No. A-____

IN THE
Supreme Court of the United States

TRADING TECHNOLOGIES INTERNATIONAL, INC.,

Petitioner,

v.

IBG LLC, INTERACTIVE BROKERS, LLC,

Respondents,

UNITED STATES,

Intervenor.

PETITIONER'S APPLICATION TO EXTEND TIME TO FILE PETITION FOR A WRIT OF CERTIORARI

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Inc.*

To the Honorable John G. Roberts, Jr., Chief Justice of the United States, as Circuit Justice for the Federal Circuit:

Pursuant to this Court's Rule 13.5, Petitioner Trading Technologies International, Inc. ("TT") respectfully requests an extension of 60 days, to and including October 18, 2019, to file a Petition for a Writ of Certiorari in this matter. The United States Court of Appeals for the Federal Circuit issued its judgment affirming the decisions of the Patent Trial and Appeal Board on May 21, 2019 (App. A). Absent an extension of time, the Petition would be due on August 19, 2019. TT is filing this application more than 10 days before that date. This Court has jurisdiction pursuant to 28 U.S.C. § 1254(1).

Background

TT owns U.S. Patent Nos. 7,685,055 ("the '055 patent"), 7,693,768 ("the '768 patent"), 7,818,247 ("the '247 patent"), and 7,412,416 ("the '416 patent"). Respondents IBG LLC and Interactive Brokers LLC (collectively, "IB") filed petitions requesting Covered Business Method ("CBM") Review of the '055, '768, and '416 patents. Another petitioner, TradeStation Technologies, Inc. ("TradeStation") filed a petition requesting CBM Review of the '247 patent. The Patent Trial and Appeal Board (the "Board") instituted CBM Review for all four patents and issued Final Written Decisions ("FWD") invalidating all of the claims (App. B; App. C; App. D; App. E). TT appealed all four decisions.

On October 26, 2017, the Federal Circuit docketed an appeal (18-1105) from the Board's FWD in CBM2016-00009, involving the '055 patent. TT appealed the Board's

erroneous conclusions that: (1) it had jurisdiction to institute CBM Review based on its mistaken belief that the '055 invention is not a technological invention, and (2) the '055 invention is not patent-eligible under 35 U.S.C. § 101. TT also raised the issue of whether the America Invents Act ("AIA"), through CBM Review, violates the U.S. Constitution.

On December 18, 2017, the Federal Circuit docketed an appeal (18-1302) from the Board's FWD in CBM2016-00054, involving the '768 patent. TT appealed the Board's erroneous conclusions that: (1) it had jurisdiction to institute CBM Review based on its mistaken belief that the '768 invention is not a technological invention, (2) the '768 invention is not patent-eligible under 35 U.S.C. § 101, and (3) the '768 invention is obvious under 35 U.S.C. § 103. TT also raised the issue of whether the AIA, though CBM Review, violates the U.S. Constitution.

On January 22, 2018, the Federal Circuit docketed an appeal (18-1438) from the Board's FWD in CBM2016-00087, involving the '416 patent. TT appealed the Board's erroneous conclusions that: (1) it had jurisdiction to institute CBM Review based on its mistaken belief that the '416 invention is not a technological invention, and (2) the '416 invention is not patent-eligible under 35 U.S.C. § 101. TT also raised the issue of whether the AIA, though CBM Review, violates the U.S. Constitution.

On January 22, 2018, the Federal Circuit docketed an appeal (18-1443) from the Board's FWD in CBM2016-00086, involving the '247 patent. TT appealed the Board's erroneous conclusions that: (1) it had jurisdiction to institute CBM Review based on its mistaken belief that the '247 invention is not a technological invention,

and (2) the '247 invention is not patent-eligible under 35 U.S.C. § 101. TT also raised

the issue of whether the AIA, though CBM Review, violates the U.S. Constitution.

On December 20, 2017, Appeal Nos. 18-1105 and 18-1302 were designated as

companion cases, to be assigned to the same merits panel. On January 31, 2018,

Appeal Nos. 18-1438 and 18-1443 were added to the companion-case group. On July

9, 2018, the United States filed a motion for leave to intervene in all four cases in

order to address TT's constitutionality challenges, and on July 31, 2018, those motions

were granted. On October 11, 2018, TradeStation filed a motion to withdraw from

Appeal No. 18-1443, which the court granted on October 18, 2018. On November 19,

2018, the Director of the United States Patent and Trademark Office filed a notice of

intervention.

On May 21, 2019, the United States Court of Appeals for the Federal Circuit

issued its judgment affirming the Board's decisions (App. A). It held that the patents

were invalid under 35 U.S.C. § 101. It declined to address TT's constitutionality

challenges and failed to address CBM jurisdiction or the obviousness of the claims of

the '768 patent under 35 U.S.C. § 103.

On July 31, 2019, TT filed a combined petition for panel rehearing and

rehearing en banc with respect to Appeal No. 18-1302. Accordingly, this Application is

with respect to Appeal Nos. 18-1105, 18-1438, and 18-1443.

<u>Reasons for Granting the Extension</u>

A 60-day extension is necessary and appropriate for several reasons:

1.   In addition to the four patents discussed above, nine of TT's other patents are the subject of appeals before the Federal Circuit between TT and IB. Additionally, four of TT's patents are currently being litigated in the Northern District of Illinois. That matter is scheduled to go to trial on February 3, 2020. As TT is involved in several other matters, an extension will enable TT to coordinate petition filings across the other TT proceedings, and also account for counsel's obligations in other matters to other courts. TT does not seek any unnecessary delay from the extension requested here, but only to insure fully developed and appropriate arguments in these multiple pending appeals.

2.   The companion case discussed above, Appeal No. 18-1302, was a part of the Federal Circuit's opinion in this case (App. A). Because TT has filed a combined petition for rehearing in that case, and extension would potentially allow for resolution of TT's rehearing petition in that companion case before TT's petition for a writ of certiorari would be due with respect to the other three companion cases.

3.   This case presents several extraordinarily important and complex issues warranting a carefully prepared petition for a writ of certiorari. The issues described above are fundamental to the operation the AIA and CBM Review proceedings. As such, it is important that the issues be properly framed to best assist the Court in its task of clarifying the law.

4.   On August 5, 2019, counsel for TT discussed extending the deadline for a Petition in this matter by 60 days with counsel for IB and counsel for the United States. Counsel for the United States indicated that it did not oppose an extension,

and accordingly, will not be prejudiced by an extension. Although counsel for IB indicated that it does oppose this motion, it is TT's position that IB also will not be prejudiced by an extension. Under either the current or the extended filing date, the Court would be able to hear TT's appeal, were it to grant a writ of certiorari, in its October 2019 term.

<div align="center">Conclusion</div>

For the foregoing reasons, TT respectfully requests that the time to file a Petition for a Writ of Certiorari be extended by 60 days, to and including October 18, 2019.

Respectfully submitted,

Date: August 7, 2019 _____

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CERTIFICATE OF SERVICE

Pursuant to Supreme Court Rule 29, I hereby certify that on August 7, 2019, I caused a copy of the foregoing Petitioner's Application To Extend Time To File Petition For A Writ of Certiorari (1) to be served via first-class mail, postage prepaid, on and (2) to be transmitted electronically to:

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Michael D. Gannon

APPENDICES

App. A	Slip Opinion, *Trading Techs. Int'l Inc. v. IBG LLC*, No. 18-1105, 18-1302, 18-1438, 18-1443 (Fed. Cir. May 21, 2019)
App. B	Final Written Decision, *IBG LLC v. Trading Techs. Int'l Inc.*, CBM2016-00009 (P.T.A.B. Apr. 26, 2017) ('055 patent)
App. C	Final Written Decision, *IBG LLC v. Trading Techs. Int'l Inc.*, CBM2016-00054 (P.T.A.B. Oct. 17, 2017) ('768 patent)
App. D	Final Written Decision, *IBG LLC v. Trading Techs. Int'l Inc.*, CBM2016-00087 (P.T.A.B. Nov. 17, 2017) ('416 patent)
App. E	Final Written Decision, *TradeStation Techs., Inc. v. Trading Techs. Int'l Inc.*, CBM2016-00086 (P.T.A.B. Nov. 17, 2017) ('247 patent)

Appendix

A

NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Appellant

v.

IBG LLC, INTERACTIVE BROKERS LLC,
Appellees

UNITED STATES,
Intervenor

2018-1105

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. CBM2016-00009.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Appellant

v.

IBG LLC, INTERACTIVE BROKERS LLC,
Appellees

UNITED STATES,
Intervenor

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2018-1302

_____

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. CBM2016-00054.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Appellant

v.

IBG LLC, INTERACTIVE BROKERS LLC,
Appellees

UNITED STATES,
Intervenor

_____

2018-1438

_____

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. CBM2016-00087.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,

Appellant

v.

UNITED STATES, ANDREI IANCU, UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,
Intervenors

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2018-1443

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Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. CBM2016-00086.

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Decided: May 21, 2019

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MICHAEL DAVID GANNON, Baker & Hostetler LLP, Chicago, IL, argued for appellant. Also represented by LEIF R. SIGMOND, JR., JENNIFER KURCZ; ALAINA J. LAKAWICZ, Philadelphia, PA; STEVEN BORSAND, JAY QUENTIN KNOBLOCH, Trading Technologies International, Inc., Chicago, IL.

BYRON LEROY PICKARD, Sterne Kessler Goldstein & Fox, PLLC, Washington, DC, argued for appellees in 2018-1105, 2018-1302, 2018-1438. Also represented by ROBERT EVAN SOKOHL, RICHARD M. BEMBEN, JON WRIGHT.

KATHERINE TWOMEY ALLEN, Appellate Staff, Civil Division, United States Department of Justice, Washington, DC, argued for intervenor United States. Also represented

by MARK R. FREEMAN, SCOTT R. MCINTOSH, JOSEPH H. HUNT; THOMAS W. KRAUSE, JOSEPH MATAL, FARHEENA YASMEEN RASHEED, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA.

AMY J. NELSON, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA, argued for intervenor Andrei Iancu in 2018-1443. Also represented by THOMAS W. KRAUSE, JOSEPH MATAL, FARHEENA YASMEEN RASHEED.

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Before HUGHES, MAYER, and LINN, *Circuit Judges.*

HUGHES, *Circuit Judge.*

Trading Technologies International, Inc., appeals four Covered Business Method Review decisions of the Patent Trial and Appeal Board finding Trading Technologies' patents ineligible under 35 U.S.C. § 101. Recently, this Court issued two precedential opinions affirming Board decisions finding several of Trading Technologies related patents unpatentable under § 101. *Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1084 (Fed. Cir. 2019) (*IBG I*); *Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1378 (Fed. Cir. 2019) (*IBG II*). The parties submitted supplemental briefing on whether *IBG I* dictated the outcome of the present appeals. The parties also discussed the effect of *IBG I* and *IBG II* at oral argument.

We are not persuaded by Trading Technologies' arguments that the patents at issue here, U.S. Patent Nos. 7,412,416 B2; 7,818,247 B2; 7,685,055 B2; and 7,693,768 B2, are distinguishable from the patents invalidated in *IBG I* and *IBG II*. Like *IBG I* and *IBG II*, the challenged patents "focus[] on improving the trader, not the functioning of the computer." *IBG II*, 921 F.3d at 1383; *see also IBG I*, 921 F.3d at 1091. Although these patents may provide different information than the patents in *IBG I* and

IBG II, information is "intangible" and its "particular content . . . does not change its character as information." *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016). We therefore hold that *IBG I* and *IBG II* control and affirm the Board's decisions.

We also find Trading Technologies waived its constitutional arguments. *See IBG II*, 921 F.3d at 1385.

AFFIRMED

Appendix

B

UNITED STATES PATENT AND TRADEMARK OFFICE
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BEFORE THE PATENT TRIAL AND APPEAL BOARD
_____

IBG LLC and INTERACTIVE BROKERS LLC,
Petitioner,

V.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Patent Owner.
_____

Case CBM2016-00009
Patent No. 7,685,055 B2
_____

Before SALLY C. MEDLEY, MEREDITH C. PETRAVICK, and
JEREMY M. PLENZLER, *Administrative Patent Judges*.

PETRAVICK, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
Covered Business Method Patent Review
35 U.S.C. § 328(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

A. *Background*

IBG LLC and Interactive Brokers LLC[1] (collectively, "Petitioner") filed a Petition (Paper 5, "Pet.") on October 23, 2015 that requests review under the transitional program for covered business method patents of U.S. Patent No. 7,685,055 B2 (Ex. 1001, "the '055 patent"). Petitioner challenges the patentability of claims 1–19 ("the challenged claims") of the '055 patent under 35 U.S.C. §§ 101 and 103. On April 28, 2016, we instituted a covered business method patent review on the following grounds:

Ground	Prior Art	Challenged Claims
§ 101	n/a	1–19
§ 103	TSE[2]	1, 3, 4, 6–15 and 17–19
§ 103	TSE and Gutterman[3]	2 and 5
§ 103	TSE and Belden[4]	16

Paper 20 ("Institution Decision" or "Inst. Dec.").

Thereafter, Trading Technologies International, Inc. ("Patent Owner") filed a Patent Owner's Response on July 21, 2016 (Paper 32, "PO. Resp.")

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[1] This proceeding was terminated with respect to CQG, INC. and CQGT, LLC and they are no longer petitioners in this proceeding. *See* Paper 16.
[2] Tokyo Stock Exchange Operation System Division, FUTURES/OPTION PURCHASING SYSTEM TRADING TERMINAL OPERATION GUIDE (1998) (Ex. 1008).
[3] Gutterman et al., U.S. Patent No. 5,297,031 (issued Mar. 22, 1994) (Ex. 1006).
[4] Belden et al., WO 90/11571 (published Oct. 4, 1990) (Ex. 1010).

and Petitioner filed a Reply (Paper 42, "Pet. Reply") to Patent Owner's Response.

Patent Owner filed a Motion for Observations (Paper 52, "PO Mot. for Observations") and Petitioner filed a response (Paper 54) to Patent Owner's Motion for Observations.

Petitioner filed a Motion to Exclude (Paper 49, "Pet. Mot. to Exclude"), and Patent Owner filed an Opposition (Paper 57) to Patent Owner's Motion. Petitioner filed a Reply (Paper 60) in support of its Motion.

Patent Owner filed a Motion to Exclude (Paper 59, "PO Mot. to Exclude") and Petitioner filed an Opposition (Paper 55) to Patent Owner's Motion. Patent Owner filed a Reply (Paper 61) in support of its Motion.

We held a hearing of this case on January 6, 2017. Paper 70 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 328(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–19 of the '055 patent are patent ineligible under 35 U.S.C. § 101.

B. Related Matters

The '055 patent is the subject of numerous related U.S. district court proceedings. Pet. 2–3; Paper 8, 2–8; Paper 17, 1.

The '055 patent was the subject of a petition for covered business method patent review in *TD Ameritrade Holding Corp. v. Trading Technologies International, Inc.,* CBM2014-00137 (PTAB). In CBM2014-

00137, covered business method patent review terminated prior to entry of a final written decision, due to settlement between the parties.

C. The '055 Patent

The '055 patent is titled "System and Method for Automatic Re-positioning of Market Information in a Graphical User Interface," and issued March 23, 2010, from Application No. 11/417,547 filed May 3, 2006. Ex. 1001, 1.

The '055 patent discloses that many exchanges throughout the world use electronic trading. *Id.* at 1:36–38. Exchange participants use specialized interactive trading screens to monitor positions on the exchange. *See Id.* at 2:3–6. "The bids and asks in the market make up the market data and everyone logged on to trade can receive this information if the exchange provides it." *Id.* at 2:27–28.

The '055 patent discloses a graphical user interface ("GUI") displaying information related to a commodity and a method of automatically re-positioning the information. *Id*. at Abstract. The '055 patent's Figure 16A is reproduced below.
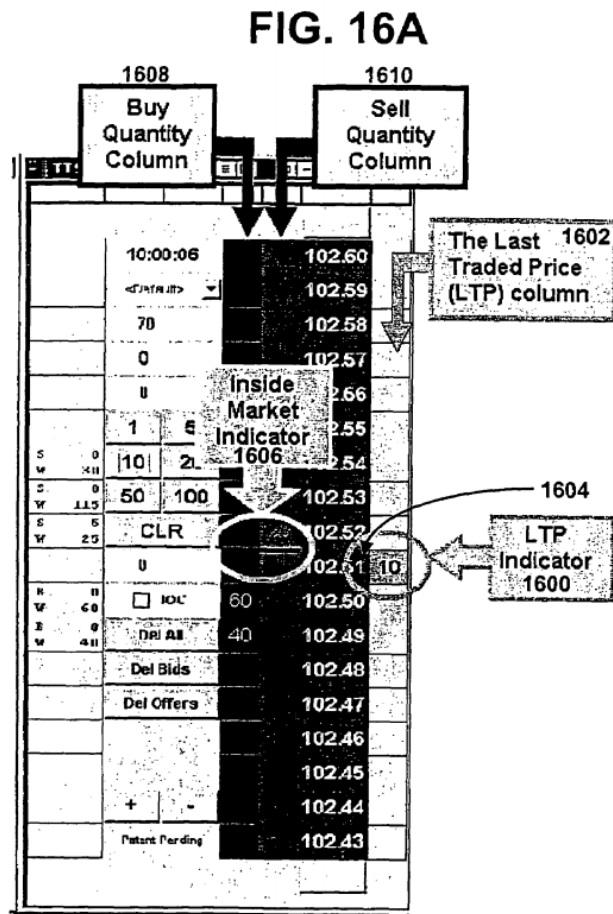
FIG. 16A

Figure 16A depicts the GUI of the '055 patent. The GUI includes a plurality of columns, including a static price axis, which includes a plurality of price values for the commodity, such as "102.60." *Id.* at Fig. 16A; 7:67–8:18. Columns 1608 and 1610 are aligned with the static price axis and dynamically display buy (i.e., bid) quantities and sell (i.e., ask) quantities, respectively, for the corresponding price values of the static price axis. *Id.* at Fig. 16A; 26:10–11. Column 1602 displays the last traded price ("LTP"), and the inside market (i.e., the highest buy price and lowest sell price at which there is quantity currently in the market) is marked with inside market indicator 1606, which is a solid line spanning columns 1608 and 1610. *Id*. at Fig. 16A; 26:3–14.

The GUI can re-position a designated item of interest, such as the LTP or inside market indicator, in the display. *Id.* at 26:4–45. For example, if the LTP or inside market moves a designated number of cells away from the top or bottom of the display screen, the display, including the static price axis, is repositioned so that LTP or inside market is centered on the display. *See Id.* Manual re-positioning can also be used in conjunction with automatic re-positioning. *Id.* at 26:33–37.

D. Illustrative Claim

Claims 1 and 17 of the '055 patent are independent. Claim 1 recites a method, and claim 17 recites a corresponding computer readable medium. Claim 1 of the '055 patent is illustrative of the challenged claims and is reproduced below.

> 1. A method for re-positioning a static price axis on a graphical user interface for displaying market information of a commodity being traded at an electronic exchange, the method comprising:
>
>   receiving market information relating to a commodity from an electronic exchange via a computing device, the market information comprising an inside market with a current highest bid price and a current lowest ask price for the commodity;
>
>   displaying a first plurality of price levels along a static price axis on a graphical user interface of a display device associated with the computing device, where the first plurality of price levels range from a lowest value to a highest value along the static price axis;
>
>   in response to an input command received via an input device associated with the computing device, adjusting the first plurality price levels among a range of price levels to an adjusted plurality of price levels including the first plurality of price levels;

displaying a bid and ask display region on the graphical user interface, the bid and ask display region comprising a plurality of locations corresponding to the first plurality of price levels displayed along the static price axis, wherein each location corresponds to one of the first plurality of price levels, and wherein a number of the plurality of locations changes according to adjusting the first plurality of price levels;

displaying a first indicator representing a quantity associated with the current highest bid price at a first location in the plurality of locations of the bid and ask display region, wherein the first indicator ascends or descends the static price axis as changes in the current highest bid price occur as a result of each of the plurality of price levels along the static price axis not changing positions on the graphical user interface unless a reposition command is received;

displaying a second indicator representing a quantity associated with the current lowest ask price at a second location in the plurality of locations of the bid and ask display region, wherein the second indicator ascends or descends the static price axis as changes in the current lowest ask price occur as a result of each of the plurality of price levels along the static price axis not changing positions on the graphical user interface unless the reposition command is received;

receiving the reposition command to reposition the static price axis when a designated price is within a designated number of price levels from the lowest value or the highest value along the static price axis; and

responsive to receiving the reposition command, automatically re-positioning the static price axis on the graphical user interface such that a current inside market price is displayed at a new desired location.

II. ANALYSIS

A. Claim Construction

In a covered business method patent review, the Board interprets claim terms in an unexpired patent according to the broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.300(b); *see Cuozzo Speed Techs. LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). Under that standard, and absent any special definitions, we give claim terms their ordinary and customary meaning, as they would be understood by one of ordinary skill in the art at the time of the invention. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definitions for claim terms must be set forth with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

i. "static price axis"

Petitioner argues that the '055 patent defines "static price axis" as "a price column where prices 'do not normally change positions unless a re-centering command is received.'" Pet. 16–17 (citing Ex. 1001, 8:16–18; Ex. 1003 ¶ 71).

Patent Owner proposes two "clarifications" to this definition. PO Resp. 40–41. First, Patent Owner argues that "the construction requires that the price levels do not change positions unless a re-centering *or repositioning command* is received" to be consistent with the claim language itself. *Id.* at 40. Second, Patent Owner argues that "the construction should [not] be limited to a price column, but should refer to a reference line." *Id.*

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Additionally, Patent Owner argues that a price axis is "a reference line, against which bids/ask[s] are plotted, that does not skip price levels" and that "a price level is a location/area provided on the screen with which a price may be (but is not required to be) displayed." *Id.* at 41 (citing Ex. 2169 ¶¶ 75–81).

Upon consideration of the parties' arguments and evidence, we are persuaded that the broadest reasonable construction, in light of the specification of the '055 patent, of "static price axis" is a price column or reference line where prices do not normally change positions unless a re-centering or re-positioning command is received. This is consistent with the '055 patent, which states:

> It is to be understood that, in this context, static does not mean immovable, but rather means fixed in relation. For example, with a static price scale, the scale itself may be movable, but the prices represented remain fixed in relation to each other, subject to consolidation or expansion.

Ex. 1001, 4:53–58. This also is consistent with the claim language, itself, which includes steps of receiving a re-positioning command and, in response, re-positions the static price axis. Ex. 1001, 34:60–67. We also are persuaded that a "static price axis" includes a reference line along which bids or asks are plotted. This is consistent with the '055 patent disclosure of the static price axis and the plain meaning of the term. *See Id.* at 7:67–8:16, Ex. 2071, 4 (dictionary definition of "axis").

We, however, are not persuaded that the broadest reasonable interpretation requires a price axis that does not skip price levels and that price levels are locations/areas provided on the screen with which a price may be (but is not required to be) displayed. Patent Owner's proposed

clarification is inconsistent with the '055 patent. The '055 patent discloses that

> [t]he representative prices for the given commodity are shown in column 304 [(i.e., the price axis)], where the prices are static and increment in "ticks," where a tick is the minimum change in a price value that is set by the exchange for each commodity. The prices can be displayed as ticks, as multiples of ticks or in any other fashion. . . . Other price display convention may alternatively be used, as long as the requisite price information is conveyed to the user.

Ex. 1001, 7:67–8:9; *see also Id.* at 7:43–50 (disclosing that the static prices can be displayed in any matter and that just market depth levels or working orders can be displayed). The '055 patent also discloses displaying indicators in only a portion of a cell because a price falls between prices in a static price scale. *See Id.* at 13:58–67, 17:65–18:2, 18:47–51, 29:25–37.

We determine that the broadest reasonable interpretation in light of the specification of the '055 patent of static price axis is a price column or reference line where prices do not normally change positions unless a re-centering or re-positioning command is received.

ii. "computer readable medium"

Claims 17–19 are directed to "[a] computer readable medium having computer-readable instructions thereon." *See* Ex. 1001, 36:1–2. Petitioner contends that, when given the broadest reasonable interpretation, the "computer readable medium" of claims 17–19 encompasses transitory, propagating signals. Pet. 33–34 (citing *In re Nuijten*, 500 F.3d 1346, 1357 (Fed. Cir. 2007)).

Patent Owner argues that it would be unreasonable to construe claims 17–19 as encompassing signals *per se*. PO Resp. 25–26. First, Patent Owner argues that "the USPTO guidance relied upon" is directed to examination, which is pre-issuance, and these proceedings are post-issuance. *Id.* at 25. Patent Owner contends that "it would be unreasonable to adopt a construction that would have made a patent invalid at the time of issuance." *Id.* Second, Patent Owner argues that intrinsic evidence in the prosecution history show that the claims are directed to non-transitory media and that this is consistent with the specification of the '055 patent, which describes the relevant field as being interface software run on an end-user computer or terminal. *Id.* (citing Ex. 1002, 165, Ex. 1001, 2:1–6, 4:60–5:7).

Upon consideration of the parties' arguments and evidence, we are persuaded that the broadest reasonable construction, in light of the specification of the '055 patent, of computer readable medium encompasses transitory, propagating signals. We are not persuaded by Patent Owner that this construction is inconsistent with the specification of the '055 patent. We are not persuaded that, because the '055 patent describes the software running on an end-user computer or terminal, the computer readable medium is limited to non-transitory media. As Petitioner points out, "[t]he specification of the '055 patent neither defines nor provides examples of a computer-readable medium." Pet. 33. It does not limit computer readable medium to non-transitory media or preclude transitory propagating signals per se. *See Subject Matter Eligibility of Computer-Readable Media,* 1351 Off. Gaz. Pat. Office 212 (Feb. 23, 2010) ("The broadest reasonable interpretation of a claim drawn to a computer readable medium . . . typically

covers forms of non-transitory tangible medium and transitory propagating signals per se . . . .").

Patent Owner argues that "the USPTO guidance relied upon" is directed to examination in a pre-issuance context and, thus, should not be relied upon in a post-issuance context. PO Resp. 25. It is not clear from Patent Owner's argument to what USPTO guidance Patent Owner is referring as Patent Owner provided no citation to any USPTO guidance. *See Id.* In our Institution Decision, we cited *Ex parte Mewherter,* 107 USPQ2d 1857, 1859–63 (PTAB May 8, 2013) (precedential). Inst. Dec. 25, n.7. *Ex parte Mewherter* refers to the guidance in *Subject Matter Eligibility of Computer-Readable Media. Ex parte Mewherter,* 107 USPQ2d at 1859. Inasmuch as Patent Owner's argument is directed to *Subject Matter Eligibility of Computer-Readable Media*, Patent Owner's argument is unpersuasive. Although the guidance provided in *Subject Matter Eligibility of Computer-Readable Media* is not binding upon the Board, Patent Owner provides no persuasive reason for the Board to depart from this guidance. Like in a pre-issuance context, during covered business method patent review, claims are given their broadest reasonable interpretation in light of the specification. 37 C.F.R. § 42.300(b); *see Cuozzo Speed Tech.*, 136 S. Ct. at 2144–46.

Further, we are not persuaded by Patent Owner that intrinsic evidence in the prosecution history shows that the claims are directed to non-transitory media. *See* PO Resp. 25. Patent Owner directs our attention to a statement made by the examiner in the prosecution history of the '055 patent — "a computer readable medium (known in the computer art as a floppy disk, cd-rom, hard drive, zip drive, jazz drive etc.)." *Id.* (quoting Ex. 1002,

165). Contrary to Patent Owner's argument, this statement does not limit computer readable medium to non-transitory media but allows for other types of media.

We determine that the broadest reasonable interpretation of "computer readable medium having computer-readable instructions thereon," in light of the specification of the '055 patent, encompasses transitory, propagating signals.

iii. Other Terms

We do not need to construe any other claim terms for purposes of our decision. *See, e.g., Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) ("[C]laim terms need only be construed 'to the extent necessary to resolve the controversy.'") (citation omitted).

B. Requirements for Covered Business Method Patent Review

Section 18 of the AIA[5] provides for the creation of a transitional program for reviewing covered business method patents. Section 18 limits review to persons or their privies who have been sued or charged with infringement of a "covered business method patent," which does not include patents for "technological inventions." AIA § 18(a)(1)(B), (d)(1); *see* 37 C.F.R. § 42.302.

In compliance with 37 C.F.R. § 42.302(a), Petitioner certifies that it has been sued for infringement of the '055 patent. Pet. 3; *see* Paper 8, 3.

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[5] Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284, 329 (2011) ("AIA").

i. "Method or Corresponding Apparatus for Performing Data Processing or Other Operations Used in the Practice, Administration or Management of a Financial Product or Service"

The statute defines a "covered business method patent" as

[a] patent that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service.

AIA § 18(d)(1); *see* 37 C.F.R. § 42.301(a). A covered business method patent can be broadly interpreted to encompass patents claiming activities that are financial in nature. Transitional Program for Covered Business Method Patents—Definitions of Covered Business Method Patent and Technological Invention, 77 Fed. Reg. 48734, 48735 (Aug. 14, 2012); *Blue Calypso, LLC v. Groupon, Inc.,* 815 F.3d 1331, 1338–41 (Fed. Cir. 2016) (determining that a patent was a covered business method patent because it claimed activities that are financial in nature); *Unwired Planet, LLC v. Google, Inc.,* 841 F.3d 1376, n. 5 (Fed. Cir. 2016) (stating that "we endorsed the 'financial in nature' portion of the standard as consistent with the statutory definition of 'covered business method patent' in *Blue Calypso*"), *Versata Development Group, Inc. v. SAP America, Inc.,* 793 F.3d 1306, 1324–25 (Fed. Cir. 2015) ("[The statute] on its face covers a wide range of finance-related activities.").

A patent need have only one claim directed to a covered business method to be eligible for review. 77 Fed. Reg. at 48,736 (Response to Comment 8). We take claim 1 as representative.

Petitioner contends that the '055 patent is a covered business method patent because it claims a method or corresponding apparatus for performing

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data processing or other operations used in the practice, administration, or management of a financial product or service. Pet. 3–5. Petitioner argues that claims 1 and 17 are directed to a method and corresponding apparatus for displaying and re-positioning market data used for trading commodities, which is a financial activity. *Id.* at 4–5. Petitioner additionally argues that claim 16 claims a financial activity, because it recites sending a trade order to an electronic exchange. *Id.* Petitioner further argues that the '055 patent discloses that it is directed to electronic trading, which is a financial activity. *Id.* (citing Ex. 1001, 1:29).

Patent Owner disagrees. Patent Owner does not dispute that the claims of the '055 patent "include financial terms" but disputes that the claims perform data processing or other operations, as required by the statute. PO Resp. 26–28. First, Patent Owner argues that "data processing" should be interpreted according to the definition of "data processing" found in the glossary for class 705 of the United States Patent Classification System, which is "[a] systematic operation on data in accordance with a set of rules which results in a <u>significant change in the data</u>." *Id.* at 26–27 (quoting Ex. 2121, 4). Patent Owner argues that the claims of the '055 patent are not directed to data processing under this definition because the claims are concerned with displaying information in a specific manner and not concerned with processing the information that is displayed. PO Resp. 27. Patent Owner asserts that the claimed invention is not directed to a business method. *Id.* at 27–28. According to Patent Owner, the legislative history "makes clear that improvements to software tools or GUIs, even if used for trading or other financial activities, were intended to be outside the scope of CBM [review]." *Id.* at 34 (citing Ex. 2126, S5428, S5433 (157

Cong. Rec. S5428 (daily ed. Sept. 8, 2011) (statements of Sens. Schumer and Durbin)).

As an initial matter, Patent Owner's arguments concerning the legislative history are not persuasive. Although the legislative history includes certain statements that certain novel software tools and graphical user interfaces that are used by the electronic trading industry worker are not the target of § 18 of the AIA (*see* Ex. 2126, S5428, S5433) the language of the AIA, as passed, does not include an exemption for user interfaces for commodities from covered business method patent review. Indeed, "the legislative debate concerning the scope of a CBM review includes statements from more than a single senator. It includes inconsistent views . . . ." *Unwired Planet*, 841 F.3d at 1381. For example, in contrast to the statements cited by Patent Owner, the legislative history also indicates that "selling and trading financial instruments and other securities" is intended to be in the scope of covered business method patent review. *See* Ex. 2126, S5432 (statements of Sen. Schumer). "[T]he legislative history cannot supplant the statutory definition actually adopted. . . . The authoritative statement of the Board's authority to conduct a CBM review is the text of the statute." *Unwired Planet*, 841 F.3d at 1381. Each claimed invention has to be evaluated individually to determine if it is eligible for a covered business method patent review. A determination of whether a patent is eligible for a covered business method patent review under the statute is made on a case-by-case basis. 37 C.F.R. § 42.301(b).

Turning to the '055 patent, we are persuaded by Petitioner that the '055 patent is a covered business method patent. According to the specification of the '055 patent, "the present invention is directed to

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electronic trading" (*Id.* at 1:28) and, in particular, to repositioning market information in a GUI. (*Id.* at 3:3–5). The information relates to tradable objects, which are financial products, such as stocks, options, bonds, futures, currency, etc. *Id.* at 5:8–17. The '055 patent discloses that the invention involves processing the information for display — "[t]he trading application . . . processes this information." Ex. 1001, 6:26–30.

The disclosed invention is reflected in claim 1 of the '055 patent, which is directed to "[a] method for repositioning a static price axis on a graphical user interface for displaying market information of a commodity being traded at an electronic exchange." Ex. 1001, 34:15–17. The claimed method recites steps of displaying market information received from an electronic exchange along a static price axis, adjusting the static price axis, and repositioning the static price axis. *Id.* at 34:19–67.

Electronic trading is a financial service or activity. Tradable objects are financial products. A method of computing and displaying financial information for a tradable object on a graphical user interface for use in electronic trading is a method for performing data processing or other operations used in the practice, administration, or management of a financial product or service. We, thus, are persuaded by Petitioner that the '055 patent is a covered business method patent. *See* Pet. 4–5, Pet. Reply. 29–30.

Patent Owner argues that the statute requires that the "data processing" cause a significant change in the data, and that data processing that merely displays the data, like the data processing disclosed in the '055 patent, is not significant. PO Resp. 26–27. Patent Owner's argument is based upon the assumption that "data processing" in the statute is interpreted according to the definition of "data processing" found in the glossary for

class 705 of the United States Patent Classification System. *See Id.* Patent
Owner, however, does not sufficiently explain why this definition is
controlling, as opposed to the plain meaning of "data processing." We, thus,
are not persuaded that "data processing" as recited by the statute precludes
data processing for the purpose of displaying the data. As pointed out
above, the '055 patent, itself, discloses processing market information
received from an electronic exchange. Ex. 1001, 6:26–30. We, thus, are not
persuaded that the '055 patent does not claim "performing data processing . .
. used in the practice, administration, or management of a financial product
or service" (AIA § 18(d)(1)).

In any event, the statute does not limit covered business method
patents to only those that claim methods for performing data processing used
in the practice, administration, or management of a financial product or
service. It includes methods for performing "other operations" used in the
practice, administration, or management of a financial product or service.
Claim 1's method for repositioning a static price axis on a graphical user
interface for displaying market information of a commodity being traded at
an electronic exchange is an operation used in the practice, administration,
or management of a financial product or service.

We determine that Petitioner has shown by a preponderance of the
evidence that the '055 patent is a covered business method patent.

ii. Technological Invention Exception

Even if a patent includes claims that would otherwise be eligible for treatment as a covered business method, review of the patent is precluded if the claims cover only "technological invention[s]," as defined by 37 C.F.R. §42.301(b). The definition of "covered business method patent" in § 18(d)(1) of the AIA does not include patents for "technological inventions."

To determine whether a patent is for a technological invention, we consider "whether the claimed subject matter as a whole [1] recites a technological feature that is novel and unobvious over the prior art; and [2] solves a technical problem using a technical solution." 37 C.F.R. § 42.301(b). The following claim drafting techniques, for example, typically do not render a patent a "technological invention":

> (a) Mere recitation of known technologies, such as computer hardware, communication or computer networks, software, memory, computer-readable storage medium, scanners, display devices or databases, or specialized machines, such as an ATM or point of sale device.

> (b) Reciting the use of known prior art technology to accomplish a process or method, even if that process or method is novel and non-obvious.

> (c) Combining prior art structures to achieve the normal, expected, or predictable result of that combination.

Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,763–64.

Both prongs must be satisfied in order for the patent to be excluded as a technological invention. *See Versata*, 793 F.3d at 1326–7.

Petitioner contends that the claims of the '055 patent do not recite a technological feature that is novel and unobvious over the prior art and do not solve a technical problem using a technical solution. Pet. 6–12. Petitioner argues that the claims are "implemented using conventional

computer hardware such as personal computers, servers, networks, displays, and input devices and therefore do not include a technological feature or implement a technological solution." *Id.* at 6–7. Petitioner also argues that the '055 patent solves a business problem: "reading a display of prices for a commodity and entering a trade order before the price for the commodity changes." *Id.* at 8–9 (citing Ex. 1001, 2:16–17, 35–67). Petitioner cites to the Declaration of Kendyl A. Roman (Ex. 1003) and the Declaration of David Rho (Ex. 1004) for support.

Patent Owner argues that "Petitioners fail to address whether the claims recite a technical feature that is purportedly novel and unobvious" and contends that the claimed combination of the adjusting and repositioning feature with the static price axis and dynamic indicators is novel and unobvious. PO Resp. 29, 31–32. Patent Owner, further, argues that the claims solve a technical problem with a technical solution. *Id.* at 29–32. According to Patent Owner, the claimed invention solves the problem of indicators moving off the display as the market data changes. *See Id.* at 9. Patent Owner contends:

> Speed, efficiency, and usability problems were created for some
> users because, if the indicators were located off, or close to off,
> the displayed static price axis, the user would have to spend
> time taking an action such as scrolling or manually
> repositioning to find the state of the market, and the GUI tool
> did not convey the state of the market precisely or efficiently
> for these users.

Id. Patent Owner cites to the Declaration of Eric Gould-Bear (Ex. 2168) and the Declaration of Dan R. Olsen, Jr. (Ex. 2174) for support.

Contrary to Patent Owner's argument, Petitioner contends in the Petition that the claims do not recite a technical feature that is novel and

unobvious. Pet. 6–8. Claim 1 recites a method that requires the display of certain information in a certain arrangement on a GUI and allows for the adjusting or re-positioning of the information on the display. Ex. 1001, 34:15–67. The first step of the method is to receive market information via a computer for a tradeable object from an electronic exchange. *Id.* at 34:19–23. The subsequent steps of the method relate to displaying and positioning/repositioning the market information on a GUI. *Id.* at 34:24–67. The '055 patent discloses that it is known that electronic exchanges provide market information to connected traders' computers. *See Id.* at 2:27–28.

As Petitioner points out, the '055 patent, itself, discloses that the technical features of claim 1 were known. Pet. 6–8. The '055 patent discloses that its system can be implemented "on any existing or future terminal or device." Ex. 1001, 5:2–7, 39–43. Computers or terminals are known to include displays. The '055 patent discloses that the input device can be a mouse, a known input device. Ex. 1001, 2:1–13, 5:24–27. The '055 patent discloses "commercially available trading applications" that provide electronic trading interfaces that display bid and ask quantities in association with a static price scale. *Id*. at 5:66–6:7. The '055 patent states that "[t]he preferred embodiments, however, are not limited to any particular product that performs the translation, storage and/or display functions." *Id.* at 5:66–6:7.

> The trading application . . . processes this information and maps it to positions in a theoretical grid program or any other comparable mapping technique for mapping data to a screen. The physical mapping of such information to a screen grid, for display on a client device . . . , may be done by any technique known to those skilled in the art. The present invention is not

limited by the method used to map the data to the screen
display.

Id. at 6:27–35.

Given the above, we determine that claim 1 does not recite a
technological feature that is novel and unobvious over the prior art. Because
both prongs must be satisfied for a patent to be excluded from covered
business method patent review for being a technological invention, we find
that the '055 patent is eligible for a covered business method patent review
for at least the reason that claim 1 fails to recite a technological feature that
is novel and unobvious.

Notwithstanding our determination above, we also are persuaded by
Petitioner that the '055 patent does not solve a technical problem with a
technical solution.

The '055 patent discloses that exchanges are volatile and move
rapidly and that to profit a trader must react quickly. Ex. 1001, 2:14–16.

> To profit in these markets, traders must be able to react quickly.
> A skilled trader with the quickest software, the fastest
> communications, and the most sophisticated analytics can
> significantly improve the trader's own or the trader's firm's
> bottom line. The slightest speed advantage can generate
> significant returns in a fast moving market. In today's securities
> markets, a trader lacking a technologically advanced interface is
> at a severe competitive disadvantage.

Id. at 2:16–24. "The more time a trader takes entering an order, the more
likely the price on which the trader wanted to bid or offer will change or not
be available in the market" because "[t]he market is fluid as many traders are
sending order to the market simultaneously." *Id.* at 2:39–43. "If a trader
intends to enter an order at a particular price, but misses the price because

the market prices moved before the trader could enter the order, the trader may lose hundreds, thousands, even millions of dollars." *Id.* at 2:49–53. "It is therefore desirable for electronic trading systems to offer tools that can assist a trader in adapting to an electronic marketplace, and help the trader to make trades at desirable prices." *Id.* at 2:64–67. "A trader may use automatic positioning to always have a visual reference of where the market is trading, increasing the likelihood of entering quantities and having those quantities filled at desirable prices." *Id.* at 26:30–34

 As can be seen from the above, the problem disclosed in the '055 patent is a trader having to read a display of prices for a commodity and enter a trade order before the price for the commodity changes. As Petitioner points out, this is a financial issue or a business problem, not a technical problem. Pet. 8–10. If the market or exchange did not rapidly change, then there would be no need for a trader to enter orders rapidly or for a GUI to accomplish such. We, thus, determine that at least claim 1 of the '055 patent does not recite a technical solution to a technical problem, as required by the second prong of the test to determine whether a patent is for a technological invention.

 As the '055 patent is a covered business method patent and is not precluded for being a technological invention, the '055 patent is eligible for covered business method patent review.

C. Patent Subject Matter Eligibility

Petitioner contends that claims 1–19 are unpatentable under 35 U.S.C. § 101 as being directed to ineligible subject matter. Pet. 18–34. Patent Owner disagrees. PO Resp. 13–24.

Patent-eligible subject matter is defined in § 101 of the Patent Act, which recites:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

There are, however, three judicially created exceptions to the broad categories of patent-eligible subject matter in § 101: laws of nature, natural phenomena, and abstract Ideas. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l,* 134 S. Ct. 2347, 2354 (2014); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (2012). Although an abstract Idea, itself, is patent-ineligible, an application of the abstract Idea may be patent-eligible. *Alice*, 134 S. Ct. at 2355. Thus, we must consider "the elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Id*. (citing *Mayo*, 132 S. Ct. at 1297–98). The claim must contain elements or a combination of elements that are "sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [abstract Idea] itself." *Id*. (citing Mayo, 132 S. Ct. at 1294).

Claims 1–16 recite a method, which falls into the process category of patent-eligible subject matter of § 101. Claims 17–19 recite a computer readable medium having computer-readable instructions thereon. When

given the broadest reasonable interpretation, in light of the specification of the '055 patent, claims 17–19 encompass subject matter that falls into the manufacture category (e.g., non-transitory media), as well as subject matter that falls outside the four statutory classes of subject matter (e.g., propagating transitory signals).

i. Subject Matter Outside the Four Statutory Categories

First, we turn to Petitioner's contention that claims 17–19 are unpatentable under 35 U.S.C. § 101 because they encompass subject matter that falls outside the four statutory categories of patentable subject matter. Pet. 33–34. Patent Owner disagrees. PO Resp. 25–26.

Claims 17–19 recite "[a] computer readable medium having computer-readable instructions thereon." Ex. 1001, 36:1–2. Above, we determine that computer readable medium, when given the broadest reasonable construction in light of the specification of the '055 patent encompasses transitory, propagating signals. Transitory, propagating signals are not covered by the four statutory classes of subject matter of 35 U.S.C. § 101. *In re Nuijten,* 500 F.3d at 1352. Petitioner has shown sufficiently that claims 17–19 are unpatentable under 35 U.S.C. § 101 as encompassing subject matter that falls outside the four statutory categories of patentable subject matter.

ii. Abstract Idea

Next, we turn to Petitioner's contention that claims 1–19 are unpatentable under 35 U.S.C. § 101 as being directed to an abstract Idea. Pet. 18–33. We take independent claim 1 as representative.[6]

Petitioner argues that claim 1 encompasses the abstract Idea of "repositioning market information on a GUI . . . and electronic trading" which is a "fundamental economic practice long prevalent in our system of commerce." Pet. 18 (quoting *Bilski v. Kappos,* 130 S. Ct. 3218, 3231 (2010)). Petitioner further argues that providing a trader with financial information to facilitate market trades is subject matter that "can be performed in [the human] mind, or by a [human] using a pen and paper." *Id.* at 18 (citing *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.2d 1366, 1372 (Fed. Cir. 2011)), 21–24.

"The 'abstract Idea' step of the inquiry calls upon us to look at the 'focus of the claimed advance over the prior art' to determine if the claim's 'character as a whole' is directed to excluded subject matter.'" *Affinity Labs of Texas, LLC v. DirectTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016) (quoting *Genetic Techs. Ltd. v. Merial LLC*, 818 F.3d 1369, 1376 (Fed. Cir. 2016) and *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016); *see also Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016). There is no definitive rule to determine what constitutes an "abstract Idea." Rather, the Federal Circuit has explained that "both [it] and

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[6] Independent claim 17, the only other independent claim, corresponds to claim 1 in that it recites a computer readable medium having computer-readable instructions thereon that causes a computer to execute a method substantially the same as the method of claim 1. Thus, claim 1 is representative of claim 17.

the Supreme Court have found it sufficient to compare claims at issue to those claims already found to be directed to an abstract Idea in previous cases." *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016); *see also Amdocs (Israel) Ltd. v. Openet Telecom, Inc.,* 841 F.3d 1288, 1294 (Fed. Cir. 2016) (explaining that, in determining whether claims are patent-eligible under § 101, "the decisional mechanism courts now apply is to examine earlier cases in which a similar or parallel descriptive nature can be seen—what prior cases were about, and which way they were decided").

Notwithstanding Patent Owner's arguments, which we address below, we determine that Petitioner has shown[7] that claim 1 is directed to the abstract Idea of repositioning market information on a GUI for electronic trading, which is a fundamental economic practice.

Claim 1 recites in the preamble "a method for repositioning a static price axis on a graphical user interface for displaying market information of a commodity being traded at an electronic exchange." Ex. 1001, 34:15–17. The method steps include receiving current highest bid price and current lowest ask price for a tradable object; displaying a first and adjusted static price axis displaying market information in locations along the static price axis; and automatically repositioning the static price axis when a designated price is within designated price levels from the lowest value or highest value of the static price axis. *Id.* at 34:19–67. We agree with Petitioner that claim 1 encompasses the abstract Idea of providing a trader with financial

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[7] As explained above, determining whether a claim is directed to an abstract idea calls upon us to look at the focus of the claimed advance over the prior art. In order to do so, we must make findings of fact as to the prior art at the time of the invention. Those facts must be supported by a preponderance of the evidence. 35 U.S.C. § 326(e).

information to facilitate market trades, a fundamental economic practice, and steps that can be performed using pen and paper, or even in a trader's mind. *See* Pet. 27–30.

As can be seen from its steps, the focus of claim 1 is repositioning market information displayed on a GUI for electronic trading. This focus is consistent with the disclosure of the '055 patent, which states that "[t]he preferred embodiments relates to . . . automatic repositioning of market information in a graphical user interface." Ex. 1001, 3:3–5. The focus of claim 1 is also consistent with the problem disclosed by the '055 patent, which is a trader missing an intended price because the market changed during the time required for a trader to read the prices displayed and to enter an order. *Id.* at 1:47–67.

Claim 1 does not recite any limitations that specify how the computer implements the steps or functions for using a GUI. For example, claim 1 does not specify how the computer maps the bid quantities, ask quantities, and prices to the display. The '055 patent also does not disclose an unconventional or improved method of mapping the bid quantities, ask quantities, and price axis to the display. It states that "[t]he physical mapping of such information to a screen grid for display . . . may be done by any technique known to those skilled in the art" and that "[t]he present invention is not limited by the method used to map the data to the screen." *Id.* at 6:31–35.

The '055 patent discloses that many exchanges throughout the world utilize electronic trading and discloses that it is known that electronic trading includes analyzing displayed market information and updated market information to send trade orders to an exchange. *See Id.* at 1:36–2:12.

Exhibit 1018 discloses that long before the '055 patent, traders maintained books that plotted bids and asks (e.g., the market depth) along a price axis. *See* Ex. 1018, 44–46. Figure 4-2 of Exhibit 1018 is reproduced below.

FIGURE 4-2. *A page in the specialist's book.*

Figure 4-2 depicts a page of a book of a trader. *Id.* at 44–45. Orders to buy or sell a commodity are plotted along a price axis. For example, Figure 4-2 shows the best bid at 22¼ and the best ask at 22⅝. *Id.* at 44. Petitioner's declarant Mr. Román testifies that:

> Claim 1 could be performed by a human using pen-and-paper or a white board. The persons could be told the highest bid and offer, which he or she could plot along a price axis. If the person wanted to adjust the display as recited in claim 1, he or she could do it by redrawing or merely adding additional price levels to the top or bottom. . . . The person could replot with updated data as it came in. If the data plotted off the existing axis (i.e., came within a set number of prices from either end of the axis), the person could reposition the axis by redrawing it.

Ex. 1003 ¶ 69.

Given this, we determine that repositioning market information displayed for electronic trading is a fundamental economic and conventional business practice. We are persuaded by Petitioner that the method of claim 1 could be performed in the human mind or with the aid of pen-and-paper with little difficulty. *See* Pet. 21 (citing Ex. 1018, 44–46; Ex. 1005, Fig. 4; Ex. 1003 ¶¶ 68–70).

The claims at issue here are like the claims at issue in *Affinity Labs*. In *Affinity Labs*, the claim at issue recited an application that enabled a cellular telephone to present a GUI displaying a list of media sources that included selectable items for selecting a regional broadcasting channel. *Affinity Labs*, 838 F.3d at 1255–56. The claim also recited that the cellular telephone was enabled to transmit a request for the selected regional broadcasting channel. *Id.* at 1256. The claims at issue here are also like the claims at issue in *Apple, Inc. v. Ameranth, Inc.,* 842 F.3d 1229 (Fed. Cir. 2016). In *Ameranth*, the claim at issue recited a GUI that displayed menu items in a specific arrangement, a hierarchical tree format. Menu items were selected to generate a second menu from a first menu. *Ameranth* 842 F.3d at 1234. In both *Affinity Labs* and *Ameranth*, the court determined that the claims were not directed to a particular way of programming or designing the software, but instead merely claim the resulting systems. The court thus determined that the claims were not directed to a specific improvement in the way computers operate. *Affinity Labs,* 838 F.3d at 1260–61; *Ameranth,* 842 F.3d at 1241. Here, the claims also recite the resulting GUI and are not directed to specific improvements in the way the computers operate. "Though lengthy and numerous, the claims [that] do not go beyond requiring the collection, analysis, and display of available information in a particular

field, stating those functions in general terms, without limiting them to technical means for performing the functions that are arguably an advance over conventional computer and network technology" are patent ineligible. *Elec. Power Grp.,* 830 F.3d at 1351. "Generally, a claim that merely describes an 'effect or result dissociated from any method by which [it] is accomplished' is not directed to patent-eligible subject matter." *Ameranth,* 842 F.3d at 1244 (quoting *Internet Patents Corp. v. Active Network, Inc.,* 790 F.3d 1343, 1348 (Fed. Cir. 2015)).

Claim 1 of the '055 patent is unlike the claims at issue in *DDR Holdings, LLC v. Hotels.com, L.P.,* 773 F.3d 1245 (Fed. Cir. 2014) and *Enfish.* In *DDR Holdings,* the court determined that the claims did not embody a fundamental economic principle or a longstanding commercial practice. The claims at issue in *DDR Holdings* were directed to retaining website visitors, which the court determined was a problem "particular to the Internet." *DDR Holdings,* 773 F.3d at 1257. The court also determined that the invention was "necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks" and that the claimed invention did not simply use computers to serve a conventional business purpose. *Id.* In *Enfish,* the claim at issue was directed to a data storage and retrieval system for a computer memory. *Enfish,* 822 F.3d at 1336–37. The court determined that the claims were directed to an improvement in the functioning of a computer and were not simply adding conventional computer components to well-known business practices. *Id.* at 1338. Here, in contrast, claim 1 is directed to a fundamental economic principle or a longstanding commercial practice and not directed to an improvement in the computer but simply to the use of the GUI in a

method of placing an order based on displayed market information, as well as updating market information.

When we compare claim 1 at issue to those claims already found to be directed to an abstract Idea in previous cases, we are persuaded that claim 1 is more similar to those claims found to encompass an abstract Idea than those determined not to encompass an abstract Idea. Claim 1 is similar to the claims in *Electric Power*, which did "not go beyond requiring the collection, analysis, and display of available information in a particular field, stating those functions in general terms, without limiting them to technical means for performing the functions that are arguably an advance over conventional computer and network technology." *Elec. Power Grp., LLC v. Alstom S.A.,* 830 F.3d 1350, 1353 (Fed. Cir. 2016).

We have considered all of Patent Owner's arguments regarding why the claims are not directed to an abstract Idea but are not persuaded by such arguments. PO Resp. 13–20. Patent Owner argues that Petitioner oversimplifies the claims and ignores the structure and functionality recited in the claims, which Patent Owner deems to be the functionality of the claimed GUI itself. *Id*. at 13–14. We disagree that Petitioner has oversimplified the claims and ignores the structure and functionality recited in the claims.

Nor are we persuaded by Patent Owner's arguments that the claimed GUI improves the functioning of the computer to solve a problem rooted in computer technology. PO Resp. 9–11, 14–17, 22–24. Patent Owner argues that the claims solve a problem with prior GUIs that included a static price axis and dynamic indicators, that the indicators could move off or close to off the displayed static price axis, and the user would have to manually

adjust the price axis. *Id.* at 14–15. This problem, however, is not a problem rooted in computer technology. As discussed above, Mr. Román's testimony and Exhibit 1018 indicate that indicators moving off or close to off a static price axis occurs when plotting market data manually, which causes the price axis to have to be adjusted or repositioned. *See* Ex. 1002 ¶¶ 58–70; Ex. 1018, 44–46.

Patent Owner argues that the claims are not directed to an abstract Idea because they are not directed to a fundamental Idea, longstanding commercial practice, a business method, or a generic GUI. PO Resp. 16–20. Patent Owner argues that in contrast to many other cited cases, the claims here are directed to the specific structure, make-up, and functionality of a particular GUI. *Id.* Patent Owner argues that the claimed GUI tool builds on and is an improvement to trading screens like those in the '132 patent and, thus, the claims of the '055 patent are even more clearly patent eligible. *Id*. at 6–9;. The claims of the '055 patent, however, do not build on and are broader in some aspects than the claims of the '132 patent. For example, claim 1 of the '055 patent does not recite the single action order feature claimed by the '132 patent. The '132 patent was involved in *Trading Technologies International, Inc.*, v. *CQG, INC.*, No. 2016-1616, 2017 WL 192716 (Fed. Cir. Jan. 18, 2017). In that case, the court indicated that even those narrower claims are on the line between patent eligibility and ineligibility (*see Id.* at *4 (noting the "close question[] of eligibility")). The specification of the '055 patent is different, and the '055 patent claims and discloses features not discussed in the '132 patent. Thus, comparing the claims of the patents involved in *Trading Technologies* is not particularly helpful here. *Trading Technologies*, 2017 WL 192716 at *2.

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iii. Inventive Concept

Next we turn to "the elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Alice,* 134 S. Ct. at 2355 (quoting *Mayo*, 132 S. Ct. at 1297–98).

Petitioner argues that the additional elements of the claims, both individually and as an ordered combination, do not recite anything more meaningful than the abstract Idea. Pet. 29–31. Petitioner further argues that the claims are not rooted in computer technology because they do not overcome a problem specifically arising in the realm of computers or computer networks. *Id.* at 44–46.

Notwithstanding Patent Owner's arguments, which we address below, we are persuaded that Petitioner has shown that none of the additional claim elements in claim 1 transforms the nature of the claims into a patent-eligible application. Claim 1 of the '055 patent recites "[a] method for re-positioning a static price axis on a graphical user interface for displaying market information." Ex. 1001, 34:15–16. The method includes a step of receiving information from an electronic exchange. *Id.* at 34:19–23. Claim 1 also recites the adjusting feature and the re-positioning feature. *Id.* at 34:24–33, 60–67. Claim 1 further recites the step of displaying a bid and ask display region, which has locations that correspond to price levels along a static price axis, on a GUI and displaying quantity indicators in the locations. *Id.* at 34:34–59. The indicators move along the static price axis as the market changes. *Id.*

The '055 patent discloses receiving market information from an exchange and displaying the information on a GUI is old and well-known,

routine and conventional activity. *Id.* at 1:34–2:34; *see also Id.* at 5:1–6, 5:38–42 (disclosing that any existing terminal device or network architecture could be used). Receiving market data from an exchange is nothing more than routine data gathering and does not transform the abstract Idea into a patent-eligible invention. *See CyberSource Corp. v. Retail Decisions, Inc.,* 654 F.3d 1366, 1370 (Fed. Cir. 2011).

The '055 patent discloses that the use of software to create specialized interactive trading screens is known and the range of features varies according to the software. Ex. 1001, 2:1–7. The '055 patent also discloses that the physical mapping of the information to the screen could be done by any known technique and that the invention is not limited by the method used to map the data to the screen. *Id.* at 6:26–35. The use of software or a GUI to display market information is a well-understood, routine, conventional activity that does not add significantly more to the abstract Idea. *Mayo*, 132 S. Ct. at 1298. The use of a computer or GUI to display information in a known arrangement (*see* Ex. 1018, 44–46) is nothing more than a mere field of use limitation. "Most obviously, limiting the claims to the particular technological environment . . . is, without more, insufficient to transform them into patent-eligible applications of the abstract Idea at their core." *Elec. Power Grp.,* 830 F.3d at 1354.

Given the above, we determine that the individual elements of claim 1 do not transform the nature of the claim into a patent-eligible application. They do not add significantly more to the abstract Idea or fundamental economic practice. Considering all of the elements as an ordered combination, we determine, on this record, that the combined elements also do not transform the nature of claim 1 into a patent-eligible application.

Patent Owner argues that the claims pass part two of *Alice* because they recite an inventive concept. PO Resp. 19–24. Patent Owner argues that the claims of the '055 patent recite significantly more because the claims allegedly specify a high level of detail, the claimed combination of GUI features/functionality is not pre-solution or post-solution activity, and the claimed functionality was not routine and conventional. *Id.* at 23–24. Patent Owner does not explain sufficiently what about the claims qualifies as an inventive concept and as discussed above the individual elements of the claims do not transform the nature of the claims into a patent-eligible application. They do not add significantly more to the abstract Idea or fundamental economic practice. Contrary to Patent Owner's argument, the claims simply recite the use of a generic computer with routine and conventional functions. Further, considering all of the elements as an ordered combination, we determine that the combined elements also do not transform the nature of the claims into a patent-eligible application.

We determine that Petitioner shows sufficiently that claims 1 and 17 are patent ineligible under 35 U.S.C. § 101.

iv. Dependent Claims

Petitioner contends that the additional elements recited by dependent claims 2–16, 18, and 19 do not add significantly more to the abstract Idea so as to render the claims patent-eligible. Pet. 32–33. On this record, we determine that Petitioner sufficiently demonstrates that dependent claims 2–16, 18, and 19 are patent ineligible under 35 U.S.C. § 101. Patent Owner makes no arguments directed to the additional elements of the dependent claims.

D. Grounds Under 35 U.S.C. § 103

Section 103 forbids issuance of a claim when

> the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.

35 U.S.C. § 103. The ultimate determination of obviousness under § 103 is a question of law based on underlying factual findings. *In re Baxter Int'l, Inc.,* 678 F.3d 1357, 1362 (Fed. Cir. 2012) (citing *Graham v. John Deere Co.,* 383 U.S. 1, 17–18 (1966)). These underlying factual considerations consist of: (1) the "level of ordinary skill in the pertinent art," (2) the "scope and content of the prior art," (3) the "differences between the prior art and the claims at issue," and (4) "secondary considerations" of non-obviousness such as "commercial success, long-felt but unsolved needs, failure of others, etc." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting *Graham,* 383 U.S. at 17–18).

i. Obviousness of Claims 1, 3, 4, 6–15 and 17–19 over TSE

Petitioner contends that claims 1, 3, 4, 6–15 and 17–19 are unpatentable under 35 U.S.C. § 103 over TSE. Pet. 34–65.

Patent Owner disagrees for numerous reasons. PO Resp. 51–84. In particular, Patent Owner contends that TSE is not prior art. *Id.* at 43–50. It is not necessary for us to determine the prior art status of TSE. Regardless of TSE's prior art status, for the reasons discussed below, Petitioner fails to show by a preponderance of the evidence that the claims of the '055 patent are unpatentable over TSE.

a. Overview of TSE

TSE is a guide for operating a trading terminal of the Tokyo Stock Exchange. Ex. 1008, 1. The trading terminal displays a GUI for depicting market information on a Board/Quotation Screen (*see Id*. at 107). The Figure on page 107 of TSE is reproduced below.

Figure depicting the Board/Quotation Screen.

The Board/Quotation Screen includes a central order price at column 11. *Id.* at 111. To the left and right of order price column 11, are ask and bid orders in respective columns 12, 13, and 14. *Id.*

The Board/Quotation Screen has a compressed mode and an uncompressed mode. Reproduced below is a figure that appears on page 68 of TSE.
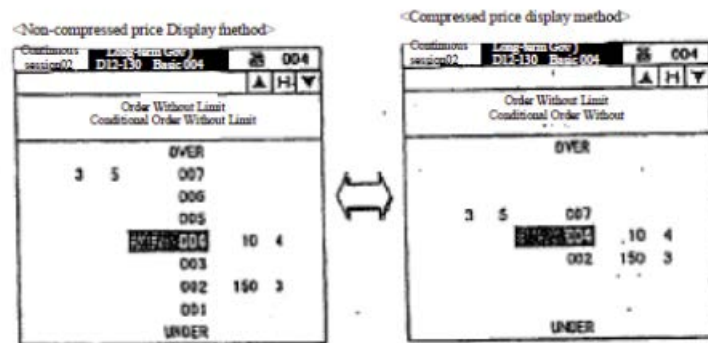
The figure depicts the Board/Quotation Screen in compressed and non-compressed mode. In non-compressed mode, all prices (i.e., the claimed adjusted price levels) are displayed on the Board/Quotation Screen, and, in compressed mode, only prices that satisfy certain conditions (i.e., the claimed first plurality of price levels), such as having an order, are displayed. *Id.* at 68. The Board/Quotation Screen can be moved between the compressed mode and uncompressed mode by selecting a radio button using a mouse. *Id.* at 69.

The Board/Quotation Screen also has a basic board screen mode and a scrolling mode. *Id.* at 115. In basic board screen mode, the information is updated so that a "Board Display Center Price" is always displayed in the center. *Id.* TSE discloses that the centering occurs upon the occurrence of different events, such as if the central price falls within the range of the top or bottom three prices. *Id.* In scrolling mode, the central price's position does not change automatically (*Id*); however, TSE does disclose a "Home Button" for returning the Board/Quotation Screen to the basic board screen centered on the central price (*Id*. at 110, 116).

b. Independent Claims 1 and 17

Claim 1 recites the following limitations:

> displaying a first plurality of price levels along a static price axis on a graphical user interface of a display device associated with the computing device, where the first plurality of price levels range from a lowest value to a highest value along the static price axis;
>
> in response to an input command received via an input device associated with the computing device, adjusting the first plurality price levels among a range of price levels to an adjusted plurality of price levels including the first plurality of price levels;
>
> displaying a bid and ask display region on the graphical user interface, the bid and ask display region comprising a plurality of locations corresponding to the first plurality of price levels displayed along the static price axis, wherein each location corresponds to one of the first plurality of price levels, and wherein a number of the plurality of locations changes according to adjusting the first plurality of price levels

Ex. 1001, 34:24–41. Claim 17 recites similar limitations. *Id.* at 36:11–25.

In the Petition, Petitioner asserts that TSE discloses these claim limitations. Pet. 45–52. Petitioner equates price levels 002, 004, and 007 depicted on TSE's compressed price display, reproduced above, to the claimed first plurality of price levels and equates price levels 001, 002, 003, 004, 005, 006, and 007 depicted on TSE's non-compressed price display to the claimed adjusted plurality of price levels, also reproduced above. *Id.* at 47. Petitioner argues that TSE teaches the claimed adjustment by transitioning from the compressed display to the non-compressed display. *Id.* at 47.

Petitioner contends that the first plurality of price levels are displayed along a static price axis when they are displayed along the price axis in the non-compressed display, after the claimed adjustment has occurred. *Id.* at 45–46. Petitioner also contends that the non-compressed display has a bid display region to the right of price axis 11 and an ask display region to the left of price axis 11. *Id.* at 50–51.

With regards to the claimed "plurality of locations corresponding to the first plurality of price levels displayed along the static price axis, wherein each location corresponds to one of the first plurality of price levels" (Ex. 1001, 34:36–39), Petitioner states the following:

> FIG. C of Mr. Roman's Declaration (reproduced below) labels three exemplary locations to highlight that each location correspond to a different price level of the first plurality of price levels displayed along the price axis. (Roman Decl., ¶ 103.)
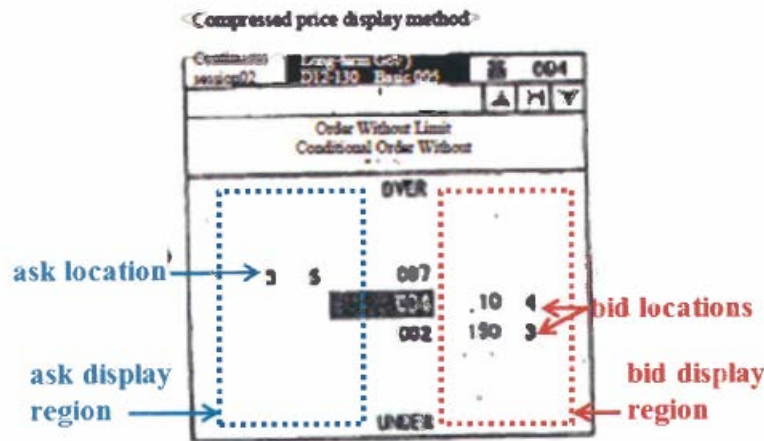
Román Decl., FIG. C

> When transitioning TSE's Board Screen from a compressed display to a non-compressed display (i.e., the claimed *"adjusting"*), the *"number of the plurality of locations changes according to adjusting the first plurality of price levels."* For example, as shown in the figure on 0068 of TSE, the number of levels changes from three to seven when the *"first plurality of price levels"* is adjusted to the *"adjusted plurality of price*

> *levels.*" (TSE, p. 0068.) Thus, TSE discloses the *"displaying a bid and ask display region"* step. (Roman Decl., ¶104.)

Pet. 51–52; *see also* Pet. Reply 15–23 (discussing price levels and corresponding locations on TSE's compressed display). As can be seen from the above, Petitioner relies upon locations in the bid and ask region of TSE's compressed display to teach the claimed plurality of locations. Claim 1 requires that the plurality of locations correspond to *the first plurality of price levels displayed along the static price axis*. Ex. 1001, 34:35–37. In annotated Figure C, the first plurality of price levels are displayed along the price axis of the compressed display.

Patent Owner disputes that the price axis of the compressed display is static. PO Resp. 54–55, 59–60. In particular, Patent Owner argues that "in the compressed mode, there is no 'static price axis'" because "when new orders are added at price levels that did not previously have any order (or when the market changes to remove previous orders from a price), the price levels change positions based on these market changes." *Id.* (citing Ex. 2331, 34:17–37:5; Ex. 2169 ¶ 91).

Patent Owner's argument is persuasive. TSE discloses that in compressed mode, only prices that satisfy certain conditions, such as having an order, are displayed. *Id*. at 68. For example, as can be seen in the figure on page 68 of TSE, reproduced above, only prices 002, 004, and 007 are displayed in the compressed display. During cross-examination, Petitioner's declarant Mr. Rho indicated that under certain circumstances the prices would move relative to each other when TSE's Board/Screen was in compressed mode.

Q. Okay. All right. So in this compressed mode figure that we've been looking at on page 12 of your declaration, there are prices shown at 002, 004, and 007, correct?

A. There are prices at 002, 004 and 007. That is correct.

. . . .

Q. Okay. Well, let's assume 006 is added but the center price is still 004. In that scenario, 006 would be added between 004 and 007, 007 would move up, and 004 would stay in the same place, correct?

. . . .

THE WITNESS: That seems correct, yes.

Ex. 2331 34:20–37:5.

Mr. Rho's testimony indicates that the price axis of the compressed screen is not a static price axis. The broadest reasonable interpretation in light of the specification of the '055 patent of static price axis is a price column or reference line where prices do not normally change positions unless a re-centering or re-positioning command is received. As Mr. Rho testified, certain price levels of TSE's compressed mode price axis change positions relative to each other in certain circumstances when a re-centering or re-positing command is not received. For example, on TSE's compressed display shown in the figure on page 68, reproduced above, price 007 would move up relative to price 004 when an order at price 006 was added, but the center price is still 004. We, thus, are persuaded by Patent Owner that Petitioner has failed to establish that TSE discloses a bid and ask display region comprising a plurality of locations corresponding to the first plurality of price levels displayed along the static price axis, as required by claims 1 and 17.

Petitioner argues that TSE's price axis in compressed mode is static because TSE discloses the price levels do not change positions in compressed, scrolling mode unless the user selects the home button to return the price axis to a designated position and because TSE allows for one-half the length of the price axis to be the designated number for causing the price axis to reposition every time the designated price leaves the center. Pet. 49–50, Pet. Reply 17–20. Petitioner's argument is unpersuasive because it does not address Mr. Rho's testimony, reproduced above. Petitioner fails to explain sufficiently why the price axis of TSE's compressed mode is a static price axis if price levels can change positions relative to each other under certain circumstances when a re-centering or re-positing command is not received.

In the Petitioner's Reply, Petitioner contends that even if the Board accepts Patent Owner's arguments, transitioning TSE's display from boardx4 mode to boardx2 mode satisfies the disputed claim limitations. Pet. Reply 20, 23–25. Petitioner's Reply raises a new issue and exceeds the proper scope of a reply.[8] Although the Petition discusses TSE's boardx4 mode and boardx2 mode in its overview of TSE (Pet. 35–40) and in connection with other claim limitations (*Id.* at 57), the Petition does not rely upon transitioning TSE's display from boardx4 mode to boardx2 mode to satisfy the disputed limitations above (*se Id.* at 45–52). Petitioner proffers a

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[8] During trial, Patent Owner objected to Petitioner's Reply as raising new issues for the first time. *See* Paper 64, Ex. 3006. In response, we authorized Patent Owner to file a listing identifying the portions of the Reply that allegedly raise new arguments and authorized Petitioner to file a listing identifying where the alleged new arguments were first raised in the record. *See* Papers 44, 45. We have taken into consideration the listings.

second Declaration of David Rho to support its argument made in its Reply. Like the Petition, the testimony of Mr. Rho in his second Declaration discusses how transitioning TSE's display from boardx4 mode to boardx2 mode satisfies the disputed claim limitations. Ex. 1035 ¶¶ 23–25. As provided in 37 C.F.R. § 42.23(b), a "reply may only respond to arguments raised in the corresponding opposition . . . or patent owner response." One indication that a new issue has been raised in a reply is where a petitioner submits "new evidence necessary to make out a prima facie case" of unpatentability of an original claim. Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,767 (Aug. 14, 2012). An argument that raises a new issue will not be considered. *Id.* We, thus, will not consider Petitioner's contention that transitioning TSE's display from boardx4 mode to boardx2 mode satisfies the disputed claim limitations raised for the first time in Petitioner's Reply.

For the reasons given above, we determine that Petitioner fails to show by a preponderance of the evidence that claims 1 and 17 of the '055 patent are unpatentable under 35 U.S.C. § 103 over TSE.

c. Dependent Claims 3, 4, 6–15, 18, and 19

Claims 3, 4, 6–15, 18, and 19 depend from claims 1 and 17. For the same reasons as discussed above with regards to the patentability of claims 1 and 17 over TSE, we determine the Petitioner fails to show by a preponderance of the evidence that claims 3, 4, 6–15, 18, and 19 are unpatentable over TSE.

ii. Obviousness of Dependent Claims 2 and 5 over TSE and Gutterman and Obviousness of Dependent Claim 16 over TSE and Belden

Claims 2, 5, and 16 depend from claim 1. For the same reasons as discussed above with regards to the patentability of claim 1 over TSE, we determine the Petitioner fails to show by a preponderance of the evidence that claims 2, 5, and 16 are unpatentable over TSE. Petitioner does not rely upon Gutterman or Belden to cure the deficiency of TSE discussed above.

III. MOTIONS TO EXCLUDE

A. Patent Owner's Motion to Exclude

Patent Owner moves to exclude Exhibits 1007, 1008, and 1011. PO Mot. to Exclude 1–2. Exhibit 1007 is TSE, and Exhibit 1008 is the English language translation of TSE. Petitioner relies on Exhibits 1007 and 1008 to establish unpatentability of the challenged claims under 35 U.S.C. § 103. Patent Owner objects to these documents for lack of authenticity and/or for inadmissible hearsay. *Id.* We find it unnecessary to consider the specific objection to the admissibility of Exhibits 1007 and 1008, because Petitioner's arguments regarding patentability are not persuasive for the reasons provided above, even assuming Exhibits 1007, 1008, and 1011 to be admissible.

Ex. 1011 is the transcript of Mr. Kawashima's deposition concerning the prior art status of TSE. Petitioner relies on Exhibit 1011 to establish the prior art status of TSE. Patent Owner objects to this document for lack of authenticity and/or for inadmissible hearsay. PO Mot. to Exclude 1–2. We find it unnecessary to consider the specific objection to the admissibility of Exhibit 1011, because it was not necessary for use to determine the prior art

status of TSE for the reasons provided above, even assuming Exhibits 1007, 1008, and 1011 to be admissible.

In addition, Patent Owner also moves to exclude portions of Petitioner's Reply, portions of a second Declaration of David Rho (Ex. 1035), and portions of the testimony of Dr. Olsen (Ex. 1038). *Id.* at 6. Patent Owner objects to these documents as being outside the scope of reply or direct questioning and/or unfairly prejudicial. PO Mot. to Exclude 6–12. Petitioner relies on the objected to portions of the second Declaration of David Rho and Petitioner's Reply to support its arguments that transitioning TSE's display from boardx4 mode to boardx2 mode satisfies the disputed claim limitations. Pet. Reply 20, 23–25. As explained above, we did not consider the specific arguments and portions of Exhibit 1035. Patent Owner's argument, thus, is moot. Petitioner relies upon the objected to testimony of Dr. Olsen to argue that TSE discloses a static price axis in compressed, non-scrolling mode. *Id.* at 18. We find it unnecessary to consider the specific objections to the admissibility of portions of Ex. 1038, because Petitioner's arguments concerning the unpatentability of the claims over TSE are unpersuasive, even assuming the objected to portions of Ex. 1038 is admissible.

Accordingly, we *dismiss* Patent Owner's Motion to Exclude as moot.

B. Petitioner's Motion to Exclude

Petitioner moves to exclude Exhibits 2030, 2032, 2168, 2292–2296, 2334, and 2339 and to exclude ¶¶ 127–128 of Exhibit 2169 because the "documents are irrelevant and/or constitute hearsay to which no exception applies." Pet. Mot. to Exclude 1.

Exhibits 2030 and 2032 are a jury verdict and docket entry, respectively, associated with an earlier district court case involving Patent Owner and a third party. Although Patent Owner relies on Exhibit 2030 in its Response, we do not find where it relies on Exhibit 2032. In any event, we understand Patent Owner to rely on at least Exhibit 2030 in support of its arguments that TSE is not prior art. PO Resp. 48, n. 8. Petitioner moves to exclude the exhibits as irrelevant and inadmissible. Pet. Mot. to Exclude 3–4. We find it unnecessary to consider the specific objections to the admissibility of Exhibits 2030 and 2032, because it was not necessary for us to determine the prior art status of TSE for the reasons provided above.

Exhibit 2168 is a Declaration of Eric Gould-Bear. Patent Owner relies upon the testimony of Mr. Gould-Bear to support its argument that the '055 patent is not eligible for covered business method patent review and that the '055 is patent eligible. PO Resp. 24, 27, 29, 30, 32, 32. Petitioner objects to Ex. 2168 for lack of relevance. Pet. Mot. to Exclude 4–5. We find it unnecessary to consider the specific objection to the admissibility of Ex. 2168, because Patent Owner's arguments regarding the eligibility of the '055 patent are not persuasive for the reasons provided above, even assuming Exhibit 2168 to be admissible.

Exhibit 2169 is a Declaration of Christopher Thomas. Exhibits 2292–2296 are transcripts from a related district court proceeding. Patent Owner's declarant Mr. Thomas relies upon Exhibits 2292–2296 to support his testimony regarding the technical nature of the '055 patent. *See* Ex. 2169 ¶¶ 127–128. Petitioner objects to the Exhibits for lack of relevance and impermissible hearsay. Pet. Mot. to Exclude 7–8. Petitioner objects to ¶¶ 127–128 of Exhibit 2169 for containing impermissible hearsay and improper

expert testimony because Mr. Thomas relies upon Exhibits 2292–2296. *Id.* at 5–6. We find it unnecessary to consider the specific objection to the admissibility of ¶¶ 127–128 of Exhibit 2169 and Exhibits 2292–2296, because Patent Owner's arguments regarding the technical nature of the '055 patent are not persuasive for the reasons provided above, even assuming ¶¶ 127–128 of Exhibit 2169 and Exhibits 2292–2296 to be admissible.

Exhibits 2334 and 2339 are both a Declaration of Harold Abilock. Patent Owner relies upon Exhibits 2334 and 2339 and argues that the challenged claims are patentable over TSE. PO Resp. 61–63, 67–68, 78. Petitioner objects to these declarations for lack of relevance. Pet. Mot. to Exclude 8–9. We find it unnecessary to consider the specific objection to the admissibility of Exhibits 2334 and 2339, because Petitioner's arguments regarding patentability are not persuasive for the reasons provided above, even assuming Exhibits 2334 and 2339 to be admissible.

Accordingly, we *dismiss* Petitioner's Motion to Exclude as moot.

IV. CONCLUSION

For the foregoing reasons, we determine that Petitioner shows, by a preponderance of the evidence, that claims 1–19 of the '055 patent are patent-ineligible under 35 U.S.C. § 101. Petitioner fails to show, by a preponderance of the evidence, that claims 1–19 of the '055 patent are unpatentable under 35 U.S.C. § 103.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–19 of the '055 patent are patent-ineligible under 35 U.S.C. § 101;

FURTHER ORDERED that Patent Owner's Motion to Exclude Evidence is *dismissed*;

FURTHER ORDERED that Petitioner's Motion to Exclude Evidence is *dismissed*; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2

CBM2016-00009
Patent 7,685,055 B2

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Appendix

C

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

_____

IBG LLC,
INTERACTIVE BROKERS LLC,
TRADESTATION GROUP, INC., and
TRADESTATION SECURITIES, INC.,
Petitioner,

v.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Patent Owner.

_____

Case CBM2016-00054
Patent 7,693,768 B2

_____

Before SALLY C. MEDLEY, MEREDITH C. PETRAVICK, and
JEREMY M. PLENZLER, *Administrative Patent Judges*.

PETRAVICK, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
Covered Business Method Patent Review
35 U.S.C. § 328(a) and 37 C.F.R. § 42.73

INTRODUCTION

A. Background

IBG LLC, Interactive Brokers, LLC, TradeStation Group, Inc., and TradeStation Securities, Inc. (collectively, "Petitioner"), filed a Petition requesting covered business method ("CBM") patent review of claims 1–23 (the "challenged claims") of U.S. Patent No. 7,693,768 B2 (Ex. 1001, "the '768 patent"). Paper 4 ("Pet."). Petitioner challenges the patentability of claims ("the challenged claims") of the '768 patent under 35 U.S.C. § 101 and § 103.

On October 18, 2016, we instituted a CBM patent review on the following grounds:

References	Basis	Claims Challenged
N/A	§ 101	1–23
TSE[1] and Belden[2]	§ 103	1–13, 15, 16, 18, and 21–23
TSE, Belden, and Cooper[3]	§ 103	14, 17, 19, and 20

Paper 10 ("Institution Decision" or "Inst. Dec.").

Thereafter, Trading Technologies International, Inc. ("Patent Owner") filed a Patent Owner's Response on January 1, 2017 (Paper 21, "PO. Resp.") and Petitioner filed a Reply (Paper 40, "Pet. Reply") to Patent Owner's Response.

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[1] Tokyo Stock Exchange Operation System Division, Futures/Option Purchasing System Trading Terminal Operation Guide (1998) (Ex. 1016). Citations to this reference refer to its English translation (Ex. 1017).
[2] PCT Pub. No. WO 90/11571, pub. Oct. 4, 1990 (Ex. 1012, "Belden").
[3] Alan Cooper, *About Face: The Essentials of User Interface Design* (1995) (Ex. 1022).

Patent Owner filed a Motion for Observations (Paper 52, "PO Mot. for Observations") and Petitioner filed a Response (Paper 54) to Patent Owner's Motion for Observations.

Petitioner filed a Motion to Exclude (Paper 44, "Pet. MTE") and Patent Owner filed an Opposition (Paper 52) to Patent Owner's Motion. Petitioner filed a Reply (Paper 53) in support of its Motion.

Patent Owner filed a Motion to Exclude (Paper 48, "PO MTE") and Petitioner filed an Opposition (Paper 50, "PO MTE Opp.") to Patent Owner's Motion. Patent Owner filed a Reply (Paper 54, "PO MTE Reply") in support of its Motion.

An oral hearing was held on June 23, 2017. Paper 58 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 328(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–23 of the '768 patent are unpatentable.

B. Related Proceedings

The parties indicate that the '768 patent is the subject of numerous related U.S. district court proceedings. Pet. 2; Paper 6, 1–5.

The application that issued as the '768 patent ultimately claims, under 35 U.S.C. § 320, the benefit of application 09/590,692, that issued as the '132 patent. The '132 patent was the subject of *Technologies International, Inc., v. CQG, Inc.*, 675 Fed. Appx. 1001 (Fed. Cir. 2017) ("*CQG*"). The Federal Circuit determined that the claims of the '132 patent are patent eligible under 35 U.S.C. § 101.

U.S. Patent No. 6,772,132 ("the '132 patent") was also the subject of petitions for CBM patent review in *TD Ameritrade Holding Corp. v. Trading Technologies International, Inc.,* CBM2014-00135 (PTAB), *CQG, Inc. v. Trading Technologies International, Inc.*, CBM2015-00058 (PTAB), and *IBG LLC v. Trading Technologies International, Inc.,* CBM2015-00182 (PTAB). Trial was instituted, but later terminated due to settlement, for CBM2014-00135. Institution was denied for CBM2015-00058. Institution was granted for CBM2015-00182, and a final written decision issued on February 28, 2017.

Numerous other patents are related to the '768 patent and the related patents are or were the subject of numerous petitions for CBM patent review and reexamination proceedings. Pet. 2; Paper 6, 5–7; Paper 8, 1.

C. The '768 Patent

The '768 patent is titled "Click Based Trading with Intuitive Grid Display of Market Depth" and issued on April 6, 2010. Ex. 1001, (45), (54). The invention of the '768 patent "is directed to the electronic trading of commodities." *Id.* at 1:16–17. The '768 patent discloses a graphical user interface ("GUI"), named the Mercury display, and a method of using the Mercury display to displaying market information and placing trade orders for a commodity on an electronic exchange. *Id.* at 1:17–22, 3:5.

Before turning to a discussion of the Mercury display, a discussion of a conventional method of trading using a GUI is helpful. Figure 2 of the '768 patent is reproduced below.

FIG. 2

	Contract	Depth	BidQty	BidPrc	AskPrc	AskQty	LastPrc	LastQty	Total
1	CDHO	•	785	7626	7627	21	7627	489	8230
2			626	7625	7629	815			
3			500	7624	7630	600			
4			500	7623	7631	2456			
5			200	7622	7632	800			

Column labels: 201 202 203 204 205

Figure 2 of the '768 patent depicts a common GUI ("the Fig. 2 GUI") that displays market information and is used to place trade orders for a commodity on an electronic exchange. *Id.* at 5:8–12, Fig. 2; *see also* PO Resp. 6–7 (describing the Fig. 2 GUI as "widely used"); Ex. 1018 ¶ 21 (describing the Fig. 3 GUI as a common dynamic screen); Ex. 2169 ¶¶ 61–62, 69 (describing the Fig. 2 GUI as "ubiquitous by the time of the invention" and "prevalent"). As can be seen from the above, the Fig. 2 GUI's screen has a grid having columns and rows. Row 1 shows the inside market. Ex. 1001, 5:14–16. The inside market is the highest bid price and the lowest ask price. *Id.* at 4:56–58. Rows 2–5 show the market depth, which are other bids or asks in the market. *Id.* at 4:52–56, 5:16–20. The market information updates dynamically as the market updates. *Id.* at 5:23–25. The inside market, however, is always displayed in row 1, a fixed location. Ex. 2169 ¶ 54.

Other prior art GUIs, similar to the Fig. 2 GUI, arrange the market information in the grid differently. Patent Owner's declarant Christopher Thomas testifies that similar dynamic GUIs "displayed the locations for the

best bid and ask prices such that the prices were displayed vertically (e.g., with the location for the best ask price being displayed above the location for the best bid price)." Ex. 2169 ¶ 60.

In the Fig. 2 GUI, "the user could place an order by clicking on a location (e.g., a cell) in one of the price or quantity columns." Ex. 2169 ¶¶ 58–59. Patent Owner's declarant Christopher Thomas testifies that "[s]ome of such dynamic screens permitted single action order entry that consisted of a trader pre-setting a default quantity and then click (e.g., using a single-click or a double-click) on a dynamic screen to cause a trade order to be sent to the exchange at the pre-set quantity." Ex. 1008 ¶ 20; *see* Ex. 1031, 7.

Other types of conventional trading GUIs used order entry tickets to send trade orders to an electronic exchange. Ex. 2169 ¶ 50. An order entry ticket is "in the form of a window, with areas for a trader to fill out order parameters for an order, such as the price, quantity, an identification of the item being traded, buy or sell, etc." *Id.*; *see also* Ex. 1001, 2:21–23, 34–36 (describing a trader manually entering trade order parameters).

Figure 3 of the '768 patent is reproduced below.

FIG. 3

SYCOM FGBL DEC99

E/W	10:48:44	BidQ	AskQ	Prc	LTQ
L	3		104	99	
R	5		24	98	
	720		33	97	
×	10		115	96	
	0		32	95	
10	1H		27	94	
50	3H		63	93	
1K	5H		45	92	
	CLR		28	91	
×	10		20	90	10
17	▽	18		89	
CXL		97		88	
+	-	30		87	
NET 0		43		86	
NET REAL		110		85	
		23		84	
		31		83	
		125		82	
		21		81	

Left labels: 1009, 1010, 1011, 1012, 1013, 1014, 1007 (S 0 W 24, S 0 W 7), 1015, 1016, 1008 (B 0 W 15, B 0 W 13), 1017, 1018 (B 0 W 17), 1019, 1021

Right label: 1020

Bottom labels: 1001, 1002, 1003, 1004, 1005, 1006

Figure 3 of the '768 patent illustrates an example of the Mercury display with example values for trading a commodity including prices, bid and ask quantities relative to price, and trade quantities. Ex. 1001, 3:41–42, 7:1–3.

The Mercury display is similar to the Fig. 2 GUI in that both display market information in a grid having rows and column and both provide for single action order entry. *See id.* at 6:59–64, 7:32–33, 4:8–18, 9:1–54, Fig. 6, steps 1306–1315. The Mercury display differs from the Fig. 2 GUI in the arrangement of the market information in the grid. In the Mercury display, price values for the commodity are displayed in a price column 1005 (i.e., a price axis). *Id.* The '768 patent explains that the price column does not display whole prices but rather representative ticks. *Id.* at 7:33–36. The

values in the price column of the Mercury display "are static; that is, they do not normally change positions unless a re-centering command is received." *Id.* at 7:42–44. Bid and ask quantities are displayed in columns 1003 and 1004, respectively, and are aligned with the corresponding price value in price column 1005. *See id.* at 7:27–33. The bid quantities and ask quantities move up and down as the market changes, and, thus, the location of the inside market moves up and down. *See id.* at 8:33–43.

Although Figure 3 of the '768 patent displays the market depth, the '768 patent discloses that:

> How far into the market depth the present invention can display depends on how much of the market depth the exchange provides. Some exchanges supply an infinite market depth, while others provide no market depth or only a few orders away from the inside market. The user of the present invention can also cho[o]se how far into the market depth to display on his screen.

Id. at 5:1–7. The '768 patent, thus, indicates that in some instances the screen will display only the inside market (i.e., the highest bid price and the lowest ask price) and not the market depth.

The Mercury display may also display other information. Column 1002 contains various parameters and information used to execute trades, such as the default quantity displayed in cell 1016. *See id*. at 7:65–8:32. The number next to the W in cell 1007 indicates the trader's orders that are in the market and not yet filled. *Id.* at 7:53–58.

D. Illustrative Claim

Claims 1 and 23 are independent. Claim 1 is illustrative of the claimed subject matter and is reproduced below:

1. A method of placing a trade order for a commodity on an electronic exchange using a graphical user interface and a user input device, said method comprising:

receiving data relating to the commodity from the electronic exchange, the data comprising an inside market with a highest bid price and a lowest ask price currently available for the commodity;

dynamically displaying via a computing device a first indicator in one of a plurality of areas in a bid display region, each area in the bid display region corresponding to a price level along a price axis, the first indicator representing a quantity associated with at least one order to buy the commodity at the highest bid price;

dynamically displaying via the computing device a second indicator in one of a plurality of areas in an ask display region, each area in the ask display region corresponding to a price level along the price axis, the second indicator representing a quantity associated with at least one order to sell the commodity at the lowest ask price;

displaying an order entry region comprising a plurality of locations for receiving single action commands to send trade orders, the plurality of location including:

(a) at least one first fixed location corresponding to a first price level along the price axis associated with the highest bid price currently available in the market, wherein upon receipt of new data representing an updated highest bid price currently available for the commodity, the at least one first fixed location continues to correspond to the first price level even if the first price level is no longer associated with the highest bid price currently available in the market; and

(b) at least one second fixed location corresponding to a second price level along the price axis associated with the lowest ask price currently available in the market, wherein upon receipt of new data representing an updated lowest ask price currently available for the commodity, the at least one second fixed

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location continues to correspond to the second price level even if the second price level is no longer associated with the lowest ask price currently available in the market;

updating the display of the first indicator such that the first indicator is moved relative to the price axis to a different area in the bid display region corresponding with a different price level along the price axis in response to receipt of new data representing an updated highest bid price currently available for the commodity;

updating the display of the second indicator such that the second indicator is moved relative to the price axis to a different area in the ask display region corresponding with a different price level along the price axis in response to receipt of new data representing an updated lowest ask price currently available for the commodity; and

setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange in response to a selection of a particular location of the order entry region by a single action of a user input device.

Ex. 1001, 11:46–12:36.

ANALYSIS

A. Claim Construction

In a covered business method patent review, claim terms are given their broadest reasonable interpretation in light of the specification in which they appear and the understanding of others skilled in the relevant art. *See* 37 C.F.R. § 42.300(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). Applying that standard, claim terms are presumed to have their ordinary and customary meaning as would be understood by one of ordinary

skill in the art in the context of the patent's specification. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

1. *"single action"*

Claims 1 and 23 both recite "a selection of a particular location of the order entry region by a single action of a user input device." Ex. 1001, 12:34–36, 14:55–57.

Petitioner contends that "single action" should be construed to be "any action by a user within a short period of time, whether comprising one or more clicks of a mouse button or other input device" as defined in the specification of the '768 patent. Pet. 14 (quoting Ex. 1001, 4:14–18).

Patent Owner states that Petitioner's proposed construction "is sufficient for these proceedings so long as the construction is limited to 'an action by a user . . .' or 'one action by a user . . .' because the claim itself specifically identifies that the action be a 'single' action." PO Resp. 10 (emphasis omitted). Patent Owner argues that any other construction would not be reasonable because it would be contrary to the specification and the plain and ordinary meaning. *Id.*

A patentee may rebut the presumption that claim terms have ordinary and customary meaning by providing a definition of the term in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). As Petitioner points out, the '768 patent provides such a definition. Pet. 14. The specification of the '768 patent states:

> the specification refers to a single click of a mouse as a means for user input and interaction with the terminal display as an example of a single action of the user. While thus describes a

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preferred mode of interaction, the scope of the present invention is not limited to the use of a mouse as the input device or to the click of a mouse button as the user's single action. *Rather, any action by a user within a short period of time, whether comprising one or more clicks of a mouse button or other input device, is considered a single action of the user for the purposes of the present invention.*

Ex. 1001, 4:8–18 (emphasis added). As can be seen from the above, the '768 patent defines "single action," with reasonable clarity, deliberateness, and precision, as "any action by a user within a short period of time, whether comprising one or more click of a mouse button or other input device." *Id.* We, thus, construe "single action" according to its definition in the '768 patent. *In re Paulsen*, 30 F.3d at 1480.

Patent Owner's proposed construction is inconsistent with the definition in the '768 patent. The definition explicitly states that more than one click of a mouse button by a user is considered a "single action" for the purposes of the present invention. Ex. 1001, 4:8–18. Further, dependent claim 9 similarly shows that "single action" should not be limited to one action by a user, as it recites that the "single action . . . consists of a double click of the user input device" (Ex. 1001, 12:66–13:8).

For the reasons given above, we construe "single action" to mean "any action by a user within a short period of time, whether comprising one or more clicks of a mouse button or other input device" (Ex. 1001, 4:14–18).

2. *Entered Order Indicator*

Claim 6 recites "an entered order indicator" and "the entered order indicator represents an order pending at the electronic exchange." Ex. 1001, 12:56–60. Patent Owner argues that "[a person of ordinary skill in the art]

would readily recognize that the entered order indicator must indicate to the user that the user has an order at a particular price level along the price axis" because the specification of the '768 patent discloses "'an entered/working' column (E/W) that 'displays the current status of the trader's order.'" PO Resp. 13 (citing Ex. 1001, 7:50–58, Figs. 3–4; Ex. 2169 ¶ 30).

As Petitioner points out, Patent Owner's argument is inconsistent with the plain language of claim 6, which explicitly states that an "entered order indicator represents an order pending at the electronic exchange." Pet. Reply 2. The plain language does not require the entered order indicator to indicate *to the user that the user* has an order at a particular price level along the price axis. Patent Owner's construction is an attempt to read a limitation from the specification of the '768 patent into the claims. If a feature is not necessary to give meaning to what the inventor means by a claim term, it would be "extraneous" and should not be read into the claim. *Renishaw PLC v. Marposs Societa' Per Azioni,* 158 F.3d 1243, 1249; *E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co.,* 849 F.2d 1430, 1433 (Fed.Cir.1988).

The plain language of claim 6 state that an "entered order indicator represents an order pending at the electronic exchange." No further construction is required.

3. Other Terms

Patent Owner proposes explicit constructions for other claim terms. *See* PO Resp. 1–4. We do not need to explicitly construe these other claim terms in order to resolve the issues before us. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.,* 200 F.3d 795, 803 (Fed.Cir.1999) (Only terms which are in

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controversy need to be construed, and then only to the extent necessary to
resolve the controversy.)

B. Covered Business Method Patent

1. Standing

Section 18 of the AIA[4] provides for the creation of a transitional
program for reviewing covered business method patents. Section 18 limits
review to persons or their privies who have been sued or charged with
infringement of a "covered business method patent," which does not include
patents for "technological inventions." AIA § 18(a)(1)(B), (d)(1); *see*
37 C.F.R. § 42.302. Petitioner certifies that it was sued for infringement of
the '768 patent. Pet. 3 (citing Exs. 1003, 1004). Patent Owner does not
dispute this. *See generally* PO Resp.

2. Whether the '768 Patent is a CBM Patent

Under § 18(a)(1)(E) of the AIA, we may institute a transitional review
proceeding only for a CBM patent. A CBM patent is a patent that "claims a
method or corresponding apparatus for performing data processing or other
operations used in the practice, administration, or management of a financial
product or service, except that the term does not include patents for
technological inventions." AIA § 18(d)(1); *see also* 37 C.F.R. § 42.301
(defining "[c]overed business method patent" and "[t]echnological
invention"). To determine whether a patent is eligible for a covered business
method patent review, the focus is on the claims. *Secure Axcess, LLC v.*

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[4] Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284, 329
(2011) ("AIA").

PNC Bank N.A., 848 F.3d 1370, 1379 (Fed. Cir. 2017) ("It is the claims, in the traditional patent law sense, properly understood in light of the written description, that identifies a CBM patent."). One claim directed to a CBM is sufficient to render the patent eligible for CBM patent review. *See id.* at 1381 ("[T]he statutory definition of a CBM patent requires that the patent have a claim that contains, however phrased, a financial activity element.").

In our Institution Decision, we determined that the Petitioner had shown that the '768 patent is a CBM patent. Inst. Dec. 9–12. Patent Owner urges us to reconsider our determination and find that the '768 patent is not eligible for CBM review. *See* PO Resp. 63–65. We, however, are not apprised of any sufficient reason to change our original determination.

> *a. Method or Corresponding Apparatus for Performing Data Processing or Other Operations Used in the Practice, Administration or Management of a Financial Product or Service"*

The statute defines a "covered business method patent" as "[a] patent that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service." AIA § 18(d)(1); *see* 37 C.F.R. § 42.301(a). A covered business method patent can be broadly interpreted to encompass patents claiming activities that are financial in nature. Transitional Program for Covered Business Method Patents— Definitions of Covered Business Method Patent and Technological Invention, 77 Fed. Reg. 48734, 48735 (Aug. 14, 2012); *Blue Calypso, LLC v. Groupon, Inc.,* 815 F.3d 1331, 1338–41 (Fed. Cir. 2016) (determining that a patent was a covered business method patent because it claimed activities

that are financial in nature); *Unwired Planet, LLC v. Google, Inc.,* 841 F.3d 1376, n. 5 (Fed. Cir. 2016) (stating that "we endorsed the 'financial in nature' portion of the standard as consistent with the statutory definition of 'covered business method patent' in *Blue Calypso*"), *Versata Development Group, Inc. v. SAP America, Inc.,* 793 F.3d 1306, 1324–25 (Fed. Cir. 2015) ("[The statute] on its face covers a wide range of finance-related activities.").

A patent need have only one claim directed to a covered business method to be eligible for review. 77 Fed. Reg. at 48,736 (Response to Comment 8). We take claim 1 as representative.

Petitioner asserts that claim 1 is directed to a covered business method because it recites a method of placing a trade order for a commodity on an electronic exchange including the steps of displaying market information and sending a trade order, which are financial in nature. Pet. 4–5. As Petitioner points out, claim 1 recites displaying market information, including indicators of a highest bid and a lowest ask in the market, and sending a trade order to an electronic trading exchange. Pet. 4; Ex. 1001, 11:46–12:34.

Displaying market information and sending a trade order to an electronic exchange are activities that are financial in nature. A method for placing a trade order for a commodity on an electronic exchange is a method for performing data processing or other operations used in the practice, administration, or management of a financial product or service.

Patent Owner does not dispute that the '768 patent claims a method used for a financial product or service, but does dispute that the '768 patent claims data processing. PO Resp. 90–91. Patent Owner's argument is based

upon the assumption that "data processing" in the statute is interpreted according to the definition of "data processing" found in the glossary for class 705 of the United States Patent Classification System. *See id.* Patent Owner, however, does not sufficiently explain why this definition is controlling, as opposed to the plain meaning of "data processing." We, thus, are not persuaded that "data processing" as recited by the statute precludes data processing for the purpose of displaying the data. The '768 patent discloses processing market information for display on a client terminal and for sending an order to an exchange. *See e.g.*, Ex. 1001, 4:60–61 ("The present invention processes this information and maps it through simple algorithms and mapping tables to positions in a theoretical grid program . . .). We, thus, are not persuaded that the '768 patent does not claim "performing data processing . . . used in the practice, administration, or management of a financial product or service" (AIA § 18(d)(1)).

In any event, the statute does not limit CBM patents to only those that claim methods for performing data processing used in the practice, administration, or management of a financial product or service. It includes methods for performing "other operations" used in the practice, administration, or management of a financial product or service. The statute states that the "other operations" are those that are "used in the practice, administration, or management of a financial product or financial service." AIA § 18(d)(1). There appears to be no disagreement that the claimed method steps are operations used in the practice, administration, or management of a commodity or trading a commodity on an electronic exchange, e.g., a financial service. *See generally* PO Resp. 90–91. The '768 patent, therefore, at least claims "other operations used in the practice,

administration, or management of a financial product or financial service"
(AIA § 18(d)(1)).

Patent Owner contends that the Legislative History confirms that the
claimed invention is not a covered business method because "it specifically
states that GUI tools for trading are not the types of inventions that fall
within CBM jurisdiction." PO Resp. 92 (citing Ex. 2126, S5428, S5433).

Although the legislative history includes certain statements that
certain novel software tools and graphical user interfaces that are used by the
electronic trading industry worker are not the target of § 18 of the AIA (*see*
Ex. 2126, S5428, S5433), the language of the AIA, as passed, does not
include an exemption for user interfaces for commodities trading from
covered business method patent review. Indeed, "the legislative debate
concerning the scope of a CBM review includes statements from more than
a single senator. It includes inconsistent views . . . ." *Unwired Planet*, 841
F.3d at 1381. For example, in contrast to the statements cited by Patent
Owner, the legislative history also indicates that "selling and trading
financial instruments and other securities" is intended to be within the scope
of covered business method patent review. *See* Ex. 2126, S5432 (statements
of Sen. Schumer); *see also id.* at S54636–37 (statements of Sen. Schumer
expressing concern about patents claiming "double click"), 157 Cong. Rec.
S1360 at S1364 (Mar. 8, 2011) (statements of Sen. Schumer explain that
"method or corresponding apparatus" encompasses "graphical user interface
claims" and "sets of instructions on storage media claims.") "[T]he
legislative history cannot supplant the statutory definition actually adopted. .
. . The authoritative statement of the Board's authority to conduct a CBM
review is the text of the statute." *Unwired Planet*, 841 F.3d at 1381. Each

claimed invention has to be evaluated individually to determine if it is eligible for a CBM patent review. A determination of whether a patent is eligible for a CBM patent review under the statute is made on a case-by-case basis. 37 C.F.R. § 42.301(b).

For the reasons stated above, we are persuaded by Petitioner that the '768 patent "claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service" and meets that requirement of § 18(d)(1) of the AIA.

3. Exclusion for Technological Inventions

Even if a patent includes claims that would otherwise be eligible for treatment as a covered business method, review of the patent is precluded if the claims cover only "technological invention[s]," as defined by 37 C.F.R. §42.301(b). The definition of "covered business method patent" in § 18(d)(1) of the AIA does not include patents for "technological inventions." To determine whether a patent is for a technological invention, we consider the following: "whether the claimed subject matter as a whole [(1)] recites a technological feature that is novel and unobvious over the prior art; and [(2)] solves a technical problem using a technical solution." 37 C.F.R. § 42.301(b). Both prongs must be satisfied in order for the patent to be excluded as a technological invention. *See Versata*, 793 F.3d at 1326–7; *Apple Inc. v. Ameranth, Inc.,* 842 F.3d 1229, 1240 (Fed. Cir. 2016). The following claim drafting techniques, for example, typically do not render a patent a "technological invention":

> (a) Mere recitation of known technologies, such as computer hardware, communication or computer networks, software,

memory, computer-readable storage medium, scanners, display devices or databases, or specialized machines, such as an ATM or point of sale device.

(b) Reciting the use of known prior art technology to accomplish a process or method, even if that process or method is novel and non-obvious.

(c) Combining prior art structures to achieve the normal, expected, or predictable result of that combination.

Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,763–64 (Aug. 14, 2012). The Federal Circuit has held that a claim does not include a "technological feature" if its "elements are nothing more than general computer system components used to carry out the claimed process." *Blue Calypso*, 815 F.3d at 1341; *see also Versata*, 793 F.3d at 1327 ("the presence of a general purpose computer to facilitate operations through uninventive steps does not change the fundamental character of an invention").

With respect to the first prong, Petitioner contends that rather than reciting a technical feature that is novel or unobvious over the prior art, the claims of the '768 patent generally recite trading software that is implemented on a conventional computer. Pet. 5–7. When addressing "whether the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art," Patent Owner alleges that "Petitioners fail to address whether the claims recite a technical feature that is novel and unobvious." PO Resp. 91. That is incorrect. *See* Pet. 5–7; Inst. Dec. 11 (discussing Petitioner's contention).

We are persuaded by Petitioner's contentions that at least claim 1 of the '768 patent does not recite a novel and non-obvious technological feature. Pet. 5–7 (citing Ex. 1007 ¶¶ 73–74). The specification of the '768

patent treats as well-known all potentially technological aspects of the claims. For example, the '768 patent discloses that its system can be implemented "on any existing or future terminal or device" (Ex. 1001, 4:4–7), each of which is known to include a display, and discloses that the input device can be a mouse (*id.* at 4:9–11), which is a known input device. The '768 patent further discloses that "[t]he scope of the present invention is not limited by the type of terminal or device used." *Id.* at 4:7–9. The '768 patent also describes the programming associated with the GUI as insignificant. *See, e.g., id.* at 4:60–66 (explaining that the "present invention processes [price, order, and fill] information and maps it through simple algorithms and mapping tables to positions in a theoretical grid program" and "[t]he physical mapping of such information to a screen grid can be done by any technique known to those skilled in the art"). That at least claim 1 of the '768 patent does not recite a novel and non-obvious technological feature is further illustrated by our comparison of the Fig. 2 GUI to the Mercury display above (*see* Pet. 5) and by our discussion of that claim being unpatentable under § 103 below. Accordingly, we are persuaded that at least claim 1 does not recite a technological feature that is novel and unobvious over the prior art.

With respect to the second prong, Petitioner contends that the claims of the '768 patent do not fall within § 18(d)(1)'s exclusion for "technological inventions" because the '768 patent does not solve a technical problem using a technical solution. Pet. 8–9. Petitioner notes that "[a]ccording to the '768 patent, the 'problem' with prior art trading GUIs was that the market price could change before a trader entered a desired order, causing the trader to 'miss his price.'" *Id.* at 8 (citing Ex. 1001, 2:50–

63). Petitioner contends that "the '768 patent's solution is not technical"
because Patent Owner "simply [] rearrange[d] how known and available
market data is displayed on a GUI" and "did not design a more accurate
mouse or a computer that responded faster." *Id.* at 9.

Patent Owner argues that the '768 patent provides a technical solution
to a technical problem. PO Resp. 91–92. Specifically, Patent Owner argues
that "the '768 claims provide a new GUI construction that improves prior
GUIs because it address the problem of a user missing their intended price."
Id. at 92. Patent Owner points to *CQG* for support. *Id.* at 91–92.

We are persuaded that the '768 patent does not solve a technical
problem with a technical solution. Pet. 8–9. The '768 patent purports to
solve the problem of a user missing an intended price because a price level
changed as the user tried to click to send an order at an intended price level
in a GUI tool. *See* Ex. 1001, 2:3–62. As written, claim 1 requires the use of
only known technology. Given this, we determine that at least claim 1 does
not solve a technical problem using a technical solution and at least claim 1
does not satisfy the second prong of 37 C.F.R. § 42.301(b).

The '768 patent describes the problem it solves as follows:

> [A]pproximately 80% [of the total time it takes to place an
> order] is attributable to the time required for the trader to read the
> prices displayed and to enter a trade order. The present invention
> provides a significant advantage during the slowest portion of the
> trading cycle—while the trader ***manually enters his order***. . . .
> In existing systems, multiple elements of an order must be
> entered prior to an order being sent to market, which is time
> consuming for the trader. Such elements include the commodity
> symbol, the desired price, the quantity and whether a buy or sell
> order is desired. The more time a trader takes entering an order,
> the more likely the price on which he wanted to bid or offer will
> change or not be available in the market. . . . In such liquid

markets, the prices of the commodities fluctuate rapidly. On a trading screen, this results in rapid changes in the price and quantity fields within the market grid. If a trader intend to enter an order at a particular price, but misses the price because the market prices moved before he could enter the order, he may lose hundreds, thousands, even millions of dollars. The faster a trader can trade, the less likely it will be that he will miss his price and the more likely he will make money.

Ex. 1001, 2:35–62 (emphasis added). "The inventors have developed the present invention which overcomes the drawbacks of the existing trading systems and dramatically reduces the time it takes for a trader to place a trade when electronically trading on an exchange." *Id.* at 2:66–3:2.

As can be seen from the above, a problem disclosed in the '768 patent is the time it takes for a trader to *manually* enter trader orders on a market or exchange that is rapidly changing, so as to make a profit. This is a financial issue or a business problem, not a technical problem. *See* Pet. 5–7. If the market or exchange did not rapidly change, then there would be no need for a trader to enter orders rapidly.

The '768 patent also describes that "the present invention ensure[s] fast and accurate execution of trades by displaying market depth on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the plane as the market prices fluctuate." Ex. 1001, 3:5–9. Claim 1, however, does not require displaying the market depth. *See id.* at 11:46–12:36. Claim 1 only requires displaying a first indicator that represents a quantity associated with the highest bid price and a second indicator that represents a quantity associated with the lowest ask price. *Id.* In other words, claim 1 only requires displaying indicators that correspond to the inside market. *See also id.* at 5:1–7 (disclosing displaying on the

inside market and not the market depth). The subject matter of claim 1, thus, does not require the alleged technical solution to the problem of ensuring fast and accurate trades.

Patent Owner's reliance on *CQG* is misplaced. *CQG* addressed the claimed subject matter of the '134 patent and U.S. Patent No. 6,766,304. The decision relied upon a feature not required by claim 1 of the '768 patent— a *static* price axis. *See* Tr. 44–60 (discussing the differences between the claims at issue in *CQG* and the claims of the '768 patent); Pet. 30. Although claim 1 of the '768 patent requires a price axis, it does not require the price axis to be static. *See* Ex. 1001, 12:23–13:16. It does not preclude the price axis from changing as the market information updates or preclude a price value associated with the order entry location changing as it is selected. *See* Tr. 44–60.

We are persuaded by Petitioner that at least claim 1 does not recite a technological feature that is novel and unobvious over the prior art and does not solve a technical problem using a technical solution. Accordingly, we determine that the '768 patent is not for a technological invention.

4. Conclusion

In view of the foregoing, we conclude that the '768 patent is a covered business method patent under AIA § 18(d)(1) and is eligible for review using the transitional covered business method patent program.

C. Section 101 Patent-Eligible Subject Matter

Petitioner challenges claims 1–23 as directed to patent-ineligible subject matter under 35 U.S.C. § 101. Pet. 15–31.

Under 35 U.S.C. § 101, we must first identify whether an invention fits within one of the four statutorily provided categories of patent-eligibility: "processes, machines, manufactures, and compositions of matter." *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 713–14 (Fed. Cir. 2014).

Initially, we note that Petitioner asserts that claim 23 is "broad enough to encompass a transitory, propagating signal that is encoded, which is not eligible for patenting." Pet. 31 (citing *In re Nuijten*, 550 F.3d 1346, 1357 (Fed. Cir. 2007); *Ex parte Mewherter,* 107 USPQ2d 1857m 1859–60 (B.P.A.I. 2013) (precedential)). Petitioner explains that the specification neither defines this term nor provides examples. *Id.* at 14. Petitioner argues that addition of the phrase "having program code recorded thereon" to "computer readable medium" does not limit the medium to non-transitory media. Petitioner argues that "record" is defined as "to set down in writing" or "to cause (as sound, visual images, or data) to be registered on something (as a disc or magnetic tape) in reproducible form." *Id.* at 15 (citing Ex. 1041, Merriam-Webster's Collegiate Dictionary definition of record). In our Institution Decision, we made an initial determination that the broadest reasonable interpretation of the "computer readable medium" recited in claim 23 is "any medium that participates in providing instruction to a processor for execution and having program code recorded thereon." Inst. Dec. 8–9.

Patent Owner responds that there is insufficient evidence to support Petitioner's contention that one skilled in the art would have understood "computer readable medium having program code recorded thereon" to encompass a signal at the time of the invention. PO Resp. 89–90. Patent

Owner disputes that the limitation encompasses signals. *Id.* (citing Ex. 2169 ¶ 33, testimony of Mr. Thomas). Patent Owner also argues that *Ex Parte Mewherter* is inapplicable because it addresses the meaning of the term "storage medium" after to 2002 and the effective filing date of the '768 patent predates 2002. *Id.* at 90.

Petitioner responds to Patent Owner's contentions by simply asserting that "the Board should follow the precedential decision in *Ex Parte Mewherter.*" Pet. Reply 11.

Petitioner's response is unhelpful. For example, in its Reply, Petitioner cites no evidence to rebut Patent Owner's contentions regarding how one skilled in the art would have understood "computer readable medium having program code recorded thereon," at the time of the invention and does not respond to Patent Owner's contentions regarding the applicability of *Ex Parte Mewherter*. In fact, Petitioner does not even acknowledge those contentions.

Accordingly, on this record, which is absent any further evidence or meaningful argument from Petitioner, we are not persuaded that at the time of the invention one skilled in the art would have understood "computer readable medium having program code *recorded* thereon" as encompassing transitory, propagating signals.

There is no dispute that the remaining claims fit within one of the four statutorily provided categories of patent-eligibility. Claim 1, for example, is directed to a process.

1. Eligibility

Patent-eligible subject matter is defined in § 101 of the Patent Act, which recites:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

There are, however, three judicially created exceptions to the broad categories of patent-eligible subject matter in § 101: laws of nature, natural phenomena, and abstract ideas. *Alice,* 134 S. Ct. at 2354; *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (2012). Although an abstract idea, itself, is patent-ineligible, an application of the abstract idea may be patent-eligible. *Alice*, 134 S. Ct. at 2355. Thus, we must consider "the elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Id.* (citing *Mayo*, 132 S. Ct. at 1297–98). The claim must contain elements or a combination of elements that are "sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [abstract idea] itself." *Id.* (citing Mayo, 132 S. Ct. at 1294).

Claims 1 and 23 are independent and recite similar limitations. We take claim 1 as representative.

2. Abstract Idea

"The 'abstract idea' step of the inquiry calls upon us to look at the 'focus of the claimed advance over the prior art' to determine if the claim's 'character as a whole' is directed to excluded subject matter.'" *Affinity Labs*

of Texas v. DirectTV, LLC, 838 F.3d 1253, 1257 (Fed. Cir. 2016) (quoting

Elec. Power Grp., LLC v. Alstom S.A., 830 F.3d 1350, 1353 (Fed. Cir.

2016); *see also Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed.

Cir. 2016).

According to Petitioner, the claims are directed to the abstract idea of

"placing an order based on observed (plotted) market information, as well as

updating market information." Pet. 17. Petitioner contends that "claim 1

could be performed in the human mind or with the aid of pen-and-paper with

little difficulty because the claim requires plotting only a few data points"

(*id.* at 18) and that the claims are directed to commodity trading which is 'a

fundamental economic practice long prevalent in our system of commerce.'"

Pet. Reply 5 (citing *Alice*, 134 S. Ct. at 2356). Patent Owner disagrees. *See*

PO Resp. 79–87.

Claim 1 of the '768 patent recites "a method of placing a trade order

for a commodity on an electronic exchange using a graphical user interface

and a user input device." Ex. 1001, 11:46–48. Claim 1 recites steps of

displaying market information, bid and ask quantities, in regions along a

price axis. *Id.* at 11:53–64. The market information is an indicator of an

order to buy at the highest bid price and an indicator of an order to sell at the

lowest ask price. *Id.* In other words, the displayed market information is the

inside market. Claim 1 does not require displaying the market depth. Claim

1 also recites a step of updating the market information such that it moves

relative to the price axis as the market changes. *Id.* at 12:19–31. Claim 1

further recites steps of displaying a first and second fixed location in an

order entry region, steps of setting parameters for a trade order, and a step of

sending a trade order to an exchange in response to a single action of a user input device *Id.* at 11:65–67, 12:32–36.

As can be seen from its steps, the focus of claim 1 is placing trade orders based on displayed market information, as well as updating the displayed market information. This focus is consistent with the '768 patent's statement that "[t]he present invention is directed to the electronic trading of commodities. . . . It facilitates the display of and the rapid placement of trade orders. . . ." *Id.* at 1:15–20. The focus of claim 1 is also consistent with the problem disclosed by the '768 patent of a trader missing an intended price because the market changed during the time required for a trader to read the prices displayed and to manually enter an order. *Id.* at 2:35–62.

Claim 1 does not recite any limitation that specifies how the computer implements the steps or functions for using a GUI. For example, claim 1 recites displaying an arrangement of the market information on the GUI. The bid quantity is displayed in the bid region at a location that corresponds to a price along a price axis and the ask quantity is displayed in an ask region at a location that corresponds to a price along the price axis. *Id.* at 11:53–64. Claim 1 does not specify how the computer maps the bid quantities, ask quantities, and price axis to the display. The '768 patent does not disclose an unconventional or improved method of mapping the bid quantities, ask quantities, and price axis to the display. It states that "[t]he physical mapping of such information to a screen grid can be done by any technique known to those skilled in the art" and that "[t]he present invention is not limited by the method used to map the data to the screen." *Id.* at 4:64–67.

The '768 patent discloses that at least 60 exchanges throughout the world utilize electronic trading and discloses that it is known that electronic trading includes analyzing displayed market information and updated market information to send trade orders to an exchange. *See id.* at 1:26–2:22. Similarly, Mr. Thomas indicates that traders in prior trading systems, including pre-electronic open outcry systems, which have been used for over one hundred years, send trade orders to an exchange based on price, such as the inside market prices or other prices. Ex. 2169 ¶¶ 36, 62, and 63. Mr. Thomas testifies that "[i]n the trading pit, traders utilize shouting and hand signals to transfer information about buy and sell orders to other traders. To avoid confusion, the inside market prices were the focus, and traders could only shout and signal regarding their interest at the best bid/offer or at prices that improves the best bid/offer." *Id.* ¶ 36. The '768 patent discloses that electronic exchanges are known to provide the market depth for display that is the inside market and a few orders away from the inside market. Ex. 1001, 5:3–5. Further, Exhibit 1020 discloses that long before the '768 patent traders maintained books that plotted bids and asks (e.g., the market depth) along a price axis. *See* Ex. 1020, 44–46. Exhibit 1020 states "[s]pecialists enter public orders, that are away from the market, in their books by price and in the order they are received." *Id.* at 44. Figure 4-2 of Exhibit 1020 is reproduced below.

FIGURE 4-2. *A page in the specialist's book.*

Figure 4-2 depicts a page of a book of a trader. *Id.* at 44–45. Orders to buy or sell a commodity are plotted along a prices axis. For example, Figure 4–2 shows the best bid at 22¼ and the best ask at 22⅝. *Id.* at 44. Ex. 1020 states: "The NYSE specialist's book is maintained on a CRT and referred to as a *display book*. This electronic book sorts all orders coming to the specialist in time and price sequence . . . ." *Id.* at 46.

Given this, we determine that placing an order based on displayed market information, such as the inside market and few other orders, as well as updating the market information is a fundamental economic and conventional business practice. We are persuaded by Petitioner that the method of claim 1 could be performed in the human mind or with the aid of pen-and-paper with little difficulty because the claim requires plotting only a few data points (i.e., the inside market). *See* Pet. 18 (citing Ex. 1020, 44–46; Ex. 1007 ¶¶ 73–74).

Patent Owner argues that the claims of the '768 patent are not directed to a fundamental economic practice, longstanding commercial practice, or business method. PO Resp. 85–87. Patent Owner contends the "claims did not have a pre-electronic equivalent as electronic trading operates in fundamentally different ways from open outcry. . . . In open outcry, trader could not publish orders away from the inside market, and could pick and choose with whom they wanted to trade." *Id.* at 85 (citations omitted). Patent Owner's arguments are unpersuasive because they are not commensurate with the scope of the claims. For example, claim 1 recites a method of placing a trade order for a commodity on an exchange, which includes steps of displaying the inside market and sending the trade order to the electronic exchange. Ex. 1001, 11:46–12:36. Claim 1 does not recite any steps as to how the electronic exchange matches or fills the order. *See id.* Claim 1 requires publishing the inside market and does not require publishing the market depth. *See id.*; *see also id.* at 5:1–7. Claim 1 does not specify how the order is filled at the electronic exchange or preclude a trader from picking and choosing with whom they want to trade. *See id.* at 11:46–12:36.

The claims at issue here are like the claims at issue in *Affinity Labs.* In *Affinity Labs*, the claim at issue recited an application that enabled a cellular telephone to present a GUI displaying a list of media sources that included selectable items for selecting a regional broadcasting channel. *Affinity Labs*, 838 F.3d at 1255–56. The claim also recited that the cellular telephone was enabled to transmit a request for the selected regional broadcasting channel. *Id.* at 1256. The claims at issue here are also like the claims at issue in *Apple, Inc. v. Ameranth, Inc.,* 842 F.3d 1229 (Fed. Cir.

2016). *See* Pet. Reply 8–9. In *Ameranth*, the claim at issue recited a GUI
that displayed menu items in a specific arrangement, a hierarchical tree
format. Menu items were selected to generate a second menu from a first
menu. *Ameranth*, 842 F.3d at 1234. In both *Affinity Labs* and *Ameranth*, the
court determined that the claims were not directed to a particular way of
programming or designing the software, but instead merely claim the
resulting systems. The court thus determined that the claims were not
directed to a specific improvement in the way computers operate. *Affinity
Labs,* 838 F.3d at 1260–61; *Ameranth,* 842 F.3d at 1241. Here, the claims
also recite the resulting GUI and are not directed to specific improvements
in the way the computers operate. "Though lengthy and numerous, the
claims [that] do not go beyond requiring the collection, analysis, and display
of available information in a particular field, stating those functions in
general terms, without limiting them to technical means for performing the
functions that are arguably an advance over conventional computer and
network technology" are patent ineligible. *Elec. Power Grp.,* 830 F.3d at
1351. "Generally, a claim that merely describes an 'effect or result
dissociated from any method by which [it] is accomplished' is not directed
to patent-eligible subject matter." *Ameranth*, 842 F.3d at 1244 (quoting
Internet Patents Corp. v. Active Network, Inc., 790 F.3d 1343, 1348 (Fed.
Cir. 2015)).

The claims of the '768 patent are unlike the claims at issue in *DDR
Holdings, LLC v. Hotels.com, L.P.,* 773 F.3d 1245 (Fed. Cir. 2014) and
Enfish. See Pet. 29–30; Pet. Reply 6. In *DDR Holdings*, the court
determined that the claims did not embody a fundamental economic
principle or a longstanding commercial practice. The claims at issue in *DDR*

Holdings were directed to retaining website visitors, which the court determined was a problem "particular to the Internet." *DDR Holdings,* 773 F.3d at 1257. The court also determined that the invention was "necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks" and that the claimed invention did not simply use computers to serve a conventional business purpose. *Id.* In *Enfish*, the claim at issue was directed to a data storage and retrieval system for a computer memory. *Enfish*, 822 F.3d at 1336–37. The court determined that the claims were directed to an improvement in the functioning of a computer and were not simply adding conventional computer components to well-known business practices. *Id.* at 1338. Here, in contrast, claim 1 is directed to a fundamental economic principle or a longstanding commercial practice and not directed to an improvement in the computer, but simply to the use of the GUI in a method of placing an order based on displayed market information, as well as updating market information. *See* Pet. 29–30.

Patent Owner argues that the GUI disclosed in the '768 patent solves an alleged problem of the Fig. 2 GUI, displaying the inside market at a fixed location, while the displayed prices change as the market changes. *See* PO Resp. 81–83. If a trader was focused on trading at a particular price, the trader could miss its intended price using the Fig. 2 GUI because the price could change as the trader clicked it. *Id.* at 2. Patent Owner contends that the '768 patent solves this problem "by combining a dynamic display of bid and ask indicators that move relative to a price axis." *Id.* at 4. The problem of a price changing just as a trader clicks on the price is not disclosed in the '768 patent. Patent Owner's argument is unpersuasive because it is not

commensurate with the scope of the claim. Claim 1 does not require the price axis to be static. *See* Ex. 1001, 11:46–12:36. It does not preclude the values of the price axis from changing as the market information updates. In other words, the claims allow for a price value associated with the order entry location to change as market information updates and change at the time a trader is selecting a corresponding order entry location. *See* Tr. 44–60. The claimed subject matter does not solve the problem alleged by the Patent Owner.[5]

Further, claim 1 of the '768 patent is unlike the claims at issue in *McRO, Inc. v. Bandai Namco Games America Inc.,* 837 F.3d. 1299 (Fed. Cir. 2016). In *McRO*, the court held that claims that recited "a specific asserted improvement in computer animation" were not directed to an unpatentable abstract idea because they go "beyond merely organizing existing information into a new form or carrying out a fundamental economic practice." *McRO*, 837 F.3d at 135. Here, the claims merely organize existing market information so that it is displayed or plotted along a price axis. Plotting bids and asks along a price axis is not a specific improvement to a functioning of a computer. *See* Ex. 1020, 44–46.

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[5] During oral hearing, Patent Owner noted the dissenting opinion in related CBM2015-00181. Tr. 53:14–54:1. Since that time, however, it has become increasingly clear that movement of the price axis is significant. *See, e.g.,* Tr. 60:10–13 (Patent Owner acknowledging that movement of the price axis does not solve the alleged problem). The Federal Circuit's decision addressing eligibility of patents related to the '768 patent focused on solving the problem alleged by Patent Owner. *See Trading Techs. Int'l, Inc. v. CQG, Inc.*, 675 F. App'x 1001, 1004–05 (Fed. Cir. Jan. 18, 2017) (non-precedential).

Patent Owner argues that the claims of the '786 patent are patent eligible under *CQG* because the '786 patent is a continuation of the patents at issue in *CQG*. PO Resp. 78. The claims of the '786 patent, however, are broader in some aspects than the claims of the '132 patent. For example, the claims of the '786 patent do not recite the static price axis feature claimed by the '132 patent. In *CQG*, the Federal Circuit referred to even those narrower claims as on the line between patent eligibility and ineligibility (*CQG* at *4 (noting the "close question[] of eligibility")). Thus, comparing the claims of the patents involved in *Trading Technologies* is not particularly helpful here.

3. Inventive Concept

Next we turn to "the elements of each claim both individually and as an ordered combination" to determine whether the additional elements "transform the nature of the claim" into a "patent-eligible application." *Mayo*, 768 S. Ct. at 1297–98. The additional elements must be more than "well-understood, routine, conventional activity." *Id.* at 1298.

Petitioner contends that claim 1 does not recite an inventive concept. Pet. 20–25; Pet. Reply 7–9. Patent Owner disagrees. PO Resp. 87–89.

First, claim 1 of the '768 patent recites "a method of placing a trade order for a commodity on an electronic exchange using a graphical user interface and a user input device." Ex. 1001, 11:46–48. The '768 patent discloses that its system can be implemented "on any existing or future terminal or device" (*id.* at 4:4–8), which are known to include displays, and discloses that the input device can be a mouse (*id*. at 4:8–18), which is a known input device. A mere recitation of a GUI does not make the claim patent eligible. *See Affinity Labs,* 838 F.3d at 1257–58; *Ameranth*, 842 F.3d

at 1236–1242; *Internet Patent Corp.*, 790 F.3d at 1348–1349. A recitation of a generic GUI merely limits the use of the abstract idea to a particular technological environment. "Limiting the field of use of the abstract idea to a particular existing technological environment does not render any claims less abstract." *Affinity Labs,* 838 F.3d at 1258 (citing *Alice,* 134 St. Ct. at 2358; *Mayo*, 132 S. Ct. at 1294).

Second, claim 1 recites steps of displaying indicators representing a quantity associated with a highest order to buy the commodity or lowest order to sell the commodity in a bid display region or ask display region, respectively and moving the indictors upon receipt of market information. Ex. 1001, 11:46–48. Locations in the bid or ask display region correspond to a price level along a price axis. *Id.* Essentially, these limitations require plotting the inside market along a price axis. Plotting information along an axis is a well-understood, routine, conventional, activity. *See* Ex. 1020, 44–46. The Fig. 2 GUI includes regions for displaying indicators of bid and ask quantities and regions for displaying corresponding prices. For example, the Fig. 2 GUI displays the bid quantity in BidQty column 202 at locations that correspond to the bid prices in BidPrc column 203. Ex. 1001, 5:12–25. This is akin to plotting information BidQty and AskQty along a price axis. Further, Mr. Thomas testifies that prior GUIs, which are similar to the Fig. 2 GUI, "displayed the locations for the best bid and ask prices such that the prices were displayed vertically (e.g., with the location for the best ask price being displayed above the location for the best bid price)." Ex. 2169 ¶ 62; *see also* Ex. 1017, 107, Ex. 1011, Fig. 2a (depicting a trading screen having a central order price column and ask and bid orders in adjacent corresponding columns). Displaying the best ask price above a best bid

price would be displaying a common column of price levels. The '768 patent states:

> the physical mapping of such information to a screen grid can be done by any technique known to those skilled in the art. The present invention is not limited by the method used to map the data to the screen display.

Id. at 4:64–67. These steps of claim 1 require merely a rearrangement of market information that was known to be displayed in corresponding columns on a GUI. *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1370 (Fed. Cir. 2011) (holding "[t]he mere collection and organization of data" patent-ineligible).

Third, claim 1 also recites steps of displaying an order entry region for receiving commands to send trade orders, setting trade order parameters, and sending trade orders to the electronic exchange with a single action. *Id.* at 11:65–67, 12:32–36. Methods that permit single action entry of an order, which has preset default parameters, by clicking on a cell in a display of a GUI are known technology. Ex. 2169 ¶¶ 51, 58–59; Ex. 1008 ¶ 20. The additional elements must be more that "well-understood, routine, conventional, activity." *Mayo*, 132 S. Ct. at 1298.

The individual elements of the claim do not transform the nature of the claim into a patent-eligible application. They do not add significantly more to the abstract idea or fundamental economic practice. Contrary to Patent Owner's argument, the claim simply recites the use of a generic GUI with routine and conventional functions. Even considering all of the elements as an ordered combination, the combined elements also do not transform the nature of the claim into a patent-eligible application. Indeed,

as discussed above, the Fig. 2 GUI disclosed in the '768 patent includes a similar combination of elements.

For the reasons discussed above, the claims 1 and 23 of the '768 patent are not directed to patent eligible subject matter under 35 U.S.C. § 101.

4. Dependent Claims

Petitioner contends that the additional elements recited by dependent claims 2–22 do not add significantly more to the abstract idea so as to render the claims patent-eligible. Pet. 25–29. Patent Owner makes no arguments directed to the eligibility of the dependent claims. *See generally* PO Resp. We are persuaded by Petitioner that dependent claims 2–22 patent ineligible under 35 U.S.C. § 101. *See* Pet. 25–29 (citing Ex. 1007).

5. Conclusion

Having considered the information provided in the Petition, we are persuaded that Petitioner has demonstrated claims 1–23 are unpatentable under 35 U.S.C. § 101.

D. Obviousness Challenges

Section 103 forbids issuance of a claim when "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103. The ultimate determination of obviousness under § 103 is a question of law based on underlying factual findings. *In re Baxter Int'l, Inc.*, 678

F.3d 1357, 1362 (Fed. Cir. 2012) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1996)). These underlying factual considerations consist of: (1) the "level of ordinary skill in the pertinent art," (2) the "scope and content of the prior art," (3) the "differences between the prior art and the claims at issue," and (4) "secondary considerations" of non-obviousness such as "commercial success, long-felt but unsolved needs, failure of others, etc." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting *Graham*, 338 U.S. at 17–18).

Petitioner challenges claims 1–13, 15, 16, 18, and 21–23 as having been obvious over TSE and Belden, claims 14, 17, 19, and 20 as having been obvious over TSE, Belden, and Cooper.

1. TSE Printed Publication Status

Petitioner argues that TSE is prior art under 35 U.S.C. § 102(a). Pet. 11–12. In support of its showing that TSE qualifies as prior art, Petitioner relies on the November 21, 2005, deposition testimony of Atsushi Kawashima taken during litigation between Patent Owner and a third party, eSpeed, Inc. *Id.*; Ex. 1019.

Whether a document qualifies as a printed publication under 35 U.S.C. § 102(a) is a question of law based on underlying findings of fact. *In re Enhanced Sec. Research, LLC*, 739 F.3d 1347, 1354 (Fed. Cir. 2014) (citing *In re Hall*, 781 F.2d 897, 899 (Fed. Cir. 1986)). The Federal Circuit "has interpreted § 102 broadly, explaining that even relatively obscure documents qualify as prior art so long as the public has a means of accessing them." *Id.* (citing *Hall*, 781 F.2d at 899).

> Our leading case on public accessibility is *In re Hall*, 781 F.2d 897 (Fed. Cir. 1986). In *Hall* we concluded that "a single

> cataloged thesis in one university library" constitutes "sufficient accessibility to those interested in the art exercising reasonable diligence." *Id.* at 900. Thereafter, in *Constant v. Advanced Micro–Devices, Inc.*, we explained that "[a]ccessibility goes to the issue of whether interested members of the relevant public could obtain the information if they wanted to." 848 F.2d 1560, 1569 (Fed. Cir. 1988). Therefore, "[i]f accessibility is proved, there is no requirement to show that particular members of the public actually received the information." *Id.*

Enhanced Sec. Research, LLC, 739 F.3d at 1354. The determination of whether a document is a "printed publication" under 35 U.S.C. § 102 involves a case-by-case inquiry into the facts and circumstances surrounding its disclosure to members of the public. *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004).

TSE is entitled "Futures/Option Purchasing System Trading Terminal Operation Guide" of the "Tokyo Stock Exchange Operation System Division." Ex. 1017, 1.[6] In the middle of page 5 is the annotation "August, 1998" above the words "Tokyo Stock Exchange Operation System Division." *Id.* at 5. Petitioner argues that TSE is prior art under 35 U.S.C. § 102(a) because it was published in August of 1998 by giving two copies to each of the about 200 participants in the Tokyo Stock Exchange, who were free to do whatever they wanted with their copies of the publication. Pet. 11 (citing Ex. 1019, 12–33).

In support of its arguments regarding TSE as prior art, Petitioner directs us to portions of Mr. Kawashima's testimony. At the time of his testimony, Mr. Kawashima testified that he was employed by the Tokyo Stock Exchange and was so at the time of the TSE manual, August 1998.

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[6] References are to pages located at center bottom of the English translation of TSE (Ex. 1017).

Ex. 1019, 5–11. He further testified that TSE "is the current TSE futures

options trading system terminal document, manual" that was prepared

August of 1998 by the Tokyo Stock Exchange and that he was in charge of

preparing the document. *Id.* at 10–11. Mr. Kawashima also testified that the

purpose of the manual was that "in 1998 we replaced the futures options

trading system and so this new manual was prepared because there were

changes to the way the trading terminals were operating." *Id.* at 12.

Kawashima further testified that the manual was distributed to "participants"

in August of 1998, who were "securities companies for banks who are able

to carry out futures options trading at the TSE" and that the "manual was

given to explain those changes" made with respect to the operation of the

TSE trading system and terminals. *Id.* at 12, 14. Mr. Kawashima testified

that the manual was given to around 200 "participant" companies—all

companies that conduct futures option trading on the Tokyo Stock

Exchange. *Id.* at 13.[7] According to Mr. Kawashima, two copies were

distributed to each company, by having a person from each company come

to the Tokyo Stock Exchange operating system section to pick up their

copies of the manual, and that there was no restriction on what the

participants could do with the 1998 manual once they received it. *Id.* at 14–

15. Mr. Kawashima personally distributed the TSE manual to some of the

participants. Ex. 2163, 60:13–24.

     Notwithstanding Patent Owner's arguments, which we address below,

we are persuaded by Petitioner's showing, which we adopt as our own, that

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[7] We understand the then "participants" included such companies as
Goldman Sachs Securities, Merrill Lynch, and Morgan Stanley. Ex. 2163,
58:5–17; Ex. 2169 ¶ 32.

TSE qualifies as prior art under 35 U.S.C. § 102(a). Petitioner asserts, with supporting evidence, that TSE was distributed to *participants* in the Tokyo Stock Exchange. Pet. 11; Ex. 1019, 12, 14. Based on the evidence before us, the participants were securities companies for banks. The purpose of the distribution of the manual was to alert the securities companies of *changes to the way the trading terminals* of the Tokyo Stock Exchange *operated*. Ex. 1019, 12, 14. Indeed, TSE is a user manual that includes, for example, in Chapter 2, instructions for terminal system configuration to enable a participant, such as a security company to connect to the Tokyo Stock Exchange. Ex. 1017, 10–25. Chapter 15, entitled "Response To A Problem" provides detailed explanations should a problem arise with terminal equipment, communication circuit difficulties, central system recovery difficulties, etc., along with in-house procured terminal problem handling instructions. *Id.* at 5. Thus, TSE is more than a user manual for how to trade on the Tokyo Stock Exchange, but also includes how to electronically connect to the Tokyo Stock Exchange.

The evidence that is before us, both circumstantial and direct, supports a finding that TSE was made accessible to securities companies and all of the personnel in such a company, who would have employed technical support personnel, such as computer scientists or engineers, who would have needed a copy of the TSE manual to configure their own system to electronically communicate, and to continue to trade securities, with the Tokyo Stock Exchange. Thus, the securities companies would have included computer scientists or engineers, as well as traders. We find that all such persons who worked at the securities companies would have been interested members of the relevant public.

2. *Patent Owner's Contentions*

Patent Owner argues that the evidence fails to prove TSE is prior art. PO Resp. 14–24. We begin by addressing Patent Owner's assertions that Mr. Kawashima's testimony should be given little or no weight because his testimony is not corroborated and he is an interested witness. *Id*. at 22–24. Patent Owner argues that Kawashima's employer—the Tokyo Stock Exchange—challenged Patent Owner's Japanese counterpart to U.S. Patent No. 6,766,304 by providing TSE to the Japanese Patent Office. *Id*. at 24. Patent Owner further argues that the Tokyo Stock Exchange wanted the Japanese Patent Office to rely on "these documents" to prevent Patent Owner from obtaining the Japanese patent. *Id*. (citing Ex. 2163, 39:23–40:20, 42:14–43:10; Ex. 1019, 110:10–14). Patent Owner concludes that because Kawashima's employer tried to use TSE to prevent Patent Owner from obtaining the 6,766,304 patent, Kawashima is not disinterested. *Id*.

We are not persuaded that Kawashima is an interested witness and that his testimony should be given little weight. First, the patent involved here is not the same as the patent involved before the Japanese Patent Office and we do not understand what Patent Owner means by "these documents." In any event, Patent Owner has not shown that what occurred in a proceeding before the Japanese Patent Office involving a different patent is relevant to the facts of this proceeding. Patent Owner has not shown sufficiently that Mr. Kawashima had an interest, himself, regarding the outcome of the Japanese Patent Office proceeding. Even assuming that the Tokyo Stock Exchange had an interest in that earlier proceeding, it does not follow necessarily that Mr. Kawashima himself had an interest in it as well.

We have considered the evidence to which we are directed, but do not find that evidence (passages from Mr. Kawashima's original and cross examination) to support Patent Owner's assertions that Mr. Kawashima is biased. Indeed, when asked if the Tokyo Stock Exchange preferred that vendors like Trading Technologies not have patents on trading screens, Mr. Kawashima testified, that that was "not something I would know." Ex. 2163, 41:6–12. Lastly, Patent Owner has not demonstrated sufficiently that Mr. Kawashima's meetings with Petitioner's attorneys prior to his cross examination is demonstrative of "bias." PO Resp. 24. Patent Owner has not shown why Mr. Kawashima's meeting with Petitioner's counsel prior to his deposition would make him biased. For these reasons, we are not persuaded that Mr. Kawashima is an interested witness.

We also are not persuaded by Patent Owner's argument that because Mr. Kawashima's testimony is uncorroborated we should give it little weight. PO Resp. 22–23. In support of the argument, Patent Owner cites to cases regarding an *interested witness*. *See, e.g., id*. at 22. As explained above, Patent Owner has not shown sufficiently that Mr. Kawashima is an interested witness. The other arguments made, e.g., that there is no evidence of when the manuals were picked up or by whom or what a person did with the document once they received it, are factors to consider when determining whether a document was publically accessible, which we address below.

For all of these reasons, we credit the testimony of Mr. Kawashima. We find that the facts discussed above regarding Mr. Kawashima's testimony (Ex. 1019) are supported by a preponderance of the evidence and

are undisputed.[8] Although Mr. Kawashima was cross-examined, Patent
Owner does not direct attention to portions of his cross examination
testimony, or any other evidence, that would outweigh Mr. Kawashima's
original testimony (Ex. 1019) regarding what the TSE manual was, why it
was distributed, how it was distributed, when it was distributed, and to
whom it was distributed.

Patent Owner argues that Petitioner has not established that TSE was
publically available. PO Resp. 14–16. In particular, Patent Owner argues
that there is no evidence that anyone actually received a copy of TSE or
whether the receivers of such document were persons of ordinary skill in the
art. *Id.* (quoting *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1348
(Fed. Cir. 2016) (a reference will be considered publicly accessible if it was
"disseminated or otherwise made available to the extent that persons
interested and ordinarily skilled in the subject matter or art exercising
reasonable diligence, can locate it.'")).

Patent Owner's argument that there is no evidence that anyone
actually received a copy of TSE is misplaced. The proponent of a document
need not show that particular members of the interested public *actually
received* the information. *See, e.g.*, *In re Enhanced Sec. Research, LLC*, 739
F.3d 1347, 1354 (Fed. Cir. 2014); *Constant v. Advanced Micro-Devices,
Inc.*, 848 F.2d 1560, 1569 (Fed. Cir. 1988); *Blue Calypso, LLC v. Groupon,
Inc.*, 815 F.3d 1331, 1348 (Fed. Cir. 2016). Rather, accessibility goes to the

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[8] The burden of showing something by a preponderance of the evidence
simply requires the trier of fact to believe that the existence of a fact is more
probable than its nonexistence. *Concrete Pipe & Products of California,
Inc. v. Construction Laborers Pension Trust for Southern California*, 508
U.S. 602, 622 (1993).

issue of whether persons interested and ordinarily skilled in the subject matter could obtain the information if they wanted to. *Id*. Here, we have before us persuasive evidence that TSE was made publically accessible by providing two copies to each of the about 200 participants (securities companies for banks) in the Tokyo Stock Exchange, who were free to do whatever they wanted with their copies of the publication. Ex. 1019, 12, 14. For these same reasons, we are not persuaded by Patent Owner's implicit argument that Petitioner need show that the two copies of the TSE manual available for pick up by the 200 participant companies actually were picked up. In any event, Mr. Kawashima testified that he personally distributed the TSE manual to some of the participants. Ex. 2163, 60:13–24.

Patent Owner argues that the participants (securities companies for banks) who allegedly received copies of the TSE manual are not persons of ordinary skill in the art, which Patent Owner submits would be GUI designers, and not traders at a stock exchange. PO Resp. 16–17. We are not persuaded by Patent Owner's argument.

The patent before us is a business method patent, the subject matter of which is represented by both the business and technical sides of the spectrum. Here, where the patent is directed to trading commodities on an exchange using a computer, we must consider all interested members of the public, which would include not only technical personnel, but traders as well. Traders of commodities at securities companies for banks would be interested members of the public.

In any event, there is sufficient evidence for us to find that the securities companies for banks also would have employed technical personnel as well, and even a "GUI designer." As explained above, the

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purpose of the TSE manual was to alert the securities companies of changes to the way the trading terminals of the Tokyo Stock Exchange *operated*. Ex. 1019, 12, 14. The TSE manual includes information and instructions of how to electronically connect to the Tokyo Stock Exchange. TSE is not simply a "how to trade commodities" user manual as Patent Owner seems to suggest. The strong circumstantial evidence supports finding that TSE was made accessible to securities companies who would have employed technical support personnel, such as computer scientists or engineers, to configure their system to electronically communicate, and to continue to trade securities, with the Tokyo Stock Exchange, based on the changes in operation of the terminals explained in the TSE manual. Thus, the securities companies would have included computer scientists or engineers, as well as traders. Lastly, even assuming that a person of ordinary skill in the art is narrowly limited to a "GUI designer" as Patent Owner asserts, we find that securities companies for banks ("participants") provided their own front-end order entry software, and that such participants would have employed GUI designers to formulate the front-end order entry software to facilitate trading on the Tokyo Stock Exchange. Ex. 2169 ¶ 32.

Patent Owner argues that because participants of the Tokyo Stock Exchange were contractually prohibited from modifying the terminals or software, there was no reason to provide the manual to GUI designers. PO Resp. 17. Patent Owner has not shown sufficiently that such a contractual provision would have prevented persons interested or even ordinarily skilled in the subject matter from receiving copies of TSE. For all of the above reasons, we are persuaded that TSE was publically accessible.

Patent Owner additionally argues that there is no evidence that a person having ordinary skill in the art could have located TSE using "reasonable diligence," because there is no evidence that such a person searching for TSE would find it, such as being placed in a library, indexed, or catalogued, or directions to locate TSE. PO Resp. 20. We determine above, that the record evidence supports a determination that TSE was publically accessible to persons interested and ordinarily skilled in the subject matter. Patent Owner's arguments are premised on the notion that none of the personnel at the securities banks are interested and ordinarily skilled in the subject matter, which we reject. Thus, Patent Owner's argument is moot.

For all of the above reasons, we determine that TSE qualifies as prior art.

3. Claims 1 and 23

With respect to claims 1 and 23, Petitioner cites TSE as teaching the majority of limitations of the claims. Pet. 31–53. Petitioner cites Belden for the "single action" limitation in the claims, including the "setting" and "sending" via the "single action." *See id.* at 41–46, 50–53. Petitioner proposes modifying TSE based on the teachings of Belden. *See id.* at 36–37. The testimony of Petitioner's declarant Kendyl Román supports Petitioner's analysis. *See* Ex. 1007 ¶¶ 77–123.

TSE describes a trading system that facilitates trading with an electronic exchange by receiving bid and offer information, displaying it to a user, and accepting and sending bid and offer orders. Ex. 1017, 6–13, 35. A trading terminal displays a GUI for depicting market information on a Board

Screen, which is shown in the figure reproduced below ("TSE's Board Screen").

The figure reproduced above is illustrated on page 107 of TSE and depicts TSE's Board Screen. The Board Screen includes a central order price at column 11—a price display. *Id.* at 111. The Board Screen can be placed in a "Scrolling Screen" mode where "the price display positions do not change automatically." *Id.* at 115. TSE describes a number of ways to scroll the Board Screen to vertically scroll, including using the up/down scroll buttons, vertically moving the cursor, and pressing the up or down key on the keyboard. *Id.* at 116. To the left and right of order price column 11, at a location corresponding to price, are bid and offer indicators consisting of numbers representing the quantity of orders in respective columns 12, 13, and 14. *Id.* at 112. The Board Screen is automatically updated with new bid

and offer information from a central system every three seconds. *Id.* at 91.
TSE explains that "[t]he board information on each Board Screen is
automatically updated even if it has been scrolled vertically." *Id.*

Román's FIG. A, reproduced below, illustrates the market information
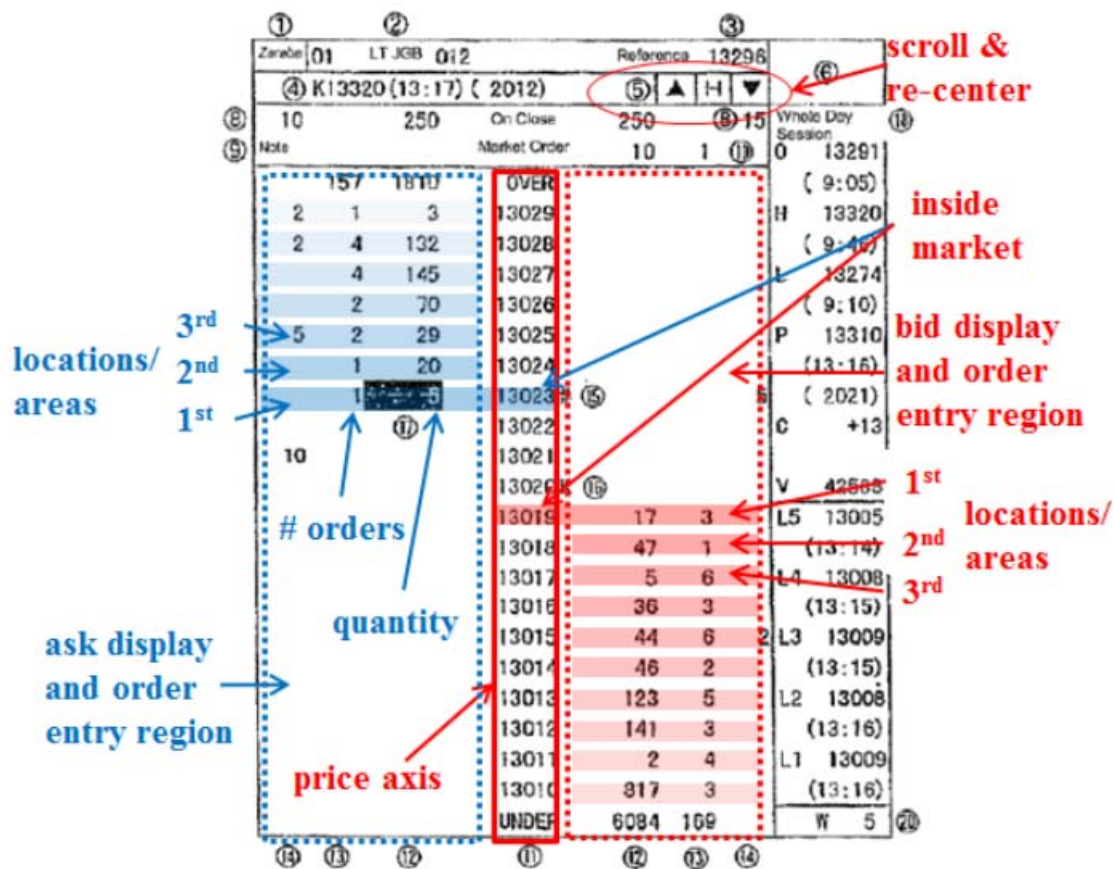received and displayed in TSE.

FIGURE A

Román's FIG. A is an annotated version of the figure illustrated on page 107
of TSE depicting a Board Screen, and is found at page 45 of the Román
Declaration. Mr. Román's annotations indicate the portions of the Board
Screen considered to correspond to various claim elements. The '768 patent

explains that "[f]or a commodity being traded, the 'inside market' is the highest bid price and the lowest ask price." Ex. 1001, 4:60–62. As illustrated above in Román's FIG. A, TSE receives and displays inside market information.

TSE describes a user entering an order by double-clicking at a location along the price axis, which automatically displays a pop-up window displaying the selected price. *Id.* at 134, 137. A Figure appearing on page 137 of TSE is reproduced below.
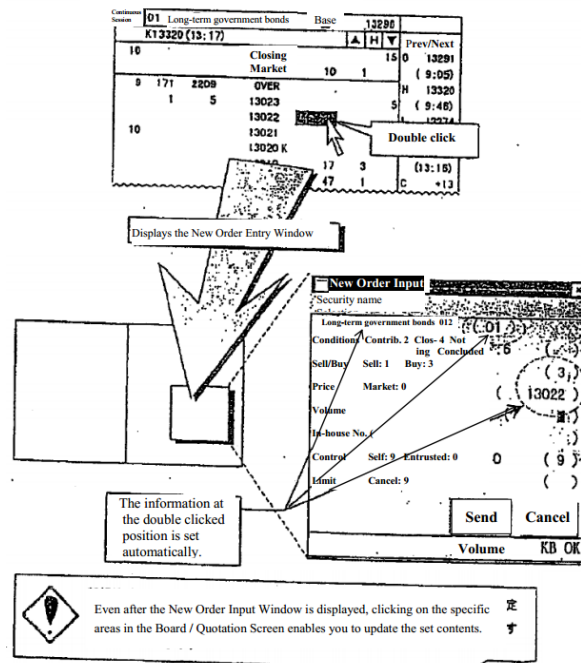
The Figure appearing on page 137 of TSE depicts the displaying of the pop-up new order entry window. TSE discloses that double-clicking on a specific area of the Board/Quotation Screen displays a new order entry window, which is automatically set with the information from the double-clicked area. Ex. 1017, 133, 139. The new order entry window includes a send button for sending the order to a central system. *Id.* at 137, 143. Clicking the send button sends an order to the exchange. *Id.* at 143.

As Petitioner points out, "TSE does not teach that the claimed 'sending' is achieved 'in response to a selection of a particular location of the order entry region by a single action of a user input device.'" Pet. 34. Petitioner relies upon Belden to teach single-action order entry. *Id.*

Belden is titled "Simulated Live Market Trading System" and published on October 4, 1990. Ex. 1012, (54), (43). Belden discloses an electronic trading system for trading commodities, which has a display with icons representing active trades. *Id.* at 26–27.[9] Belden discloses that "[t]rading is done by using the mouse to move a cursor onto the icon of a trader and pushing a button, i.e., 'clicking' on the icon." *Id.* at 12. Belden discloses that a trader "benefits from the speed with which he can take or liquidate positions." *Id.* at 4.

Petitioner provides rationale for combining the teachings of Belden with that of TSE. Pet. 36–37, 45–46, 52–53. Petitioner reasons that a person skilled in the art "would have been motivated to incorporate Belden's single-action order techniques in TSE's electronic trading system to achieve the predictable and desirable results of reducing the time needed to place an order and reduce operator error." Pet. 37 (citing Ex. 1007 ¶ 90). Petitioner additionally notes that "Belden provides motivation for the combination." Pet. 36 (citing Ex. 1012, 4 (noting the speed benefits)).

Upon review of Petitioner's evidence and analysis and taking into account Patent Owner's arguments and evidence, discussed below, we determine the Petitioner shows by a preponderance of the evidence that claims 1 and 23 are unpatentable under 35 U.S.C. § 103 over TSE and

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[9] We refer to the pagination inserted into Exhibit 1012 and not the original pagination.

Belden. In reaching our determination, we considered Patent Owner's

argument and evidence of secondary considerations, also discussed below.

Patent Owner disputes that TSE and Belden teaches all the limitations

of claims 1 and 23 and argues that Petitioner fails to provide any evidence of

motivation to combine Belden and TSE. PO Resp. 24. First, Patent Owner

disputes that TSE and Belden teaches the "order entry region" and "single

action" limitations. PO Resp. 25–26. Patent Owner argues that "TSE does

not include the claimed 'order entry region' because selecting an area along

the alleged price axis only opens a separate order entry window, it cannot be

used to *send orders*." PO Resp. 35 (citing Ex. 1017, 137). Patent Owner

explains that "[b]ecause of the separate order entry window, TSE does not

disclose the claimed 'order entry region' and functions of the claimed

'graphical areas' along a price axis." PO Resp. 26 (citing Ex. 2169 ¶ 166).

With respect to Belden, Patent Owner argues that Belden does not suggest

the order entry region because "it is completely lacking any showing of a

price axis and therefore cannot possibly disclose the claimed order entry

region." PO Resp. 26. Patent Owner further contends that "even if TSE and

Belden were combined in the manner suggested by Petitioners, one still

would not arrive at the claimed invention because the suggested combination

lacks an 'order entry region' as claimed." *Id.* Patent Owner further

contends that "Belden does not show a single action to both set parameters

and send an order from an area that correspond to a price level along a price

axis." *Id.* at 26–27.

The problem with Patent Owner's response is that it does not address

the *combined* teachings of TSE and Belden asserted by Petitioner. *See In re*

Merck & Co., Inc. 800 F.2d 1091, 1097 (Fed. Cir. 1986) (Non-obviousness

cannot be shown by attacking references individually when the ground is predicated upon the teachings of a combination of references.) Regardless of whether Belden sends an order message, or executes a trade (as Patent Owner contends), there is no dispute it does this with a single action command received by a graphical area (clicking on an icon). *See*, *e.g.*, Ex. 1012, 12, 33. As noted above, Petitioner's challenge proposes modifying TSE to send its orders based on a "single action," which is taught by Belden as explained above. There is no dispute, and we agree, that TSE teaches sending trade orders. *See* PO Resp. 25–26 (explaining that in TSE, "selecting an area along the price axis only opens a separate order entry window" and "clicking 'send[]' to send the order"). There is also no dispute, and we agree, that TSE teaches automatically setting a price for the trade order. *See* Ex. 1017, 137 ("Depending on the place that is double clicked, the . . . 'Order Price' . . . [is] set automatically."). Petitioner's proposed modification simply eliminates opening the separate window used to send trade orders in TSE and, instead, sends those orders automatically with the single action that was used previously to open the order entry window. The *combined* teachings of TSE and Belden provide an order entry region having the single action features recited in the claims.

Second, Patent Owner disputes that TSE and Belden teaches the claimed first and second fixed locations and updating the display of the first and second indicators. PO Resp. 27–29. Patent Owner argues that "TSE does not disclose that the bid/ask quantity indicators are updated *on the display* in scroll mode." *Id.* at 27–28. Patent Owner also argues that "TSE does not disclose that the user can bring up the new order entry window while in scroll mode" because "the scroll mode does not display updated

market conditions . . . and as such a trader would not want to being the order

entry process from a screen that does not accurately convey market

conditions." *Id.* at 28–29. Contrary to Patent Owner's argument TSE states

that "[t]he principal features relating to the display of board and quotation

information are . . . [t]he board information on each Board Screen is

automatically update[d] even if it has been scrolled vertically." Ex. 1017,

91; *see also* Ex. 1007 ¶ 102 (testimony of Mr. Román). Patent Owner points

to the testimony of Mr. Abilock, a Japanese translator, to assert that "the

Japanese version of TSE does not make clear whether this updating occurs

in memory only or on screen" and concludes that a person of ordinary skill

in the art would have understood that the board information is only updated

in memory. PO Resp. 28 (Ex. 2178 ¶¶ 20, 23–26). Mr. Abilock is a

translator, and his testimony does not sufficiently support Patent Owner's

conclusion as to what would be understood by a person of ordinary skill in

the art. *See* Pet. Reply 16, n. 1. We, thus, are not persuaded by Patent

Owner that TSE does not permit the user to access the new order entry

window in scroll mode. *See* Pet. Reply 16–17.

Third, Patent Owner argues that "Petitioners' purported motivation to

combine—that Belden is 'applicable to all markets' . . . is misplaced" and

that "'speed' in Belden refers to instantaneous trade-making of open outcry

pits." PO Resp. 29–30. Regardless of the specific type of market to which

Belden is related, we are persuaded that one skilled in the art would have

appreciated that reducing the number of steps required to execute an order

would result in a decrease in the amount of time required to place that order,

and that users in various types of markets would have appreciated that

mitigating the delay between choosing to place an order and placing that

order would be beneficial. Patent Owner also argues that "TSE actually teaches away . . . by instructing the trader to click on the board screen to open an entirely separate new order input window. . . ." PO Resp. 31–32. A reference teaches away from a claimed invention if it "criticizes, discredits, or otherwise discourages" modifying the reference to arrive at the claimed invention. *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). A disclosure of instructing the trader to click on the board screen to open an entirely separate new order input window does not discourage modifying TSE to alternatively using single action order entry.

Patent Owner further alleges that Petitioner is using impermissible hindsight to arrive at the claimed invention and not from teachings of Belden or TSE. PO Resp. 32. Patent Owner's argument is not persuasive because it does not address Petitioner's supporting evidence. As discussed above, we determine that Petitioner has shown by a preponderance of the evidence that one of ordinary skill in the art would have combined TSE and Belden. *See* Pet. 36–37 (citing Ex. 1007 ¶ 90; Ex. 1012, 4). Further, Patent Owner's own declarant, Mr. Thomas, indicates that single-action, as taught by Belden, is a known alternative for order tickets. *See* Ex. 1063, 72:7–74:10; Ex. 1008 ¶¶ 19–20.

For the reasons set forth above, we are persuaded that Petitioner has established, by a preponderance of the evidence that claims 1 and 23 are taught by the combination of TSE and Belden, and that one skilled in the art would have combined those teachings.

4. Claims 2–5, 10, 15, 16, 18, and 21–22

Petitioner additionally challenges claims 2–5, 10, 15, 16, and 21–22 as being unpatentable over TSE and Belden. Pet. 73–75, 77–80. We have reviewed Petitioner's challenges to those claims, which Patent Owner does not dispute, as well as the evidence supporting those challenges.

We are persuaded by Petitioner's arguments and evidence, which we adopt, that the features recited in those claims are taught by the combination of TSE and Belden and that one skilled in the art would have combined those teachings. We determine the Petitioner shows by a preponderance of the evidence that claims 2–5, 10, 15, 16, 18, and 21–22 are unpatentable under 35 U.S.C. § 103 over TSE and Belden

5. Claim 6

Claim 6 depends from claim 4 and further recites "dynamically displaying an entered order indicator in association with a price level along the price axis, wherein the entered order indicator represents an order pending at the electronic exchange." Ex. 1001, 12:56–60.

Petitioner points to the figure on page 107 of TSE, reproduced above, as showing an entered order indicator. Pet. 55–56. Petitioner argues that the "ask order for a quantity of 5 at a price level of 13023" is an entered order indictor. *Id.* at 5 (citing Ex. 1007 ¶ 132).

Upon review of Petitioner's evidence and analysis and taking into account Patent Owner's arguments and evidence, discussed below, we determine the Petitioner shows by a preponderance of the evidence that claim 6 is unpatentable under 35 U.S.C. § 103 over TSE and Belden.

Patent Owner disputes that TSE discloses an entered order indicator. PO Resp. 32–33. Patent Owner argues that there is no display in TSE to represent a user's trade order and that "in TSE the bids and asks at each level of the display represent *all of the orders* pending." *Id.* Patent Owner's argument is not persuasive because it is not commensurate with the scope of the claim. As discussed above, claim 6 does not require the entered order indicators to represent *a user's* trade order.

6. Claims 7–9

Claim 7 depends from claim 6 and further recites "sending a message to the electronic exchange to delete the order represented by the entered order indicator in response to a single action of the user input device with a pointer of the user input device positioned over the entered order indicator." Ex. 1001, 12:61–65. Claims 8 and 9 depend from claim 7.

Petitioner argues:

> Each of TSE and Belden teaches that traders interact with a GUI on a client device to "*send[] a message to the electronic exchange to delete*" an order. (TSE at 0006-13 (overview of system, including clients), 0077-80 (clients exchanging messages with central system), 0143 (sending input order to central system), 0155 (canceling orders); Belden 0014-19 (describing interaction between user terminals and host), 0037 (canceling orders).)

> Belden further teaches deleting an order "*represented by the entered order indicator in response to a single action of the user input device with a pointer of the user input device positioned over the entered order indicator*." Belden teaches that a trader can cancel an entered order using a mouse by clicking on the order in the trading arena. (Belden at 0037.) For example, "[t]o cancel a bid in MAR89 bonds" using a mouse, "point and

click on your bid icon for MAR89 bonds with the mouse." (*Id*;
see also id. at 0038 (canceling all bids).)

Thus, both TSE and Belden teach canceling trade orders.
It would have been obvious to a POSA to implement Belden's
single-action order canceling in TSE's electronic trading system
to achieve the predictable and desirable results of reducing the
time needed to cancel an order and of reducing operator error.
(Román Decl. ¶ 136; *see also* Shneiderman at 0101-02 (desirable
to reduce number of operator actions such as keystrokes).)

Pet. 56–57. Patent Owner disagrees and argues that "the Petition fails to
provide any motivation to combine the single-action deletion [of Belden]
with TSE." PO Resp. 34.

We are not persuaded by Petitioner's arguments and evidence that the
combination of TSE and Belden teaches the limitation of claim 7. [10]
"In an *inter partes* review, the burden of persuasion is on the petitioner to
prove 'unpatentability by a preponderance of the evidence,' 35 U.S.C. §
316(e), and that burden never shifts to the patentee." *In re Magnum Oil
Tools Int'l, Ltd.,* 892 F.3d at 1375 (quoting *Dynamic Drinkware, LLC v.
Nat'l Graphics, Inc.,* 800 F.3d 1375, 1378 (Fed. Cir. 2015). Claim 7
depends from claim 6 and, as discussed above, Petitioner relies upon the buy

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[10] As Petitioner notes, we rejected a similar argument by Patent Owner in
CBM2015-00181. Pet. Reply 17–18 (citing Ex. 1060, 52–55). U.S. Patent
No. 7,676, 411 B2 ("the '411 patent") was the subject of claim of
CBM2015-00181. Ex. 1060, 1. Unlike the claims here, the claim 9 of the
'411 patent explicitly required that the entered order indicator represented a
user's trade order. *Id.* at 52. In CBM2015-00181, Petitioner did not cite to
TSE's bid and ask quantities to teach the entered order indictor but cited to
Belden and argued that it would have been obvious to display the entered
order indicator aligned with the price axis in TSE. *See id.* at 52–54.
Petitioner does not make this argument here.

and ask quantities on the TSE's Board Screen depicted in the figure on page
107 of TSE to teach the claimed entered order indicator. Pet. 55–5.
Petitioner's argument with respect to claim 7 does not sufficiently explain
why one of ordinary skill in art would have modified TSE such that an order
can be canceled by a single action of the user input device with a pointer of
the user input device positioned over the buy and ask quantities on the TSE's
Board Screen depicted in the figure on page 107. Mr. Román also does not
provide a sufficient explanation. *See* Ex. 1007 ¶ 136. "To satisfy it burden
of proving obviousness, a petitioner cannot employ mere conclusory
statements. The petitioner must instead articulate specific reasoning, based
on evidence of record, to support the legal conclusion of obviousness." *In re
Magnum Oil Tools Int'l, Ltd.,* 892 F.3d at 1380 (citing *KSR*, 550 U.S. at
418).

 We determine the Petitioner fails to show by a preponderance of the
evidence that claims 7–9 are unpatentable under 35 U.S.C. § 103 over TSE
and Belden.

7. Claim 11

 Claim 11 depends from claim 1 and further recites "wherein the bid
and ask display regions are displayed in a window, the method further
comprising centering the display of the first and second indicators in the
window upon receipt of a centering instruction." Ex. 1001, 13:12–15.

 Petitioner contends that selection of the "home button [H]" while in
the Scroll Screen in TSE teaches this feature. Pet. 58–60 (citing Ex. 1017,
115–116; Ex. 1007 ¶ 142). Upon review of Petitioner's evidence and
analysis and taking into account Patent Owner's arguments and evidence,

discussed below, we determine the Petitioner shows by a preponderance of the evidence that claims 11 is unpatentable under 35 U.S.C. § 103 over TSE and Belden.

Patent Owner argues that "[t]his is not a manual re-centering command because it switches between modes (scroll mode to basic-board mode), also referred to as a modal shift, [and] returns the user to the basic Board screen." PO Resp. 35. Patent Owner contends that "a [person of ordinary skill in the art] would not understand this mode switching to be a re-centering command." *Id.* (citing Ex. 2169 ¶ 170).

Patent Owner's contentions are not persuasive. There is no dispute, and we agree, that TSE teaches manual re-centering by switching between modes. *See* Ex. 1017, 116 (discussing switching from the "Scrolling Screen" to the "Basic Board Screen" by "[u]se the mouse to click the 'H' (Home) button on the Board Screen); *see also id.* at 110 (further explaining operation of the "home button," noting that "[c]licking [the home] button with the mouse after the board information has been scrolled causes the screen to return to the Basic Board Screen, with the board display center price at the center"). The fact that re-centering is achieved by switching between modes does not change the fact that this is a re-centering command. The testimony from Patent Owner's declarant, Mr. Thomas, is also unpersuasive because it, too, is not tied to any requirement in the claims, and instead requires re-centering without changing modes. The claims simply require "re-centering," and are silent as to whether a mode must remain the same. *See* Ex. 2169 ¶ 170.

8. Claims 14, 17, 19, and 20

With respect to dependent claims 14, 17, 19, and 20, Petitioner contends that the combination of TSE and Belden teaches each limitation of the claims except that the first and second locations of the order entry region are within a cell and that the areas in the bid and ask display regions are a cell of a grid. Pet. 67–71. Petitioner contends that TSE suggests that its Board Screen uses a grid of cells because the figures on pages 137 and 138 of TSE depicts a cursor in a rectangular region of price columns 11 and 12 but does not explicitly disclose cells. *Id.* at 67. Petitioner relies upon Cooper to teach that it is well known to use a grid of cells because it allows for objects to neatly line up. *Id.* at 68. Petitioner states:

> it would have been obvious to a POSA to combine a grid of cells (as disclosed by Cooper) with TSE's Board Screen. . . . The combination would have been nothing more than combining prior art GUI elements according to known methods to yield the predictable and desirable result of aligning or arranging the various number in the rows and columns of TSE's Board Screen.

Id. at 68. The testimony of Mr. Román supports Petitioner's analysis. *See* Ex. 1007 ¶¶ 161–166.

We are persuaded by Petitioner's arguments and evidence, which we adopt, that the features recited in these claims are taught by the combination of TSE, Belden, and Cooper and that one skilled in the art would have combined those teachings. We determine the Petitioner shows by a preponderance of the evidence that claims 14, 17, 19, and 20 are unpatentable under 35 U.S.C. § 103 over TSE, Belden, and Cooper.

9. Secondary Considerations

As part of our obviousness analysis, we consider the arguments and corresponding evidence submitted by Patent Owner regarding secondary considerations of non-obviousness. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). To be relevant, evidence of non-obviousness must be commensurate in scope with the claimed invention. *In re Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011). There must be a nexus between the merits of the claimed invention and the evidence of secondary considerations. *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995). "Nexus" is a legally and factually sufficient connection between the objective evidence and the claimed invention, such that the objective evidence should be considered in determining non-obviousness. *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988).

Patent Owner contends that "there is a mountain of objective indicia of non-obviousness that proves the claimed invention is not obvious." PO Resp. 43.

a. MD Trader

Patent Owner contends that "MD Trader [is] the commercial embodiment of the invention" (PO Resp. 45, 56), and refers to MD Trader throughout its discussion of secondary considerations of non-obviousness (*id.* at 35–78).

"There is a presumption of nexus for objective considerations when the patentee shows that the asserted objective evidence is tied to a specific product and that product 'is the invention disclosed and claimed in the patent." *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1329 (Fed. Cir. 2016).

A patent challenger may rebut the presumption of nexus with evidence that shows the proffered objective evidence was due to extraneous factors other than the patented invention. *Id.*

As Petitioner notes, however, "the [Patent Owner Response] fails to explain how MD Trader embodies the claims." Pet. Reply 20. The only discussion provided in Patent Owner's Response as to how MD Trader includes the features recited in the challenged claims is a general allegation noted above that "MD Trader [is] the commercial embodiment of the invention . . . Ex. 2173, ¶¶ 20–23; Ex. 2169, ¶¶ 97, Ex. 2170, ¶¶ 24–31Ex.2169; Ex.2233 (explaining how each claim element is present in MD Trader)." PO Resp. 56. Such an incorporation by reference is inappropriate, as Patent Owner's Response fails to explain how MD Trader includes the features of the claims. *See* 37 C.F.R. § 42.6(a)(3) ("Arguments must not be incorporated by reference from one document into another document."); Paper 38, 3–4 (explaining that we will not consider any arguments that are not adequately explained in the Patent Owner's Response).

Nevertheless, and as explained below, Patent Owner's contentions regarding secondary considerations fail even if we assume that MD Trader includes the claim elements.

b. Unrecognized Problems

Patent Owner contends that "[t]he inventive GUI tool solved problems presented by conventional GUIs," which "exhibited problems with speed and accuracy." PO Resp. 46. Patent Owner, however, offers no persuasive authority for the proposition that "unrecognized problems" is a secondary consideration of non-obviousness. *See id.* at 47 (citing *Leo Pharm. Prods.,*

Ltd. v. Rea, 726 F.3d 1346, 1353–54, 1357 (Fed. Cir. 2013)). An inventor's discovery of a previously unrecognized problem is generally accounted for in the analysis of the scope of the prior art and a motivation to combine prior art elements, rather than it being a secondary consideration of non-obviousness. *See Leo Pharm. Prods.*, 726 F.3d at 1353–54; *see also S. Alabama Med. Sci. Found. v. Gnosis S.P.A.*, 808 F.3d 823, 827 (Fed. Cir. 2015). We note that Patent Owner's contentions regarding "unrecognized problems" are not tied to any of the asserted references or rationale discussed above with respect to the challenges to claims 1–23 under § 103.

Accordingly, these contentions are not persuasive of non-obviousness.

c. Unexpected Results

Patent Owner contends that "[u]nexpected superior properties from an invention support the conclusion that the invention was not obvious to a [person of ordinary skill in the art]." PO Resp. 48 (citing *Procter & Gamble Co. v. Teva Pharm. USA, Inc.* 566 F.3d 989, 997 (Fed. Cir. 2009); *In re Soni*, 54 F.3d 746, 750 (Fed. Cir. 1995)). As the authority cited by Patent Owner explains,

> [t]he basic principle behind [unexpected results supporting non-obviousness] is straightforward—that which would have been surprising to a person of ordinary skill in a particular art would not have been obvious. The principle applies most often to the less predictable fields, such as chemistry, where minor changes in a product or process may yield substantially different results.

In re Soni, 54 F.3d at 750.

Patent Owner contends that "[a]lthough the invention achieved Brumfield's intended benefit of increasing the likelihood that the user would get his/her desired price, this was not a problem widely appreciated by

others." PO Resp. 48. Patent Owner further contends that "the invention provided several other *unexpected* benefits as well." *Id.* This is not persuasive of "unexpected results."

Patent Owner does not allege that the GUI operated in some unexpected manner. Indeed, it is hard to imagine computer code (i.e., a set of instructions) operating in an unexpected manner, particularly when the '786 patent describes the programming associated with the GUI as insignificant. *See, e.g.*, Ex. 1001, 4:60–67 (explaining that "present invention processes [price, order, and fill] information and maps it through simple algorithms and mapping tables to positions in a theoretical grid program" and "[t]he physical mapping of such information to a screen grid can be done by any technique known to those skilled in the art").

Accordingly, we are not persuaded by Patent Owner's contentions regarding unexpected results.

d. Initial Skepticism

Patent Owner contends that "MD Trader was received with skepticism by TT's own sales personnel." PO Resp. 52 (citing Ex. 2169 ¶¶ 99–100, 103; Ex. 2211, 715:19–716:18; Ex. 2173 ¶¶ 16–19; Ex. 2170 ¶¶ 22–28; Ex. 2171 ¶¶ 39–40; Ex. 2173 ¶¶ 16–19). Initially, we reiterate that "[a]rguments must not be incorporated by reference from one document into another document" (37 C.F.R. § 42.6(a)(3)) and arguments not made in the Patent Owner's Response will not be considered (Paper 38).

Patent Owner's arguments related to "initial skepticism" are based primarily on the premise that "a [person of ordinary skill in the art] would have rejected outright a price axis with relative movement." PO Resp. 54.

Those contentions are unpersuasive. As noted above, TSE expressly teaches this feature. To the extent the other contentions related to "initial skepticism" are directed to traders simply being resistant to change, generally, those contentions are also unpersuasive. *See, e.g., id.* at 54 (discussing profitable traders being hesitant towards *any* type of change because change can alter their confidence). Those contentions are not tied in any meaningful way to the features of the claims.

That traders would have been resistant to accept anything different is not persuasive of non-obviousness.

e. Commercial Success

Patent Owner contends that MD Trader "became a huge commercial success." PO Resp. 56. As noted above, Patent Owner does not explain, in its Patent Owner Response, how MD Trader embodies the claimed invention. Even if MD Trader includes each feature recited in the claims, "[e]vidence of commercial success . . . is only significant if there is a nexus between the claimed invention and the commercial success." *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1311–12 (Fed. Cir. 2006). As explained above, the Patent Owner Response is silent as to any nexus between the alleged commercial success and the claimed invention. Petitioner argues there is no presumption of nexus, and that Patent Owner has not established the requisite nexus. Pet. Reply 19–20. We agree with Petitioner.

Patent Owner admits that MD Trader is part of a suite of software and not sold separately. Ex. 1064, 92:11–15. A limited exception to the presumption of nexus exists where the patented invention is only a component of the product to which the asserted objective considerations are

tied. *Demaco*, 851 F.2d at 1392. Here, because MD Trader is a component of a suite of software, Patent Owner enjoys no presumption of nexus. Patent Owner fails to offer any meaningful discussion of nexus in its Patent Owner Response, other than a general assertion at the end of its discussion that "MD Trader was successful due to the patented features." PO Resp. 46. Patent Owner's contentions regarding commercial success fail for this reason alone.

Even if we were to assume nexus, Petitioner persuasively rebuts that presumption. Petitioner responds, for example, that Patent Owner's increase in sales could easily have been the result of increases in the market itself during the relevant time period. Pet. Reply 24. Petitioner explains that "in the U.S., both the trading volume and the number of actively traded commodities contracts exploded in the early-to-mid 2000s" and "[t]rading volume increased six-fold; the number of actively traded contacts increased five-fold." *Id.* (citing Ex. 1072, 35–37). Exhibit 1072 is a document from the Commodity Futures Trading Commission (CFTC), and pages 35–37 support the trading volume increase alleged by Petitioner.

Petitioner also points to several unclaimed features being responsible for the alleged commercial success. Pet. Reply 20–21. In support of this contention, Petitioner cites Patent Owner's own testimony from traders in the industry (Ex. 2223), noting, for example, that "Ryan . . . testified that MD Trader's ability to display multiple trade windows . . . was a reason he used MD Trader," "Grisafi identified one-click re-centering as a key feature" and "McElveen identified speed, precision, and one-click re-centering as [] key features." *Id.* (citing Ex. 2223, 3–4, 22, 40). Patent Owner acknowledges that, "in this industry . . . *anything* that is even remotely

appreciated as providing an edge is tried and spreads quickly if successful."
PO Resp. 56 (emphasis added).

Furthermore, Patent Owner does not provide information regarding sales volume or market share as compared to providers of competing products. Rather, Patent Owner only alleges an increase in its own sales, without reference to the market. *See* PO Resp. 56–61. This information, without market share information, is only weak evidence, if any, of commercial success. *See In re Applied Materials* 692 F.3d at 1299.

f. Copying

Patent Owner additionally contends that the invention was widely copied by others. PO Resp. 62–69. "[C]opying requires the replication of a specific product." *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004).

Patent Owner refers to products allegedly including the claimed features, as well as consent judgements where others acknowledged infringement. PO Resp. 62–69. This is not persuasive evidence of copying. *See Iron Grip*, 392 F.3d at 1325 ("Not every competing product that arguably falls within the scope of a patent is evidence of copying. Otherwise every infringement suit would automatically confirm the nonobviousness of the patent.").

Although Patent Owner repeatedly alleges that others copied the invention, there is no explanation, in the Patent Owner Response, to support those alleged copiers attempting to replicate specific products. For example, Patent Owner contends that "Mr. Deux, founder of licensee NinjaTrader, also acknowledged copying of the invention." PO Resp. 64 (citing Ex. 2169

¶¶ 128–130; Ex. 2247, 210:8–212:25). The evidence cited by Patent Owner, however, does not support that contention. For example, the cited portion of Exhibit 2247 is just another example of Patent Owner alleging copying based on the existence of similar products.

Patent Owner has failed to establish widespread copying.

g. Industry Praise

Patent Owner contends that widespread praise in the industry also supports non-obviousness. PO Resp. 69–71. In support of its "widespread praise" contentions, Patent Owner notes, for example, that the invention was characterized as a "unique vision," "ingenious," "paradigm change," "revolutionary… not just an incremental improvement," "outside of the box," "huge innovation," "significant advance," "determining factor in our success," "radically different," "far superior," "very significant departure [from the prior art]," "invaluable tool," "stroke of genius," "so significant that I cannot put a price on its value." *Id.* at 69–70. Patent Owner proceeds to conclude that "[e]ach one of these was directed to the claimed features." *Id.* at 54.

As with commercial success, however, evidence of industry praise is only relevant when it is directed to the merits of the invention claimed. *See Ormco*, 463 F.3d at 1311. Patent Owner offers no sufficient explanation, in its Patent Owner Response, as to how any of the alleged praise is due to specific features that are present in the claims.

h. Industry Acquiescence

Patent Owner contends that non-obviousness is further shown by "widespread acquiescence and acceptance in the industry, with many licenses and consent judgments acknowledging infringement and validity." PO Resp. 71–72. Although licenses taken under the patent in suit may constitute evidence of non-obviousness, only little weight can be attributed to such evidence if the patentee does not demonstrate "a nexus between the merits of the invention and the licenses of record." *In re GPAC Inc.*, 57 F.3d at 1580 (internal quotation and citations omitted). Furthermore, as Petitioner notes, litigation-induced licensing, alone, does not establish non-obviousness. *See* Pet. Reply 26 (citing *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907–8 (Fed. Cir. 1985)).

We note that Patent Owner's contention regarding licensing to traders is more related to commercial success than licensing in the context of secondary considerations of non-obviousness. *See* PO Resp. 71 (discussing traders purchasing software licenses, the MD Trader product).

i. Failure of Others

Patent Owner additionally contends that the alleged failure of others to make the invention supports non-obviousness. PO Resp. 72–75. Patent Owner's contentions on this issue are not directed to any particular attempt and failure of others to make the claimed invention. *See id.* Indeed, it is difficult to image that would be the case with the claimed invention, as the '768 patent explains that there is nothing special about the programming required. Ex. 1001, 4:60–67.

Rather, Patent Owner's contentions are directed to the allegation that the claimed invention did not exist before arrived at by Patent Owner. PO

Resp. 72–75. This does not establish non-obviousness. *Iron Grip,* 392 F.3d

at 1325 ("Absent a showing of long-felt need or the failure of others, the

mere passage of time without the claimed invention is not evidence of

nonobviousness."). Patent Owner does not allege any long-felt need existed.

In fact, Patent Owner advances the opposite position, that the problem was

not even recognized by others. *See* PO Resp. 74 ("Prior to the invention,

[persons of ordinary skill in the art] failed to even appreciate the

problems.").

j. Other Evidence

Patent Owner additionally cites another party's attempt to invalidate

the '768 patent as evidence of non-obviousness. PO Resp. 75–76. Patent

Owner concludes that party's "actions show that experts in the field

recognized that prior art, including the TSE, was insufficient to render the

invention obvious." *Id.* at 76. We are apprised of no persuasive reason as to

why those contentions establish non-obviousness in this proceeding.

k. Weighing Secondary Considerations

As explained above, Patent Owner has not established the majority of

its alleged secondary considerations of non-obviousness. Weighing the

evidence before us, Patent Owner's contentions regarding secondary

considerations of non-obviousness do not outweigh the strong case of

obviousness discussed above. For example, as noted above, TSE teaches

each feature of claim 1 other than the "single action" setting and sending,

which is taught by Belden. As noted above, Belden itself, for example,

provides motivation for the proposed modifications to TSE (e.g., increased

speed).

Accordingly, we are persuaded that Petitioner has established, by a preponderance of the evidence, that claims 1–6 and 10–23 are unpatentable under 35 U.S.C. § 103.

I. Motions to Exclude

1. Patent Owner's Motion to Exclude

Patent Owner moves to exclude Exhibit 1016 (TSE) and Exhibit 1017 (TSE Translation). Paper 48 ("PO MTE"). Patent Owner seeks to exclude Exhibits 1016 and 1017 because they have not been authenticated per rule 901 of the Federal Rules of Evidence (FRE). PO MTE 1. Patent Owner further argues that Exhibit 1017 should be excluded under FRE 106 and 403 because it is incomplete and misleading. *Id.*

First, Patent Owner argues that Petitioner fails to sufficiently authenticate Exhibits 1016 and 1017 as required by FRE 901. PO MTE 2–5; PO MTE Reply 1–4. Petitioner relies upon the testimony of Mr. Kawashima[11] to authenticate Exhibits 1016 and 1017. PO MTE Opp. 1–10 (citing Exs. 1019, 2163). Patent Owner argues that the November 2005 deposition of Mr. Kawashima (Ex. 1019) does not sufficiently authenticate Exhibits 1016 and 1017 for many of the same reasons discussed above with respect to the public accessibility of TSE.

Patent Owner's argument is not persuasive. Patent Owner has not met its burden to show that either Exhibit 1016 or Exhibit 1017 should be excluded from the record. For the same reasons as discussed above, Patent

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[11] Patent Owner argues that the November 2005 deposition testimony of Mr. Kawashima's (Exhibit 1019) is hearsay. MTE 2. Patent Owner, however, does not move to exclude Exhibit 1019.

Owner's arguments are unpersuasive. As Petitioner argues, Mr.

Kawashima's testimony sufficiently establishes the authenticity. *See* PO

MTE Opp. 3–10.

Accordingly, we *deny* Patent Owner's Motion to Exclude with respect

to Exhibits 1016 and 1017.

Second, Patent Owner argues Exhibit 1017 is inadmissible under FRE

106 and 403 because it is incomplete and misleading. PO MTE 5–6; PO

MTE Reply 4–5. Patent Owner argues that Exhibit 1017 "omit[s] two

translator's notes from Patent Owner's original translation." *Id.* (citing Ex.

2178, 39–40).

Patent Owner's argument is not persuasive. FRE 106 provides that:

> If a party introduces all or part of a writing or recorded
> statement, an adverse party may require the introduction, at that
> time, of any other part —or any other writing or recorded
> statement — that in fairness ought to be considered at the same
> time.

As Petitioner points out, "rather than providing a basis for excluding

evidence, Fed. R. Evid. 106 is a vehicle for entry of additional evidence."

Here, the two translator's notes from Patent Owner's original translation

already appear in the record. Ex. 2178, 39–40.

FRE 403 provides:

> The court may exclude relevant evidence if its probative value is
> substantially outweighed by a danger of one or more of the
> following: unfair prejudice, confusing the issues, misleading the
> jury, undue delay, wasting time, or needlessly presenting
> cumulative evidence.

Patent Owner has not met its burden to show Exhibit 1017 should be

excluded from the record under FRE 304. Patent Owner asserts that Exhibit

1017 should be excluded but does not provide a sufficient explanation why

the probative value is substantially outweighed by being misleading. *See* PO
MTE 5–6. Here, the two translator's notes from Patent Owner's original
translation already appear in the record (Ex. 2178, 39–40) and we are
capable of assigning the appropriate weight to Exhibit 1017.

Accordingly, we *deny* Patent Owner's Motion to Exclude with respect
to Exhibits 1017 for these additional reasons.

2. Petitioner's Motion to Exclude

Petitioner moves to exclude various ones of Patent Owner's Exhibits.
Paper 44. Because the outcome of this trial does not change based on
whether or not we exclude those exhibits, we *dismiss* Petitioner's Motion to
Exclude as moot.

CONCLUSION

For the foregoing reasons, we determine that Petitioner has shown, by
a preponderance of the evidence, that claims 1–23 of the '768 patent are
unpatentable.

ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–23 of the '768 are *unpatentable*;

FURTHER ORDERED that Patent Owner's Motion to Exclude
Evidence is *denied*;

FURTHER ORDERED that Petitioner's Motion to Exclude Evidence
is *dismissed*; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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Appendix

D

UNITED STATES PATENT AND TRADEMARK OFFICE
_____

BEFORE THE PATENT TRIAL AND APPEAL BOARD
_____

IBG LLC, INTERACTIVE BROKERS LLC,
TRADESTATION GROUP, INC., and
TRADESTATION SECURITIES, INC.,
Petitioner,

v.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Patent Owner.
_____

CBM 2016-00087
Patent 7,412,416 B2
_____

Before SALLY C. MEDLEY, MEREDITH C. PETRAVICK, and
JEREMY M. PLENZLER, *Administrative Patent Judges*.

MEDLEY, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 328(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

IBG LLC, Interactive Brokers LLC, Tradestation Group, Inc., and Tradestation Securities, Inc., ("Petitioner")[1] filed a Petition requesting a review of claims 1–24 of U.S. Patent No. 7,412,416 B2 (Ex. 1001, "the '416 patent") under the transitional program for covered business method patents.[2] Paper 3 ("Pet."). Trading Technologies International, Inc. ("Patent Owner") did not file a Patent Owner Preliminary Response. Upon consideration of the Petition, we instituted a covered business method patent review of claims 1–24 of the '416 patent (Paper 11 ("Dec.")).

Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 19 ("PO Resp.")) and Petitioner filed a Reply (Paper 23 ("Pet. Reply")). Patent Owner filed a Motion to Exclude (Paper 29 ("PO Mot. to Exclude")) Exhibits 1015, 1016, 1018, and portions of Exhibit 1060. Petitioner filed an Opposition to the Motion to Exclude (Paper 31 ("Pet. Exclude Opp.")), and Patent Owner filed a Reply (Paper 33 ("PO Exclude Reply")). An oral hearing was held on August 10, 2017, and a transcript of the hearing is included in the record (Paper 36 ("Tr.")).

For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–24 of the '416 patent are unpatentable.

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[1] Petitioner indicates that IBG LLC, Interactive Brokers LLC, TradeStation Group, Inc., TradeStation Securities, Inc., TradeStation Technologies, Inc., and IBFX, Inc. are real parties-in-interest. Pet. 2.

[2] *See* § 18(a) of the Leahy-Smith America Invents Act, Pub. L. No. 112-29,

A. Related Matters

The '416 patent is involved in the following lawsuit: *TradeStation Technologies v. Trading Technologies International, Inc.*, No. 0:16-cv-60296 (S.D. Fl.). Pet. 2. In compliance with 37 C.F.R. § 42.302(a), Petitioner certifies, and it is not disputed, that Petitioner has been sued for infringement of the '416 patent. *Id*. at 3–4. On this record, we determine that Petitioner may petition for review of the '416 patent pursuant to 37 C.F.R. § 42.302(a).

B. The '416 Patent

The Specification of the '416 patent describes a graphical user interface ("GUI") for an electronic trading system that allows a remote trader to view trends for an item, which assists the trader to anticipate demand for an item. Ex. 1001, 1:14–16, 2:8–11. Figure 3A of the '416 patent is reproduced below.
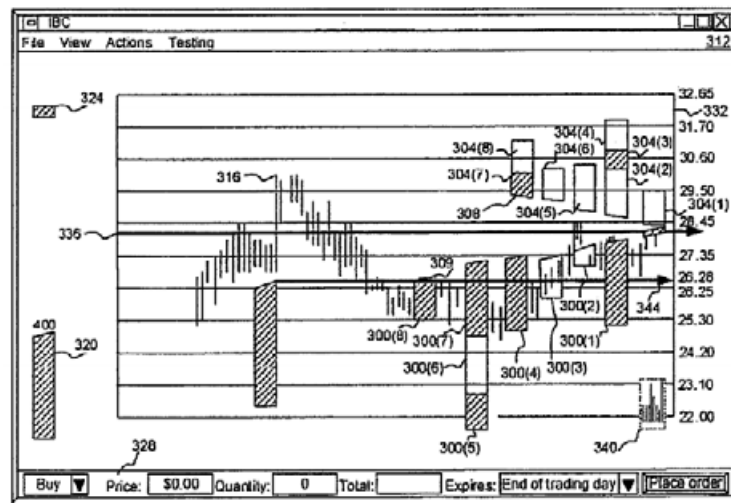

FIG. 3A

Figure 3A depictes a GUI that includes: 1) value axis 332, which
indicates the value at which an item is being traded, 2) multiple offer icons
304(1)–304(8), and 3) multiple bid icons 300(1)–300(8). *Id.* at 6:3–10, 6:44–
54. The offer icons and the bid icons represent orders in the marketplace. *Id.*

A trader can place an order by dragging-and-dropping an order icon
(e.g., bid order icon 320) to a desired location on the chart, triggering a pop-
up window (e.g., Fig. 3D) that allows the trader to send the order. *Id.* at
8:28–56, Fig. 3D.

C. Illustrative Claims

Claims 1 and 14 of the '416 patent are the only independent claims and
are reproduced below.

1.   A method for facilitating trading and displaying
information regarding the buying and selling of a good, the
method comprising:

displaying a chart on a graphical user interface
comprising a vertical axis of price values and a horizontal
axis of time;

displaying indicators representing historical trading data
for the good at locations along the vertical axis of price
values and the horizontal axis of time;

providing a plurality of locations on the graphical user
interface to place an order icon with a pointer of a user
input device, each location corresponding to a particular
price value along the vertical axis of price values;

placing an order icon for a particular quantity of the good
at a specific location of the plurality of locations along the
vertical axis of price values with a pointer of an input

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device, wherein the specific location on which the order
icon is placed corresponds to a particular price value;

generating an order to buy or sell the particular quantity
of the good at the particular price value responsive to
placing the order icon at the specific location; and

sending the order to an electronic trading system, wherein
the order is for the particular quantity of the good and at
the particular price value determined based on the
location where the order icon was placed.

14. A computer readable medium, for an electronic exchange
in which a good is bought and sold responsive to orders
submitted by traders, each order specifying a value and
quantity for the order, the computer readable medium
containing a program containing instructions to cause a
processor to perform the following steps:

displaying a chart on a graphical user interface
comprising a vertical axis of price values and a horizontal
axis of time;

displaying indicators representing historical trading data
for the good at locations along the vertical axis of price
values and the horizontal axis of time;

providing a plurality of locations on the graphical user
interface to place an order icon with a pointer of a user
input device, each location corresponding to a particular
price value along the vertical axis of price values;

placing an order icon for a particular quantity of the good
at a specific location of the plurality of locations along the
vertical axis of price values with a pointer of an input
device, wherein the specific location on which the order

icon is placed corresponds to a particular price value;

generating an order to buy or sell the particular quantity
of the good at the particular price value responsive to
placing the order icon at the specific location; and

sending the order to an electronic trading system, wherein
the order is for the particular quantity of the good and at
the particular price value determined based on the
location where the order icon was placed.

D. Grounds of Unpatentability

We instituted review of claims 1–24 on the following grounds:

References	Basis	Challenged Claims
n/a	§ 101	1–24
n/a	§ 112 ¶ 4	2 and 15

E. Covered Business Method Patent

A covered business method patent is "a patent that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service, except that the term does not include patents for technological inventions." Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284, 329 (2011) ("AIA") § 18(d)(1); *see* 37 C.F.R. § 42.302. To determine whether a patent is for a technological invention, we consider "whether the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution." 37 C.F.R. § 42.301(b). For purposes of

determining whether a patent is eligible for a covered business method patent review, the focus is on the claims. *Secure Axcess, LLC v. PNC Bank N.A.*, 848 F.3d 1370, 1379 (Fed. Cir. 2017) ("It is the claims, in the traditional patent law sense, properly understood in light of the written description, that identifies a CBM patent."). One claim directed to a CBM is sufficient to render the patent eligible for CBM patent review. *See id.* at 1381 ("[T]he statutory definition of a CBM patent requires that the patent have a claim that contains, however phrased, a financial activity element.").

In our Institution Decision, we determined that Petitioner had shown that the '416 patent is a CBM patent. Dec. 6–9. Patent Owner urges us to reconsider our determination and find that the '416 patent is not eligible for CBM patent review. *See* PO Resp. 68–76. We are not persuaded to change our original determination.

1.   *Method or Corresponding Apparatus for Performing Data Processing or Other Operations Used in the Practice, Administration or Management of a Financial Product or Service*

The statute defines a "covered business method patent" as "[a] patent that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service." AIA § 18(d)(1); *see* 37 C.F.R. § 42.301(a). A covered business method patent can be broadly interpreted to encompass patents claiming activities that are financial in nature. Transitional Program for Covered Business Method Patents— Definitions of Covered Business Method Patent and Technological Invention, 77 Fed. Reg. 48734, 48735 (Aug. 14, 2012); *Blue Calypso, LLC v.*

Groupon, Inc., 815 F.3d 1331, 1338–41 (Fed. Cir. 2016) (determining that a patent was a covered business method patent because it claimed activities that are financial in nature); *Unwired Planet, LLC v. Google, Inc.,* 841 F.3d 1376, n.5 (Fed. Cir. 2016) (stating that "we endorsed the 'financial in nature' portion of the standard as consistent with the statutory definition of 'covered business method patent' in *Blue Calypso*"), *Versata Dev. Grp., Inc. v. SAP America, Inc.,* 793 F.3d 1306, 1324–25 (Fed. Cir. 2015) ("[The statute] on its face covers a wide range of finance-related activities.").

A patent need have only one claim directed to a covered business method to be eligible for review. 77 Fed. Reg. at 48736 (Response to Comment 8). We take claim 1 as representative.

Petitioner argues that the '416 patent is a patent that claims a method for performing data processing or other operations used in the practice, administration, or management of a financial product or service. Pet. 4–6. Petitioner argues that claim 1 expressly requires the performance of a financial transaction by its recitation of facilitating trading and displaying information regarding the buying and selling of a good, including the steps of: (1) displaying a chart on a GUI comprising a vertical axis of price values and a horizontal axis of time; (2) displaying indicators representing historical trading data for the good on the chart; (3) providing a plurality of locations on the GUI to place an order icon; (4) placing an order icon for a particular quantity of the good at a specific location along the vertical axis; (5) generating an order to buy or sell the particular quantity of the good; and (6) sending the order to an electronic trading system. *Id.* at 5.

Notwithstanding Patent Owner's arguments, which we address below, we are persuaded by Petitioner's showing, and find that the '416 patent is directed to a method for performing data processing or other operations used in the practice, administration, or management of a financial service. Here, Petitioner asserts, and we agree, that the claim 1 method steps for displaying historical trading data, placing an order icon for a particular quantity of a good at a location along a price axis, and sending an order to an electronic trading system are each financial activities. Pet. 5.

Patent Owner argues that the Petition is silent as to whether the '416 patent is directed to performing "data processing" or "other operations," and that Petitioner's showing focuses solely on whether the '416 patent is financial in nature. PO Resp. 69–70. We disagree with Patent Owner. Petitioner does address whether the patent is directed to data processing or other operations. *See, e.g.*, Pet. 6 (the '416 patent claims are directed to a method "*for facilitating trading* in an electronic trading system") (emphasis added). The definition for a covered business method patent is "a patent that claims a method or corresponding apparatus for performing data processing *or other operations* used in the practice, administration, or management of a financial product or service . . . ." 37 C.F.R. § 42.301(a) (emphasis added). Petitioner relies on the "other operations" part of the definition to make its case. This is exemplified, for example, in Petitioner's showing that the preamble recites a method for facilitating trading and displaying information regarding the buying and selling of a good, which would be "other operations" used in the practice of a financial service (trading on an exchange).

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Patent Owner also argues that the '416 claims are not directed to "data processing." PO Resp. 70–72. As explained immediately above, however, the definition for a covered business method patent is not limited to a patent that claims a method for performing data processing. In any event, we are not persuaded by Patent Owner's arguments, because such arguments are premised on the assumption that "data processing" should be interpreted according to the definition of "data processing" found in the glossary for class 705 of the United States Patent Classification System, which is a "systematic operation on data in accordance with a set of rules which results in a significant change in data." *Id*. at 71 (citing Ex. 2121, 4). Patent Owner does not sufficiently explain why this definition is controlling as opposed to the plain meaning of data processing, which includes a computer performing operations on data. *See, e.g.*, Pet. Reply 24–25 (citing Ex. 1066; Ex. 1067).

Claim 1 is directed to, for example, "displaying a chart on a graphical user interface," which must be done with a computer performing operations on data in order to display the data as a chart on a graphical user interface. The '416 patent discloses processing market information for display on a client terminal. *See e.g.,* Ex. 1001, 5:6–15 ("[C]lient terminals 104 generate icons for bid and offer orders (called bid and offer icons), historical charts and trader icons, and determine the placement of bid and offer icons and trader icons responsive to the information received from the transaction server 200.") For these reasons, we also determine that the '416 patent claims a method for performing data processing.

In addition, Patent Owner argues that the legislative history of the AIA confirms that the claimed invention is not a covered business method because

"[T]he '416 patent, which claims the structure, makeup, and functionality of a GUI tool (i.e., not remotely close to a business method) is not that type of patent." PO Resp. 76–79 (citing Ex. 2126; Ex. 2127).

Although the legislative history includes certain statements that certain novel software tools and graphical user interfaces that are used by the electronic trading industry worker are not the target of § 18 of the AIA (*see* Ex. 2126, S5428, S5433), the language of the AIA, as passed, does not include an exemption for user interfaces for commodities trading from covered business method patent review. Indeed, "the legislative debate concerning the scope of a CBM review includes statements from more than a single senator. It includes inconsistent views . . . ." *Unwired Planet*, 841 F.3d at 1381. For example, in contrast to the statements cited by Patent Owner, the legislative history also indicates that "selling and trading financial instruments and other securities" is intended to be within the scope of covered business method patent review. *See* Ex. 2126, S5432 (statements of Sen. Schumer); *see also id.* at S5436–37 (statements of Sen. Schumer expressing concern about patents claiming "double click"), Ex. 2127, S1364 (Mar. 8, 2011) (statements of Sen. Schumer explaining that "method or corresponding apparatus" encompasses "graphical user interface claims" and "sets of instructions on storage media claims"). "[T]he legislative history cannot supplant the statutory definition actually adopted. . . . The authoritative statement of the Board's authority to conduct a CBM review is the text of the statute." *Unwired Planet*, 841 F.3d at 1381. Each claimed invention has to be evaluated individually to determine if it is eligible for a CBM patent review. A determination of whether a patent is eligible for a

CBM patent review under the statute is made on a case-by-case basis. 37 C.F.R. § 42.301(b).

For the reasons stated above, we are persuaded that the '416 patent "claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service" and meets that requirement of § 18(d)(1) of the AIA.

2. *Exclusion for Technological Inventions*

Even if a patent includes claims that would otherwise be eligible for treatment as a covered business method, review of the patent is precluded if the claims cover only "technological invention[s]," as defined by 37 C.F.R. §42.301(b). The definition of "covered business method patent" in § 18(d)(1) of the AIA does not include patents for "technological inventions." To determine whether a patent is for a technological invention, we consider the following: "whether the claimed subject matter as a whole [(1)] recites a technological feature that is novel and unobvious over the prior art; and [(2)] solves a technical problem using a technical solution." 37 C.F.R. § 42.301(b). Both prongs must be satisfied in order for the patent to fall within the exception for a technological invention. *See Versata*, 793 F.3d at 1326–27; *Apple Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016). The following claim drafting techniques, for example, typically do not render a patent a "technological invention":

> (a) Mere recitation of known technologies, such as computer hardware, communication or computer networks, software, memory, computer-readable storage medium, scanners, display

devices or databases, or specialized machines, such as an ATM or point of sale device.

(b) Reciting the use of known prior art technology to accomplish a process or method, even if that process or method is novel and non-obvious.

(c) Combining prior art structures to achieve the normal, expected, or predictable result of that combination.

Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,763–64 (Aug. 14, 2012). The Federal Circuit has held that a claim does not include a "technological feature" if its "elements are nothing more than general computer system components used to carry out the claimed process." *Blue Calypso*, 815 F.3d at 1341; *see also Versata*, 793 F.3d at 1327 ("the presence of a general purpose computer to facilitate operations through uninventive steps does not change the fundamental character of an invention").

Petitioner asserts that the '416 patent claims fail to recite any technological feature that is novel and unobvious over the prior art, and do not solve a technical problem with a technical solution. Pet. 6–10. In particular, Petitioner contends that independent claims 1 and 14 recite trading software that is implemented using conventional computer hardware, such as personal computers, servers and networks, and do not include a technological feature or implement a technological solution. *Id.* at 7. Petitioner further argues that the '416 patent itself describes that the computing device used to display the graphical user interface and that performs the claimed method and functions need not be any specific hardware, but can be "personal computers, terminals as part of a network, or any other computing device." *Id.* at 8

(quoting Ex. 1001, 4:34–36). Petitioner also argues that electronic trading was well known as of the filing date, going back as far as 1971 when NASDAQ set up the first electronic stock exchange. *Id.* at 8 (citing Ex. 1026).

We agree with Petitioner that at least claim 1 is directed to well-understood, routine, and conventional steps of facilitating trading and displaying information regarding the buying and selling of a good to a trader, who uses the information to facilitate trading a commodity. For example, the "BACKGROUND OF THE INVENTION" section of the '416 patent explains that it was well known for an electronic exchange to record all transactions for a particular item and to replay or post to the individual traders outstanding bids with the highest values and outstanding offers with the lowest value, along with a quantity specified for each order, to facilitate trading a commodity. Ex. 1001, 1:34–41. There is no indication in the '416 patent that the inventors invented gathering market information, displaying it to a trader, and using the information to facilitate trading a commodity. The use of a computer to perform these functions also was known in the art at the time of the invention (*see, e.g.*, Ex. 1026), and the '416 patent does not claim any improvement of a computing device.

Petitioner argues that the claimed subject matter does not solve a technical problem using a technical solution, because the problem is a business, financial, or trader problem and the solution is functional, such as rearranging available market data and providing locations to place a trade on a GUI. Pet. 9–10. We agree with Petitioner that the problem noted in the Specification of the '416 patent is not a technical one. The '416 patent

Specification highlights the problem and importance of informing a trader of certain stock market events so that the trader may use such information to facilitate trading a commodity. Ex. 1001, 1:27–33, 2:8–11. Informing a trader of certain stock market trends or events is an activity that is financial in nature.

Patent Owner argues that the '416 patent claims a technological GUI tool that improves upon prior GUIs using a particular combination of GUI features and functionality (the particular makeup, structure and features of a GUI tool), and, thus, falls under the technological exception. *Id*. at 72–74. Patent Owner, however, does not tie its arguments to the actual claim language to explain which of the steps of the broad method claim 1, for example, recite an improved technological GUI tool or how the claimed steps solve a technical problem. We do not find that claim 1 solves a technical problem. Rather, claim 1 recites method steps of receiving, displaying, and updating market data, and generating an order to buy or sell a good based on that information.

Patent Owner argues that *Technologies International, Inc. v. CQG, Inc.*, 675 Fed. Appx. 1001 (Fed. Cir. 2017) ("*CQG*") dictates that the '416 patent claims cover technological inventions (PO Resp. 75–76). *CQG* involved U.S. Patent Nos. 6,772,132 and 6,677,340. The Federal Circuit determined that the claims of those patents are patent eligible under 35 U.S.C. § 101. The claims before us, however, are broader than the claims involved in *CQG*. The Specification of the '416 patent is different from the specification of the patents involved in *CQG*. Thus, comparing the claims of the patents involved in *CQG* is not particularly helpful here. Moreover, the

CQG decision relied upon a feature not required by claim 1 of the '416 patent— a static price axis. Although claim 1 of the '416 patent requires a vertical axis of price and a horizontal axis of time, the claim does not require a static price axis.

For all of the foregoing reasons, the subject matter of the claims is not a "technological invention" under 37 C.F.R. § 42.301(b), and the '416 patent is eligible for a covered business method patent review.

II. ANALYSIS

A. Claim Interpretation

In a covered business method patent review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.300(b). Under the broadest reasonable construction standard, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

For purposes of this decision, we need not interpret any limitations of the claims expressly.

B. The Level of Ordinary Skill in the Art

Notwithstanding the parties' submissions of the level of ordinary skill in the art, we find that the level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

C. 35 U.S.C. § 101 Asserted Ground of Unpatentability

Petitioner contends that claims 1–24 of the '416 patent are not patent eligible under 35 U.S.C. § 101. Pet. 20–41. Patent Owner opposes. PO Resp. 6–68.

Under 35 U.S.C. § 101, we must first identify whether an invention fits within one of the four statutorily provided categories of patent-eligibility: "processes, machines, manufactures, and compositions of matter." *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 713–14 (Fed. Cir. 2014).

Initially, we note that Petitioner asserts that claims 14–22 are "broad enough to encompass a transitory, propagating signal that is encoded, which is not eligible for patenting." Pet. at 42 (citing *In re Nuijten*, 500 F.3d 1346, 1357 (Fed. Cir. 2007)). Independent claim 14 recites a "computer readable medium containing a program containing instructions to cause a processor to perform the following steps." Petitioner contends that the Specification does not define "computer readable medium" or provide examples of a "computer readable medium." *Id.* at 16. Petitioner further argues that "[u]nder the broadest reasonable interpretation ('BRI'), the scope of this term is broad enough to encompass a transitory, propagating signal that is encoded" and that the additional language of "containing a program containing instructions to cause a processor to perform the following steps" does not limit the medium to non-transitory media. Pet. 16–17 (citing *In re Nuijten*, 550 F.3d 1346, 1357 (Fed. Cir. 2007)); Pet. Reply 22–23.

In our Institution Decision, we made an initial determination, based on the limited record before us at that time, that the broadest reasonable interpretation of "computer readable medium" in the context of claim 14

"encompasses a transitory, propagating signal that is encoded." Inst. Dec.
11. Patent Owner argues, among other things, that Petitioner fails to
establish that the claims cover signals, because there is nothing in the
Specification of the '416 patent that allows the computer readable medium to
be read as being a signal or other transitory medium, and that a person having
ordinary skill in the art would have understood that a computer readable
medium containing a program would not be a signal or other transitory
medium. PO Resp. 66–67 (citing Ex. 2168 ¶ 45; Ex. 2169 ¶ 64). Petitioner
responds to Patent Owner's contentions by asserting that "[t]he Board should
follow the precedential decision in *Ex Parte Mewherter* and hold that claims
14–22, which recite a term of art in patent law, encompass transitory signals
and are thus non-statutory." Pet. Reply 22. Petitioner further argues that
Patent Owner's expert, Christopher Thomas, admitted that "computer
readable medium" is "a patent term." *Id.* at 22–23.

Petitioner's response is unhelpful. For example, in its Reply,
Petitioner fails to direct us to evidence to rebut Patent Owner's contentions
regarding how one skilled in the art would have understood the disputed
phrase at the time of the invention.

Accordingly, on this record, which is absent any further evidence or
meaningful argument from Petitioner, we are not persuaded that at the time
of the invention one skilled in the art would have understood "computer
readable medium containing a program containing instructions to cause a
processor to perform the following steps," as encompassing transitory,
propagating signals.

There is no dispute that the remaining claims fit within one of the four statutorily provided categories of patent-eligibility. Claim 1, for example, is directed to a process.

1. Eligibility

Section 101 of Title 35, United States Code, provides:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The Supreme Court recognizes three exceptions to these statutory classes: laws of nature, natural phenomena, and abstract ideas. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (2012). Although an abstract idea by itself is not patentable, a practical application of an abstract idea may be deserving of patent protection. *Alice*, 134 S. Ct. at 2355. We must "consider the elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Id.* (citing *Mayo*, 132 S. Ct. at 1298, 1297). The claim must contain elements or a combination of elements that are "'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [abstract idea] itself.'" *Id.* (citing *Mayo*, 132 S. Ct. at 1294).

2. Abstract Idea

Petitioner argues that the claims encompass an abstract idea because they are directed to a fundamental economic practice. Pet. 22–25. In particular, Petitioner argues that the claims' recitation of displaying a chart

with vertical price axis and a horizontal time axis, displaying indicators
representing historical trading data along those axes, placing an order icon at
a particular location of a plurality of locations, and generating and sending
the order to an electronic trading system, is nothing more than the abstract,
fundamental economic practice of graphing (or displaying) trading data to
assist a trader to place an order. *Id.* Petitioner further argues that the abstract
idea is old, well-known, and prevalent. *Id.* at 23–24 (citing Ex. 1033, 8–15).
Additionally, Petitioner contends that the claims are directed to solving a
business problem (anticipating market movement) and can be performed
using pen and paper, or using only human mental steps, further indicating
that the claims are directed to an abstract concept. *Id.* at 24–27 (citing Ex.
1012 ¶¶ 67–70; Ex. 1001, 1:28–31, 1:53–63; Ex. 1033, 8–15; Ex. 1037, 3).

 "The 'abstract idea' step of the inquiry calls upon us to look at the
'focus of the claimed advance over the prior art' to determine if the claim's
'character as a whole' is directed to excluded subject matter." *Affinity Labs
of Texas v. DirectTV, LLC,* 838 F.3d 1253, 1257 (Fed. Cir. 2016) (quoting
Elec. Power Grp., LLC v. Alstom S.A., 830 F.3d 1350, 1353 (Fed. Cir.
2016)); *see also Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed.
Cir. 2016). There is no definitive rule to determine what constitutes an
"abstract idea." Rather, the Federal Circuit has explained that "both [it] and
the Supreme Court have found it sufficient to compare claims at issue to
those claims already found to be directed to an abstract idea in previous
cases." *Enfish*, 822 F.3d at 1334; *see also Amdocs (Israel) Ltd. v. Openet
Telecom, Inc.*, 841 F.3d 1288, 1294 (Fed. Cir. 2016) (explaining that, in
determining whether claims are patent-eligible under § 101, "the decisional

mechanism courts now apply is to examine earlier cases in which a similar or parallel descriptive nature can be seen—what prior cases were about, and which way they were decided").

Claim 1 is similar to independent claim 14 and is representative. Notwithstanding Patent Owner's arguments, which we address below, we determine that Petitioner has shown[3] that claim 1 is directed to the abstract idea of displaying a chart with a vertical price axis and a horizontal time axis, displaying indicators representing historical trading data along those axes, placing an order icon at a particular location of a plurality of locations, and generating and sending the order to an electronic trading system to assist a trader to place an order, which is a fundamental economic practice.

The preamble of claim 1 recites a method for facilitating trading and displaying information regarding the buying and selling of a good. The method steps of claim 1 include displaying a chart on a graphical user interface having a vertical axis of price values and a horizontal axis of time, placing an order icon for a quantity of a good at a location along the vertical axis of price levels, and generating and sending the order to an electronic trading system. We agree with Petitioner that claim 1 encompasses the abstract idea of the fundamental economic practice of graphing (or displaying) trading data to assist a trader to place an order, steps that can be performed using pen and paper, or even in a trader's mind. Pet. 22–25

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[3] As explained above, determining whether a claim is directed to an abstract idea calls upon us to look at the focus of the claimed advance over the prior art. In order to do so, we must make findings of fact as to the prior art at the time of the invention. Those facts must be supported by a preponderance of

(citing *CyberSource Corp. v. Retail Decisions*, 654 F.3d 1366, 1372 (Fed. Cir. 2011) (unpatentable mental process performed with aid of pen and paper)); Ex. 1012 ¶¶ 67–70; Ex. 1001, 1:28–31, 1:53–63; Ex. 1033, 8–15; Ex. 1037, 3. We further agree with Petitioner that the '416 patent claims simply provide a graphical representation on a computer of what traders have done in their minds since trading began. Pet. 26 (citing Ex. 1001, 1:28–31, 1:53–63); *see also* Ex. 1027, 44–46.

When we compare claim 1 at issue to those claims already found to be directed to an abstract idea in previous cases, we are persuaded that claim 1 is more similar to those claims found to encompass an abstract idea than those determined not to encompass an abstract idea. Claim 1 is similar to the claims in *Electric Power,* which did "not go beyond requiring the collection, analysis, and display of available information in a particular field, stating those functions in general terms, without limiting them to technical means for performing the functions that are arguably an advance over conventional computer and network technology." *Elec. Power Grp., LLC v. Alstom S.A.,* 830 F.3d 1350, 1353 (Fed. Cir. 2016).

In comparison, claim 1 is unlike the claims at issue in *DDR Holdings, LLC v. Hotels.com, L.P.,* 773 F.3d 1245 (Fed. Cir. 2014) and *Enfish.* In *DDR Holdings*, the court determined that the claims did not embody a fundamental economic principle or a longstanding commercial practice. The claims at issue in *DDR Holdings* were directed to retaining website visitors, which the court determined was a problem "particular to the Internet." *DDR*

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the evidence. 35 U.S.C. § 326(e).

Holdings, 773 F.3d at 1257. The court also determined that the invention was "necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks," and that the claimed invention did not simply use computers to serve a conventional business purpose. *Id.* In *Enfish*, the claim at issue was directed to a data storage and retrieval system for a computer memory. *Enfish*, 822 F.3d at 1336–37. The court determined that the claims were directed to an improvement in the functioning of a computer and were not simply adding conventional computer components to well-known business practices. *Id.* at 1338. Here, claim 1 is directed to a fundamental economic principle or a longstanding commercial practice and not directed to an improvement in the functioning of the computer.

We have considered all of Patent Owner's arguments regarding why the claims are not directed to an abstract idea but are not persuaded by such arguments. *See, e.g.*, PO Resp. 12–39. Patent Owner argues that the claims "set forth a GUI that is comprised of specific structure, makeup, and functionality that provide a specific means or method (generally speaking, placing order icons in specific locations) for achieving the result of a more intuitive interface." *Id*. at 12–13. Patent Owner argues that the claims are analogous to the claimed inventions in *CQG*, *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d. 1299 (Fed. Cir. 2016) ("*McRO*"), and *Enfish*. *Id*. at 13–15. We disagree.

Claim 1 of the '416 patent is unlike the claims at issue in *McRO*. In *McRO*, the court held that claims that recited "a specific asserted improvement in computer animation" were not directed to an unpatentable

abstract idea because they go "beyond merely organizing existing information into a new form or carrying out a fundamental economic practice." *McRO*, 837 F.3d at 135. Here, the claims merely organize existing market information so that it is displayed in order for a trader to place an order, which is not a specific improvement to the functioning of a computer.

With respect to *CQG*, and as explained above, the claims before us are much broader than the claims involved there. The Specification of the '416 patent is different from the patents involved in *CQG*. Thus, comparing the claims of the patents involved in *CQG* is not particularly helpful here. Moreover, the *CQG* decision relied upon a feature not required by claim 1 of the '416 patent— a static price axis. Although claim 1 of the '416 patent requires displaying a chart on a graphical user interface comprising a vertical price axis and a horizontal time axis, the claim does not require a static price axis. Nor are we persuaded that the claims are analogous to those in *Enfish* for reasons already discussed.

Patent Owner also argues that Petitioner's arguments overgeneralize the claimed invention and ignore the claim elements that make up the specifically claimed GUI. PO Resp. 15–21, 35. We disagree that Petitioner has overgeneralized the claimed invention or ignored the claim elements. Petitioner's arguments are commensurate in scope with the breadth of the claims. Nor are we persuaded by Patent Owner's arguments that Petitioner has not shown that the claimed invention preempts the broad concept of graphing (or displaying) trading data or generating a trade order. *Id*. at 21– 24. In particular, Patent Owner argues that while it is understood that pre-

emption may not be the sole test, it is a guide for understanding whether the claims are directed to the purported abstract idea. *Id.* Even Patent Owner, recognizes (*id.* at 22), however, that preemption is not the sole test for determining patent eligibility. In *McRO* our reviewing court explained that in considering preemption we should consider whether the claims "focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery." *McRO*, 837 F.3d at 1314 (citing *Enfish*, 822 F.3d at 1335). Here, we determine that the claims are directed to an end result of displaying market data and placing a trade order based on the displayed data that invokes generic processes.

Patent Owner argues that the claimed invention provides a solution (and is not directed to a fundamental economic practice) by reciting a specific implementation of generating a trade order based on placement of an icon in a specific location of a chart, and as such, differentiates the claimed GUI tool from other GUI tools for generating trade orders. PO Resp. 24–27, 35–39. Patent Owner also argues that GUIs are technology (*id.* at 28–31), the claims of the '416 patent recite an improvement to existing GUIs (*id.* at 31–34), and GUI's are akin to mechanical devices (*id.* at 34–35). We have considered all of these arguments, but are not persuaded by such arguments for reasons already provided.

In addition, and to the extent that Patent Owner asserts that claims that require a GUI are automatically patent eligible, that assertion is not commensurate with our reviewing court's holdings on the issue of patent eligibility. For example, the claim at issue in *Affinity Labs* recited an

application that enabled a cellular telephone to present a GUI displaying a list of media sources that included selectable items for selecting a regional broadcasting channel. *Affinity*, 838 F.3d at 1255–56. The claim also recited that the cellular telephone was enabled to transmit a request for the selected regional broadcasting channel. *Id.* at 1256. In *Ameranth*, the claim at issue recited a GUI that displayed menu items in a specific arrangement, a hierarchical tree format. Menu items were selected to generate a second menu from a first menu. *Apple*, 842 F.3d at 1234. In both *Affinity Labs* and *Ameranth*, the court determined that the claims were not directed to a particular way of programming or designing the software, but instead merely claim the resulting systems and determined that the claims are not directed to a specific improvement in the way computers operate. *Affinity Labs,* 838 F.3d at 1260–61; *Ameranth*, 842 F.3d at 1241. The same is true here in that the claims are not directed to any particular way of programming or designing software, but merely claim the resulting system and not any specific improvement in the way a computer operates.

Patent Owner also argues that the steps recited in the claims cannot be performed with pen and paper or in the human mind. PO Resp. 35–39. We disagree for the reasons stated above, namely that we agree with Petitioner that the '416 patent claims simply provide a graphical representation on a computer of what traders have done in their minds since trading began. Pet. 22–25 (citing *CyberSource Corp. v. Retail Decisions*, 654 F.3d 1366, 1372 (Fed. Cir. 2011) (unpatentable mental process performed with aid of pen and paper)); Ex. 1012 ¶¶ 67–70; Ex. 1001, 1:28–31, 1:53–63; Ex. 1033, 8–15; Ex. 1037, 3.

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3. Inventive Concept

To be patent eligible, a claim to an otherwise abstract idea must recite additional elements that constitute an inventive concept. *Alice*, 134 S. Ct. at 2357. One looks to "[t]he elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Mayo*, 132 S. Ct. at 1297–98. The additional elements must be more than "well-understood, routine, conventional, activity." *Id.* at 1298.

Petitioner argues that the claims do not recite an inventive concept. Pet. 27–35. Petitioner argues that the claims recite insignificant and conventional extra-solution activities of data gathering, dragging-and-dropping, sending orders, and arranging data and locations to place a trade on a display using conventional, well-known components (a computer device and input device). *Id.* Petitioner also argues that the claims are not rooted in computer technology. *Id.* at 35–40.

Notwithstanding Patent Owner's arguments, which we address below, we are persuaded that Petitioner has shown that none of the additional claim elements in claim 1 or claims 2–24 transforms the nature of the claims into patent-eligible subject matter. Claim 1 recites a method for facilitating trading and displaying information regarding the buying and selling of a good. The method steps of claim 1 include displaying a chart on a graphical user interface having a vertical axis of price values and a horizontal axis of time, placing an order icon for a quantity of a good at a location along the vertical axis of price levels, and generating and sending the order to an electronic trading system. The Specification of the '416 patent does not

disclose a particular way for data gathering, dragging-and-dropping, sending orders, and arranging data and locations to place a trade on a display, nor does the Specification provide or disclose any particular algorithms or rules for performing the recited functions of claim 1. All of the method steps of claim 1 are performed on a generic computer using known algorithms, as the '416 patent itself acknowledges that the computing device used to display the graphical user interface and that performs the claimed method and functions need not be any specific hardware, but can be "personal computers, terminals as part of a network, or any other computing device." Ex. 1001, 4:34–36. Based on the record before us, the functional steps of data gathering, dragging-and-dropping, sending orders, and arranging data and locations to place a trade on a display, were not novel or non-obvious, but rather known in the art at the time of the invention. *See, e.g.*, Pet. 29. We also agree with Petitioner that none of claims 2–24 transforms the nature of the claims into a patent-eligible application. Pet. 32–35. We agree that these claims recite well-understood, routine, conventional extra-solution activity that is not related to an inventive concept. *Mayo*, 132 S. Ct. at 1298.

Moreover, and to the extent that the claims require a GUI, a mere recitation of a GUI does not make the claim patent eligible. *See Affinity Labs*, 838 F.3d at 1257–58, *Ameranth*, 842 F.3d at 1236–42, *Internet Patent Corp.*, 790 F.3d at 1348–49. A recitation of a generic GUI merely limits the use of the abstract idea to a particular technological environment. "Limiting the field of use of the abstract idea to a particular existing technological environment does not render any claims less abstract." *Affinity Labs,* 838 F.3d at 1258 (citing *Alice,* 134 St. Ct. at 2358; *Mayo*, 132 S. Ct. at 1294).

Patent Owner argues that the claims, in light of the Specification, pass part two of *Alice* because they recite an inventive concept. PO Resp. 39–43. Patent Owner contends that the combination of displaying market information and selecting and moving an icon to place an order is an inventive concept that transforms the abstract idea into a particular application. *Id.* at 41–43. Patent Owner relies upon the testimony of Mr. Christopher Thomas to show that the claimed invention was not well-known or conventional. *Id.* at 42 (citing Ex. 2169 ¶¶ 48–50). Mr. Thomas's testimony is conclusory and does not specifically address the claimed invention. Selecting and moving an icon is a well-understood, routine, conventional activity that does not add significantly more to the abstract idea. *See* Ex. 1029, 247–249 (disclosing that drag-and-drop (i.e., clicking and holding a button while moving some object across a screen) is old and well known). Conventional post-solution activity is not sufficient to transform the abstract idea into patent-eligible subject matter. *See Parker v. Flook*, 437 U.S. 584, 590–92 (1978). The claims require nothing more than a generic computer to perform the method of the claims.

Patent Owner does not explain sufficiently what about the claims, or even the specification, qualifies as an inventive concept. For example, Patent Owner argues that the claimed combination specifies GUI features and functionality with great detail, and that the claims recite "structure of a specific GUI that functions differently from prior art GUIs to solve GUI-centric problems." PO Resp. 40. Claim 1, for example, does not recite a GUI tool, nor does Patent Owner explain sufficiently what it is about method claim 1 that requires a GUI tool or makes it a GUI tool, or how the GUI tool

provides an enhanced display. Patent Owner fails to focus on the claims before us or explain with respect to the actual elements of these claims why such elements constitute an inventive concept. We are not persuaded by Patent Owner's arguments.

The individual elements of the claims do not transform the nature of the claims into a patent-eligible application. They do not add significantly more to the abstract idea or fundamental economic practice. Contrary to Patent Owner's argument, the claims simply recite the use of a generic computer with routine and conventional functions. Further, considering all of the elements as an ordered combination, we determine that the combined elements also do not transform the nature of the claims into a patent-eligible application.

Lastly, we have considered all of Patent Owner's arguments regarding case law and the claims and issues in those cases, along with how Petitioner allegedly misconstrues the claims and law to assert that the claims are not patent eligible. PO Resp. 43–63. We are aware of the cited cases and have discussed relevant case law throughout this opinion. We reiterate that we find the '416 claims to be similar to the claims in *Electric Power* and disagree with Patent Owner's argument that unlike the claims in *Electric Power*, "the claims of the '416 patent recite the process of constructing the interface rather than simply claiming a generic interface for displaying the results of an abstract process." PO Resp. 51. Again, Patent Owner does not explain sufficiently what it is about the claims that recites the alleged patentable interface. We also disagree that Petitioner misconstrued the claims and law as provided above in this decision.

We have considered Petitioner's showing and all of Patent Owner's arguments, and determine, for all of the above reasons, Petitioner has shown sufficiently that claims 1–24 of the '416 patent are not directed to patent eligible subject matter under 35 U.S.C. § 101.

D. 35 U.S.C. § 112 ¶ 4 Asserted Ground of Unpatentability

Petitioner contends that claims 2 and 15 are unpatentable under § 112 ¶ 4 as failing to further limit their respective base claims 1 and 14. Pet. 85. The fourth paragraph of § 112 states, "a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed." 35 U.S.C. § 112 ¶ 4.

Each of claims 1 and 14 recites "displaying indicators representing historical trading data for the good." Each of claims 2 and 15 depends from claims 1 and 14 respectively and recites "wherein the historical trading data is of the good, another good, or a combination of goods."

Petitioner argues that claims 2 and 15 do not further limit the claimed subject matter of claims 1 and 14, but rather broaden the claimed subject matter of those claims. Pet. 85. In our Institution Decision, we made an initial determination that the claims were more likely than not unpatentable under 35 U.S.C. § 112 ¶ 4. Dec. 23–24. Patent Owner is silent with respect to Petitioner's challenge to claims 2 and 15 under 35 U.S.C. § 112 ¶ 4. Based on the record before us, we agree with Petitioner that dependent claims 2 and 15 fail to specify a further limitation of the subject matter claimed, but rather expand the subject matter claimed by claiming that the association of

historical trading data from a good is to the same good, another good, or a combination of goods.

Based on the record before us, we determine that Petitioner has shown sufficiently that claims 2 and 15 are unpatentable under 35 U.S.C. § 112 ¶ 4.

D. Patent Owner's Motion to Exclude

Patent Owner moves to exclude Exhibit 1015 and 1016 (TSE[4]), Mr. Kawashima's deposition (Ex. 1018), and portions of Exhibit 1060 (the cross examination testimony of Mr. Thomas). PO Mot. to Exclude 1. Patent Owner seeks to exclude Exhibits 1015 and 1016 as not relevant under Rules 401 and 402 of the Federal Rules of Evidence (FRE) and because the exhibits have not been authenticated under FRE 901. *Id.* at 1–4. Patent Owner also seeks to exclude Exhibit 1018 as hearsay, and pages 248, and 263–269 of Exhibit 1060 (the cross examination testimony of Mr. Thomas) as prejudicial and confusing. *Id.* at 4–13. In rendering our Final Decision, we did not and need not consider Exhibits 1015, 1016, 1018 or pages 248, and 263–269 of Exhibit 1060. We have determined that Petitioner has demonstrated, by a preponderance of the evidence, that the challenged claims are unpatentable, without considering Exhibits 1015, 1016, 1018 or pages 248, and 263–269 of Exhibit 1060. Accordingly, Patent Owner's Motion to Exclude is *dismissed*.

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[4] TOKYO STOCK EXCHANGE OPERATION SYSTEM DIVISION, FUTURES/OPTION PURCHASING SYSTEM TRADING TERMINAL OPERATION GUIDE (1998) (Ex. 1016) ("TSE"). Exhibit 1015 is the Japanese version of TSE.

III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has shown, by a preponderance of the evidence, that claims 1–24 of the '416 patent are patent ineligible under 35 U.S.C. § 101, and that claims 2 and 15 also are unpatentable under 35 U.S.C. § 112 ¶ 4.

IV. ORDER

It is:

ORDERED that claims 1–24 of the '416 patent are patent-ineligible under 35 U.S.C. § 101;

FURTHER ORDERED that claims 2 and 15 are unpatentable under 35 U.S.C. § 112 ¶ 4;

FURTHER ORDERED that Patent Owner's Motion to Exclude is *dismissed*; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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Appendix

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UNITED STATES PATENT AND TRADEMARK OFFICE
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BEFORE THE PATENT TRIAL AND APPEAL BOARD
_____

TRADESTATION TECHNOLOGIES, INC.,
Petitioner,

v.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Patent Owner.
_____

CBM2016-00086
Patent 7,818,247 B2
_____

Before SALLY C. MEDLEY, MEREDITH C. PETRAVICK, and
JEREMY M. PLENZLER, *Administrative Patent Judges*.

MEDLEY, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 328(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

TradeStation Technologies, Inc., ("Petitioner")[1] filed a Petition requesting a covered business method patent review of claims 1–21 of U.S. Patent No. 7,818,247 B2 (Ex. 1001, "the '247 patent") under the transitional program for covered business method patents.[2] Paper 2 ("Pet."). Trading Technologies International, Inc. ("Patent Owner") did not file a Patent Owner Preliminary Response. Upon consideration of the Petition, we instituted a covered business method patent review of claims 1–21 of the '247 patent (Paper 8 ("Dec.")).

Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 14 ("PO Resp.")) and Petitioner filed a Reply (Paper 18 ("Pet. Reply")). An oral hearing was held on August 10, 2017, and a transcript of the hearing is included in the record (Paper 27 ("Tr.")).

For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–21 of the '247 patent are unpatentable.

A. Related Matters

The '247 patent is involved in the following lawsuit: *TradeStation Technologies v. Trading Technologies Int'l, Inc.,* No. 0:16-cv-60296 (S.D. Fl.). Pet. 2. In compliance with 37 C.F.R. § 42.302(a), Petitioner certifies, and it is not disputed, that Petitioner has been sued for infringement of the

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[1] Petitioner indicates that TradeStation Group, Inc., TradeStation Securities, Inc., TradeStation Technologies, Inc., and IBFX, Inc. are real parties-in-interest. Pet. 2.

[2] *See* § 18(a) of the Leahy-Smith America Invents Act, Pub. L. No. 112-29,

'247 patent. *Id*. at 15. On this record, we determine that Petitioner may petition for review of the '247 patent pursuant to 37 C.F.R. § 42.302(a).

B. The '247 Patent

The Specification of the '247 patent describes trading tools for trading and monitoring a commodity on an electronic exchange. The tools increase a user's efficiency and reduce the time it takes to enter an order or quote. Ex. 1001, Abstract, 2:63–67.

C. Illustrative Claims

Claim 1 and dependent claim 3 are representative:

1.   A method for displaying market information corresponding to a commodity being traded at an electronic exchange, comprising:

> receiving by a computer device market data relating to the commodity from the electronic exchange, the market data comprising a quantity of an order that is pending at a first price level;

> displaying by the computer device a first graphical area corresponding to the first price level;

> displaying by the computer device a second graphical area corresponding to a second price level, the second price level corresponding to a price level for the commodity that is different than the first price level, wherein the first and second graphical areas are arranged in an axial direction;

> color-coding the first graphical area using a first color to indicate that the order is pending at the first price level;

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125 Stat. 284, 329 (2011) ("AIA").

determining by the computer device from the market data that there is no order pending at the second price level;

color-coding the second graphical area using a second color to indicate that there is no order pending at the second price level;

updating the first graphical area such that the first graphical area is color-coded using the second color in response to new market data indicating that there is no order pending at the first price level; and

updating the second graphical area such that the second graphical area is color-coded using the first color in response to new market data indicating that there is an order pending at the second price level.

Ex. 1001, 34:31–60.

3. The method of claim 1, further comprising:

displaying an order entry region comprising a plurality of graphical areas corresponding to a plurality of price levels, the plurality of graphical areas in the order entry region arranged in the axial direction, such that selection of one of the plurality of graphical areas of the order entry region sends a trade order to the electronic exchange for the commodity, the trade order comprising a price based on the selected graphical area and a default order quantity; and

sending the trade order to the electronic exchange in response to the selection of one of the plurality of graphical areas of the order entry region by a single action of a user input device.

Id. at 35:4–17.

D. Ground of Unpatentability

We instituted review of claims 1–21 of the '247 patent on the ground that the claims are unpatentable under 35 U.S.C. § 101.

E. Covered Business Method Patent

A covered business method patent is "a patent that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service, except that the term does not include patents for technological inventions." Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284, 329 (2011) ("AIA") § 18(d)(1); *see* 37 C.F.R. § 42.302. To determine whether a patent is for a technological invention, we consider "whether the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution." 37 C.F.R. § 42.301(b). For purposes of determining whether a patent is eligible for a covered business method patent review, the focus is on the claims. *Secure Axcess, LLC v. PNC Bank N.A.*, 848 F.3d 1370, 1379 (Fed. Cir. 2017) ("It is the claims, in the traditional patent law sense, properly understood in light of the written description, that identifies a CBM patent."). One claim directed to a CBM is sufficient to render the patent eligible for CBM patent review. *See id.* at 1381 ("[T]he statutory definition of a CBM patent requires that the patent have a claim that contains, however phrased, a financial activity element.").

In our Institution Decision, we determined that Petitioner had shown that the '247 patent is a CBM patent. Dec. 4–7. Patent Owner urges us to reconsider our determination and find that the '247 patent is not eligible for

CBM patent review. *See* PO Resp. 63–76. We are not persuaded to change our original determination.

> 1. *Method or Corresponding Apparatus for Performing Data Processing or Other Operations Used in the Practice, Administration or Management of a Financial Product or Service*

The statute defines a "covered business method patent" as "[a] patent that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service." AIA § 18(d)(1); *see* 37 C.F.R. § 42.301(a). A covered business method patent can be broadly interpreted to encompass patents claiming activities that are financial in nature. Transitional Program for Covered Business Method Patents— Definitions of Covered Business Method Patent and Technological Invention, 77 Fed. Reg. 48734, 48735 (Aug. 14, 2012); *Blue Calypso, LLC v. Groupon, Inc.,* 815 F.3d 1331, 1338–41 (Fed. Cir. 2016) (determining that a patent was a covered business method patent because it claimed activities that are financial in nature); *Unwired Planet, LLC v. Google, Inc.,* 841 F.3d 1376, n.5 (Fed. Cir. 2016) (stating that "we endorsed the 'financial in nature' portion of the standard as consistent with the statutory definition of 'covered business method patent' in *Blue Calypso*"), *Versata Dev. Grp., Inc. v. SAP America, Inc.,* 793 F.3d 1306, 1324–25 (Fed. Cir. 2015) ("[The statute] on its face covers a wide range of finance-related activities.").

A patent need have only one claim directed to a covered business method to be eligible for review. 77 Fed. Reg. at 48736 (Response to Comment 8). We take claim 3 as representative.

Petitioner argues that the '247 patent is a patent that claims a method
for performing data processing or other operations used in the practice,
administration, or management of a financial product or service. Pet. 15–18.
In particular, Petitioner argues that at least claim 3, which depends directly
from claim 1, expressly requires the performance of a financial transaction
by, for example, the recitation of receiving market data relating to the
commodity [being traded at an electronic exchange] (claim 1), and further
sending a trade order to the electronic exchange for the commodity. Pet. 17
(citing Ex. 1001, 34:31–37, 35:4–13[3]). Petitioner asserts that the claims are
financial in nature, such as receiving market data relating to a commodity and
comprising a quantity of an order that is pending at a first price level,
displaying an indicator corresponding to a current highest bid price level or a
current lowest ask price level provided in the market data, sending the trade
order to the electronic exchange for the commodity, and displaying the price
level, etc. *Id.* at 16–17.

Notwithstanding Patent Owner's arguments, which we address below,
we are persuaded by Petitioner's showing, and find that the '247 patent is
directed to a method for performing data processing or other operations used
in the practice, administration, or management of a financial service. Here,
Petitioner asserts, and we agree, that claim 3 is directed to a method for
displaying market information, which is a financial activity. Petitioner
further asserts, and we agree, that claim 3 also is directed to receiving trader
inputs for a trade and sending a trade order to an exchange, which is a

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[3] We understand this citation to be a typographical error, and instead should

financial activity.

Patent Owner argues that the Petition is silent as to whether the '247 patent is directed to performing "data processing" or "other operations," and that Petitioner's showing focuses solely on whether the '247 patent is financial in nature. PO Resp. 65–66. We disagree with Patent Owner. Petitioner does address whether the patent is directed to data processing or other operations. Pet. 17 (the '247 patent claims expressly require "the *performance of a financial transaction*.") (emphasis added). The definition for a covered business method patent is "a patent that claims a method or corresponding apparatus for performing data processing *or other operations* used in the practice, administration, or management of a financial product or service . . . ." 37 C.F.R. § 42.301(a) (emphasis added). Petitioner relies on the "other operations" part of the definition to make its case. This is exemplified in showing that it is the method step of sending a trade order to the electronic exchange that Petitioner relies on as showing "other operations" which are used in the practice of a financial service (trading on an exchange).

Patent Owner also argues that the '247 claims are not directed to "data processing." PO Resp. 66–68. As explained immediately above, the definition for a covered business method patent is not limited to a patent that claims a method for performing data processing. In any event, we are not persuaded by Patent Owner's arguments, because such arguments are premised on the assumption that "data processing" should be interpreted

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be 35:4–17.

according to the definition of "data processing" found in the glossary for class 705 of the United States Patent Classification System, which is a "systematic operation on data in accordance with a set of rules which results in a significant change in data." *Id*. at 66 (citing Ex. 2121, 4). Patent Owner does not sufficiently explain why this definition is controlling as opposed to the plain meaning of data processing.

Claim 1 is directed to, for example, "displaying by a computer device market data relating to the commodity." The '247 patent discloses processing market information for display on a client terminal and for sending an order to an exchange. *See, e.g.,* Ex. 1001, 6:42–45 ("The trading application, . . . , processes this information and maps it to positions in a theoretical grid program or any other comparable mapping technique for mapping data to a screen."). For these reasons, we also determine that the '247 patent claims a method for performing data processing.

In addition, Patent Owner argues that the legislative history of the AIA confirms that the claimed invention is not a covered business method because "the '247 patent, which claims the structure, makeup, and functionality of a GUI tool (i.e., not remotely close to a business method) is not that type of patent." PO Resp. 73–76 (citing Ex. 2126; Ex. 2127).

Although the legislative history includes certain statements that certain novel software tools and graphical user interfaces that are used by the electronic trading industry worker are not the target of § 18 of the AIA (*see* Ex. 2126, S5428, S5433), the language of the AIA, as passed, does not include an exemption for user interfaces for commodities trading from covered business method patent review. Indeed, "the legislative debate

concerning the scope of a CBM review includes statements from more than a single senator. It includes inconsistent views . . . ." *Unwired Planet*, 841 F.3d at 1381. For example, in contrast to the statements cited by Patent Owner, the legislative history also indicates that "selling and trading financial instruments and other securities" is intended to be within the scope of covered business method patent review. *See* Ex. 2126, S5432 (statements of Sen. Schumer); *see also id.* at S5436–37 (statements of Sen. Schumer expressing concern about patents claiming "double click"), Ex. 2127, S1364 (Mar. 8, 2011) (statements of Sen. Schumer explaining that "method or corresponding apparatus" encompasses "graphical user interface claims" and "sets of instructions on storage media claims"). "[T]he legislative history cannot supplant the statutory definition actually adopted. . . . The authoritative statement of the Board's authority to conduct a CBM review is the text of the statute." *Unwired Planet*, 841 F.3d at 1381. Each claimed invention has to be evaluated individually to determine if it is eligible for a CBM patent review. A determination of whether a patent is eligible for a CBM patent review under the statute is made on a case-by-case basis. 37 C.F.R. § 42.301(b).

For the reasons stated above, we are persuaded that the '247 patent "claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service" and meets that requirement of § 18(d)(1) of the AIA.

2.   *Exclusion for Technological Inventions*

Even if a patent includes claims that would otherwise be eligible for treatment as a covered business method, review of the patent is precluded if the claims cover only "technological invention[s]," as defined by 37 C.F.R. §42.301(b). The definition of "covered business method patent" in § 18(d)(1) of the AIA does not include patents for "technological inventions." To determine whether a patent is for a technological invention, we consider the following: "whether the claimed subject matter as a whole [(1)] recites a technological feature that is novel and unobvious over the prior art; and [(2)] solves a technical problem using a technical solution." 37 C.F.R. § 42.301(b). Both prongs must be satisfied in order for the patent to fall within the exception for a technological invention. *See Versata*, 793 F.3d at 1326–27; *Apple Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016). The following claim drafting techniques, for example, typically do not render a patent a "technological invention":

> (a) Mere recitation of known technologies, such as computer hardware, communication or computer networks, software, memory, computer-readable storage medium, scanners, display devices or databases, or specialized machines, such as an ATM or point of sale device.

> (b) Reciting the use of known prior art technology to accomplish a process or method, even if that process or method is novel and non-obvious.

> (c) Combining prior art structures to achieve the normal, expected, or predictable result of that combination.

Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,763–64 (Aug.

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14, 2012). The Federal Circuit has held that a claim does not include a "technological feature" if its "elements are nothing more than general computer system components used to carry out the claimed process." *Blue Calypso*, 815 F.3d at 1341; *see also Versata*, 793 F.3d at 1327 ("the presence of a general purpose computer to facilitate operations through uninventive steps does not change the fundamental character of an invention").

Petitioner asserts that the '247 patent claims fail to recite any technological feature that is novel and unobvious over the prior art, and do not solve a technical problem with a technical solution. Pet. 18–28. Petitioner contends that the only arguably technical feature in the claims (e.g., claim 1 and all claims depending therefrom) is a "computer device" that performs standard computing functions such as "receiving," "displaying," and "updating." *Id.* at 20. Petitioner argues that such terms, however, are merely generic technical terms referring to conventional technology that cannot qualify as novel and unobvious technological features. *Id.* Petitioner also argues that the '247 patent itself acknowledges that "the trading tools may be implemented on any existing or future terminal or device." *Id.* (quoting Ex. 1001, 5:20–21). Petitioner contends that the various technologies mentioned in the '247 patent (computer, terminal, mouse, gateway server, workstation, router, etc.) all were standard, off-the-shelf products commonly used at the time. *Id.* Petitioner argues that the alleged novel feature—color-coding graphical areas based on market data—does not solve a technical problem, but rather a business problem, and further, such color-coding was not novel or non-obvious, but rather known in the art at the time of the invention. *Id.* at 21–22 (citing Ex. 1009, 189; Ex. 1010, 3).

We agree with Petitioner that the claims are directed to well-understood, routine, and conventional steps of receiving market information, color-coding and displaying such information to a trader, who uses the information to facilitate trading a commodity. For example, the "BACKGROUND OF THE INVENTION" section of the '247 patent explains that it was well known for an electronic exchange to connect to participant computers, allowing traders to participate in the market, by using software that creates specialized interactive trading screens in the traders' desktops to facilitate trading a commodity. Ex. 1001, 1:60–67. There is no indication in the '247 patent that the inventors invented gathering market information, displaying it to a trader, and using the information to facilitate trading a commodity. The use of a computer to perform these functions also was known in the art at the time of the invention, and the '247 patent does not claim any improvement of a computing device.

Petitioner argues that the claimed subject matter does not solve a technical problem using a technical solution, because the problem is a financial one and the solution is functional, such as rearranging and color-coding available market data on a display. Pet. 22–23. We agree with Petitioner that the problem noted in the Specification of the '247 patent is not a technical one. The '247 patent Specification highlights the problem and importance of reducing the time it takes to evaluate market data and enter an order. Ex. 1001, 2:64–67. Informing a trader of certain stock market trends or events is an activity that is financial in nature.

Patent Owner argues that the '247 patent claims a technological GUI tool that improves upon prior GUIs using a particular combination of GUI

features and functionality (the particular makeup, structure and features of a GUI tool), and, thus, falls under the technological exception, because the claims solve a technical problem. *Id*. at 69–70. Patent Owner, however, does not tie its arguments to the actual claim language to explain which of the steps of the broad method claims 1 or 3, for example, recite an improved technological GUI tool or how the claimed steps solve a technical problem. We do not find, for example, that either claim 1 or claim 3 recites an improved technological GUI tool or solves a technical problem.

Patent Owner argues that *Trading Technologies International, Inc., v. CQG, Inc.*, 675 Fed. Appx. 1001 (Fed. Cir. 2017) ("*CQG*") dictates that the '247 patent claims cover technological inventions (PO Resp. at 71–73). *CQG* involved U.S. Patent Nos. 6,772,132 and 6,677,340. The Federal Circuit determined that the claims of those patents are patent eligible under 35 U.S.C. § 101. The claims before us, however, are much broader than the claims involved in *CQG*. The Specification of the '247 patent is different from the specification of the patents involved in *CQG*. Thus, comparing the claims of the patents involved in *CQG* is not particularly helpful here. Moreover, the *CQG* decision relied upon a feature not required by claim 1 of the '247 patent— a static price axis. Although claim 1 of the '247 patent requires first and second geographical areas arranged in an axial direction, the claim does not require an axis, let alone a static price axis.

For all of the foregoing reasons, the subject matter of the claims is not a "technological invention" under 37 C.F.R. § 42.301(b), and the '247 patent is eligible for a covered business method patent review.

II. ANALYSIS

A. Claim Interpretation

In a covered business method patent review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.300(b). Under the broadest reasonable construction standard, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

For purposes of this decision, we need not interpret any limitations of the claims expressly.

B. The Level of Ordinary Skill in the Art

Notwithstanding the parties' submissions of the level of ordinary skill in the art, we find that the level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

C. 35 U.S.C. § 101 Asserted Ground of Unpatentability

Petitioner contends that claims 1–21 of the '247 patent are not patent eligible under 35 U.S.C. § 101. Pet. 29–54. Patent Owner opposes. PO Resp. 6–63.

Section 101 of Title 35, United States Code, provides:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and

useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The Supreme Court recognizes three exceptions to these statutory classes: laws of nature, natural phenomena, and abstract ideas. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (2012). Although an abstract idea by itself is not patentable, a practical application of an abstract idea may be deserving of patent protection. *Alice*, 134 S. Ct. at 2355. We must "consider the elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Id.* (citing *Mayo*, 132 S. Ct. at 1298, 1297). The claim must contain elements or a combination of elements that are "'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [abstract idea] itself.'" *Id.* (citing *Mayo*, 132 S. Ct. at 1294).

1. Abstract Idea

Petitioner argues that the claims encompass an abstract idea because they are directed to a fundamental economic practice. Pet. 31–34. In particular, Petitioner argues that the claims recite receiving market information, color-coding graphical areas based on market information, and then updating the display based on newly received market information. Petitioner further asserts that the '247 patent explains that display of trading data was intended to assist a trader in digesting market data and to reduce the time it takes to enter an order. *Id.* at 31 (citing Ex. 1001, 2:64–67). As such, Petitioner contends, the claims are directed to the abstract, fundamental

economic practice of displaying financial information in a manner that makes it easier to understand and thereby, facilitate trades on an exchange. *Id.* at 31. Petitioner further argues that the abstract idea is old, well-known, and prevalent. *Id.* at 32–34 (citing Ex. 1003 ¶ 69; Ex. 1021; Ex. 1017, 12). Additionally, Petitioner contends that the claims can be performed using pen and paper, or using only human mental steps, further indicating that the claims are directed to an abstract concept. *Id.* at 34–38 (citing Ex. 1003 ¶ 69; Ex. 1017, 12).

"The 'abstract idea' step of the inquiry calls upon us to look at the 'focus of the claimed advance over the prior art' to determine if the claim's 'character as a whole' is directed to excluded subject matter." *Affinity Labs of Texas v. DirectTV, LLC,* 838 F.3d 1253, 1257 (Fed. Cir. 2016) (quoting *Elec. Power Grp., LLC v. Alstom S.A.,* 830 F.3d 1350, 1353 (Fed. Cir. 2016)); *see also Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016). There is no definitive rule to determine what constitutes an "abstract idea." Rather, the Federal Circuit has explained that "both [it] and the Supreme Court have found it sufficient to compare claims at issue to those claims already found to be directed to an abstract idea in previous cases." *Enfish*, 822 F.3d at 1334; *see also Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1294 (Fed. Cir. 2016) (explaining that, in determining whether claims are patent-eligible under § 101, "the decisional mechanism courts now apply is to examine earlier cases in which a similar or parallel descriptive nature can be seen—what prior cases were about, and which way they were decided").

Notwithstanding Patent Owner's arguments, which we address below, we determine that Petitioner has shown[4] that claim 1 is directed to the abstract idea of receiving market information, color-coding graphical areas based on market information, and then updating the display based on newly received market information to assist a trader to make an order, which is a fundamental economic practice.

Claim 1, the sole independent claim, recites in the preamble a method for displaying market information corresponding to a commodity being traded at an electronic exchange. The method steps include receiving market data including a quantity of an order at a first price level, displaying a first and second graphical area corresponding to a first and second price level in an axial direction, color-coding the first and second graphical areas with a first and second color respectively, and updating the first and second graphical area such that the first graphical area is color-coded with the second color and the second graphical area is color-coded with the first color. We agree with Petitioner that claim 1 encompasses the abstract idea of displaying financial information in a manner that makes it easier to understand and facilitate trades on an exchange, steps that can be performed using pen and paper, or even in a trader's mind. Pet. 31–38 (citing *CyberSource Corp. v. Retail Decisions*, 654 F.3d 1366, 1372 (Fed. Cir. 2011) (unpatentable mental process performed with aid of pen and paper)); Ex.

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[4] As explained above, determining whether a claim is directed to an abstract idea calls upon us to look at the focus of the claimed advance over the prior art. In order to do so, we must make findings of fact as to the prior art at the time of the invention. Those facts must be supported by a preponderance of

1003 ¶ 69; Ex. 1021; Ex. 1017, 12; Ex. 1001, 2:64–67. We further agree with Petitioner that the '247 patent claims simply provide a graphical representation on a computer of what traders have done in their minds since trading began. Pet. 37.

When we compare claim 1 at issue to those claims already found to be directed to an abstract idea in previous cases, we are persuaded that claim 1 is more similar to those claims found to encompass an abstract idea than those determined not to encompass an abstract idea. Claim 1 is similar to the claims in *Electric Power*, which did "not go beyond requiring the collection, analysis, and display of available information in a particular field, stating those functions in general terms, without limiting them to technical means for performing the functions that are arguably an advance over conventional computer and network technology." *Elec. Power Grp., LLC v. Alstom S.A.,* 830 F.3d 1350, 1353 (Fed. Cir. 2016).

In comparison, claim 1 is unlike the claims at issue in *DDR Holdings, LLC v. Hotels.com, L.P.,* 773 F.3d 1245 (Fed. Cir. 2014) and *Enfish*. In *DDR Holdings*, the court determined that the claims did not embody a fundamental economic principle or a longstanding commercial practice. The claims at issue in *DDR Holdings* were directed to retaining website visitors, which the court determined was a problem "particular to the Internet." *DDR Holdings,* 773 F.3d at 1257. The court also determined that the invention was "necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks," and that the

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the evidence. 35 U.S.C. § 326(e).

claimed invention did not simply use computers to serve a conventional business purpose. *Id.* In *Enfish*, the claim at issue was directed to a data storage and retrieval system for a computer memory. *Enfish*, 822 F.3d at 1336–37. The court determined that the claims were directed to an improvement in the functioning of a computer and were not simply adding conventional computer components to well-known business practices. *Id.* at 1338. Here, claim 1 is directed to a fundamental economic principle or a longstanding commercial practice and not directed to an improvement in the functioning of the computer.

We have considered all of Patent Owner's arguments regarding why the claims are not directed to an abstract idea but are not persuaded by such arguments. *See, e.g.*, PO Resp. 13–39. Patent Owner argues that the claims "set forth a GUI that is comprised of specific structure, makeup, and functionality that provide a specific means or method (generally speaking, providing an enhanced display that uses color-coding of graphical areas to contrast price levels with and without pending orders that updates as the market changes) for achieving a desired result." *Id.* at 13–14. Patent Owner argues that the claims are analogous to the claimed inventions in *CQG*, *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d. 1299 (Fed. Cir. 2016) ("*McRO*"), and *Enfish*. *Id.* at 14–16. We disagree.

Claim 1 of the '247 patent is unlike the claims at issue in *McRO*. In *McRO*, the court held that claims that recited "a specific asserted improvement in computer animation" were not directed to an unpatentable abstract idea because they go "beyond merely organizing existing information into a new form or carrying out a fundamental economic

practice." *McRO*, 837 F.3d at 135. Here, the claims merely organize existing market information so that it is displayed in a color-coded manner, which is not a specific improvement to the functioning of a computer.

With respect to *CQG*, and as explained above, the claims before us are much broader than the claims involved there. The Specification of the '247 patent is different from the patents involved in *CQG*. Thus, comparing the claims of the patents involved in *CQG* is not particularly helpful here. Moreover, the *CQG* decision relied upon a feature not required by claim 1 of the '247 patent— a static price axis. Although claim 1 of the '247 patent requires first and second geographical areas arranged in an axial direction, the claim does not require an axis, let alone a static price axis. Nor are we persuaded that the claims are analogous to those in *Enfish* for reasons already discussed.

Patent Owner also argues that Petitioner's arguments overgeneralize the claimed invention and ignore the claim elements that make up the specifically claimed GUI. PO Resp. 16–22, 33–34. We disagree that Petitioner has overgeneralized the claimed invention or ignored the claim elements. Petitioner's arguments are commensurate in scope with the breadth of the claims. Moreover, Patent Owner has not shown sufficiently how any of the claims recite the structure, makeup, and functionality of a *GUI tool*. Nor are we persuaded by Patent Owner's arguments that Petitioner has not shown that the claimed invention preempts the broad concept of graphing (or displaying) trading data or generating a trade order. *Id*. at 22– 25. In particular, Patent Owner argues that while it is understood that pre-emption may not be the sole test, it is a guide for understanding whether the

claims are directed to the purported abstract idea. *Id*. Even Patent Owner,
recognizes (*id*. at 23), however, that preemption is not the sole test for
determining patent eligibility. In *McRO* our reviewing court explained that
in considering preemption we should consider whether the claims "focus on a
specific means or method that improves the relevant technology or are
instead directed to a result or effect that itself is the abstract idea and merely
invoke generic processes and machinery." *McRO*, 837 F.3d at 1314 (citing
Enfish, 822 F.3d at 1335). Here, we determine that claim 1, for example, is
directed to an end result of color-coding market data that invokes generic
processes.

Patent Owner argues that the claimed invention provides a solution
(and is not directed to a fundamental economic practice) by reciting a specific
implementation of an enhanced display that uses color-coding of graphical
areas to contrast price levels with and without pending orders that updates as
the market changes, and as such, differentiates the claimed GUI tool from
other GUI tools for displaying financial information in a manner that makes
it easier to understand and facilitate trading. PO Resp. 25–27, 33–34, 38–39.
Patent Owner also argues that GUIs are technology (*id*. at 28–30), the claims
of the '247 patent recite an improvement to existing GUIs (*id*. at 30–32), and
GUI's are akin to mechanical devices (*id*. at 32–33). We have considered all
of these arguments, but are not persuaded by such arguments for reasons
already provided.

In addition, and to the extent that Patent Owner asserts that claims that
require a GUI are automatically patent eligible, that assertion is not
commensurate with our reviewing court's holdings on the issue of patent

eligibility. For example, the claim at issue in *Affinity Labs* recited an application that enabled a cellular telephone to present a GUI displaying a list of media sources that included selectable items for selecting a regional broadcasting channel. *Affinity*, 838 F.3d at 1255–56. The claim also recited that the cellular telephone was enabled to transmit a request for the selected regional broadcasting channel. *Id.* at 1256. In *Ameranth*, the claim at issue recited a GUI that displayed menu items in a specific arrangement, a hierarchical tree format. Menu items were selected to generate a second menu from a first menu. *Apple*, 842 F.3d at 1234. In both *Affinity Labs* and *Ameranth*, the court determined that the claims were not directed to a particular way of programming or designing the software, but instead merely claim the resulting systems and determined that the claims are not directed to a specific improvement in the way computers operate. *Affinity Labs,* 838 F.3d at 1260–61; *Ameranth*, 842 F.3d at 1241. The same is true here in that the claims are not directed to any particular way of programming or designing software, but merely claim the resulting system and not any specific improvement in the way a computer operates.

Patent Owner also argues that the steps recited in the claims (including dependent claims 3–8) cannot be performed with pen and paper or in the human mind. PO Resp. 35–38. We disagree for the reasons stated above, namely that we agree with Petitioner that the '247 patent claims simply provide a graphical representation on a computer of what traders have done in their minds since trading began. Pet. 31–38 (citing *CyberSource Corp. v. Retail Decisions*, 654 F.3d 1366, 1372 (Fed. Cir. 2011) (unpatentable mental

process performed with aid of pen and paper); Ex. 1003 ¶ 69; Ex. 1021; Ex. 1017, 12; Ex. 1001, 2:64–67.

    2.   *Inventive Concept*

To be patent eligible, a claim to an otherwise abstract idea must recite additional elements that constitute an inventive concept. *Alice*, 134 S. Ct. at 2357. One looks to "[t]he elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Mayo*, 132 S. Ct. at 1297–98. The additional elements must be more than "well-understood, routine, conventional, activity." *Id.* at 1298.

Petitioner argues that the claims do not recite an inventive concept. Pet. 39–49. Petitioner argues that the claims recite insignificant and conventional extra-solution activities of color-coding, arranging graphical areas in an axial direction, determining whether or not an order is pending, and updating the display upon receiving new market data using conventional, well-known components (a computer device and input device). *Id.* Petitioner also argues that the claims are not rooted in computer technology. *Id.* at 49–53.

Notwithstanding Patent Owner's arguments, which we address below, we are persuaded that Petitioner has shown that none of the additional claim elements in claim 1 or dependent claims 2–21 transforms the nature of the claims into a patent-eligible subject matter. Claim 1 recites a method for displaying market information corresponding to a commodity being traded at an electronic exchange. The method steps include receiving market data including a quantity of an order at a first price level, displaying a first and

second graphical area corresponding to a first and second price level in an axial direction, color-coding the first and second graphical areas with a first and second color respectively, and updating the first and second graphical area such that the first graphical area is color-coded with the second color and the second graphical area is color-coded with the first color. The Specification of the '247 patent does not disclose a particular way for color-coding, arranging graphical areas in an axial direction, determining whether or not an order is pending, and updating the display upon receiving new market data. The Specification of the '247 patent does not provide or disclose any particular algorithms or rules for performing the recited functions of claim 1. All of the method steps of claim 1 are performed on a generic computer using known algorithms, as the '247 patent itself acknowledges that "the trading tools may be implemented on any existing or future terminal or device" and that the "physical mapping of such information to a screen grid, ... [can] be done by any technique known to those skilled in the art." Ex. 1001, 5:20–21, 6:46–49. Based on the record before us, the functional steps of color-coding graphical areas based on market data, and arranging graphical areas corresponding to price levels, were not novel or non-obvious, but rather known in the art at the time of the invention. Pet. 40–44. We also agree with Petitioner that none of claims 2–21 transforms the nature of the claims into a patent-eligible application. Pet. 44–49. We agree that these claims recite well-understood, routine, conventional extra-solution activity that is not related to an inventive concept. *Mayo*, 132 S. Ct. at 1298.

Moreover, and to the extent that the claims require a GUI, a mere recitation of a GUI does not make the claim patent eligible. *See Affinity Labs*, 838 F.3d at 1257–58, *Ameranth*, 842 F.3d at 1236–1242, *Internet Patent Corp.*, 790 F.3d at 1348–49. A recitation of a generic GUI merely limits the use of the abstract idea to a particular technological environment. "Limiting the field of use of the abstract idea to a particular existing technological environment does not render any claims less abstract." *Affinity Labs,* 838 F.3d at 1258 (citing *Alice,* 134 St. Ct. at 2358; *Mayo*, 132 S. Ct. at 1294).

Patent Owner argues that the claims pass part two of *Alice* because they recite an inventive concept. PO Resp. 39–42. In addition, Patent Owner argues that we must consider the claims in light of the specification. Patent Owner, however, does not explain sufficiently what about the claims, or even the specification, qualifies as an inventive concept. For example, Patent Owner argues that the claims recite a particular GUI tool that provides an enhanced display that uses color-coding of graphical areas to contrast price levels with and without pending orders that updates as the market changes, and that the claims recite "structure of a specific GUI that functions differently from prior art GUIs to solve GUI-centric problems." *Id*. at 41 (emphasis omitted). Claim 1, for example, does not recite a GUI tool, nor does Patent Owner explain sufficiently what it is about method claim 1 that requires a GUI tool or makes it a GUI tool, or how the GUI tool provides an enhanced display. Patent Owner fails to focus on the claims before us or explain with respect to the actual elements of these claims why such elements constitute an inventive concept. We are not persuaded by Patent Owner's

arguments.

The individual elements of the claims do not transform the nature of the claims into a patent-eligible application. They do not add significantly more to the abstract idea or fundamental economic practice. Contrary to Patent Owner's argument, the claims simply recite the use of a generic computer with routine and conventional functions. Further, considering all of the elements as an ordered combination, we determine that the combined elements also do not transform the nature of the claims into a patent-eligible application.

Lastly, we have considered all of Patent Owner's arguments regarding case law and the claims and issues in those cases, along with how Petitioner allegedly misconstrues the claims and law to assert that the claims are not patent eligible. PO Resp. 42–63. We are aware of the cited cases and have discussed relevant case law throughout this opinion. We reiterate that we find the '247 claims to be similar to the claims in *Electric Power* and disagree with Patent Owner's argument that unlike the claims in *Electric Power*, "the claims of the '247 patent recite the process of constructing the interface rather than simply claiming a generic interface for displaying the results of an abstract process." PO Resp. 50. Again, Patent Owner does not explain sufficiently what it is about the claims that recites the alleged patentable interface. For example, claim 1 recites displaying graphical areas corresponding to price levels and color coding, and updating that color coding, of the graphical areas. Such claim language appears to us to be as generic as what was recited in claim 12 in the *Electric Power* case of displaying event analysis results in visuals, tables, charts, or combinations of

these interfaces, and displaying concurrent visualization of measurements from data streams. Patent Owner makes no meaningful distinction between the claims in *Electric Power* and the '247 claims. We also disagree that Petitioner misconstrued the claims and law as provided above in this decision.

We have considered Petitioner's showing and all of Patent Owner's arguments, and determine, for all of the above reasons, Petitioner has shown sufficiently that claims 1–21 of the '247 patent are not directed to patent eligible subject matter under 35 U.S.C. § 101.

III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has shown, by a preponderance of the evidence, that claims 1–21 of the '247 patent are patent-ineligible under 35 U.S.C. § 101.

IV. ORDER

It is:

ORDERED that claims 1–21 of the '247 patent are patent-ineligible under 35 U.S.C. § 101; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

CBM2016-00086
Patent 7,818,247 B2

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