

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HYUNDAI MOTOR COMPANY,

Petitioner,

v.

MEL NAVIP LLC,

Patent Owner

Case No. IPR2024-00172

U.S. Patent No. 8,244,465

PATENT OWNER'S PRELIMINARY RESPONSE

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Exhibit List

Exhibit	Description
2001	Declaration of Dr. Fang Qui (“Qui Decl.”)
2002	Curriculum vitae of Dr. Fang Qui

* * * *

USE OF EMPHASIS IN QUOTATIONS

All emphases in quotations and exhibit citations have been added, unless otherwise indicated.

APPLICABLE STATUTES

References to 35 U.S.C. §§ 102 and 103 are to the AIA versions applicable to the '465 Patent.

I. INTRODUCTION

Mel NavIP LLC (“Patent Owner” or “Mel NavIP”) submits this preliminary response showing that each of the 2 grounds set forth by Hyundai Motor Company (“Petitioner” or “Hyundai”) fails to render obvious challenged claims 1-3, and 5 of U.S. Patent No. 8,244,465 (“the ’465 Patent”).

As to Ground 1, a core inventive concept and the related claim elements of independent claim 1 and its dependents are not taught by Yokota. These missing elements were not obvious to a POSITA viewing Yokota at the time of the invention.

As to Ground 2, the combination of McDonough, Huber and Tanizaki does not disclose every element of claims 1-3 or claim 5, and the missing elements would not be obvious to a POSITA. Furthermore, there is no motivation to combine Tanizaki with McDonough to implement missing elements from McDonough.

Accordingly, Patent Owner respectfully requests that the Board deny the petition for *inter partes* review of claims 1-3 and 5 of the ’465 Patent on the merits.

II. THE ’465 PATENT DISCLOSES AN IMPROVED NAVIGATION SYSTEM WHICH ACHIEVES DISPLAY WITHOUT LOSING CONTINUITY OF DISPLAY ELEMENTS WHILE MAINTAINING NAVIGATION.

The ’465 Patent was nationalized via a PCT on July 21, 2009, and claims priority to a Japanese application filed April 9, 2007. The ’465 Patent issued on August 14, 2012.

The '465 Patent recognized that in prior art systems, “a large-scale wide-area map displays main roads such as expressways and national highways, and as the map scale reduces, more narrow roads come to be displayed.” Ex. 1001 – '465 Patent, 1:15-18. However, “when the map scale is switched, the display elements being displayed can sometimes disappear from the screen suddenly, thereby confusing a user.” *Id.* 1:18-21. Alternatively, a technique which does not lose the continuity of roads, in that technique, the map is displayed in such a manner that as the distance from the current position assigned as the origin increases, the scale is increased continuous in circumference directions. *Id.* 1:22-27. However, since the display elements are displayed without losing continuity in the same manner as a fisheye lens, the display elements with different scales are mixedly displayed on a single screen, which distorts the image. *Id.* 1:32-36.

The '465 Patent is directed to a navigation system and a display method of a road network on the same system aiming at achieving display without losing continuity of display elements such as roads and facilities without distortion, and at reducing a load of the hardware resources at the time of calculating the display positions. *Id.*, 1:44-50.

Specifically, the '465 Patent solves the problem in the prior art by teaching a navigation system which displays roads and facilities based on their attributes for various map scales as show in Fig. 2 below, but also continuously displays each of

the roads that is part of the calculated route but not indicated by the attributes as being displayable at the current map scale.

FIG. 2

Relationships Between Map And Map Scale										
Map Scale Road Attributes	Map Scale									
	50m	100m	250m	500m	1km	2.5km	5km	10km	25km	100km
Road Class 1	X	X	X	X	X	X	X	X	X	X
Road Class 2	X	X	X	X	X	X	X	X	X	X
Road Class 3	X	X	X	X	X	X	X			
Road Class 4	X	X	X							
Road Class 5	X	X								
District/National Highway Name									X	X
Position Information Icon	X	X	X	X						
Facility Position Icon	X	X	X	X						
Main City Icon : < 20 k People	X	X	X	X	X					
Main City Icon : ≥ 20 k People				X	X					
Main City Icon : ≥ 100 k People				X	X					
Main City Icon : ≥ 500 k People				X	X	X				
Main City Icon : ≥ One Hundred Million People				X	X	X	X	X	X	

As seen in FIG. 7(e) and FIG. 8(e) below, FIG. 8(e) includes additional roads shown in dotted lines wherein those roads do not have attributes which would normally qualify them for display based on the attributes of FIG. 2. However, because those roads drawn on dotted lines on FIG. 8(e) are part of the calculated routes, they are still shown on the map for continuous navigation.

FIG. 7 (e)

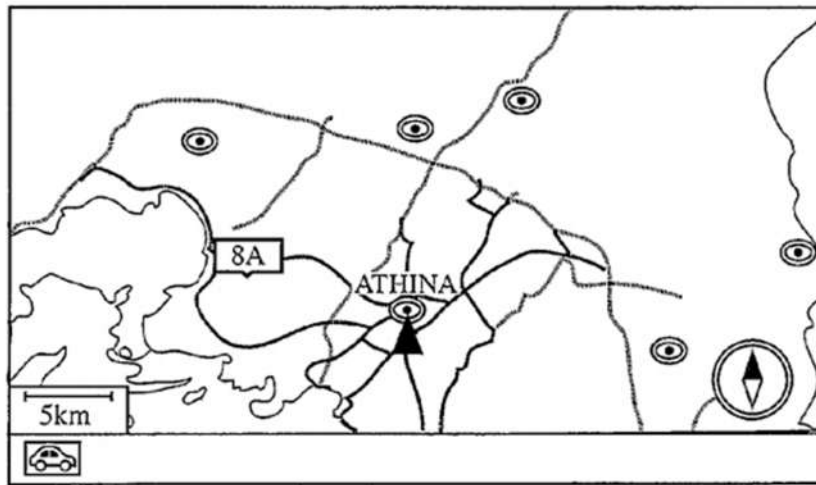
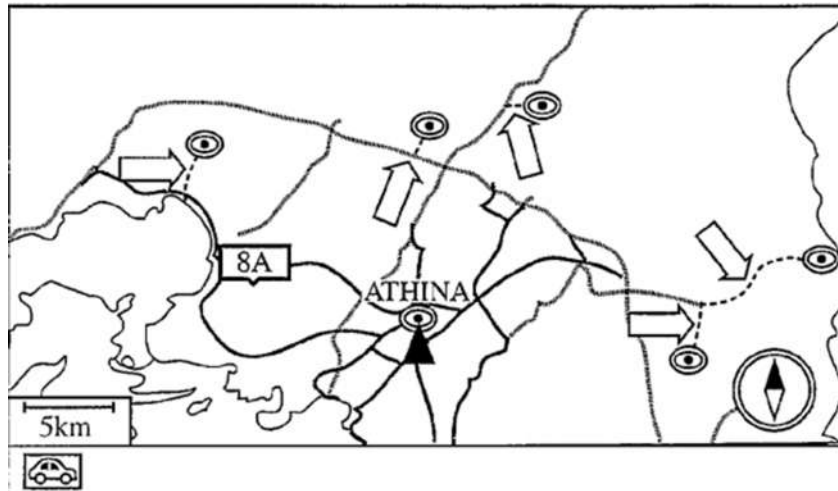


FIG. 8 (e)



This is emphasised as applicant distinguished claim 1 over the prior art Millington

Thus, Millington does suggest that a road segment, which is not normally displayable at the highest zoom-out because of its rank, could be displayed if it is either the current road segment, the previous or next cross street, or a planned road segment. However, Millington does not teach calculating a route between the vehicle's current location and a particular city center or facility. As such, Millington does not teach or even suggest choosing to display a road segment which is included in the calculated route, but not indicated as being displayable at the current scale by its rank/attribute, as presently claimed. Thus, Millington does not teach or suggest every feature as recited in independent claim 1.

Ex. 1002 - '465 Patent File History, March 21, 2012 Amendment, Pg. 7 of 8.

As such, unlike the prior art, the '465 Patent includes the novelty of “choosing to display a road segment which is included in the calculated route, but not indicated as being displayable at the current scale by its rank/attribute.”

As discussed later, this is analogous to the difference between the '465 Patent and the references cited by Petitioner in Grounds 1 and 2. Neither Yokota, nor the combination of McDonough, Huber and Tanizaki teach this. Instead, Petitioner attempts to improperly rely on hindsight “evidence” from its expert.

A. Declaration Evidence

This Preliminary Response is supported by the declaration of Fang Qiu, an expert with long-standing experience in the industry. Ex. 2001. Dr. Qiu is a professor of GIS and remote sensing at the University of Texas at Dallas and has decades of experience in Geographic Information Systems. Ex. 2001, ¶¶ 7-11. Furthermore, Dr. Qiu has published numerous papers in field including one titled “The Application of GPS and GIS in Vehicle Real-time Monitoring.” See Ex. 2002

B. Person of Ordinary Skill in the Art

Based on these factors, on or before April 9, 2007, a POSITA relating to the technology of the '465 Patent would have (a) a Bachelor's of Science degree in a technical field and at least four years of experience in the field of geospatial information sciences; (b) a Master's of Science degree in a technical field and at least

two years of experience in the field of geospatial information sciences; or (c) a PhD in a technical field relating to the geospatial information sciences. Additional graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education. A POSITA is presumed to have knowledge of all relevant prior art, and therefore would have been familiar with each of the references cited in this declaration and the full range of teachings they contain. Ex. 2001, ¶¶ 29-31.

C. Claim Construction

No terms require construction at this time. Patent Owner reserves the right to propose specific constructions if appropriate during this proceeding.

III. PRIOR ART CITED BY PETITIONER.

A. Yokota

Petition's sole reference for Ground 1 is U.S. Patent No. 6,587,787 (Ex. 1005 - "Yokota"). Yokota issued from Patent Application Number 09/526,023 with a filing date of March 15, 2000.

Yokota is directed to a vehicle navigation apparatus displaying enhanced information regarding geographic entities, such as the names, sizes and boundaries of municipalities, counties, and states on scale and in such a manner that state names can be easily distinguished from municipality and/or county names. Yokota, 2:18-

24. And further to do so in such a manner that the municipalities, counties, and states can be easily distinguished from street names. *Id.*

As shown in FIGs. 4A and 4B below, Yokota provides different sizes for the state "NEVADA" vs the cities "Reno" and "Nevada City." Table 1 of Yokota shown discloses how the different states, counties, should be rendered at different scales

FIG. 4A

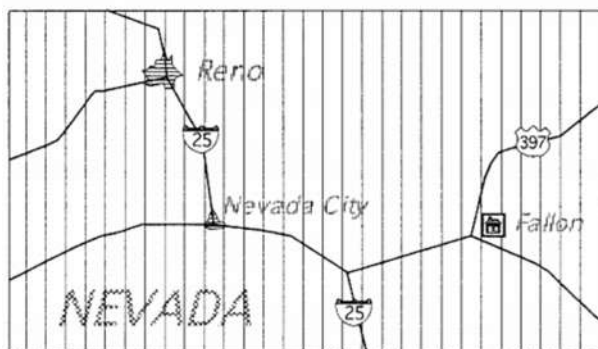


FIG. 4B

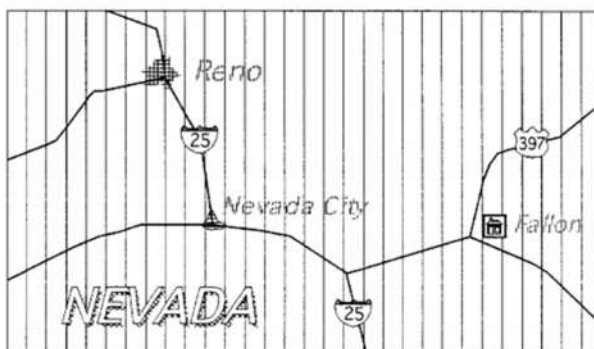


TABLE 1			
Level of Detail	Small-Scale Map	Medium-Scale Map	Large-Scale Map
Off	None	None	None
Coarse (polygon)	States	Counties	Cities/rural counties
(label)	—	States	—
Medium (polygon)	States	Counties	Cities/rural counties
(label)	Large counties	Large cities	Large communities
Detailed (polygon)	States	Counties	Cities/rural counties
(label)	Counties	Cities	Communities

Furthermore, Yokota discloses a set of road priority levels. *Id.* 9:15-26

TABLE 3					
	Scale				
	Smallest	Small	Medium	Large	Largest
Inter-state	Shown	Shown	Shown	Shown	Shown
Major Hwys	Upgradable	Shown	Shown	Shown	Shown
Minor Hwys	Omitted	Upgradable	Shown	Shown	Shown
Major Roads	Omitted	Omitted	Upgradable	Shown	Shown
Minor Roads	Omitted	Omitted	Omitted	Upgradable	Shown

However, Yokota is not focused on whether a type of road is shown or omitted but also includes an “upgradable” which may vary what roads are displayed at certain scales. Compare FIGS. 4C and 4D below to 4A and 4B.

FIG. 4C

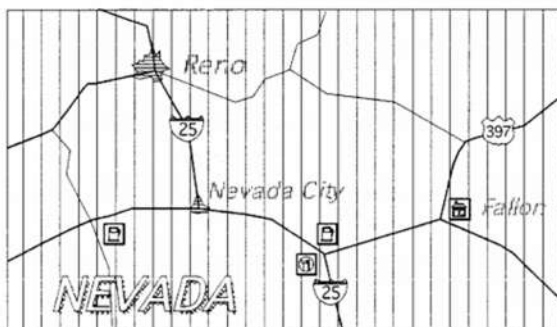
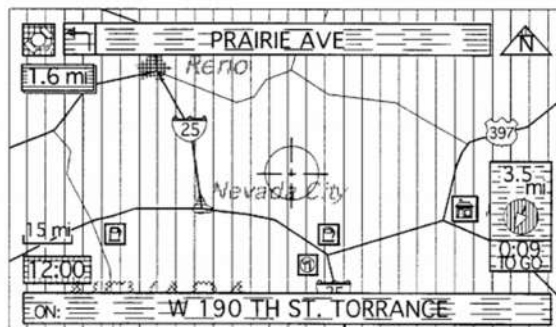


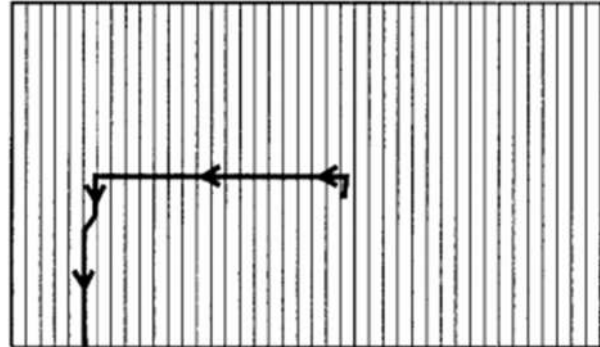
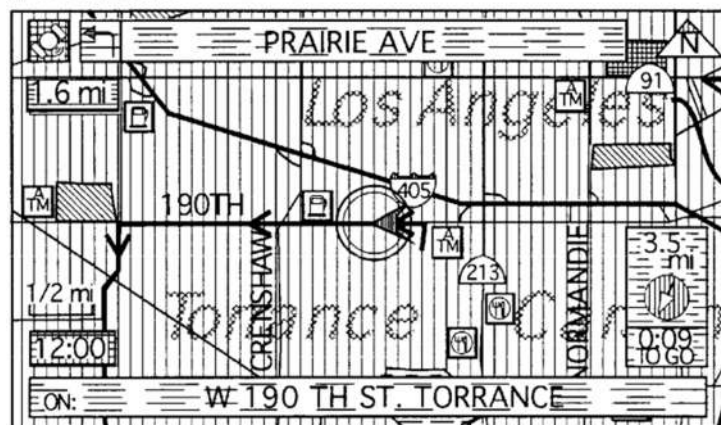
FIG. 4D



i. Petitioner Mischaracterizes the Figures of Yokota

Yokota does not teach “selecting each of the roads that is part of a calculated or route but not indicated by the attributes as being displayable according to the instructed map scale” nor “displaying the selected roads and the selected display elements on the display section of the map along with the roads indicated by the attributes as being displayable according to the instructed map scale and by selecting the display elements based on ranks.”

Petitioner attempts to mislead using concocted figures. Petition at 32-33. Petitioner attempts to juxtapose FIG. 6D with 7A, and FIG. 6F with 7A to argue that somehow this element is met. However, Petitioner points to no disclosure in Yokota that suggests FIG. 6F is displaying a road that was not indicated by attributes as being displayable according to the instructed map scale. In fact, FIG. 6D contradicts that argument as the guidance of FIG. 6F are clearly based on roads that would be shown at the scale of 6D. Petitioner's attempt to pass off the tail of the arrow as an additional road is unsupported by Yokota.

FIG. 6D**FIG. 6F****FIG. 7A**

B. McDonough

Petitioner's primary reference for Ground 2 is U.S. Patent No. 6,163,749 (ex. 1007 – "McDonough".) McDonough was filed June 5, 1998, and issued December 19, 2000.

McDonough is directed to a smooth scrolling function in a map display tool used with a navigation system. McDonough, Abstract. To accomplish smooth scrolling, first and second graphics buffers are provided. The first graphics buffer contains map information regarding a first location, and the second graphics buffer holds map information regarding a predicted future location. While a map area is shown and scrolled from map information in the first graphics buffer, a look-ahead process creates an auxiliary map in the second butter. When the map area that is shown on the display reaches or approaches the edge of the map information store in the first buffer, the map information from the second buffer is copied into the first buffer and the process repeats. *Id.* 2:18-31.

C. Huber

Petitioner's secondary reference for Ground 2 is U.S. Patent No. 7,023,456 (Ex. 1008 – "Huber"). Huber was filed September 16, 2003, and issued on April 4, 2006.

Huber is directed to a way to improve the presentation of map information on a display screen of a computing device when a user zooms in or out. Huber, 1:13-

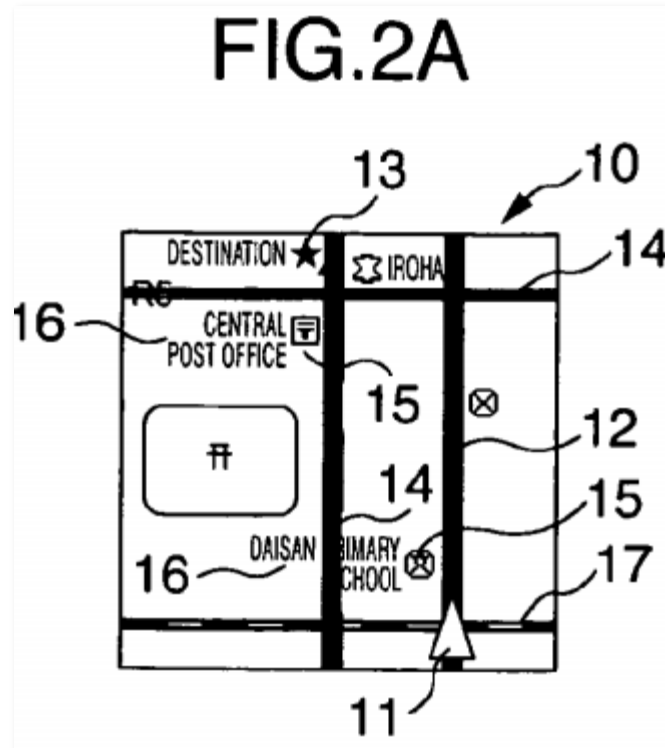
15. Huber teaches a starting image that shows geographic features at a first scale with a first level of detail and then displaying an ending image that shows the same geographic features at a second scale with a second level of detail. Additionally, intermediate images are used that combine component images showing at least some of the same features. The intermediate image is a temporary transitional images that illustrates a relationship between the first image and the second image.

D. Tanizaki

Petitioner's secondary reference for Ground 2 is U.S. Patent Publication No. 82006/0220923. (Ex. 1009 – "Tanizaki") Tanizaki was filed August 18, 2004, and published October 5, 2006.

According to Tanizaki, the object of the invention is to provide a map display method whereby the contents of a road map on display can be easily and clearly grasped without regard to the running conditions of the vehicle. Tanizaki, [0006].

Tanizaki is directed to creating "summarized maps." FIGS. 2A to 2C. Tanizaki, [0027]. In the summarized maps, symbols 15 of roads 14 or facilities and characters indicating the names of places or facilities (names 16) are displayed, together with a mark Δ indicating the present vehicle position 11 (vehicle mark). *Id.*



IV. GROUND 1 – YOKOTA IN VIEW OF A POSITA FAILS TO RENDER OBVIOUS CLAIMS 1-3 AND 5.

Petitioner relies on Yokota as its reference for Ground 1. But Petitioner fails to demonstrate that Yokota in view of a POSITA would render obvious Claims 1-3, and 5. Ex. 2001, ¶¶ 53-70.

Claim 1 recites:¹

[1Preamble] A navigation system comprising:
[1a] a map data storage section for storing map data together with attributes and classes of the map data, the map data being composed of roads necessary for a route search and display elements including city centers and facilities, and the city centers being a display element each representing a city and indicating a representative position of the city, wherein the attributes are indicative of whether or not each of the roads should be displayed for each of a plurality of map scales;

¹ The elements in Claim 1 are numbered to match Petitioner's numbering.

- [1b] a display section for displaying the map data;
- [1c] an input section for inputting an instruction from a user; and
- [1d] a control section for carrying out:
 - [1e] a procedure of calculating a route between an own-vehicle position and a destination represented by one of the display elements, the destination being instructed via the input section,
 - [1f] in accordance with one of the plurality of map scales instructed via the input section, a procedure of displaying a map on the display section by:
 - [1g] selecting the roads indicated by the attributes as being displayable according to the instructed map scale, and by selecting the display elements based on ranks,
 - [1h] further selecting each of the roads that is part of the calculated route but not indicated by the attributes as being displayable according to the instructed map scale, and
 - [1i] displaying the selected roads and the selected display elements on the display selection as part of the map.

'465 Patent, Claim 1.

A. Yokota Misses the Core Teaching of the '465 Patent.

As discussed above, a fundamental novelty of the '465 Patent is to ensure continuity of the navigation at any scale. In amending the claims over the prior art, the '465 Patent applicant stated:

Thus, Millington does suggest that a road segment, which is not normally displayable at the highest zoom-out because of its rank, could be displayed if it is either the current road segment, the previous or next cross street, or a panned road segment. However, Millington does not teach calculating a route between the vehicle's current location and a particular city center or facility. As such, Millington does not teach or even suggest choosing to display a road segment which is included in the calculated route, but not indicated as being displayable at the current scale by its rank/attribute, as presently claimed. Thus, Millington does not teach or suggest every feature as recited in independent claim 1.

Ex. 1002 – '465 Patent File History, Mar. 21, 2012, Amendment pg. 7 of 8

This distinction between the '465 Patent and Millington is equally applicable to Yokota. Yokota also **does not** teach or even suggest choosing to display a road segment which is included in the calculated route, but not indicated as being displayable at the current scale by its rank/attribute. Nothing in Yokota teaches or suggests that its system intentionally displays a road not indicated as being displayable at the current scale by its rank/attribute.

Petitioner relies on FIGS. 6F and 7A-D and the corresponding discussion in Yokota 11:8-17, but none of those portions of Yokota teach this crucial novelty. As a fall back, Petitioner's expert merely parrots the claim language of the '465 Patent but fails to explain why a POSITA without the benefit of hindsight would've modified Yokota to obtain this novelty. Ex. 2001, ¶ 56. In Yokota, all of the Figures are shown at the same scale and Yokota was not concerned with any guidance roads not being displayed when the scale was changed. Ex. 2001, ¶ 57.

In addition to not teaching this inventive concept, Patent Owner addresses what Yokota fails to teach with respect to the individual claim elements below.

B. Yokota Fails to Disclose All of the Limitations of [Claim 1a.]

With regards to this lengthy claim element, Yokota does not teach “*a map data storage section for storing of map data together with attributes and classes of the map data, the map data being composed of roads necessary for a route search*”

and display elements including city centers and facilities, and the city centers being a display element each representing a city and indicating a representative position of the city, wherein the attributes are indicative of whether or not each of the roads should be displayed for each of a plurality of map scales.” ’465 Patent, Claim 1 (emphasis added)

Petitioner relies on Table 3 of Yokota and argues that it shows the “road priority levels indicate whether or not each of the roads in the road data table 150 should be displayed for each of a plurality of map scales.” Petition at 14. Petitioner argues that “Yokota’s Table 3 is essentially identical to Figure 2 of the ’465 Patent.” Petition at 15.

TABLE 3					
	Scale				
	Smallest	Small	Medium	Large	Largest
Inter-state	Shown	Shown	Shown	Shown	Shown
Major Hwys	Upgradable	Shown	Shown	Shown	Shown
Minor Hwys	Omitted	Upgradable	Shown	Shown	Shown
Major Roads	Omitted	Omitted	Upgradable	Shown	Shown
Minor Roads	Omitted	Omitted	Omitted	Upgradable	Shown

However, Table 3 of Yokota does not specifically teach that “wherein the attributes are indicative of whether or not each of the roads should be displayed for

each of a plurality of map scales” as recited in Claim 1. Yokota is instead ambiguous with respect to certain roads being referred to as “upgradable” rather than “whether or not *each of the roads* should be displayed for *each* of a plurality of map scales.”

Furthermore, Yokota fails to teach “attributes and classes” for “display elements including city centers and facilities.” Petitioner glosses over this point by only reciting that the data storage section also stores the population and type for city centers and facilities. Petitioner conveniently ignores any discussions of attributes for display elements including city centers and facilities.

As shown in FIG. 2 of the '465 Patent and as recited in claim 1, the “map data storage section for storing of map data together with *attributes and classes of the map data, the map data being composed of roads* necessary for a route search *and display elements including city centers and facilities*” as shown below:

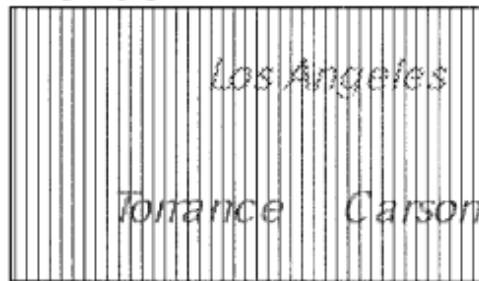
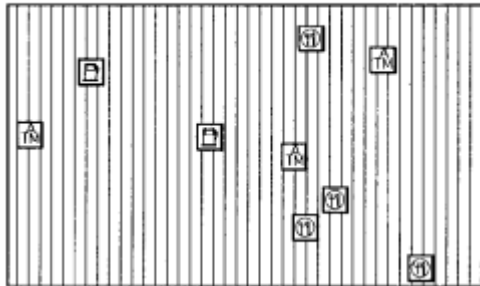
FIG. 2

Relationships Between Map And Map Scale										
Map Scale Road Attributes	Map Scale									
	50m	100m	250m	500m	1km	2.5km	5km	10km	25km	100km
Road Class 1	X	X	X	X	X	X	X	X	X	X
Road Class 2	X	X	X	X	X	X	X	X	X	X
Road Class 3	X	X	X	X	X	X	X			
Road Class 4	X	X	X							
Road Class 5	X	X								
District/National Highway Name									X	X
Position Information Icon	X	X	X	X						
Facility Position Icon	X	X	X	X						
Main City Icon : < 20 k People	X	X	X	X	X					
Main City Icon : ≥20 k People				X	X					
Main City Icon : ≥100 k People				X	X					
Main City Icon : ≥500 k People				X	X	X				
Main City Icon : ≥ One Hundred Million People				X	X	X	X	X	X	

As such, Yokota fails to teach [Claim 1A].

C. Yokota Fails to Disclose [Claim 1g] “selecting the roads indicated by the attributes as being displayable according to the instructed map scale, and by selecting the display elements based on ranks.”

Yokota does not teach or suggest “ranks” used for “display elements” which include city elements and facilities. Despite this, Petitioner contends that “Yokota further teaches that the display controller 16 selects city center and facility display elements based on their priorities (i.e. ranks) and draws them as layers shown below.” Petition at 28-29. This is objectively false. Yokota does not include ranks for facility information based on map scale. The image cited by Petitioner on page 29 (reproduced below) of its Petition is completely deceptive as the images shown are two layers from Yokota without any regard to ranks of the display elements.

FIG. 6C**FIG. 6E**

Yokota FIGS 6C and 6E show layers with cities and facilities only. Ex

Recognizing that its argument is flawed, Petitioner then contends that a “POSITA would have been motivated to modify Yokota to select city center and facility display elements based on ranks to: (i) reduce map clutter and make the map easier to read, (ii) prevent display elements from overlapping with each other and with the displayed roads, and (iii) ensure that the most relevant display elements are

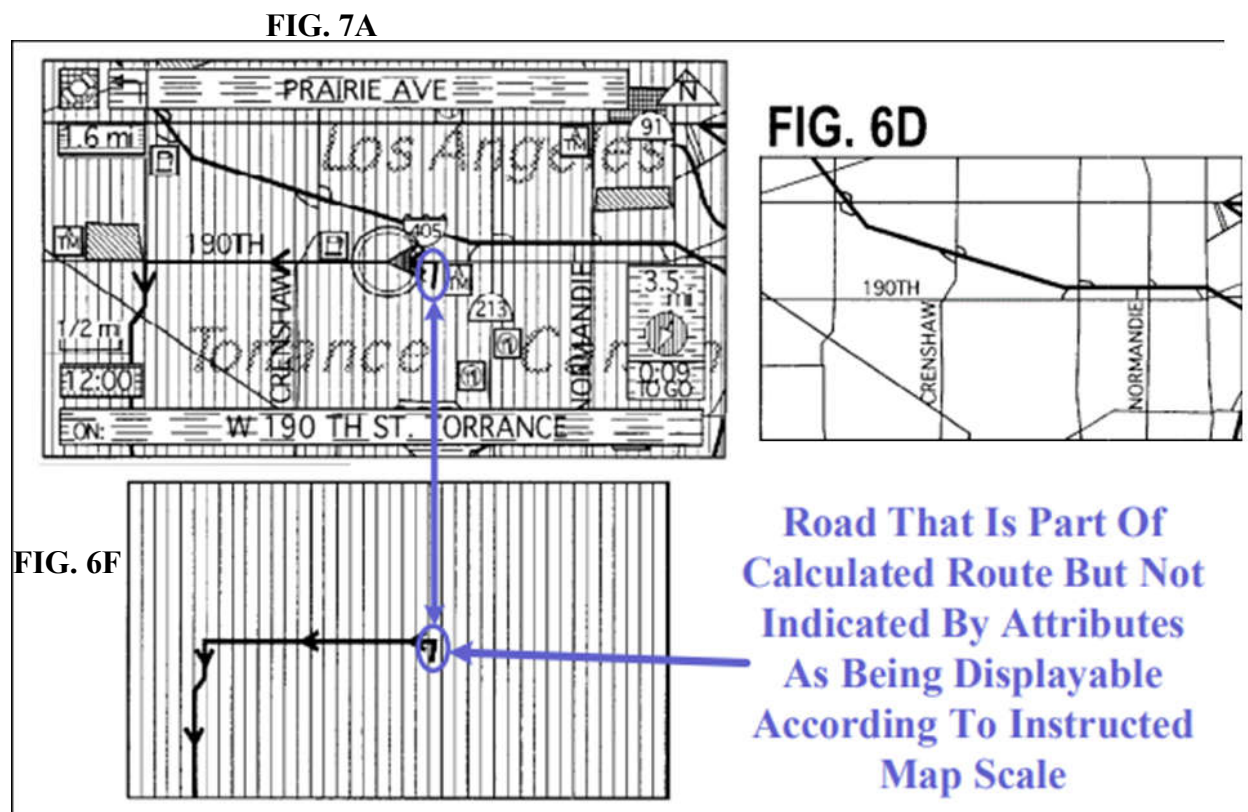
shown for the selected map scale.” Petition at 30. However, a POSITA would not have made this modification as Yokota was primarily concerned about generating a “set or layers and an order in which the display controller 16 may synthesize them to create a display, is: base polygons, e.g. city boundaries; then geo-feature polygons, e.g. shopping malls and rivers; then city name labels; then local roads; then highways; then freeways; then street names; then points of interest, such as restaurants; then a guidance route, if present; then route numbers.” Ex. 2001, ¶ 63-64; *see also* Yokota, claims generally:

Furthermore, as discussed above with respect to [Claim 1a], Yokota also does not properly teach “selecting the roads indicated by the attributes as being displayable according to the instructed map scale” as Yokota is ambiguous with respect to roads at certain scales being referred to as “upgradable” so it’s unknown whether a road would be displayable according to the instructed map scale as one would be left guessing.

D. Yukata Fails to Disclose [Claim 1h] “further selecting each of the roads that is part of the calculated route but not indicated by the attributes as being displayable according to the instructed map scale” and [Claim 1i] “displaying the selected roads and the selected display elements on the display selection as part of the map.”

As discussed above in Section IV(A), Yokota does not teach this core novelty of the ’465 Patent and claim 1.

Petitioner's arguments and misleading annotations to the figures do not actually show that this element is taught by Yokota. When examined accurately the portions of FIGS. 6D and 6F cited by Petitioner do nothing to disclose "selecting each of the roads that is part of the calculated route but not indicated by the attributes as being displayable according to the instructed map" and then "displaying those selected roads and the selected display elements on the display selection as part of the map (which include those roads that are part of the calculated route but not indicated by the attributes as being displayable).



See Petition at 32-33, citing FIGS. 6D and 6F (FIG labels added back)

The guidance route of FIG. 6F does not show any roads that were not displayed in FIG. 6F and also fails to show the entire calculated route. Misleadingly, Petitioner attempts to conflate the vertical hash at the end as a road, this is objectively false. The vertical hash is not a road. It is not labeled as a road and not discussed as a road anywhere in Yokota. This alleged road segment is just hanging in space and Petitioner's attempt to conflate this with a road that is part of the calculated route should be rejected. There is no disclosure anywhere in Yokota that this small hash is a road. Ex. 2001, ¶ 67.

Appearing to recognize that Yokota does not disclose this element, Petitioner defaults to a squirrely argument by stating that “Yokota's figures...*at least suggests* that the layer containing the calculated guidance route includes *all* roads that are part of the calculated guidance-route-including any roads that are part of the calculated guidance route but not indicated by the attributes as being displayable according to the instructed map scale.” Petition at 32 (partial emphasis added and in original). However, this is patently false and merely parroting the claim language does not miraculously change the teachings of Yokota.

As a last grasp effort, Petitioner defaults to arguing that a POSITA would have understood that selecting the roads that are part of the calculated route but not indicated by the attributes as being displayable according to the instructed map scale would've been obvious, but this ignores the full invention of the '465. Claim 1 does

not merely “select[] each of the roads that is part of the calculated route,” it must also “display[] the selected roads and the selected display elements on the display section as part of the map.” This includes displaying the roads that are part of the calculated route but not indicated by the attributes as being displayable according to the instructed map scale. This is not something taught in Yokota or obvious to a POSITA viewing Yokota. Ex. 2001 ¶ 68. Nor would a POSITA have modified the layering system of Yokota to intentionally display roads that were deemed by attributes to be of a class too insignificant at certain scales to be shown at all scales to ensure continuity for the guidance route. *Id.*

E. Yokota Does Not Disclose “wherein the control section displays each selected road not indicated by the attributes as being displayable according to the instructed map scale on the display section in a fashion different from the other selected roads.” of Claim 2.

Because Yokota does not teach displaying the selected roads not indicated by the attributes as being displayable according to the instructed map scale on the display section, Yokota cannot then teach that “each selected road not indicated by the attributes as being displayable according to the instructed map scale on the display section in a fashion different from the other selected roads” of claim 2. Ex. 2001, ¶ 69.

Petitioner's argument contending that “Yokota also discloses that upgradable roads ‘may be displayed with a slightly adjusted color (e.g. lighter) and/or a line

style (e.g. dotted) to indicate [their] lower priority.’...An ‘upgradable road’ is a road that should not be displayed at a certain map scale unless certain criteria are met.” Petition at 34. This is a red herring as claim 2 is related to roads which are part of the calculated route guidance, not just any selected road not indicated by the attributes as being displayable. An upgradable road of Yokota is not equivalent as it refers to roads which are not initially displayed but then later displayed due to various supplemental criteria unrelated to the calculated guidance route. *See* Yokota, Fig. 5, and 9:33-62. Because a POSITA would not find it obvious to modify Yokota to intentionally display roads that were deemed by attributes to be of a class too insignificant at certain scales to be shown at all scales to ensure continuity for the guidance route, a POSITA would’ve further not been motivated to modify Yokota to arrive at claim 2. Ex. 2001, ¶ 70.

F. Independent Claim 5

Independent claim 5 is similar to independent claim 1 and is likewise not obvious to a POSITA in view of Yokota. Ex. 2001, ¶¶ 54-68. As such, the below discussion will reference arguments from above.

Claim 5 recites:²

[5*Preamble*] A display method of a road network in a navigation system having a map data storage section for storing map data, which is composed of roads necessary for a route search and display elements including city centers and facilities, together with attributes

² The elements in Claim 5 are numbered to match Petitioner’s numbering.

and classes of the map data, the attributes being indicative of whether or not each of the roads should be displayed for each of a plurality of map scales, the navigation system also having a position information acquiring section for obtaining position information on a vehicle, a control section including a drawing memory, an input section for inputting an instruction from a user, and a display section for displaying the map data, the display method of the road network in the navigation system comprising:

[5a] calculating a route between an own-vehicle position and a destination represented by one of the display elements, the destination being instructed by the user via the input section;

[5b] drawing, according to one of a plurality of map scales designated by the user via the input section, a map on the drawing memory by::

[5c] selecting the roads indicated by the attributes as being displayable according to a designed map scale, the selected roads including an own-vehicle position obtained by the position information acquiring section,

[5d] drawing the selected roads and one or more of the display elements on the drawing memory;

[5e] further selecting each of the roads that is part of the calculated route produced as a result of the route calculation, but not indicated by the attributes as being displayable according to the designated map scale, on the drawing memory;

and,

[5f] displaying the road network drawn on the drawing memory on the display section.

'465 Patent, Claim 5.

G. The Preamble is a limitation and Yokota Does Not Disclose “map data storage section for storing map data, which is composed of roads necessary for a route search and display elements including city centers and facilities, together with attributes and classes of the map data, the attributes being indicative of whether or not each of the roads should be displayed for each of a plurality of map scales.”

As discussed above regarding claim 1a, Yokota does not disclose map data storage section for storing map data, which is composed of roads necessary for a

route search and display elements including city centers and facilities, together with attributes and classes of the map data, the attributes being indicative of whether or not each of the roads should be displayed for each of a plurality of map scales.”

[See discussions of 1a] Sec IV(B)

H. Yokota does not disclose [Claim 5e] “further selecting each of the roads that is part of the calculated route produced as a result of the route calculation, but not indicated by the attributes as being displayable according to the designated map scale, on the drawing memory” and [Claim 5f] “displaying the road network drawn on the drawing memory on the display section.”

See above discussion regarding Claim 1h and 1i. Sec IV(D)

I. Dependent Claims 2 and 3 are Also Not Rendered Obvious Because Independent Claim 1 is not Obvious

Just as Yokota in view of a POSITA does not render independent claim 1 obvious, Petitioner cannot demonstrate that any of the dependent claims challenged in Ground 1 are rendered obvious.

V. GROUND 2 - PETITIONER'S McDONOUGH IN COMBINATION WITH HUBER AND TANIZAKI FAIL TO RENDER OBVIOUS CLAIMS 1-3 AND 5.

Petitioner relies on McDonough as its primary reference for Gound 2. But Petitioner fails to demonstrate that McDonough in combination with Huber and Tanizaki would render obvious Claims 1-3 and 5. Ex. 2001, ¶¶ 71-80. Furthermore, a POSITA would not be motivated to combine the “summarized map” and route guidance of Tanizaki with the first and second buffering system of McDonough. Ex. 2001, ¶¶ 74-78.

- A. McDonough does not disclose [Claim 1a] “a map data storage section for storing map data together with attributes and classes of the map data, the map data being composed of roads necessary for a route search and display elements including city centers and facilities...”**

Similar to Yokota in Ground 1, McDonough fails to teach “attributes and classes” for “display elements including city centers and facilities.” Petitioner glosses over this point by only contending that “point data items 428 [that] represents points of interest including cities (*i.e.*, city centers), as well as museums, restaurants, and the like” but conveniently ignores any discussions of attributes for display elements including city centers and facilities. Petition at 61

As shown in FIG. 3 and as recited in claim 1, the “map data storage section for storing of map data together with attributes and classes of the map data, the map data being composed of roads necessary for a route search and display elements including city centers and facilities” as shown below:

FIG. 2

Relationships Between Map And Map Scale										
Map Scale Road Attributes	Map Scale									
	50m	100m	250m	500m	1km	2.5km	5km	10km	25km	100km
Road Class 1	X	X	X	X	X	X	X	X	X	X
Road Class 2	X	X	X	X	X	X	X	X	X	X
Road Class 3	X	X	X	X	X	X	X			
Road Class 4	X	X	X							
Road Class 5	X	X								
District/National Highway Name									X	X
Position Information Icon	X	X	X	X						
Facility Position Icon	X	X	X	X						
Main City Icon : < 20 k People	X	X	X	X	X					
Main City Icon : ≥ 20 k People				X	X					
Main City Icon : ≥ 100 k People				X	X					
Main City Icon : ≥ 500 k People				X	X	X				
Main City Icon : $\geq$ One Hundred Million People				X	X	X	X	X	X	

As such, McDonough fails to disclose this Claim 1a.

B. McDonough does not disclose [Claim 1g] “selecting the roads indicated by the attributes as being displayable according to the instructed map scale, and by *selecting the display elements based on ranks.*”

Similar to Petitioner's discussion for [Claim 1a], Petitioner contends “McDonough also teaches that its map data storage section stores, for each road segment data record in the map database 30, a “rank” of the represented road that corresponds to the road's class (*e.g.*, freeway, alleyway, etc..)... In one example, the ranks range from ‘0’ to ‘4.’... McDonough further teaches a plurality of data layers that range from ‘0’ to ‘4.’... Each data layer corresponds with a different map scale.” Petition at 62. Petitioner then contends that “[a] POSITA would have understood that McDonough's ranks are “attributes” indicative of whether or not each of the roads in the map database 30 should be displayed for each of a plurality of map

scales (*i.e.*, a rank of ‘0’ indicates that road should be displayed only on the layer 0 map scale, a rank of ‘1’ indicates that the road should be displayed only on the layer 0 and layer 1 map scales, etc.).” Petition at 63. While this disclosure may relate to roads, it discloses nothing relating to the display elements.

Nothing in its discussion of limitation [claim 1a] nor [claim 1g] does Petitioner argue that McDonough discloses ranks of the display elements and thereby “selecting the display elements based on ranks.” Ex. 2001, ¶ 73.

C. A POSITA Would Not Be Motivated to Combine McDonough and Tanizaki with Respect to [Claim 1h] “further selecting each of the roads that is part of the calculated route but not indicated by the attributes as being displayable according to the instructed map scale.”

Petitioner argues that combining Tanizaki with McDonough is appropriate because Tanizaki is “[i]n the same field of endeavor.” Petition at 54. However, this is not a proper motivation to combine. Likewise, Petitioner’s argument of why a POSITA would have been motivated to modify McDonough’s navigation system to add features of Tanizaki does not actually provide a motivation but merely parrots the language of claim 1 of the ’465 Patent. Petition at 56.

First, a POSITA would not have been motivated to combine the “summarized map” and route guidance of Tanizaki with the first and second buffering system of McDonough. Ex. 2001, ¶ 73. Because McDonough is directed to smooth scrolling by holding present map location in the first buffer and predicted future location in a

second buffer, the combined teachings would not have suggested to a POSITA to incorporate the incompatible route guidance of Tanizaki which displays the entire route guidance on the screen. *Id.* Simply put, since McDonough is intended to scroll from one location to a look-ahead location smoothly, it would not need or want to display the entire route guidance on the display. *Id.*, ¶ 76. Indeed, Petitioner recognizes that “McDonough’s map display technique would lead to *discontinuities*...” Petition at 56-57. (emphasis in original). Because of the differences in systems, one intended to allow for smooth scrolling rather than showing the entire map, Tanizaki’s summarized map route guidance would not have been a “suitable option” for implementation into the first and second buffer system of McDonough. Ex. 2001, ¶ 76. *See Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1381 (Fed. Cir. 2023).

Second, McDonough explicitly uses the road ranking to display certain roads at a specified map scale. Ex. 2001, ¶ 77. Modifying this operation with Tanizaki would obviate the need for the map scale feature in McDonough and would result in an overly complicated system that would not be an improvement over either invention individually. *Id.* McDonough describes that the data is organized into layers. When the graphics interface layer displays specific data (i.e., roads) in reference to a set map scale, the system is only looking at one specific data layer. In other words when McDonough is set to rank ‘0,’ the navigations system is only

looking at data in that particular rank. The zooming and map scale feature described in McDonough requires a road to be stored in the database according to separate layers. In other words, the road data for each rank will be distinct and held separately in the database. Ex. 2001, ¶ 77. Implementing Tanizaki to select (and subsequently display) each of the roads that is part of the calculated route but not indicated by the attributes as being displayable according to the instructed map scale would not be a “routine, straightforward adjustments to the programming logic in McDonough’s map display tool” as Petitioner contends. Ex. 2001, ¶ 77, rebutting Petition at 58. A POSITA would understand that McDonough's map scale and data layer method would be useless if changed to operate according to Petitioner's statement. Ex. 2001, ¶ 77. A POSITA would have to change the way the road data would be stored and retrieved; accordingly, they would not incorporate data layering hierarchy described by McDonough as it would be wasteful and overly complicated. Ex. 2001, ¶ 77.

If a POSITA wanted to select each road not indicated by the attributes, then they would simply use Tanizaki exclusively. Ex. 2001, ¶ 78. Tanizaki discloses a route guidance method, along with a map scaling feature.

[0028] According to this embodiment, the summarized map is displayed on the display Screen 10 in Such a manner as to include the guide route from the present vehicle position to the destination. Therefore, the contraction scale of the Summarized map and the area displayed are changed in accordance with the distance from the present vehicle position to the destination.

Given at least these above reasons, a POSITA would not be motivated to combine this aspect of Tanizaki with McDonough. Ex. 2001, ¶ 78,

D. McDonough does not disclose [Claim 1i] “displaying the selected roads and the selected display elements on the display selection as part of the map.”

Although Petitioner relies on McDonough (Petition at 75), Petitioner correctly stated, “McDonough’s map display technique would not select (and thus would not display) roads in the calculated guide route that have a ‘rank’ that is less than the scale.” Petition at 56. And as discussed above (claim 1h), a POSITA would not look to combine Tanizaki with McDonough and would not be displaying the selected each of the roads that is part of the calculated route but not indicated by the attributes as being displayable according to the instructed map scale.

As such, McDonough does not disclose or teach this element. Ex. 2001, ¶ 79,

E. McDonough does not disclose [Claim 2] “wherein the control section displays each selected road not indicated by the attributes as being displayable according to the instructed map scale on the display section in a fashion different from the other selected roads.”

First as discussed above in Sections V(C) and V(D) with respect to claim elements [claim 1h] and [claim 1i], McDonough does not display the “selected roads not indicated by the attributes as being displayable” and a POSITA would not have modified McDonough using Tanizaki to select each of the roads that is part of the

calculated route but not indicated by the attributes as being displayable according to the instructed map scale.

Because McDonough would not have met this limitation, McDonough does not also disclose displaying each selected road not indicated by the attributes as being displayable according to the instructed map scale on the display section in a fashion. As such a POSITA would've further not been motivated to modify McDonough to arrive at claim 2. Ex. 2001, ¶ 80.

Thus, McDonough alone does not render obvious Claim 2.

F. Independent Claim 5

Independent claim 5 is similar to independent claim 1 and is likewise not obvious in view of McDonough in combination with Huber and Tanizaki. Ex. 2001, ¶¶ 72-79.

G. McDonough does not disclose [Claim 5 PRE] “map data storage section for storing map data, which is composed of roads necessary for a route search and display elements including city centers and facilities, together with attributes and classes of the map data”

See discussion of claim 1a above. Section V(A).

H. McDonough and Tanizaki do not disclose [Claim 5e] “further selecting each of the roads that is part of the calculated route produced as a result of the route calculation, but not indicated by the attributes as being displayable according to the designated map scale, on the drawing memory; and [Claim 5f] “displaying

the road network drawn on the drawing memory on the display section.”

As discussed above regarding claim 1h in Section V(C), a POSITA would not be motivated to combine McDonough and Tanizaki. As such, McDonough does not disclose claim 5e and therefore cannot also satisfy claim 5f.

I. McDonough does not disclose [Claim 5f] "displaying the road network drawn on the drawing memory on the display selection”.

As discussed above regarding clause h of claim 1, a POSITA would not be motivated to combine McDonough and Tanizaki. McDonough does not disclose [Claim 1i] “displaying the selected roads and the selected display elements on the display selection as part of the map.” *See* Section V(D)

J. Dependent Claims 2 and 3 are Also Not Rendered Obvious Because Independent Claim 1 is not Obvious

Just as McDonough in combination with Huber and Tanizaki does not render independent claim 1 obvious, Petitioner cannot demonstrate that any of the dependent claims challenged in Ground 2 are rendered obvious.

VI. CONCLUSION

The Board should exercise its discretion to deny the petition on each of Grounds 1 and 2.

Accordingly, Patent Owner respectfully requests the Board deny institution of this petition under Ground 1-2.

Respectfully submitted,

/Neal Massand /

Neal Massand

Counsel for Petitioner

CERTIFICATE OF COMPLIANCE

Per 37 C.F.R. §42.24(a) and (d), the undersigned hereby certifies that the Petition complies with the type-volume limitation of 37 C.F.R. §42.24(a)(i) because, exclusive of exempted portions, it contains 6,422 words as counted by the word-processing program used to prepare it.

Dated: February 28, 2024,

Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies that the above-captioned document Notice was served on counsel of record for the Petitioner by filing this document through the Patent Review Processing System as well as by delivering a copy via electronic mail to:

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