

Miscellaneous Docket No. \_\_\_\_\_

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**IN THE  
UNITED STATES COURT OF APPEALS  
FOR THE FEDERAL CIRCUIT**

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IN RE TRADING TECHNOLOGIES INTERNATIONAL, INC.

*Petitioner.*

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On Petition for a Writ of Mandamus to the United States Patent  
and Trademark Office, Patent Trial and Appeal PTAB,  
Case CBM2015-00161

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**PETITION FOR WRIT OF MANDAMUS**

**Certificate of Interest**

Counsel for Petitioner Trading Technologies International, Inc. certify the following (use “None” if applicable; use extra sheets if necessary):

1. The full name of every party or amicus represented by me is:

Trading Technologies International, Inc.

2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:

Trading Technologies International, Inc.

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

None

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or are expected to appear in this court are:

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**Trading Technologies International, Inc.**

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**STATEMENT OF RELATED CASES**

In this petition, Trading Technologies International, Inc. (“TT”) seeks relief from a Covered Business Method Review (“CBMR”) (CBM2015-00161) instituted by the Patent Trial and Appeal Board (“PTAB”) on U.S. Patent No. 6,766,304 (“the ’304 patent”). 35 U.S.C. § 101 is the sole ground of institution in CBM2015-00161. The petitioners are TradeStation Group, Inc. and TradeStation Securities, Inc. (collectively “TradeStation”). No appeal in or from CBM2015-00161 was previously before this Court or any appellate court.

Appeal No. 2016-1616 pending in this Court is an appeal by CQG, a joint defense partner of TradeStation, from a district court decision upholding the validity of the ’304 patent and a related patent under § 101 in *Trading Techs. International, Inc. v. CQG, Inc.*, No. 05-cv-4811, 2015 WL 774655 (N.D. Ill. Feb. 24, 2015). That appeal (the “§ 101 Appeal”) follows a jury verdict finding infringement of the ’304 patent and awarding damages and a permanent injunction.

Appeal Nos. 2015-1767, -1768, *Trading Techs. International, Inc. v. Sungard Data Systems, Inc.*, are pending before this Court and relate to the ’304 patent. Oral argument is scheduled for March 8, 2016. These appeals involve issues relevant to this petition because the infringement issues relate to claimed technological graphical user interface (“GUI”) features in accused GUI products.

In 2008, this Court heard appeals from a jury verdict finding infringement of

the '304 patent in Appeal Nos. 2008-1392, -1393, and -1422. This Court (Judges Rader, Lourie, and Clark (sitting by designation)) affirmed the lower court's decisions and the jury verdict. *Trading Techs. Int'l, Inc. v. eSpeed, Inc.*, 595 F.3d 1340 (Fed. Cir. 2010). The issues included claim construction, definiteness, infringement, and validity. In that decision, this Court made findings regarding the claimed invention of the '304 patent that are relevant to this petition because they go to the issue of the underlying claimed invention being a technological GUI tool.

Appeal No. 2011-1424 (Judges Rader, Lourie, and Wallach) to this Court involved the '304 patent and affirmed damages issues from the *eSpeed* case. *Trading Techs. Int'l, Inc. v. eSpeed, Inc.*, 469 F. App'x 914 (Fed. Cir. 2012) (unpublished).

In 2013, this Court heard Appeal No. 2012-1583 involving multiple defendants (including TradeStation), regarding a lower court's application of collateral estoppel based on the first *eSpeed* decision to issues of written description and prosecution history estoppel ("PHE") for patents not on appeal here, but from the same family as the '304 patent, including U.S. Patent No. 7,676,411 ("the '411 patent"), which shares the same specification as the '304 patent. This Court (Judges Lourie, Plager, and Benson (sitting by designation)) reversed the district court's summary judgment of invalidity and its finding that PHE applied to the patents-at-issue there. *Trading Techs. Int'l, Inc. v. Open E Cry*,

*LLC*, 728 F.3d 1309 (Fed. Cir. 2013). This Court made findings regarding the claimed invention described in the common specification of the '411 and '304 patents that are relevant to this petition because they go to the issue of the underlying claimed invention being a technological GUI tool. Afterward, the case was remanded for further proceedings. This consolidated district court case is the underlying litigation to CBM2015-00161 and is still pending with respect to two defendants (the others have settled). The patents-in-suit include the '304 patent and eleven other patents directed to GUI tools used for electronic trading. These two district court cases are captioned:

- *Trading Techs. Int'l, Inc. v. IBG LLC*, No. 10-CV-00721 (N.D. Ill.); and
- *Trading Techs. Int'l, Inc. v. TradeStation Secs., Inc.*, No. 10-CV-0084 (N.D. Ill.).

Both cases are consolidated under the caption *Trading Techs. Int'l, Inc. v. BGC*, No. 10-CV-715 (N.D. Ill.) (Judge Kendall). This consolidated case is referred to here as the "TradeStation District Court Case."

The following USPTO proceedings, each styled *TD Ameritrade v. Trading Technologies International, Inc.*, filed by TD Ameritrade (a former joint defendant with TradeStation in the TradeStation District Court Case) involved either the '304 patent or other patents claiming GUI tools in the TradeStation District Court Case,

some of which are related to the '304 patent:

- CBM2014-00136 (Re: the '304 patent; institution was denied, but the PTAB found that the '304 patent qualified as a covered business method (“CBM”) patent within the jurisdictional scope of Section 18);
- CBM2014-00131 (Re: U.S. Patent No. 7,533,056) (instituted; terminated due to settlement);
- CBM2014-00133 (Re: the '411 patent) (instituted; terminated due to settlement);
- CBM2014-00135 (Re: U.S. Patent No. 6,772,132) (instituted; terminated due to settlement); and
- CBM2014-00137 (Re: U.S. Patent No. 7,685,055, a continuation-in-part of the '132 patent) (instituted; terminated due to settlement).

(Collectively the “TD Ameritrade CBMRs”).

The following USPTO proceedings involving the '304 and '132 patents were denied institution by the PTAB because the petitioner had previously filed a declaratory judgment action:

- *CQG, Inc. v. Trading Techs. Int'l, Inc.*, CBM2015-00057 (Re: the '304 patent); and

- *CQG, Inc. v. Trading Techs. Int'l, Inc.*, CBM2015-00058 (Re: the '132 patent).

(Collectively the “CQG CBMRs”).

The following USPTO proceeding, currently pending with the PTAB, also involves the '304 patent in which the petitioner IBG, a joint defense partner of TradeStation, is asserting the same § 101 grounds as those in CBM2015-00161:

- CBM2016-00035, *IBG LLC v. Trading Techs. Int'l, Inc.* (filed February 17, 2016).

The following USPTO proceedings, currently pending before the PTAB, involve other patents owned by TT that are directed to similar technology as the '304 patent (i.e., GUI tools used for electronic trading):

- CBM2015-00172, *TradeStation Grp., Inc. v. Trading Techs. Int'l, Inc.* (filed August 12, 2015) (Re: The '556 patent; instituted February 12, 2016 on § 101 grounds only);
- CBM2015-00179, *IBG LLC v. Trading Techs. Int'l, Inc.* (filed September 2, 2015) (Re: The '056 patent; instituted February 24, 2016 on §§ 101 and 103 grounds);
- CBM2015-00181, *IBG LLC v. Trading Techs. Int'l, Inc.* (filed September 11, 2015) (Re: the '411 patent; instituted March 7, 2016 on §§ 101 and 103 grounds);

- CBM2015-00182, *IBG LLC, TradeStation Grp., Inc. v. Trading Techs. Int'l, Inc.* (filed September 11, 2015) (Re: the '132 patent; instituted March 3, 2016 on §§ 101 and 103 grounds);
- CBM2016-00009, *IBG LLC v. Trading Techs. Int'l, Inc.* (filed February 2, 2016) (Re: the '055 Patent; awaiting institution);
- CBM2016-00031, *TradeStation Grp., Inc. v. Trading Techs. Int'l, Inc.* (filed October 23, 2015) (Re: U.S. Patent No. 7,813,996, a continuation of the '132 patent and which shares the same specification as the '304 patent; awaiting institution decision);
- CBM2016-00032, *IBG LLC v. Trading Techs. Int'l, Inc.* (filed February 9, 2016) (Re: U.S. Patent No. 7,212,999; awaiting institution decision); and
- CBM2016-00040, *IBG LLC v. Trading Techs. Int'l, Inc.* (filed February 25, 2016) (Re: U.S. Patent No. 7,783,556, which shares a specification with the '304 patent; awaiting institution decision).

## I. PRELIMINARY STATEMENT

The extraordinary remedy of mandamus is needed to correct a recurring jurisdictional error by the Patent Trial and Appeal Board (“PTAB”): it improperly instituted a covered business method review (“CBMR”) under § 18 of the America Invents Act (“AIA”) against a patent that is clearly and indisputably not a CBM patent. In § 18, “Congress created a special review regime, over and above any other authority the PTAB might have, for reviewing and invalidating patents that qualify as CBM patents.” *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1320 (Fed. Cir. 2015). The PTAB has no jurisdictional authority to institute CBMR for a patent that is not a CBM patent, which § 18(d)(1) defines as:

[T]he term “covered business method patent” means a patent that claims a method or corresponding apparatus<sup>[1]</sup> 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.

Thus, there are three separate requirements for a patent to qualify for CBMR: (1) it must claim a “data processing” method or “other operation” (*e.g.*, a business method); (2) the claimed invention must be used with respect to a financial product/service; and (3) it must not be for a technological invention.

The ’304 patent (Ex. A) indisputably does not meet either the first or third

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<sup>1</sup> “Corresponding apparatus” encompasses patents that substantively tie up the underlying method using claim drafting techniques.

requirements for CBMR jurisdiction because (1) it claims the makeup, structure, and features of a technological tool, not a “data processing” or business method; and (2) the claimed technological tool solves technical problems of speed, precision, and usability with prior art technology. Indeed, this Court twice found that the ’304 patent claims an invention that solves these technical problems in the prior art technology. Moreover, a district court recently held the ’304 patent claims are patent-eligible under § 101 because, *inter alia*, they claim technological improvements to prior technology and devices. The overwhelming evidence, mostly uncontested, definitively establishes that the ’304 patent, just like a patent claiming a physical device, is not close to qualifying for CBMR.

Despite this, the PTAB instituted CBM2015-00161 against the ’304 patent on the sole ground of § 101 eligibility. In concluding that the ’304 patent is a CBM patent, the PTAB ignored the dispositive evidence and prior court opinions (except a footnote stating they “do not give much, if any, deference” to the district court). There is no rational basis for or credible evidence supporting the PTAB’s decision. Instead, the PTAB focused on the fact that the claimed invention is used in a financial setting (trading) and the truism that improving technology in that field provides a financial benefit. CBM jurisdiction, however, requires more than using an invention in a financial setting. The ’304 patent does not claim trading—it indisputably claims a tool that solves technical problems. The PTAB has also

repeated this clear jurisdictional error four times in the last few weeks and is certain to do so again in the pending CBM petitions awaiting institution decisions. Although the AIA provides the USPTO Director with discretion to intervene and deny institution to prevent these types of errors, the Director has refused to do so, citing a prior delegation of this authority to the PTAB.<sup>2</sup>

## **II. STATEMENT OF THE ISSUE**

Whether the PTAB exceeded its authority under AIA § 18 by instituting CBM2015-00161 even though the '304 patent is clearly and indisputably outside CBMR jurisdiction, claiming a technological tool that solves technical problems, not a “data processing” method, business method, or entrepreneurial activity?

## **III. STATEMENT OF RELIEF SOUGHT**

TT requests that the Court direct the PTAB to vacate its institution decision (Ex. BA) in CBM2015-00161 and terminate that proceeding.

## **IV. THE RECORD ESTABLISHES THAT THE '304 PATENT DOES NOT CLAIM A “DATA PROCESSING” METHOD OR “OTHER OPERATION” AND FALLS WITHIN THE TECHNOLOGICAL EXCEPTION OF § 18**

The evidence definitively establishes: (1) the '304 patent does not claim a “data processing” method or “other operation;” (2) the '304 patent claims a specific GUI tool used for electronic trading; (3) the claimed GUI tool is

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<sup>2</sup> TT asked Director Lee, before and after institution, to exercise her discretion to terminate for lack of jurisdiction. Exs. B-E (without attachments). On February 19, 2016, her office responded for the first time declining to do so. Ex. F.

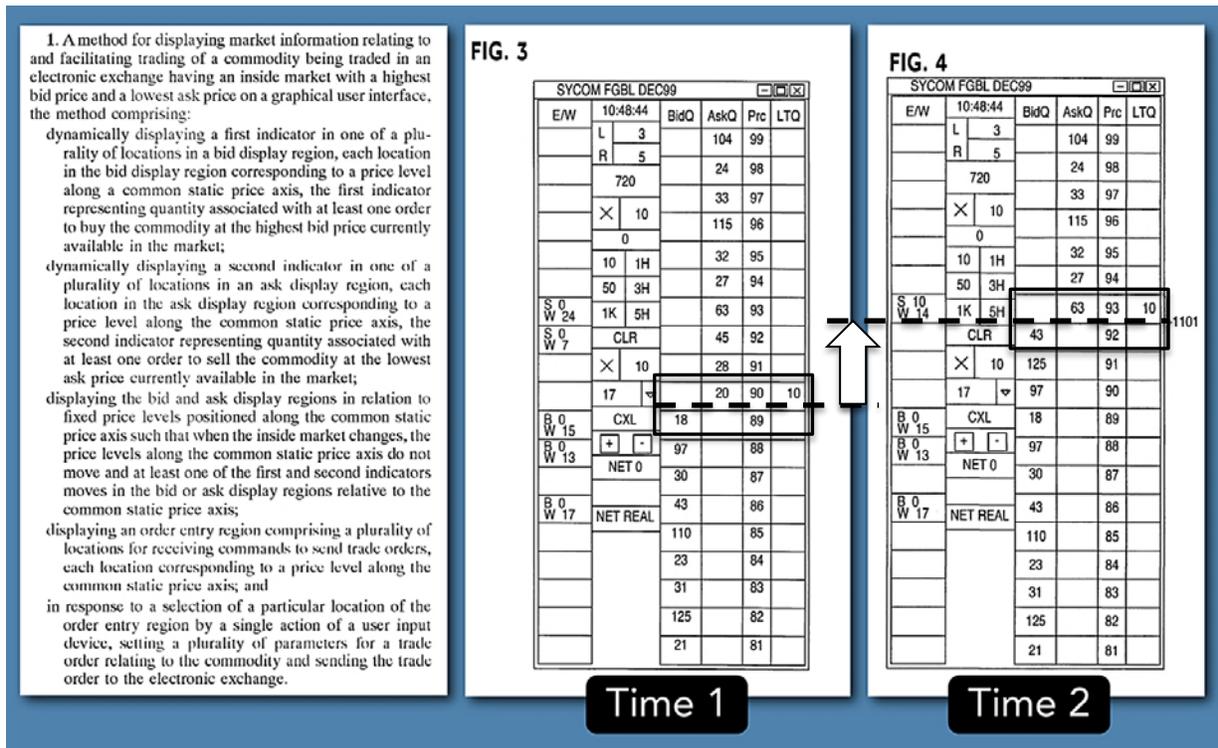
technological; (4) the claimed GUI tool solves problems with prior GUIs related to speed, accuracy, and usability; and (5) speed, accuracy and usability are technical problems. This Court and a district court have found that the '304 patent claims a GUI tool that solved technical problems of speed, accuracy, and usability with prior GUI tools, and the district court specifically determined that the claimed invention is technological. The PTAB ignored the dispositive evidence and the prior court opinions in exercising jurisdiction under § 18.

**A. The '304 Patent Claims the Makeup, Structure, and Features of a Technological GUI Tool, Not a “Data Processing” Method or “Other Operation”**

The '304 patent relates to GUI tools for electronic order entry that “provide[] a trader with a versatile and efficient tool for executing trades.” *See* Ex. A at 1:19. The patent explains that speed and accuracy are important to GUI tools for trading. *Id.* at 2:47-65. In prior art GUIs, such as shown in Figure 2, a displayed price could unexpectedly change under a trader’s pointer as he clicked the GUI, causing an order message to be sent with an unintended price parameter. *Id.* at 2:60-3:6. The '304 patent’s claims address this problem with a GUI that includes “a dynamic display for a plurality of bids and for a plurality of asks” and “a static display of prices corresponding to the plurality of bids and asks.” *Id.* at 3:15-20.

Figures 3 and 4 (reproduced and annotated below alongside claim 1) show a claimed GUI tool at two times, before (Time 1, FIG. 3) and after (Time 2, FIG. 4)

an update from the electronic exchange reflecting a change to the best bid and best ask prices (the inside market). The claimed GUI includes a static price axis with a range of price levels displayed in the “Prc” column. The GUI provides dynamic indicators representing bids and asks that are displayed in regions (BidQ and AskQ columns, respectively) with locations corresponding to the levels of the price axis. *Id.* at 7:54-8:19. In response to the update, the bid and ask indicators dynamically move along the price axis (e.g., up from 89 and 90 in Figure 3 to 92 and 93, in Figure 4, respectively), yet the values of the price axis remained fixed. The ’304 claims refer to these price levels as “static.”



The claimed GUI also provides locations corresponding to different price levels of the price axis that can be selected by a single action of a user input device

to set order parameters (*e.g.*, price and order type) and send an order message. For example, the cells of the BidQ/AskQ columns are configured to receive single action commands that set the price, specify that the order is a buy or sell order, and send an order message with these parameters to the exchange. *E.g.*, *id.* at 10:46-48, 11:3-5. These locations are analogous to buttons on a physical device.

Unlike Figure 2's prior-art type GUIs, if a user clicks on the claimed GUI to send an order at the same moment that the GUI changes the bid/ask indicators to reflect a market change, the order message will still be set with the user's intended price because the order entry location remains associated with the same level along the price axis, even when the bid/ask indicators move. *Id.* at 7:15-46, FIGS. 3 and 4. The claimed invention also improves usability by providing a more intuitive visualization of market changes than prior GUIs. *Id.* at 7:15-46; Ex. G at 13-14.

Claim 1 of the '304 patent recites a combination of GUI features shown in the embodiment of Figures 3 and 4, including a common static price axis; dynamically displaying bid/ask display indicators in locations of bid/ask display regions corresponding to levels along the static price axis; displaying the bid/ask display regions such that when market updates are received, the levels of the common static price axis do not move, but the indicators move in the bid/ask display regions relative to the static price axis; and displaying an order entry region with locations corresponding to levels along the static price axis that can be

selected by a single action of a user input device to set parameters and send an order message. *See* Ex. A, claim 1. This combination of GUI features was the reason for allowance during the original examination (Ex. H at 5) and confirmation in a later reexamination (Ex. I at 2-3). While the claims refer to trading, this is merely the invention's application. The claimed invention is a GUI tool. The demonstrative in Ex. J, cited in the PTAB proceedings below, shows how the body of claim 1 recites elements that define the makeup, structure, and features of a GUI tool—not a business method such as a trading strategy. Ex. J at 33-46.

GUI development is indisputably technological, falling under the scientific field of Human Computer Interaction (“HCI”), which is a category of the broader scientific field of Man Machine Interface (“MMI”). Ex. K. Universities across the country offer technical degrees in the HCI field. *See, e.g.*, Exs. L-R. TradeStation's expert and experts from all sides in the patent's long litigation history agree that the patent claims a GUI tool that addresses problems of speed, accuracy/precision, and usability and that GUIs are technology. Ex. J at 65-66, 67, 68, 69. This has also been confirmed by the declarations of thirty-one users praising TT's commercial embodiment of the invention (“MD Trader”). Exs. S-AW. As found by the European Patent Office (“EPO”), the claimed GUI “solves a technical problem which is to improve the operation of the system in terms of increasing the accuracy for placing orders. In fact, this problem is independent from the business aspects of

the claims.” Ex. AX at 6; *see also* Exs. BO-BQ. Problems of speed, accuracy/precision, and usability are classic engineering problems that are indisputably technical. Ex. G at pp. 15-17.

As noted by TradeStation and the PTAB, the CBM definition in § 18 tracks the USPTO’s classification definition for Class 705. Ex. AY at 11; Ex. BA at 12. The USPTO defines “data processing” in Class 705 as “[a] systematic operation on data in accordance with a set of rules which results in a significant change in data.” Ex. BB at 4. “Data” is defined as “[r]epresentation of information in a coded manner suitable for communication, interpretation or processing.” *Id.* Thus, “data processing” is different from communicating or interpreting data. The claimed invention does not perform any “operation on data . . . which results in a significant change of data.” Ex. BB. An example of a patent performing “data processing” would be one claiming a technique for data sorting or filtering noise out of data. The ’304 patent does not claim anything remotely close to a “data processing” method under Class 705’s definition of that term. Neither the PTAB nor TradeStation have proposed any other definition of “data processing.”

Although not a basis of the institution decision, the ’304 patent does not claim any “other operation” (*e.g.*, a business method) under § 18. While the claimed invention may be used to conduct a business practice (*e.g.*, a trading strategy), the claims are to a GUI tool that changes how the computer operates.

Indeed, counterparts to the '304 patent with similar claims were granted in the EPO and UK, where there is a ban on business method patents. Ex. AX.

Importantly, the '304 patent's claims are not merely tacking on a conventional computer to a business practice, as was the case in *Alice Corp. v. CLS Bank International*, 123 S. Ct. 2347 (2014), and *Versata*, 793 F.3d 1306. The '304 patent's claims do not recite a data processing or business method and merely add a step of displaying data on a generic GUI. Instead, the '304 patent claims the makeup, structure and features of a particular GUI.

**B. This Court Found the '304 Patent Claims a GUI Tool That Solves Problems of Speed, Accuracy, and Usability in GUIs**

In *eSpeed*, this Court found that the '304 patent claims a “graphical user interface (‘GUI’)” that “includes ‘a dynamic display for a plurality of bids and for a plurality of asks in the market for the commodity and a static display of prices corresponding to the plurality of bids and ask’” and that “[t]he claimed invention facilitates more accurate and efficient orders in this trading environment.” 595 F.3d at 1345 (quoting '132 patent at 3:11-16, 21-24). This Court summarized the claimed invention, referring to Figures 3 and 4, as a GUI tool that provided “numerous advantages over the prior art” including improving speed, accuracy, and usability by “prevent[ing] accidental orders at an unintended price” and by allowing users to “visually follow the market movement as the inside market shifts up and down along the price column.” *Id.* at 1347. This Court reaffirmed that the

'304 patent “concern[s] a graphical user interface” that is more intuitive and efficient than prior GUIs in *Open E Cry*, 728 F.3d at 1312-14.

**C. A District Court Found the '304 Patent Claims a Specific Technological GUI Tool**

A district court recently held that the '304 patent recites patent-eligible technology under 35 U.S.C. § 101. *Trading Techs. Int'l v. CQG, Inc.*, No. 05-cv-4811, 2015 WL 774655 (N.D. Ill. Feb. 24, 2015), now on appeal to this Court (App. No. 16-1616). The court found that the claimed GUI “profess[es] to solve problems of prior graphical user interface devices (GUIs), in the context of computerized trading, relating to speed, accuracy and usability.” *Id.* at \*4. The court determined that the '304 patent's claims:

are directed to solving a problem that existed with prior art GUIs, namely, that the best bid and best ask prices would change based on updates received from the market. There was a risk with the prior art GUIs that a trader would miss her intended price as a result of prices changing from under her pointer at the time she clicked on the price cell on the GUI. The patents-in-suit provide a system and method whereby traders may place orders at a particular, identified price level, not necessarily the highest bid or the lowest ask price because the invention keeps the prices static in position, and allows the quantities at each price to change.

*Id.* The claimed invention allows users “the ability to more efficiently and accurately place trades on electronic trading systems.” *Id.* at \*5. The court reaffirmed what this Court previously found—the '304 patent improves prior art GUIs—and what the evidence definitively establishes—“the claims are directed to

a technological improvement of GUIs.” *CQG*, 2015 WL 774655, at \*5.

**D. The Legislative History Confirms Patents to GUI Tools Are Not CBM Patents**

Congress named § 18 the “covered business method” law for a reason—it was created to address “questionable” business method or data processing patents.

Ex. BC, S5428. As Sen. Schumer, the bill’s sponsor, explained:

[Mr. Schumer.] *Business method patents* are the bane of the patent world . . . State Street launched an avalanche of patent applications seeking protection for *common business practices*. The quality of these *business method patents* has been much lower than that of other patents, as Justice Kennedy noted in his concurring opinion in *eBay Inc. v. MercExchange* . . . . One of the main reasons for the poor quality of *business method patents* is the lack of readily accessible prior art references. Because *business method patents* were not patentable prior to 1998 when the State Street decision was issued, the library of prior art on *business method patents* is necessarily limited – as opposed, say, to more traditional types of patents for which there can be centuries of patents and literature about them for the PTO to examine. Furthermore, information about *methods of conducting business*, unlike information about other patents, is often not documented in patents or published in journals . . . . The ability to easily obtain *business method patents* without a rigorous and thorough review in the Patent Office has created a flood of poor quality *business method patents*.

Ex. BD, S1363 (emphasis added). The legislative history provides many examples of CBM patents, each of which claims an allegedly inventive data processing or business method. *See* Ex. BC, S5432.

On the other hand, patents on GUI tools for trading are identified as an example of what is *not* a CBM patent:

[Mr. DURBIN.] . . . [S]ome companies that possess patents categorized by the PTO as class 705 business method patents have used the patents to develop novel software tools and *graphical user interfaces that have been widely commercialized and used within the electronic trading industry* to implement trading and asset allocation strategies . . . Are these the types of patents that are the target of Section 18?

[Mr. SCHUMER.] No . . . . [I]t is not the understanding of Congress that such patents would be reviewed and invalidated under Section 18.

Ex. BC at S5428 (emphasis added); *see also id.* at S5433.

**E. TradeStation Did Not Allege that the '304 Patent Claims a "Data Processing" Method or "Other Operation"**

In its CBM petition, TradeStation skipped the first requirement that a CBM patent must claim a "data processing" method or "other operation." Instead, TradeStation started with the financial prong (which was not in dispute). Ex. AY at 8-17. Then, TradeStation argued the technological exception does not apply. *Id.*

It is not surprising that TradeStation ignored the first jurisdictional requirement, considering the testimony of TradeStation's own expert, Dr. Mellor. Dr. Mellor, a Ph.D. in electrical engineering and computer science, testified that the invention is a "graphical user interface." Ex. BE, ¶¶ 21-22; ¶ 49 (POSITA "must be someone capable of making and using the invention, *here a GUI*") (emphasis added). He also explained that a POSITA must have a computer or engineering related degree and at least two years of experience programming. *Id.*, ¶¶ 21-22. He further testified that "one need *not* have trading experience" to testify

as one of ordinary skill in the art for this case. *Id.*, ¶ 49 (emphasis in original).

It is also not surprising that TradeStation ignored the first CBM requirement in light of what it previously told this Court about the common specification shared by the '304 and '132 patents at issue in Appeal No. 2012-1583: it “teaches that the invention is a graphical user interface” and “teaches that the invention includes a display of prices, or price axis, which is ‘static.’”. Ex. BF at 7. In that appeal, TradeStation relied on this Court’s prior conclusion that a feature of the GUI tool, the “static price axis,” was at the “heart of the advantages” of the claimed invention over the prior art. *Id.* at 11, *citing eSpeed*, 595 F.3d at 1356.

**F. The PTAB Ignored the Dispositive Evidence and Prior Court Opinions in Finding the '304 Patent Is a CBM Patent**

Despite this record, the PTAB found claim 1 of the '304 patent “encompasses processing financial data.” Ex. BA at 12. Based on this, the PTAB found that the '304 patent claims a “data processing” method and thus meets the first requirement for CBM jurisdiction. *Id.* The PTAB reached this conclusion even though TradeStation did not allege the patent claims a “data processing” method. The PTAB’s opinion does not address the claims as a whole, ignores the evidence discussed above, and ignores the previous decisions of this Court and a district

court finding that the patent claims a GUI.<sup>3</sup>

The PTAB also reached its decision without explaining its definition of “data processing.” Rather, the PTAB based its “data processing” finding on two statements from the ’304 patent’s specification. *Id.* at 11-12 (citing Ex. A at 4:66-5:3, 11:50-52). Neither statement, however, shows that the ’304 patent claims “data processing.” Indeed, the first statement actually shows the opposite:

The exchange sends the price, order and fill information to each trader on the exchange. The present invention processes this information and maps it through simple algorithms and mapping tables 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 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.***

Ex. A at 4:65-5:7 (emphasis added). In context, this statement makes clear that the claimed invention is agnostic to what specific algorithm is used for processing or mapping the data. But, the claimed invention is a GUI tool, not a method of processing/mapping data “under the hood” in the computer. If the patent actually claimed a data mapping technique, the analysis may be different.<sup>4</sup> But the ’304

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<sup>3</sup> Even though TT made clear it was not disputing the “financial” requirement, the PTAB analyzes that requirement as if TT was disputing that issue. Ex. AZ at 63; *cf. Blue Calypso, LLC v. Groupon, Inc.*, No. 2015-1391, 2016 WL 791107, at \*3 (Fed. Cir. Mar. 1, 2016).

<sup>4</sup> While not relevant, such mapping is not “data processing” under the USPTO (continued...)

patent has no such claim. The second statement is part of a sentence describing a flowchart (Fig. 6) showing the “process” of how the disclosed GUI tool (“Mercury”) is used to place orders—the application of the claimed GUI tool. This is not “data processing” and the patent does not claim a data processing technique.

The PTAB also relied on the ’304 patent’s classification in Class 705. However, the PTAB did not consider the Class 705 definition of “data processing,” which does not apply to the ’304 patent. The legislative history confirms that there are Class 705 patents that are not CBM patents, such as GUI tools for trading. Ex. BC at S5428.

The PTAB dismissed Sen. Durbin’s statements, Ex. BA at 13, contrary to USPTO policy that his “examples of the kinds of patents that would not be subject to a transitional covered business method patent review” are “instructive” and should be “addressed when reviewing the merits” of jurisdiction. *Transitional Program for Covered Business Method Patents*, 77 Fed. Reg. 48734, 48736-37 (Aug. 14, 2012).

The PTAB further found that the ’304 patent does not fall within the technological invention exception of § 18. Ex. BA at 15-18. In doing so, the PTAB

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(...continued)

Class 705 definition. Rather, it is communicating data, which is defined by the USPTO as different than “processing.” Ex. BB at 4.

again ignored the dispositive evidence establishing that the claimed invention is a technological tool that solves technical problems and that the claimed combination of technical GUI elements addressing these problems was the reason the patent was allowed. The PTAB also ignored the prior court decisions discussed above.

Instead, the PTAB hinged its opinion on its view that the claimed invention solves the “business problem” of “the placing of trader orders on a market or exchange that is rapidly changing, so as to make a profit.” *Id.* at 16. However, the evidence definitively establishes that the claimed invention also addresses classic technical problems of speed, precision and usability. *Supra* at IV.A-D. The PTAB did not explain why such problems are not technical.

The PTAB also relied on the fact that the claimed GUI can be implemented on conventional computers. *Id.* at 18. This is not relevant because the patent claims a combination of features that make up the improved GUI, not the equipment on which it runs. Finally, the PTAB attempted to support its conclusion by looking at certain phrases of claim 1 in isolation and finding, without support, that these phrases were individually known in the prior art. *Id.* at 17-18. Without considering the claimed combination of GUI elements and without analysis of the technical problem and solution discussed above, the PTAB concluded that “the ’304 patent is not for a technological invention.” *Id.* at 18.

**V. ALL OF THE REQUIREMENTS FOR MANDAMUS ARE MET**

This Court has broad jurisdiction and discretion to issue writs of mandamus pursuant to the All Writs Act, 28 U.S.C. § 1651(a), to correct a “clear abuse of discretion or usurpation of judicial power.” *In re EchoStar Commc’ns Corp.*, 448 F.3d 1294, 1297 (Fed. Cir. 2006). Mandamus will be granted when three conditions are met. First, a petitioner must show a “‘clear and indisputable’ right to relief.” *In re Procter & Gamble Co.*, 749 F.3d 1376, 1378 (Fed. Cir. 2014). Second, the petitioner “must ‘lack adequate alternative means to obtain the relief’ it seeks,” and third, this Court “must be satisfied that the writ is appropriate under the circumstances.” *Id.* (quoting *Mallard v. U.S. Dist. Court*, 490 U.S. 296, 309 (1989) and *Cheney v. U.S. Dist. Court for D.C.*, 542 U.S. 367, 381 (2004)).

**A. This Case Is Different from Cases Denying Mandamus, Because the PTAB Is Outside its Jurisdictional Authority**

“[W]hether a patent falls within the scope of the PTAB’s authority under AIA § 18 as a CBM patent is a *limitation on the PTAB’s authority* to issue a final decision . . . .” *SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307, 1314 (Fed. Cir. 2015) (emphasis added). This determination is jurisdictional because, “[i]f a particular patent is not a CBM patent, there is no proper pleading that could be filed to bring it within the PTAB’s § 18 authority.” *Versata*, 793 F.3d at 1320. The CBM determination is “the ‘defining characteristic’ of the [PTAB’s] ‘authority to invalidate’ a patent in the specialized CBMR process . . . because it subjects that

patent “to a special [PTAB] power to invalidate.”” *Achates Reference Publ’g, Inc. v. Apple Inc.*, 803 F.3d 652, 657 (Fed. Cir. 2016).

Jurisdictional errors are the traditional use of mandamus writs, and mandamus is especially appropriate here because the PTAB’s jurisdictional error is recurring. While this Court has rejected mandamus review of PTAB institution-related issues in prior cases, none of those cases involved a jurisdictional issue going to the PTAB’s underlying authority like the issue here.

**B. The ’304 Patent Is Clearly and Indisputably Not a CBM Patent**

The first requirement for mandamus is met because the ’304 patent is clearly and indisputably not within the jurisdictional reach of § 18 for two independent reasons: (1) it does not claim a data processing/business method, and (2) it claims a technological invention.

**1. The ’304 Patent Is Indisputably Not a CBM Patent Because It Does Not Claim a “Data Processing” Method or “Other Operation”**

Overwhelming evidence, including the ’304 patent’s claims, the intrinsic evidence, and other evidence and opinions from this Court and a district court, clearly and indisputably show that the ’304 patent claims a technological tool—the particular makeup, structure, and features of a GUI tool. The ’304 patent does not claim a “data processing” or business method. The PTAB’s decision ignores this dispositive evidence. The PTAB’s failure to address prior decisions of this Court

and a district court regarding the nature of the claimed invention is troubling. *See Power Integrations, Inc. v. Lee*, 797 F.3d 1318, 1326-27 (Fed. Cir. 2015) (criticizing PTAB failure to address court’s claim construction).

The ’304 patent claims are not “data processing” claims and fall outside of the USPTO’s Class 705 definition. The PTAB did not provide any definition of “data processing,” even though this was the sole grounds for meeting the first jurisdictional requirement. The legislative history, also dismissed by the PTAB, further confirms that the ’304 patent is not a CBM patent. Ex. BC at S5428 (clarifying that not all Class 705 patents in are CBM). Thus, classification in Class 705, relied on by the PTAB, is irrelevant because mere classification warrants no deference in the CBM jurisdictional analysis.

**2. The ’304 Patent Is Also Indisputably Not a CBM Patent Because It Claims a Technological Invention**

As set forth above, the ’304 patent clearly and indisputably claims a technological GUI tool that solves technical problems related to speed, accuracy, and usability of GUIs. Both this Court and a district court have found that the claimed invention solves problems of speed, accuracy, and usability. *Supra* at IV.B-C. The claimed combination of GUI elements that address these problems were the reason the claims were allowed. Such problems are recognized technical problems. Indeed, the district court specifically found that “the claims are directed to a technological improvement of GUIs.” *CQG*, 2015 WL 774655, at \*5.

The PTAB ignored the dispositive evidence presented. Instead, it based its opinion on an irrelevant factual finding that the claimed invention also solves a “business problem.” Ex. BA at 16. But solving an additional business problem, even if true, does not negate the technological problems solved by the claimed invention. All innovative tools that solve technical problems also solve problems in their field of use. For example, a flight instrument embodied in a GUI can address both a technical problem (usability) and a problem in its field (flight safety).

Moreover, the PTAB’s framing of the “problem” reflects a misunderstanding of the claimed invention. The PTAB viewed the problem as a “rapidly changing” market and that 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.” Ex. BA at 16. This is incorrect. As made clear in the ’304 patent, two findings by this Court, and the district court, the problem addressed by the invention is with elements of the GUI changing in response to the market, not that the market itself changes. *See, e.g., eSpeed*, 595 F.3d at 1346-47; *Open E Cry*, 728 F.3d at 1313-14; *CQG*, 2015 WL 774655, at \*4. Notably, this problem with prior art GUIs exists regardless of the speed at which a market changes—a displayed price may change at the same moment the user attempts to place an order, thereby resulting in setting an undesired price. *eSpeed*, 595 F.3d at 1346-47; *Open E Cry*, 728 F.3d at 1313-14; *CQG*, 2015 WL 774655, at \*4. This

problem and the '304 patent's solution are necessarily rooted in computer technology and the operation of prior art GUIs, not in a business practice. *See DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014).

The PTAB further incorrectly focuses on the irrelevant fact that the claimed GUI tool can be run on conventional computer equipment, instead of the claimed GUI features.<sup>5</sup> Ex. BA at 16-18. The PTAB also applied an incorrect legal analysis when it made statements that various claim elements in isolation were known. *Id.* at 17-18. Putting aside the unsupported nature of these findings, the analysis is flawed as a matter of law. First, as noted by this Court, the ultimate questions of novelty and obviousness should not be part of determining CBM jurisdiction. *See Versata*, 793 F.3d at 1326. The '304 patent's claims do not merely add a conventional computer to a known business practice, as claimed in *Versata*. *Id.* at 1327 (citing *Alice*, 134 S.Ct. 2347). Rather, the patent claims technology (the particular makeup, structure, and features of a GUI tool), not a business practice, and was found to satisfy the second prong of *Alice* in the recent district court decision (now on appeal to this Court). *CQG*, 2015 WL 744655, at \*5.

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<sup>5</sup> This is the crux of the PTAB's finding that the patent is likely ineligible under § 101. The flaw to this logic is shown by the fact that the USPTO has an entire classification for patents on GUI innovations separate from new computer hardware. Ex. BS; *see also* Ex. BT at 7-9 (providing an example of an eligible claim to GUI functionality).

Even if considered, the PTAB's incorrect analysis of novelty/obviousness is flawed. Rather than analyzing the entire claimed combination, which was found to be patentable during original examination and in reexamination (considering the same "TSE" art cited by the PTAB), the PTAB improperly only looked at certain claim elements in isolation.

**3. The PTAB's Decision Reflects a Fundamental Misunderstanding of the Claimed GUI Technology**

The PTAB's reasoning and conclusions reflect a fundamental misunderstanding of GUI technology and a failure to appreciate that GUI tools are analogous to physical devices. The PTAB's logic would result in incorrectly finding a patent claiming a device that improves the speed and accuracy of data entry is not technological because the device is used to enter financial data. The PTAB incorrectly places weight on the fact that the claimed GUI tool can be implemented on a conventional computer, that "software for creating GUIs" was known, and "physical mapping" of "information to a screen grid" was known in the art. Ex. BA at 15-18. These facts are not relevant because the claims are to the GUI tool, not to the underlying computer by itself or the practice of electronic trading. Almost all GUIs can be implemented on a conventional computer, such as a PC, smart phone, tablet, etc. But the '304 patent does not claim the conventional computing equipment upon which the claimed GUI tool is run. Instead, it claims the makeup, structure, and features of the improved GUI tool itself.

The institution decision's flawed logic has far-reaching consequences for many different industries where GUIs are becoming ever more important. GUI development is part of the scientific field of HCI. Just as people control machines with physical devices, people control computing equipment with GUI tools. GUIs are forms of specialized physical devices of the Information Age. For example, virtual buttons have replaced physical interface elements like keypads, but people interact with the GUI tools similar to physical devices.<sup>6</sup> A patent claiming a GUI with an allegedly innovative arrangement of graphical buttons to control access to a safe, for example, should not be treated differently than a patent claiming the same arrangement of physical buttons on a keypad to access the safe. The PTAB's focus on the underlying computer, not the claimed GUI features, is improper. GUI development is critical to convert computing devices into useful tools. For example, an iPhone is useless without GUIs and becomes a different tool (*e.g.*, phone, calculator, compass, gaming device, etc.) depending on which GUI is run.

Computers and program code for developing GUIs, which the PTAB focused on (Ex. BA at 16-17), are merely the building blocks used to create GUIs. They are analogous to raw materials, such as metal, glass, and plastic, used to create physical devices. A physical device is not a CBM patent or ineligible under

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<sup>6</sup> Companies invest millions of dollars annually to develop GUIs in consumer electronics, medical devices, aviation, automobiles, etc. *See, e.g.*, Exs. BG-BH.

§ 101 because it was built using known materials. The claimed invention is not the material, but the device. Likewise, the claimed invention here is not the underlying computer or code, but the claimed GUI tool/device itself.<sup>7</sup>

**4. The '304 Patent's Underlying Invention is a GUI Tool Regardless of Claim Form (Method, System or CRM)**

In substance, all claims of the '304 patent, whether to a method, system, or computer-readable medium ("CRM"), recite the combination of GUI features summarized above. Neither TradeStation nor the PTAB have contended that the method claims (*e.g.*, claim 1) should be treated as claiming a business method/operation merely because the last claim element recites "sending the trade order to the electronic exchange." Such a new argument should not be permitted now. *See Power Integrations*, 797 F.3d at 1326 . In any event, this argument lacks merit because it would improperly elevate form over substance. The CBM analysis is similar to a § 101 analysis. The Supreme Court and this Court have repeatedly held that it is the substance, not the form, of a claim that matters for patentability issues. *Alice*, 123 S. Ct. at 2361; *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1374 (Fed. Cir. 2011).

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<sup>7</sup> TT is not arguing that all software patents are not CBMs. This Petition focuses on a particular type of software invention: a specific GUI in the field of HCI. Patents claiming these types of inventions fall far afield of being a CBM.

**C. TT Lacks Other Adequate Means to Obtain Relief and Mandamus Is Appropriate to Prevent the PTAB From Exceeding Its Statutory Authority and to Prevent Recurring Error and Undue Prejudice**

**1. Mandamus Is Especially Appropriate Here Because the Error Is Jurisdictional and Recurring**

“That a court operate solely within its statutory jurisdiction is one of the most fundamental premises of our judicial system.” *In re Lowe*, 102 F.3d 731, 733 (4th Cir. 1996). One “traditional use” of mandamus therefore “has been to confine an inferior court to a lawful exercise of its prescribed jurisdiction.” *Cheney*, 542 U.S. at 380 (quoting *Roche v. Evaporated Milk Assn.*, 319 U.S. 21, 26 (1943)). Absent a statute granting jurisdiction, the lower court cannot hold a trial. *Steel Co. v. Citizens for a Better Env't*, 523 U.S. 83, 94 (1998). The scope of an agency’s statutory authority is subject to mandamus review. See *Piecznik v. Domantis*, 120 F. App’x 317, 319 (Fed. Cir. 2005) (unpublished). This Court’s predecessor acknowledged that mandamus is appropriate to dismiss an action where the “the mandatory terms of the statute conferring jurisdiction on the [lower court] . . . [are] clearly absent,” explaining that for a lower court “to exercise a non-existent jurisdiction is an exceptional circumstance of import most grave.” *U.S. v. Boe*, 543 F.2d 151, 158 (C.C.P.A. 1976).

Writs of mandamus have been commonly used to compel lower courts to dismiss proceedings when the lower court did not have jurisdiction to hear the

case. *See, e.g., Boe*, 543 at 161; *Stein v. KPMG, LLP*, 486 F.3d 753, 764 (2d Cir. 2007); *In re Hot-Hed Inc.*, 477 F.3d 320, 326 (5th Cir. 2007); *First Jersey Sec., Inc. v. Bergen*, 605 F.2d 690, 703 (3d Cir. 1979); *In re Dutile*, 953 F.2d 61, 63-64 (5th Cir. 1991); *BancOhio Corp. v. Fox*, 516 F.2d 29, 33 (6th Cir. 1975); *Belle v. Sellevold*, 713 F.2d 1396, 1404-05 (8th Cir. 1983); *Special Invs., Inc. v. Aero Air, Inc.*, 360 F.3d 989, 995 (9th Cir. 2004).

“Early-stage decision of a basic authority question can make sense as an efficiency matter.” *Versata*, 793 F.3d at 1319. “[O]ne of the limits on § 18 invalidation authority is that the patent at issue be a CBM patent . . . . If a particular patent is not a CBM patent, there is no proper pleading that could be filed to bring it within the PTAB’s § 18 authority.” *Id.* at 1320. The PTAB’s lack of jurisdiction to conduct CBMR of the ’304 patent makes mandamus appropriate.

Mandamus is especially appropriate here because the PTAB has repeated this jurisdictional error, and it is likely to continue if not stopped. *See Special Invs.*, 360 F.3d at 994. Before its erroneous jurisdictional holding in this proceeding, the PTAB made the same error with respect to the ’304 patent and several other TT patents claiming GUI tools at least *five* other times. *Supra* at viiii-ix. Moreover, the PTAB has repeated the error four additional times in the last few weeks (February 12 and 24, and March 3 and 7, 2016) when it granted institution of additional CBM petitions filed by TradeStation or IBG in CBM2015-00172, -00179, -00181, and

-00182 against other TT GUI tool patents. And, there are currently five other CBM petitions awaiting institution decisions regarding the '304 patent and other GUI tool patents that present the same CBM jurisdictional issue.

**2. TT Will Be Unfairly Prejudiced if the Erroneous CBM Determination Is Not Corrected Now**

If the PTAB's extra-statutory CBMR is not terminated now, TT will be unfairly subjected to numerous trial proceedings at the PTAB and subsequent appeals that will involve the same issue, resulting in millions of dollars of expense, creating undue and unwarranted burdens on the PTAB and this Court, and resulting in undue prejudice to TT on the merits of the challenges in the CBMR. "Allowing this case to proceed in the [lower] court would be to ignore the practical benefits writs of mandamus can serve to improve judicial administration." *First Jersey*, 604 F.2d at 702; *see also Athlone Indus., Inc. v. Consumer Prod. Safety Comm'n*, 707 F.2d 1485, 1489 (D.C. Cir. 1983); *Atl. Richfield Co.*, 769 F.2d at 782. "There is no good reason to launch a proceeding if it is clear that the agency will have no authority to act at its conclusion." *Versata*, 793 F.3d at 1319.

TT's mandamus request is not an impermissible substitute for the regular appeals process. *In re TS Tech USA Corp.*, 551 F.3d 1315, 1322 (Fed. Cir. 2008). Without jurisdiction, the PTAB has no authority to either institute a trial or to issue a final decision. *See Versata*, 793 F.3d at 1320-21. The jurisdictional CBM issue is also common to at least three and as many as eight other CBMRs. Issuance of a

writ vacating the PTAB's institution decision now would not only dispose of this proceeding, but the others following it, thereby conserving judicial resources. *See First Jersey Secs.*, 604 F.2d at 702.<sup>8</sup>

In addition, TT will be prejudiced in other ways if the PTAB is permitted to proceed with this CBMR outside of its jurisdiction. For example, on February 19, TradeStation and the other defendants moved to stay the district court litigation based on institution in CBM2015-00161. Ex. BI. The district court has already granted one stay (based on the now-settled TD Ameritrade CBMRs) even though there are many other patents-in-suit not subject to any CBMR proceedings. Ex. BJ. That stay was the subject of an expedited appeal to this Court that became moot due to a settlement. Ex. BK. An additional stay (which TT would appeal) would cause further delay. Likewise, defendants will undoubtedly appeal a denial of a stay—in either event causing more work for this Court. TT has already obtained injunctions against other competitors from infringement of the '304 patent by demonstrating irreparable harm (*e.g.*, Ex. BL) and is seeking injunctions against the remaining two defendants, who are competitors of TT. Any further delay creates additional irreparable harm to TT. Ex. BM at 4-5.

An improperly issued PTAB final decision may have lingering effects, even

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<sup>8</sup> Moreover, the only merits issue in this CBMR—whether the '304 patent is eligible under 101—is already before this Court in Appeal No. 16-1616.

after that determination is later reversed for lack of jurisdiction. For example, if any of the TT GUI patents are erroneously found unpatentable or invalid by the PTAB, the underlying substantive validity issue may not be addressed on appeal because reversal of the threshold CBM determination would resolve the appeal. This result, however, would cast a lingering cloud on the patents with detrimental effects. For example, it might influence a district court or jury, despite a prior court ruling that the '304 patent is patent-eligible under § 101. Also, the USPTO just announced that it will be notifying examiners of PTAB decisions “to shine a spotlight” on issues. Ex. BR at 31. This new policy will irreparably influence examinations of related applications. Likewise, such a cloud will hurt licensing efforts. Ex. BN at 1121, 1126-1129. In view of the recurring error of the PTAB and the resulting prejudice to TT, TT lacks adequate means to obtain relief except through mandamus, and mandamus is appropriate under the circumstances.

## **VI. CONCLUSION**

The '304 patent is clearly and indisputably not a CBM patent within the PTAB's jurisdiction under § 18 because (1) it claims a GUI tool, not a “data processing” or business method, and (2) it claims a technological invention. By instituting CBM2015-00161, the PTAB has exceeded its lawful jurisdiction, which should be corrected by mandamus. The PTAB has repeated this error and will likely continue to do so. TT has no other adequate means of relief and will be

irreparably harmed if the jurisdictional error is not immediately corrected.

Accordingly, this Court should grant this petition for mandamus and order the PTAB to vacate its institution decision in CBM2015-00161 and terminate that proceeding.

Dated: March 8, 2016  
Washington, DC

Respectfully submitted,

/s/Erika H. Arner

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**CERTIFICATE OF SERVICE**

I hereby certify that on March 8, 2016, two true and correct copies of the foregoing PETITION FOR WRIT OF MANDAMUS were served by mail or email to the persons at the addresses listed:

<b>Counsel</b>	<b>Parties represented by one or more of the listed Counsel</b>
John C. Phillips 3200 RBC Plaza 60 South Sixth Street Minneapolis, MN 55402 Telephone: 858-678-4304 Fax: 877-769-7945  Kevin Su 3200 RBC Plaza 60 South Sixth Street Minneapolis, MN 55402 Telephone: 617-521-7827 Fax: 877-769-7945	TradeStation Group, Inc.; TradeStation Securities, Inc.

I hereby further certify that on March 8, 2016, I caused a copy of the foregoing Petition for a Writ of Mandamus to be delivered by overnight courier to the Patent Trial and Appeal Board at the following address:

Director of the United States Patent and Trademark Office  
 c/o Office of the General Counsel  
 Madison Building East, 10B20  
 600 Dulany Street  
 Alexandria, VA 22314-5793

Date: March 8, 2016

/s/Erika H. Arner

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