

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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TEXAS ASSOCIATION OF REALTORS,  
Petitioner,

v.

POI SEARCH SOLUTIONS LLC,  
Patent Owner.

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Case IPR2016-00615  
Patent 8,510,045 B2

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Before JUSTIN T. ARBES, THOMAS L. GIANNETTI, and  
ROBERT L. KINDER, *Administrative Patent Judges*.

KINDER, *Administrative Patent Judge*.

DECISION  
Institution of *Inter Partes* Review  
*37 C.F.R. § 42.108*

Texas Association of REALTORS (“Petitioner”) filed a Petition pursuant to 35 U.S.C. §§ 311–319 to institute an *inter partes* review of claims 1–28 (all claims) of U.S. Patent No. 8,510,045 B2, issued on August 13, 2013 (Ex. 1001, “the ’045 patent”). Paper 1 (“Pet.”). POI Search Solutions LLC (“Patent Owner”) filed a Preliminary Response. Paper 9 (“Prelim. Resp.”). Applying the standard set forth in 35 U.S.C. § 314(a), which requires demonstration of a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim, we institute an *inter partes* review of all challenged claims.

## I. BACKGROUND

### A. *The ’045 Patent (Ex. 1001)*

The ’045 patent describes a method for “displaying points-of-interest (‘POIs’) on a digital map.” Ex. 1001, Abstract. The ’045 patent discloses a user selecting an arbitrary region on a digital map (displayed on an electronic device, such as a smart phone) and displaying POIs on the digital map that are within the geographic confines of the arbitrary region. *Id.* at 1:15–19. POIs may include businesses, such as coffee shops, gas stations, or other attractions. *Id.* at 1:58–65. Along with selecting an arbitrary region, the user can enter a search query to allow retrieval of various POIs by the mapping application. *Id.* at 1:63–66. The ’045 patent describes retrieving POIs based on the search query, dimensions of the map, and any other logic used by the mapping application. *Id.* at 1:66–2:1. In one embodiment, a filtered subset of POIs may be displayed within the geographical confines of the user’s selected region. *Id.* at 2:1–5.

*B. Illustrative Claim*

Claim 1 of the '045 patent recites:

1. A method of displaying points-of-interest (“POI”s) on a digital map, comprising:

displaying a digital map within a given view and at a given scale, on a graphical display of an electronic device;

receiving user input containing a search query;

providing one or more search results associated with the search query, the search results containing geographic coordinates;

receiving user input defining a geographic region within the digital map, wherein the geographic region is defined from within the current view and current scale of the digital map, and wherein the geographic region is represented by a polygon;

determining the one or more search results whose geographic coordinates are within the user defined geographic region; and

displaying the determined one or more search results as one or more graphics on the digital map; wherein the one or more graphics represent one or more POIs.

Ex. 1001, 11:64–12:16.

*C. Related Proceedings*

Petitioner and Patent Owner identify two related, but dismissed, litigations in the Eastern District of Texas involving the '045 patent: *POI Search Solutions LLC v. Keller Williams Realty, Inc.*, 2-15-cv-00144 (E.D. Tex.); and *POI Search Solutions LLC v. Fathom Realty, LLC*, 2-15-cv-00143 (E.D. Tex.). Pet. 59; Paper 8, 2.

*D. Real Party in Interest*

In accordance with 35 U.S.C. § 312(a)(2) and 37 C.F.R. § 42.8(b)(1), Petitioner identifies Texas Association of REALTORS (“TAR”) as the real party-in-interest. Pet. 59. According to Petitioner, “TAR is a professional

membership association consisting of approximately 97,000 members” that each “contribute to a legal fund maintained by TAR, from which the legal expenses and fees for the instant proceeding have been paid.” *Id.* Petitioner also contends that the “Executive Board of TAR” maintains direction and control of this Petition, and the individual members do not direct or control TAR or this Petition. *Id.* Accordingly, Petitioner concludes that “the over 97,000 individual members of TAR are not real parties-in-interest to this proceeding.” *Id.*

Patent Owner takes issue with Petitioner’s failure to name each individual member of TAR as a real party-in-interest. Prelim. Resp. 16. According to Patent Owner, “TAR’s members are real-parties-in-interest based on their control of TAR and Petitioner’s misrepresentation of such control.” *Id.* Patent Owner relies on a statement found on TAR’s website that conveys “[t]he Texas Association of REALTORS® is governed by its members, who volunteer their time to serve in leadership positions.” *Id.* (quoting Ex. 2001). Patent Owner further contends that Petitioner’s members have paid to initiate the instant Petition because they contributed to a legal fund, from which the legal expenses and fees for this proceeding have been paid. *Id.* at 16–17.

Based on the current record, we do not agree with Patent Owner that TAR’s members are real parties-in-interest. As explained in the Trial Practice Guide, “if Trade Association X files an IPR petition, Party A does not become a ‘real party-in-interest’ or a ‘privy’ of the Association simply based on its membership in the Association.” Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,760 (Aug. 14, 2012). According to the Petition and the web page submitted by Patent Owner, TAR is a trade

association and its tens of thousands of members contribute to a legal fund from which the Executive Board funded this Petition. *See* Pet. 59; Ex. 2001. There is no indication on the website or elsewhere in the record that the individual members of TAR have control or could exercise control over this *inter partes* review. Instead, the information of record suggests that TAR's Executive Board made the decision to file the instant Petition. *See* Pet. 59; Ex. 2001 (“The Executive Board manages all of the association’s affairs, except those requiring approval by the board of directors.”). Patent Owner has not pointed to sufficient facts to show, at this stage of the proceeding, that Petitioner failed to name all real parties-in-interest, and we do not deny the Petition on that basis.

*E. References*

Petitioner relies on the following references:

U.S. Patent No. 7,373,246 B2, issued May 13, 2008 (Ex. 1003, “O’Clair”);

U.S. Patent Application Publication No. 2010/0094548 A1, filed July 9, 2009, published April 15, 2010 (Ex. 1004, “Tadman”);

U.S. Patent Application Publication No. 2009/0153492 A1, filed December 13, 2007, published June 18, 2009 (Ex. 1005, “Popp”);

International Patent Application Publication No. WO 97/48065, published December 18, 1997 (Ex. 1006, “DeLorme”);

U.S. Patent Application Publication No. 2009/0132927 A1, filed November 16, 2007, published May 21, 2009 (Ex. 1007, “Reed”);

U.S. Patent No. 6,791,536 B2, issued September 14, 2004 (Ex. 1008, “Keely”); and

U.S. Patent Application Publication No. 2005/0270311 A1, filed February 5, 2005, published December 8, 2005 (Ex. 1009, “Rasmussen”).

*F. The Asserted Grounds*

Petitioner challenges claims 1–28 of the ’045 patent as unpatentable under 35 U.S.C. § 103(a) on the following grounds:

References	Claim(s) Challenged
O’Clair and Tadman	1, 2, 5, and 6
O’Clair, Tadman, and Popp	3 and 4
O’Clair, Tadman, and DeLorme	7–10
O’Clair, Tadman, and Reed	11, 12, and 14–20
O’Clair, Tadman, Reed, and Popp	13
O’Clair, Tadman, Reed, and Keely	21
O’Clair, Tadman, and Rasmussen	22 and 25–28
O’Clair, Tadman, Rasmussen, and Popp	23 and 24

*G. Claim Interpretation*

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard).

Petitioner proposes constructions for three terms. *See* Pet. 6–8 (“demarcating,” “delimiting,” and “‘select’ control”). Patent Owner does

not propose any interpretations of claim terms, but contends that claim 1 requires certain steps of the method to be performed in a specific order, specifically that the one or more search results must be provided before the “determining” step of claim 1 is performed. Prelim. Resp. 4.

Only terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011). For the purposes of this Decision, we determine that the only claim interpretation issue that we must address is whether certain steps of claim 1 must be performed in the recited order.

To determine whether the steps of a method claim that do not otherwise recite an order must nonetheless be performed in a particular order, we first “look to the claim language to determine if, as a matter of logic or grammar, they must be performed in the order written.” *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369 (Fed. Cir. 2003). “If not, we next look to the rest of the specification to determine whether it ‘directly or implicitly requires such a narrow construction.’” *Id.* at 1370 (citation and emphasis omitted); *see also Mformation Techs., Inc. v. Research In Motion Ltd.*, 764 F.3d 1392, 1398–99 (Fed. Cir. 2014) (“a claim ‘requires an ordering of steps when the claim language, as a matter of logic or grammar, requires that the steps be performed in the order written, or the specification directly or implicitly requires’ an order of steps” (citation omitted)).

Claim 1 recites “providing one or more search results associated with the search query” and “determining the one or more search results whose geographic coordinates are within the user defined geographic region.” Ex. 1001, 12:2–4, 12:10–12. Patent Owner contends that because the

“determining” step refers back to “the one or more search results,” claim 1 has a specific order, requiring that “the one or more search results” are provided before the “determining” step is performed. Prelim. Resp. 4.

We agree with Patent Owner that the language of claim 1 requires the step “providing one or more search results” to occur before the step “determining the one or more search results whose geographic coordinates are within the user defined geographic region.” The claimed “*the* one or more search results” in the “determining” step refers back to the “one or more search results” introduced in the “providing” step. Logically, therefore, the search results must first be provided before the system can determine which subset of these results have geographic coordinates within a user defined geographic region. Ex. 1001, 12:2–4, 12:10–12. We need not decide at this time whether any other steps of claim 1 must be performed in a particular order.

## II. DISCUSSION

### *A. Obviousness Ground Based on O’Clair and Tadman (Claims 1, 2, 5, and 6)*

Petitioner contends that claims 1, 2, 5, and 6 are unpatentable over O’Clair and Tadman under 35 U.S.C. § 103(a), relying on the supporting testimony of Michael Goodchild, Ph.D. (Ex. 1010). Pet. 9–18. We are persuaded that Petitioner has established a reasonable likelihood of prevailing on its asserted ground as to claims 1, 2, 5, and 6 for the reasons explained below.

#### *1. O’Clair*

O’Clair describes methods and systems for “using boundaries associated with a given map view for retrieving the location of businesses

located within the boundaries of the map view.” Ex. 1003, 1:8–12. O’Clair describes adopting user defined boundaries of a map view to “search a corpus of location listings” to identify entities or businesses “that are the most relevant to a given search query.” *Id.* at 2:54–65.

In one embodiment, O’Clair describes a user-initiated search of businesses located within a user-defined geographical region. *Id.* at 3:39–46. The search includes providing a map view to a user, accepting search input from the user, and searching an index “to retrieve businesses that have corresponding latitude and longitude location information located within the entirety of the geographical region.” *Id.* at 3:46–58.

## 2. *Tadman*

Tadman describes “systems and methods for advanced features for online mapping, searching, and planning driving tours.” Ex. 1004, Abstract. Tadman discloses that a user may define a destination search area displayed on a geographical map utilizing either spatial or non-spatial filters. *Id.*; *see also id.* ¶ 81 (“When searching, a user may be able to combine spatial and non-spatial criteria.”). The system may utilize “a spatial search” which “may be a search or filter based on a shape,” such as a “polygon.” *Id.* ¶ 53; *see also id.* ¶ 69. Tadman describes an “[i]nitial launch to [a] map results page showing the interactive map graphic” and a subsequent step in which “users can interact with the map via . . . drawing a custom shape on the map.” *Id.* ¶ 36.

Tadman describes that the user may be able to search within selected areas for listing results and the system may also enable a user to select one or more shapes on the map to be searched. *Id.* ¶¶ 74, 81. In one embodiment, Tadman describes the use of geographic coordinates, for

example, saving the “latitude and longitude of each point of the polygon.” *Id.* ¶ 146. Tadman also describes including a destination indicator within the destination search area that corresponds to the location of at least one destination. *Id.* ¶ 80.

### 3. Claim 1

We have reviewed the information provided by Petitioner, including the relevant portions of the supporting declaration of Dr. Goodchild, and are persuaded, based on the current record, that Petitioner has demonstrated a reasonable likelihood of prevailing on its obviousness challenge to claim 1 based on the combination of O’Clair and Tadman. *See* Pet. 9–16.

Petitioner asserts that O’Clair teaches displaying a digital map and receiving user input containing a search query, as well as providing one or more search results associated with the search query. *Id.* at 11–12. Petitioner contends O’Clair’s search query retrieves businesses from a geographic region of a map view based on their latitude and longitude information. *Id.* at 9 (citing Ex. 1003, 3:39–58). Petitioner relies on Tadman as teaching user input defining a geographic region, such as a polygon, to search within a digital map. *Id.* at 13–14. According to Petitioner, the combination of O’Clair and Tadman teaches determining search results having geographic coordinates within the user-defined geographic region. *Id.* at 12–15.

Petitioner also provides a persuasive rationale, based on the current record, for combining the teachings of O’Clair and Tadman. *Id.* at 9–10, 14–15. Specifically, Petitioner contends both references are in “similar fields,” with both references referring to the mapping application Google Maps, and:

A person of ordinary skill in the art would have found it obvious and desirable at the time of the '045 Patent's filing to combine the features of Tadman into O'Clair to achieve, for example, the ability for a "user to conduct a joint query by using both spatial and non-spatial searches" and the other "advanced features" described by Tadman.

*Id.* at 9–10 (quoting Ex. 1010 ¶¶ 50–51).

Patent Owner disputes Petitioner's analysis on two primary grounds. First, Patent Owner argues Petitioner's obviousness ground is deficient because O'Clair fails to teach "providing one or more search results associated with the search query, the search results containing geographic coordinates" as required by claim 1. Prelim. Resp. 1. More specifically, Patent Owner argues O'Clair does not teach "providing . . . search results containing geographic coordinates" because there is no "discussion in O'Clair that the 'ranked identified businesses' include 'geographic coordinates,' as required by Claim 1." *Id.* at 2. Patent Owner further contends that the cited portions of O'Clair only discuss a search process performed by a server to identify businesses within a given location, but O'Clair does not discuss any search results. *Id.*

Based on the current record, we are not persuaded by Patent Owner's argument. Claim 1 requires "search results containing geographic coordinates." Petitioner identifies O'Clair's "user ranked identified businesses, which are associated with latitude and longitude coordinates," as the claimed search results. Pet. 12. O'Clair states "the latitude and longitude coordinates associated with each indexed business that is determined to be relevant to the search query may be compared with the latitudes and longitudes associated with the geographic search area." *Id.* (quoting Ex. 1003, 7:20–24). O'Clair teaches each business subject to a user

search has corresponding latitude and longitude information that is utilized during and after the search. *Id.* at 9, 12; *see also* Ex. 1003, 3:54–56 (the “index may be searched to retrieve businesses that have corresponding latitude and longitude location information”). For example, each identified business has a corresponding map identifier (730 of Fig. 7), which visually indicates the geographic location, or coordinates, of a business on the map. Ex. 1003, 7:39–42. The map identifier further suggests that O’Clair’s search results contain geographic coordinates. Therefore, on this record, we are persuaded by Petitioner’s arguments that O’Clair teaches that the provided search results (user-identified businesses) contain geographic coordinates as required by claim 1.

Second, Patent Owner alleges O’Clair and Tadman fail to teach “determining the one or more search results whose geographic coordinates are within the user defined geographic region” (hereinafter, the “determining step”). Prelim. Resp. 4. Patent Owner first argues that because the determining step refers back to “the one or more search results,” claim 1 must be performed in a specific order such that the search results are provided before the determining step is performed. *Id.* *See* discussion *supra*. Second, Patent Owner contends that Tadman performs these steps in the opposite order by “first defining a shape on a map, and then searching for results within the shape.” *Id.* Thus, according to Patent Owner, Tadman does not teach the determining step.

We are not persuaded by Patent Owner’s second argument. For the reasons discussed, we agree the determining step must be performed after the search results are provided. Petitioner relies first on O’Clair as teaching the providing step. Pet. 12. Specifically, O’Clair satisfies the step of

“providing one or more search results” before the determining step is carried out according to Petitioner’s proposed combination. *See id.* 12–15. After execution of the providing step by O’Clair, Petitioner relies on the combination of O’Clair and Tadman, not Tadman alone, as teaching the determining step. *See id.* at 14–15 (“the combination of Tadman and O’Clair teaches ‘determining the one or more search results whose geographic coordinates are within the user defined geographic region’”). Thus, according to Petitioner, O’Clair first provides the one or more search results associated with the search query before Tadman defines a geographic region and determines the one or more search results (as taught by O’Clair) whose geographical coordinates are within the user defined region. *See id.* at 12, 14.

For the reasons discussed above, based on the current record and at this stage of the proceeding, we determine Petitioner has shown a reasonable likelihood of prevailing with respect to its obviousness challenge to claim 1 over O’Clair and Tadman.

#### *4. Claims 2, 5, and 6*

With respect to claims 2, 5, and 6, we have reviewed Petitioner’s analysis and supporting declaration and are persuaded that, on this record, Petitioner has shown a reasonable likelihood of prevailing in showing that the claims would have been obvious over O’Clair and Tadman. *See Pet.* 16–18 (explaining how Tadman teaches the use of multiple geographic regions and highlighting and outlining the defined geographic regions).

*B. Obviousness Ground Based on O’Clair, Tadman, and Popp  
(Claims 3 and 4)*

Petitioner contends that claims 3 and 4 are unpatentable over O’Clair, Tadman, and Popp under 35 U.S.C. § 103(a). Pet. 19–21. We are persuaded that Petitioner has established a reasonable likelihood of prevailing on its asserted ground as to claims 3 and 4 for the reasons explained below.

*1. Popp*

Popp describes an “interactive media display system” which includes “a touch-sensitive display surface configured to display a geographic map and receive a gesture input generated by a user on the touch-sensitive display surface while the geographic map is displayed.” Ex. 1005, Abstract. Popp discloses that “the gesture input defin[es] a selected geographic area on the geographic map.” *Id.*

*2. Claims 3 and 4*

Petitioner’s element-by-element analysis demonstrates where each limitation of claims 3 and 4 is found in the O’Clair, Tadman, and Popp combination. Pet. 19–21. For example, Petitioner identifies the claimed display receiving user touch input of claim 3 as being taught by Popp’s use of a touch-sensitive display surface. *Id.* at 21.

Petitioner also asserts that a person of ordinary skill in the art would have been motivated to combine the teachings of O’Clair, Tadman, and Popp because Popp teaches the advantages of using a touch-screen display on a graphical map. *Id.* at 20 (citing Ex. 1005 ¶¶ 11, 42). Patent Owner has not challenged these assertions in its Preliminary Response. *See* Prelim. Resp. 7. At this stage, we have considered Petitioner’s arguments, including Dr. Goodchild’s Declaration, and are satisfied that Petitioner has

demonstrated a reasonable likelihood of prevailing on this ground of challenge to claims 3 and 4 based on Popp in combination with O’Clair and Tadman.

*C. Obviousness Ground Based on O’Clair, Tadman, and DeLorme  
(Claims 7–10)*

Petitioner contends that claims 7–10 are unpatentable over O’Clair, Tadman, and DeLorme under 35 U.S.C. § 103(a), relying on the supporting testimony of Dr. Goodchild. Pet. 21–26. We are persuaded that Petitioner has established a reasonable likelihood of prevailing on its asserted ground as to claims 7–10 for the reasons explained below.

*1. DeLorme*

DeLorme describes a computer-aided routing and positioning system that enables travel planning. Ex. 1006, 1:12–14. DeLorme discloses an “interactive computer travel planning guide for determining a route.” *Id.* at 1:14–17. DeLorme discloses that a “user can also select among a plurality of types of geographically locatable points of interest (POIs) within a user-defined region of interest along the travel route.” *Id.* at 1:18–20. For example, in one embodiment, DeLorme discloses that a user-defined region of interest may be established by drawing a polygon enclosure at a specified tangential distance around a line segment, which represents an optimal route. *Id.* at 76:31–77:6. DeLorme also describes embodiments where users may interactively modify routes and waypoints through a “series of multiple interactions and repeated iterations” to achieve a customized travel plan. *Id.* at 23:16–22.

## 2. Claims 7 and 10

Petitioner's element-by-element analysis demonstrates where each limitation of claims 7 and 10 is found in the O'Clair, Tadman, and DeLorme combination. Pet. 23–24, 26. For example, Petitioner identifies DeLorme's disclosure of a user-defined region along a travel route as a “geographic region [that] corresponds to a route on the digital map.” *Id.* at 23–24.

Petitioner asserts that a person of ordinary skill in the art would have been motivated to combine the teachings of DeLorme with O'Clair and Tadman because both Tadman and DeLorme describe selecting travel routes connecting destinations, and DeLorme describes that an advantage of its invention is that it optimizes travel planning in an iterative process. *Id.* at 22–23. Patent Owner has not challenged these assertions in its Preliminary Response. *See* Prelim. Resp. 7–8. At this stage, we have considered Petitioner's arguments, including Dr. Goodchild's Declaration, and are satisfied that Petitioner has demonstrated a reasonable likelihood of prevailing on this ground of challenge to claims 7 and 10 based on DeLorme in combination with O'Clair and Tadman.

## 3. Claims 8 and 9

Petitioner asserts that claims 8 and 9 are unpatentable under § 103(a) as obvious in view of O'Clair, Tadman, and DeLorme. Pet. 24–26. Claim 8 depends from claim 7, and the two claims require that the geographical region correspond to a route on the digital map, and further that the geographical region be “automatically set to include a route and a set amount of additional area adjacent to the route.” Ex. 1001, 12:35–39. Claim 9, which depends from claim 8, further requires “wherein in response to a change in the route on the digital map, the geographic region is updated

to include a changed route.” *Id.* at 12:40–42.

Petitioner’s element-by-element analysis demonstrates where each limitation of claims 8 and 9 is found in the O’Clair, Tadman, and DeLorme combination. Pet. 24–26. Petitioner relies on DeLorme’s disclosure of identifying POIs within a user-defined region of interest along the travel route through the use of a polygonal enclosure around a line segment, or route. *Id.* at 24 (quoting Ex. 1006, 1:18–20, 76:31–77:1). According to Petitioner, because DeLorme discloses the identification of a route and an area defined by a tangential distance all around the route, DeLorme teaches that “the geographic region is automatically set to include a route and a set amount of additional area adjacent to the route” as required by claim 8. *Id.* at 25. As for claim 9, Petitioner contends DeLorme’s disclosure that “the travel route . . . can be updated or changed according to the user preferences” and that the user can develop, through “multiple interactions and repeated iterations . . . an individualized or customized travel plan,” satisfies the requirement that the geographic region is updated to include a changed route. *Id.* (quoting Ex. 1006, 1:26–29, 23:18–22).

Regarding claim 8, Patent Owner argues that Petitioner fails to address the requirement that “the geographic region is *automatically* set to include a route.” Prelim. Resp. 8. We find this argument unpersuasive on this record. Claim 1, from which claim 8 indirectly depends, still requires “receiving user input defining a geographic region within the digital map.” Ex. 1001, 12:5–6. Thus, automatically setting the geographic region to include a route must still be based upon an initial user input that defines the geographic region. Petitioner presents a sufficient analysis based on the current record explaining how DeLorme’s user-defined region of interest

automatically includes a route and defined area along the route based upon initial user input. *See* Pet. 24–25; Ex. 1010, 40.

Regarding claim 9, Patent Owner argues that “[t]he Petition completely fails to address the requirement of Claim 9 that ‘*the geographic region is updated to include a changed route.*’” Prelim. Resp. 9. According to Patent Owner, DeLorme discloses the ability for the user to change the travel route, but not the ability to update the geographic region, as required by claim 9. *Id.* We find this argument unpersuasive on this record. DeLorme discloses modifying waypoints and routes through a “series of multiple interactions and repeated iterations” to refine travel plans. Ex. 1006, 23:17–22. Petitioner argues that DeLorme’s disclosure of iterative modification of a travel plan would include the user-defined region of interest along the travel route. *See* Pet. 24–25; Ex. 1006, 1:18–20, 1:26–29. Thus, Petitioner sufficiently shows on this record that DeLorme teaches “in response to a change in the route on the digital map, the geographic region is updated to include a changed route,” as required by claim 9.

For the reasons discussed above, based on the current record and at this stage of the proceeding, we determine Petitioner has shown a reasonable likelihood of prevailing with respect to its obviousness challenge to claims 8 and 9 over O’Clair, Tadman, and DeLorme.

*D. Obviousness Ground Based on O’Clair, Tadman, and Reed  
(Claims 11, 12, and 14–20)*

Petitioner contends that claims 11, 12, and 14–20 are unpatentable over O’Clair, Tadman, and Reed under 35 U.S.C. § 103(a), relying on the supporting testimony of Dr. Goodchild. Pet. 26–39. We are persuaded that Petitioner has established a reasonable likelihood of prevailing on its

asserted ground as to claims 11, 12, and 14–20 for the reasons explained below.

### *1. Reed*

Reed describes a user interface including a view that may include a map and be configured to enable additions to the map, such as polygonal areas of interest. Ex. 1007, Abstract, ¶ 114. Reed describes making additions to a map with an addition selector. *Id.* ¶¶ 114, 162, Fig. 4 (addition selectors 222, such as drawing of a polygon or drawing of a circle). Reed also describes a map manipulation selector that can be used to drag and drop the map when enabled. *Id.* ¶ 164.

### *2. Claims 11 and 14–19*

Petitioner’s element-by-element analysis demonstrates where each limitation of claims 11 and 14–19 is found in the O’Clair, Tadman, and Reed combination. Pet. 26–39. For example, Reed describes the functionality of toolbar buttons, such as a hand shape as a “map manipulation selector 220” and several “map addition selectors 222,” one of which is a polygon shape, another of which is a circle shape. Ex. 1007 ¶ 114, Fig. 4. Reed further explains what occurs when each selector is used. *Id.* Petitioner argues that Reed’s map manipulation selector corresponds to the claimed “map control commands” that are suspended in response to a first user input and then unsuspended in response to a third user input. *See* Pet. 28–30, 32–33.

Petitioner asserts that a person of ordinary skill in the art would have been motivated to combine the teachings of O’Clair, Tadman, and Reed because Tadman discloses the selection of common toolbar buttons, with little detail about how those buttons work, and Reed “fills in gaps in Tadman with respect to what occurs when each selector is used.” *Id.* at 27. Further,

Petitioner argues that a person of ordinary skill in the art would have been motivated to integrate Reed’s approximating techniques with Tadman’s polygonal search capabilities. *Id.* Patent Owner has not challenged these assertions in its Preliminary Response. *See* Prelim. Resp. 10. At this stage, we are satisfied that Petitioner has demonstrated a reasonable likelihood of prevailing on this ground of challenge based on Reed in combination with O’Clair and Tadman.

Regarding claim 11, Patent Owner repeats its contentions made with respect to claim 1 and similarly argues that the cited portions of O’Clair fail to disclose “presenting a set of POIs, wherein each POI is represented by longitude and latitude coordinates.” Prelim. Resp. 10. For the reasons set forth above for claim 1, we find this contention unpersuasive.

We have considered Petitioner’s arguments, including Dr. Goodchild’s Declaration. On this record, we find them sufficient to demonstrate a reasonable likelihood of prevailing on this ground of challenge to claims 11 and 14–19.

### 3. Claim 12

Petitioner asserts that claim 12 is unpatentable under § 103(a) as obvious in view of O’Clair, Tadman, and Reed. Pet. 35. Claim 12 requires “wherein the map control commands include zooming and panning.” Ex. 1001, 13:9–10. Petitioner relies on Tadman’s disclosure of “features such as zooming, panning, and viewing the map through different views” as teaching this limitation. Pet. 35 (quoting Ex. 1004 ¶ 59).

Patent Owner argues that because claim 12 depends from claim 11, “the map control commands” must both be suspended, and Tadman fails to disclose that its zooming and panning are ever suspended. Prelim. Resp. 10–

11.

Patent Owner's argument attacks Tadman individually but it does not address the combination proposed by Petitioner. Petitioner relies on Reed, not Tadman, as teaching the suspending and un-suspending functions required by claim 11. Pet. 28–33. Petitioner sufficiently shows on this record that Tadman's disclosure of a panning and zooming toolbar combined with Reed's disclosure of suspending and un-suspending map control commands teaches the disputed limitations of claim 12. Petitioner has established a reasonable likelihood of prevailing as to claim 12.

#### *4. Claim 20*

Petitioner asserts that claim 20 is unpatentable under § 103(a) as obvious in view of O'Clair, Tadman, and Reed. Pet. 39. Claim 20 requires "wherein in response to discarding all the data received from the second set of user input, all POIs displayed on the digital map in response to the second set of data, are deleted from the digital map." Ex. 1001, 13:30–33.

Petitioner relies on Tadman's clear button that "erase[s] all selected areas from a map, leaving it clear for a user to make new selections." Pet. 39 (quoting Ex. 1004 ¶ 89). According to Petitioner, one of ordinary skill in the art would understand Tadman's clear button to return the user to the user interface display of Figure 3, where no search results are displayed. *Id.* (citing Ex. 1010, 59).

Regarding claim 20, Patent Owner argues that although "Tadman discusses a button that can erase the 'selected areas,' there is no discussion or suggestion in Tadman that the button will erase any POIs displayed on the digital map." Prelim. Resp. 11. Patent Owner cites to exemplary embodiments of Tadman (Figs. 4–7) that show interfaces with a clear button

but no POIs and to an interface that shows POIs with no clear button (Fig. 8). *Id.* at 11–12. Therefore, according to Patent Owner, Tadman’s clear “button will erase *only selected shapes* from the map not POIs displayed on the map.” *Id.* at 12.

We are not persuaded by Patent Owner’s arguments based on the current record. Petitioner relies on paragraph 89 of Tadman. Pet. 39. We read paragraph 89 as disclosing two capabilities of the clear function. Tadman states that a user may be able to remove selected areas from the map, but also that a user can “clear existing selections from a map.” Ex. 1004 ¶ 89. Petitioner sufficiently shows on this record that a person of ordinary skill in the art would understand Tadman’s “selections” to include POIs. Thus, erasing all selected areas from a map would include POIs. Petitioner has established a reasonable likelihood of prevailing as to claim 20.

*E. Obviousness Ground Based on O’Clair, Tadman, Reed, and Popp (Claim 13)*

Petitioner’s element-by-element analysis demonstrates where each limitation of claim 13 is found in the O’Clair, Tadman, Reed, and Popp combination. Pet. 39–41. For example, by describing touch screens and manually drawn boundary gesture inputs, Tadman and Popp teach “wherein at least one of the first or the second or the third user inputs are touch-based” as required by claim 13 according to Petitioner. *Id.* at 41.

Petitioner also provides a sufficiently persuasive rationale on this record for combining the teachings of O’Clair, Tadman, Reed, and Popp. *Id.* at 39–40. For example, Petitioner contends that it would have been obvious to combine the teachings of O’Clair, Tadman, and Reed with the teachings

of Popp to achieve “the advantages described by Popp, such as ‘efficiently access[ing] stored media associated with a geographic area, using a gesture input on a geographic map displayed on a touch sensitive display surface.’” *Id.* at 40 (quoting Ex. 1005 ¶ 42). Patent Owner has not challenged these assertions in its Preliminary Response. *See* Prelim. Resp. 12. At this stage, we are satisfied that Petitioner, relying on the supporting testimony of Dr. Goodchild, has established a reasonable likelihood of prevailing on its asserted ground as to claim 13.

*F. Obviousness Ground Based on O’Clair, Tadman, Reed, and Keely (Claim 21)*

Petitioner contends that claim 21 is unpatentable over O’Clair, Tadman, Reed, and Keely under 35 U.S.C. § 103(a), relying on the supporting testimony of Dr. Goodchild. Pet. 41–45. We are persuaded that Petitioner has established a reasonable likelihood of prevailing on its asserted ground as to claim 21 for the reasons explained below.

*1. Keely*

Keely describes a method for simulating a gesture of a pointing device, such as a mouse. Ex. 1008, Abstract. Keely discloses detecting whether a stylus is being held down on a touch-sensitive display surface for a threshold amount of time, detecting whether the stylus is removed, and responsive to the removal, generating an event representing a right mouse button click. *Id.* Keely defines the term “stylus” to include “a user’s own finger.” *Id.* at 5:46–50.

*2. Claim 21*

Petitioner’s element-by-element analysis demonstrates where each limitation of claim 21 is found in the O’Clair, Tadman, Reed, and Keely

combination. Pet. 41–45. For example, by teaching that the removal of the stylus ends pending mouse events, such as the selection event caused by the press and hold gesture, Keely teaches “when the first touch terminates, treating the first touch termination as the third set of user input” as required by claim 21 according to Petitioner. *See id.* at 44–45.

Petitioner asserts that a person of ordinary skill in the art would have been motivated to combine the teachings of Keely with O’Clair, Tadman, and Reed because each reference describes various compatible user interface features for interacting with a displayed map, and Keely’s solution to the problem of a touch-sensitive display screen not having a way to distinguish between a right and left mouse click would provide reason to use Keely’s solution with O’Clair, Tadman, and Reed. *Id.* at 42–43. Patent Owner has not challenged these assertions in its Preliminary Response. *See* Prelim. Resp. 13. At this stage, we are satisfied that Petitioner has established a reasonable likelihood of prevailing on its asserted ground as to claim 21 based on Keely in combination with O’Clair, Tadman, and Reed.

*G. Obviousness Ground Based on O’Clair, Tadman, and Rasmussen  
(Claims 22 and 25–28)*

Petitioner contends that claims 22 and 25–28 are unpatentable over O’Clair, Tadman, and Rasmussen under 35 U.S.C. § 103(a), relying on the supporting testimony of Dr. Goodchild. Pet. 45–56. We are persuaded that Petitioner has established a reasonable likelihood of prevailing on its asserted ground as to claims 22 and 25–28 for the reasons explained below.

*1. Rasmussen*

Rasmussen describes “methods, systems, and apparatus for implementing aspects of a digital mapping system.” Ex. 1009, Abstract.

Rasmussen acknowledges issues with prior art solutions to digital mapping, and explains that those problems can be overcome by a tiling approach. *Id.* ¶¶ 10–12. Tiling involves transmitting a number of smaller images from a web server to a web browser. *Id.* ¶ 12. In one embodiment, Rasmussen describes “sending a location request from a client-side computing device to a map tile server, receiving a set of map tiles in response to the location request” and thereafter “displaying the result as a map image.” *Id.* ¶ 13, Abstract.

## 2. Claim 22

Petitioner asserts that independent claim 22 is unpatentable under § 103(a) as obvious in view of O’Clair, Tadman, and Rasmussen. Pet. 46–49. Claim 22 is similar in scope to claim 1, but claim 22 requires using “map tiles.” *See* Ex. 1001, 13:44–45. Petitioner relies on Rasmussen because it describes implementations of digital maps using map tiles, which according to Petitioner would have been obvious to combine with O’Clair and Tadman. Pet. 45–46 (“Rasmussen acknowledges issues with prior art solutions to digital mapping, and explains that those problems can be overcome by a tiling approach.”). Claim 22 also recites “wherein the displayed graphic is displayed on the digital map at the geographic coordinates of each of the determined one or more POIs.” Ex. 1001, 14:6–9. Petitioner relies on its analysis of claim 1 for this limitation. Pet. 49. For example, Petitioner contends “by describing a graphical user interface that displays map search results as numbered flags, Tadman and O’Clair teach ‘displaying the determined one or more search results as one or more graphics on the digital map’ as recited.” *Id.* at 15.

Patent Owner argues that displaying a graphic at the geographic coordinates of each of the determined one or more POIs is a unique limitation that Petitioner’s analysis of claim 1 fails to address. Prelim. Resp. 13. More specifically, Patent Owner contends that none of the cited portions of Tadman or O’Clair teach displaying a graphic at the geographic coordinates. *Id.* at 14.

We are not persuaded by Patent Owner’s contentions on this record. As we previously discussed with respect to claim 1, O’Clair’s user-ranked identified businesses are associated with latitude and longitude coordinates. O’Clair teaches using geographic coordinates to determine search results within a region and also comparing relevant search results “with the latitudes and longitudes associated with the geographic search area.” Pet. 14 (quoting Ex. 1003, 7:17–26). Tadman teaches that search results, or POIs, may be displayed as numbered flags on a map to show the location of the search results. *Id.* at 15 (citing Ex. 1004 ¶¶ 80, 83, Fig. 8). Petitioner sufficiently shows on this record that O’Clair and Tadman teach displaying a graphic “at the geographic coordinates” as required by claim 22. Petitioner has established a reasonable likelihood of prevailing as to claim 22.

### 3. *Claims 25, 26, and 28*

Petitioner’s element-by-element analysis demonstrates where each limitation of claims 25, 26, and 28 is found in the O’Clair, Tadman, and Rasmussen combination. Pet. 50–52, 54–56. Patent Owner has not challenged these assertions in its Preliminary Response. *See* Prelim. Resp. 14. We have considered Petitioner’s arguments, including Dr. Goodchild’s Declaration. On this record, we find them sufficient to demonstrate a reasonable likelihood of prevailing on this ground of challenge to claims 25,

26, and 28.

#### 4. Claim 27

Petitioner asserts that claim 27 is unpatentable under § 103(a) as obvious in view of O’Clair, Tadman, and Rasmussen. Pet. 52–53. Claim 27 depends from claim 22, and further requires, in pertinent part, “removing one or more POIs on the digital map that are outside the new selected region.” Ex. 1001, 14:37–38. Petitioner relies on Tadman for this limitation. Petitioner contends that Tadman’s search repetition can occur when shapes are deleted, and search results within those now-deleted shapes would not be returned. Pet. 53. Thus, according to Petitioner, “by teaching that the user may perform additional searches within newly modified selected areas, Tadman teaches ‘removing one or more POIs on the digital map that are outside the new selected region’ as recited.” *Id.*

Patent Owner argues that Petitioner fails to show how the combination of references, and specifically paragraph 139 of Tadman, teaches “removing one or more POIs on the digital map that are outside the new selected region.” Prelim. Resp. 14. Instead, according to Patent Owner, Tadman only discloses that a “user may manually delete specific listings.” *Id.* (quoting Ex. 1004 ¶ 139). Patent Owner argues that because Tadman’s removal of search results is done manually, the removal “has no relation to the user’s polygon – whereas in Claim 27, the POIs outside of the new selected region are removed *in response to* receiving additional user input de-selecting a previously-delimited region of the digital map.” *Id.* at 15.

We are not persuaded by Patent Owner’s contentions based on the current record. Claim 27 first requires, in response to receiving user input de-selecting a previously-delimited region, “removing the de-selected region

from the portion of the digital map selected by the user to form a new selected region.” Ex. 1001, 14:35–37. Petitioner relies on Tadman’s disclosure that a user may remove selected areas from the map, as well as Tadman’s disclosure of performing additional searches after selected areas are modified. Pet. 52–53 (quoting Ex. 1004 ¶ 89). Next, claim 27 requires “removing one or more POIs on the digital map that are outside the new selected region.” Ex. 1001, 14:37–39. Petitioner relies on Tadman’s teaching that when shapes are deleted, the search results within those deleted shapes would not be returned. Pet. 53. Accordingly, Petitioner sufficiently shows on this record that when the user performs additional searches within the newly modified selected areas, the one or more POIs on the digital map that are outside the new selected region would be removed.

Upon review of Petitioner’s analysis and the supporting testimony from Dr. Goodchild, we are persuaded that, on this record, Petitioner has shown a reasonable likelihood of prevailing in showing that claim 27 would have been obvious over the combination of O’Clair, Tadman, and Rasmussen.

*H. Obviousness Ground Based on O’Clair, Tadman, Rasmussen, and Popp (Claims 23 and 24)*

Petitioner’s element-by-element analysis demonstrates where each limitation of claims 23 and 24 is found in the O’Clair, Tadman, Rasmussen, and Popp combination. Pet. 56–58. For example, Petitioner relies on both Tadman and Popp as teaching that the graphic display is a touch screen as required by claim 23.

Petitioner asserts that a person of ordinary skill in the art would have been motivated to combine the teachings of the references for several

reasons. *Id.* at 56. For example, according to Petitioner, the combination would achieve the specific advantages described by Popp, such as allowing efficient access to stored media associated with a geographic area, and using a gesture input on a geographic map displayed on a touch sensitive display surface. *Id.* Patent Owner has not challenged these assertions in its Preliminary Response. *See* Prelim. Resp. 15. At this stage, we are satisfied that Petitioner has explained sufficiently the reasons for its reliance on the combination of O'Clair, Tadman, Rasmussen, and Popp. Petitioner has established a reasonable likelihood of prevailing on its asserted ground as to claims 23 and 24.

### *I. Conclusion*

We conclude that Petitioner has demonstrated a reasonable likelihood of prevailing with respect to claims 1–28 of the '045 patent as set forth above. The Board, however, has not made a final determination under 35 U.S.C. § 318(a) with respect to the patentability of the challenged claims, or the construction of any claim term.

### III. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that an *inter partes* review is instituted as to claims 1–28 of the '045 patent;

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review of the '045 patent is hereby instituted commencing on the entry date of this Decision, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; and

FURTHER ORDERED that the trial is limited to the following grounds of unpatentability, and no other grounds as to claims 1–28 of the '045 patent are authorized:

Claims 1, 2, 5, and 6 under 35 U.S.C. § 103(a) as unpatentable over O'Clair and Tadman;

Claims 3 and 4 under 35 U.S.C. § 103(a) as unpatentable over O'Clair, Tadman, and Popp;

Claims 7–10 under 35 U.S.C. § 103(a) as unpatentable over O'Clair, Tadman, and DeLorme;

Claims 11, 12, and 14–20 under 35 U.S.C. § 103(a) as unpatentable over O'Clair, Tadman, and Reed;

Claim 13 under 35 U.S.C. § 103(a) as unpatentable over O'Clair, Tadman, Reed, and Popp;

Claim 21 under 35 U.S.C. § 103(a) as unpatentable over O'Clair, Tadman, Reed, and Keely;

Claims 22 and 25–28 under 35 U.S.C. § 103(a) as unpatentable over O'Clair, Tadman, and Rasmussen; and

Claims 23 and 24 under 35 U.S.C. § 103(a) as unpatentable over O'Clair, Tadman, Rasmussen, and Popp.

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