

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TOYOTA MOTOR CORPORATION

Petitioner

v.

INFOGATION CORPORATION

Patent Owner

**PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT 6,292,743**

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	MANDATORY NOTICES UNDER 37 C.F.R. § 42.8	2
	A. Real Parties-in-Interest	2
	B. Related Matters	2
	C. Lead and Back-up Counsel and Service Information	4
III.	CERTIFICATION OF GROUNDS FOR STANDING	4
IV.	OVERVIEW OF CHALLENGE AND RELIEF REQUESTED	4
	A. Prior Art Patents and Printed Publications	5
	B. Statutory Grounds for Challenges	6
V.	U.S. PATENT NO. 6,292,743	7
	A. Summary	7
	B. Prosecution History	8
	C. Prior IPR2017-00819	9
VI.	PERSON OF ORDINARY SKILL IN THE ART	10
VII.	CLAIM CONSTRUCTION	10
VIII.	GROUNDS CHALLENGING PATENTABILITY	11
	A. GROUND 1: Claims 1-7, 12-16, and 21-22 are obvious by Behr in view of (ITS Architecture or Lappenbusch)	11

B. GROUND 2: Claims 1-7, 12-16, and 21-22 are obvious by Behr in view of ITS Architecture/Lappenbusch and (Knockeart or Ishihara)	59
C. GROUND 3: Claims 8 and 9 are obvious by Behr in view of ITS Architecture/Lappenbusch, Knockeart/Ishihara, and Geiser	72
D. GROUND 4: Claims 10 and 11 are obvious by Behr in view of ITS Architecture/Lappenbusch, Knockeart/Ishihara, Geiser, and Saito	75
E. GROUND 5: Claims 17 and 18 are obvious by Behr in view of ITS Architecture/Lappenbusch, Knockeart/Ishihara, and JP091	77
F. GROUND 6: Claim 19 is obvious by Behr in view of ITS Architecture/Lappenbusch, Knockeart/Ishihara, and JP230	78
IX. DISCRETIONARY CONSIDERATION	79
A. The Board Should Not Exercise its Discretion to Deny Institution Under § 325(d).....	79
B. The Board Should Not Exercise its Discretion to Deny Institution Based on Co-Pending District Court Litigation	82
X. CONCLUSION	82

TABLE OF AUTHORITIES

Cases

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH,
IPR2019-01469, Paper 6 (PTAB 2020) (precedential)80

Google Inc. et al. v. InfoGation Corp.,
IPR2017-00819, Paper 16 (PTAB 2017)..... 9, 11, 31, 81

KSR Int’l Co. v. Teleflex Inc.,
550 U.S. 398 (2007).....68

Oticon Medical AB v. Cochlear Limited,
IPR2019-00975, Paper 15 (PTAB Oct. 16, 2019) (precedential).....81

Phillips v. AWH Corp.,
415 F.3d 1303 (Fed. Cir. 2005) (*en banc*)10

Pitney Bowes, Inc. v. Hewlett-Packard Co.,
182 F.3d 1298, 51 USPQ2d 1161 (Fed. Cir. 1999) 22, 54

Wellman, Inc. v. Eastman Chem. Co.,
642 F.3d 1355 (Fed. Cir. 2011)10

Zup v. Nash Mfg.,
896 F.3d 1365 (Fed. Cir. 2018) 37, 42

TABLE OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 6,292,743 to Pu
1002	Prosecution File History of U.S. Patent No. 6,292,743
1003	Declaration of William Michalson, Ph.D.
1004	International Publication No. WO 96/00373 (“Behr”)
1005	National Intelligent Transportation Systems (ITS) Architecture: Standards Requirements Package 03 (Information Service Provider Wireless Interfaces) (retrieved from the Wayback Machine in association with the Wayback URL: https://web.archive.org/web/19970214063822/http://www.itsa.org/public/archdocs/NAR/srp.zip (http://www.itsa.org/public/archdocs/NAR/srp.zip on or before February 14, 1997))
1006	National Intelligent Transportation Systems (ITS) Architecture: Logical Architecture Volume 1 (Description) (retrieved from the Wayback Machine in association with the Wayback URL: https://web.archive.org/web/19970214054941/http://www.itsa.org/public/archdocs/NAR/logical.zip (http://www.itsa.org/public/archdocs/NAR/logical.zip on or before February 14, 1997))
1007	National Intelligent Transportation Systems (ITS) Architecture: Logical Architecture Volume 2 (Process Specifications) (retrieved from the Wayback Machine in association with the Wayback URL: https://web.archive.org/web/19970214054941/http://www.itsa.org/public/archdocs/NAR/logical.zip (http://www.itsa.org/public/archdocs/NAR/logical.zip on or before February 14, 1997))
1008	National Intelligent Transportation Systems (ITS) Architecture: Logical Architecture Volume 3 (Data Dictionary)

	<p>(retrieved from the Wayback Machine in association with the Wayback URL: https://web.archive.org/web/19970214054941/http://www.itsa.org/public/archdocs/NAR/logical.zip (http://www.itsa.org/public/archdocs/NAR/logical.zip on or before February 14, 1997))</p>
1009	<p>National Intelligent Transportation Systems (ITS) Architecture: Implementation Strategy Appendix A (Detailed Market Package Definitions) (retrieved from the Wayback Machine in association with the Wayback URL: https://web.archive.org/web/19970214063148/http://www.itsa.org/public/archdocs/NAR/is.zip (http://www.itsa.org/public/archdocs/NAR/is.zip on or before February 14, 1997))</p>
1010	<p>National Intelligent Transportation Systems (ITS) Architecture: Executive Summary (retrieved from the Wayback Machine in association with the Wayback URL: https://web.archive.org/web/19970214054553/http://www.itsa.org/public/archdocs/NAR/exsum.zip (http://www.itsa.org/public/archdocs/NAR/exsum.zip on or before February 14, 1997))</p>
1011	<p>National Intelligent Transportation Systems (ITS) Architecture: Standards Development Plan (retrieved from the Wayback Machine in association with the Wayback URL: https://web.archive.org/web/19970214063304/http://www.itsa.org/public/archdocs/NAR/sdp.zip (http://www.itsa.org/public/archdocs/NAR/sdp.zip on or before February 14, 1997))</p>
1012	<p>National Intelligent Transportation Systems (ITS) Architecture: Mission Statement (retrieved from the Wayback Machine in association with the Wayback URL: https://web.archive.org/web/19970214055038/http://www.itsa.org/public/archdocs/NAR/mission.zip</p>

	(http://www.itsa.org/public/archdocs/NAR/mission.zip on or before February 14, 1997))
1013	U.S. Patent No. 5,982,298 (Lappenbusch)
1014	U.S. Patent No. 6,680,694 (Knockeart)
1015	U.S. Patent No. 5,059,965 (Geiser)
1016	U.S. Patent No. 5,237,323 (Saito)
1017	Japan Patent Application Publication No. JPH10-221091 (JP091)
1018	Japan Patent Application Publication No. JPH08-110230 (JP230)
1019	ITS Brochure (retrieved from the Wayback Machine in association with the Wayback URL: https://web.archive.org/web/19970624013455/http://www.its.dot.gov/architecture/brochure.html (http://www.its.dot.gov/architecture/brochure.html on or before June 24, 1997))
1020	Overview of the National Architecture (retrieved from the Wayback Machine in association with the Wayback URL: https://web.archive.org/web/19970131030735/https://www.its.dot.gov/architecture/overview.html (https://www.its.dot.gov/architecture/overview.html on or before January 31, 1997))
1021	National ITS Architecture Documents (retrieved from the Wayback Machine in association with the Wayback URL: https://web.archive.org/web/19970214033013/http://www.itsa.org/public/archdocs/national.html (http://www.itsa.org/public/archdocs/national.html on or before February 14, 1997))
1022	ITSA Homepage (retrieved from the Wayback Machine in association with the Wayback URL: https://web.archive.org/web/19970214032637/http://www.itsa.org/index.html

	(http://www.itsa.org/index.html on or before February 14, 1997))
1023	ITSA Public Programs, Notices & Announcements (retrieved from the Wayback Machine in association with the Wayback URL: https://web.archive.org/web/19970214032150/http://www.itsa.org:80/public/notice.html (http://www.itsa.org/public/notice.html on or before February 14, 1997))
1024	ITSA Benefits of Membership (retrieved from the Wayback Machine in association with the Wayback URL: https://web.archive.org/web/19970214032110/http://www.itsa.org/public/benefits.html (http://www.itsa.org/public/benefits.html on or before February 14, 1997))
1025	The U.S. Department of Transportation’s ITS Standards Program 1996 Status Report (retrieved from the Wayback Machine in association with the Wayback URL: https://web.archive.org/web/19970624010219/http://www.its.dot.gov/standards/docs/REPORT96.htm (http://www.its.dot.gov/standards/docs/REPORT96.htm on or before June 24, 1997))
1026	ITS Deployment Guidance for Transit Systems (April 1997)
1027	U.S. Patent No. 6,240,360 (Phelan)
1028	U.S. Patent No. 6,591,263 (Becker)
1029	Federal Register Notice 96-4184
1030	Federal Register Notice 97-18983
1031	U.S. Patent No. 6,098,016 (Ishihara)
1032	Public Roads Magazine, Vol. 61 No. 2 (September/October 1997)
1033	Curriculum Vitae of William Michalson, Ph.D
1034	U.S. Patent No. 4,502,123 (Minami)

1035	R.L. French, “Automobile navigation: Where is it going?,” <i>Aerospace and Electronic Systems Magazine</i> , pp. 6-12, May 1987 (French)
1036	“Route Guidance Systems for Improving Urban Travel and Location Choices,” <i>Transportation Research Part A: General</i> , Vol. 22A, No. 4, pp.275-281, Pergamon Press, 1988 (Boyce)
1037	B. Coppock et. al., <i>History of GIS, Geographical Information Systems: Principles and Applications</i> , Vol. 1, Longman Group, pp. 21-34, 1991 (Coppock)
1038	Peuquet, <i>A Conceptual Framework And Comparison Of Spatial Data Models</i> , <i>Cartographica</i> , Vol. 21, No. 4, pp. 66–113, 1984 (Peuquet)
1039	P. Davies, et.al., “Assessment of Technologies for Relieving Urban Traffic Congestion,” <i>National Cooperative Highway Research Program Report 340</i> , Transportation Research Board, December 1991 (Davies)
1040	Kopitz, <i>RDS: The Radio Data System</i> , 1999
1041	<i>The Proceedings of the 1992 Annual Meeting of IVHS America Vol. 2</i> , 1992 (TRAVTEK)
1042	Lanter, <i>User-Centered Graphical User Interface Design for GIS</i> , National Center for Geographic Information and Analysis Report 91-6, 1991
1043	White, <i>Car Navigation Systems</i> , <i>Geographical Information Systems: Principles and Applications</i> , D.J. Maguire, et. al., eds., Vol. 2, pp. 115-125, Longman Group, 1991
1044	“Automobile navigation system using beacon information,” <i>IEEE 1989 Vehicle Navigation and Information Systems Conference</i> , pp. 139-145, Toronto, 11-13 Sep 1989 (Saito)
1045	Guzolek, J.; Koch, E.; “Real-time route planning in road networks,” <i>1989 Vehicle Navigation and Information Systems Conference</i> , pp. 165-169, Toronto, Ont., Canada, 11-13 Sep 1989 (Guzolek)
1046	Rosen, D.A.; Mammano, F.J.; Favout, R.; “An electronic route-guidance system for highway vehicles,” <i>IEEE Transactions on Vehicular Technology</i> , vol. 19, no. 1, pp. 143-152, Feb 1970 (Rosen)
1047	UK Patent Application GB 2,079,453, filed July 1980 (Wootton)

1048	Certified Translation of JP091
1049	Certified Translation of JP230
1050	Declaration of Fadi N. Kiblawi

I. INTRODUCTION

Toyota Motor Corporation (“Petitioner”) requests *inter partes* review and cancelation of claims 1-19 and 21-22 of U.S. Patent No. 6,292,743 (“the ’743 Patent”), which describes a distributed navigation system that uses “[a] generic natural language description... to specify optimal routing information that is transmitted from the server to the client.” EX1001, 1:5-8, 3:21-23. The “natural language” content, in one example from the ’743 Patent, includes generic terms such as “road names and turning directions.” *Id.*, 3:37-40. The specification contends that this alleged solution differed from then-existing systems in which “all geographic data transmitted by the server is in a proprietary format... specific to the particular mapping database used on the client.” *Id.*, 1:62-67. This assumption mischaracterized the prior art.

Indeed, the alleged solution from the ’743 Patent was not innovative by the time leading up to its priority date in January 1999. As explained below and in the accompanying testimony of Dr. Michalson (EX1003), use of a non-proprietary format to transmit server-calculated routing information was recognized industry-wide years before January 1999, in the government-funded National Intelligent Transportation Systems (ITS) Architecture (“ITS Architecture,” EX1005-1012). Numerous other publications such as Behr (EX1004) show that routing information

in a natural language description was also a known prior art practice. Behr, the ITS Architecture, and the predictable combinations cited in Grounds 1-6 were not considered during prosecution. If they had been, the '743 Patent never would have issued. Petitioner therefore requests the Board to institute IPR of claims 1-19, 21, and 22 as set forth below.

II. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8

A. Real Parties-in-Interest

Pursuant to 37 C.F.R. § 42.8(b)(1), Petitioner certifies that Petitioner, Toyota Motor North America, Inc., Toyota Motor Engineering & Manufacturing North America, Inc., and Toyota Motor Sales, U.S.A., Inc., are the real parties-in-interest, and further certify that no other party exercised control or could exercise control over Petitioner's participation in this proceeding, the filing of this petition, or the conduct of any ensuing trial.

B. Related Matters

The '743 Patent is currently the subject of the following litigation: *Infogation Corporation v. Toyota Motor Corp. et al*, Case No. 2:23-cv-359 (EDTX Aug. 2, 2023); *Infogation Corporation v. Bayerische Motoren Werke AG et al*, Case No. 2:23-cv-358 (EDTX Aug. 2, 2023); *Infogation Corporation v. Honda Motor Co. Ltd. et al*, Case No. 2:23-cv-513 (EDTX Nov. 7, 2023); and *Infogation Corporation v.*

Changan Ford Automobile Co., Ltd. et al., Case No. 2:23-cv-573 (EDTX Dec. 6, 2023).

The '743 Patent was previously asserted in the following litigations, all of which have been dismissed and none of which named any Real Party-in-Interest to the instant petition:

InfoGation Corporation v. Google LLC, 3-21-cv-00843 (SDCA Apr. 29, 2021);

InfoGation Corporation v. Google LLC, 6-20-cv-00366 (WDTX May 5, 2020);

Google Inc. v. InfoGation Corp., 3-16-cv-05821 (NDCA Oct. 7, 2016);

InfoGation Corp. v. ZTE Corporation et al., 3-16-cv-01901 (SDCA, Jul. 27, 2016);

InfoGation Corp. v. HTC Corporation et al., 3-16-cv-01902 (SDCA Jul. 27, 2016); and

InfoGation Corp. v. Huawei Technologies Co., Ltd. et al., 3-16-cv-01903 (SDCA Jul. 27, 2016).

Finally, the '743 Patent was the subject of IPR2017-00819 (*Google Inc. et al. v. InfoGation Corp.*, PTAB Feb. 10, 2017). None of the Real Parties-in-Interest to the instant Petition were Real Parties-in-Interest to the prior IPR.

C. Lead and Back-up Counsel and Service Information

Lead Counsel for Petitioner is: William Mandir, Registration No. 32,156.
Back-Up Counsel for Petitioner are: Fadi Kiblawi, Registration No. 61,973; John Rabena, Registration No. 38,584; and Yoshinari Kishimoto, Registration No. 47,327.

Service Information: Petitioner consents to electronic service by email to the following addresses:

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- fkiblawi@sughrue.com
- jrabena@sughrue.com
- ykishimoto@sughrue.com

A Power of Attorney accompanies this Petition.

III. CERTIFICATION OF GROUNDS FOR STANDING

Petitioner certifies, pursuant to Rule 42.104(a), that the patent for which review is sought is available for *inter partes* review and that Petitioner is not barred or estopped from requesting an *inter partes* review challenging the patent claims on the grounds identified in this Petition.

IV. OVERVIEW OF CHALLENGE AND RELIEF REQUESTED

Pursuant to Rules 42.22(a)(1) and 42.104(b)(1)–(2), Petitioner challenges claims 1-19 and 21-22 (“Challenged Claims”) of the ’743 Patent.

A. Prior Art Patents and Printed Publications

The '743 Patent has an earliest effective filing date of January 6, 1999.

The following references are pertinent to the grounds of unpatentability explained below:

1. International Publication WO 96/00373 to Behr (published January 4, 1996) (EX1004), which is prior art under at least 35 U.S.C. §102(b).
2. National Intelligent Transportation Systems (ITS) Architecture (published February 14, 1997) (EX1005-EX1012), which is prior art under at least 35 U.S.C. §102(b).
3. U.S. Patent No. 5,982,298 to Lappenbusch (filed November 14, 1996) (EX1013), which is prior art under at least 35 U.S.C. §102(e).
4. U.S. Patent No. 6,680,694 to Knockart (filed August 19, 1998 and claiming benefit of provisional filed August 19, 1997) (EX1014), which is prior art under at least 35 U.S.C. §102(e).
5. U.S. Patent No. 6,098,016 to Ishihara (filed December 1, 1997) (EX1031), which is prior art under at least 35 U.S.C. §102(e).
6. U.S. Patent No. 5,059,965 to Geiser (published October 22, 1991) (EX1015), which is prior art under at least 35 U.S.C. §102(b).
7. U.S. Patent No. 5,237,323 to Saito (published August 17, 1993) (EX1016), which is prior art under at least 35 U.S.C. §102(b).

8. Japan Patent Application Publication No. JPH10-221091 (published August 21, 1998) (EX1017), which is prior art under at least 35 U.S.C. §102(a).
9. Japan Patent Application Publication No. JPH08-110230 (published April 30, 1996) (EX1018), which is prior art under at least 35 U.S.C. §102(b).

B. Statutory Grounds for Challenges

This Petition, supported by the declaration of Dr. William Michalson (EX1003), requests cancellation of claims 1-19 and 21-22 under the Grounds listed below:

GROUND 1: Claims 1-7, 12-16, and 21-22 are obvious by Behr (EX1004) in view of (ITS Architecture (EX1005-EX1012) or Lappenbusch (EX1013));

GROUND 2: Claims 1-7, 12-16, and 21-22 are obvious by Behr in view of (ITS Architecture/Lappenbusch) and (Knockeart (EX1014) or Ishihara (EX1031));

GROUND 3: Claims 8 and 9 are obvious by Behr in view of (ITS Architecture/Lappenbusch), (Knockeart/Ishihara), and Geiser (EX1015);

GROUND 4: Claims 10 and 11 are obvious by Behr in view of (ITS Architecture/Lappenbusch), (Knockeart/Ishihara), Geiser, and Saito (EX1016);

GROUND 5: Claims 17 and 18 are obvious by Behr in view of (ITS Architecture/Lappenbusch), (Knockeart/Ishihara), and JP091 (EX1017); and

GROUND 6: Claim 19 is obvious by Behr in view of (ITS Architecture/Lappenbusch), (Knockeart/Ishihara), and JP230 (EX1018).

V. U.S. PATENT NO. 6,292,743

A. Summary

The '743 Patent (EX1001) is directed to a distributed navigation system including a server for calculating optimal routes using real-time data. EX1001, 1:5-8. The specification of the '743 Patent contends that prior art systems required “all geographical data transmitted by the server” to be “in a proprietary format” rather than “using a natural language” for the “road names and turning directions” of the route information. *Id.*, 1:62-63; 3:35-39. This characterization of the prior art was not accurate. *See, infra*, Sec. VIII.; EX1003, ¶81.

More specifically, the '743 Patent purports to provide a solution in which the system uses a “natural language” to describe optimal routing information that is transmitted from the server to the client in a non-proprietary format. EX1001, 3:11-27. The “natural language” content, in one example, includes “using pre-defined generic terms such as road names and turning directions.” *Id.*, 3:37-40. The client interprets this routing data, reconstructs the optimal route from the non-proprietary natural language description, and displays the reconstructed route using a local

mapping database. *Id.*, 3:40-48. As shown in detail below with respect to claim 1, multiple prior art navigation systems existed that already implemented or otherwise plainly suggested such a solution. EX1003, ¶82.

B. Prosecution History

The '743 Patent application was filed on January 6, 1999. The Challenged Claims were allowed in July 2001 after a brief examination involving prior art references that did not provide an accurate picture of the state of the art. EX1003, ¶¶90-91.

In particular, after all original 28 claims were rejected in the first Office Action, the Applicant amended independent claims 1 and 15 to include “non-proprietary,” and argued that the independent claims were patentable because the cited reference did not disclose “formatting the optimal route into a non-proprietary, natural language description and downloading the non-proprietary, natural language description to the client.” EX1002, 87-91, 110-125. The Examiner subsequently allowed the claims with no express reasons for allowance other than to say that “[t]his communication is responsive to phone interview of 6/8/01.” *Id.*, 145. Even if the Examiner accepted the Applicant’s argument (regarding the step of “formatting the optimal route into a non-proprietary, natural language description and downloading the non-proprietary, natural language description to the client”), this prosecution history reveals that prior art that expressly described examples of

the “non-proprietary, natural language description” elements and all other features of the claims were never considered by the Examiner.

C. Prior IPR2017-00819

The '743 Patent was previously the subject of IPR2017-00819 filed by Google. Google's Petition challenged claim 15 on two separate grounds: Behr in view of Knockart; and U.S. Patent No. 6,212,474 (“Fowler”) in view of U.S. Patent No. 6,334,089 (“Hessing”). *Google Inc. et al. v. InfoGation Corp.*, IPR2017-00819, Paper 16, 4 (PTAB 2017). The Board, in a split decision, denied institution because Google failed to address how either Behr or Fowler discloses a “non-proprietary format” for route guidance information. *Id.*, 18-20, 22. The majority's decision did, however, make clear that Google did not argue and the Board takes no position on whether it would have been obvious to use a non-proprietary format for the natural language route guidance messages of Behr and Fowler. *Id.*, fn5, fn6.

On dissent, Judge Plenzler noted that the '743 Patent makes no disclosure of a non-proprietary format other than as a natural language description. *Id.*, Dissenting Opinion, 2. Accordingly, “it is at least reasonably likely that a description in Fowler that is similar to the description in the '743 patent, which allegedly supports the ‘non-proprietary, natural language description’ limitation, teaches the ‘non-proprietary, natural language description’ limitation.” *Id.*, 2.

VI. PERSON OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art (“POSITA”) at the filing date for the ’743 Patent would have had a bachelor’s degree in electrical engineering, computer science, or a related discipline, and at least two years of experience working with navigation systems, or an equivalent advanced education in the field of navigation systems. EX1003, ¶¶94-97.

VII. CLAIM CONSTRUCTION

The claim terms should be given their ordinary and customary meaning as understood by a person of ordinary skill in the art (“POSITA”) in view of the specification. 37 C.F.R. § 42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (*en banc*). Moreover, “claim terms need only be construed to the extent necessary to resolve the controversy.” *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011).¹ Petitioner submits that, solely for

¹ Petitioner does not concede that each claim satisfies all statutory requirements, such as §§101 and 112, or waive any arguments concerning claim scope or grounds that can only be raised in district court. For this Petition, Petitioner applies prior art in a manner consistent with Patent Owner’s allegations of infringement before the district court.

purposes of this proceeding, no claim term requires construction beyond its plain and ordinary meaning.

VIII. GROUNDS CHALLENGING PATENTABILITY

The various grounds detailed below show a reasonable likelihood that claims 1-19 and 21-22 of the '743 Patent are unpatentable. The Grounds are not cumulative or redundant with those raised in the prior IPR by Google. In that proceeding, the Board specifically noted that “Petitioner does not argue, and we do not opine on, whether it would have been obvious to one of ordinary skill in the art to use a non-proprietary format for Behr’s base unit responses.” IPR2017-00819, Paper 16 at fn5. The instant Grounds rely on references not previously considered during prosecution or in the Google IPR to address the “non-proprietary” feature and its obviousness.

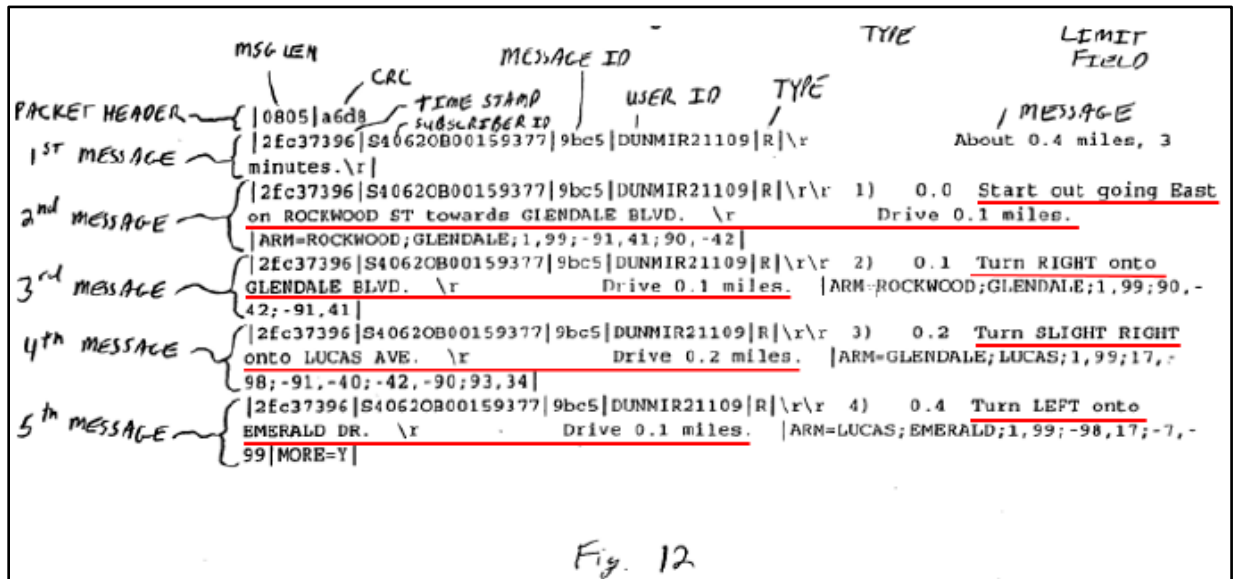
A. GROUND 1: Claims 1-7, 12-16, and 21-22 are obvious by Behr in view of (ITS Architecture or Lappenbusch)

i. Overview of Behr

Behr (EX1004), entitled “Electronic Navigation System and Method,” is directed to “a method and system for providing route guidance and other information from a base unit (12) to a remote unit (16, 18, 20) in response to a request from the remote unit.” EX1004, Abstract. Behr is analogous art to the '743 Patent because both are in the same field of endeavor of route guidance. EX1003, ¶100.

Behr's route guidance method begins with the remote unit sending a query message including "an origin point and a destination point, from which the route calculator 66 (Fig. 1) of the base unit 12 is to calculate the route." EX1004, 20:27-39, 21:21-24. The base unit, *i.e.*, a server (*id.*, 9:16-21), calculates the route, formats it in accordance with a particular protocol, and sends the formatted route to the mobile unit. *Id.*, 22:11-29; EX1003, ¶101.

In calculating the route, the base unit uses a map database 72 included therein, and real-time traffic information. EX1004, 17:25-18:20, 15:37-16:2. Further, the formatted route sent to the mobile unit includes a "set of driving instructions" including natural language descriptions of road names, turning instructions, etc., as exemplified in FIG. 12 reproduced below. *Id.*, 30:24-33:22; EX1003, ¶102.



Id., FIG. 12 (annotated)

ii. Overview of ITS Architecture

Exhibits 1005-1012 (hereinafter “ITS Architecture”) are documents included in the National Intelligent Transportation Systems (ITS) Architecture² published in 1997 by the U.S. Department of Transportation in partnership with the Intelligent Transportation Society of America (ITSA). EX1019, 2; EX1003, ¶103.

a. The ITS Architecture was a Publicly Accessible Publication

The ITS Architecture was publicly accessible to persons interested and ordinarily skilled in the art of intelligent transportation systems (including navigation and route guidance systems). EX1003, ¶¶104-105. In this regard, the ITS Architecture’s existence would have been known by a POSITA, as it was the product of an industry-wide collaboration mandated by Congress. EX1019, 2-3; EX1020. Further, a POSITA would have been able to easily locate the ITS Architecture. Exhibits 1005-1012 were themselves accessible and downloadable from ITSA’s website, by navigating from ITSA’s homepage to the “Public Programs, Notices & Announcements” link and subsequently a clearly labeled

² Exhibits 1005-1012 are those documents included in the National ITS Architecture that are cited in this Petition. All of the documents constituting the National ITS Architecture are accessible via ITSA’s archived website, shown in Exhibit 1021.

“National ITS Architecture Documents” link. EX1021-EX1023; EX1003, ¶104. As of the 1997 date of publication of Exhibits 1005-1012 on ITSA’s website, ITSA had “hundreds of member organizations participating both nationally and through a growing network of state chapters.” EX1024, 2. These hundreds of member organizations and their countless constituents would have therefore been able to easily locate the documents on ITSA’s website. Further, the U.S. Department of Transportation promoted the ITS Architecture and directed interested parties to ITSA to access it. EX1019, 8 (“Copies of the original architecture documentation are available through ITS America, and at reading rooms around the country.”). The Federal Government also issued numerous public notices directing interested parties to ITSA’s website to obtain electronic copies of the National ITS Architecture. *See, e.g.*, EX1029, 5; EX1030, 3.

Thus, as of at least its 1997 publication date, a POSITA exercising reasonable diligence would have been able to locate the ITS Architecture documents, *e.g.*, by browsing the website of ITSA (an industry-wide public-private membership-based organization) or by being directed thereto from the Department of Transportation’s website or government notices to the interested public. EX1003, ¶105.

b. The ITS Architecture

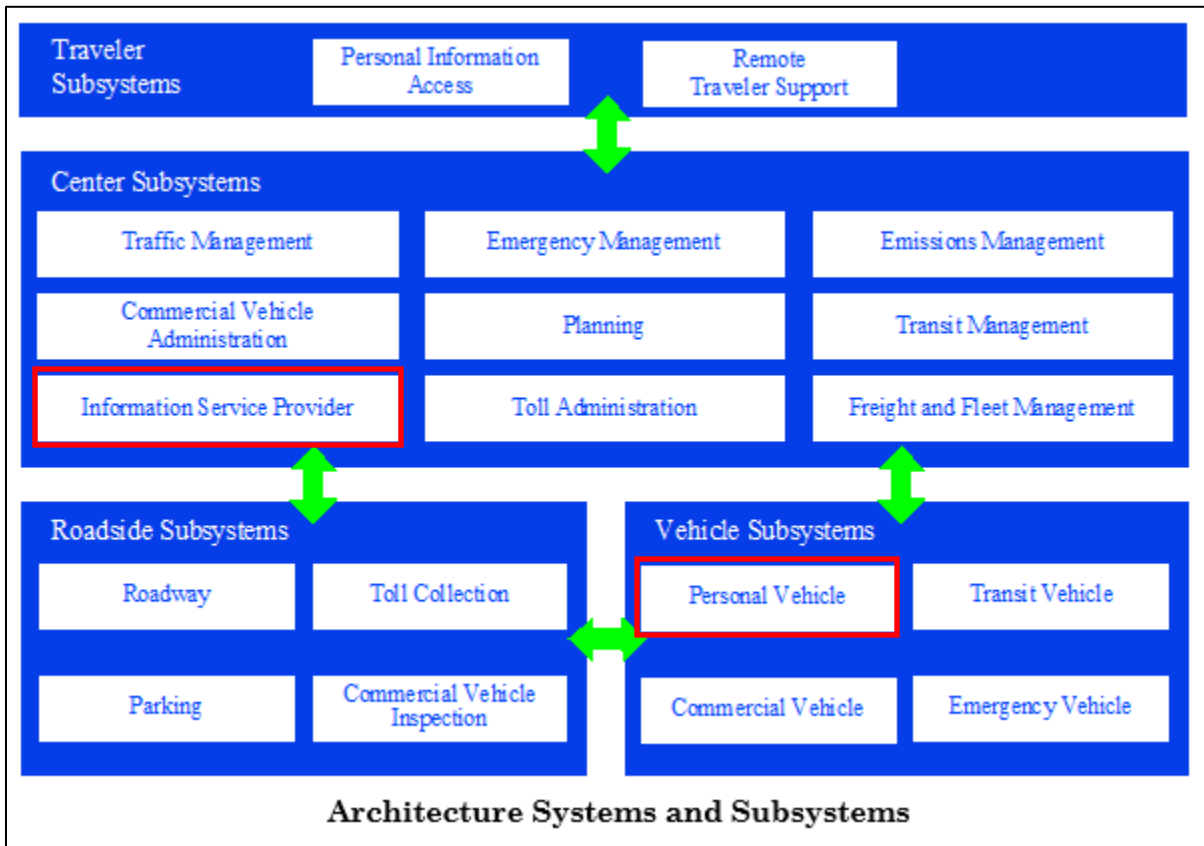
The ITS Architecture “provides a common structure for the design of intelligent transportation systems.” EX1010, 3. To this end, “[t]he architecture

defines the functions (e.g., gather traffic information or *request a route*) that must be performed to implement a given user service, the physical entities or subsystems where these functions reside (e.g., the roadside or the vehicle), the interfaces/information flows between the physical subsystems, and the communication requirements for the information flows (e.g., wireline or wireless)” (emphasis added). *Id.* Notably, the ITS Architecture “identifies and specifies the requirements for the standards needed to support national and regional interoperability, as well as product standards needed to support economy of scale considerations in deployment.” *Id.* The ITS Architecture specifically identifies a route guidance message as using a standardized format, discussed in detail below. EX1003, ¶¶106-114.

By way of context, the ITS Architecture was born from the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, the law that identified the “need for... compatibility among intelligent [transportation] technologies implemented throughout the States.” EX1019, 2-3; EX1003, ¶107. ISTEA specifically directed the Secretary of Transportation to “develop and implement *standards and protocols* to promote widespread use and evaluation of ITS technology” and “promote *compatibility* among ITS technologies implemented throughout the States.” EX1025, 3 (emphasis added). Accordingly, the Architecture was funded, developed, and published as “a guide [to] developing standards and making deployment

decisions that will result in efficiency, economies of scale, and national interoperability.” EX1019, 2; *see also* EX1021 (ITS Architecture “identifies and specifies the requirements for the standards needed to support national and regional interoperability, as well as product standards needed to support economy of scale considerations in deployment”). “Standardization of interfaces is a *requirement* for successful implementation of the... National Architecture... so that systems that provide similar functions to the traveling public can use interoperable equipment and readily exchange information.” EX1025, 4.

The ITS Architecture defines 19 interconnected subsystems (physical entities), among them a Vehicle (VS) and an Information Service Provider (ISP). EX1010, 5-6. The ITS Architecture also defines the processes for each subsystem functionality to implement a User Service, as well as specifications of the Data Flows and data structures for these processes. EX1006, 10, 19; EX1010, 3-4; EX1003, ¶108.



EX1010, 6 (annotated)

One of the User Services defined in the ITS Architecture is route guidance, EX1010, 2, in which the ISP calculates and provides an optimal (*e.g.*, “safest, least used, etc.”) route for a vehicle “using current... traffic conditions.” EX1006, 172-175; *see also* EX1005, 6-7, 13-17. Thus, the ITS Architecture is analogous art to the '743 Patent because both are in the same field of endeavor of route guidance. For this service, the ITS Architecture discloses establishing a wireless link between the vehicle subsystem and the ISP. EX1005, 6. Using this link, the vehicle subsystem transmits a Trip Request message to the ISP. EX1005, 14 (“Driver...

interacts with the corresponding subsystem to issue a Trip Request message to the ISP.”).

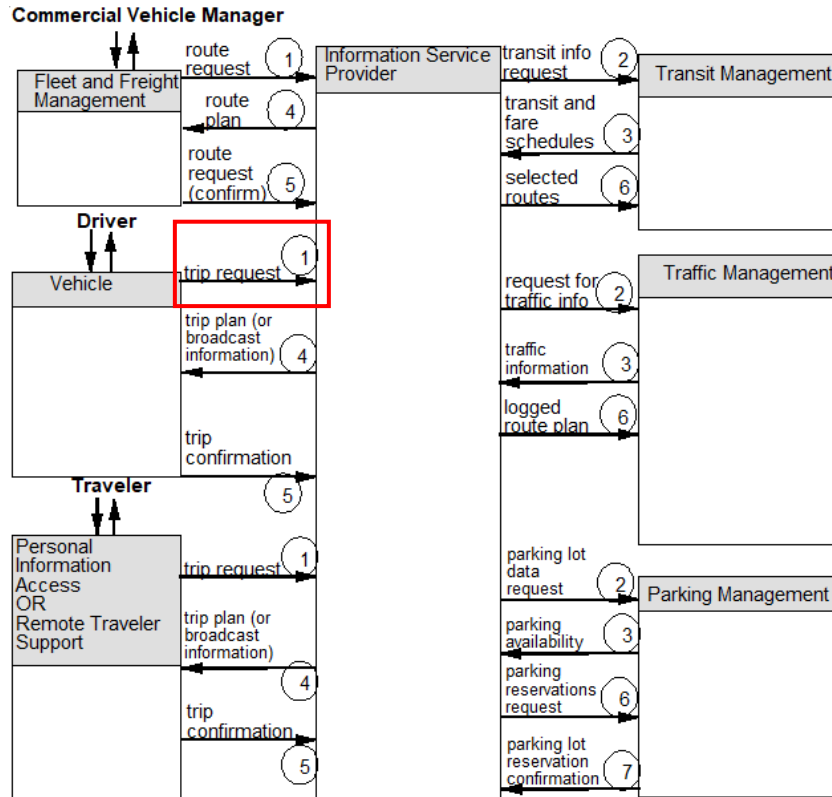


Figure 9 - Physical Architecture for Route Guidance

EX1005, 15 (annotated)

The Trip Request message is defined in the ITS Architecture as a vehicle_route_request message:

<p>Physical Architecture Flow: <u>trip request U1t</u> Request for special routing</p> <p>Logical Architecture Flows: <u>(1) vehicle route request</u></p>
--

EX1005, 35-36 (annotated); *see also id.*, 5 (“Typically the physical architecture flow or highest level logical architecture data flows represent individual messages.”);

EX1003, ¶110. The vehicle_route_request message “include[s] the necessary source and destination data from which a route can be computed.” EX1005, 35-36.

The ITS Architecture discloses that, upon receiving the Trip Request message, the ISP accesses “current... traffic data” from a Traffic Management subsystem. EX1005, 13-15.

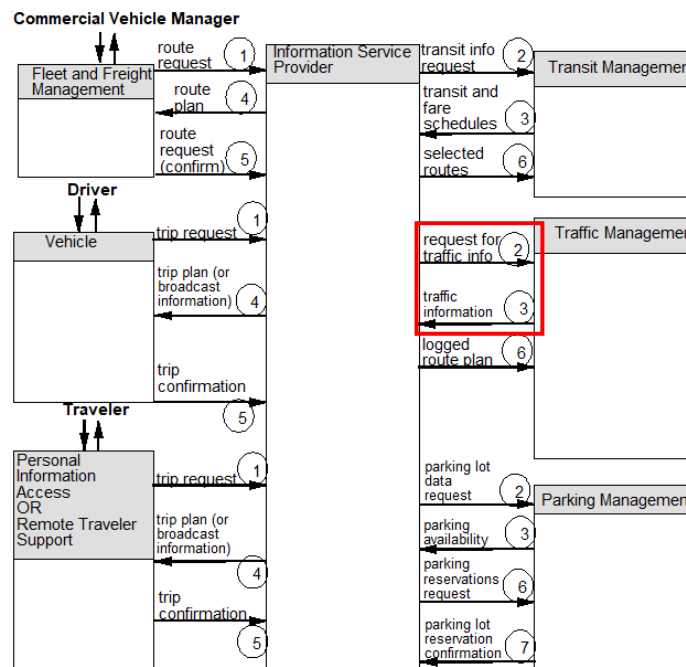


Figure 9 - Physical Architecture for Route Guidance

EX1005, 15 (annotated).

The ISP also accesses “current weather conditions” to calculate the optimal route. EX1008, 146; EX1007, 182-183 (input data for ISP’s route calculation process includes fws_current_weather). The ISP then calculates the optimal route based on the real-time data and start and end route designations. EX1005, 13-15; EX1006, 175-177. Specifically, the ISP “processes a route and sends it to the

requesting subsystem in the Trip Plan message” for subsequent display. EX1005, 14; EX1006, 180 (route “visual[ly] output”); EX1005, 13 (“presenting the selected route to the driver... in the vehicle subsystem”).

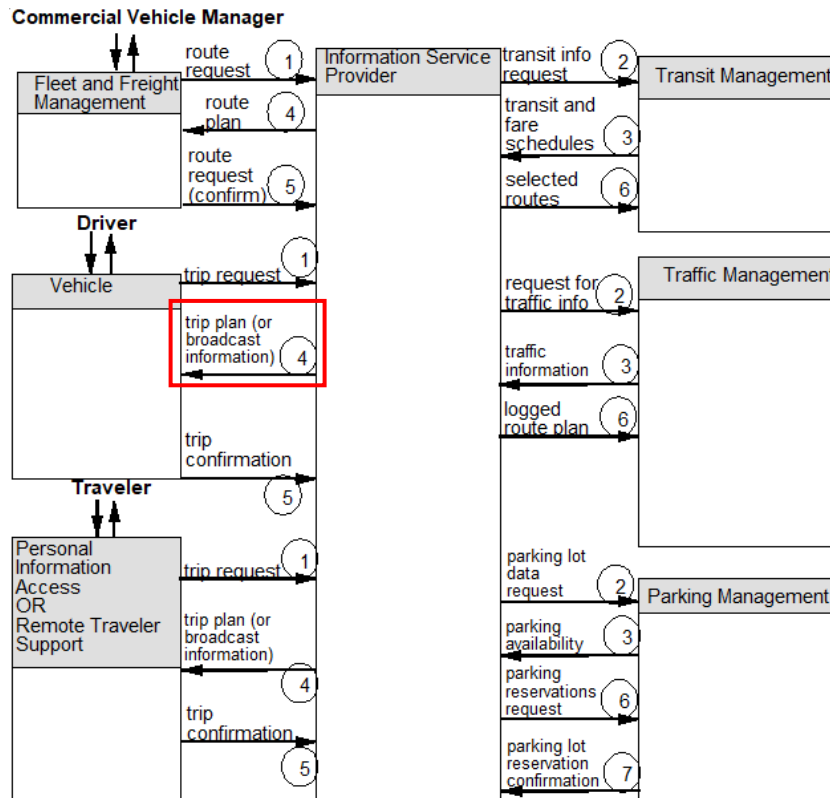


Figure 9 - Physical Architecture for Route Guidance

EX1005, 15 (annotated).

The Trip Plan message is defined in the ITS Architecture as a vehicle_guidance_route message:

Physical Architecture Flow: trip plan U1t
 A sequence of links and special instructions indicating efficient ways of navigating the links. Normally coordinated with traffic conditions, other incidents, preemption and prioritization plans.
 (1) **vehicle_guidance_route**

EX1005, 42 (annotated); *see also id.*, 5 (“Typically the physical architecture flow or highest level logical architecture data flows represent individual messages.”); EX1003, ¶113.

Notably, the ITS Architecture discloses using a standardized (*i.e.*, non-proprietary) format for the `vehicle_guidance_route` message. EX1005, 42-43; EX1003, ¶114. In this regard, the ITS Architecture discloses that its defined interfaces and data flows are bases for standardization, and specifically identifies 11 high-priority standards packages. EX1010, 14-16; EX1005, 3-4; EX1011, 16. “Each package is a special grouping of standards requirements and contextual information intended to be used” for standardization. EX1005, 3; *see also id.*, 4 (standards requirements package identifies “some subset of the National ITS Architecture” for standardization); EX1011, 8 (standardization of “data flows and interfaces defined in the architecture documents”). Among them, Standards Requirements Package 03 identifies `vehicle_guidance_route`, and its defined data structure, as a standardized message under the ITS Architecture. EX1005, 19 (“decomposition for the interfaces covered in this package”), 42-43, 120-121; *see also* EX1011, 77 (“trip plan” standardized under “Standard Pkg” 03). Thus, by Standards Requirements Package 03, the ITS Architecture discloses using a standardized format for the `vehicle_guidance_route` message.

iii. Overview of Lappenbusch

Lappenbusch is provided in the alternative to the ITS Architecture, and is non-cumulative to the extent that Patent Owner alleges that the ITS Architecture was not publicly accessible.

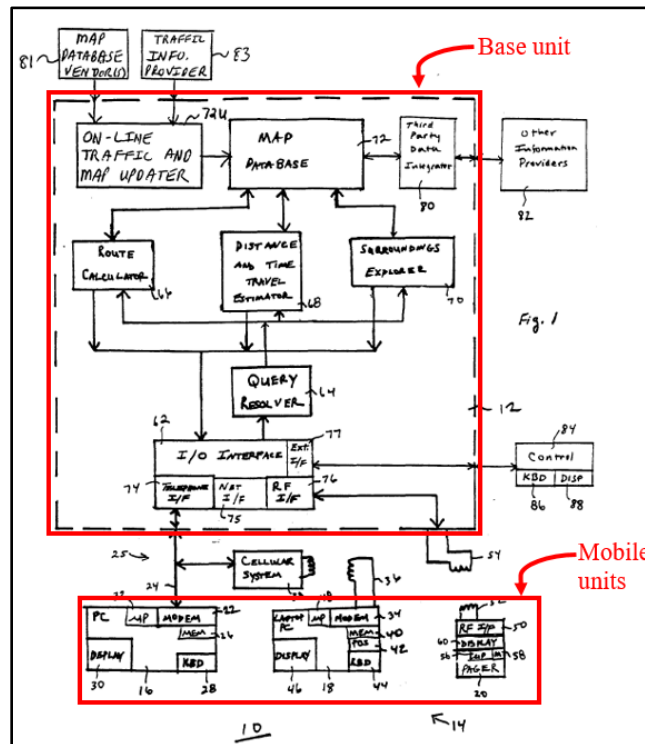
Lappenbusch (EX1013) is entitled “Interactive Traffic Display and Trip Planner,” and is directed to a user interface that “allows a user to find a shortest-time route between designated locations.” EX1013, Abstract. Thus, Lappenbusch is analogous art to the ’743 Patent because both are in the same field of endeavor of route guidance. Lappenbusch’s user interface is embodied by server computers 38 and a client computer, with the servers providing relevant data in a “common” (*i.e.*, non-proprietary) format that is “independent of the particular formats used within the various monitoring systems.” *Id.*, 3:41-49, 5:8-29, 7:2:19-28; EX1003, ¶115.

iv. Claim 1

a. 1[pre] “A method for providing an optimal route using real-time information for a navigation system comprising a client and a server, said server coupled to a computer network, said method comprising the steps of:”

Even if the preamble of claim 1 was treated as a limitation (which it is not under the BRI standard), Behr discloses the preamble of claim 1. *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165-66 (Fed. Cir. 1999); EX1003, ¶¶116-117. Behr discloses a system for providing route

guidance from a base unit located at a central location to a mobile unit. EX1004, 1:3-6, 3:35-38, 4:5-8, 6:24-27, 7:5-7, 7:20-21, 7:28-30, 7:38-39, 8:15-17, 12:9-12, 12:24-25, 38:30-41:8, FIGS. 1-2 and 41. FIG. 1 of Behr shows the navigation system including the base unit (*server*) and mobile units (*client*):



EX1004, 12:9-20, FIG. 1 (annotated).

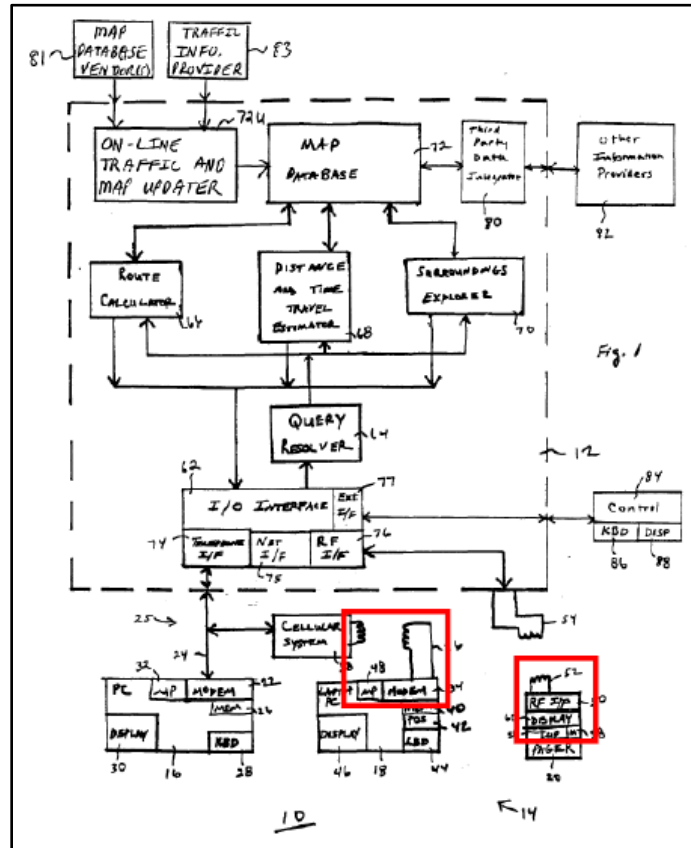
The base unit (*server*) is coupled to one or more wireless communication networks. EX1004, 16:18-38, 1:3-6, 20:10-26. Further, the base unit calculates the optimal route using real-time information, including traffic information, from information providing servers 82. EX1004, 17:39-18:3, 11:22-26, 18:4-13, 15:37-16:2, 19:27-36, FIG. 1.

b. 1[a] “establishing a wireless connection between the client and the server;”

Behr discloses this element. EX1003, ¶118. For example, Behr’s mobile unit (*client*) communicates with the base unit (*server*) using a wireless communication system, such as cellular telephone or radio frequency transmission. EX1004, 1:3-6, 3:35-38, 8:23-26, 11:31-36, 14:34-37, 15:19-24. The mobile unit may include a modem configured to communicate information over a wireless transmission network such as advanced radio data information services (ARDIS), cellular digital packet data (CDPD), RAM mobile data network, or cellular telephone system. *Id.*, 13:1-12, 14:2-12, 15:19-36, 20:15-24. The mobile unit may include an RF interface coupled to an antenna for receiving RF signals from an antenna coupled to the base unit. *Id.*, 14:34-37, 15:19-36. The base unit includes an I/O interface. *Id.*, 15:37. The I/O interface includes a telephone interface for coupling the base unit to the commercial telephone system, an RF interface for coupling the base unit with RF communication devices such as an antenna, and a network interface for coupling the base unit to wireless and/or wireline communication networks such as CDPD, TCP/IP, ARDIS, or RAM. *Id.*, 16:2-22. Behr teaches a common example in which mobile unit and the base unit establishes communication with each other via the cellular telephone system. *Id.*, 20:11-26, FIG. 2:100. A mobile unit including a

modem coupled to the microprocessor for connecting with the base unit is shown in

FIG. 1 of Behr reproduced below:



Id., 12:9-20, 15:19-24, FIG. 1 (annotated).

c. 1[b] “transmitting start and end route designations from the client to the server;”

Behr’s mobile unit (*client*) transmits start and end route designations to the base unit (*server*). EX1003, ¶119. For example, Behr discloses that the client sends a request (“query”) to the server for a navigation route, where the request “specif[ies] an origin point and a destination point.” EX1004, 20:27-21:7; *see also id.*, 23:18-

23, 25:37-12, 25:20-23. The navigation server calculates an optimal route based on these designations. *Id.*, 20:27-21:7.

d. 1[c] “accessing real-time information by the server;”

Behr’s navigation server (base unit) accesses real-time information. EX1004, 17:39-18:3, 11:22-26, 18:4-13, 15:37-16:2, 19:27-36; EX1003, ¶120. For example, Behr discloses that the navigation server includes a route calculator, a map database, and an on-line traffic and map updater. EX1004, 15:37-16:2, 17:25-18:20. The route calculator calculates a route between the origin and the destination using the large up-to-date map database. *Id.*, 4:22-30, 6:27-32, 7:9-11, 7:24-27, 8:1-8, 9:28-30, 15:37-38, 17:25-39, 21:21-24, 22:11-16, 26:34-27:2; 39:25-27, FIG. 2 step 114. The map database includes an accurate, complete, and up-to-date representation of geographic information such as addresses, street names, navigation attributes (including turn restrictions, one-way streets, physical dividers, relative heights, and freeway sign text). *Id.*, 17:31-39. The map database of the base unit is maintained via automatic, real time database updates. *Id.*, 11:22-26. The traffic and map updater receives updated information from map database vendors and traffic information providers and ensures that the map database is current. *Id.*, 17:39-18:3.

e. 1[d] “calculating the optimal route by the server, based on the real-time information and said start and end route designations;”

Behr’s navigation server (base unit) performs this function. EX1003, ¶¶121-122. For example, Behr discloses that the navigation server includes a route calculator, a map database, and an on-line traffic and map updater. EX1004, 15:37-16:2, 17:25-18:20. In response to the origin and destination data (start and end route designations) received from the mobile unit, the route calculator calculates a route between the origin and the destination using the large up-to-date map database. *Id.*, 4:22-30, 6:27-32, 7:9-11, 7:24-27, 8:1-8, 9:28-30, 15:37-38, 17:25-39, 21:21-24, 22:11-16, 26:34-27:2; 39:25-27, FIG. 2: 114. The map database of the base unit includes an accurate, complete, and up-to-date representation of geographic information such as addresses, street names, navigation attributes (including turn restrictions, one-way streets, physical dividers, relative heights, and freeway sign text). *Id.*, 17:31-39. The map database of the base unit is maintained via automatic, real time database updates. *Id.*, 11:22-26. The traffic and map updater receives updated information from map database vendors and traffic information providers and ensures that the map database is current. *Id.*, 17:39-18:3.

Additionally, the route calculator takes into account routing restrictions such as toll road avoidance, turn restrictions at a specified time of day, and other restrictions that may be specified by an operator at the base unit in response to a

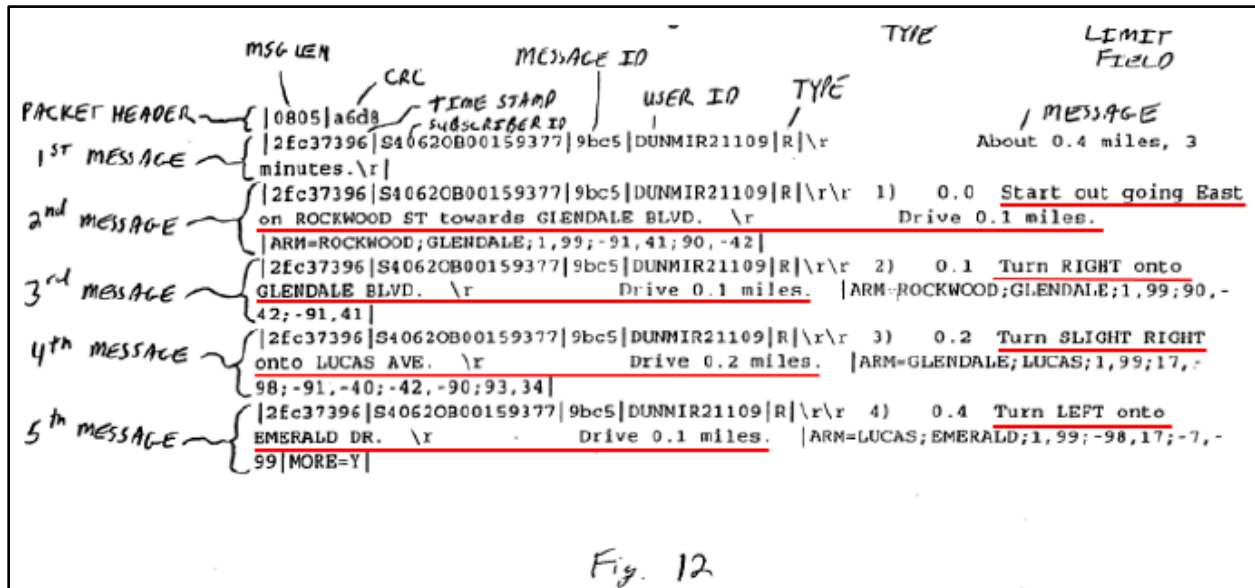
temporary condition or that may be added to the map database when the restrictions become nationally available. *Id.*, 18:4-13. The base unit also includes a third-party data integrator that receives additional data such as on-line yellow pages information, news, weather, and traffic advisory information from other information providers for responding to queries. *Id.*, 15:37-16:2, 19:27-36. For at least these reasons, Behr's navigation server calculated optimal routes based on real-time information, as was conventional in the art at the time.

f. 1[e] “formatting the optimal route into a non-proprietary, natural language description;”

Behr discloses this element. EX1003, ¶¶123-127. For example, Behr discloses that the server of the base unit formats a response message including route guidance information. EX1004, 4:30-32, 6:32-36, 9:20-21, 13:28-30, 18:21-25, 22:19-27, 27:24-35, 30:20-22, FIG. 2: 116. The route guidance information includes navigation instructions from the origin to the destination. *Id.*, 6:36-7:6, 7:15-19. The navigation instructions are divided into several lines of text, each separated by carriage return/newline characters. *Id.*, 8:32-36, 26:29-37, 30:24-30. Each response message may correspond to a single maneuver or be the complete text of the navigation instructions. *Id.*, 30:28-30.

Many examples of response messages that include non-proprietary, natural language text navigation instructions are shown in Behr. *Id.*, 8:32-36, 30:24-26,

FIGS. 12, 14, 20, 22, 24, 26, 28, 30. Indeed, Behr’s examples of the plain text description for each link in the route (using predefined generic terms such as road names and turning directions) parallels the examples in the ’743 patent specification (EX1001, 3:35-40; 10:10-21 (the natural language description “includes at least the street name...”). Behr’s FIG. 12 illustrates some of Behr’s many examples of using non-proprietary, natural language text for each link along the optimal route:



Id., FIG. 12 (annotated)

Behr’s FIG. 20 illustrates another of Behr’s many examples of using non-proprietary, natural language text for each link along the optimal route:

```
|0753|2bc6|2ef5d987|IDSDIVISION|9d98|BOBD|R|\r          About 9.1 miles,  
20 minutes.\r|~  
|2ef5d987|IDSDIVISION|9d98|BOBD|R|\r\r 1)  0.0 Start out going  
Northwest on S FLINT RIDGE WAY. \r          Drive a short distance.  
|ARM=FLINT RIDGE;WHITE FIR;1,99;-79,-61;24,-96|~  
|2ef5d987|IDSDIVISION|9d98|BOBD|R|\r\r 2)  0.0 Turn LEFT onto E WHITE  
FIR LN. \r          Drive 0.1 miles. |ARM=FLINT RIDGE;WHITE FIR;1,99;-  
79,-61;24,-96|~  
|2ef5d987|IDSDIVISION|9d98|BOBD|R|\r\r 3)  0.1 Turn RIGHT onto S LONE  
PINE LN. \r          Drive 0.1 miles. |ARM=WHITE FIR;LONE  
PINE;1,99;67,-73|~  
|2ef5d987|IDSDIVISION|9d98|BOBD|R|\r\r 4)  0.2 Turn LEFT onto E  
SOMERSET LN. \r          Drive a short distance. |ARM=LONE  
PINE;SOMERSET;1,99;-93,-35;38,-92|MORE=Y|~  
  
Fig. 20
```

Id., FIG. 20 (annotated), *see also* FIGS. 22, 24, 26, 28, 30

As shown in Behr's FIGS. 12 and 20 (and in the other examples in the figures), a POSITA would have plainly recognized that the text driving instructions for the optimal route are divided into multiple parts or messages, with each message including a natural language description of the street name and a turning orientation. *Id.*, FIG. 12, 8:30-9:6 ("responses may include, for example, textual navigational directions" that are "adaptable to any system" and "support for many different mobile unit platforms"), 11:27-36 (the format of route requests and responses is "independent of specific hardware" and "using any commonly available hardware devices"), 15:27-36 ("independently of particular hardware configurations... and of the communication system"), 38:30-41:8, FIGS. 15-38, 41; EX1003, ¶126. Additionally or alternatively, a POSITA would have recognized that, much like the

'743 patent's preferred embodiment in which the calculated route is "compressed" prior to transferring to the vehicle's computer (8:45-53), Behr teaches the same known option in which the natural language description of the route can be converted to a "compressed form" for transmission to the mobile device and then expanded to the full natural language text at the mobile device. EX1004, 29:7-24, 36:13-38:29; EX1003, ¶126.

In the prior IPR, the Board held that "Petitioner fails to show a reasonable likelihood of demonstrating that Behr discloses formatting that is not specific to the particular mapping database used on the client." IPR2017-00819, Paper 16 at 19. Although not noted in Google's petition, Behr, however, does disclose a messaging format "adaptable to any system." EX1004, 9:1-2. Nevertheless, to the extent that this "adaptable to any system" format is considered deficient with respect to the "non-proprietary" claim feature, a POSITA would have found it obvious to implement a non-proprietary format in view of, for example, either the ITS Architecture or Lappenbusch. EX1003, ¶¶127-143.

Behr in view of the ITS Architecture

The ITS Architecture discloses use of a server-generated non-proprietary route guidance message that is capable of working with any local mapping database. EX1003, ¶¶128-133. In particular, the ITS Architecture proposes "open standards that enable multiple public- and private-sector organizations to independently

deploy ITS components that work together, regardless of who designed or manufactured the particular hardware or software.” EX1032, 17.

As discussed above, the ITS Architecture is directed to a navigation system including a route guidance user service in which a server (Information Service Provider (ISP)) calculates and provides an optimal (*e.g.*, “safest, least used, etc.”) route to a client (vehicle subsystem) “using current... traffic conditions” (using real-time information). EX1006, 172-175; *see also* EX1005, 6-7, 13-17.

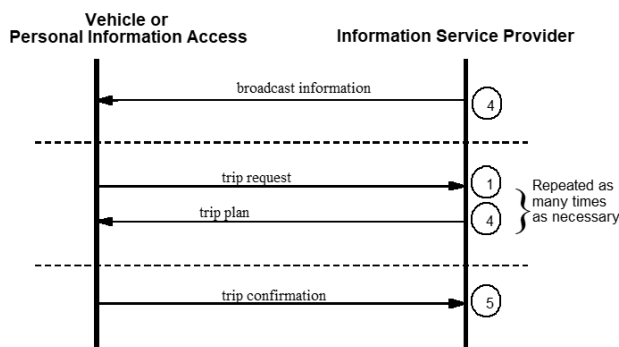


Figure 10 - Route Guidance Transaction Set

EX1005, 16

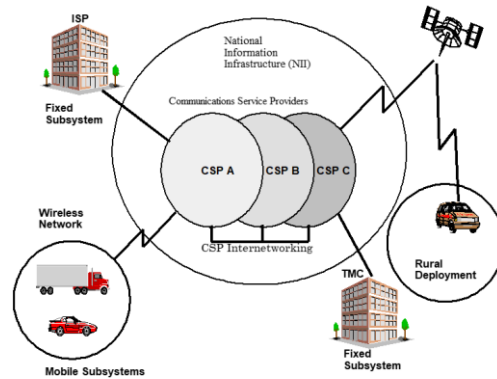


Figure 13 - ITS Communications Network Topology

EX1005, 45

Specifically, the ISP “processes a route and sends it to the requesting subsystem in the Trip Plan message.” EX1005, 14. The Trip Plan message is defined in the Architecture as a `vehicle_guidance_route` message:

Physical Architecture Flow `trip plan U1t`
 A sequence of links and special instructions indicating efficient ways of navigating the links. Normally coordinated with traffic conditions, other incidents, preemption and prioritization plans.
 (1) `vehicle_guidance_route`

EX1005, 42 (annotated); *see also id.*, 5 (“Typically the physical architecture flow or highest level logical architecture data flows represent individual messages.”). The

vehicle_guidance_route message provides the “efficient” (*optimal*) route based on the “traffic conditions” (*real-time information*). EX1005, 42-43; *see also* EX1006, 175 (“routes are selected using a variety of parameters, e.g. safest, least used, etc. and traffic data.”).

Notably, the Architecture discloses using a standardized (*non-proprietary*) format for the calculated route, vehicle_guidance_route. EX1005, 42-43; EX1003, ¶130. Indeed, a fundamental objective of the Architecture was “[t]o provide a framework for the definition of appropriate standards.” EX1012, 10. To do so, the Architecture requires its subsystem interfaces be “open and flexible to prevent unnecessary restriction to implementation choice” and to provide a system “that is both compatible and interoperable across the nation.” EX1012, 1. By utilizing open and standardized interfaces and data definitions, the Architecture’s subsystems are modular and interchangeable to ensure that users “do not become captive to proprietary systems.” EX1012, 10. Thus, the ITS Architecture identifies the “[d]ata standards” and “message sets” for standardization, to “provide uniform formats for data sharing across ITS applications” and “define message content... amount various ITS elements and subsystems. EX1032, 19.

To this end, the Architecture discloses that its defined interfaces and data flows are bases for standardization, and specifically identifies 11 high-priority standards packages. EX1010, 14-16; EX1005, 3-4; EX1011, 16. “Each package is

a special grouping of standards requirements and contextual information intended to be used” for standardization. EX1005, 3; *see also id.*, 4 (standards requirements package identifies “some subset of the National ITS Architecture” for standardization); EX1011, 8 (standardization of “data flows and interfaces defined in the architecture documents”).

Standards Requirements Package 03 is directed to the ISP wireless interfaces, particularly addressing the recognized need to standardize a “Message Set³ for... Route Guidance.” EX1011, 94. Relatedly, the 03 package specifies vehicle_guidance_route, and its defined data structure, as a standardized message under the Architecture. EX1005, 19 (“decomposition for the interfaces covered in this package”), 42-43, 120-121; *see also* EX1011, 77 (“trip plan” standardized under “Standard Pkg” 03); EX1003, ¶132.

³ A “message set” defines the “standard format” in which data is transmitted.

EX1026, 72; *see also* EX1032, 19.

(1) *vehicle_guidance_route*

This data flow is used within the Provide Driver and Traveler Services function and is a special form of "route" for vehicle guidance only. It contains a subset of the data items included in the "route" data flow to meet the requirements of in-vehicle infrastructure based guidance as opposed to the more general requirements for a route need as part of a trip planning activity. The data flow consists of the following data items each of which is defined in its own DDE:

- (2)*route_identity*
- (2)*route_segment_description*
- (2)*route_segment_end_point*
 - (3)*location_identity*
- (2)*route_segment_estimated_travel_time*
- (2)*route_segment_report_position_points*
 - (3)*list_size*
 - (3)*route_segment_way_point*
 - (4)*location_identity*
- (2)*route_segment_start_point*
 - (3)*location_identity*
- (2)*vehicle_identity*

EX1005, 42-43

Thus, by Standards Requirements Package 03, the ITS Architecture discloses using a standardized format for the *vehicle_guidance_route* message (*formatting the optimal route into a non-proprietary description*), which is open and therefore interoperable with any suppliers' software (*i.e.*, local mapping database), EX1011, 3, and ensures that users "do not become captive to proprietary systems." EX1012, 10. By using a standardized *vehicle_guidance_route* message, the ITS Architecture "ensure[s] interoperability of conforming products from competing vendors" and "reassure[s] purchasers that their systems will be compatible with other ITS elements." EX1032, 11-12; *see also* 18 ("The architecture... allows ITS products from competing vendors to work together" such that "'vendor lock-in,' functional isolation, and obsolescence—all of which can be experienced with closed

proprietary solutions—are less likely with adherence to a national framework.”). In other words, the standardized vehicle_guidance_route message is capable of being used with any local mapping database “to ensure interoperability of conforming products from competing vendors” and “reassure purchasers that their systems will be compatible with other ITS elements.” EX1032, 11-12; EX1003, ¶133.

A POSITA would have found it obvious to implement Behr’s natural language description route information as an open standardized (*i.e.*, non-proprietary) format, as taught by the ITS Architecture, for multiple reasons. EX1003, ¶¶134-137.

First, the ’743 Patent, Behr, and the ITS Architecture all pertain to the same field of endeavor of route guidance systems, as discussed in Secs. V.A and VIII.A.i-ii. Further, the three disclosures all address problems of compatibility between the different subsystems (*i.e.*, remote client and route calculation server) providing the route guidance service. EX1001, 2:35-42 (“Another problem with the current systems is that the proprietary server cannot be used with navigation systems and mapping databases provided by other manufacturers.”); EX1004, 3:29-34 (“There is a further need for a routing and information system which is independent of any particular hardware configuration and which may be implemented on any suitably equipped data processing apparatus...”); EX1012, 10 (“The objective of the ITS architecture development effort is to create an integrated system architecture whose component subsystems satisfy the ITS architecture goals, ensure nationwide

compatibility and interoperability, support the necessary range of implementations, and allow for cost-effective expansion and modernization”).

Second, a POSITA implementing Behr’s natural language route guidance message would have been motivated to provide that message in a standardized, *i.e.*, non-proprietary, format as taught by the ITS Architecture, in order to improve compatibility and interoperability. EX1003, ¶136. Indeed, the ITS Architecture explicitly provides such a motivation so as to ensure that users “do not become captive to proprietary systems.” EX1012, 10. Standardizing the “data flows and interfaces defined in the architecture documents” (EX1011, 8)—including the specifically identified `vehicle_guidance_route` message—would “allow[] multiple suppliers of equipment and software that will directly connect to other ITS subsystems.” EX1011, 3 (emphasis added); *see also id.*, 4 (“Open standards will further benefit the consumer by enhancing competition for the range of products necessary to implement the ITS user services.”), 6 (“Potential Benefits...”). Thus, a POSITA implementing Behr’s route guidance system would have been motivated to use a non-proprietary route guidance message as explicitly taught by the ITS Architecture, to improve interoperability, compatibility, and consumer choice and “ultimately provide enhanced service to the consumer.” *Id.*, 6; *Zup v. Nash Mfg.*, 896 F.3d 1365, 1371 (Fed. Cir. 2018) (“motivation to combine may be found explicitly or implicitly in market forces; design incentives; the interrelated teachings

of multiple patents; any need or problem known in the field of endeavor at the time of invention and addressed by the patent; and the background knowledge, creativity, and common sense of the person of ordinary skill” (internal quotation marks and citations omitted)).

Third, a POSITA would have had a reasonable expectation of success in implementing Behr’s natural language route guidance message as a non-proprietary format, as taught by the ITS Architecture. EX1003, ¶137. The two references disclose nearly identical processes for providing route guidance information, in which a client device transmits a routing request including start and end designations to a server, the server uses real-time information to calculate the optimal route, and the server returns the calculate route to the client for display. *See, supra*, Secs. VIII.A.i-ii. Further, there is a complete functional overlap between the content of Behr’s message and that suggested in the ITS Architecture, with both providing route guidance information for display. For example, the ITS Architecture’s non-proprietary message “provide[s] information from which guidance can be produced in a form which is understandable by the driver, e.g. lane selection, right/left turns, etc.” EX1008, 234. A POSITA would have no reason to doubt that using a non-proprietary format for a route guidance message as taught by the ITS Architecture would be equally operable and successful in achieving the aforementioned benefits

thereof in the nearly identical system of Behr, which is similarly directed to providing compatibility and “adaptab[ility] to any system.” EX1004, 9:1-2.

Behr in view of Lappenbusch

To the extent that Behr’s “adaptable to any system” format is considered deficient with respect to the “non-proprietary” claim feature, a POSITA would have found it obvious to implement a non-proprietary format in view of the teachings of Lappenbusch. EX1003, ¶¶138-143. Lappenbusch is presented in the alternative to the ITS Architecture, to the extent that public accessibility of the ITS Architecture is questioned.

Lappenbusch is directed to a navigation system in which a server provides data used by the client’s navigation function “in a common format that is independent of the particular formats used within the various monitoring systems.” EX1013, 7:51-55; *see also*, 5:21-29, 3:41-49, 9:22-25, 2:19-28. This “make[s] it possible for users to access information in a format that is chosen for their particular needs, specifically standard PC file formats” and overcomes problems in conventional systems in which “data... is available only in different formats, depending on the particular proprietary format used by each monitoring system.” EX1013, 9:22-25, 2:19-28.

In view of Lappenbusch's teachings, a POSITA would have found it obvious to implement Behr's natural language description route information in a common (*i.e.*, non-proprietary) format, for multiple reasons. EX1003, ¶¶140-143.

First, the '743 Patent, Behr, and Lappenbusch all pertain to the same field of endeavor of route guidance systems, as discussed in Secs. V.A, VIII.A.i, VIII.A.iii. Further, the three disclosures all address problems of compatibility between the different entities (*i.e.*, remote client and information providing server) of the route guidance system. EX1001, 2:35-42 ("Another problem with the current systems is that the proprietary server cannot be used with navigation systems and mapping databases provided by other manufacturers."); EX1004, 3:29-34 ("There is a further need for a routing and information system which is independent of any particular hardware configuration and which may be implemented on any suitably equipped data processing apparatus..."); EX1013, 2:19-28; EX1003, ¶141. Indeed, Lappenbusch specifically addresses the problem of different subsystems providing data in different proprietary formats, thereby limiting the accessibility to information for route guidance. EX1013, 2:19-28.

Second, a POSITA implementing Behr's natural language route guidance message would have been motivated to provide that message in a common or non-proprietary format as taught by Lappenbusch, in order to improve compatibility and access to information. *Id.*, 7:51-55, 9:22-25; EX1003, ¶142. A POSITA would have

found such a motivation to implement a non-proprietary format for server-provided information throughout the route guidance art. *See, e.g., supra*, Sec. VIII.A.iv (motivation to combine with ITS Architecture). Lappenbusch, for example, explicitly provides such a motivation so as to “***make it possible for users to access information*** in a format that is chosen for their particular needs.” *Id.*, 9:22-25. EX1012, 10. U.S. Patent No. 6,240,360 to Phelan (EX1027) similarly teaches using a standardized protocol for transmitting server-provided navigation information to a client device such that there is no “need to have knowledge of the map server software provided on the map server, and vice versa.” EX1027, 4:7-12, Abstract, 7:65-8:38, FIGS. 1-3. As a result, “servers providing information do not have to deal with maps, map ownership issues or mapping software, and ***information from several different sources*** can be integrated on a single screen.” EX1027, 9:21-30; *see also* EX1028, 5:29-41 (“Preferably, ***information content***, communications protocols, and information geographic referencing ***would all be in accordance with existing industry standards and evolving Intelligent Transportation Systems (ITS) open systems standards***. Source providers of general travel conditions information 20 would include traffic operations centers, traveler information centers, or any other information service provider...”); *id.*, 5:5-19 (“...present invention does not rely on any proprietary communications protocols or non-public geographic referencing methods, but rather provides open communications and geographic referencing

methods to ensure the broadest application of the invention and broadest availability to travelers...”). Thus, a POSITA implementing Behr’s route guidance system would have been motivated to use non-proprietary server-provided messages to improve interoperability, compatibility, and access to information from different sources, as described above. *Zup*, 896 F.3d at 1371 (“motivation to combine may be found explicitly or implicitly in market forces; design incentives; the interrelated teachings of multiple patents; any need or problem known in the field of endeavor at the time of invention and addressed by the patent; and the background knowledge, creativity, and common sense of the person of ordinary skill” (internal quotation marks and citations omitted)).

Third, a POSITA would have had a reasonable expectation of success in implementing Behr’s natural language route guidance message as a non-proprietary format. EX1003, ¶143. The two references both disclose a route guidance system in which information for route guidance is received from a server. *See, supra*, Secs. VIII.A.i, VIII.F.i. A POSITA would have no reason to doubt that using a non-proprietary format, as taught by Lappenbusch, for a route guidance message would be equally operable and successful in achieving the aforementioned benefits thereof in the system of Behr.

g. 1[f] “downloading said non-proprietary, natural language description to the client;”

Behr discloses this feature. EX1003, ¶144. For example, Behr discloses that the response, which is “formatted in accordance with a data communications protocol,” is transmitted from the base unit (server) to the mobile unit (client). EX1004, 22:19-29.

h. 1[g] “reconstructing the optimal route by the client using a local mapping database; and”

Behr discloses this element. EX1003, ¶¶145-146. For example, Behr’s mobile unit includes an on-board database with information and maps for a limited metropolitan area. EX1004, 38:30-40:7, 39:1-5, 39:20-22. The mobile unit uses the on-board database to reconstruct the optimal route, for example, by comparing the route information received from the base unit with map information stored in the on-board database. *Id.*, 39:6-31, FIG. 41 step S3. To this end, the route information transmitted from server (base unit) to a remote mobile unit can “include which of the streets is included in the route to be travelled so that for example, that street may be highlighted in the graphical display.” *Id.*, 28:7-10. To supplement the on-board database, the mobile unit obtains maps for a route and maps for an area not covered by the on-board database from the base unit. *Id.*, 39:6-20, FIG. 41. If any part of the route is not adequately covered by the maps stored in the on-board database, the mobile unit requests, from the base unit, stripmaps for the portions of the route which

are not adequately covered by the maps stored in the on-board database. *Id.*, 39:37-40:1, FIG. 41 step S5.

Based on Behr's teaching, a POSITA would have plainly recognized that each of the mobile units can have different maps stored in the on-board database due to Behr's disclosure that a mobile unit may need to receive stripmaps to update its on-board database in order to reconstruct the optimal route from the on-board database. EX1003, ¶146. Additionally, a POSITA would have understood that Behr's system provides similar functionality and features of the '743 Patent because Behr's system also "alleviates the need to have specific pre-defined turn-by-turn mapping databases installed on the client" and "can be used with any mapping database installed on the client navigation system." EX1001, 2:46-50.

i. 1[h] "displaying said optimal route on a display system coupled to the client."

Behr discloses this element. EX1003, ¶¶147-148. For example, Behr discloses that the mobile unit includes a display that displays the route guidance information. EX1004, 4:30-33, 7:30-33, 8:8-14, 9:30-36, 13:1-3, 13:31-34, 14:31-32, FIG. 1. Specifically, the mobile unit includes a graphical display that shows map portions and textual information providing travel directions. *Id.*, 9:32-36, 9:38-10:8, 32:30-35, FIGS. 6-10. As shown in Figure 1, the mobile unit includes a display and a microprocessor. *Id.*, FIG. 1. The evidence here shows that a POSITA would have

recognized that the display is coupled to the microprocessor for displaying the route guidance information. *See id.*, FIG. 6-10.

Behr also described the conventional option in which the mobile unit includes an on-board database containing maps for a metropolitan area and requests from the base unit, as needed, stripmaps for the portions of the route which are not adequately covered by the maps stored in the on-board database. EX1004, 38:30-41:8, FIG. 41. As part of the mobile unit's operation to reconstruct the optimal route for displaying to the user, Behr's mobile unit determines whether portions of the route are adequately covered by comparing the route information received from the base unit with map information stored in the on-board database. *Id.*, 39:27-31, FIG. 41:S3. If any part of the route is not adequately covered by the maps stored in the on-board database, the mobile unit requests, from the base unit, stripmaps for the portions of the route which are not adequately covered by the maps stored in the on-board database. *Id.*, 39:37-40:1, FIG. 41:S5. Behr further discloses that the mobile unit receives selected map portions for display, and displaying the route by highlighting streets on the display. *Id.*, 12:2-7, 28:7-10. Accordingly, Behr discloses the client displaying the optimal route on a display.

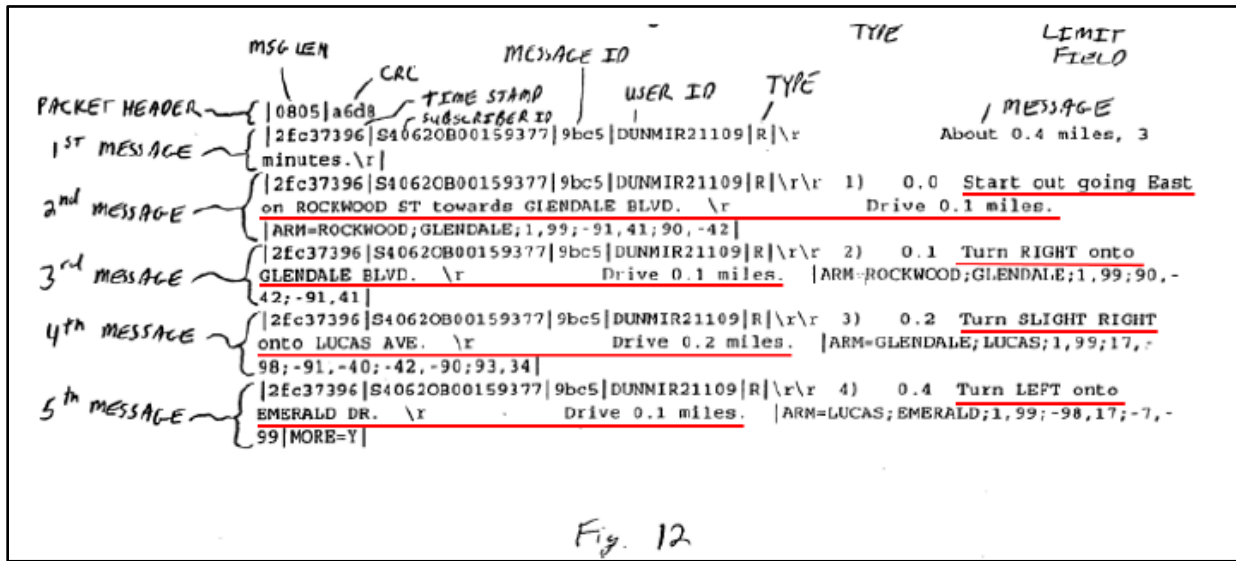
v. Claim 2

- a. “The method of claim 1, wherein said step of formatting includes the step of dividing the optimal route into one or**

more links, wherein each link includes at least a street name and a turning orientation.”

Behr discloses this element. EX1003, ¶¶149-152. For example, Behr discloses that the route guidance information in the formatted response message includes navigation instructions divided into several lines of text, each separated by carriage return/newline characters. EX1004, 8:32-36, 26:29-37, 30:24-30. Each response message or line thereof may correspond to a single maneuver from one road to another. *Id.*, 30:28-30, 31:27-29, FIG. 12. That is, each line may correspond to a particular link. The maneuver arm information conveyed in each line specifies “the road being driven on at the beginning of the maneuver” and “the road being driven on at the end of the maneuver.” *Id.*, 31:27-29. Further, each maneuver includes a turning orientation, in both a message field (e.g., “Turn **RIGHT** onto GLENDALE BLVD.” (FIG. 12)) as well as the x_2 , y_2 values corresponding to the “to” road being turned onto. *Id.*, FIG. 12, 32:2-16. With respect to the latter, the x_2 , y_2 values indicate a turning angle or orientation from the current road to the “to” road. *Id.*, 32:2-16.

An example of the links divided into separate lines “by carriage return/newline characters” in the formatted response message is shown in FIG. 12 of Behr:



Id., FIG. 12 (annotated)

As can be seen, each of the third through fifth messages corresponds to a different “link” or maneuver from one street to the next. Each of these messages includes a street name and a turning orientation:

Message	Street Name	Turning Orientation
3 rd	GLENDALE BLVD.	Right (90, -42)
4 th	LUCAS AVE.	SLIGHT RIGHT (17, -98)
5 th	EMERALD DR.	LEFT (-98, 17)

EX1003, ¶151

The ITS Architecture similarly formats its non-proprietary vehicle_guidance_route message by dividing the route into segments (*one or more links*).

```
route_identity
+ route_segment_number{route_segment_description
    + route_segment_end_point
    + route_segment_estimated_travel_time
    + route_segment_report_position_points
    + route_segment_start_point}
+ vehicle_identity.
```

EX1005, 120 (annotated)

vi. **Claim 3**

- a. **“The method of claim 2, wherein said step of reconstructing includes the steps of: searching said local mapping database for a closest match of said street name and said turning orientation for each of said links; and building the optimal route by combining each of said closest matches from said searching step.”**

Behr discloses this feature. EX1003, ¶153. For example, Behr’s mobile unit includes an on-board database with information and maps for a limited metropolitan area. EX1004, 38:30-40:7, 39:1-5, 39:20-22. The mobile unit uses the on-board database to reconstruct the optimal route, for example, by comparing the route information received from the base unit with map information stored in the on-board database. *Id.*, 39:6-31, FIG. 41 step S3. To this end, the route information transmitted from server (base unit) to remote mobile unit can “include which of the streets is included in the route to be travelled so that for example, that street may be highlighted in the graphical display.” *Id.*, 28:7-10. To supplement the on-board database, the mobile unit obtains maps for a route and maps for an area not covered

by the on-board database from the base unit. *Id.*, 39:6-20, FIG. 41. If any part of the route is not adequately covered by the maps stored in the on-board database, the mobile unit requests, from the base unit, stripmaps for the portions of the route which are not adequately covered by the maps stored in the on-board database. *Id.*, 39:37-40:1, FIG. 41 step S5.

vii. Claim 4

- a. “The method of claim 1, wherein said accessing step comprises the step of accessing a traffic database comprising current traffic conditions; and querying said traffic database for determining current traffic conditions between locations defined by said start and end route designations.”**

Behr discloses this feature. EX1003, ¶¶154-155. Specifically, Behr’s base unit includes an on-line traffic and map updater 72U that “receives updating information from map database vendor(s) 81 and traffic information providers 83 and maintains map database 72 current.” EX1004, 17:39-18:3; *see also id.*, 19:27-36.

The ITS Architecture also discloses this feature. Specifically, the ITS Architecture discloses that upon receiving the Trip Request message, the ISP (*server*) queries a Traffic Management subsystem (*traffic database*) for “current... traffic data” (*current traffic conditions*) “relevant to the route request” (*conditions*

between locations defined by said start and end route designations). EX1005, 13-15.

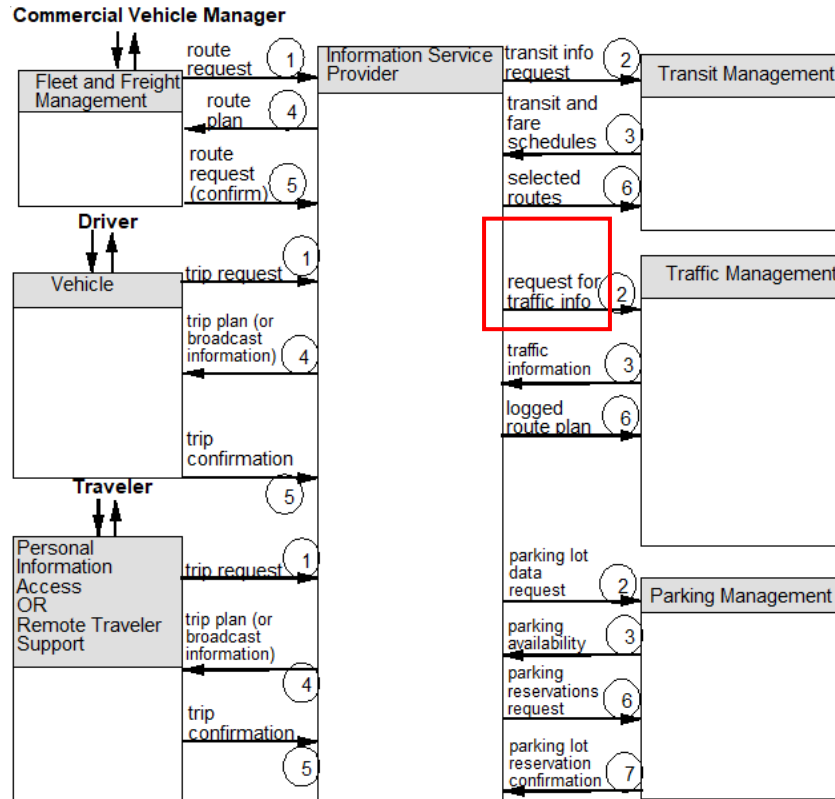


Figure 9 - Physical Architecture for Route Guidance

EX1005, 15 (annotated)

viii. Claim 5

- a. "The method of claim 1, wherein said real-time information includes one or more from the set of: current traffic conditions; highway ramp configurations; current weather conditions; constriction information; road restrictions; detour information; and event traffic information."

Behr discloses real-time information, including at least current traffic conditions and current weather conditions, being taken into account in its route

calculation. EX1004, 17:39-18:3, 19:27-36; EX1003, ¶156. Specifically, the map database of the base unit is maintained via automatic, **real time** database updates. EX1004, 11:22-26. The traffic and map updater receives updated information from map database vendors and traffic information providers and ensures that the map database is current. *Id.*, 17:39-18:3.

ix. Claim 6

- a. “The method of claim 1, wherein said wireless connection is accomplished using a cellular network.”**

Behr discloses wireless communication between the mobile unit and the base unit via a cellular network. EX1004, 8:23-26 (“cellular”); EX1003, ¶157.

x. Claim 7

- a. “The method of claim 1, wherein said transmitting step includes the step of entering into a keypad data entry field, said start and stop route designations including a name for one or more of: a city; a state; a country; and a street.”**

Behr discloses that “a user manipulates [a] keyboard 28 to formulate a request... seek[ing] the route between an origin and a destination. The keyboard 28 thus provides an input means at the mobile unit for providing an origin and a destination.” EX1004, 13:20-25. The input origin or destination includes at least an address, which a POSITA would understand to include at least a name of a city and a street. *See, e.g., id.*, 17:16-21 (“address... definition of cross streets”).

xi. Claim 12

- a. “The method of claim 1, wherein said downloading step comprises the step of compressing said natural language description.”**

Behr discloses that its response message, including the natural language route guidance, is compressed using, *e.g.*, a “current phrase compression table,” “the current dictionary,” or “the L-Z (Lev-Zempel) compression algorithm.” EX1004, 29:7-24; *see also id.*, 36:13-27.

The ITS Architecture similarly discloses that “[t]he ISP and receiving subsystem may use a data compression/decompression process at both ends to minimize the communications cost of this potentially large [route] message.” EX1005, 14.

xii. Claim 13

- a. “The method of claim 1, wherein said calculating step further comprises the step of reading user-specific data in calculating the optimal route.”**

Behr teaches a route determination that accounts for user-specified data, such as user settings for avoiding tolls, avoiding left turns, avoiding limited access roads, or specifying a time of day for starting the route. EX1004, 27:7-10; EX1003, ¶161.

The ITS Architecture also discloses its route calculation process using user-specific “preferences and constraints specified in the route request.” EX1006, 177. This “enable[s] the requester to influence the route that the process chooses.” *Id.*

As one example, the requester may specify a constraint prioritizing the use of urban roads. *Id.* In this case, “the process will calculate a route that uses route segments that are urban roads and will ignore those that are freeways.” *Id.* Additionally, the ITS Architecture discloses calculating the routes based on whether the user is a driver of an emergency vehicle or a commercial vehicle. *Id.*

Specifically, the route request is embodied as a `vehicle_route_request` message, which includes user-specific constraints, such as “`constraint_on_acceptable_travel_time`” and “`constraint_on_urban.`” EX1005, 35-36; EX1003, ¶¶162-163.

xiii. Claim 14

a. “The method of claim 1, wherein said computer network is the Internet.”

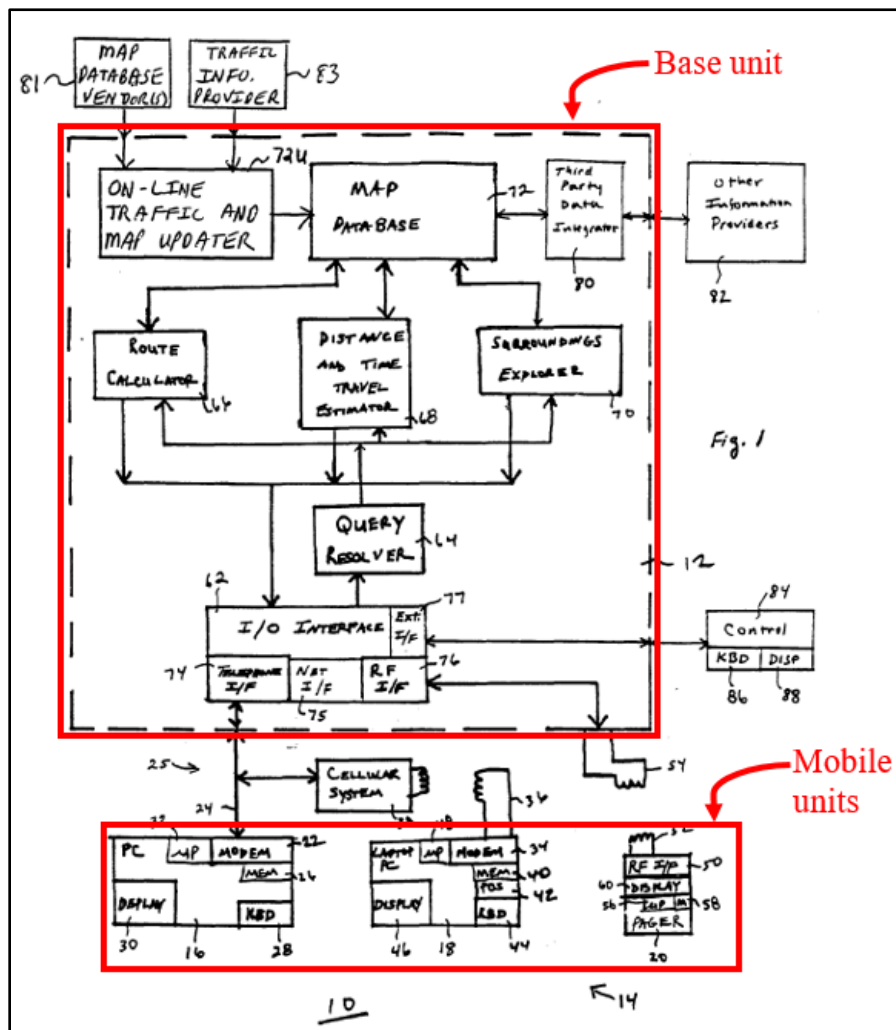
Behr discloses its navigation server (base unit) is connected to the Internet. EX1004, 16:18-25 (“The I/O interface 62 may further include a network interface 75 for coupling the base unit 12 to one or more wireless or wireline communication networks such as... TCP/IP (transmission control protocol/Internet protocol)”); EX1003, ¶164.

xiv. Claim 15

a. 15[pre] “A mobile navigation system comprising:”

Even if the preamble of claim 15 was treated as a limitation (which it is not under the BRI standard), Behr discloses the preamble of claim 15. *See Pitney*

Bowes, 182 F.3d at 1305; EX1003, ¶¶165-166. Behr discloses a system for providing route guidance from a base unit located at a central location to a mobile unit. EX1004, 1:3-6, 3:35-38, 4:5-8, 6:24-27, 7:5-7, 7:20-21, 7:28-30, 7:38-39, 8:15-17, 12:9-12, 12:24-25, 38:30-41:8, FIGS. 1-2 and 41. FIG. 1 of Behr shows the navigation system including the base unit (*server*) and mobile units (*client*):



EX1004, 12:9-20, FIG. 1 (annotated)

The base unit (*server*) is coupled to one or more wireless communication networks. EX1004, 16:18-38, 1:3-6, 20:10-26. Further, the base unit calculates the optimal route using real-time information, including traffic information. EX1004, 17:39-18:3, 11:22-26, 18:4-13, 15:37-16:2, 19:27-36.

b. 15[a] “a navigation computer;”

Behr’s mobile unit is a navigation computer. EX1003, ¶167. The mobile unit includes a microprocessor that responds to program instructions and data stored in memory. EX1004, 12:17-22, 12:27-32, 14:1-32, 14:37-39, *see also* 13:1-3, 13:20-20, FIG. 1. Under the control of a program of instructions stored in memory, the mobile unit sends to the base unit a request for a route between an origin and a destination. EX1004, 14:22-27, 13:22-30, FIG. 41 and 38:30-41:8. The microprocessor displays information, including geographical route/map information, on a display based on the information transmitted from the base unit to the mobile unit. EX1004, 14:39-15:3, 31:16-23, 38:30-39:15 (“maps” in an “on-board database” for display), FIG. 41.

c. 15[b1] “a wireless transceiver coupled to said navigation computer for connecting with a navigation server,”

See Claim 1[a].

d. 15[b2] “said navigation server for calculating optimal routes based on real-time information,”

See Claim 1[d].

- e. **15[b3] “said optimal routes being formatted using a non-proprietary, natural language description;”**

See Claim 1[e].

- f. **15[c] “a mapping database coupled to said navigation computer for reconstructing said optimal route from said non-proprietary, natural language description; and”**

See Claim 1[g].

- g. **15[d] “a display screen coupled to said navigation computer for displaying said optimal route using said mapping database.”**

See Claim 1[h].

xv. Claim 16

- a. **16[a] “The mobile navigation system of claim 15, further comprising: a GPS receiver coupled to said navigation computer for monitoring position;”**

Behr discloses that its mobile unit includes a GPS receiver, *i.e.*, a position locator 42 that provides the current location using “GPS (Global positioning System).” EX1004, 14:14-22, FIG. 1.

- b. **16[b] “a telephonic device coupled to said wireless transceiver and said navigation computer for making and receiving telephone calls; and”**

Behr discloses this feature, namely, “[a] modem 34 is coupled to an antenna 36 for sending and receiving cellular telephone calls in conjunction with the cellular telephone system 38.” EX1004, 13:23-25, FIG. 1.

c. 16[c] “a keypad coupled to said navigation computer for entering start and end route designations”

Behr discloses that “a user manipulates [a] keyboard 28 to formulate a request... seek[ing] the route between an origin and a destination. The keyboard 28 thus provides an input means at the mobile unit for providing an origin and a destination.” EX1004, 13:30-25, FIG. 1.

xvi. Claim 21

a. 21[pre] “A method for providing an optimal route using real-time information from a server of a navigation system, the navigation system also comprising a client and said server coupled to a computer network, said method comprising the steps of:”

See Claim 1[pre], 1[c], 1[d].

b. 21[a] “establishing a wireless connection with the client;”

See Claim 1[a].

c. 21[b] “receiving at the server start and end route designations from the client;”

See Claim 1[b].

d. 21[c] “calculating at the server the optimal route based on real-time information at the server and said start and end route designations;”

See Claim 1[d].

g. 21[d] “formatting at the server the optimal route into a non-proprietary, natural language description;”

See Claim 1[e].

- h. 21[e] “downloading from the server said non-proprietary, natural language description to the client so that the client can reconstruct the optimal route using a local mapping database and display said optimal route on a display system coupled to the client.”**

See Claim 1[f], 1[g], 1[h].

xvii. Claim 22

- a. 22[pre] “A method for providing an optimal route using real-time information at client of a navigation system, the navigation system also comprising a client and said server coupled to a computer network, said method comprising the steps of:”**

See Claim 1[pre], 1[c], 1[d].

- b. 22[a] “establishing a wireless connection with the server;”**

See Claim 1[a].

- c. 22[b] “transmitting start and end route designations from the client to the server;”**

See Claim 1[b].

- d. 22[c] “receiving from the server an optimal route formatted in a non-proprietary, natural language description and calculated based on real-time information and said start and end route designations;”**

See Claim 1[d], 1[e], 1[f].

- e. 22[d] “reconstructing the optimal route using a local mapping database; and”**

See Claim 1[g].

f. 22[e] “displaying said optimal route on a display system coupled to the client.”

See Claim 1[h].

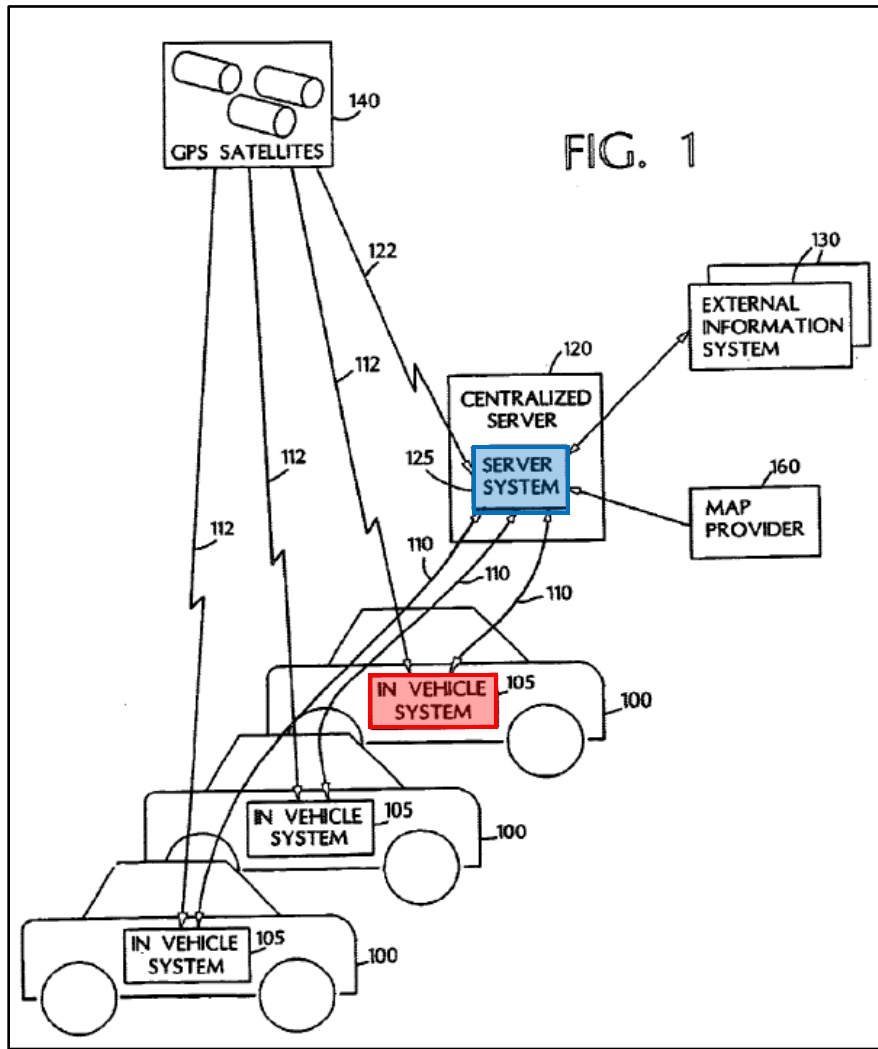
B. GROUND 2: Claims 1-7, 12-16, and 21-22 are obvious by Behr in view of ITS Architecture/Lappenbusch and (Knockeart or Ishihara)

Ground 2 is presented to the extent that Behr in view of ITS Architecture is alleged to not explicitly suggest reconstructing the route by the client using a local mapping database, *i.e.*, claim element 1[g]. As discussed in detail below, this feature was well known in the art, as evidenced by both Knockeart and Ishihara. EX1003, ¶¶188-229.

i. Overview of Knockeart

Knockeart (EX1014) is entitled “Vehicle Information System,” and is directed to an in-vehicle navigation system that transmits a specified destination to a centralized server and receives and displays a computed route in return. EX1014, Abstract. Thus, Knockeart is analogous art to the ’743 Patent because both are in the same field of endeavor of route guidance. EX1003, ¶¶189-192.

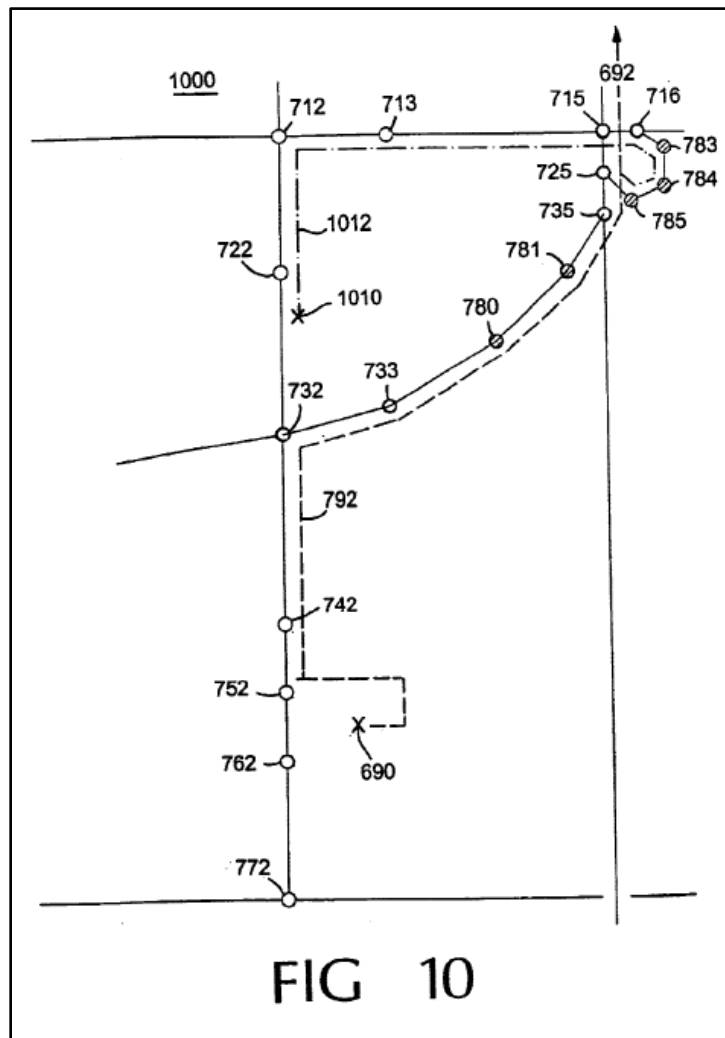
In detail, the route guidance begins with a user inputting a destination into the in-vehicle system 105 (annotated red below), which is then wirelessly transmitted together with a starting location to a server system 125 (annotated blue). EX1014, 9:64-10:13.



EX1014, FIG. 1

The server calculates the “best” route from the starting location to the destination, using its map data and traffic information received from the external information system 130. EX1014, 10:14-54, 8:53-60, FIG. 7, 21:51-56. The calculated route “is downloaded from the server system to the in-vehicle system in the form of a sequence of links joined by nodes... correspond[ing] to a node in the server’s road network 700.” *Id.*, 10:55-11:4. The server additionally provides, to

Id., 11:65-12:5. While traveling toward the destination, if the driver goes off the planned route, the in-vehicle system re-plans the route by determining an optimal path to a waypoint of the server-calculated route. *Id.*, 12:6-32, 24:48-62. In so doing, the in-vehicle system uses its preloaded main roads network, and combines the new path with the server-calculated route to reconstruct its optimal route. *Id.*, 11:20-31, 24:48-62, 17:54-62, FIG. 16.



EX1014, FIG. 10

ii. Overview of Ishihara

Ishihara is presented in the alternative to Lappenbusch and is non-cumulative at least due to its earlier § 102(e) date.

Ishihara (EX1031) is entitled “Dynamic Route Guidance Apparatus,” and is directed to “[a] vehicle route guide system in which a vehicle transmits a destination to a control center, and the control center obtains an optimum route in consideration of current traffic conditions and notifies the vehicle of the route.” EX1031, Abstract. Thus, Ishihara is analogous art to the ’743 Patent because both are in the same field of endeavor of route guidance. EX1003, ¶¶193-196.

Ishihara’s vehicle system includes road map data (*i.e.*, a local map database) in addition to Universal Traffic Management Systems (UTMS) link and node data, which is “road link data controlled by a control center.” *Id.*, 4:37-48. The vehicle also stores a correspondence table that provides a mapping between the local map data and the server (control center) map data (*i.e.*, UTMS data). *Id.*, 4:48-65.

The two sets of map data differ in that the local map data is “more detailed” than the UTMS data. *Id.*, 5:21-23. Because the UTMS data is not as detailed, routes calculated based only thereon may not be optimal since the nearest UTMS link to the destination may be incorrectly identified. *Id.*, 1:24-35.

Ishihara resolves this problem by utilizing its local map database to identify the correct UTMS link that is closest to the destination. Specifically, when a user

inputs destination data for seeking an optimum route, the vehicle system searches for an optimum route using its local map data, and identifies a UTMS link that is “located on the searched route and is nearest to the destination.” *Id.*, 5:6-17. The vehicle then sends this destination UTMS link to the control center, which “calculates a recommended route with the minimum cost which goes from the present position of the vehicle to the [destination] UTMS link, and notifies the vehicle of the route.” *Id.*, 5:19-38, 5:62-67. To this end, the control center uses real-time traffic data to determine the most optimal route. *Id.*, Abstract, 5:66-6:3. Upon receiving the optimal UTMS route, the vehicle combines the route based on the local mapping database (FIG. 4A) with the received route (FIG. 4B) to reconstruct the optimal route (FIG. 4C). *Id.*, 6:11-25, FIGs. 4A-4C.

iii. Claim 1

- a. 1[pre] “A method for providing an optimal route using real-time information for a navigation system comprising a client and a server, said server coupled to a computer network, said method comprising the steps of:”**

See Ground 1, Claim 1[pre].

- b. 1[a] “establishing a wireless connection between the client and the server;”**

See Ground 1, Claim 1[a].

- c. 1[b] “transmitting start and end route designations from the client to the server;”**

See Ground 1, Claim 1[b].

d. 1[c] “accessing real-time information by the server;”

See Ground 1, Claim 1[c].

e. 1[d] “calculating the optimal route by the server, based on the real-time information and said start and end route designations;”

See Ground 1, Claim 1[d].

f. 1[e] “formatting the optimal route into a non-proprietary, natural language description;”

See Ground 1, Claim 1[e].

g. 1[f] “downloading said non-proprietary, natural language description to the client;”

See Ground 1, Claim 1[f].

h. 1[g] “reconstructing the optimal route by the client using a local mapping database; and”

As discussed above, Behr’s mobile unit uses the on-board database to reconstruct the optimal route, for example, by comparing the route information received from the base unit with map information stored in the on-board database. EX1004, FIG. 41 step S3; *see also, supra*, Sec. VIII.A.iii.h. Nevertheless, to the extent that Behr is considered to not explicitly disclose reconstructing the optimal route using a local mapping database, such a feature was commonly known in similar prior art navigation systems. EX1003, ¶¶205-214.

Behr in view of ITS Architecture/Lappenbusch and Knockeart

Knockeart, for example, discloses that the route received from the server may have “a compact representation,” such that it is reconstructed “by referencing stored street names or by using references to nodes in the main roads network that is already stored in the vehicle.” EX1014, 29:61-67. The server-provided route may also refer to “predefined sequences of road segments, maneuver points, and way points” or previously downloaded routes stored in the in-vehicle systems. *Id.*, 30:5-17. Thus, in all of these cases, the in-vehicle system reconstructs the route by using the locally stored mapping data (whether it be the preloaded main roads network, or previously downloaded road or route sequences) that are compactly represented in the server-provided route. EX1003, ¶206.

A POSITA would have been motivated to incorporate one or more of these data compacting techniques (which reference and reconstruct the route using the local mapping database) into Behr’s system for the explicit reasons provided in the reference, *i.e.*, “to reduce the amount of data” and thereby allow the route to “be downloaded quickly from the server to the vehicle.” EX1014, 29:61-65. A POSITA would have had a reasonable expectation of success in making the combination. EX1003, ¶207. That is, a POSITA would have reasonably expected that using references to the vehicle’s locally stored data to construct the route (as taught by Knockeart) would have further compressed the routing information that is

transmitted in Behr's system. Indeed, like Knockeart, Behr also recognizes the benefit of reducing the amount of data transmission to provide a more efficient transmission. EX1004, 29:7-24, 36:13-19; *see also* EX1001, 8:45-53. A POSITA would have understood that the combination would not have altered or hindered the similar functions performed by the system of Behr. EX1003, ¶207.

Knockeart further discloses at least two additional ways in which it uses a local mapping database to reconstruct the route. First, Knockeart suggests using "spot maps" downloaded from the server (and therefore stored in the vehicle, EX1003, ¶208) to display the route to the driver. EX1014, 11:38-64, 7:5-6, 23:4-7, 30:45-48, FIG. 9. A POSITA would have recognized that the predictable modification to Behr (as suggested by the teachings of Knockeart regarding displaying spot maps for the route) would have included the mobile unit using the maps downloaded to, or otherwise stored at, Behr's on-board database to provide a display of the optimal route. *Id.*; EX1003, ¶208.

Another way in which Knockeart suggests use of a local mapping database to reconstruct the route is with respect to its preloaded main roads network. EX1014, 11:65-12:5. As described above, Knockeart re-plans the route when the driver is off-route, using the preloaded roads network to determine an optimal path to a waypoint of the server-calculated route. *Id.*, 12:6-32, 24:48-62, 17:54-62, FIG. 16, 32:65-33:43, FIG. 10. In this case, the in-vehicle system reconstructs the optimal

route using the combination of its preloaded main roads network and the server-calculated route. *Id.*; EX1003, ¶209.

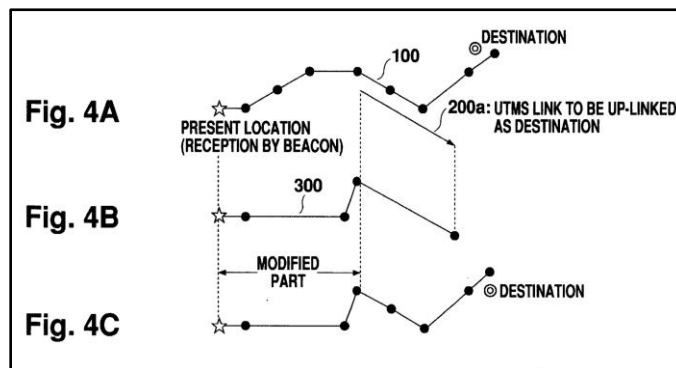
A POSITA would have recognized that implementing Behr’s system in a manner that uses a preloaded in-vehicle roads network to reconstruct the optimal route as taught by Knockeart (and described above) would provide a system that can quickly re-maneuver an off-route vehicle “back onto the originally planned route,” without having to contact the server system. EX1003, ¶210; EX1004, 9:30-10:5; EX1014, 12:6-26.

Multiple reasons would have prompted a POSITA to combine these features (as suggested by Knockeart) with the teachings of Behr. EX1003, ¶211. At the least, integrating either of Knockeart’s spot maps or route re-planning techniques into Behr would have merely been the application of these known techniques (*e.g.*, Knockeart’s use of spot maps and/or local mapping data to reconstruct the optimal route) to a known device (*e.g.*, Behr’s navigation system that provides stripmaps at the client device to update the local mapping database) ready for improvement to yield predictable results. *Id.* Indeed, “when a patent ‘simply arranges old elements with each performing the same function it had been known to perform and yields no more than one would expect from such an arrangement, the combination is obvious.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007). Here, both Behr and Knockeart disclose navigation systems, and a POSITA would have recognized that

applying Knockeart's teachings to Behr's system would have led to predictable results without significantly altering or hindering the functions performed by the system of Behr. EX1003, ¶211.

Behr in view of ITS Architecture/Lappenbusch and Ishihara

In addition to Knockeart, Ishihara also discloses the feature of reconstructing the route using the local mapping database. EX1003, ¶¶212-214. Ishihara's FIG. 4B, for example, "shows a recommended route with the minimum cost, obtained by the control center," *i.e.*, as UTMS links. EX1031, 6:17-19. FIG. 4C, meanwhile, shows the reconstructed route ("final guidance route") obtained using the local mapping database. EX1031, 6:19-25. Here, the route is reconstructed "such that the part of the searched route from the present position to the start of the UTMS link 200a is replaced by the corresponding [local mapping database] part." *Id.*



EX1031, FIGS. 4A-4C

A POSITA would have found it obvious to incorporate Ishihara's use of its local mapping database into the combined Behr-ITS Architecture system, described

above. EX1003, ¶¶213-214. To this end, the combined Behr-ITS Architecture system uses a non-proprietary format for routing information such that users “do not become captive to proprietary systems.” EX1012, 10. As a result, this would “allow[] multiple suppliers of equipment and software that will directly connect to other ITS subsystems.” EX1011, 3. In other words, the combined Behr-ITS Architecture would provide a system in which the remote unit (*e.g.*, vehicle subsystem) and the route calculation server could be from different suppliers with respectively different proprietary software (*i.e.*, map databases). A recognized problem with the use of different software is, as explained by Ishihara, that the route obtained by the server may not be the most direct route to the destination. EX1031, 1:24-35. Accordingly, a POSITA would have identified Ishihara’s solution to this problem, namely, reconstructing the server-calculated route that factors current traffic conditions, using the local mapping database that might provide the most direct route to the destination. EX1031, 6:14-25. A POSITA would have reasonably expected that Ishihara’s solution applied to the Behr-ITS Architecture system would have provided “an optimum route for the current traffic condition” that is also “the shortest route avoiding any detour.” *Id.*, 6:26-33; EX1003, ¶214.

i. 1[h] “displaying said optimal route on a display system coupled to the client.”

See Ground 1, Claim 1[h]; EX1003, ¶216.

iv. Claim 2

See Ground 1, Claim 2.

v. Claim 3

See Ground 1, Claim 3.

vi. Claim 4

See Ground 1, Claim 4.

vii. Claim 5

See Ground 1, Claim 5.

viii. Claim 6

See Ground 1, Claim 6.

ix. Claim 7

See Ground 1, Claim 7.

x. Claim 12

See Ground 1, Claim 12.

xi. Claim 13

See Ground 1, Claim 13.

xii. Claim 14

See Ground 1, Claim 14.

xiii. Claim 15

See Ground 1, Claim 15 and Ground 2, Claim 1[g].

xiv. Claim 16

See Ground 1, Claim 16.

xv. Claim 21

See Ground 1, Claim 21 and Ground 2, Claim 1[g].

xvi. Claim 22

See Ground 1, Claim 22 and Ground 2, Claim 1[g].

C. GROUND 3: Claims 8 and 9 are obvious by Behr in view of ITS Architecture/Lappenbusch, Knockeart/Ishihara, and Geiser

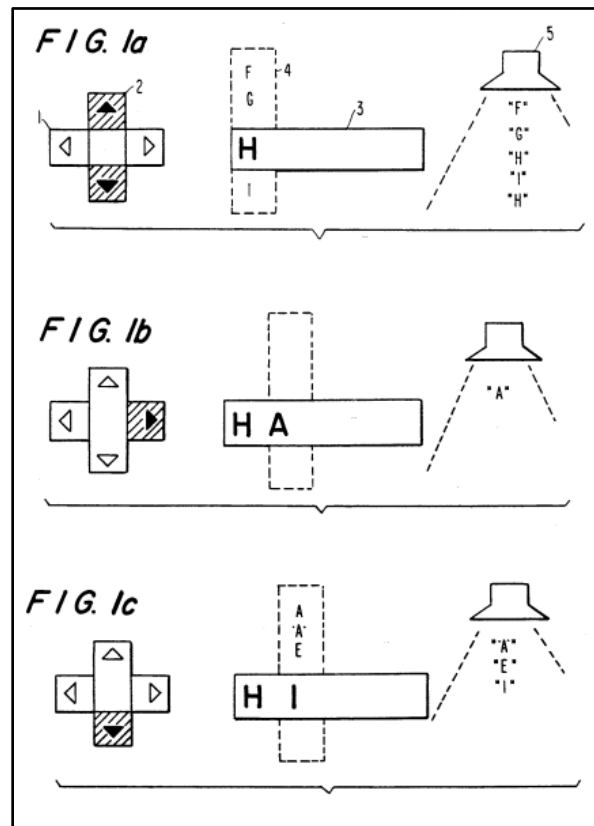
i. Claim 8

- a. “The method of claim 7, wherein said step of entering comprises the steps of: comparing data entered into the keypad data entry field with a database of allowable entries; determining a set of conforming data items associated with said entered data; applying a criterion to said set of conforming data items to determine an anticipated data item; and displaying said anticipated data item in the data entry field.”**

As discussed above with reference to claim 7, Behr discloses user input to a keyboard to specify the start and stop route endpoints. EX1004, 13:20-25. Although Behr does not provide details on validating or predictive data entries, Geiser discloses the features of claim 8. EX1003, ¶¶230-232.

Geiser discloses a navigation device that determines a subset of anticipated letters for entry in defining a navigation destination, based on certain criteria. EX1015, 2:67-68, 3:2-25, FIGs. 1a-1c. As one example, shown in FIGs. 1a to 1c, a

first letter, “H,” of a destination is input. EX1015, FIG. 1a. Subsequently, for the second letter, the system compares the entered data (“H”) with allowable entries (i.e., the alphabet) and determines a subset of eight confirming data items, i.e., the letters “A,” “E,” “I,” “O”, “O”, “U”, “u”, and “Y.” EX1015, 3:4-9, 3:66-4:8. This subset is determined to conform with the rule that only these letters can follow the letter “H” grammatically. A particular criterion (i.e., alphabetic order, as shown in FIGs. 1a and 1c) is then applied to this subset of eight letters to determine one anticipated letter to be displayed. In this case, as “A” is first alphabetically among the subset, it is determined and displayed in the data entry field, and the subsequent letters of the subset are sequentially scrolled in alphabetical order (FIG. 1c):



EX1015, FIGs. 1a-1c

In another example, the conforming data items may be the possible subset of letters that can occur in a particular letter position among destination locations limited by the preceding letter positions. EX1015, 3:10-25; *see also* 4:16-19.

A POSITA would have found it obvious to apply Geiser's above-described predictive data entry method into the keypad entry of Behr, as no more than the application of a known technique to improve similar devices in the same way. EX1003, ¶233. Here, Behr, Geiser, and the '743 Patent are all directed to analogous art, *i.e.*, route guidance systems. *See, supra*, Secs. V.A, VIII.A.i; EX1015, 1:7-9. As Behr does not specify a particular method for its keyboard inputs of route

endpoints, a POSITA would have looked to Geiser's comparable device that has the purported improvement of claims 8 and 9 (below). A POSITA could have applied Geiser's input method in the same way to Behr's input mechanism, with a predictable expectation of a destination search with increased efficiency and less distractions. EX1015, 1:55-58, 1:68-2:3, 2:18-20.

ii. Claim 9

- a. "The method of claim 8, wherein said criterion defines a data item in said set of conforming data items that appears first alphabetically."**

As described above, Geiser applies an alphabetical order criterion to display the letter that appears first alphabetically. EX1015, FIGs. 1a-1c; EX1003, ¶234.

D. GROUND 4: Claims 10 and 11 are obvious by Behr in view of ITS Architecture/Lappenbusch, Knockeart/Ishihara, Geiser, and Saito

i. Claim 10

- a. "The method of claim 8, wherein said criterion defines a data item in said set of conforming data items that is used most frequently."**

The Behr-Geiser combination suggests an alphabetical order criterion, and not a frequency of use criterion, for determining an anticipated data item. A POSITA would have found it obvious to apply a frequency of use criterion, such as taught by Saito, as a simple substitution of one known element for another to obtain predictable results. Saito discloses reading and displaying data based on frequency of use, with the most frequently used (*i.e.*, "having the greatest number of past references") being

displayed first. EX1016, 2:51-3:7. A POSITA could have substituted Geiser’s alphabetical criterion with Saito’s frequency of use criterion to predictably achieve a system in which “the hit ratio” for Geiser’s anticipated data item (destination character) “is raised and it is possible to shorten the search time.” *Id.*, 3:7-14; EX1003, ¶235.

ii. Claim 11

a. “The method of claim 8, wherein said criterion defines a data item in said set of conforming data items that is used most recently.”

Saito discloses reading and displaying map data or maps based on history of use, with the most recently used (i.e., “a last map referred to”) being displayed first. EX1016, 5:57-60. A POSITA would have found it obvious to apply a most recently used criterion, such as taught by Saito, as a simple substitution of one known element for another to obtain predictable results. EX1003, ¶236. Saito discloses outputting data based on history of use, with the most frequently used being displayed first. EX1016, 5:57-60. A POSITA could have substituted Geiser’s alphabetical criterion with Saito’s frequency of use criterion to predictably achieve a system in which the process of searching is “simplified” and “shorten[ed].” EX1016, 5:57-6:7.

E. GROUND 5: Claims 17 and 18 are obvious by Behr in view of ITS Architecture/Lappenbusch, Knockeart/Ishihara, and JP091

i. Claim 17

- a. “The mobile navigation system of claim 15, wherein said display screen is used to display the mapping database in a head right configuration.”**

JP091 discloses a head right configuration for a navigation display of mapping data. EX1048⁴, ¶¶ [0024] (“As for the road map displayed on the screen 31, the traveling direction is indicated by a vertex serving as the most acute angle at a mark on a triangle shape indicating the position of the vehicle, the traveling direction matches the lateral direction (horizontal direction) of the screen 31, and **here the right side is set to the front**”), [0027] (“Note that in the display example in FIG. 5, the map is displayed having **the right side of the screen set to the traveling direction**”). A POSITA would have been motivated to incorporate the head right configuration of JP091 into the Behr system to provide the expected benefit of “[i]ncreasing the amount of information displayed ahead of the traveling direction” thereby allowing the driver “to easily confirm the route on which the vehicle will travel.” *Id.*, ¶¶ [0025] – [0026]; EX1003, ¶237.

⁴ EX1048 is a certified translation of JP091 (EX1017).

ii. **Claim 18**

- a. **“The mobile navigation system of claim 15, wherein said display screen is used to display the mapping database in a head left configuration.”**

JP091 discloses a head left configuration for a navigation display of mapping data. EX1048, ¶¶ [0024] (“As for the road map displayed on the screen 31, the traveling direction is indicated by a vertex serving as the most acute angle at a mark on a triangle shape indicating the position of the vehicle, the traveling direction matches the lateral direction (horizontal direction) of the screen 31”), [0027] (“Note that in the display example in FIG. 5, the map is displayed having the right side of the screen set to the traveling direction, **but the map may be displayed having the left side set to the same**”). A POSITA would have been motivated to incorporate the head right configuration of JP091 into the Behr system to provide the expected benefit of “[i]ncreasing the amount of information displayed ahead of the traveling direction” thereby allowing the driver “to easily confirm the route on which the vehicle will travel.” *Id.*, ¶¶ [0025] – [0026]; EX1003, ¶238.

F. GROUND 6: Claim 19 is obvious by Behr in view of ITS Architecture/Lappenbusch, Knockeart/Ishihara, and JP230

i. **Claim 19**

- a. **“The mobile navigation system of claim 16, further including a clock coupled to said navigation computer, wherein said navigation computer is programmed to set**

said clock to an accurate local time in accordance with a time from said GPS receiver and a current time zone.”

Although Behr does not disclose synchronizing a clock with the local time, JPH08-110230 (JP230) discloses this claim element. For example, JP230 discloses reading out a time generated by a GPS receiver 1, and correcting it based on time difference data corresponding to a current time zone. EX1049⁵, Abstract, ¶ [0011]. The corrected time is displayed. *Id.* A POSITA would have been motivated to incorporate JP230’s clock correction method into the Behr system to provide the expected benefit of automatically correcting the remote unit’s time in a “convenient” and “simple” manner. *Id.*, ¶¶ [0005], [0006]; EX1003, ¶239.

IX. DISCRETIONARY CONSIDERATION

Petitioner respectfully submits that the Board should not exercise its discretion under 35 U.S.C. §§ 314(a) or 325(d) to deny this Petition.

A. The Board Should Not Exercise its Discretion to Deny Institution Under § 325(d)

The Board uses a two-part framework to analyze denial under 325(d):

(1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and

⁵ EX1049 is a certified translation of JP230 (EX1018).

(2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6, 7 (PTAB 2020) (precedential). When considering the first prong, the PTAB considers the prosecution of the patent, and any post-issuance proceedings. *Id.*, 7-8. As to the second prong, the PTAB provided examples of “material errors,” including whether the office overlooked a specific teaching of the relevant prior art or an error of law, such as misconstruing a claim term. *Id.*, fn9.

First, the ITS Architecture and Lappenbusch references (as well as Knockeart and Ishihara) were not before the Patent Office during prosecution or the prior Google IPR. As discussed in Secs. V.B-C, the claims were allowed during prosecution and the prior IPR was denied on the basis of the “non-proprietary” feature of the claims. This prosecution history reveals that more pertinent prior art was never considered by the Examiner or submitted to the Board that expressly described examples of the “non-proprietary” elements and all other features of the claims.

Second, while Behr was previously considered by the Board, the present Petition relies on the combinations of Behr with the ITS Architecture or Lappenbusch (as well as Knockeart/Ishihara), prior art references that were not

before the Patent Office or the Board (or cumulative with any such references considered by the Patent Office or the Board). *See Oticon Medical AB v. Cochlear Limited*, IPR2019-00975, Paper 15 at 19 (PTAB Oct. 16, 2019) (precedential) (no discretionary denial under 325(d) where Petition relies on previously considered references in combination with one new, non-cumulative prior art reference). Both of the ITS Architecture and Lappenbusch explicitly disclose a non-proprietary format for navigation information, unlike the Behr reference according to the Board's decision in the prior IPR. *See* Secs. VIII.A.iv and VIII.F.ii. Notably, the present Petition relies on these references to raise new arguments regarding the obviousness of using a non-proprietary format for Behr's natural language description. These new arguments were never previously considered by the Examiner or the Board, as expressly noted by the Board: "Petitioner does not argue, and we do not opine on, whether it would have been obvious to one of ordinary skill in the art to use a non-proprietary format for Behr's base unit responses." IPR2017-00819, Paper 16 at fn5.

Thus, the present Petition, and the references discussed in relation thereto, raise new art and arguments not previously considered by the Patent Office under the first prong of the *Advanced Bionics* framework.

**B. The Board Should Not Exercise its Discretion to Deny Institution
Based on Co-Pending District Court Litigation**

Petitioner stipulates that, if the Board institutes trial, Petitioner will cease asserting in the district court any grounds raised in this petition or reasonably could have been raised in this petition. Petitioner therefore respectfully submits that the Board should not exercise its discretion under 35 U.S.C. §§ 314(a) to deny this Petition.

X. CONCLUSION

For at least the foregoing reasons, Petitioner requests that the Patent Office order institution of *inter partes review* for claims 1-19 and 21-22 and then cancel these claims as unpatentable.

Respectfully submitted,

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Date: MARCH 29, 2024

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Petitioner hereby certifies that the present paper contains 13,938 words (as counted by the “Word Count” feature of Microsoft Word™). This word count excludes the table of contents, table of authorities, table of exhibits, Mandatory Notices, certificate of word count, and certificate of service.

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CERTIFICATE OF SERVICE

The undersigned certifies that on March 29, 2024, in accordance with 37 C.F.R. §§ 42.105 and 42.6, a complete and entire copy of this Petition for *Inter Partes* Review and all supporting exhibits were provided via Priority Mail Express to the Patent Owner, by serving the correspondence address of record as follows:

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Date: March 29, 2024