UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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LENNOX INDUSTRIES INC.,

Petitioner,

v.

ROSEN TECHNOLOGIES LLC,

Patent Owner.

_____

IPR2023-00716
Attorney Docket No.: 018635.0921

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PETITION FOR *INTER PARTES* REVIEW OF CLAIMS 1-3, 6-9 OF U.S. PATENT NO. 6,789,739

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[1] Citations to issued patents are made by column and line number. Citations to deposition transcripts are made by page and line number. Citations to patent application publications and Exhibits 1002 and 1013 are made by paragraph number. Citations to Exhibit 1003 and 1018 are to the page number added by the exhibit label. Citations to remaining exhibits are to the original page numbering in the exhibits.

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1023	Gillet, Sharon Eisner et al., A Taxonomy of Internet Appliances, Telecommunications Policy Research Conference (2000)
1024	Dokter, D.A., From Glosser-RuG to Glosser-WeB (Apr. 18, 1997)
1025	KR1998/0701245 ("Ehers") translated with certification
1026	Millett, Lynette et al., Cookies and Web Browser Design: Toward Realizing Informed Consent Online CHI 2001
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1028	Major, April., Copyright Law Tackles Yet Another Challenge: The Electronic Frontier of the World Wide Web, 24 Rutgers Computer Tech. L. J. 75 (1998).
1029	Wagner, Thomas et al., A Modified Architecture for Constructing Real-Time Information Gathering Agents
1030	Andrew T. Dufresne, Nathan K. Kelley, & Lori Gordon, *How reliable are trial dates relied on by the PTAB in the Fintiv analysis?*, PERKINS COIE 1600 PTAB & BEYOND, Oct. 29, 2021

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I. INTRODUCTION

Lennox Industries Inc. ("Petitioner" or "Lennox") respectfully submits this Petition for *inter partes* review of Claims 1-3, 6-9 (the "Challenged Claims") of U.S. Patent No. 6,789,739 (the "'739 Patent"). Petitioner respectfully requests institution of *inter partes* review and a finding that the Challenged Claims are unpatentable.

II. MANDATORY NOTICES UNDER 37 C.F.R. 42.8(a)(1)

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

The real parties-in-interest are Lennox Industries Inc., Lennox International Inc., Heatcraft Inc., Heatcraft Technologies Inc., and Lennox Procurement Company Inc. Lennox Industries Inc. is the Petitioner. Lennox Industries Inc., Heatcraft Inc., Heatcraft Technologies Inc., and Lennox Procurement Company Inc. are wholly owned subsidiaries of Lennox International Inc. No other parties exercised or could have exercised control over this Petition; no other parties funded or directed this Petition. *See* Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,759-60 (2012) (to be codified at 37 C.F.R. 42).

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

As of the filing date of this Petition, and to the best knowledge of Petitioner, the '739 Patent is involved in the following:

Rosen Techs. LLC v. Lennox Indus. Inc., No. 3:22-cv-00732-K (N.D. Tex.) ("NDTX Litigation"). The '739 Patent was first asserted against Petitioner in a

Complaint for Patent Infringement filed on March 31, 2022. Petitioner moved to dismiss the complaint on June 21, 2022. On January 4, 2023, Petitioner's motion to dismiss was granted in part and denied in part.

As of the filing date of this Petition, and to the best knowledge of Petitioner, the '739 Patent has been involved in the following proceedings in which Petitioner was not a party:

Rosen Techs. LLC v. Resideo Techs., Inc., No. 6:22-cv-00131 (W.D. Tex. Feb. 6, 2022) (dismissed on Oct. 27, 2022); and

Verdant Envtl. Techs. v. Ecobee Inc., No 1:10-cv-02771 (N.D. Ill. May 4, 2010) (closed pursuant to notice of voluntary dismissal on Nov. 1, 2010).

Additionally, the '739 Patent is related to U.S. Patent No. 6,619,555 (the "'555 Patent"), which is the subject of IPR2023-00715, filed by Petitioner on the same day, March 29, 2023. Patent Owner has also asserted the '555 Patent against Petitioner in the NDTX Litigation.

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

Petitioner provides the following designation of counsel:

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

A copy of this entire Petition, including all Exhibits and a power of attorney, is being served by FEDERAL EXPRESS, costs prepaid, to the address of the attorney or agent of record for the '739 Patent at the USPTO: Marc Hankin, Hankin Patent Law, APC, 12400 Wilshire Boulevard, Suite 1265, Los Angeles, CA 90025; and to the address of the attorney or agent of record for Patent Owner in the NDTX Litigation: Hao Ni, NI, WANG & MASSAND, PLLC, 8140 Walnut Hill Ln., Ste. 500, Dallas, TX 75231.

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

III. CLAIM LISTING

A. Claim 1

1[Pre]	A location response system with an environmental controller located at a single physical location adapted to be an integral part of a system of environmental sensing or control for a local and substantially enclosed space comprising:
1[a]	A) a physical location of the environmental controller stored as location data in storage means in the controller;
1[b]	B) transmitter means connected to the controller adapted to transmit location data to a remote device physically remote from the controller, so that a location response is induced at the remote device; and
1[c]	C) location response is storage of the location data at the remote device and correlation of the physical location to location response data stored at or available to the remote device or created by processing of location data at the remote device, whereafter location response data is transmitted from the remote device to the controller.

B. Claim 2

2	The system of claim 1 in which said transmitter means includes a modem and the remote devices is a computer network server.

C. Claim 3

3	The system of claim 1 in which said location data includes one or more of the group consisting of a local telephone number or portion thereof, a local zip or postal code, and local latitude and longitude of the physical location of the controller or systems correlated thereto.

D. Claim 6

6	The system of claim 1 in which location response is storage of the location data at the remote device.

E. Claim 7

7	The system of claim 1 in which location response is storage of the location data at the remote device and correlation of the physical location to location response data stored at or available to the remote device or created by processing of location data at the remote device.

F. Claim 8

8	The system of claim 1 in which location response data is stored in the controller storage means.

G. Claim 9

9	The system of claim 8 in which stored location response data is displayed on a display screen at the controller.

IV. REQUIREMENTS UNDER 37 C.F.R. 42.104

A. Grounds for Standing

Petitioner certifies that the ’739 Patent is available for IPR and that Petitioner is not barred or otherwise estopped.

B. Identification of Challenge and Statement of Precise Relief Requested

This IPR, supported by the declaration of Dr. R. Jacob Baker, Ph.D., P.E. (EX1002), requests cancelation of Claims 1-3 and 6-9 of the ’739 Patent under the following grounds:

Ground	'739 Patent Claims	Basis for Challenge
1	1-3, 6-9	Anticipated under §102 by *Liming*
2	1-3, 6-9	Obvious under § 103 based on *Liming* in view of *Rainer*
3	1-3, 6-9	Obvious under §103 based on *Inoue* in view of *Peters* and *weather.com*
4	1-3, 6-9	Obvious under §103 based on *Rainer* in view of *Kikinis* and *weather.com*.

V. The '739 Patent

A. Subject Matter

The '739 Patent alleges as its point of novelty an environmental controller with geographic information. EX1001, 7:58-61. The challenged claims essentially are directed to sending the geographic location of a thermostat to a server and then getting back data related to that location, such as a weather forecast. EX1001, Claim 1. Prior art discloses this concept—including for thermostats.

The environmental controller has the conventional hardware elements one would expect. The controller "stores data that establishes its physical location for interaction with remote devices." *Id*., 6:51-54. It also has "a modem with Internet" connection to transmit the location data. *Id*., 7:3-9, 7:20. The remote device may be Internet web sites such as a "weather website." *Id*., 6:53-56, 7:10-15, 7:19-31. Examples of "location data" include a phone number, zip code, and longitude/latitude information. *Id*., 7:42-45.

B. Prosecution History

The '739 Patent was filed as Application No. 10/287,677 on November 4,

2002. The '739 Patent claims priority as a continuation-in-part of Application No. 10/075,886, now U.S. Patent No. 6,619,555. In response to a rejection over the prior art, Applicant amended Claim 1 to add limitation 1[c]. EX1003, 25 (4/15/04 Response to OA).

C. Priority Date

The claims of the '739 Patent are not entitled to a priority date earlier than November 4, 2002, the filing date of the CIP. EX1002, ¶¶50-52.

The '886 Application/'555 Patent fail to disclose every element of independent Claim 1, from which all other challenged claims depend. *Id*., ¶51. The '886 Application and '555 Patent fail to disclose at least elements 1[a] and 1[b] of Claim 1. *Compare* EX1017 ('555 Patent) and EX1018, 8-32 ('886 Application as-filed) *with* EX1001 ('739 Patent), Claim 1; EX1002, ¶51. In particular, the '886 Application and '555 Patent fail to disclose storing the controller's physical location information in the controller or transmitting location data to a remote device so that a location response is induced at the remote device. EX1002, ¶51.

VI. LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art ("POSITA") as of February 13, 2002 would have had a Bachelor of Science degree in Electrical Engineering or a year or two of experience working with or designing processor-based systems with network connectivity. EX1002, ¶54. This level of skill is approximate, and more experience would compensate for less formal education, and vice versa. *Id*.

VII. CLAIM CONSTRUCTION

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

A. Terms Governed By 35 U.S.C. § 112, ¶6

The challenged claims include limitations that recite "means" for performing various functions. Element 1[a] recites "storage means" and Element 1[b] recites "transmitter means." EX1001, Claim 1.

In the related district court litigation, Petitioner asserts both limitations are means plus function limitations, but that "storage means" is indefinite due to failure to link a corresponding structure. EX1016, 37. Without conceding definiteness or that the construction is correct, Petitioner applies Patent Owner's proposed corresponding structure.[2] This approach is permitted. *10X Genomics, Inc. v. Bio-Rad Labs*, IPR2020-00086, Paper 8, 21 (P.T.A.B. Apr. 27, 2020); *Abbott Diabetes Care, Inc. v. DexCom, Inc.*, IPR2022-00921, Paper 15, 7-11 (P.T.A.B. Nov. 3, 2022).

[2] To the extent Patent Owner subsequently changes its position as to whether 35 U.S.C. § 112, ¶6 applies to these elements, the claims are still rendered invalid by the prior art, as discussed herein.

Limitation	Structure and Function
1[a]: "storage means"	Function: storing as location data a physical location of the environmental controller Structure: memory

Patent Owner contends "transmitter means" should have its plain meaning. Petitioner applies that construction here. If the Board determines "transmitter means," is a means plus function limitation, the specification discloses "a modem with Internet or network connection." EX1001, 7:2-9, 7:20. The claims would still have been obvious under this claim interpretation.

VIII. SUMMARY OF PRIOR ART

As discussed above, the challenged claims are not entitled to a priority date earlier than November 4, 2002. *Supra*, §V.C. Petitioner therefore relies on pre-AIA provisions for the prior art relied upon herein.

A. State of the Art

It was well known to connect an environmental controller to the Internet at the time of the alleged invention. EX1002, ¶¶75-76. Numerous references teach the connection of a thermostat to the Internet. It "makes sense" to connect a thermostat to the Internet so that it can be remotely controlled. EX1023, 9, n.10. Thermostats are examples of Internet "appliances" connected to the Internet.

EX1006, 4:38-52. Internet connection allows a user to configure the thermostat for their desired language. EX1010, Abstract, 1:41-51, 3:49-65. As another example, a reference from 2001 describes accessing a web browser on a thermostat. EX1037, 50, 52. Internet connection allows for displaying of information. EX1006, 4:46-52; EX1022, 55:14-57; EX1005, 4:31-34, 5:28-31; EX1020, 3:19-26; EX1019, 1:18-30.

It additionally was well known at the time of the alleged invention to obtain location based information for an environmental controller and display it. EX1002, ¶¶77-80. Numerous references teach obtaining location based information, such as the weather, for a thermostat. For example, a thermostat includes a "communications link that can be used to obtain weather predictions from weather services for control and display purposes." EX1005, 4:31-34. "[O]ne might invoke the *weather.com* wrapper with a specific zip code to obtain the five day forecast for a given area." EX1029, 4. Further, it was known to incorporate location based information into systems containing thermostat functionality such as a display inside an elevator. EX1020, 3:19-26.

Numerous references before the date of the alleged invention also teach displaying location based information, such as weather, on a thermostat. EX1002, ¶79. It was known for devices in the bedroom to check the weather. EX1023, 6, n.6. It further "makes sense" to connect a thermostat to the Internet. *Id*., 9, n.10. A thermostat would obtain weather information for control and display purposes.

EX1005, 4:31-34, 5:28-31. A control panel in a car that integrates basic functions including the car thermostat and temperature control system with features for accessing information including via Internet surfing was known. EX1022, 55:49-57. It was further well known that a thermostat would display announcements, promotions, or the customer's energy bill. EX1021, 5:61-6:1; EX1005, 5:37-41. Other types of information were displayable by thermostats included stock quotations, breaking news headlines, and weather. EX1020, 3:19-26. Thermostats could also be used to receive local news and alerts, such as weather alerts. EX1025, 65-2, 65-17.

B. *Liming* (EX1004)

U.S. Pub. No. 2002/0055924 to Liming ("*Liming*") was filed on January 18, 2002, and published on May 9, 2002. *Liming* qualifies as prior art under at least pre-AIA §§102(a) and 102(e). *Liming* discloses a "location-enabled system" for "processing, integration, and exchange of spatially relevant information over a communications network like the Internet." EX1004, Abstract. As *Liming* describes, "[i]t is an object of the present invention to provide a method for delivering location relevant media to clients." EX1004, ¶[0075].

Liming's system may be used in "a home, office building, or telecommunications facility with a network capability," and may contain "computer controlled automation systems for controlling heating, ventilation, and air conditioning (HVAC)." EX1004, ¶[0065].

C. *Rainer* (EX1005)

U.S. Patent No. 7,398,821 to Rainer ("*Rainer*") was filed March 12, 2001 and published on September 12, 2002. *Rainer* qualifies as prior art under at least pre-AIA §102(a) & (e).

Rainer discloses a thermostat connected to the Internet. EX1005, Fig. 2, 3:28-32, 5:28-31, 4:31-34, Fig. 2. *Rainer* discloses that the thermostat can obtain weather information from the Internet for "control and display purposes." *Id*., 4:31-34, 5:28-31, 5:37-41.

D. *Kikinis* (EX1006)

U.S. Patent No. 6,161,133 to Kikinis ("*Kikinis*") was filed on October 19, 1998, and issued on December 12, 2000. *Kikinis* therefore qualifies as prior art under at least pre-AIA §102(a)-(b).

Kikinis discloses a thermostat (an "internet appliance") connected to the Internet to use "information from the Internet." EX1006, Abstract, 4:38-52. *Kikinis* discloses a web browser for an internet appliance. *Id*., 2:38-41, 6:56-7:5. The thermostat connects to the Internet through wireless devices and cable modems. *Id*., 2:31-44

E. *Inoue* (EX1007)

EP 1085399 to Inoue ("*Inoue*") was filed on March 29, 2000, and published on March 21, 2001. *Inoue* qualifies as prior art under at least pre-AIA §102(a)-(b) and (e). *Inoue* discloses "a method of controlling temperature in an electronic

apparatus such as a computer device." EX1007, ¶[0001]. Thus, *Inoue's* laptop computer qualifies as an "environmental controller" within the meaning of Claim 1 of the '739 Patent.

F. *Peters* (EX1008)

U.S. Patent No. 6,470,289 to Peters ("*Peters*") was filed August 5, 1999. *Peters* qualifies as prior art under at least pre-AIA §102(a)-(b).

Peters discloses "[a] computer system having thermal control logic that efficiently cools the computer system," where "the thermal control logic couples to a CPU module and a fan." EX1008, Abstract, 3:50-4:6, 5:20-31, Fig. 1. *Peters* discloses two temperature sensors, one of which measures the temperature of the CPU core and one that measures the temperature near the exterior surface of the CPU. EX1008, Abstract, 4:7-31, 6:12-21.

G. *Weather.com* (EX1009)

Weather.com is documentation concerning a website available and used by others in the United States since at least January 26, 1997. EX1013, ¶5. Inventor Rosen admitted to using the weather.com website in the 1990s. EX1012, 223:12-15.

Weather.com qualifies as prior art under at least pre-AIA §102(a) and (b). *Weather.com* provides an example of code for a website that can be accessed via the Internet on an electronic device, including a laptop. When a user enters weather.com into their web browser, the user would be queried for their location and

would entire their location (*e.g.*, zip code) into the memory of the computer. EX1002, ¶¶101-108; EX1009, 6-9. The website would then return the weather data for the zip code. Petitioner is only relying upon the printed information about weather.com obtainable from that website in 1997 and not on the system itself. The reference is a printed publication.

IX. THE ASSERTED GROUNDS OF INVALIDITY

A. Grounds 1 and 2: Claims 1-3, 6-9 are anticipated by *Liming* and obvious over *Liming* in view of *Rainer*.

Liming anticipates the Challenged Claims. However, to the extent the Board disagrees, *Liming* at least renders the Challenged Claims obvious when combined with *Rainer*. For convenience, these two grounds are handled in parallel.

1. Claim 1

a. *1[Pre]:*

If the preamble is limiting, *Liming* discloses it. EX1002, ¶¶112-117.

Liming discloses a location response system. EX1002, ¶113. *Liming* discloses a "location-enabled system" for "processing, integration, and exchange of spatially relevant information over a communications network like the Internet." EX1004, Abstract. *Liming's* system delivers "location relevant media to clients." EX1004, ¶[0075]. It does so by "associating unique identifiers with spatial locations." EX1004, ¶[0013]. *Liming*'s system includes "a location determination device" which determinates geographic locations—for example using GPS or a manual process. EX1004, ¶¶[0034], [0039],[0071]; Fig. 1 (block 108). All discussion below regarding "location response" is incorporated by reference here to further demonstrate that *Liming* is a location response system.

Liming's location response system comprises an environmental controller adapted to be an integral part of a system of environmental sensing or control. EX1002, ¶115. *Liming* discloses ST406, ST408, and ST410 may contain "computer controlled automation systems for controlling heating, ventilation, and air conditioning (HVAC)." EX1004, ¶[0065], Fig. 1. Those blocks "may also contain a System 100 device." EX1004, ¶[0065]. The automation systems are connected to System 100 and that combination creates an environmental controller that is a system of environmental sensing or control. EX1002, ¶115. For example, Figure 12 states that the System 100 is networked to a home automation facility. EX1004, Fig. 12, S5. A POSITA would have understood that the computer controlled automation system for controlling HVAC is coupled to System 100 and, together, those components make up an environmental controller.

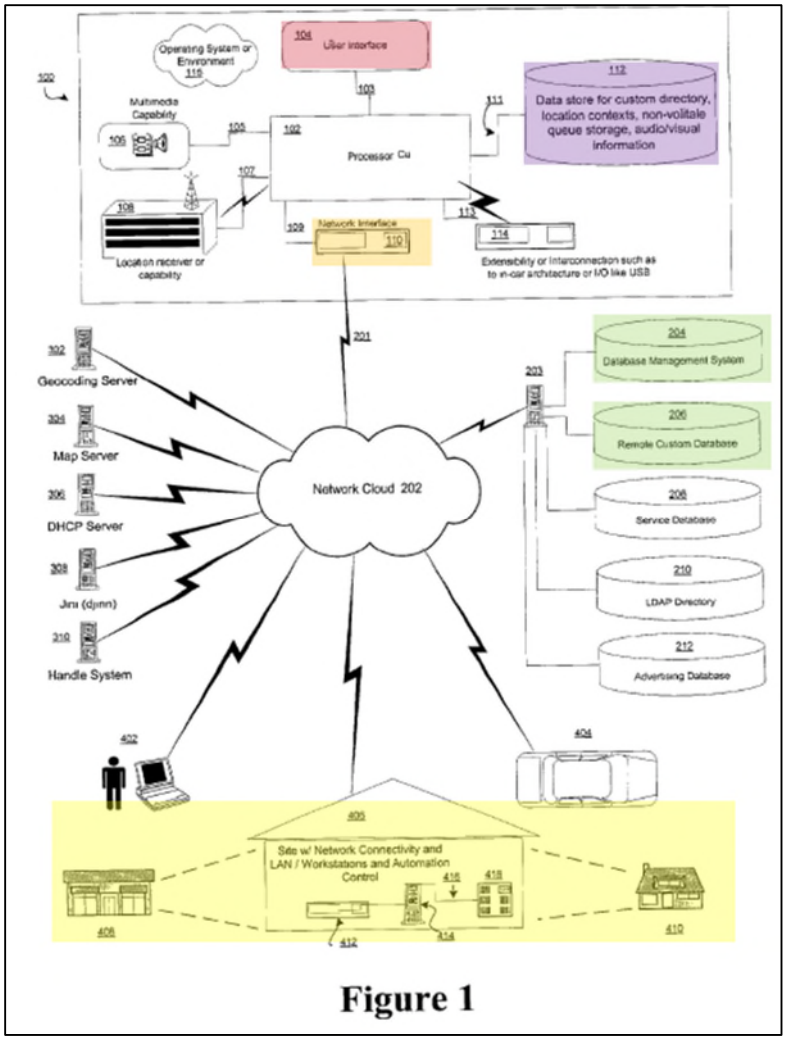


Figure 1

EX1004, Fig. 1 (annotated).

Liming's environmental controller is located at a single physical location. Blocks 406-10 "may be a home, office building, or telecommunications facility with a network capability." EX1004, ¶[0065]. Each of those qualifies as "a single physical location." EX1002, ¶116.

Liming's system is for a local and substantially enclosed space. EX1002, ¶117. A POSITA would have understood the disclosed automated system for controlling HVAC for a building to be part of a system of environmental sensing or control for a local and substantially enclosed space (the interior of the building). *Id.*

GROUND 2: To the extent the preamble is not disclosed by *Liming*, it is disclosed by *Rainer*. EX1002, ¶¶118-121. It would have been obvious for a POSITA to use *Liming's* teachings regarding obtaining location information over the Internet in *Rainer*'s thermostat.

Rainer teaches connection of the thermostat to the Internet and that weather information can be obtained for "control and display purposes." EX1005, 5:28-31; 4:31-34. It was common knowledge that an easy way to obtain weather information would have been to use a web browser and access a service such as weather.com. EX1002, ¶119. The '739 Patent concedes, "[s]uch local current weather information sources are widely available and are routinely accessed by, for example, using the Internet." EX1001, 4:13-15. Use of web browsers on Internet appliances, such as thermostats, was common knowledge. EX1006, 2:38-41, 4:38-52, 6:57-7:5.

A POSITA looking to obtain the weather information for control, would have been motivated to use *Liming's* system to do so. EX1002, ¶120. First, rather than creating new software to obtain information, a POSITA would be motivated to use existing software, such as a web browser. *Liming's* system uses a web browser.

EX1004, ¶¶[0086], [0103]-[0105], [0139]. Second, a POSITA would have been motivated to use *Liming's* web browser in *Rainer's* thermostat because a web browser automatically formats requests to websites in the format expected by the website. EX1002, ¶120. Third, a POSITA would have been motivated to use *Liming's* web browser in *Rainer's* thermostat because a web browser automatically formats information for display on a device. *Id*. Fourth, *Liming* teaches that the location information is stored in the cookie of a web browser. EX1004, ¶¶[0103]-[0105]. This would avoid the need for *Rainer*'s thermostat to have to repeatedly obtain location information. EX1002, ¶120; EX1004, ¶[0104]-[0105]. This is especially beneficial because using the weather for control would require obtaining the weather with some frequency. EX1002,¶120.

A POSITA would have had a reasonable expectation of success. EX1002, ¶121. Prior art thermostats connect to the Internet. EX1001, 7:35-38. It was common knowledge how to use a web browser on an Internet appliance, such as a thermostat, and how to use the web browser to obtain Internet content. EX1002, ¶121; EX1006, 2:38-41, 4:38-52, 6:57-7:5. Using a web browser on a thermostat with a cookie would have involved combining well known prior art elements (web browsers, cookies, and digital thermostats) according to known methods (automated configuration over the Internet) to yield predictable results (obtaining information from the Internet using a web browser). EX1002, ¶121. Doing so would have involved minimal, if any, modification to *Rainer's* thermostat which has Internet

access. *Id.*

b. *1[a]:*

Liming discloses element 1[a]. EX1002, ¶¶122-128.

(a) Function

Liming discloses storing a physical location of the environmental controller as location data. EX1002, ¶¶123-125. As *Liming* describes, "[t]he system may store *the current client location data*." *Id.*, ¶¶[0088]-[0089], [0110]. Because the system and HVAC controller are in the same building, a POSITA would have understood "current client location data" to be the physical location of the environmental controller—*i.e.*, the location of the building in which the HVAC controller and system 10 are present. EX1002, ¶123.

Liming shows different ways to handle location. First, the system may determine its own location, for example using a GPS. EX1004, ¶¶[0151], [0014], [0015], [0039], [0066]. Second, the user can manually enter a location. *Id.*, ¶¶[0016], [0066]. If used only once, this data is stored in memory. Before a device can communicate with a server, the information it is communicating is stored in memory for transmission of a message. EX1002, ¶124. Inventor Rosen agrees that when the controller communicates with a server, the location information is necessarily stored in memory of both the controller and the server. EX1012, 244:18-245:1. A POSITA would have understood that whether location is manually entered or obtained via a GPS, the information is stored in the controller

memory before it can be sent to the remote server. EX1002, ¶124.

An example of is illustrated in Figure 10.

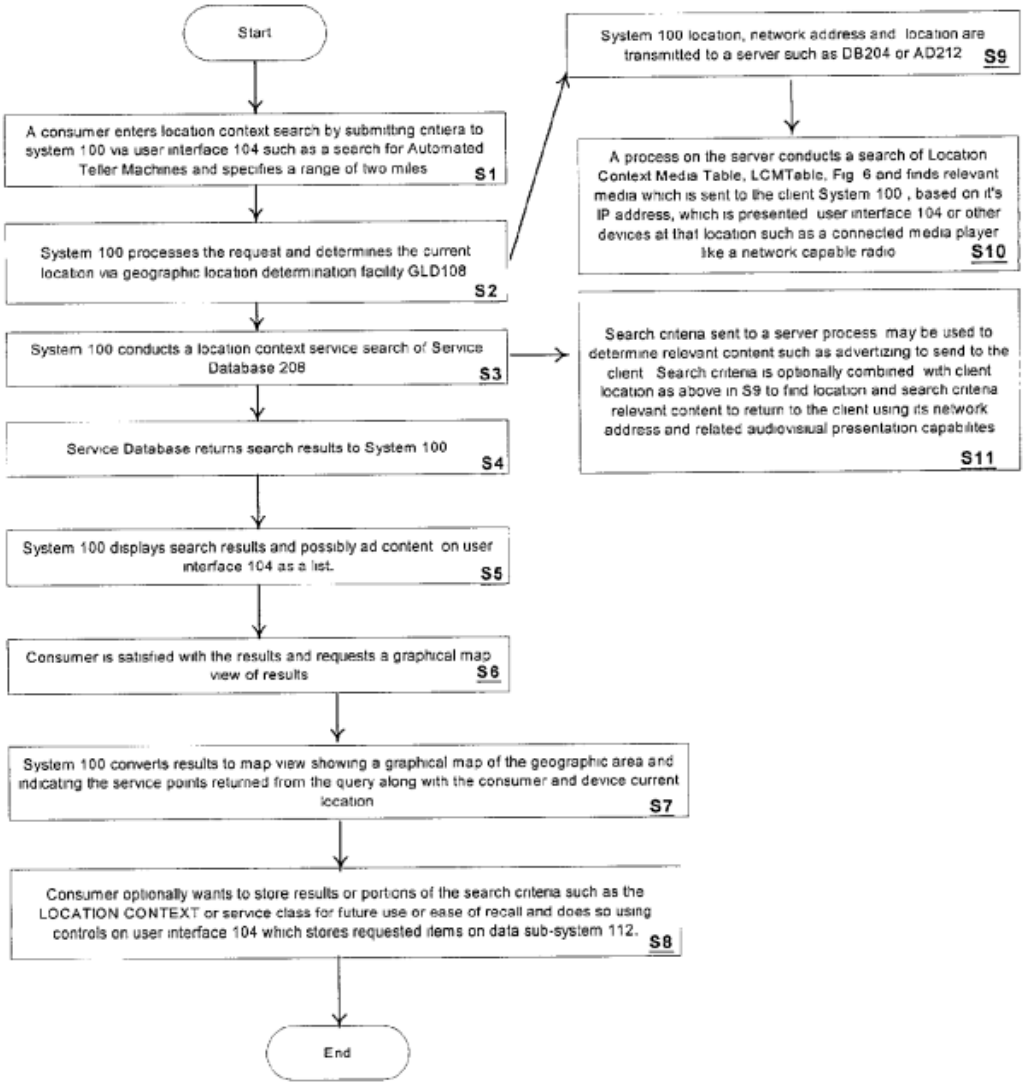


Figure 10

The system determines the location in S2 and then transmits that location to a server. EX1004, Fig. 10. For that transmission to occur, the location is stored in a memory at least temporarily. EX1002, ¶124.

Second, *Liming* also teaches more permanent storage in the controller. EX1002, ¶125; EX1004, ¶¶[0075], [0098], [0104]-[0106]. Specifically, a "cookie" can be used to transmit location information from a client "so that a user of the system will not have to repeatedly enter *location information* from use to use." EX1004, ¶¶[0104]-[0106]. A POSITA would have understood that the use of the cookie would involve storage in the controller. EX1002, ¶125. The "client" is a part of the controller. EX1004, ¶[0070].

(b) Structure

Liming also discloses the structure of "memory" or its equivalent. EX1002, ¶126; EX1004, ¶¶[0034], [0035], [0042]. In addition to disclosing memory, the cited passages disclose storage means such as hard drives. A POSITA would have understood that each of these types of storage is an insubstantial difference. The purpose of the claimed storage means is storing the location data so it can then be transmitted to a remote device. All of the types of storage disclosed in *Liming* are interchangeable for that purpose and, therefore, are insubstantially different. EX1002, ¶126; EX1012, 221:18-222:4, 238:1-4 (nothing new about storage means). The storage means are part of the system 100—which is part of the controller. EX1002, ¶126; EX1004, Fig. 1, ¶¶[0034], [0065].

Even if the *Liming* structures were not equivalent, however, when location data is sent to a remote server, it is stored in memory of the controller. The examples of using GPS coordinates or manually entered data that use memory are

discussed above. *Supra*, §IX.A(1)(b)(a). If the location information was stored in a cookie, the result is the same. For a cookie to be used to send a message to a server, the data from the cookie is first loaded into memory so that it can be sent as part of a message. EX1002, ¶127; EX1024, 4; EX1026, 46, 49-51, EX1027, 8, 15; EX1036, 12:5-32, Fig. 4. Inventor Rosen agrees that the location must be stored in a memory in the controller. EX1012, 244:18-245:1.

GROUND 2: This element is obvious in light of *Liming/Rainer*. EX1002, ¶128. *Rainer* also discloses or at least renders obvious a memory in an environmental controller. *Infra*, §IX.C(3)(b); EX1002, ¶128. It would have been obvious for the memory to store location data (the physical location of the controller) in the memory (storage means). One would use *Liming's* web browser with cookies to obtain weather information to control the *Rainer's* thermostat. *Supra*, §IX.A(1)(a). Web browser software is capable of sending messages to Internet websites to obtain weather information. A POSITA would have understood that for a browser to use a cookie to request weather, the cookie information is first loaded into the thermostat's memory so that the web browser can compose a message. EX1002, ¶128; EX1024, 4; EX1026, 46, 49-51; EX1027, 8, 15; EX1036, 12:5-32, Fig. 4. To the extent Patent Owner can fathom some other way a message could be sent, it is at least obvious to use the memory to hold the message that the web browser sends to a server. *Id.* Inventor Rosen agrees that the location must be in memory at least temporarily. EX1012, 244:18-245:1.

c. *1[b]:*

Liming discloses element 1[b]. EX1002, ¶¶129-134.

(a) Remote device

Liming discloses multiple remote devices to which location data may be sent. For example, in Figure 10, the system transmits a message containing location information to a "server such as DB204 or AD212." EX1004, Fig. 10.

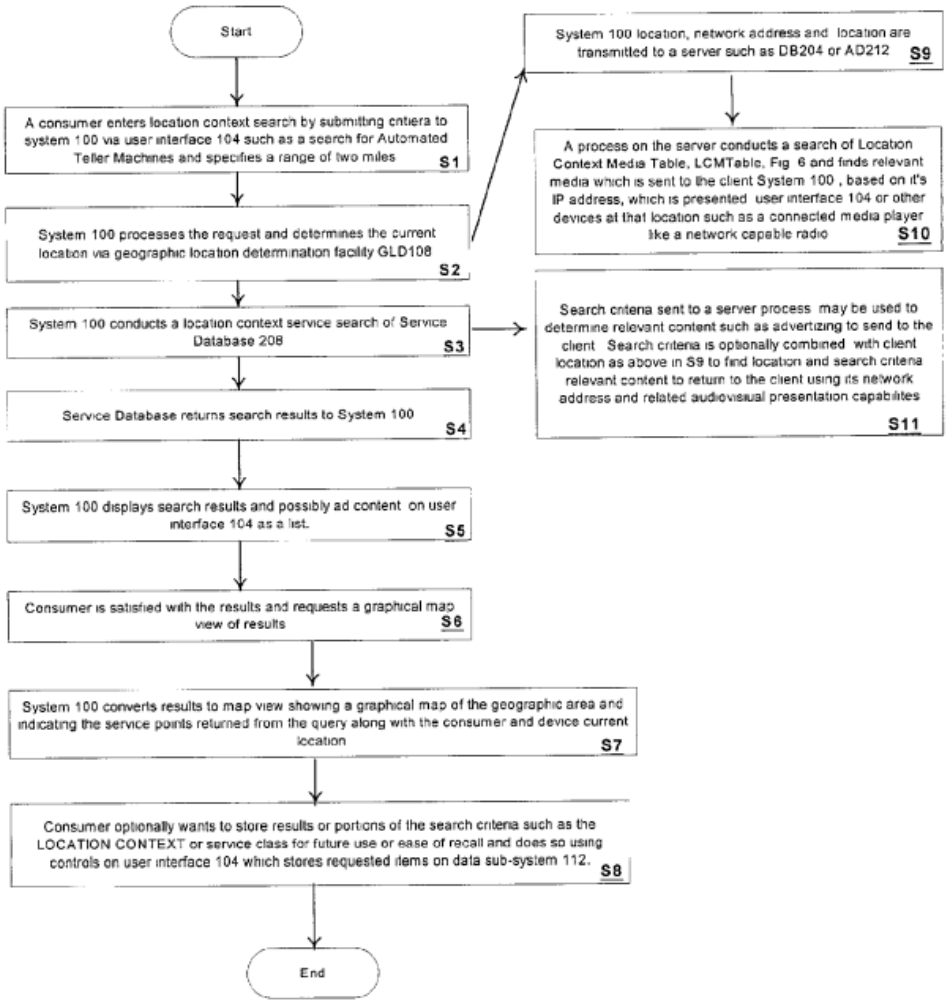


Figure 10

Those servers are both remote devices as illustrated in Figure 1:

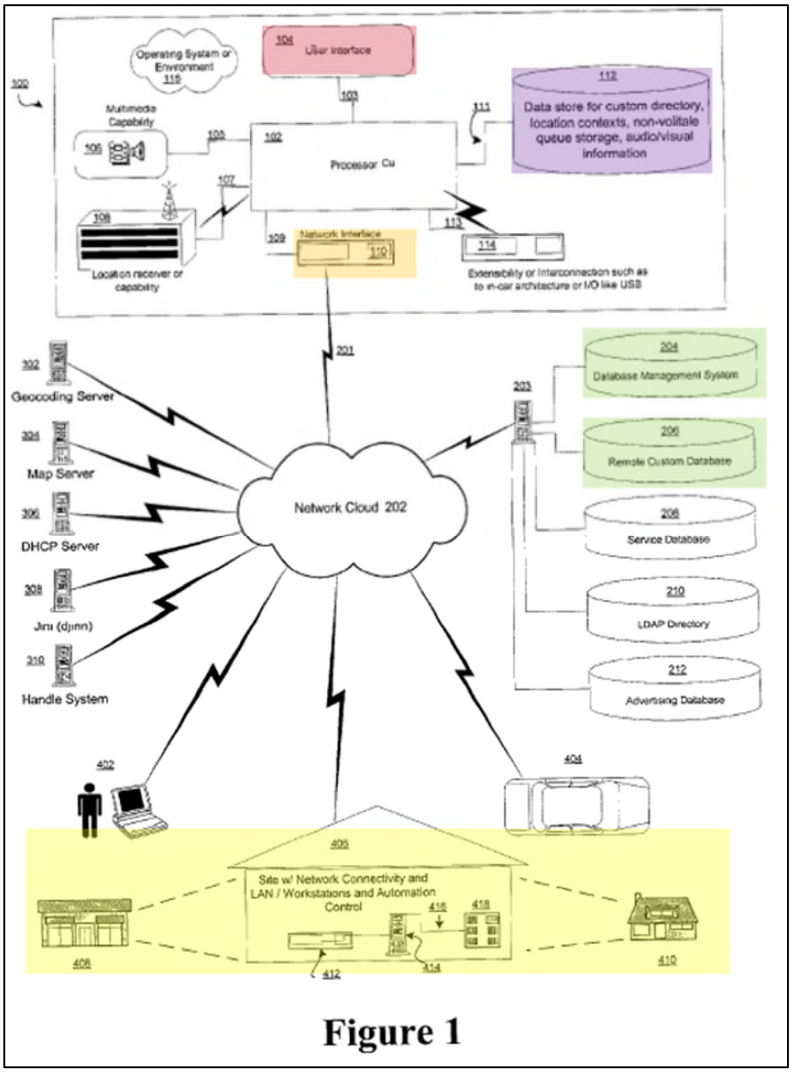


Figure 1

Another example is "remote custom database" 206. EX1004, Fig. 1, ¶[0062]. Remote database 206 is a "DBMS system[] like DB204." *Id*. Database management system 204 (and therefore remote database 206) "is an information management server platform or similar computing component which can include a server with a data storage and network connectivity." EX1004, ¶[0059].

As illustrated in Figure 1, the servers 204, 206, and 212 are all remote. *Liming* describes them as "remote data systems" or a "remote database." EX1004, ¶¶[0038], [0062]-[0063]. The '739 Patent, which describes "physically remote" as

"located away from that thermostat." EX1001, 6:53-54. Inventor Rosen agrees it is remote if external to the thermostat. EX1012, 256:2-14.

(b) Transmitter means

Liming discloses a transmitter means connected to the controller adapted to transmit location data. EX1002, ¶133. *Liming* discloses that device 100 may have a network access device 110 to transmit information over a network, such as to or from "remote data systems, such as Database Management System 204 ('DB204'). EX1004, ¶¶ [0038], [0091]. *Liming* discloses a plethora of options for the network device 110, including multiple types of modems with Internet connection. EX1004, ¶¶[0041], [0044], [0065]. This is the identical transmitter means disclosed in the '739 Patent. *Supra*, §VII. Network device 110, as part of system 100, is in the environmental controller and is thus connected to it. EX1004, ¶[0065]; EX1002, ¶133.

(c) Function

Liming discloses the claimed function of "transmitting location data to a remote device physically remote from the controller so that a location response is induced at the remote device." As discussed above, in the Figure 10 example, location data is transmitted to the remote servers DB204 or AD212. *Supra*, §IX.A(1)(c)(a). As discussed below, this transmission induces a location response. *Infra*, §IX.A(1)(d). The stored location information may be communicated to servers, including web servers via the use of cookies. EX1004, ¶¶[0104]-[0106].

A POSITA would have understood a web server as a "remote device." EX1002, ¶134.

GROUND 2: *Liming* discloses the transmitter means connected to the controller as discussed. It is obvious that in the *Liming/Rainer* combination where a web browser uses a cookie to transmit the location of the thermostat to an Internet server to get weather information, (*supra*, §IX.A(1)(a)) that the transmitter is adapted to transmit location data (the location stored in the cookie) to a remote device physically remote from the controller (the weather service web server) so that a location response is induced at the remote device (see Element 1(c) below). EX1002, ¶¶118-121, 135.

d. *1[c]:*

Liming discloses element 1[c]. EX1002, ¶¶136-140.

First, *Liming* discloses the location response is storage of the location data at the remote device. Figure 10 illustrates a good example of this:

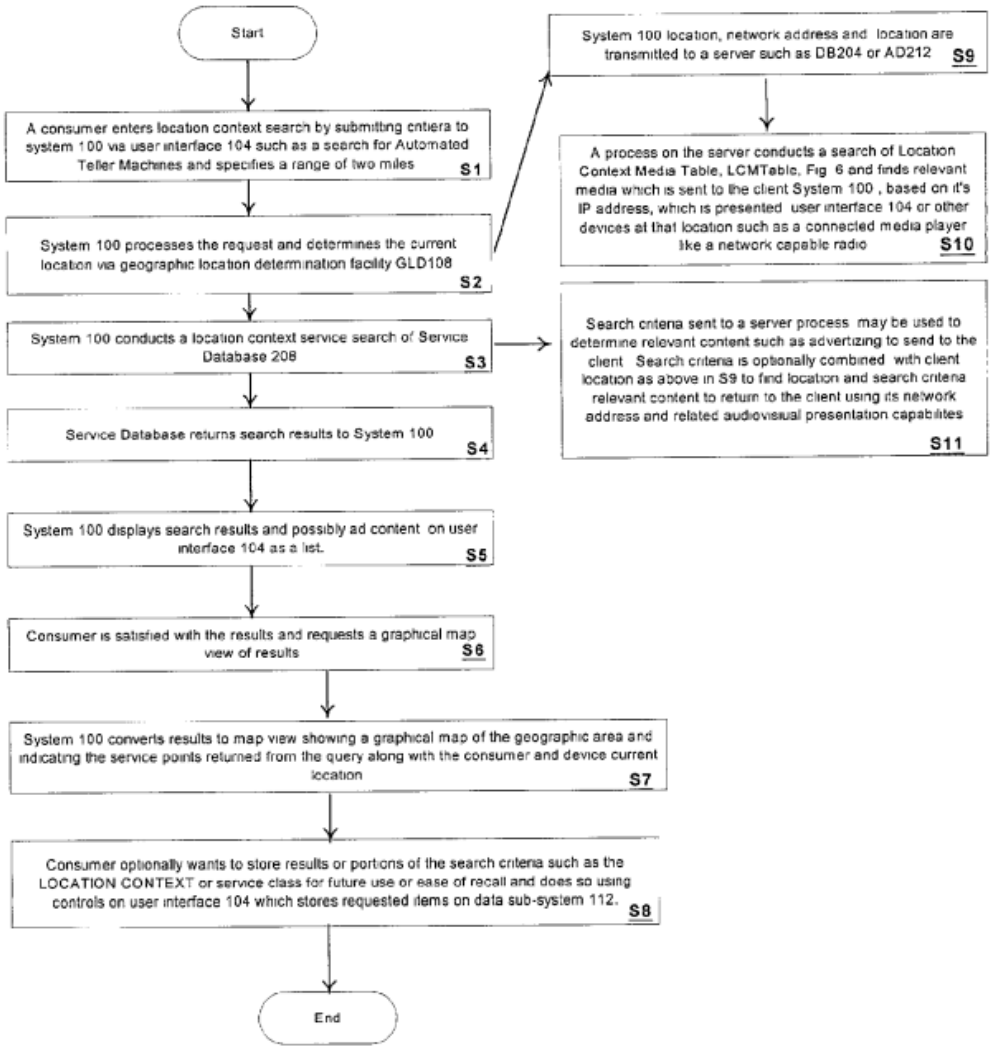


Figure 10

EX1004, Fig. 10. After the system transmits its location to a server (such as DB204 or AD212), Figure 10 describes the location response: "A process on the server conducts a search of location Context Media Table, LCMTable, Fig. 6 and finds relevant media which is sent to the client System 100, based on it's IP address." In order for a server process to search for location relevant media, the location that was "transmitted to a server" in S9 would be stored at the remote device (a) for the server to even receive the message because that is how messages are received at servers,

and (b) for the process to perform the search or comparison. EX1002, ¶138. As to reason (b), for the process to search location context media to find relevant media, the location of system 100 would be stored in order to perform the comparison. *Id*. Inventor Rosen agrees the server must at least temporarily store the location data. EX1012, 244:18-245:1.

Second, *Liming* discloses correlation of the physical location to location response data stored at or available to the remote device or created by processing of location data at the remote device. With reference to Figure 10, quoted above, this is the search to find "relevant media." EX1002, ¶139. *Liming* describes "[i]t is an object of the present invention to provide a method for delivering location relevant media to clients." EX1004, ¶[0075]. "This may be achieved by storing content or pointers to such content, along with spatial or geographic areas of relevance, in a table." *Id*.

Third, *Liming* discloses "whereafter location response data is transmitted from the remote device to the controller." *Liming* discloses "[i]t is an object of the present invention to provide a method for delivering location relevant media to clients." EX1004, ¶[0075]. A POSITA would have understood that in order to deliver location relevant media to clients, the location response data would be transmitted from the remote device to the controller. EX1002, ¶140. Figure 10 confirms this as the quoted passage from above indicates that the "relevant media" is "sent to the client System 100." EX1004, Fig. 10, EX1002, ¶140.

GROUND 2: In the *Liming/Rainer* combination, the three location response steps occur when a web browser using a cookie with location information is used to obtain the weather for control purposes. *Supra*, §IX.A(1)(a); EX1002, ¶¶118-121, 141. First, the web server stores received cookie information with the location in its memory. EX1002, ¶141. In order to process the request from the thermostat, the web server at least temporarily stores the location information in the cookie in its memory. *Id.* Inventor Rosen agrees. EX1012, 244:18-245:1. Second, the web server correlates the location in the cookie to the weather for that location. EX1002, ¶141. Inventor Rosen agrees this is how a weather website works. EX1012, 222:15-20, 223:12-25, 248:23-249:11. If the weather website did not do the correlation, it could not obtain the proper weather data to return to the thermostat. EX1002, ¶141. Finally, the web server transmits the location response data (the weather) to the thermostat. *Id.* If it did not, the thermostat could not use the weather for control/display purposes. *Id.* Inventor Rosen agrees this is how a weather website works. EX1012, 222:15-20, 223:5-9, 223:12-249:11.

2. Claim 2:

Liming discloses Claim 2. EX1002, ¶¶142-147. *Liming* discloses Claim 1 . *Supra*, §IX.A(1). *Liming* discloses "said transmitter means includes a modem" as addressed above in 1[b]. *Supra*, §IX.A(1)(c).

Liming discloses "the remote device is a computer network server." As discussed above, the remote device in the Figure 10 example includes a "server"

such as DB204 or AD212, which a POSITA would have understood is a "computer network server." EX1002, ¶¶130, 134, 138, 144. As described above, *Liming* discloses a "client equipped with a Web browser connects to a Web server," and communicating information stored in cookies with a server. EX1004, ¶[0104]. A Web server is a computer network server. EX1002, ¶144.

GROUND 2: *Liming* discloses the modem and in the combination, the server accessed is a weather web server that qualifies as a computer network server. EX1002, ¶145.

3. Claim 3:

Liming discloses Claim 3. EX1002, ¶¶146-148. *Liming* discloses the system of Claim 1 . *Supra,* §IX.A(1). *Liming* discloses multiple examples of the Markush group as location data including: "telephone numbers," "street addresses" (which would include a zip code) and local latitude and longitude in the form of GPS coordinates. EX1004, ¶¶[0013]-[0014], [0034], [0039], [0071]. Figure 10 relied upon above teaches the use of the geographic location determination facility 108, which can include GPS. *Id.* ¶[0039].

GROUND 2: *Liming* discloses this limitation but even if it did not, it would have been obvious to use the zip code or local latitude and longitude to send to a website to get weather information for control purposes in the *Liming/Rainer* combination. EX1002, ¶148.

4. Claims 6-7

Liming discloses Claims 6 and 7. EX1002, ¶149. *Liming* discloses Claim 1 as detailed above. *Supra*, §IX.A(1). Claims 6 and 7 parrot language from Limitation 1[c]. *Liming* discloses Claims 6 and 7 for the reasons detailed above in 1[c]. *Supra*, §IX.A(1)(d).

GROUND 2: The *Liming/Rainer* combination discloses Claims 6 & 7 for the reasons detailed above in 1[c]. EX1002, ¶150; *supra*, §IX.A(1)(d).

5. Claim 8:

Liming discloses Claim 8. EX1002, ¶¶153-157. *Liming* discloses Claim 1 as detailed above. *Supra*, §IX.A(1).

Liming discloses location response data as detailed above in 1[b]-[c]. *Supra*, §IX.A(1)(c)-(d). *Liming* also discloses controller storage means as detailed above in 1[c]. *Supra*, §IX.A(1)(d).

As discussed in Figure 10, *Liming* discloses presenting location relevant media to user interface 104. EX1004, Fig. 10. In order to present media to a user interface, that media would be stored in the memory of the controller, at least temporarily, to output the media to the user. EX1002, ¶155; EX1015, 681-691, 720-723; EX1014, 4; EX1028, 82, 93; EX1035, Abstract, 3:8-49, Figs. 1-2; EX1036, 4:4-5:5; EX1026. In order for sound to be played or graphics to be displayed on a computer screen, data representing the sound or graphics needs to be first stored in a memory. EX1002, ¶155. A microprocessor controls the output of the data to

the user using the location relevant content in memory. *Id.*

Moreover, *Liming* discloses retrieving information from DS112 (which includes memory or equivalents as discussed above) to display the information on user interface 104. EX1004, ¶¶[0037], [0049], [0075].

GROUND 2: In the *Liming/Rainer* combination, the weather data obtained from the weather web service is used for "display and control purposes." It would have been obvious that for the data to be used to control the thermostat, the data would be stored in the memory of the thermostat so it could be accessed by the control algorithm for control and by the software to display it for display. EX1002, ¶158; EX1015, 682-688; EX1024, 4; EX1028, 82, 93; EX1035, Abstract, 3:8-49, Figs. 1-2; EX1036, 4:4-5:5; EX1026.

6. Claim 9:

Liming discloses Claim 9. EX1002, ¶¶159-160. *Liming* discloses the system of Claim 8 as detailed above. *Supra*, §IX.A(5). *Liming* discloses that "[u]ser interface 104 may comprise a visual display, such as a CRT or LCD." EX1004, ¶¶[0034], [0036]. The user interface is part of the controller. *Id.* ¶¶[0036], [0065]. As taught in Figure 10, the "relevant media" may be presented via "user interface 104." *Id.*, Fig. 10. This interface displays the received location response. EX1004, ¶[0037]; EX1002, ¶¶136-141, 153-158, 160; *supra*, §§IX.A(1)(d), IX.A(5).

GROUND 2: Claim 8 is disclosed by *Liming/Rainer* as discussed above.

Supra, §IX.A(5). As discussed below, *Rainer* discloses a display screen on which weather data (location response data) is displayed. EX1005, 4:31-34, 5:37-41, 5:48-65; Figs. 1-2. In the *Liming/Rainer* combination, it would have been obvious to display that data using *Liming*'s web browser. EX1002, ¶161.

B. Ground 3: Claims 1-3, 6-9 are obvious over *Inoue* in view of *Peters* and *weather.com*.

This Ground is included because its references have earlier dates than *Liming* and *Rainer*. It also looks at the claims from a different perspective given their broad recitation of location response with an "environmental controller." Because a laptop computer qualifies as an "environmental controller," the claims are obvious in light of a laptop computer accessing weather.com.

1. A POSITA Would Have and Could Have Combined *Inoue* with *Peters*.

A POSITA would have been motivated to combine *Inoue* with *Peters*. EX1002, ¶¶163-169. *Inoue* and *Peters* are analogous art and address similar problems of temperature control in laptop computers. EX1007, Abstract, ¶¶[0001]-[0016], Fig. 1; EX1008, Abstract, 1:15-22, 3:41-4:6.

A POSITA would have been motivated to modify *Inoue*'s laptop computer to incorporate *Peters*'s exterior temperature sensor to monitor the temperature outside of the CPU. EX1002, ¶164. *Inoue* discloses a thermal sensor that "measure the temperature within the enclosure of the electronic apparatus" and when there is an increase in temperature of a certain threshold, *Inoue*'s cooling fan generates air to

cool the temperature in the device. EX1007, ¶¶[0002], [0013], [0015], [0029], [0038]. *Peters* discloses a temperature sensor that measures the temperature outside of the CPU. EX1008, Abstract, 4:7-31, 5:32-53, 6:12-21; EX1007, ¶[0020], Fig. 1. In light of *Inoue*'s teachings of monitoring and cooling the temperature inside of the laptop's main enclosure, a POSITA would have been motivated to look to *Peters* for implementation details regarding the location, coupling, and thermal control logic related to *Peters'* second temperature sensor that measures the temperature outside of the CPU. EX1002, ¶164.

A POSITA would have recognized and been motivated by the express benefits of such a combination in order to control not only the temperature of the CPU itself but also the laptop's main enclosure, which a POSITA would have recognized contains not only the CPU but other components also in need of temperature control. *Id*., ¶165.

Peters also teaches the benefits of its system for "reduc[ing] or minmiz[ing] the annoyance caused by a fan turning on and off often in a relatively short period of time" and conserving power. EX1008, 3:41-47. A POSITA would have recognized that conserving battery power and minimizing fan annoyances improve the consumer experience, and would have been motivated by design and market forces to modify *Inoue* in view of *Peters* to achieve these benefits. EX1002, ¶166.

A POSITA would have had a reasonable expectation of success with combining *Inoue* with *Peters*. EX1002, ¶167. *Inoue* and *Peters* are

complimentary laptop cooling systems using a combination of sensors, thermal control logic, and fans to monitor and control temperature in the laptop computer. EX1007, ¶¶[0001]-[0002], [0013], [0015], [0020], [0029], [0038], Fig. 1; EX1008, Abstract, 2:65-3:8, 3:50-4:31, 5:20-52, 6:12-21, 7:5-10, 13:24-48, 16:52-65, Fig. 1. In light of *Inoue*'s express teachings of a thermal sensor that "measure[s] the temperature within the enclosure of the electronic apparatus," a POSITA would have recognized that *Peters*'s temperature sensor measuring temperature exterior to the CPU would have been readily incorporated into *Inoue*'s laptop computer without substantial modification or undue experimentation. EX1002, ¶167. Such a combination would have involved combining prior art elements (sensors) according to known methods (measuring temperature in a space) to yield predictable results (environmental control of a substantially enclosed space). *Id*.

A POSITA also would have been motivated to incorporate *Peters*'s graphical controller rendering data structures from memory for display. EX1008, 8:39-65. *Inoue* discloses an LCD display. EX1007, ¶¶[0020]-[0021], Fig. 1. In light of *Inoue*'s teachings, a POSITA would have been motivated to look to *Peters* for implementation details regarding the display of "[p]rocessing and/or results of execution of application software." *Peters* discloses a graphics controller 123 that renders data structures from main memory for display. EX1008, 8:39-49.

A POSITA would have had a reasonable expectation of success with combining *Inoue* with *Peters*. *Inoue* and *Peters* are complimentary laptop systems

both with memories for storing programs or applications and data, as well as LCD displays. EX1007, ¶¶[0020]-[0021], [0025], Fig. 1; EX1008, 8:24-38. A POSITA would have recognized that Peters's graphics controller would have been readily incorporated into Inoue's laptop computer for display of data stored in memory without substantial modification or undue experimentation. EX1002, ¶169. Such a combination would have involved combining prior art elements (graphics controllers, memory, and LCD displays) according to known methods (rendering data from memory for display) to yield predictable results (display of data). *Id*.

2. A POSITA Would Have and Could Have Combined *Inoue* in view of *Peters* with *weather.com*.

A POSITA would have been motivated to combine *Inoue-Peters* with *weather.com*. EX1002, ¶¶170-172. *Inoue-Peters* and *weather.com* are analogous art in the same field of endeavor of computing and data networks such as the Internet. EX1007, ¶[0001].

A POSITA would have been motivated to combine *Inoue-Peters* with *weather.com* to use location data (*e.g.*, a zip code) to retrieve location response data (*e.g.*, the local weather) to display on a laptop. EX1002, ¶171. A POSITA would have readily recognized the benefits of using a location (*e.g.*, a zip code) to retrieve location-specific information (*e.g.*, the local weather) using a laptop connected to the Internet. *Id*. It would have been a matter of common sense to a POSITA to

use location data such as zip code to obtain location-based information such as weather for that zip code, as users desire to know about the weather in their particular area. *Id*. A POSITA would have recognized that this is the purpose and benefit of a weather website such as *weather.com*. *Id*. Moreover, accessing weather.com on a laptop computer is a well known and conventional method for retrieving local weather information using location data. *Id*. The '739 Patent admits that weather information sources are "widely available" and are "routinely accessed." EX1001, 4:10-15. Thus, accessing a website such as weather.com using *Inoue-Peters's* laptop would be doing something that is common.

A POSITA would have had a reasonable expectation of success in combining *Inoue-Peters* with *weather.com*. EX1002, ¶172. As noted, the '739 Patent admits that weather information sources are widely accessed on the Internet. A POSITA would have understood that a laptop is a common way to do so. EX1002, ¶172. *Inoue*'s laptop computer executes software, and it would have been well known to a POSITA that such software would have included web browsers. EX1007, ¶¶[0021], [0025], [0027]; EX1002, ¶172. *Weather.com* is a website accessible on the Internet, such as through a web browser. EX1002, ¶172. Executing a browser on *Inoue-Peters*'s laptop computer to use *weather.com* would have involved combining well known prior art elements (websites and computers) according to known methods (accessing the Internet) to yield predictable results (retrieving the local weather). EX1002, ¶172.

3. Claim 1

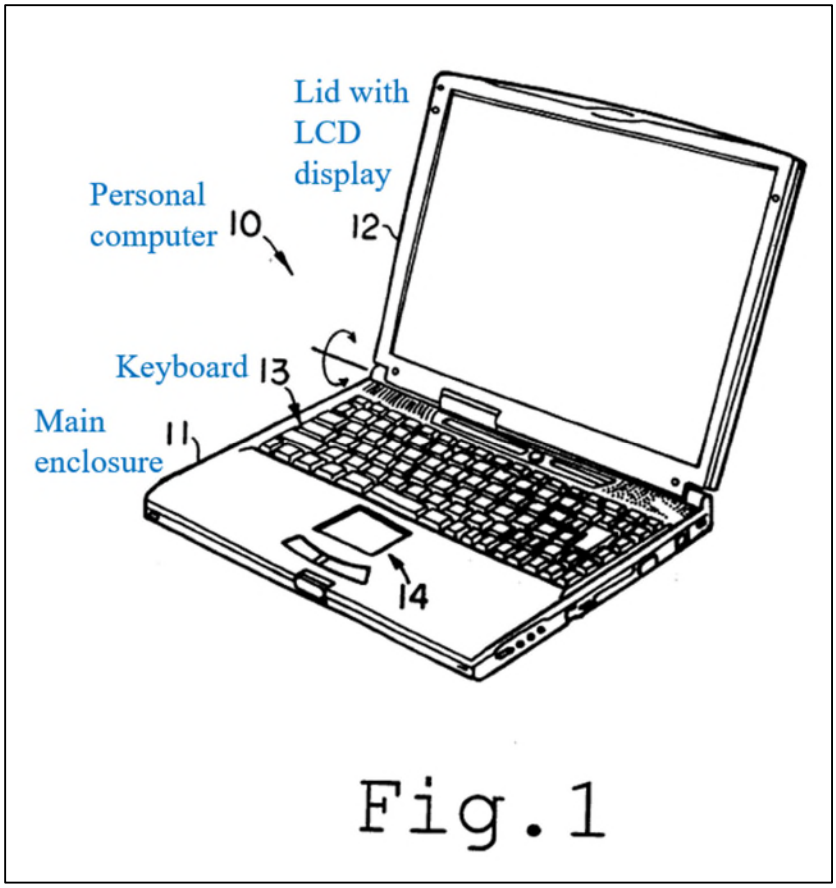
a. *1[Pre]:*

If the preamble is limiting, the *Inoue-Peters-weather.com* combination discloses it. EX1002, ¶¶173-185.

Inoue discloses an environmental controller. *Inoue* discloses a laptop computer that uses a "temperature information signal, identifying the temperature, so as to commence an interruption processing for controlling the temperature." EX1007, ¶¶[0001], [0011], [0008]-[0010]. =

Inoue's laptop computer is an "integral part of a system of environmental sensing or control." *Inoue* discloses the system of environmental sensing is "a computer system" or "an electronic apparatus such as a computer device" or laptop computer. EX1007, ¶¶[0001]-[0002], [0009]-[0010], [0020], Fig. 1.

Inoue's electronic device is illustrated in Figure 1 below and includes a main enclosure 11 and a display. EX1007, ¶[0020].



EX1007, Fig. 1 (annotated). The motherboard of the electronic device comprises, a CPU, a temperature detector or thermal sensor, a cooling fan, a fan controller, memory, and a modem, among other components, as illustrated in Figure 2 below. EX1007, ¶¶[0020]-[0032].

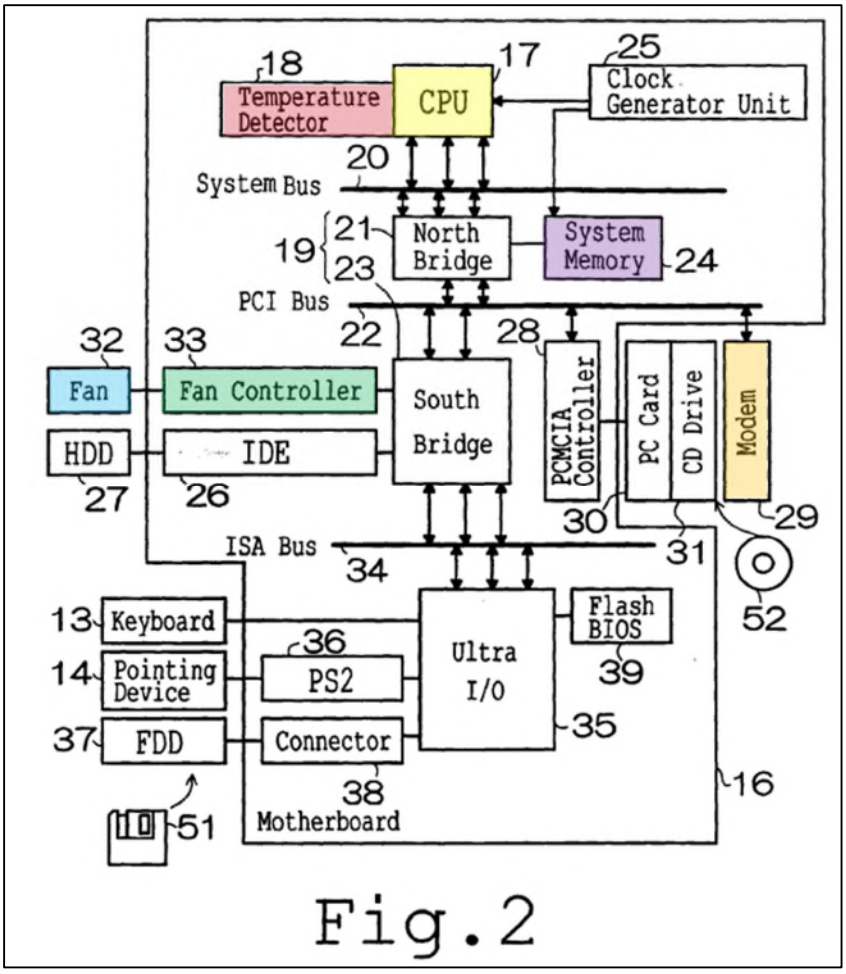


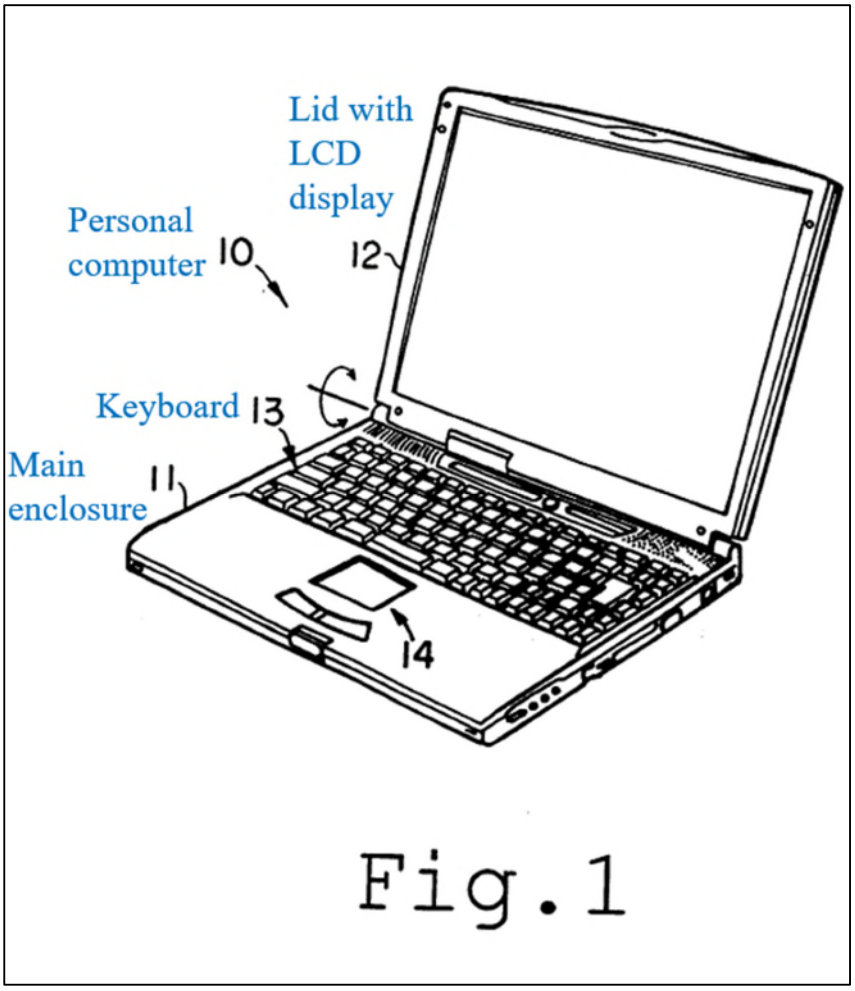
Fig.2

EX1007, Fig. 2 (highlighted).

While the preamble recites a "system of environmental sensing or control," *Inoue*'s system both senses and controls the temperature. With respect to sensing, for example, *Inoue* discloses "[a] temperature detector or thermal sensor may be connected to the interrupt request *so as to measure the actual temperature within the enclosure of the electronic apparatus*." EX1007, ¶[0013].

The laptop also controls its temperature. EX1007, Abstract, ¶¶[0001]-[0002], [0008]-[0011]. Temperature is controlled because, for example, "an increase in the temperature within the enclosure can be suppressed." EX1007, ¶[0014], Abstract ("[H]eat generated at the CPU can be suppressed."). For example, *Inoue* discloses use of a cooling fan to control the temperature. EX1007, ¶¶[0002], [0027], [0036].

Inoue's system of environmental sensing or control is "for a local and substantially enclosed space." *Inoue* describes the interior of the computer where temperature is controlled as an "enclosure." *See, e.g.*, EX1007, ¶¶[0001]-[0002], [0015]-[0016]. As detailed above, *Inoue* both senses and controls the temperature within the enclosure. *Id*., ¶¶[0011], [0016], [0029], [0038]. It also would have been well known to a POSITA that a laptop computer would be a "substantially enclosed space," with the CPU and other components enclosed within a casing. EX1002, ¶¶179-180. Such a typical laptop computer is further illustrated by Figure 1:



EX1007, Fig. 1 (annotated), ¶[0019] *Inoue* specifically discloses that the laptop computer includes a "main enclosure 11" in which the CPU and other components are enclosed. EX1007, ¶[0020]. The cooling fan cools the temperature of this main enclosure 11. *Id.*, ¶[0029]. *Inoue* specifically describes main enclosure 11 as comprising a "confined space." *Id.*, ¶[0038]. Thus, it qualifies as a "local and substantially enclosed space." EX1002, ¶180.

Peters also discloses an environmental controller adapted to be an integral part of a system of environmental sensing or control for a local and substantially enclosed space. *Peters* discloses "[a] computer system having thermal control logic that efficiently cools the computer system," where "the thermal control logic couples to a CPU module and a fan." EX1008, Abstract, 3:50-4:6, 5:20-31, Fig. 1. The fan (or fan 180) conditions the temperature of the local and substantially enclosed space of the computer by cooling the computer. *Id*., 7:5-10 13:24-48, 16:52-65. The thermal control logic controls the fan in response to temperature monitored by sensors. A POSITA would have understood the *Peters* laptop is a system of environmental sensing or control. *Id*., 2:65-3:8, 6:30-49, 7:40-59; EX1002, ¶181.

Peters discloses two temperature sensors, one of which measures the temperature of the CPU core and one that measures the temperature near the exterior surface of the CPU. EX1008, Abstract, 4:7-31, 6:12-21. The latter sensor is able to measure the temperature of "a region away from the die 105, such as an exterior region 109 of the CPU 102." EX1008, 5:32-52. If the temperature of that space becomes excessive, the thermal control logic adjusts the fan speed. *Id*., 7:40-59. A POSITA would have understood that the temperature of the exterior region 109 of the CPU is the temperature of a "local and substantially enclosed space." EX1002, ¶182; EX1008, 5:65-6:4. A POSITA also would have understood that *Peters*'s laptop is an "environmental controller." EX1002, ¶182; EX1008, 6:30-

49.

The *Inoue-Peters-weather.com* combination renders obvious that the environmental controller is located at a single physical location. It would have been well known to a POSITA that a laptop computer such as that in *Inoue* and *Peters* is located at a single physical location rather than at multiple or dispersed physical locations. EX1002, ¶183.

A POSITA further would have recognized that laptops may be used within a single physical location, such as within one room, one address (such as an office or home), or within a single zip code. EX1002, ¶184; EX1004, ¶[0046]. Thus, regardless of the meaning of "single physical location," a POSITA would have understood that a laptop such as the *Inoue-Peters* laptop's environmental controller is located at a single physical location. *Id.*

The *Inoue-Peters-weather.com* combination discloses a location response system. When accessing *weather.com* on a web browser on a laptop computer, such as *Inoue-Peters*'s laptop computer, a user would enter their location (*e.g.*, zip code) and receive a location response (*e.g.*, local weather). EX1002, ¶¶101-108, 185; EX1009, 6, 9; EX1014, 39-40, 44-54, 59-62, 64-69; EX1015, 681-691, 720-723.

b. *1[a]:*

The *Inoue-Peters-weather.com* combination discloses element 1[a]. EX1002, ¶¶186-192. As discussed above, the "storage means" recited in this claim

element is governed by 35 U.S.C. § 112, ¶6. *Supra*, §VII.

(a) Function

The *Inoue-Peters-weather.com* combination discloses the claimed function of "storing a physical location of the environmental controller as location data." EX1002, ¶¶187-188. As discussed above, a POSITA would have been motivated to use *Inoue-Peters*'s laptop computer to access a website such as *weather.com* on a web browser. *Supra*, §IX.B(2). When accessing *weather.com* on a web browser on a laptop computer, such as *Inoue-Peters*'s laptop computer, a user would enter their location (*e.g.*, zip code) into a memory of the computer. EX1002, ¶¶101-108, 187; EX1009, 6, 9 (confirming that the zip code that is sent to *weather.com* would first be stored in memory of the computer and explaining the basic methods available in HTTP (*e.g.*, GET, POST, PUT, DELETE)); EX1014, 39-40, 44-54, 59-62, 64-69; EX1015, 681-691, 720-723. Inventor Rosen admits one enters a zip code to use the website. EX1012, 223:22-25.

It was common knowledge of and well known to a POSITA that interaction with a website that provides location information in response to a query from a laptop computer would involve storage of location information in the memory of the laptop. EX1002, ¶187. Before a query can be sent to a website, the data for the query is stored in the memory of the device—usually under control of a web browser. *Id*. Inventor Rosen agreed that the location information is necessarily stored at both the controller and remote device at least temporarily. EX1012, 244:18-245:1.

The *Inoue-Peters-weather.com* combination therefore teaches storing a physical location of the environmental controller as location data (*e.g.*, as a zip code in memory of the laptop computer under control of a web browser).

(b) Structure

The *Inoue-Peters-weather.com-Liming* combination discloses storing the location data in storage means in the controller. EX1002, ¶¶188-192. As discussed in the prior section, the zip code that is sent to weather.com is stored in memory before being sent. It is at least obvious to store the zip code there before sending the HTTP request. EX1002, ¶188. *Inoue* also discloses the identical structure for storage—a memory, as system memory unit 24. EX1007, ¶¶[0025], [0027]; EX1002, ¶188. Similarly, *Peters* also discloses a main memory array 145. EX1008, 8:24-38.

It would have been well known to a POSITA that application software or programs referenced in both *Inoue* and *Peters* would include a web browser. EX1002, ¶191. Web browsers were common knowledge of a POSITA and even used in Internet appliances. EX1006, Abstract, 2:38-41, 2:61-64; EX1002,¶191. A POSITA using a laptop to access *weather.com* would have known to use a web browser—that would have been obvious. EX1002, ¶191. The web browser, as discussed above, stores the message containing the zip code in memory before sending it to *weather.com*. *Id*. Thus, while *Inoue-Peters* discloses a memory where the data would be stored, such a memory would have been obvious just

knowing *weather.com* was to be accessed using a zip code. *Id.* Inventor Rosen admitted the storage means is not inventive. EX1012, 221:18-222:4, 238:1-4, 241:11-4.

c. *1[b]:*

The *Inoue-Peters-weather.com* combination discloses element 1[b]. EX1002, ¶¶193-202.

(a) Transmitter Means

The *Inoue-Peters-weather.com* combination discloses a modem with Internet or network connection—the same transmitter disclosed in the specification. EX1002, ¶¶200-202. *Inoue* discloses a modem 29 that "serves to connect CPU 17 to a network such as the Internet, an extranet, or the like." EX1007, ¶[0028], Fig. 2. A POSITA would have understood that *Inoue*'s laptop would access a website (remote device) such as *weather.com* on a web browser using a modem like *Inoue*'s modem 29. EX1002, ¶200.

In the combination of reference, *Inoue-Peters's* laptop is accessing weather.com. Weather.com's server is a "remote device physically remote from the controller" as it is "located away from that thermostat." EX1002, ¶199; EX1001, 6:53-56, 7:10-15 (Internet nodes are remote), 7:21-23 ("weather website" is "remote device"); EX1014, 39-40, 44-54, 59-62, 64-69; EX1015, 681-691, 720-723. Inventor Rosen admitted the transmitter means is not inventive. EX1012, 221:18-222:4, 238:9-11.

(b) Function

The *Inoue-Peters-weather.com* combination discloses function of "transmitting location data to a remote device physically remote from the controller so that a location response is induced at the remote device." EX1002, ¶¶194-199.

When accessing *weather.com* from a laptop computer, a user would enter their location (*e.g.*, zip code). EX1002, ¶¶101-108, 195; EX1009, 6, 9 (confirming that the zip code that is sent to *weather.com* would first be stored in memory of the computer and explaining the basic methods available in HTTP (*e.g.*, GET, POST, PUT, DELETE)). This location data (*e.g.*, zip code) would be transmitted from the laptop computer to the weather.com server over the Internet. *Id.* For example, the computer would perform an HTTP POST query whereby the location information is sent to a *weather.com* server (network server). *Id.*; EX1009, 6, 9; EX1014, 39-40, 44-54, 59-62, 64-69; EX1015, 681-691, 720-723. The induced location response is discussed in connection with element 1[c] below. *Infra*, IX.B(3)(d); EX1002, ¶¶196-199, 203-211.

d. *1[c]:*

The *Inoue-Peters-weather.com-Liming* combination discloses element 1[c]. EX1002, ¶¶196-199, 203-211.

When the query is received by the website server, the query information, including the location information (zip code), is stored in the memory of the server. EX1002, ¶¶101-108, 205. This would occur, for example, in the ordinary case of

interaction with weather websites such as *weather.com*. *Id*. Inventor Rosen agrees that the location information would necessarily be stored temporarily. EX1012, 244:18-245:1. He further agreed that *weather.com* itself would store the location data. EX1012, 223:12-25, 248:23-249:11.

The *Inoue-Peters-weather.com* combination discloses "correlation of the physical location data to location response data stored at or available to the remote device or created by processing of location data at the remote device." EX1002, ¶¶101-108, 206-208, 210-211. For example, as detailed above, the *weather.com* server executes a CGI script on the location information (physical location data) to retrieve the weather (location response data). *Id.*; EX1009, 6, 9. To execute the CGI script, the location data is stored in memory of the server when the message is received from the laptop. EX1002, ¶¶101-108, 206-208; EX1014, 39-40, 44-54, 59-62, 64-69; EX1015, 681-691, 720-723. The '739 Patent and Inventor Rosen both concede that a weather website correlates the location data with the local weather. EX1001, 7:22-26; EX1012, 222:8-13, 223:12-25, 248:23-249:11.

The *Inoue-Peters-weather.com* combination also discloses "whereafter location response data is transmitted from the remote device to the controller." EX1002, ¶209-211. In response to a query with a zip code, *weather.com* teaches the server returning HTML to the client device for displaying the current location weather conditions to the user. EX1002, ¶¶101-108, 193-202, 209-211; EX1009, 6, 9; EX1014, 39-40, 44-54, 59-62, 64-69; EX1015, 681-691, 720-723. Inventor

Rosen conceded this step was also performed by weather.com. EX1012, 222:15-20; 223:12-25, 248:23-249:11.

4. Claim 2:

Inoue-Peters in view of *weather.com* discloses Claim 1. *Supra*, §IX.B(3).

As detailed in 1[b], *Inoue* specifically discloses a modem as a transmitter means. *Supra*, §IX.B(3)(b).

The *Inoue-Peters-weather.com* combination discloses "the remote device is a computer network server." The weather.com server is a "computer network server." EX1002, ¶¶212-214.

5. Claim 3:

The *Inoue-Peters-weather.com* combination discloses Claim 1. *Supra*, §IX.B(3).

The *Inoue-Peters-weather.com-Liming* combination discloses the new limitations of Claim 3 because when *weather.com* is used, a zip code is stored as location data as discussed in 1[b]. EX1002, ¶¶101-108, 193-202, 215-216; *supra*, §IX.B(3)(c).

6. Claim 6 & 7:

The *Inoue-Peters-weather.com* combination discloses Claim 1 as detailed above. *Supra*, §IX.B(3). Claims 6 and 7 repeats part of 1[c]. The *Inoue-Peters-weather.com* combination discloses Claims 6 and 7 for the reasons above in 1[c]. *Supra*, §IX.B(3)(d); EX1002, ¶¶217-218.

7. Claim 8:

The *Inoue-Peters-weather.com-Liming* combination discloses Claim 8. EX1002, ¶¶219-222. The *Inoue-Peters-weather.com* combination discloses t Claim 1 as detailed above. *Supra*, §IX.B(3).

The *Inoue-Peters-weather.com* combination discloses "in which location response data is stored in the controller storage means." The *Inoue-Peters-weather.com-Liming* combination also discloses controller storage means as detailed in 1[c]. *Supra*, §IX.B(3)(d). For example, as detailed above in 1[b], *weather.com* teaches the server returning HTML to the client device for displaying the current location weather conditions to the user. *Supra*, §IX.B(3)(c); EX1002, ¶¶101-108, 193-202, 222; EX1009, 6, 9.; EX1014, 39-40, 44-54, 59-62, 64-69; EX1015, 681-691, 720-723 It would have been well known to a POSITA that displaying information would have involved storing the information locally in memory. EX1002, ¶222. A computer displays information on its display that is stored in the memory of the computer. *Id*. It would have been obvious to display the weather information as that is the purpose for which it is sought from weather.com. *Id.*

8. Claim 9:

The *Inoue-Peters-weather.com* combination discloses Claim 9. EX1002, ¶¶223-227. The *Inoue-Peters-weather.com* combination discloses Claim 8. *Supra*, §IX.B(7).

The *Inoue-Peters-weather.com-Liming* combination discloses "in which

stored location response data is displayed on a display screen at the controller." *Inoue* discloses an LCD display. EX1007, ¶[0020], Fig. 1. As *Inoue* describes, "[p]rocessing and/or results of execution of the application software may be displayed on the screen of the LCD incorporated in the lid 12." EX1007, ¶[0021]. Similarly, *Peters* discloses a display 125 that is an LCD display. EX1008, 8:59-65. *Peters* also discloses a graphics controller 125 that may access main memory 124 to render data structures from main memory for display. *Id*., 8:39-58.

As discussed above, it would have been obvious to access *weather.com* using *Inoue-Peters's* laptop and use a web browser to obtain the local weather. *Supra*, §IX.B(2). Once that weather information is obtained, it would be displayed by the web browser as that was the purpose of seeking the weather information in the first place. EX1002, ¶227.

C. Ground 4: Claims 1-3, 6-9 are obvious over *Rainer* in view of *Kikinis* and *weather.com*.

This ground is included because the primary reference has an earlier date of invention than *Liming* and specifically discloses the alleged point of novelty—retrieving weather information for a thermostat.

1. A POSITA Would Have and Could Have Combined *Rainer* with *Kikinis*.

A POSITA would have been motivated to combine *Rainer* and *Kikinis*. EX1002, ¶¶229-233. *Rainer* and *Kikinis* are analogous art in the same field of endeavor as they both teach connecting a thermostat to the Internet. *See* EX1005,

5:28-31; EX1006, 4:38-52.

Rainer discloses a thermostat. EX1005, Fig. 2, 3:28-32.

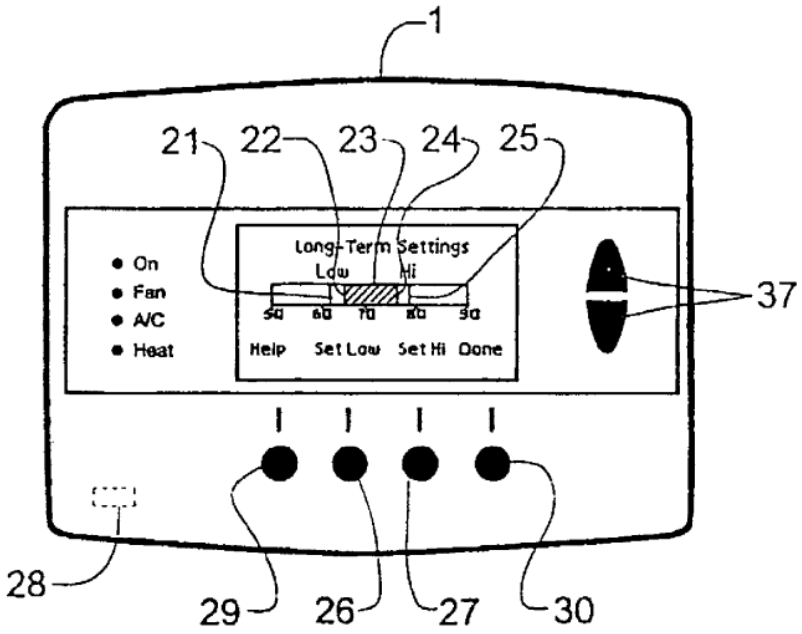


FIG. 2

It uses temperature predictions for improved temperature control. *Id.* 3:21-27. The thermostat connects to the Internet via a communications link and weather information is obtained from "weather services" for "control and display purposes." EX1005, 5:28-31; 4:31-34.

Kikinis teaches that an air conditioning thermostat is an "internet appliance" which may be "connected to an utilize information from the Internet." EX1006, 4:38-52. *Kikinis* discloses a network server that will "fully configure such appliances over a network connection to access and operate on the Internet." *Id.*,

Abstract. *Kikinis* teaches that a problem with internet appliances is that they often require "lengthy and tedious set-up operations" before the device can be used. *Id.*, 2:45-47, 2:61-3:5. *Kikinis's* service configures internet appliances to operate on the Internet, including downloading and configuring a browser application. *Id.* 6:57-7:5. A POSITA would thus have understood *Kikinis*'s thermostat uses of a web browser. EX1002, ¶231.

A POSITA would have been motivated to use the automated set up service taught by *Kikinis* to set up *Rainer*'s thermostat for Internet operation. EX1002, ¶232. First, use of such a service would make it easier for the thermostat's user to connect to the Internet by avoiding lengthy, tedious, and difficult set-operations. Second, *Rainer* teaches that the thermostat displays weather information and utility cost information. EX1005, 4:31-34, 5:37-41. It was common knowledge and well known to a POSITA that weather information is available on the Internet. EX1002, ¶232. *Kikinis* teaches that existing Internet appliances typically contain at least some elements or aspects of a web browser. EX1006, 2:38-41. Rather than creating new software to obtain information over the Internet, a POSITA would have been motivated to use existing software, such as a web browser, in *Rainer*'s thermostat to handle communications over the Internet. Third, a POSITA would have been motivated to use a web browser in *Rainer's* thermostat because a web browser automatically formats requests to websites in the format expected by the website. EX1002, ¶232. Fourth, a POSITA would have been motivated to use the

web browser in *Rainer's* thermostat because a web browser automatically formats information for display on a device. *Id*.

A POSITA would have had a reasonable expectation of success in doing so. EX1002, ¶233. The '739 Patent concedes the prior art thermostats may already be connected to the Internet. EX1001, 7:35-38. A POSITA knew how to install a web browser on an Internet appliance such as a thermostat using a network server and how to use the web browser to obtain Internet content. EX1002, ¶233. Using a web browser on an Internet appliance such as a thermostat would have involved combining well known prior art elements (web browsers and digital thermostats) according to known methods (automated configuration over the Internet) to yield predictable results (obtaining information from the Internet using a web browser). *Id*. Doing so would have involved minimal, if any, modification to *Rainer's* thermostat which has Internet access and a display screen. *Id*.

2. A POSITA Would Have and Could Have Combined *weather.com* with *Rainer* in view of *Kikinis*.

A POSITA would have been motivated to combine *Rainer-Kikinis* with *weather.com*. EX1002, ¶¶234-239. *Rainer* teaches obtaining weather data for "control and display purposes." EX1005, 5:28-31, 4:31-34. A POSITA would have known that an easy way to obtain weather information from "weather services" would be to use one of the most popular and easy to use weather services—the *weather.com* website. EX1002, ¶234. The '739 Patent concedes, "weather

information sources are widely available and are routinely accessed by, for example, using the Internet." EX1001, 4:13-15. A POSITA would have known that *weather.com* was one website that could be "routinely accessed." EX1002, ¶234.

A POSITA would have been motivated to combine *Rainer*/*Kikinis* with *weather.com*. *Rainer*, *Kikinis*, and *weather.com* are analogous art in the same field of endeavor of obtaining information over the Internet. EX1002, ¶235.

A POSITA would have been motivated to combine *Rainer*/*Kikinis* with *weather.com* to use location data (*e.g.*, a zip code) to retrieve location response data (*e.g.*, the local weather). EX1002, ¶236. *Rainer* teaches use of the weather information for both "control and display purposes." EX1005, 4:31-34. A POSITA would have understood that the local weather is what is called for because it is being used to control the thermostat. EX1002, ¶236. An easy way to obtain the local weather is to use a web browser on *Rainer's* thermostat connected to the Internet to communicate with *weather.com*. *Weather.com* teaches that weather information is obtained by providing the zip code to the website, which results in the weather for that zip code being supplied. EX1002, ¶¶101-108, 236; EX1009, 6, 9.

A POSITA would have readily recognized the improvements and benefits to implementing the concept of using a location (*e.g.*, a zip code) to retrieve location-specific information (*e.g.*, the local weather) using a thermostat connected to the Internet. EX1002, ¶237. First, doing so would have helped the accuracy of the control of *Rainer*'s thermostat. *Id.* Second, it would be desirable for display as

users desire to know about the weather in their particular area. *Id*. Third, accessing *weather.com* using a web browser was a well-known conventional method for retrieving local weather information using location data. *Id*. It accordingly would have been obvious to retrieve local weather information using location information (like a zip code) by accessing a weather website like *weather.com* on a thermostat connected to the Internet using a web browser. *Id*.

A POSITA would have had a reasonable expectation of success in combining these references. EX1002, ¶¶238-239. *Rainer/Kikinis* and *weather.com* are complimentary systems. *Id*. *Rainer/Kikinis* is a system connected to the Internet with a browser. EX1002, ¶238. *Weather.com* is a website accessible on the Internet. *Rainer/Kikinis* executes web browser software capable of interacting with websites and indicates that it is desirable to retrieve weather information. *Id*. Using that thermostat system with *weather.com* would have involved combining well known prior art elements (websites and internet appliances with web browsers) according to known methods (accessing websites using a web browser) to yield predictable results (retrieving the local weather and displaying it). *Id*.

Moreover, a POSITA would have understood that *Rainer/Kikinis* already includes the hardware and software needed to interact with *Weather.com*. EX1002, ¶239. *Rainer* includes an Internet communications link, (EX1005, 5:28-31) and, when combined with *Kikinis* includes a web browser to access the Internet. EX1006, 2:38-41. It would have been well known to a POSITA that a web browser

would be used to access websites such as *weather.com*. EX1002, ¶239; EX1001, 4:13-15.

3. Claim 1

a. *1[Pre]:*

If the preamble is limiting, *Rainer/Kikinis* discloses it. EX1002, ¶240. *Rainer* discloses an environmental controller—a thermostat. EX1005, 3:28-31. The thermostat is "located at a single physical location" (a building) and controls the environment of a "local and substantially enclosed space" (the building). EX1002, ¶240; EX1005, 4:35-46, 5:24-27, 6:37-7:19, Claim 11. The thermostat is part of a location response system as it obtains weather information for "control and display purposes." EX1002, ¶240. The thermostat is also adapted to be "an integral part of environmental sensing or control." *Id*. For example, the thermostat senses temperature (*e.g.*, EX1005, 6:36-41) and controls HVAC equipment (*e.g.*, *id.*, 16:6-7:19). EX1002, ¶240; EX1005, 3:61-4:12, 4:22-34, 5:3-18, 5:24-31, 5:48-7:24.

b. *1[a]*

The Rainer-Kikinis-weather.com combination discloses element 1[a]. EX1002, ¶¶241-248.

(a) Function

The Rainer-Kikinis-weather.com combination discloses the claimed function of "storing a physical location of the environmental controller as location data." As discussed above, a POSITA would have been motivated to use a browser installed

on *Rainer*'s thermostat to access *weather.com* to obtain the local weather. *Supra*, §IX.C(1)-(2); EX1002, ¶242; EX1005, 4:31-34.

A POSITA would have understood that to use the weather for "control purposes," (*e.g.*, changing the operation of the thermostat based upon the weather—EX1005, 4:6-10, 6:14-19, Claims 1,7, & 8) the local weather would be obtained automatically so that the control could take place whether a human was present in the building or not. EX1002, ¶243. To obtain the weather without a human, it would have been obvious to store location information in the thermostat so that information can be sent in an automated fashion to receive the proper weather data when a human is not present. *Id*.

As noted above, it would have been obvious to use a web browser accessing *weather.com* to obtain the local weather using a zip code. The '739 Patent teaches that a zip code is one method that can be used to obtain "location information"—specifically the weather. EX1001, 7:19-31, 7:41-44. A POSITA would have understood that for control purposes, the web browser would be used to automatically access *weather.com* using the zip code stored in the thermostat, especially because weather .com provides weather data in response to a request using the zip code. EX1002, ¶244.

Even if the weather data is only displayed, the location of the thermostat (*e.g.* the zip code) would still be stored in the memory of the controller. *Weather.com* uses a zip code to retrieve weather information and return it to the device requesting

it. EX1002,¶245. In order for *weather.com* to supply weather data, it first receives a request to do so which identifies the zip code for which weather is desired. *Id.* A POSITA would have understood that before a query is sent to a website, the data for the query is stored in the memory of the device. EX1002, ¶¶101-108, 245; EX1009, 6, 9. That query would include the zip code. *Id.* This is true whether the zip code was stored each time the weather was requested or was previously stored. *Id.*

The *Rainer-Kikinis-weather.com* combination discloses or at least renders obvious the storage of the physical location of the environmental controller as location data in the controller.

(b) Structure

The *Rainer-Kikinis-weather.com* combination discloses storing the location data in memory in the controller (thermostat). EX1002, ¶¶247-248. *Rainer* makes clear that the software is stored in the microprocessor. EX1005, 5:50-51. A POSITA would have understood the microprocessor contains a memory because memory stores the software code for the microprocessor to execute. EX1002, ¶247. A POSITA would further have understood that data is also stored in that memory because no other memory is shown or described and the thermostat stores data to function such as data received from outside sources (EX1005, 5:28-31), indoor and outdoor temperature data as well as high and low temperature settings and predicted indoor temperature range (*id.*, 6:14-19), weather data (*id.*, 4:31-34),

utility price data (*id.*, 5:37-41), etc. Moreover, to use a web browser to interact with a website, data would need to be stored in a memory to send a query to the website and data would need to be stored when receiving the results of the query. EX1002, ¶247; EX1015, 682-688; EX1024, 4; EX1028, 82-93; EX1035, Abstract, 3:8-49, Figs. 1-2; EX1036, 4:4-5:5; EX1026. Thus, a POSITA would have understood that *Rainer* discloses or at least makes obvious the storage of the location data in memory (the location data that is stored per the analysis of the function discussed above). EX1002, ¶247.

At a minimum, a memory to store program and data information in a thermostat was within the general knowledge of a POSITA as admitted by the '739 Patent. EX1001, 1:34-41. Inventor Rosen admits that the claimed storage means is not inventive. EX1012, 221:18-222:4, 238:1-4; 241:11-14.

c. *1[b]:*

The *Rainer-Kikinis-weather.com* combination discloses element 1[b]. EX1002, ¶¶249-257.

(a) Transmitter means

The *Rainer-Kikinis-weather.com* combination discloses a transmitter means connected to the controller. EX1002, ¶¶255-257. *Rainer* discloses using the Internet or other means of connection to outside data sources. EX1005, 5:28-31. This means is connected to the environmental controller; otherwise the weather data received could not be used for "control and display purposes." EX1002, ¶255.

Kikinis teaches that Internet appliances are linked to the Internet using a variety of options including wireless devices and cable modems. EX1006, 2:31-44. Thus, the *Rainer-Kikinis* combination discloses a modem with Internet connection—the identical structure disclosed in the '739 Patent. EX1002, ¶255; EX1001, 7:2-9, 7:20. Alternatively, the disclosure to connect to the Internet, for example using a cable modem or wireless devices, at a minimum discloses an equivalent to the transmitter disclosed in the specification. *Id.*, ¶256. Inventor Rosen agrees he did not invent any new kind of transmitter. EX1012, 221:18-222:4, 238:9-11.

(b) Function

The *Rainer-Kikinis-weather.com* combination discloses the function of "transmitting location data to a remote device physically remote from the controller so that a location response is induced at the remote device." EX1002, ¶¶250-254. As discussed in the motivations to combine above, it would have been obvious to obtain weather data from *weather.com* for "control and display purposes" in *Rainer*'s thermostat. *Supra*, §IX.C(1)-(2); EX1002, ¶¶229-239, 250. As further explained in both that Section and in 1[a] above, obtaining weather data from *Weather.com*, involves sending a query containing the location information (zip code) for the thermostat. *Supra*, §§IX.C(1)-(2), IX.C(3)(b); EX1002, ¶¶101-108, 241-248, 250 When that query is sent, the transmitter is transmitting location data (*e.g.* the zip code) to a remote device (the *weather.com* server) so that a location response is induced at the remote device. EX1002, ¶¶101-108, 250, 258-263; *infra*,

§IX.C(3)(d).

To be clear, when accessing *weather.com* using a web browser, a query would be stored in the memory of the thermostat containing the location information (*e.g.* zip code) and this query would be sent by a transmitter to the *weather.com* website over the Internet. EX1002, ¶¶101-108, 251-252; EX1009, 6, 9; EX1012, 222:15-20, 223:5-9, 223:12-15, 244:18-245:1, 248:23-249:11; EX1015, 682-688; EX1024, 4; EX1028, 82, 93; EX1035, Abstract, 3:8-49, Figs. 1-2; EX1036, 4:4-5:5; EX1026.

The remote device is physically remote from the controller. It would have been well known to a POSITA that the *weather.com* server would be physically remote from the thermostat. EX1002, ¶253. This is consistent with the '739 Patent, which discloses that the remote device physically remote from the controller "may be Internet sites transmitting weather data to the thermostat based on the geographic location of the thermostat." EX1001, 6:54-56, 7:10-15, 7:21-23. Inventor Rosen testified that "physically remote" means "just remote," and includes "sitting on the wall right next to the thermostat" (or environmental controller). EX1012, 256:2-14.

The claim requires the transmitter means to transmit location data to a remote device "so that a location response is induced at a remote device." The location response is discussed in 1[c] which is incorporated by reference here. *Infra*, §IX.C(3)(d); EX1002, ¶¶258-263.

d. *1[c]:*

The *Rainer-Kikinis-weather.com* combination discloses element 1[c]. EX1002, ¶¶258-263.

The *Rainer-Kikinis-weather.com* combination discloses "location response is storage of the location data at the remote device." EX1002, ¶¶249-257, 259. The *weather.com* website receives an HTTP POST query from the thermostat and that query is stored in the memory of the *weather.com* website so that the query can be processed. EX1002, ¶¶101-108, 259. In order for the *weather.com* website to return the proper weather data to the thermostat, it first stores the location information (the zip code) in the HTTP POST query, among other information (such as the IP address of the thermostat to return the data to). *Id*. Inventor Rosen agreed weather information is location response data. EX1012, 222:8-13. He further agreed that the location information must necessarily be stored at the weather.com server. I*d.*, 244:18-245:1, 248:23-249:11. He also agreed storage occurs with *weather.com*. *Id.*, 223:12-25, 248:23-249:11.

The *Rainer-Kikinis-weather.com* combination discloses "location response is . . . correlation of the physical location data to location response data stored at or available to the remote device or created by processing of location data at the remote device." For example, as detailed above, the *weather.com* server executes a CGI script on the location information (physical location data) to retrieve the weather (location response data), thus correlating the location data to the weather data

(location response data). EX1002, ¶¶101-108, 260-261; EX1009, 6, 9. To execute the CGI script, the location data is stored in memory of the server when the message is received from the laptop. *Id.* To return the weather data in response to the HTTP POST query, the weather data is stored at or available to the *weather.com* server, otherwise it could not be returned in response to the request. *Id.* Inventor Rosen agreed that weather.com performs the correlation. EX1012, 248:23-249:11, 222:15-20.

The *Rainer-Kikinis-weather.com* combination discloses "whereafter location response data is transmitted from the remote device to the controller." EX1002, ¶262. *Rainer* discloses that the communication link is used to "obtain weather predictions from weather services for control and display purposes." EX1005, 4:31-34. The only way the weather predictions can be obtained is if a weather service, such as *weather.com*, transmits the location response data (the weather information) from the remote device (*weather.com* server) to the controller (*Rainer*'s thermostat). The weather.com server returns HTML to the client and that HTML is what would be transmitted from the website to *Rainer's* thermostat. EX1002, ¶¶101-108, 249-257, 262; EX1009, 6, 9. Inventor Rosen agrees weather.com transmits response data to the controller. EX1012, 248:23-249:11, 222:15-20.

To the extent Patent Owner contends any part of element 1[c] is missing, it was common knowledge of and well known to a POSITA as admitted prior art. EX1002, ¶263; *Qualcomm Inc. v. Apple Inc.*, 24 F.4th 1367, 1376 (Fed. Cir. 2022)

(can rely upon admitted prior art to disclose a missing element). The '739 Patent concedes that (a) local weather sources are both widely available and routinely accessed on the Internet and that (b) "[t]he weather website (the remote device) receives the location data and associates it with local weather data for the thermostat location, which is then transmitted to the thermostat through the modem (a response of the remote device)." EX1001, 4:13-15 7:22-26.

4. Claim 2:

The *Rainer-Kikinis-weather.com* combination discloses Claim 2. EX1002, ¶¶264-265. The *Rainer-Kikinis-weather.com* combination discloses Claim 1. *Supra*, §IX.C(3). *Kikinis* discloses an internet appliance, such as a thermostat, connected to the Internet via a cable modem. EX1006, 2:34-44, 4:38-52. A cable modem is a type of modem so this element is disclosed. EX1002, ¶264. Including a modem as part of a transmitter to connect to the Internet was well known to a POSITA. EX1002, ¶264 (citing EX1007, ¶[0028]), Fig. 2 (modem 29)); EX1006, 2:31-44). Inventor Rosen admits that the claimed modem is not inventive. EX1012, 221:18-222:4, 241:18-22.

The *Rainer-Kikinis-weather.com* combination discloses "the remote device is a computer network server." As discussed above in Ground 3, *weather.com* satisfies this limitation. *Supra*, §IX.B(4). As detailed above with respect to limitation 1[b], *Rainer* discloses connection to the Internet (EX1005, 5:28-31) and it would have been obvious to connect to *weather.com*, (a computer network server)

to get weather data for control and display purposes. *Supra*, §IX.C(2); EX1002, ¶¶249-257, 265. It would have been well known to a POSITA that connecting to the Internet involves connecting to a computer network server. EX1002, ¶265. Inventor Rosen admits that he did not invent any new server or remote device. EX1012, 221:18-222:4, 240:6-8.

5. Claim 3:

The *Rainer-Kikinis-weather.com* combination discloses Claim 3. EX1002, ¶¶266-267. The *Rainer-Kikinis-weather.com* combination discloses Claim 1. *Supra*, §IX.C(3). *Weather.com* discloses the zip code of Claim 3 for the same reason discussed for Claim 3 in Ground 3. *Supra*, §IX.B(5); EX1002, ¶¶101-108, 193-202, 216, 266.

6. Claims 6 & 7:

The *Rainer-Kikinis-weather.com* combination discloses Claim 1. *Supra*, §IX.C(3). Claims 6 and 7 repeat a portion of the same limitation disclosed in 1[c]. The *Rainer-Kikinis-weather.com* combination discloses Claims 6 and 7 for the reasons in 1[c]. *Supra*, §IX.C(3)(d); EX1002, ¶¶268-269.

7. Claim 8:

The *Rainer-Kikinis-weather.com* combination discloses Claim 8. EX1002, ¶¶270-273. The *Rainer-Kikinis-weather.com* combination discloses Claim 1. *Supra*, §IX.C(3).

The *Rainer-Kikinis-weather.com* combination discloses "in which location

response data is stored in the controller storage means." *Rainer* discloses that the weather data is used for "control and display purposes." EX1005, 4:31-34. To use the data for control and display purposes, that information would be stored in the controller storage means. EX1002, ¶271; EX1015, 681-691, 720-723; EX1014, 4; EX1028, 82, 93; EX1035, Abstract, 3:8-49, Figs. 1-2; EX1036, 4:4-5:5; EX1026. While the data could be stored somewhere else, no other storage is specified in *Rainer* and the controller storage means is at least an obvious place to store that data. *Id.* *See limitations* 1[a]-1[c] for a discussion of the storage means and the location response data provided by *weather.com*. *Supra,* §IX.C(3)(b)-(d).

8. Claim 9:

The *Rainer-Kikinis-weather.com* combination discloses Claim 9. EX1002, ¶274. The *Rainer-Kikinis-weather.com* combination discloses Claim 8. *Supra,* §IX.C(3)(7). The *Rainer-Kikinis-weather.com* combination discloses "in which stored location response data is displayed on a display screen at the controller." *Rainer* discloses obtaining weather data for "control and display purposes." EX1005, 4:31-34. A POSITA would have understood that the weather data obtained from the *weather.com* website and stored in the memory of the thermostat is then displayed on the LCD pursuant to *Rainer's* teaching that the weather data is obtained for display purposes. EX1002, ¶274; EX1005 5:48-49.

X. SECONDARY CONSIDERATIONS

Petitioner is aware of no evidence of secondary considerations that would

meaningfully rebut a finding of obviousness. EX1002, ¶¶275-276. Petitioner reserves the right to rebut any purported objective evidence of non-obviousness raised by PO.

XI. INSTITUTION SHOULD BE GRANTED

A. Discretion Under 35 U.S.C. § 314(a)

The Board should not exercise its discretion under §314(a) to deny this Petition. First, no other petitions have been filed against the '739 Patent. *Gen. Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19, 15-16 (P.T.A.B. Sept. 6, 2017) (precedential).

Second, if the Board applies the analysis in *NHK Spring Co., Ltd v. Intri-Plex Techs. Inc.*, IPR2018-00752, Paper 8, 19-20 (P.T.A.B., Sept. 12, 2018) (precedential)[3] or *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (P.T.A.B. Mar. 20, 2020) (precedential), those factors taken together support institution.

Factor 1: Potential Stay

While Petitioner intends to move for a stay, the Board should "not attempt to predict how the district court in the related district court litigation will proceed."

[3] Petitioner recognizes the Board must apply its precedential caselaw, but specifically reserves its objection to the Board's application of the *NHK-Fintiv* caselaw as non-justiciable under the APA.

Sand Revolution II, LLC v. Cont'l Intermodal Grp.-Trucking LLC, IPR2019-01393, Paper 24, 7 (P.T.A.B. June 16, 2020) (informative).

Factor 2: Trial Date

The related litigation is set for jury trial beginning June 3, 2024. EX1011, 2. That is approximately three months before the projected September 2024 statutory deadline for the Board to enter a final written decision in this proceeding (if instituted). "[T]he decision whether to institute will likely implicate other factors . . . such as the resources that have been invested in the parallel proceeding." *Apple*, IPR2020-00019, Paper 11, 9. As discussed below, the litigation is in its early stages.

Also, trial dates are uncertain. *Halliburton Energy Servs., Inc. v. U.S. Well Servs., LLC*, IPR2021-01032, Paper 12 (P.T.A.B. Jan. 19, 2022); EX1030, 2 (finding the PTAB had accurately "evaluat[ed] future trial dates" only six percent of the time); EX1032 (similar). Even if the trial is scheduled several months before the Board's final written decision, this factor would be "at most, neutral." *Micron Tech., Inc. v. Godo Kaisha IP Bridge 1*, IPR2020-01008, Paper 10, 14 (P.T.A.B. Dec. 7, 2020); *Google LLC v. Parus Holdings, Inc.*, IPR2020-00846, Paper 9, 12-14 (P.T.A.B. Oct. 21, 2020).

If trial were to proceed as scheduled, this factor at most "only slightly favors" denying institution. *Micron Tech., Inc. v. Vervain, LLC*, IPR2021-01550, Paper 11, 10 (P.T.A.B. Apr. 11, 2022) In that case, however, it is outweighed by other factors

here, including the relatively early stage of the case as discussed below. *Microsoft Corp. v. WSOU Invs., LLC, IPR2021-00930*, Paper 8, 6-13 (PTAB Dec. 2, 2021); *Facebook, Inc. v. USC IP P'ship, L.P.*, IPR2021-00033, Paper 13, 12-13 (P.T.A.B. Apr. 30, 2021)

Factor 3: Investment in the parallel proceeding

Neither the parties nor the court have expended substantial effort in the parallel proceeding. Petitioner filed a motion to dismiss on June 21, 2022. The motion was granted in part and denied in part on January 4, 2023. Patent Owner served its preliminary infringement contentions on October 20, 2022 and its amended infringement contentions on November 21, 2022. Petitioner served its invalidity contentions on December 15, 2022. The claim construction process has only just begun. Claim construction briefing will be completed by May 11, 2023, followed by a potential hearing. EX1034, 8. The effort and resources expended to date are "typical of the early stages of litigation" and thus this factor "does not favor exercising discretion to deny institution." *Apple Inc. v. Smart Mobile Techs. LLC*, IPR2022-00808, Paper 24, 52 (P.T.A.B. Sept. 29, 2022).

Petitioner worked diligently to file this Petition. As noted above, Petitioner moved to dismiss on June 21, 2022. That motion was potentially case dispositive as to the '739 Patent. To conserve resources of the Board and the parties, it would have made no sense to file petitions for IPR prior to resolution of the motion to dismiss. This Petition, and four other petitions challenging different patents also

asserted in the litigation, were filed just over two months after the district court denied the motion. Additionally, the Petition was filed within five months of receiving Patent Owner's original infringement contentions and less than two months after receiving Patent Owner's proposed claim constructions.

It would be premature to speculate as to "the amount and type of work" that will have been completed when the institution decision is made. *Google LLC*, IPR2020-00846, Paper 9, 17-18. For example, the deadline to complete all discovery is November 20, 2023. EX1011, 6. Summary judgment motions are due on December 21, 2023. *Id.*, 2. Thus, there will certainly be "much work remain[ing] in the district court case as it relates to invalidity" when this proceeding is ready for institution. *Sand Revolution*, IPR2019-01393, Paper 24, 11. Coupled with Petitioner's diligence in filing this Petition, this factor weighs against discretionary denial. *Cf. id.*, 10-11; *Google*, IPR2020-00846, Paper 9, 18.

Factor 4: Issue Overlap

This Petition challenges each district court asserted claim and would dispose of all claims related to the '739 Patent. EX1033, 1. The district court, however, will not be addressing invalidity of all claims challenged in this Petition, because the Petition challenges additional claims of the '739 Patent not asserted in the district court litigation (claims 2 and 6). Petitioners served invalidity contentions in the parallel proceeding, but Petitioner did not chart *Rainer* or *Kikinis* with respect to the '739 Patent and so Petitioner's Ground 3 has no overlap with the district court

litigation with respect to the ’739 Patent. Moreover, the parallel case is at an early stage. Neither party has served its claim construction brief. Any overlap between the two proceedings at this point would be completely speculative. As such, this factor fails to support discretionary denial.

Factor 5: Party Overlap

Petitioner and Patent Owner are parties in the related district court litigation.

Factor 6: Other Circumstances Favoring Institution

Additional circumstances favor institution. First, Petitioner acted with diligence. Petitioner has gained no advantage from the parallel litigation, which favors institution. *Oticon Med. AB v. Cochlear Ltd.*, IPR2019-00975, Paper 15, 22-23 (P.T.A.B. Oct. 16, 2019) (precedential). The motion to dismiss had the potential to dispose of the case for the ’739 Patent. It was entirely reasonable for Petitioner to wait until the motion had been decided before undertaking the effort and expense of preparing the instant Petition.

Moreover, the merits favor institution as the strong grounds in this Petition demonstrate. “In such cases, the institution of a trial may serve the interest of overall system efficiency and integrity because it allows the proceeding to continue in the event that the parallel proceeding settles or fails to resolve the patentability question presented in the PTAB proceeding.” *Google*, IPR2020-00846, Paper 9, 21 (quoting *Fintiv*, IPR2020-00019, Paper 11, 14-15). The Petition’s Grounds 1-4 render anticipated or obvious every challenged claim. Multiple references disclose

obtaining location information from a remote source in an environmental controller system—the alleged point of novelty. Because the merits of Petitioner's patentability challenge is compelling, this factor weighs against denying institution. *Fintiv*, IPR2020-00019, Paper 11, 14-15; EX1031, 4.

"Considering the *Fintiv* factors as part of a holistic analysis," it would undermine "the interests of efficiency and integrity of the system" if the Board were "to deny institution of a potentially meritorious Petition." *Sand Revolution*, Paper 24, 14.

B. Discretion Under 35 U.S.C. §325(d)

Liming, *Inoue*, *Peters*, *weather.com*, and *Rainer* were disclosed, cited, or considered during prosecution. Thus, none of the art in Grounds 1-3 were considered by the Examiner at all during prosecution. While *Kikinis* was cited in an IDS along with other references, the Examiner could not have considered it in conjunction with the primary reference for Ground 4, *Rainer*. This Petition therefore does not present a situation in which "the same or substantially the same prior art or arguments previously were presented to the Office." 35 U.S.C. §325(d). Accordingly, the Board should decline to exercise its discretion under 35 U.S.C. §325(d).

XII. CONCLUSION

Petitioner respectfully requests institution of IPR and that the Challenged Claims be canceled as unpatentable pursuant to 35 U.S.C. §318(b).

Respectfully Submitted,

March 29, 2023

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CERTIFICATE OF SERVICE

In accordance with 37 C.F.R. §§ 42.6(e) and 42.105, the undersigned certifies that on March 29, 2023, a complete and entire copy of the **PETITION FOR *INTER PARTES* REVIEW OF CLAIMS 1-3, 6-9 OF U.S. PATENT NO. 6,789,739** including exhibits and testimony relied upon and a power of attorney were served on Patent Owner via FedEx overnight at the correspondence address of record for the subject patent and counsel for Patent Owner in the NDTX Litigation, as included below:

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CERTIFICATION UNDER 37 C.F.R. § 42.24(d)

Pursuant to 37 C.F.R. § 42.24(d), the undersigned hereby certifies that the word count under § 42.24(a)(1) for the foregoing Petition for *Inter Partes* Review totals 13,802 words, within the 14,000 word limit allowed under § 42.24(a)(1)(i).

Date: March 29, 2023

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