¶134. A POSITA would have been motivated to combine *Sellberg*’s teachings with *Calo* to ensure that the most current exchange rate is used at settlement. *Supra* §VI.A.1; EX1003, ¶¶77-83, 134.

- ix. 1[h]: executed costs and fees in the settlement per the second prevailing exchange rate are not identical to the displayed costs and fees with the first prevailing exchange before the transaction of the asset took place.**

The *Calo-Rude-Sellberg* combination discloses or at least renders this limitation obvious. EX1003, ¶¶135-137. As discussed for limitations 1[d] and 1[f], the *Calo-Rude-Sellberg* combination renders obvious displaying costs and fees in the native currency before the order is placed, where the displayed costs and fees are based on a real-time current currency exchange rate (first prevailing exchange rate).

Supra, §VI.A.2(v), VI.A.2(vii); EX1004, [0030]; EX1003, ¶136. The combination also teaches a “locked-in AUD value” that is the result of applying a second prevailing exchange rate calculated right before the transaction takes place. EX1003, ¶136. Prior to executing a transaction, *Calo* discloses vetting “the estimated commissions and fees for a cross-border trade” and setting aside a reserve to “allow for fluctuations in both the US equity and USD/AUD currency market.” EX1004, [0030].

A POSITA would have understood that the exchange rate used to calculate the preview price in the native currency (first prevailing exchange rate), and the locked-in rate used at settlement (second prevailing exchange rate) are not identical due to fluctuations in exchange rates, and that the cost of the asset may not be identical due to fluctuations in the equity market. EX1003, ¶137; EX1004, [0030], [0070] (describing “exchange rate volatility”). As a result, *Calo*’s executed costs and fees (*e.g.*, commissions and fees) in settlement would not be identical to the initial cost and fees used as estimates before the transaction took place. EX1004, [0030], [0028]; EX1003, ¶137. This distinction is underscored by *Calo*’s real-time architecture and reserve mechanism, which account for differences caused by exchange rate movement. EX1003, ¶137.

3. Claim 3: The platform as recited in claim 1, wherein the first prevailing exchange rate and the second prevailing exchange rate are different.

The *Calo-Rude-Sellberg* combination discloses a preview price (based on a first prevailing exchange rate before order placement) and a “locked-in AUD value” (based on a second prevailing exchange rate). *Supra*, §§VI.A.2(v), VI.A.2(vii). A POSITA would have understood that the two prevailing exchange rates—one used for estimation and the other for execution—would be different due to normal volatility in the currency markets. EX1003, ¶¶138-139; EX1004, [0030] (describing “*fluctuations in both the US equity and USD/AUD currency market*”).

4. Claim 4: The platform as recited in claim 3, wherein the first prevailing exchange rate and the second prevailing exchange rate are automatically calculated in different times by the trading server from a network including the at least one currency exchange server.

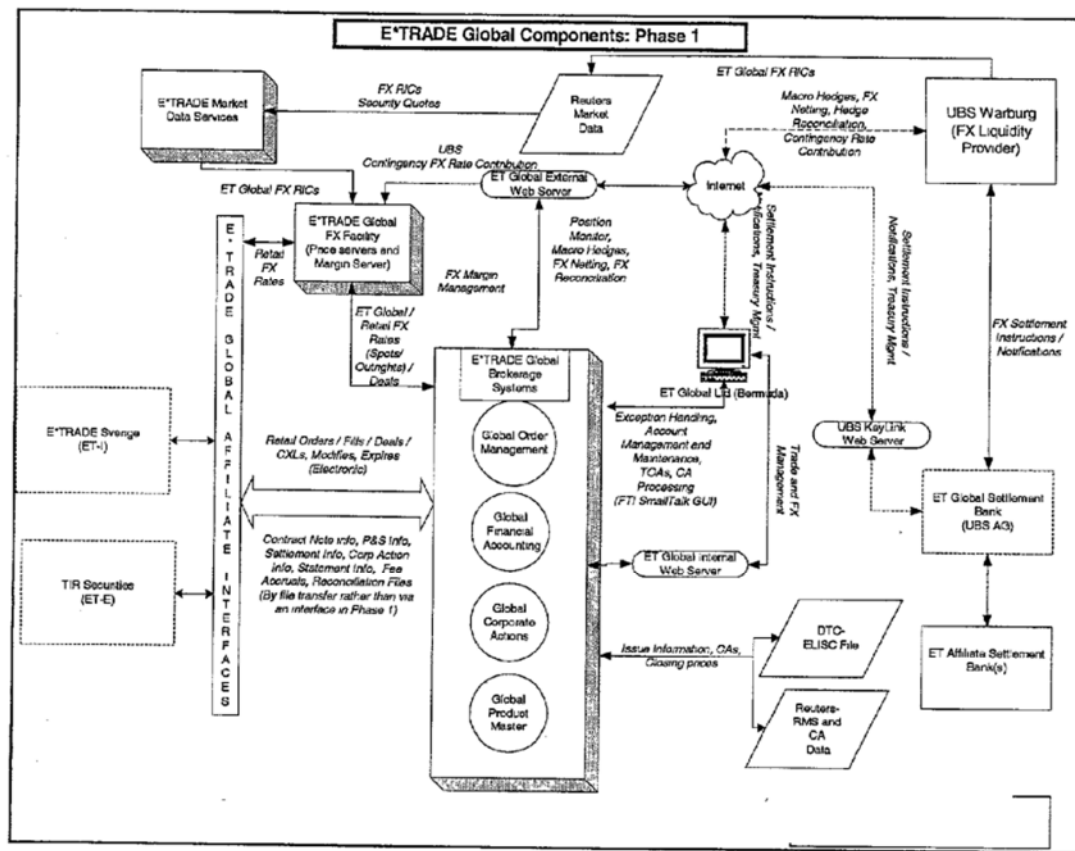
The rate used to calculate *Calo*’s preview price in the native currency is calculated *before* the order is placed, while the rate used to generate the “locked-in AUD value” is calculated for settlement (*i.e.*, at different times). EX1004, [0030]; EX1003, ¶¶140-141; *supra*, §§VI.A.2(v), VI.A.2(vii). In *Calo*, “prices are *computed automatically*” by the GBS based on “*real-time conversion from the foreign exchange rates*” provided by the Foreign Exchange Facility (currency exchange server) over *Calo*’s “global network.” EX1004, [0030], [0027], [0061]; EX1003, ¶142. Additionally, *Sellberg* teaches receiving “an updated exchange rate”

repeatedly and automatically (*e.g.*, “several times a second”). EX1006, [0024]; EX1003, ¶142.

5. **Claim 6**

- i. **6[a]: The platform as recited in claim 1, wherein the trading server is caused to be coupled to the client machine, and configured to couple to the at least one currency exchange server and the at least one market exchange server via a network,**

Calo in view of *Rude* discloses or at least renders obvious a trading server coupled to a client machine, at least one currency exchange server, and at least one market exchange server via a network. *Supra* §§VI.A.2(ii), VI.A.2(iii); EX1003, ¶¶143-144. *Calo* implements its “system of computers” on a network, such as the “exemplary computer **network**” in Figure 10.



EX1004, Fig. 10, [0021], [0028]; *see also id.*, Fig. 2, [0003] (“a globalized trading network”), [0013]; EX1003, ¶145.

- ii. **6[b]: the trading server is configured to further: calculate automatically the second prevailing exchange rate from the network to ensure that the transaction only happens when the conditions are met with the second prevailing exchange rate.**

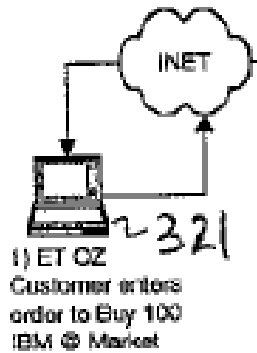
Calo discloses or at least renders obvious that the trading server automatically calculates the second prevailing exchange rate from the network. *Supra* §VI.A.4; EX1003, ¶¶146-147. *Calo* also discloses performing transactions in accordance with conditions set by a trader (*e.g.*, a limit order). *Supra* §VI.A.2(vii); EX1003, ¶¶147-148. Limit orders “guarantee[] that an equity will be bought or sold only at a specific

price,” meaning the trading server evaluates whether the market price satisfies the specified conditions before executing the transaction. EX1004, [0070]; EX1003, ¶148.

Given that *Calo*’s GBS relies on real-time, automatically computed pricing that includes current exchange rate data, and that execution is contingent on meeting predefined pricing conditions (*e.g.*, a limit order), a POSITA would have understood that the trading server automatically calculates the second prevailing exchange rate from the network to ensure the transaction only happens when the conditions are met with the second prevailing exchange rate. EX1003, ¶149; *see also* EX1006, [0024] (describing “repeatedly and automatically” receiving an updated exchange rate up to “several times a second”).

6. Claim 7: The platform as recited in claim 1, wherein the client machine is a desktop, a laptop, a server computer, a handheld wireless device, or a mobile phone.

Calo’s customer “accesses the system” with “a computer,” which discloses or at least renders obvious the claimed desktop and laptop computer in Figure 3A. EX1004, [0027]-[0028]; EX1003, ¶¶150-151.



EX1004, Fig. 3A (excerpted).

7. Claim 8

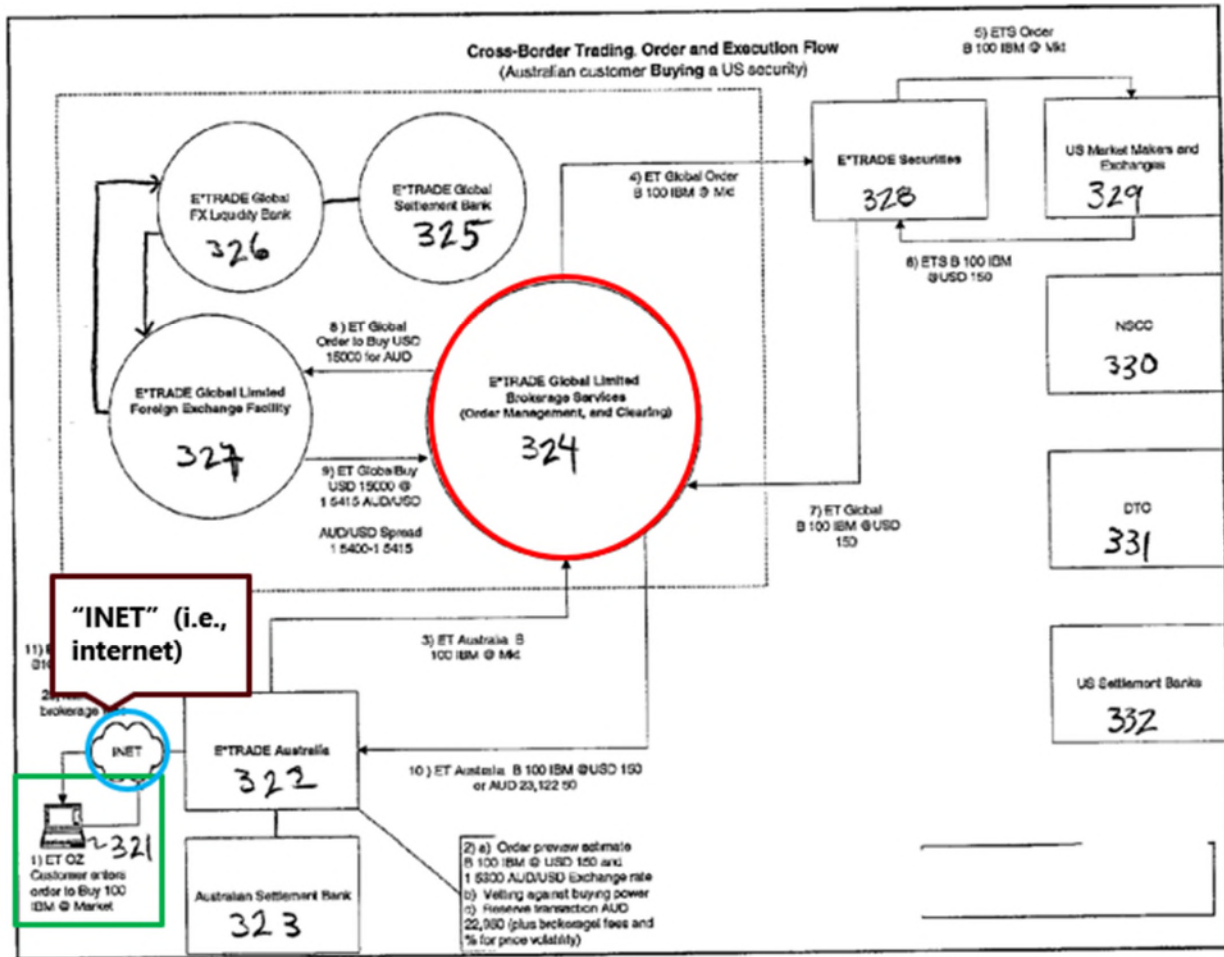
i. 8[p]: A platform for trading an asset, the platform comprising:

Supra §VI.A.2(i); EX1003, ¶152.

ii. 8[a]: a client machine associated with a user, coupled to a trading server via the Internet, executing a software product to send an indicator of a first currency to the trading server,

Calo in view of *Rude* discloses or at least renders obvious a client machine associated with a user, coupled to a trading server, sending an indicator of a first currency to the trading server. *Supra* § VI.A.2(ii); EX1003, ¶¶153-154.

Calo's client machine is coupled to the trading server via the Internet. EX1003, ¶155. *Calo*'s Figure 3A depicts the client machine (green) coupled to GBS 324 (red) via the internet (blue).



EX1004, Fig. 3A (annotated). *Calo* discloses that customers may place orders “**over the internet.**” EX1004, [0030]; *see also* EX1005, [0028] (*Rude*’s devices communicate over “the Internet”); EX1003, ¶156.

Additionally, the combination teaches executing a software product to send an indicator of a first currency to the trading server. EX1003, ¶157. *Rude* executes a software product to send an indicator of a first currency to the trading server. *See* EX1005, [0026], [0037], [0043]. *Calo* further discloses that all E*TRADE Global entities can be “**linked by common software.**” EX1004, [0051].

- iii. **8[b]: wherein the trading server is configured to couple to at least one currency exchange server and at least one market exchange server and**

Supra §VI.A.2(iii); EX1003, ¶158.

- iv. **8[c]: configured to calculate costs and fees in the first currency to own or sell the asset being traded in second currency,**

Supra §VI.A.2(vi); EX1003, ¶159.

- v. **8[d]: the client machine is caused to display the costs and fees on a display device thereof, the costs and fees being displayed are dynamically changed in accordance with a first prevailing exchange rate between the first currency and the second currency, and even when the market value of the asset remains unchanged, and**

Supra §VI.A.2(v); EX1003, ¶160.

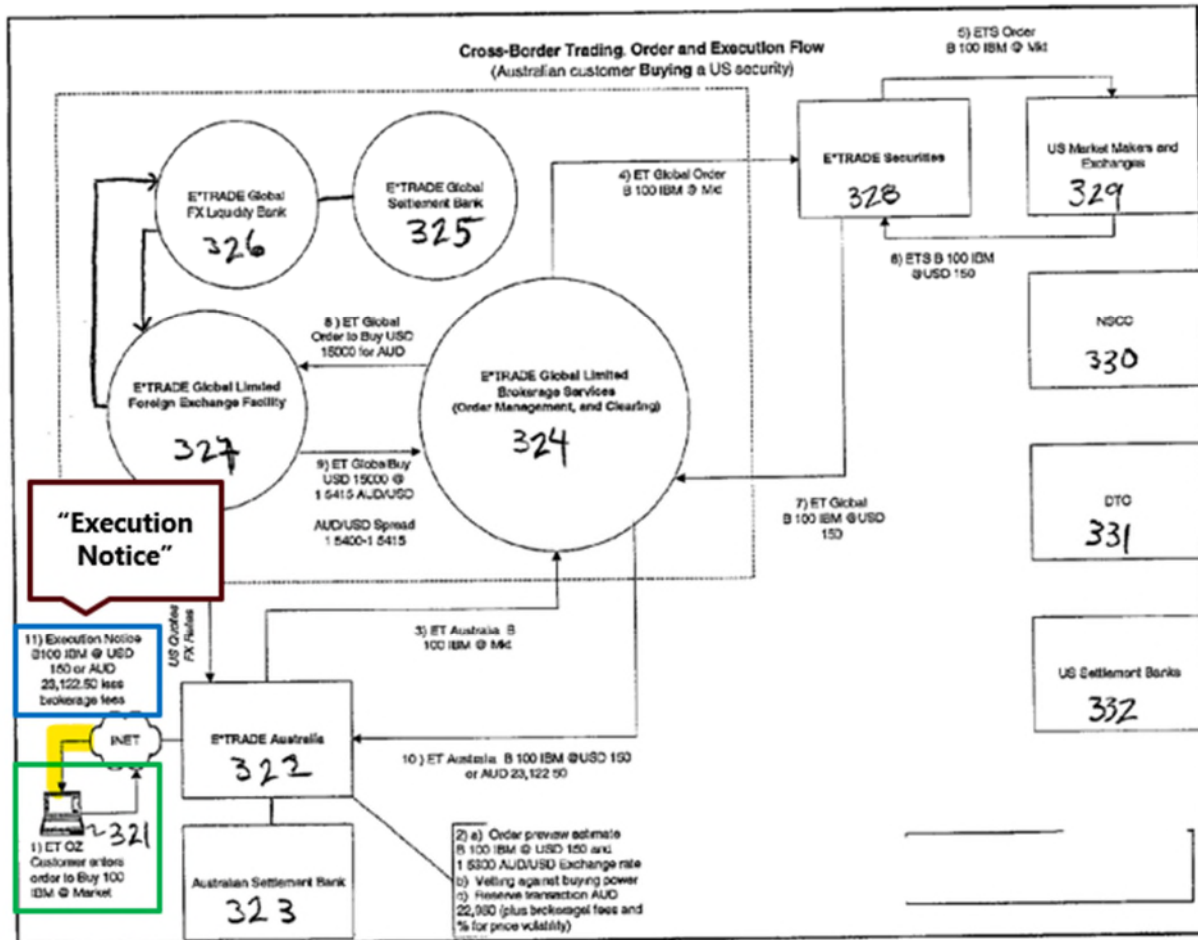
- vi. **8[e]: wherein a transaction of the asset is conducted in the trading server in response to the market exchange server upon receiving an order from the client machine;**

Supra §VI.A.2(vi); EX1003, ¶161.

- vii. **8[f]: the client machine receives a settlement based on a second prevailing exchange rate, wherein the second prevailing exchange rate is calculated by the trading server from the at least one currency exchange server right before the transaction takes place,**

The *Calo-Rude-Sellberg* combination discloses a second prevailing exchange rate. *Supra* §VI.A.2(vii), VI.A.2(viii); EX1003, ¶¶162-163. Additionally, *Calo* discloses that the client machine receives a settlement based on the second prevailing exchange rate. EX1004, [0030]; EX1003, ¶164. After a trade is executed using the prevailing rate used to determine the final “locked-in AUD value” (second

prevailing exchange rate), the customer receives “**confirmation [] of the purchase[]**” which includes “commissions and fees.” EX1004, [0030]. As Figure 3A shows, the user’s client machine (green) receives a settlement (“Execution Notice,” blue).



EX1004, Fig. 3A (annotated).

- viii. **8[g]:** executed costs and fees in the settlement per the second prevailing exchange rate are not identical to the displayed costs and fees with the first prevailing exchange before the transaction of the asset took place.

Supra §VI.A.2(viii); EX1003, ¶165.

8. Claim 9: The platform as recited in claim 8, wherein the client machine is caused to keep displaying the costs and fees being dynamically updated in accordance with the first prevailing exchange rate updated constantly, even when the market value of the asset remains unchanged.

The *Calo-Rude-Sellberg* combination discloses the platform recited in claim 8. *Supra*, §VI.A.2; EX1003, ¶166. *Calo* discloses or at least renders obvious the costs and fees being dynamically updated in accordance with the first prevailing exchange rate, even when the market value of the asset remains unchanged. *Supra* §VI.A.2(v), VI.A.7(v); EX1003, ¶167.

Additionally, *Calo*'s Foreign Exchange Facility provides "round-the-clock access to realtime currency exchange rates which can be distributed ... to the end user." EX1004, [0061]. A POSITA would have understood this to mean that the prevailing exchange rate is constantly updated and displayed. EX1003, ¶168.

Calo also discloses or at least renders obvious that the client machine is caused to keep displaying the costs and fees. *Supra*, §VI.A.2(v). *Calo* discloses that, prior to executing a trade (prior to step 301), the customer receives "a preview price on a **real-time basis** for a U.S. equity," which reflects "both the **real-time quote** for price on the U.S. equity, as well as a **real-time conversion** from the foreign exchange rates." EX1004, [0030]. *Calo* further discloses that "the estimated prices are computed automatically." *Id.* A POSITA would have understood this to mean that the client machine keeps displaying the dynamically updated costs and fees because

the estimated prices previewed to the customer are “computed automatically” based on “real-time” data. *Id.*; EX1003, ¶169; *see also* EX1015, 476, 479-86, 496; EX1019, 6; EX1019. Moreover, it would have been obvious to “keep displaying” the costs and fees being dynamically updated based on *Sellberg*’s express disclosure that “the trader may continuously follow the updated exchange rates.” EX1006, [0031]; EX1003, ¶170.

9. Claim 11: The platform as recited in claim 8, wherein the first prevailing exchange rate and the second prevailing exchange rate are different.

Supra §VI.A.3; EX1003, ¶171.

10. Claim 12: The platform as recited in claim 11, wherein the first prevailing exchange rate and the second prevailing exchange rate are automatically calculated in the trading server in different times by the trading server from a network including the at least one currency exchange server.

Supra §VI.A.3; EX1003, ¶172.

11. Claim 14

i. 14[a]: The platform as recited in claim 8, wherein the client machine is coupled to the trading server, the at least one currency exchange server and the at least one market exchange server via a network, and causes the trading server to:

Supra §VI.A.5(i); EX1003, ¶173.

ii. 14[b]: calculate automatically the second prevailing exchange rate from the network to ensure that the transaction only happens when the conditions are met with the second prevailing exchange rate.

Supra §VI.A.5(ii); EX1003, ¶174.

12. Claim 15: The platform as recited in claim 8, wherein the client machine is a desktop, a laptop, a server computer, a handheld wireless device, or a mobile phone.

Supra §VI.A.6; EX1003, ¶175.

13. Claim 16: The platform as recited in claim 4, wherein the costs and fees displayed on the display device of the client machine are dynamically updated in time per the first prevailing exchange rate or the second prevailing exchange rate.

Calo discloses or at least renders obvious wherein the costs and fees displayed on the display device of the client machine are dynamically updated in time per the first prevailing exchange rate. *Supra* §§VI.A.2(v), VI.A.7(v); EX1003, ¶176. *Calo*'s preview prices in the native currency are based on "real-time conversion from the foreign exchange rates." EX1004, [0030]. *Sellberg* further discloses receiving exchange rate updates "repeatedly and automatically" from a currency market to allow a trader to "continuously follow the updated exchange rates." EX1006, [0024], [0025], [0031]. A POSITA would have understood that costs and fees fluctuate with changes in exchange rates. EX1004, [0069]; EX1003, ¶177. Thus, a POSITA would have understood that the preview prices and fees provided "on a real-time basis" before a user places an order "are dynamically updated in time per the first prevailing exchange rate or the second prevailing exchange rate." EX1003, ¶177; EX1004, [0028]; *Supra*, §VI.A.1.

B. Ground 2: Claims 1, 3-4, 6-9, 11-12, and 14-16 are unpatentable under 35 U.S.C. §103(a) as obvious over *Calo* in view of *Rude* and in further view of *Szoc*.

1. Rationale and Motivation to Combine

A POSITA would have been motivated to combine *Calo* and *Rude* with an expectation of success. *Supra*, §VI.A.1. A POSITA would have been motivated to combine *Szoc* with *Calo* (as modified by *Rude*). EX1003, ¶¶178-185.

Szoc is analogous art to the '701 Patent. *Szoc* is in the same field of endeavor as the '701 Patent (and *Calo* and *Rude*). *Supra* §VI.A.1; EX1003, ¶179. *Szoc* discloses a system for “conducting transactions over a network” that provides “real-time foreign exchange rate quotes [and] cross-border payments.” EX1007, [0005]. *Szoc* is also pertinent to problems the '701 Patent was purportedly trying to solve. EX1003, ¶180; *Supra* §VI.A.1. *Szoc* seeks to mitigate the “volatile nature of exchange rates” by providing “real-time foreign exchange rate quotes that may be relied upon by consumers for a predetermined period of time.” EX1007, [0009], [0018]; EX1003, ¶180.

A POSITA would have been motivated to combine *Szoc*’s teachings related to exchange rate timing for limit transactions and displaying real-time rates with *Calo* (as modified by *Rude*). EX1003, ¶181. While *Calo* uses a “locked-in” rate at settlement, it leaves open exactly when the corresponding exchange rate is calculated, and it acknowledges volatility risks by reserving buffers for rate

fluctuations. EX1004, [0030]. *Szoc* teaches limit transactions that execute only when a client-specified exchange rate is achieved, meaning the system evaluates real-time rates at execution. EX1007, [0101]; EX1003, ¶181.

Szoc further discloses a “scrolling quote bar” which “provides a scrolling list of the foreign exchange rates ... displayed for various currencies with respect to the currently logged-in client’s native currency.” EX1007, [0083]. *Szoc*’s scrolling quote bar “may display realtime, constantly-changing rates,” indicating that updated rates are not only received in real time, but also are continuously displayed to the user. *Id.* A POSITA would have been motivated to combine *Szoc*’s teachings with *Calo* to provide traders with the most accurate information at the time of trade, thereby increasing transparency in volatile trading markets, and to ensure that limit orders are executed only when the conditions specified by the trader are met. EX1003, ¶182.

Moreover, a POSITA would have found it obvious to apply *Szoc*’s real-time display functionality to the costs and fees shown in *Calo*’s client interface. EX1003, ¶183. *Calo* discloses dynamically updating costs and fees based on a prevailing exchange rate, and *Szoc*’s teachings of continuously displaying real-time, fluctuating rates underscore the advantage of maintaining such information visibly and updated for the user. *Id.*; EX1004, [0030]; EX1007, [0083]. Given *Calo*’s concern for market volatility and exchange rate fluctuations, a POSITA would have recognized the

benefit of extending *Szoc*'s scrolling quote display mechanism to the costs and fees to enhance pricing transparency. *Id.*

Combining *Szoc*'s teachings with *Calo*'s system would predictably result in the exchange rate being determined right before execution (*e.g.*, to ensure that limit orders are carried out only when the trader's conditions are met). EX1007, [0018], [0049], [0101]; EX1003, ¶184. A POSITA would have been further motivated to combine these teachings to minimize exposure to rate fluctuations and reduce the need for reserve buffers, improving accuracy and giving users greater control in cross-currency trading. EX1007, [0018], [0049]; EX1003, ¶184. This modification aligns with the shared goal of optimizing automated foreign currency conversion in cross-border transactions. EX1003, ¶184.

A POSITA would have expected success combining *Szoc* with *Calo* (as modified by *Rude*) based on their compatible architectures and aligned objectives, and because *Szoc*'s techniques were already applied in a similar system. EX1003, ¶185. Each system operates within a computerized foreign transaction system and is implemented on appropriate hardware and software. EX1004, [0027], [0051]; EX1005, [0030], [0037]; EX1007, [0034]. *Szoc*'s quote bar, which provides real-time exchange rates to support conditional foreign currency transactions, is structurally and functionally compatible with *Calo*'s real-time foreign exchange conversions in generating preview prices. EX1004, [0030]; EX1007, [0036]. A

POSITA would have expected success combining Szoc's quote bar functionality with *Calo* because *Calo* already disclosed foreign exchange-based pricing and limit order functionality. EX1004, [0070]; EX1003, ¶185. Moreover, both *Calo* and *Szoc* seek to streamline cross-border financial transactions by automating currency exchange data, reinforcing their suitability for integration. EX1003, ¶185.

2. Independent Claim 1

i. 1[p]: A platform for trading an asset, the platform comprising:

Supra §VI.A.2(i); EX1003, ¶186.

ii. 1[a]: a trading server, coupled to a client machine associated with a user, receiving an indicator of a first currency from the client machine,

Supra §VI.A.2(ii); EX1003, ¶187.

iii. 1[b]: wherein the trading server is configured to couple to at least one currency exchange server and at least one market exchange server,

Supra §VI.A.2(iii); EX1003, ¶188.

iv. 1[c]: the trading server is further configured to calculate costs and fees in the first currency to own or sell the asset being traded in a second currency,

Supra §VI.A.2(iv); EX1003, ¶189.

- v. **1[d]: the costs and fees are caused to be displayed on a display device of the client machine and are dynamically changed in accordance with a first prevailing exchange rate between the first currency and the second currency, and even when a market value of the asset remains unchanged,**

Supra §VI.A.2(v); EX1003, ¶190.

- vi. **1[e]: and wherein the trading server is configured to conduct a transaction of the asset by transporting a transaction request to the market exchange server upon receiving an order from the trader,**

Supra §VI.A.2(vi); EX1003, ¶191.

- vii. **1[f]: and reach a settlement based on a second prevailing exchange rate as soon as the transaction of the asset is performed in accordance with conditions set by the trader,**

Calo discloses or at least renders obvious reaching a settlement based on a second prevailing exchange rate as soon as the transaction of the asset is performed in accordance with conditions set by the trader. *Supra* §VI.A.2(vii); EX1003, ¶¶127-130, 192-193.

Szoc provides additional implementation details regarding fulfilling limit orders. EX1003, ¶194. For “transactions that will execute ***only when and if a specific foreign exchange rate is available***,” *Szoc* teaches that the client enters a “desired exchange rate,” and the transaction executes only if that rate is achieved. EX1007, [0101]. It would have been obvious to a POSITA to combine *Szoc*’s teachings regarding limit transactions with *Calo* (as modified by *Rude*) so that the transaction of the asset is performed—and settlement is reached—as soon as the

trader's conditions are met. EX1007, [0018], [0049], [0101]; EX1003, ¶194. Doing so ensures that limit orders are executed only when the trader's conditions are met. EX1003, ¶194; *supra*, §VI.B.1.

viii. 1[g]: and wherein the second prevailing exchange rate is calculated from the at least one currency exchange server right before the transaction takes place,

Calo discloses or at least renders obvious that the second prevailing exchange rate is calculated from the at least one currency exchange server as discussed above. *Supra* §VI.A.2(viii); EX1003, ¶¶195-196. It would have been obvious to calculate the second prevailing exchange rate “right before the transaction takes place” based on *Szoc*. EX1003, ¶197. Similar to *Calo*, *Szoc* discloses displaying “realtime, constantly-changing rates[.]” EX1007, [0083]. When a client enters into “transactions that will execute **only when and if a specific foreign exchange rate is available**,” the client enters a “desired exchange rate,” and the transaction executes only if that rate is achieved. EX1007, [0101]. To do this, the system evaluates the exchange rate right before the transaction takes place. *Id.*; EX1003, ¶197. *Szoc* further discloses that if the specified rate is not met, the transaction may expire after a designated time period. EX1007, [0101]. A POSITA would have been motivated to use *Szoc*'s approach for limit orders to ensure that the execution rate used for settlement is determined right before the transaction based on a predefined value. *Supra* §VI.B.1; EX1003, ¶198.

- ix. **1[h]: executed costs and fees in the settlement per the second prevailing exchange rate are not identical to the displayed costs and fees with the first prevailing exchange before the transaction of the asset took place.**

Supra §VI.A.2(ix); EX1003, ¶199.

3. Claims 3, 4, 6, and 7

The *Calo-Rude-Szoc* combination discloses these claims for the same reasons as Ground 1. *Supra* §§VI.A.3-VI.A.6; EX1003, ¶200.

4. Claim 8

- i. **8[p]: A platform for trading an asset, the platform comprising:**

Supra §VI.B.2(i); EX1003, ¶201.

- ii. **8[a]: a client machine associated with a user, coupled to a trading server via the Internet, executing a software product to send an indicator of a first currency to the trading server,**

Supra §§VI.A.2(ii), VI.B.2(ii); EX1003, ¶202.

- iii. **8[b]: wherein the trading server is configured to couple to at least one currency exchange server and at least one market exchange server and**

Supra §§VI.A.2(iii), VI.B.2(iii); EX1003, ¶203.

- iv. **8[c]: configured to calculate costs and fees in the first currency to own or sell the asset being traded in second currency,**

Supra §§VI.A.2(iv), VI.B.2(iv); EX1003, ¶204.

- v. **8[d]: the client machine is caused to display the costs and fees on a display device thereof, the costs and fees being displayed are dynamically changed in accordance with a first prevailing exchange rate between the first currency and the second currency, and even when the market value of the asset remains unchanged, and**

Supra §§VI.A.2(v), VI.B.2(v); EX1003, ¶205.

- vi. **8[e]: wherein a transaction of the asset is conducted in the trading server in response to the market exchange server upon receiving an order from the client machine;**

Supra §§VI.A.2(vi), VI.B.2(vi); EX1003, ¶206.

- vii. **8[f]: the client machine receives a settlement based on a second prevailing exchange rate, wherein the second prevailing exchange rate is calculated by the trading server from the at least one currency exchange server right before the transaction takes place,**

Supra §§VI.A.2(vii), VI.B.2(vii); EX1003, ¶207.

- viii. **8[g]: executed costs and fees in the settlement per the second prevailing exchange rate are not identical to the displayed costs and fees with the first prevailing exchange before the transaction of the asset took place.**

Supra §§VI.A.2(viii), VI.B.2(viii); EX1003, ¶208.

- 5. **Claim 9: The platform as recited in claim 8, wherein the client machine is caused to keep displaying the costs and fees being dynamically updated in accordance with the first prevailing exchange rate updated constantly, even when the market value of the asset remains unchanged.**

The *Calo-Rude-Szoc* combination discloses the platform recited in claim 8.

Supra §VI.B.4; EX1003, ¶209. *Calo's* client machine displays costs and fees on a display device and the costs and fees displayed are dynamically changed in

accordance with a first prevailing exchange rate, even when the market value of the asset remains unchanged. *Supra* §VI.A.2(vii); EX1003, ¶210. To the extent the claim’s recited “keep displaying” requires more than displaying preview costs and fees “on a real-time basis,” it would have been obvious to keep displaying the costs and fees in view of *Szoc*. EX1003, ¶211. *Szoc* discloses a “scrolling quote bar” which “provides a scrolling list of the foreign exchange rates ... displayed for various currencies with respect to the currently logged-in client’s native currency.” EX1007, [0083]. *Szoc* also discloses that “the scrolling quote bar 430 may display realtime, constantly-changing rates.” *Id.* It would have been obvious to a POSITA to apply *Szoc*’s display teaching to the costs and fees in *Calo* as both references disclose dynamic, real-time updates and desire to provide updated information to traders. *Id.*; EX1004, [0030]; EX1003, ¶211. Given *Calo*’s acknowledgment of the volatility in market values and exchange rates, a POSITA would have recognized the benefit in applying *Szoc*’s real-time display functionality to *Calo*’s costs and fees to enhance the presentation of information to traders. EX1003, ¶211. A POSITA would have understood that costs and fees fluctuate with changes in exchange rates, and thus the client machine would be caused to keep displaying those costs and fees dynamically updated in accordance with the first prevailing exchange rate—even when the asset’s market value remains unchanged. EX1004, [0069]; EX1003, ¶211.

6. Claims 11, 12, 14, and 15

The *Calo-Rude-Szoc* combination discloses these claims for the same reasons as Ground 1. *Supra* §§VI.A.9-VI.A.12; EX1003, ¶212.

7. Claim 16: The platform as recited in claim 4, wherein the costs and fees displayed on the display device of the client machine are dynamically updated in time per the first prevailing exchange rate or the second prevailing exchange rate.

The *Calo-Rude-Szoc* combination discloses the platform as recited in claim 4. *Supra* §VI.A.4; EX1003, ¶213. *Calo* discloses that the costs and fees displayed on the display device of the client machine are dynamically updated in time per the first prevailing exchange rate. *Supra* §VI.A.2(v); EX1003, ¶214.

Szoc provides additional implementation details for displaying dynamically updated information. EX1003, ¶215. *Szoc*'s "scrolling quote bar" "provides a scrolling list of the foreign exchange rates ... displayed for various currencies with respect to the currently logged-in client's native currency." EX1007, [0083]. *Szoc* discloses that "the scrolling quote bar 430 may display realtime, constantly-changing rates." *Id.* A POSITA would have understood that because costs and fees fluctuate with changes in exchange rates, the same display interface would be advantageous to use to display pricing (*e.g.*, costs and fees) based on a first prevailing exchange rate (*e.g.*, a selected current rate at one moment), and then be dynamically updated to reflect second prevailing exchange rate (*e.g.*, a different

selected current rate) shortly after. EX1003, ¶215. Doing so would have been consistent with *Calo*'s goal of offering a "real-time system" that increases transparency and reduces "risks from price movement." *Id.*; see also EX1004, [0028]; EX1015, 479-86, 496; EX1019.

C. Ground 3: Claims 2, 5, 10, and 13 are unpatentable under 35 U.S.C. §103(a) as obvious over *Calo*, *Rude*, and *Sellberg*, in further view of *Davidowitz*.

1. Rationale and Motivation to Combine

A POSITA would have been motivated to combine *Calo*, *Rude*, and *Sellberg*. *Supra*, §VI.A.1; EX1003, ¶¶77-83. A POSITA would have been motivated to combine *Davidowitz* with *Calo* (as modified by *Rude* and *Sellberg*). EX1003, ¶¶216-221. *Davidowitz* is analogous art to the '701 Patent. EX1003, ¶217. *Davidowitz* is similarly in the field of automated financial trading systems that facilitate cross-border transactions involving different currencies, and specifically addresses pairs trading¹⁰ across international markets with real-time foreign exchange rate hedging and dynamic cost displays. *Id.*; EX1008, [0003], [0061]. *Davidowitz* is also pertinent to problems the '701 Patent is trying to solve, including challenges in cross-border

¹⁰ "Pairs trading ... involves the purchase of one or more securities while simultaneously selling (or selling short) one or more other securities." EX1008, [0005].

transactions, particularly currency differences, exchange rate volatility risks, and transparency in pricing. *Supra*, §VI.A.1 (discussing *Calo*, *Rude*, and *Sellberg*); EX1003, ¶¶217-218. *Davidowitz* monitors the relationships between securities denominated in different currencies and revalues securities in real time to a common currency. EX1008, [0003].

A POSITA would have been motivated to combine *Davidowitz*'s real-time cost display functionality with *Calo* (as modified by *Rude* and *Sellberg*). EX1003, ¶218. *Calo* discloses that preview prices are generated based on real-time exchange rates. EX1004, [0030]. *Davidowitz* discloses an automated system that can continuously monitor the various markets and automatically execute transactions based on the investor's specific parameters. EX1008, [0036], [0041]. *Davidowitz* expressly teaches using real-time foreign exchange data to continuously update and revalue asset costs, including displaying those updated values to the user. *Id.*; EX1003, ¶219. A POSITA would have recognized that combining *Davidowitz*'s more granular teachings regarding displaying updated asset prices with *Calo* would enhance *Calo*'s preview price feature—by providing more transparent and responsive cost updates as exchange rates fluctuate. EX1004, [0069]; EX1003, ¶219; EX1015, 476; EX1019, 6.

Moreover, *Sellberg* discloses “repeatedly” or periodically receiving updated exchange rates as often as “several times a second down to once an hour.” EX1006,

[0024]. A POSITA would have been motivated to incorporate *Sellberg*'s periodic update mechanism into the *Calo* system (as modified by *Rude*) to ensure that exchange rates are consistently refreshed at regular intervals. EX1003, ¶220. When combined with *Davidowitz*'s teachings on updating and displaying asset costs, this would enhance *Calo*'s preview pricing feature by ensuring that both exchange rates and asset valuations remain up-to-date in volatile markets. *Id.* Such a combination would improve pricing transparency and reduce the risk associated with fluctuating market conditions. *Id.*

A POSITA would have had a reasonable expectation of success in combining *Davidowitz*'s real-time cost display functionality with the trading or market servers disclosed in *Calo*, which already handles real-time data and order execution logic. EX1003, ¶221. This integration would have been a predictable improvement consistent with the shared goals of improving transparency and mitigating volatility in cross-border trading. *Id.*

2. Claim 2

- i. **2[a]: The platform as recited in claim 1, wherein the trading server is configured to: monitor the conditions in conjunction with a prevailing exchange rate calculated from the at least one currency exchange server and the market exchange server; and**

The *Calo-Rude-Sellberg* combination discloses or at least renders obvious the platform recited in claim 1. *Supra* §VI.A.2; EX1003, ¶¶222-223. *Calo* discloses

conditions set by a trader (*e.g.*, limit orders). *Supra* §VI.A.2(vii); EX1003, ¶223; EX1004, [0070].

Calo discloses monitoring conditions in conjunction with a prevailing exchange rate calculated from the at least one currency exchange server and the market exchange server. EX1003, ¶224. Prior to executing a trade (before step 301), the customer receives “a preview price on a real-time basis for a U.S. equity,” based on “both the real-time quote for price on the U.S. equity, as well as a real-time conversion from the foreign exchange rates.” EX1004, [0030]. The GBS (trading server) receives global exchange rates via the Foreign Exchange Facility (currency exchange server) and obtains equity market data from “the stock exchange 221 of the country from where the equities are being purchased” (market exchange server). *Id.*, [0027], [0050]. A POSITA would have understood that for *Calo*’s trading server to comply with limit orders, it would monitor the limit order thresholds (conditions) in conjunction with prevailing exchange rates (from the currency exchange server) and asset prices (from the market exchange server). EX1003, ¶225; EX1015, 470; EX1016, 45-46.

Moreover, *Davidowitz* discloses continuously monitoring updated market data, including equity prices and exchange rates, to determine whether trading conditions are met. EX1008, [0008], [0031], [0036]; EX1003, ¶226. A POSITA would have been motivated to incorporate *Davidowitz*’s continuous monitoring into

the *Calo-Rude-Sellberg* system to ensure compliance with limit orders. *Supra* §VI.C.1; EX1003, ¶226.

- ii. **2[b]: perform the transaction of the asset only when the conditions are met, wherein the conditions are periodically checked with respect to an updated market value of the asset and an updated prevailing currency exchange rate calculated from the at least one currency exchange server right before the transaction takes place.**

Calo discloses performing a transaction of the asset in accordance with conditions set by a trader (*e.g.*, a limit order). *Supra* §VI.A.2(vii); EX1003, ¶227-28; EX1004, [0030].

Calo discloses that the conditions are periodically checked with respect to an updated market value of the asset and an updated prevailing currency exchange rate. EX1003, ¶229. A POSITA would have understood that to execute a limit order the trading server would periodically check current market conditions because the order should only execute if and when the specified price condition is satisfied. EX1003, ¶229; EX1015, 470; EX1016, 45-46. This involves checking both the real-time (i) market value of the asset and (ii) prevailing exchange rate. EX1003, ¶229. Since these values fluctuate, *Calo's* trading server would periodically check them to determine whether the conditions for the transaction are met. EX1004, [0069]; EX1003, ¶229. Moreover, *Davidowitz* discloses an automated system that can monitor or check the various markets and automatically execute transactions by realizing specific investor parameters. EX1008, [0008]; EX1003, ¶230.

It would have been obvious to check the conditions periodically in view of *Sellberg*. EX1003, ¶231. *Sellberg* discloses receiving an updated exchange rate periodically (*e.g.*, “from several times a second down to once an hour”). EX1006, [0024]. For limit orders, a POSITA would have been motivated to periodically check for an asset’s updated market value with the same frequency as the exchange rate, because both fluctuate over time and the conditions are tied to both the market value and the exchange rate. By refreshing these values at regular intervals, the system can more accurately determine when trader-specified conditions (*e.g.*, limit orders) are met. EX1004, [0069]; EX1003, ¶231. This would ensure that transactions are executed based on current market conditions, thereby improving execution accuracy and reducing the risk of acting on stale data. EX1003, ¶231.

Sellberg discloses using a rate calculated from the at least one currency exchange server right before the transaction takes place. *Supra* §VI.A.2(viii); EX1003, ¶232.

3. Claim 5

- i. **5[a]: The platform as recited in claim 1, wherein the trading server is configured to: receive periodically an updated market value of the asset being traded from the market exchange server;**

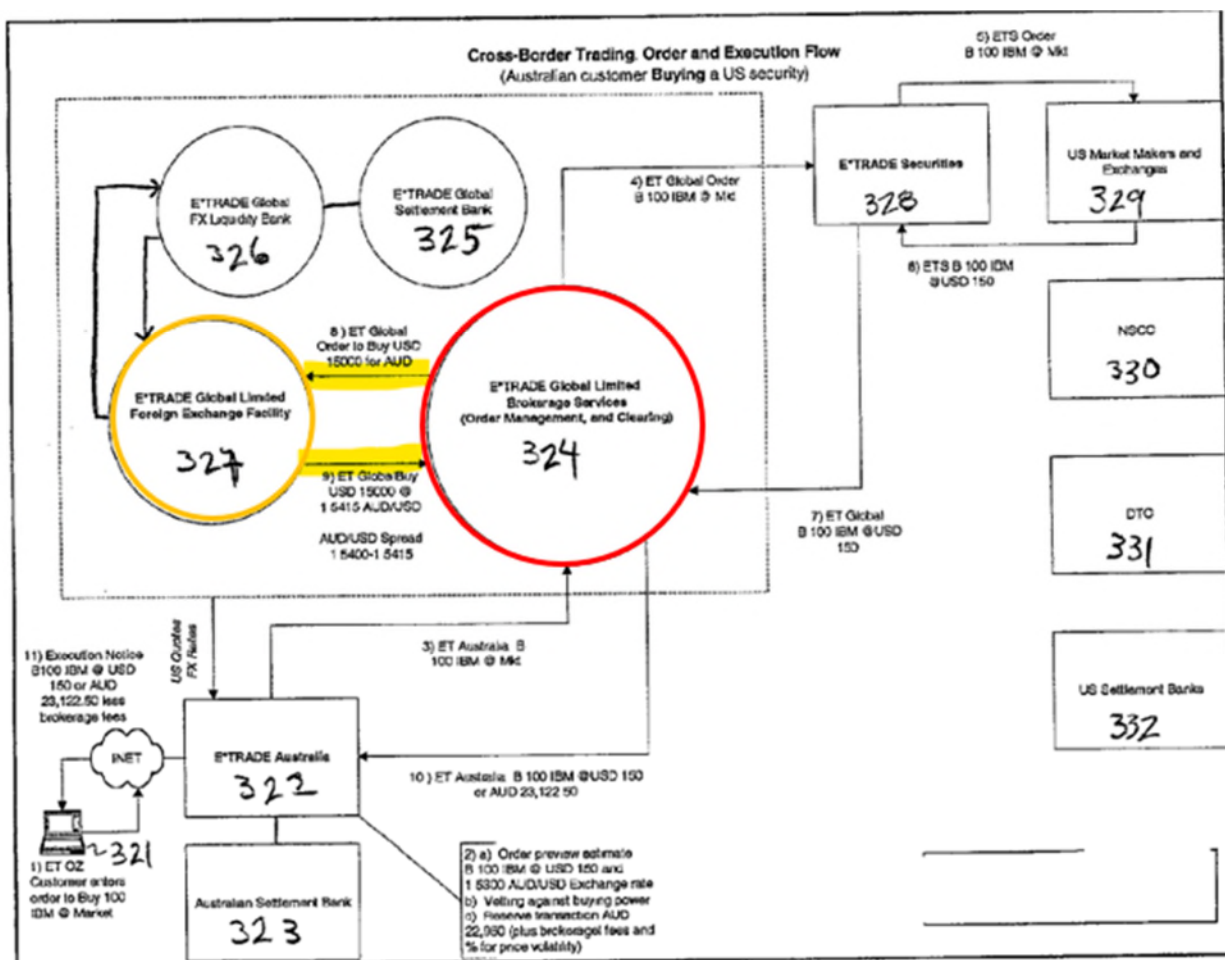
Calo discloses that, prior to executing a trade (prior to step 301), the customer receives preview prices “***based on both the real-time quote for price on the U.S. equity***, as well as a real-time conversion from the foreign exchange rates.” EX1004,

[0030]. The GBS also connects to “the stock exchange 221 of the country from where the equities are being purchased” (*i.e.*, market exchange server). *Id.*, [0027]. The “real-time quote for price of the U.S. equity” reflects updated market value of the asset being traded, sourced from the relevant market exchange (*e.g.*, the U.S. stock market for U.S. equities). *Id.*, [0030]; EX1003, ¶¶233-234. Once the customer places an order based on these cost estimates, but before the trade is executed, *Calo*’s system provides an order preview that reflects “the current U.S. ask price, the Australian dollar (AUD) equivalent based on the current ask price for USD based on the US principal amount, [and] the estimated commissions and fees for a cross-border trade.” *Id.* A POSITA would have understood that, to generate and maintain real-time preview pricing before order placement and to preview the order before execution, the trading server periodically receives an asset’s updated market value from the market exchange server. *Id.*

Moreover, *Sellberg* discloses “repeatedly” (periodically) receiving updated exchange rates as often as “several times a second down to once an hour.” EX1006, [0024]; EX1003, ¶235. A POSITA would have been motivated to apply *Sellberg*’s periodic update mechanism to the asset’s market value. *Supra* §VI.C.2(ii); EX1003, ¶235.

ii. **5[b]: receive periodically an updated prevailing currency exchange rate from the exchange server; and**

Calo discloses that, prior to executing a trade (prior to step 301), the customer receives preview prices “***based on*** both the real-time quote for price on the U.S. equity, as well as a ***real-time conversion from the foreign exchange rates.***” EX1004, [0030]; EX1003, ¶¶236-237. *Calo* further discloses that the Foreign Exchange Facility “provides indicative foreign exchange rates.” EX1004, [0027], [0061]. As Figure 3A shows, the GBS receives these exchange rates from the Foreign Exchange Facility:



EX1004, Fig. 3A (annotated). Moreover, *Sellberg* discloses periodically receiving updated exchange rates as often as “several times a second down to once an hour.” EX1006, [0024]. A POSITA would have found it obvious to incorporate *Sellberg*’s periodic update mechanism into *Calo*’s system to ensure that the exchange rates used for pricing and execution remain current. EX1003, ¶238.

- iii. **5[c]: determine whether the conditions have been met together with the updated market value of the asset and the updated prevailing currency exchange rate.**

Calo discloses conditions set by a trader (*e.g.*, limit orders). *Supra* §VI.A.2(vii); EX1003, ¶¶239-240; EX1004, [0070].

A POSITA would have understood that in order to evaluate whether such a limit order condition is met, the trading server determines whether the updated market value and the updated prevailing currency exchange rate together satisfy the specified threshold. EX1003, ¶241; EX1015, 470; EX1016, 45-46. Because *Calo*’s trading server uses both sources to present prices and execute trades, it determines whether conditions are met based on both updated values. EX1004, [0030]; EX1003, ¶241.

Davidowitz further reinforces this understanding by disclosing an automated system that continuously monitors multiple market variables and executes trades when specified investor parameters are satisfied. EX1008, [0008]; EX1003, ¶242. A POSITA would have been motivated to incorporate this functionality into *Calo*’s

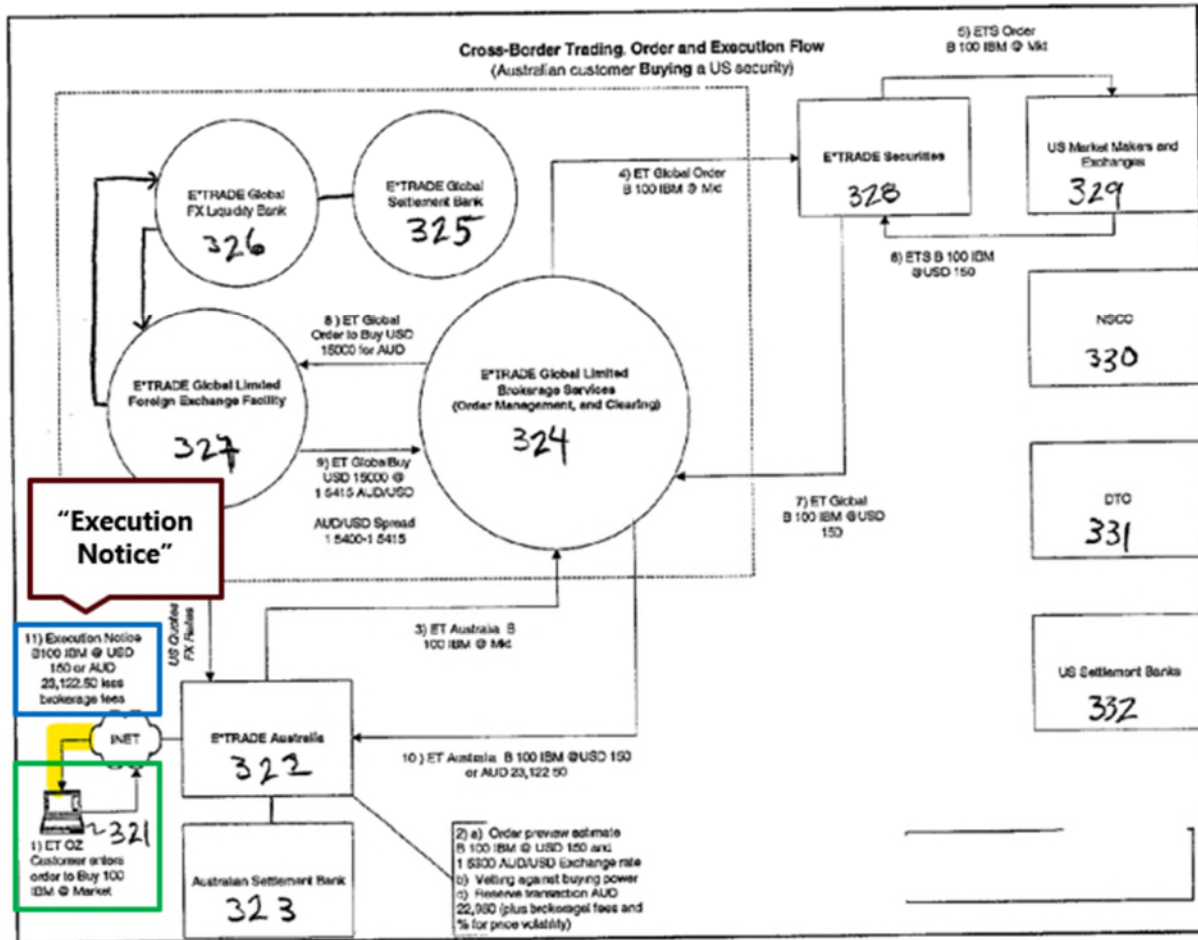
system to improve automation and ensure timely execution based on combined market and currency conditions. EX1003, ¶242.

4. Claim 10

- i. 10[a]: The platform as recited in claim 8, wherein the client machine shows a settlement soon after the trading server is configured to perform the transaction of the asset only when the conditions are met,**

The *Calo-Rude-Sellberg* combination discloses the platform recited in claim 8. *Supra*, §VI.A.7(i); EX1003, ¶¶243-244. *Calo* discloses performing a transaction of the asset in accordance with conditions set by a trader (*e.g.*, a limit order). *Supra* §VI.A.2(vii); EX1003, ¶244; EX1004, [0030].

Additionally, *Calo* discloses the client machine shows a settlement soon after the trading server is configured to perform the transaction. EX1003, ¶245. Once the conditions are met and the trade is executed, *Calo's* trading server “gives confirmation to the customer of the purchase” which includes “commissions and fees.” EX1004, [0030]; *supra* §VI.A.2(ix). As Figure 3A shows, the client machine (laptop in green) receives a settlement (“Execution Notice,” blue).



EX1004, Fig. 3A (annotated).

- ii. 10[b]: wherein the conditions are periodically checked in the trading server with respect to an updated market value of the asset and an updated prevailing currency exchange rate calculated from the at least one currency exchange server right before the transaction takes place.

Supra §VI.C.2(ii); EX1003, ¶246.

5. Claim 13: The platform as recited in claim 8, wherein the client machine is configured to receive periodically an updated market value of the asset being traded from the market exchange server as a result of an updated prevailing currency exchange rate.

The *Calo-Rude-Sellberg* combination discloses the platform recited in claim 8. *Supra*, §VI.A.7(v); EX1003, ¶¶247-248. *Calo* in view of *Sellberg* discloses a trading server configured to receive periodically an updated market value of the asset being traded from the market exchange server. *Supra*, §VI.C.3(i); EX1003, ¶248.

Additionally, *Calo* discloses that the client machine is configured to periodically receive this updated market value, because the user is shown a real-time preview price. EX1003, ¶249. Specifically, *Calo* discloses that, prior to executing a trade (prior to step 301), the customer receives “a preview price on a real-time basis for a U.S. equity ... based on both the real-time quote for price on the U.S. equity, as well as a real-time conversion from the foreign exchange rates.” EX1004, [0030]. Because the preview price is provided on a “real-time basis,” a POSITA would have understood that it is periodically updated (*e.g.*, “several times a second down to once an hour” as taught by *Sellberg*). EX1003, ¶249. Additionally, once the customer places an order, a preview of the order provides “the Australian dollar (AUD) equivalent based on the current ask price for USD based on the US principal amount.” EX1004, [0030]. A POSITA would have understood that, between the display of the preview price and the preview of the order, the asset’s market value

updates as a result of an updated exchange rate. EX1003, ¶249. This understanding is reinforced by *Calo*'s "reserve" to account for fluctuations in both the asset's market value and the currency exchange rate. *Id.*; EX1004, [0030].

Davidowitz further discloses continuously monitoring exchange rates and updating trading information for a trader based on or as a result of changing market conditions. EX1008, [0007]-[0008]; EX1003, ¶250. Combining *Davidowitz*'s more granular approach to updating the asset's market value would enhance *Calo*'s preview price feature—by providing more transparent and responsive cost updates as exchange rates fluctuate. EX1004, [0069]; EX1003, ¶¶250-251; EX1015, 476; EX1019, 6.

VII. SECONDARY CONSIDERATIONS

Petitioner is not aware of secondary considerations evidence that would rebut an obviousness finding. EX1003, ¶¶252-253. Petitioner reserves the right to rebut any purported objective evidence raised by Patent Owner.

VIII. CONCLUSION

Petitioner requests the Board institute IPR and cancel Claims 1-16 as unpatentable pursuant to 35 U.S.C. § 318(b).

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned hereby certifies that the word count under 37 C.F.R. § 42.24(a)(1) for the foregoing Petition for *Inter Partes* Review totals 13,998 words, within the 14,000-word limit allowed under 37 C.F.R. § 42.24(a)(1)(i), as measured by the word-processing system used to prepare the petition.

Respectfully submitted,

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Date: December 17, 2025

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CERTIFICATE OF SERVICE

In accordance with 37 C.F.R. §§ 42.6(e) and 42.105, the undersigned certifies that on December 17, 2025, a complete and entire copy of this **PETITION FOR INTER PARTES REVIEW OF CLAIMS 1-16 OF U.S. PATENT NO. 11,620,701** including exhibits and testimony relied upon and a power of attorney were served on Patent Owner via Federal Express, postage prepaid, at the correspondence address of record for the subject patent and counsel for Patent Owner in the related litigation:

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