IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re *Ex Parte* Reexamination of:	)
	)
Patent No. 7,030,781	) Control Number: Not Yet Assigned
	)
Inventor: Martin Kelly Jones	) Group Art Unit: Not Yet Assigned
	)
Issue Date: Apr. 28, 2006	) Examiner: Not Yet Assigned
Application No.: 10/686,925	)
	) Box: *Ex Parte* **Reexam**
For: NOTIFICATION SYSTEM AND	)
METHOD THAT INFORMS A	)
PARTY OF VEHICLE DELAY	)

Mail Stop *Ex Parte* Reexam
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir or Madam:

REQUEST FOR *EX PARTE* REEXAMINATION

Requestor[1] believes that ArrivalStar, the assignee of U.S. Patent No. 7,030,781, is causing significant public harm by asserting invalid claims to extract licenses from government agencies that provide public transportation services and simultaneously deterring other agencies from modernizing their own transportation systems. Requestor asks for *ex parte* reexamination of claims 1-14 of U.S. Patent No. 7,030,781 ("the '781 Patent") [Exhibit 1], titled "Notification System and Method that Informs a Party of Vehicle Delay," issued to Martin Kelly Jones, owned by Melvino Technologies Limited, a company registered in the British Isles, with the exclusive right to license the patent held by ArrivalStar, Inc., a company registered in Luxembourg.

Claims 1-14 of the '781 Patent are anticipated and/or rendered obvious under 35 U.S.C §§ 102 *et seq.* and 103(a) by various printed prior-art publications. Consequently, EFF

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[1] For a brief description of the Requestor, see Appendix A.

respectfully requests that the Patent Office order an *ex parte* reexamination of the '781 Patent

and issue a certificate cancelling claims 1-14.

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EXHIBITS

I.   **THE '781 PATENT IS CAUSING SIGNIFICANT PUBLIC HARM**

U.S. Patent No. 7,030,781 ("the '781 Patent") [Exhibit 1] claims a method and system for tracking the location of vehicles, calculating whether or not they are on schedule, and communicating the results to interested parties. ArrivalStar has broadly asserted that the '781 Patent covers any vehicle tracking system that sends any type of notification to a potential passenger about a vehicle's status.[1] ArrivalStar has brought more than 150 lawsuits on its family of vehicle tracking patents, many of them against public services and government agencies such as King County, Illinois Commuter Rail, Massachusetts Bay Transportation Authority, Greater Cleveland Regional Transit Authority, and the United States Postal Service, among others. Yet despite its aggressive approach, one of the main patents-in-suit – the '781 Patent – contains invalid claims. Nonetheless, because of the high cost of litigation, many defendants have chosen to settle with ArrivalStar. These settlements only deter other government agencies from adopting new vehicle-tracking techniques, which would benefit communities by increasing the use of public transportation. Although such exploitive practices are not by themselves grounds to grant this reexamination request, EFF respectfully requests that the Patent Office consider ArrivalStar's practices.

II.   **SUBSTANTIAL NEW QUESTIONS OF PATENTABILITY ARE RAISED BY PRIOR ART NOT PREVIOUSLY CONSIDERED BY THE PATENT OFFICE**

The '781 Patent relates to the field of vehicle tracking, and specifically to user notification based on the tracking information. This system and method were disclosed, described, and known to the public years before the filing of the application which resulted in this patent. Each of the following prior art references (or combinations thereof) raises a

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[1] J.J. Barrow, *Track This (Litigation) Vehicle: ArrivalStar Has Filed More Than 100 Patent Lawsuits*, (Sept. 2011) available at http://patentexaminer.org/2011/09/arrivalstar-and-melvino-technologies-have-filed-more-than-100-patent-lawsuits/ [Appendix G].

substantial question of patentability. This section summarizes those references; each piece of

prior art is discussed in greater detail in Section III below.

> **A.** **Lawrence Labell,** *et al.***,** *Advanced Public Transportation Systems: The State of the Art Update '92* **(***State of the Art Update 92* **or** *SotA92***).**

Lawrence Labell, *et al.*, *Advanced Public Transportation Systems: The State of the Art*

Update '92, U.S. Department of Transportation, April 1992 (*State of the Art Update '92* or

SotA92),[2] a technical report describing the state of technology for public transportation solutions

in 1992, raises a substantial new question of patentability to claims 1-14 of the '781 Patent.

SotA92 was published prior to the January 19, 1999 priority date[3] and taught each element of

claims 1-14 of the '781 Patent. *SotA92* qualifies as a prior art printed publication under 35 U.S.C.

§ 102(b) because it was published and copyrighted by the U.S. Department of Transportation and

made available to the public through the National Technical Information Service in Springfield,

Virginia in 1992.[4] The PTO did not consider this article during the prosecution of the '781

Patent; it thus presents new prior art. Because *SotA92* provides a basis for rejection of claims 1-

14 under 35 U.S.C. § 102(b), Requestor believes that a reasonable examiner would consider its

teachings important in determining whether or not claims 1-14 are patentable.[5]

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[2] Lawrence Labell, *et al.*, *Advanced Public Transportation Systems: The State of the Art Update '92*, U.S. Department of Transportation, April 1992 (*State of the Art Update '92* or *SotA92*) [Appendix B].
[3] *See infra* section III (B). Further, *SotA92* also predates May 18, 1993, the earliest possible priority date of the '781 Patent.
[4] *SotA92* at ii (Technical Report Documentation Page).
[5] *See* MPEP § 2242(I) (8th ed., rev. 7, July 2010) ("A prior art patent or printed publication raises a substantial question of patentability where there is a substantial likelihood that a reasonable examiner would consider the prior art patent or printed publication important in deciding whether or not the claim is patentable").

B. **Thaai Walker, Gadget May End Lengthy Bus Waits: Inventor's Locator Device Could Stop Bus-Stop Blues (Nextbus Chronicle Article or NBCA).**

Thaai Walker, *Gadget May End Lengthy Bus Waits: Inventor's Locator Device Could Stop Bus-Stop Blues*, S.F. Chron., Nov. 25, 1996 ("*Nextbus Chronicle Article*" or "*NBCA*"),[6] a newspaper article describing the Nextbus Information System, raises a substantial new question of patentability to claims 1-14 of the '781 Patent. *NBCA* taught each element of claims 1-14 of the '781 Patent. *NBCA* qualifies as a prior art printed publication under 35 U.S.C. § 102(b) because it was published and copyrighted in 1996. The PTO did not consider this article during the prosecution of the '781 Patent; it thus presents new prior art. Because *NBCA* provides a basis for rejection of claims 1-14 under 35 U.S.C. § 102(b), Requestor believes that a reasonable examiner would consider its teachings important in determining whether or not claims 1-14 are patentable.

C. **NBCA and U.S. Patent No. 6,006,159 ("Schmier" or "'159 Patent").**

NBCA combined with U.S. Patent No. 6,006,159 to Schmier et al. entitled "Public Transit Vehicle Arrival Information System" ("*Schmier*" or "the '159 Patent") raises a substantial new question of patentability to claims 1-14 of the'781 Patent.[7] *Schmier* concerns the same system described in *NBCA*, and the inventor of *Schmier* is quoted in *NBCA*. *Schmier* taught the elements of claims 1-14 of the '781 Patent in more technical detail than *NBCA*. *Schmier* qualifies as a prior art patent under 35 U.S.C. § 102(e) because the application that led to its issuance was filed on August 13, 1996, before the January 19, 1999 priority date for the '781 Patent, and the inventive entity of *Schmier* is different than that of the '781 Patent. The teachings of *Schmier* were considered but not cited in the prosecution of the '781 Patent, and thus are not new.

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[6] Thaai Walker, *Gadget May End Lengthy Bus Waits: Inventor's Locator Device Could Stop Bus-Stop Blues*, S.F. Chron., Nov. 25, 1996 ("*Nextbus Chronicle Article*" or "*NBCA*") [Appendix C].
[7] U.S. Patent No. 6,006,159 ("Schmier") [Appendix D].

However, the PTO did not consider *NBCA* during examination, and it is the combination of *Schmier* and *NBCA* that provides a basis for rejection of claims 1-14 of the '781 Patent. Thus, the Patent Office should consider the combination of *NBCA* and *Schmier* in the reexamination of the '781 Patent.[8] Because *Schmier,* when combined with *NBCA,* establishes a basis for rejection of claims 1-14 under 35 U.S.C. 103(a), Requestor believes that a reasonable examiner would consider these teachings and suggestions important in determining whether claims 1-14 are patentable.

D.   U.S. Patent No. 5,835,377 ("Bush").

U.S. Patent No. 5,835,377 to Bush entitled "Method and System for Optimized Material Movement within a Computer Based Manufacturing System Utilizing Global Positioning Systems" ("*Bush*") raises a substantial new question of patentability to claims 1-14 of the '781 Patent.[9] *Bush* teaches each element of claims 1-14 of the '781 Patent. *Bush* qualifies as a prior art patent under 35 U.S.C. § 102(e) because the application that led to its issuance was filed on March 24, 1997, before the January 19, 1999 priority date for the '781 Patent, and the inventive entity of *Bush* differs from that of the '781 Patent. The PTO did not consider *Bush's* teachings during the prosecution of the '781 Patent; it thus presents new prior art. Because *Bush* provides a basis for rejection of claims 1-14 under 35 U.S.C. § 102(e), Requestor believes that a reasonable examiner would consider its teachings important in determining whether or not claims 1-14 of the '781 Patent are patentable.

E.   U.S. Patent No. 5,835,377 ("Bush") and NBCA.

Bush, when combined with *NBCA,* raises a substantial new question of patentability to claims 1-14 of the '781 Patent. As explained above, both *Bush* and *NBCA* teach the elements of

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[8] *In re Hiniker*, 150 F.3d 1362, 1367 (Fed. Cir. 1998).
[9] U.S. Patent No. 5,835,377 ("Bush") [Appendix E].

claims 1-14 of the '781 Patent. *NBCA* qualifies as a prior art printed publication under 35 U.S.C. § 102(b) because it was published and copyrighted in 1996, prior to the January 19, 1999 priority date. The PTO did not consider NCBA's teachings during the prosecution of the '781 Patent; they are thus new. *Bush* qualifies as a prior art patent under 35 U.S.C. § 102(e) because the application that led to its issuance was filed on March 24, 1997, before the January 19, 1999 priority date for the '781 Patent, and the inventive entity of *Bush* is different than that of the '781 Patent. The PTO also did not consider *Bush's* teaching during the prosecution of the '781 patent and they are thus new. Because *Bush* when combined with *NBCA* provides a basis for rejection of claims 1-14 under U.S.C. § 103(a), Requestor believes that a reasonable examiner would consider these teachings and suggestions important in determining whether or not claims 1-14 of the '781 Patent are patentable.

III.   BACKGROUND

A.   The claimed inventions of the '781 Patent.

The application that led to the issuance of the '781 Patent was filed on January 19, 1999. The '781 Patent contains a total of 14 claims and 2 independent claims. Claim 1 is the method claim, and claim 2 is the system claim. Claims 3-8 are dependent on claim 1, while claims 9-14 are dependent on claim 2. The language of claim 2 mirrors claim 1 except that it describes a system instead of a method. Similarly, claims 9-14 are system claims which otherwise mirror the method claims 3-8.

Claims 1 and 2 describe a method and system that monitors a vehicle, compares the monitored information with the planned arrival time of the vehicle, then contacts a user via a communication device and informs that user of the vehicle's status. The dependent claims that

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follow create specific elements of the steps in claims 1 and 2, for example stating that the process is performed by a computer system in claims 8 and 14.

Priority Date.

The priority date of the '781 Patent is January 19, 1999. This is based on the file history and on erroneous assertions on the face of the '781. While on its face the '781 Patent claims priority back to an earlier application dated May 18, 1993, the Patent fails to list a copendent chain of applications extending earlier than January 19, 1999 and therefore is not entitled to an earlier priority date.

1. The Priority Date of the '781 Patent is January 19, 1999.

35 U.S.C. § 120 allows a patent application to receive the benefit of an earlier priority date if "filed **before the patenting or abandonment** of or termination of proceedings on the first application *or* **on an application similarly entitled to the benefit** of the filing date of the first application **and** if it contains or is amended to contain **a specific reference** to the earlier filed application."[10]. As interpreted by the Federal Circuit in *Encyclopaedia Britannica,*[11] 35 U.S.C. § 120 requires enablement, identity of inventors, copendency, and specific reference. Copendency requires that a continuation application be filed before the earlier application is terminated or abandoned, while specific reference requires that the full copendent chain of applications and their relations is correctly stated on the patent.[12] The copendency and specific reference requirements are not met here.

First, the '781 Patent is not entitled to an earlier priority date because the Patent, on its face, fails to list a copending chain of applications extending earlier than January 19, 1999. Although the '781 Patent claims that application 09/233,795, filed January 19, 1999 (January '99

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[10] 35 U.S.C. § 120 (emphasis added).
[11] *Encyclopaedia Britannica, Inc. v. Alpine Electronics of America, Inc.*, 609 F.3d 1345, 1349-50 (Fed. Cir. 2010).
[12] *Id*.

Application), is a continuation of application 08/407,319 filed March 20, 1995 (March '95

Application), this is a false statement—in fact, application 08/407,319 was expressly abandoned

on December 22, 1995. Since there were several years between the abandonment of the March

'95 Application and the filing of the January '99 Application, the January '99 Application cannot

be a continuation of the March '95 Application.[13] This failure to present a copending chain

precludes any earlier priority date. 35 U.S.C. § 120 places the burden of disclosing this

information squarely on the inventor, who "is the person best suited to understand the relation of

his applications, and it is [therefore] no hardship to require him to disclose this information."[14]

Second, by failing to list a full copendent chain, the '781 Patent also fails the specific

reference requirement of 35 U.S.C. § 120, and is therefore not entitled to priority prior to January

19, 1999.[15] Specific reference requires that all intervening copendent patents must be

referenced.[16] As previously discussed, such a copendent chain is not specifically referenced in

the '781 Patent. Further, the specific reference requirement demands a *correct* statement of the

relationships between continuation patents.[17] Here, the statement that the January '99

Application continues from the March '95 Application is incorrect and thus fails the specific

reference requirement. The earliest application with respect to which the '781 meets the specific

reference requirement is the January 19, 1999 application.

Accordingly, the priority date of the '781 Patent is January 19, 1999.

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[13] *Id*. at 1350; MPEP § 201.07 (8th ed., rev. 8, July 2010).
[14] *Sampson v. Ampex*, 463 F.2d 1042, 1045 (2nd Cir. 1972) (*citing Sticker Indus. Supply Corp. v. Blaw-Knox Co.*, 405 F.2d 90 (7th Cir. 1968).
[15] *Encyclopaedia Britannica*, 609 F.3d at 1352 ("We conclude that § 120 requires each application in the chain of priority to refer to the prior applications").
[16] Chisum on Patents §13.06 (2006 ed.) "[a]n application must refer to the remote application in order to obtain the benefit of its filing date, and it must not omit reference to any intermediate application necessary to maintain a chain of copendency and disclosure."(citing *Adrain v. Hypertech, Inc.*, 2001 WL 740542 (D. Utah 2001).
[17] *Simmons, Inc. v. Bombardier, Inc.*, 328 F.Supp. 2d 1188, 1201 (D. Utah 2004) ("Parties viewing a patent and taking legal risks based upon it are entitled to know the correct relationship of the applications").

       2.   <u>Even if the Priority Date is May 18, 1993, SotA92 remains anticipatory
prior art.</u>

Assuming, arguendo, that the '781 Patent can claim the earlier, May 18, 1993 priority

date, the '781 Patent is still anticipated by *SotA92*, published in April 1992. Since *SotA92*

predates both priority dates, and expressly anticipates or renders obvious each claim of the '781

Patent, the reexamination should be granted and claims 1-14 of the '781 Patent rejected

regardless of the Patent Office's priority-date determination.

     B.   **Prosecution History.**

The '781 Patent prosecution history is very short. The PTO only issued one Office

Action, rejecting the original filing's claims 1, 2, and 4-7 under 35 U.S.C. § 102(b) based on

U.S. Patent No. 4,350,969 ("*Greer*") [Appendix F], as well as rejecting the original filing's

claims 1-8 for double patenting. [18] In response, the applicant filed terminal disclaimers to

overcome the double patenting objection, and cancelled claims 1, 2, and 4-7 to traverse *Greer*.

This left claims 3 and 8 from the original application, which became independent claims 1 and 2

on the final patent. The applicant added dependent claims 9-26, and later voluntarily cancelled

several of those dependent claims without comment by the examiner. The remaining claims were

allowed in a Notice of Allowance dated May 3, 2005.

     Greer disclosed a system that worked via radio signals emitted from a device on each

bus.[19] Those signals could be received by special devices that riders would keep in their homes.

This system would show the location of the bus once it was within a certain range of the receiver

and subsequently notify the user of the bus's imminent arrival.[20] Unlike the other references

cited herein, it did not estimate arrival times, did not utilize expected arrival times, would have

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[18] '781 Patent File History at 11-30-2004 Non-Final Rejection.
[19] '969 Patent Abstract.
[20] *Id*.

been incompatible with GPS and other location tracking systems, and the device that notified

passengers was part of the system, not a multipurpose communication device. The new prior art

presented in this Request for Reexamination raises each of these characteristics, among others.

Therefore, there are substantial new questions of patentability regarding the claims that survived

the only non-final rejection in the prosecution history of the '781 Patent.

Exhibits 2, 3, 4, 5, 6, 7, and 8 are charts that show, on a claim-by-claim and element-by-

element basis, how each asserted prior art reference anticipates, renders obvious, or combination

of prior art references renders obvious, every claim in the '781 Patent.

C.   Claim Construction.

The examiner must consider the broadest reasonable claim construction: "Claim

construction is an essential part of the examination process. Each claim must be separately

analyzed and given its broadest reasonable interpretation in light of and consistent with the

written description."[21]

To Requestor's knowledge, despite having asserted the patent in numerous lawsuits, no

court has construed the claims of the '781 Patent because the parties in each case reached

settlement before claim construction.[22] Requestor believes that there is one term that is pivotal in

interpreting the '781 Patent: "contacting a user communications device."[23] Requestor proposes

the following construction:

Term	Proposed Definition
Contacting a user communications device	Sending a signal to any device capable of delivering information to a user of a transportation system.

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[21] MPEP § 2163 (8th ed., rev. 8, July 2010) (citing *In re Morris*, 127 F.3d 1048, 1053-54, 44 USPQ 2d 1023, 1027 (Fed. Cir. 1997)).
[22] *See e.g. ArrivalStar vs. King County*, No. 2:11-cv-00461 (W.D. Wash. filed Mar. 17, 2011); *ArrivalStar vs. Mass. Bay Transp. Auth.*, No. 1:10-cv-10456 (D. Mass. filed March 17, 2010); *ArrivalStar vs. Maryland Transit Admin.*, No. 1:11-cv-00761 (D. Md. filed March 22, 2011).
[23] '781 Patent, col. 14 ll. 15, 17, 27, 30.

Requestor believes that this is the broadest reasonable construction of the term. Notably, this construction captures a potentially diverse array of systems outside of the preferred embodiment of bus routes. Requestor believes such construction is appropriate since ArrivalStar, the assignee of the '781 Patent, has asserted its family of vehicle-tracking patents against all types of defendants, such as airlines, airports, parcel delivery services, retailers, freight companies, auto manufacturers, and railways, among others.[24] Further, an ArrivalStar attorney has stated in press reports that he believes it would be difficult to create a useful vehicle tracking and notification system of any sort without infringing ArrivalStar's patents.[25]

Moreover, the specification contemplates that the step of contacting a user communication device may be done using a telephone.[26] However, the choice to use general terms such as "user communication device" in the claims, as opposed to terms used as examples in the specification such as "telephone" and "passenger," indicate that the claims were meant to apply more broadly than those examples.

Thus, the '781 Patent, as a member of this family of patents, should be construed to cover a wide variety of different users and devices.

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[24] *See e.g. ArrivalStar vs. US Airways Inc.*, No. 1:10-cv-24266 (S.D. Fla. filed Nov. 30, 2010); *ArrivalStar vs. Dallas-Fort Worth Int'l Airport Inc.*, No. 3:07-cv-00464 (N.D. Tex. filed Mar. 14, 2007); *ArrivalStar vs. USA*, No. 1-11-cv-00784 (Ct. Cl. filed Nov. 22, 2011)(against the United States Postal Service); *ArrivalStar vs. Burlington Coat Factory Warehouse Corp.*, No. 1:12-cv-20300 (S.D. Fla. filed Jan. 25, 2012); *ArrivalStar vs. Freightview, LLC*, No. 1:12-cv-20684 (S.D. Fla. filed Feb. 17, 2012); *ArrivalStar vs. Ford Motor Co.*, No. 1:10-cv-04359 (N.D. Ill. filed July 13, 2010); *ArrivalStar vs. Canadian Nat'l Ry. Co. et al*, No. 1:08-cv-01086 (N.D. Ill. filed Feb. 21, 2008).
[25] J.J. Barrow, *Track This (Litigation) Vehicle: ArrivalStar Has Filed More Than 100 Patent Lawsuits*, (Sept. 2011) available at http://patentexaminer.org/2011/09/arrivalstar-and-melvino-technologies-have-filed-more-than-100-patent-lawsuits/ [Appendix G].
[26] "In the preferred embodiment, the BSCU **14** communicates through multiple port voice cards to passage telephones **29**." '781 Patent, col. 6 ll. 31-33; *see also* '781 Patent col. 6 ll. 17-30 (listing means of communication, all related to telephone services).

IV.   MULTIPLE PRIOR ART PUBLICATIONS RENDER THE CLAIMS OF THE '781 PATENT ANTICIPATED AND/OR OBVIOUS

A.   Lawrence Labell et al., *SotA92* anticipates or renders obvious claims 1-14 of the '781 Patent.

1.   *SotA92* qualifies as 102(b) prior art.

The U.S. Department of Transportation published SotA92, an academic article, seven years before the January 18, 1999 priority date of the '781 Patent, and one year before the March 1993 Application, the earliest possible priority date for the '781 Patent. The article was made available to the public through the National Technical Information Service in Springfield, Virginia.[27] *SotA92* describes a series of systems that perform the same function as the '781 Patent and in the same manner. *SotA92* was not considered by the Patent Office during prosecution. *SotA92* anticipates and/or renders obvious claims 1-14 of the '781 Patent.

2.   *SotA92* expressly discloses every element of claims 1-14.

Exhibit 2 maps the relevant disclosures of *SotA92* to the claims of the '781 Patent on a claim-by-claim and element-by-element basis. A claim is anticipated if each and every element as set forth in the claim is expressly or inherently found in a single prior art reference.[28] Exhibit 2 confirms that *SotA92* expressly disclosed claims 1-14 of the '781 Patent. What follows is a summary of the contents presented in Exhibit 2.

Claims 1 and 2 each have four steps: (a) monitoring travel data associated with the vehicle, (b) comparing the planned timing of the vehicle along a route to updated vehicle status information, (c) contacting a user communication device before the vehicle reaches a stop along the route, and (d) informing the user of vehicle delay and impending arrival at the stop based on the results of the comparing step.

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[27] *SotA92* at ii (Technical Report Documentation Page).
[28] *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1334 (Fed. Cir. 2008); MPEP § 2131(8th ed., rev. 8, July 2010).

Element 1(a) consists of monitoring travel data associated with the vehicle. *SotA92* discloses "[a]n AVL [automatic vehicle location] system measures the position of each vehicle and then reports the information to the computer at the dispatch center."[29] Beyond monitoring merely position, *SotA92* discloses that ". . . additional components can be added to an AVL system that will enhance its capabilities . . . [including]: Automatic passenger counters[;] Engine component monitoring/mechanical alarms[;] Signal preference/HOV lane access equipment[;] Security alarm[;] [and] Connections to passenger information systems."[30] *SotA92* then discloses that "The necessary components for any AVL system include: A method of position determination[,] A means of communication with the dispatcher (real-time), and A central processor capable of storing and using the transmitted information."[31] Thus, by disclosing that position and other travel data is monitored and relayed to a central computer, *SotA92* fully anticipates element 1(a). Further, corresponding system element 1(a) is anticipated by the disclosure of a means of communication with a central processor.[32]

Element 1(b) consists of comparing the planned timing of the vehicle along a route to updated vehicle status information. *SotA92* discloses "a new strategy, called 'Exception Reporting', [which] is becoming fairly common. The route structure and schedule are pre-loaded into a memory module on-board the bus. **As the 'Smart Bus' proceeds along its route, it compares its current position to its expected position on-board**."[33] *SotA92* also discloses a system wherein "the bus will have **a module of route and schedule information on-board, to which it will compare the current time and position**."[34] The "route and schedule information"

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[29] *SotA92* at 44.
[30] *SotA92* at 45.
[31] *Id.*
[32] *Id.*
[33] *SotA92* at 47 (emphasis added).
[34] *SotA92* at 53 (emphasis added).

is the planned timing of the vehicle, which is compared to the "current time and position," or the updated vehicle status information. The language from *SotA92* pertaining to comparing scheduled to expected timing/position mirrors the disclosure language of the '781 Patent, which states that "[t]he [Vehicle Control Unit] **compares elapsed time and/or traveled distance to the programmed scheduled time and/or traveled distance** to determine if the vehicle is on schedule."[35] Therefore, *SotA92* fully anticipates element 1(b), and further anticipates corresponding system element 2(b) by disclosing that this comparison is performed by the on-board memory module.[36]

Element 1(c) consists of contacting a user communication device before the vehicle reaches a stop along the route. *SotA92* discloses that "[p]assenger information can be provided through a variety of conventional and high technology methods including **telephones, direct computer links, and cable television**[.] When linked to automatic vehicle location (AVL) systems which track transit vehicles, advanced traveler information systems are able to provide real-time **updates on expected transit vehicle arrival times** and warn transit users of delays."[37] Thus *SotA92* discloses contacting phones, computers, and televisions, which are user communication devices. This is done to convey expected arrival times, which means contact is made before the vehicle reaches a stop along the route. Therefore, *SotA92* fully anticipates element 1(c) of the '781 Patent. Further, *SotA92* anticipates corresponding system element 2(c) by listing, telephones, computers, and televisions as the devices contacted.

Element 1(d) consists of informing the user of vehicle delay and impending arrival at the stop based on the results of the comparing step. *SotA92* discloses that "**[w]hen linked to automatic vehicle location (AVL) systems** which track transit vehicles, advanced traveler

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[35] '781 Patent Abstract (emphasis added).
[36] *SotA92* at 47.
[37] *SotA92* at 4 (emphasis added).

information systems are able to provide **real-time updates** o**n expected transit vehicle arrival times and warn transit users of delays**."[38] Thus *SotA92* anticipates informing users of expected arrival times based on comparisons done by the AVL system, which was discussed above in the discussion of element 1(b). Therefore *SotA92* anticipates element 1(d), and further anticipates corresponding system element 2(d) by disclosing that the AVL system determines the expected arrival times.

Claim 3 is dependent on claim 1, but adds the limitation that the comparing step in element 1(b) includes evaluating the vehicle's current location to a scheduled location to determine lateness. *SotA92* discloses: "The route structure and schedule are pre-loaded into a memory module on-board the bus. **As the 'Smart Bus' proceeds along its route, it compares its current position to its expected position on-board**. The bus will communicate its position to central dispatch at regular intervals, if it is still on schedule, and the computer at the dispatch center will estimate the bus' position between reports, assuming it is on schedule. **If the bus deviates from its route or schedule, the bus immediately communicates its true position** to dispatch"[39] The "current position" is the current location, which is compared to the "expected position," which is the expected location. This is done to determine if the bus "deviates" from its schedule, i.e., to determine if it is on time or late. Therefore *SotA92* anticipates claim 3, and further anticipates corresponding system claim 9 by disclosing that the memory module on board the bus performs this method.

Claim 4, dependent on claim 1, adds the limitation that the comparing step in 1(b) includes evaluating the vehicle's progress along the route in terms of time with respect to a scheduled time. *SotA92* discloses a system in which "the bus will have **a module of route and**

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[38] *SotA92* at 4 (emphasis added).
[39] *SotA92* at 47 (emphasis added).

schedule information on-board**, to which it will compare the current time and position**."[40]

Schedule information includes scheduled times that a vehicle should reach a location. Since this system compares the current time and position to this schedule information, the comparison is in terms of time. Therefore *SotA92* anticipates claim 4 of the '781 Patent, as well as corresponding system claim 10, through the disclosure of an on-board module performing the comparison.

Claim 5, dependent on claim 1, adds the limitation that a route has a plurality of vehicle stops, and that the comparing step of 1(b) is based upon the vehicle's progress along those stops. *SotA92* discloses that "[t]he route structure and schedule are pre-loaded into a memory module on-board the bus. **As the 'Smart Bus' proceeds along its route**, it compares its current position to its expected position on-board."[41] As the bus "proceeds along its route," it performs the comparison to determine if it is adhering to a schedule, its "expected position." This means that the comparing step is based upon the vehicle's progress along the stops of the route, since those stops comprise the vehicle's expected position at given times. Therefore, *SotA92* anticipates claim 5 of the '781 Patent, as well as corresponding system claim 11, through the disclosure of a memory module performing the method.

Claim 6, dependent on claim 1, adds the limitation that the travel data comprises scheduled stop information. *SotA92* discloses that "[t]he route structure and schedule are pre-loaded into a memory module on-board the bus."[42] The route structure and schedule are the scheduled stop information, which is loaded into the memory module that gathers travel data. Therefore *SotA92* anticipates claim 6, and as before, the disclosure of the memory module anticipates corresponding system claim 12.

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[40] *SotA92* at 53 (emphasis added).
[41] *SotA92* at 47 (emphasis added).
[42] *SotA '92* at 47.

Claim 7, dependent on claim 6 and thus claim 1, adds the limitation of an additional step of updating scheduled stop information based upon the tracking information pertaining to the vehicle. *SotA92* discloses that "[w]hen linked to automatic vehicle location (AVL) systems which track transit vehicles, advanced traveler information systems are able to provide real-time **updates on expected transit vehicle arrival times** and warn transit users of delays."[43] These real-time updates of scheduled stop information had been or were being implemented in a variety of systems.[44] Therefore *SotA92* anticipates claim 7 of the '781 Patent. Corresponding system claim 13 is also anticipated by the disclosure of the AVL system to inform the advanced traveler information system of delays.[45]

Claim 8, dependent on claim 1, adds the limitation that the method is performed by a computer system, either a single computer or a plurality of connected computers. The components described in *SotA92* include GPS receivers, radio transmitters, and a "central processor capable of storing and using the transmitted information."[46] All of these entail a computer system, since only a computer can receive and interpret GPS signals, and then send radio signals with the data. Moreover, *SotA92* discloses that "**the computer at the dispatch center** will estimate the bus' position between reports, assuming it is on schedule."[47] Therefore *SotA92* fully anticipates both claim 8 and corresponding system claim 14 by repeatedly disclosing the usage of computers to perform the method.[48]

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[43] *SotA92* at 4 (emphasis added).
[44] *See SotA92* at 10-12.
[45] *SotA92* at 4.
[46] *SotA92* at 45.
[47] *SotA92* at 47 (emphasis added).
[48] To the extent that any of the previous disclosures were not anticipatory, they render the '781 Patent obvious.

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3. *SotA92* is enabled.

"A claimed invention cannot be anticipated by a prior art reference if the allegedly anticipatory disclosures cited as prior art are not enabled."[49] However, "a prior art printed publication cited by an examiner is presumptively enabling barring any showing to the contrary by a patent applicant or patentee."[50] The test for whether a printed publication is enabling is whether a person of ordinary skill in the art would be able to reduce the disclosed invention to practice without undue experimentation.[51] Because patents are presumed enabled,[52] a prior art disclosure containing the same level of detail as the patent being examined must meet the enablement requirement.

SotA92 provided a disclosure with at least the same level of detail found in the '781 Patent, and for some elements, such as exception reporting of positions derived from an AVL system, used terminology nearly identical to that in the '781 Patent. *SotA92* enabled one of skill in the art to practice all claims of the '781 Patent because a skilled person, upon reading the article, would have understood that success could be achieved merely by replicating the system and method described in the publication, primarily using products already being manufactured. This would require no undue experimentation.

Accordingly, *SotA92* is enabled.

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[49] *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F,3d 1313, 1355 (Fed. Cir. 2003).
[50] *In re Antor Media Corp.*, __ F.3d __ (Fed. Cir. 2012) (Holding that in the context of a reexamination, "an examiner is entitled to reject claims as anticipated by a prior art publication or patent without conducting an inquiry into whether or not that prior art reference is enabling. As long as an examiner makes a proper prima facie case of anticipation by giving adequate notice under § 132, the burden shifts to the applicant to submit rebuttal evidence of nonenablement."
[51] *Id*; MPEP § 2164.01 (8th ed., rev. 8, July 2010).
[52] *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 457 F.3d 1293, 1305 (Fed. Cir. 2006).

B. **Thaai Walker, *NBCA* anticipates and/or renders obvious claims 1-14 of the '781 Patent.**

1. *NBCA* qualifies as 102(b) prior art.

NBCA, a newspaper article, was published on Nov. 25, 1996, more than two years before

the January 1999 priority date of the '781 Patent. It described a system remarkably similar to the

invention described in the '781 Patent, and was not considered by the Patent Office during

prosecution. *NBCA* anticipates and/or renders obvious claims 1-14 of the '781 Patent.

2. *NBCA* expressly disclosed every element of claims 1-14.

Exhibit 3 maps the relevant disclosures of *NBCA* to the claims of the '781 Patent on a

claim-by-claim and element-by-element basis. Exhibit 3 confirms that *NBCA* expressly disclosed

claims 1-14 of the '781 Patent. What follows is a summary of the contents presented in

Exhibit 3.

Claims 1 and 2 each has four steps: (a) monitoring travel data associated with the vehicle,

(b) comparing the planned timing of the vehicle along a route to updated vehicle status

information, (c) contacting a user communication device before the vehicle reaches a stop along

the route, and (d) informing the user of vehicle delay and impending arrival at the stop based on

the results of the comparing step. *NBCA* discloses element 1(a), namely, monitoring, via an

"automatic vehicle location" (AVL) system which uses satellite signals to determine the precise

position of the vehicle.[53] Further, *NBCA* discloses that the AVL system itself specifically does

the tracking, and that several companies, such as Motorola and Westinghouse, make these

devises, which must be installed on each vehicle.[54] As such, *NBCA* anticipates corresponding

system element 2(a).

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[53] *NBCA* at 2.
[54] *Id.*

NBCA discloses comparing the planned timing of the vehicle to the updated vehicle status information. Specifically, it discloses element 1(b) when it states that the system "calculate[s] a vehicle's time of arrival."[55] This calculation inherently involves the comparison required by element 1(b), particularly since the information on the associated pager device discloses such changing information as holiday schedules for buses, and alerts users to changes in bus schedules due to emergencies. This information requires that the calculation of arrival time be compared to a schedule; therefore it is inherently disclosed by *NBCA*. *NCBA* likewise discloses that a computer must be used to accomplish element 2(b). Specifically, *NCBA* discloses that the user device can scroll through a "database."[56] The presence of a database of course signals the use of a computer. Further, the entire system disclosed in *NBCA* revolves around receiving signals from satellites and performing a calculation based on those signals, which inherently could only be performed by a computer. Therefore, the disclosure of a computer system satisfies corresponding system element 2(b).

NBCA explicitly discloses contacting a user communication device. *NBCA* discloses that the vehicle's estimate time of arrival is sent to both a handheld "BusTracker" carried by travelers and to signs located at bus stops.[57] This disclosure satisfies element 1(c). The particular device that does this contacting is the computer, which is disclosed by implication in the same way as previously discussed; only a computer could perform those functions and use a database. Thus, *NBCA* also discloses the elements of corresponding system element 2(c).

Element (d) of claims 1 and 2, informing the user, is likewise explicitly disclosed by *NBCA*. *NBCA* clearly states that users are told of the vehicle's impending arrival, both by text and by increasingly urgent beeping of the BusTracker, based upon the comparison in

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[55] *Id*

[56] *Id*. at 3.

[57] *Id*.

element (b).[58] The graphic makes this especially clear, as it shows a BusTracker informing its

user of the arrival time of the next bus and the one following.[59] This disclosure fully anticipates

element 1(d). Corresponding system element 2(d) is also clearly anticipated by the disclosure

that this information is displayed both on the BusTracker and on signs located at bus stops, two

specific means for conveying the aforementioned information.

Claim 3 is dependent on claim 1, but adds the limitation that the comparing step in 1(b)

includes evaluation the vehicle's current location to a scheduled location to determine lateness.

To the extent that this claim differs from claim 1(b), it is disclosed by *NBCA* through the same

disclosures as element 1(b) above. The AVL system gathers the current location information, and

then uses a database to show the user the anticipated arrival times of upcoming buses, which

inherently requires comparing that current location to a scheduled location.[60] Claim 9, the mirror

of claim 3 except depending on claim 2, is also disclosed just as it is in 2(b). A computer is the

device that performs the comparing step, as shown by the functions performed themselves and

the disclosure of a database.

Claim 4, dependent on claim 1, adds the limitation that the comparing step in 1(b)

includes evaluating the vehicle's progress along the route in terms of time with respect to a

scheduled time. As with scheduled stops, the calculation of estimated arrival time necessitates

using route information to determine an accurate value. The use of a route is reinforced by the

designation of a particular route for the user of the BusTracker in the diagram, as well as the

ability to examine schedules or various bus routes.[61] Since the route information is available

from the database, it is inherent that the system uses this information to determine an estimated

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[58] *Id.*
[59] *Id.*
[60] *Id.* at 1.
[61] *Id.* at 2.

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arrival time, which discloses claim 4. As with the preceding claim, this task is performed by a

computer for the same reasons. This satisfies claim 10, dependent on claim 2, which is the

system claim mirror of claim 4.

Claim 5, dependent on claim 1, adds the limitation that a route has a plurality of vehicle

stops, and that the comparing step of 1(b) is based upon the vehicle's progress along those stops.

NBCA discloses a plurality of stops in several ways. First, the system is described in terms of its

use for San Francisco's bus system, which has a plurality of stops on each route.[62] Moreover, the

BusTracker graphic depicts the number of the bus stop displayed for the user, and allows the user

to scroll through multiple bus stops.[63] Additionally, the user can see the anticipated arrival times

for the bus at each stop.[64] As in earlier discussions surrounding the elements of claim 1(b), the

calculation inherently involves the vehicle's progress along stops, especially because the length

between stops would need to be factored into estimated arrival times for future stops in order to

be accurate. Thus, claim 5 is disclosed. The accompanying claim 11, dependent on system claim

2, is again performed by the computer and database as previously discussed. Therefore, *NBCA*

explicitly discloses claims 5 and 11.

Claim 6, dependent on claim 1, adds the limitation that the travel data comprises

scheduled stop information. As previously discussed, *NBCA* discloses that schedules—including

those for each stop and those that make adjustments for holidays or emergencies—are made

available to users in a variety of ways.[65] Thus, the travel data for the vehicle disclosed in *NBCA*

comprises its scheduled stop information. Claim 12, dependent on claim 2, mirrors the language

of claim 6. Travel data comprising scheduled stop information requires the database disclosed in

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[62] *Id*. at 1.
[63] *Id*. at 3.
[64] *Id*.
[65] *Id*.

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NBCA, which is what the user scrolls through when reading scheduled stop information. Thus, claims 6 and 12 are explicitly disclosed.

Claim 7, dependent on claim 6 and thus claim 1, adds the limitation that an additional step of updating scheduled stop information based upon the tracking information pertaining to the vehicle is performed. Since the BusTracker disclosed in *NBCA* tells the user of both the estimated arrival time of the next bus *and* the following bus, it necessarily discloses updating the scheduled stop information.[66] Once the upcoming bus arrives, the schedule is updated to reflect the estimated arrival of the now second and third buses scheduled to arrive at that stop.[67] Claim 13, dependent on claim 12 and thus claim 2, mirrors the language of claim 7 except it describes the means used to update scheduled stop information. The means are the AVL system and the computer, which calculates estimated arrival times and puts them into the database of schedules, as previously discussed.[68] Thus claims 7 and 13 are both anticipated by *NBCA*.

Claim 8, dependent on claim 1, adds the limitation that the method is performed by a computer system, either a single computer or a plurality of connected computers. As before, the nature of the signals being transmitted and the calculations being performed in *NBCA* discloses the use of a computer system, as well as the use of a "database," which one would scroll through using the BusTracker.[69] Claim 14, dependent on claim 2, discloses the means by which the system as a whole is performed is via a single computer or a plurality of connected computers. The same disclosures that apply to claim 8 also apply to claim 14. Therefore both claims 8 and 14 are anticipated by *NBCA*.

Therefore *NBCA* anticipates all 14 claims of the '781 Patent.

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[66] *Id.*
[67] *Id.*
[68] *Id* at 2.
[69] *Id* at 3.

3. Alternatively, *NBCA* renders obvious every element of claims 1-14 that it may not anticipate.

Exhibit 4 maps the relevant *NBCA* disclosures to the claims of the '781 Patent on a claim-by-claim and element-by-element basis. Exhibit 4 confirms that *NBCA* at least renders obvious claims 1-14 of the '781 Patent. What follows is a summary of the contents presented in Exhibit 4 that differ from the contents of Exhibit 3. Assuming, *arguendo*, that *NBCA* does not anticipate claim 1 element (b) or claim 2 element (b), it renders them obvious.

Element 1(b) is a method for comparing the planned timing of the vehicle along a route to updated vehicle status information. *NBCA* discloses tracking the current location of the vehicle, and also discloses the planned timing of the vehicle in a database, as seen on the BusTracker graphic. At the very least, *NBCA* provides a roadmap for a person of skill in the art to implement element 1(b). In *Leapfrog v. Fisher-Price*, for example, the court found a presumption of obviousness when a piece of prior art provided "a roadmap for one of skill in the art" to produce the invention at issue.[70] Since *NBCA* clearly discloses a system that contains the two pieces of information compared in element 1(b), it provides a roadmap for a person of ordinary skill in vehicle tracking to use that data in any calculation. It would be common sense to use the schedules that are readily available in the database to calculate the vehicle's expected arrival time along with the monitored vehicle status. Element 2(b), the means for performing the comparison described, is likewise rendered obvious if it is not inherent because the only device capable of using this information and interfacing with a database of schedules would be a computer. Even if there were some other possibility, a person of ordinary skill in vehicle tracking would assume a computer would be the means used for such a system since a database is being

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[70] 485 F.3d 1157, 1162 (Fed. Cir. 2007).

used already, and no other method aside from electronic calculation is disclosed.[71] Thus *NBCA*

renders elements 1(b) and 2(b) obvious even if it does not anticipate them.

        4. *NBCA is enabled.*

NBCA enabled one of skill in the art to practice all claims of the '781 Patent because a

skilled person, upon reading the article, would have understood that success could be achieved

merely by replicating the system and method described in the publication, primarily using

products that were already being manufactured. *NBCA* provided a disclosure of at least the same

general level of detail as found in the '781 Patent, and for some items, such as sources of AVL

equipment and the exact way the technology was to be implemented, even more detail.

Therefore, *NBCA* is enabled.

    C.   **Combined, *NBCA* and U.S. Patent No. 6,006,159 ("*Schmier*") renders obvious claims 1-14 of the '781 Patent.**

        1. *Schmier* qualifies as 102(e) prior art and is proper to consider in combination with *NBCA*.

Schmier qualifies as a prior art patent under 35 U.S.C. § 102(e) because the application

that led to its issuance was filed on August 13, 1996, before the January 19, 1999 priority date

for the '781 Patent, and the inventive entity of *Schmier* is different than that of the '781 Patent.

The teachings of *Schmier* were considered but not cited in the prosecution of the '781 Patent, and

thus are not new. However, *NBCA* was not considered by the PTO during examination, and it is

the combination of *Schmier* and *NBCA* which provides a basis for rejection of claims 1-14 of the

'781 Patent. This makes it proper to consider the combination of *NBCA* and *Schmier* in the

reexamination of the '781 Patent.[72]

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[71] *NBCA* at 3.
[72] *In re Hiniker*, 150 F.3d 1362, 1367 (Fed. Cir. 1998).

2. Combined, *NBCA* and *Schmier* renders obvious claims 1-14 of the '781 patent.

Exhibit 5 maps the relevant disclosures of *Schmier* and *NBCA* to the claims of the '781 Patent on a claim-by-claim and element-by-element basis. Exhibit 5 confirms that *Schmier* combined with *NBCA* renders obvious claims 1-14 of the '781 Patent. What follows is a summary of the combination arguments presented in Exhibit 5. These arguments show why elements 1(b), 1(d), 2(b), 2(d), 3 and 9 would be obvious to a person of ordinary skill in the art considering *NBCA* in light of *Schmier*.

Element 1(b) consists of comparing the planned timing of the vehicle along a route to updated vehicle status information. *NBCA* states that the system "calculate[s] a vehicle's time of arrival."[73] *Schmier* elaborates by disclosing a system that "computes" arrival times based on "**the location of the vehicles and from electronically stored information therein concerning the routes and a plurality of stops along the routes [. . . .]**".[74] This disclosure renders element 1(b) of the '781 Patent obvious by elaborating on the computation disclosed in *NBCA*, making it obvious to a person of skill in the art how the planned timing of the vehicle is incorporated into the comparison. Element 2(b), which mirrors 1(b) but is a system claim, is also rendered obvious in light of *Schmier*, which discloses "the central processor includes means for **computing**, **from the location of the vehicle and** the electronically stored information, status information, for example, in the form of **transit data tables which include the predicted arrival time of each transit vehicle operating in the system**, or that will be operating in the system, at each transit stop along each vehicle's route [. . . .]".[75] Thus the means for comparing the planned timing of a

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[73] *NBCA* at 2.
[74] '159 Patent, col. 17 ll. 39-45 (emphasis added).
[75] '159 Patent, col. 4 ll. 21-28 (emphasis added).

vehicle along a route to updated vehicle status information is a computer. Therefore elements 1(b) and 2(b) are rendered obvious by combining *Schmier* with *NBCA*.

Element 1(d) consists of informing the user of vehicle delay based upon the updated status information and the planned timing. The process of informing the user is fully disclosed by *NBCA* through the data available on the BusTracker, as depicted in the graphic.[76] However, assuming *NBCA* doesn't explicitly disclose that the basis for the information is the updated status information and planned timing of the vehicle, this is rendered obvious in light of *Schmier*. As before, *Schmier* computes arrival times based on "**the location of the vehicles** and from electronically stored **information therein concerning the routes and a plurality of stops along the routes** [. . . .]"[77] This renders obvious the answer to any remaining questions a person of ordinary skill in the art might have regarding element 1(d) after reading *NBCA*. As above, the means for performing this notification is explicitly described as a computer in *Schmier,*[78] which satisfies the system element 2(d). Therefore 1(d) and 2(d) are rendered obvious by *NBCA* in light of *Schmier*.

Claim 3 is dependent on claim 1, but adds the limitation that the comparing step includes evaluating the vehicle's current location to a scheduled location in order to determine if the vehicle is on time or late. The gathering of current location data is explicitly disclosed in *NBCA*, as previously discussed. *Schmier* further discloses "[i]n electronic storage means **24** are stored the identification of all vehicles or buses in communication with central processor **22** and the **location coordinates representing the routes of all vehicles** in communication with central processor **22**. Also stored are location coordinates of transit stops and 'normal' transit times for a

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[76] *NBCA* at 3.
[77] '159 Patent, col. 17 ll. 39-45 (emphasis added).
[78] '159 Patent, col. 14 ll. 41-43 (emphasis added).

bus between each of the stops."[79] Therefore a person of ordinary skill in the art would understand

that the Nextbus Information System contained both types of information specified in claim 3. In

KSR Intern. Co. v. Teleflex, Inc., the court held that "when there is a design need or market

pressure to solve a problem and there are a finite number of identified, predictable solutions, a

person of ordinary skill has good reason to pursue the known options within his or her technical

grasp. If this leads to the anticipated success, it is likely the product […] of ordinary skill and

common sense."[80] Here, the market need described in the *NBCA*, "[u]nreliable timetables are the

bane of many public transit systems [. . . .]"[81], had a finite number of predictable solutions based

on vehicle tracking technology. A person of ordinary skill in the art would find it common sense

to compare the actual location with the scheduled location to achieve the goal of determining

arrival times. Comparing how far off a bus is to a planned stop would be obvious to a person of

ordinary skill in the art after reading a description of how such data is gathered with that goal in

mind. Since such a comparison results in the expected success in making timetables more

reliable, under *KSR* claim 3 is obvious.[82] Claim 9, the system claim that corresponds to the

method of claim 3, is made obvious by the foregoing disclosures as well. The "electronic storage

means" disclosed in *Schmier* is one involved device, as well as a computer means, which was

disclosed explicitly in *Schmier* as well.[83] Therefore claims 3 and 9 are rendered obvious by

combining *NBCA* with *Schmier*.

Based upon the foregoing and further detailed disclosures in Exhibit 5, claims 1-14 are

rendered obvious by the combination of *NBCA* and *Schmier* if they were not already disclosed in

NBCA alone.

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[79] '159 Patent, col. 9 ll. 38-44 (emphasis added).
[80] 550 U.S. 398, 421 (2007).
[81] *NBCA* at 1.
[82] 550 U.S. at 421.
[83] *See* discussion of claim 1(b) regarding *Schmier* above.

3. A person of ordinary skill in the art would have been motivated to combine *NBCA* with *Schmier.*

One of ordinary skill in the art would have a strong motive to combine *Schmier* and *NBCA* because both references describe the same "NextBus" system. They have the same inventor and he is quoted in *NBCA*.[84] Moreover, the system described in both *NBCA* and *Schmier* address the identical problem as the '781 Patent – informing public transit users of accurate vehicle arrival times.[85] In *Inline Connection Corp. v. EarthLink, Inc.*, the court stated that "[t]he court agrees with Earthlink that the evidence demonstrates that the Bellcore RFI and the Valenti Article should be combined. That evidence includes the testimony of both Beckmann and Waring that both references were written by the same author and both described [the same technology][. . . .]"[86] As in *Inline v. Earthlink*, these facts demonstrate that a person of ordinary skill in the art would have sufficient motivation to combine these two pieces of art.

4. *NBCA* combined with *Schmier* enables claims 1-14 of the '781 Patent.

Schmier described a system for tracking vehicles, estimating arrival times, and making that information available in a database. *Schmier* explicitly taught the technical details of the system, especially the nature of the comparing process. Thus, *Schmier* is a detailed, enabling disclosure of how to monitor vehicles, estimate arrival times, and make that information available.

As shown above, *NBCA* enabled one of skill in the art to practice all claims of the '781 Patent because a skilled person, upon reading the article, would have understood that success could be achieved merely by replicating the system and method described in the publication, primarily using products that were already being manufactured. *NBCA* went into particular detail

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[84] '159 Patent, Inventor; *NBCA* at 1.
[85] *Compare* '159 Patent Abstract with *NBCA* at 1 *with* '781 Patent, Abstract.
[86] 684 F.Supp. 2d 496, 522 (D. Del. 2010).

regarding the nature and functions of user communication devices and how they are contacted. A person of ordinary skill in the art reading *Schmier* and *NBCA* would have been able to implement a system that performed all elements of claims 1-14 of the '781 Patent from those teachings alone.

For at least the foregoing reasons, the combination of *Schmier* and *NBCA* enabled one of ordinary skill in the art to practice claims 1-14 of the '781 Patent.

D. U.S. Patent No. 5,835,377 (*Bush*) anticipates or renders obvious claims 1-14 of the '781 Patent.

1. *Bush* qualifies as 102(e) prior art.

Bush qualifies as a prior art patent under 35 U.S.C. § 102(e) because the application that led to its issuance was filed on March 24, 1997, before the January 19, 1999 priority date for the '781 Patent, and the inventive entity of *Bush* is different than that of the '781 Patent. The teachings of *Bush* were not considered during the prosecution of the '781 Patent and thus are new.

2. *Bush* discloses every element of claims 1-14 of the '781 Patent.

Exhibit 6 maps the relevant disclosures of *Bush* to the claims of the '781 Patent, on a claim-by-claim and element-by-element basis. Exhibit 6 confirms that *Bush* anticipates claims 1-14 of the '781 Patent. What follows is a summary of the contents presented in Exhibit 6.

Element 1(a) consists of monitoring travel data associated with the vehicle. *Bush* discloses "affixing a wireless communication device to each remotely originating material shipment."[87] This device is "[a] tracking module which includes a wireless communication device, such as a cellular telephone chip set, a position determination systems, such as a global

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[87] '377 Patent col. 7. ll. 14-15.

position receiver chip set, is built into each shipping container, **vehicle** or the like [. . . .]"[88] *Bush*

then discloses "periodically querying each wireless communication device utilizing [a]

computer" to "determin[e] a location of each remotely originating material shipment utilizing

said position determination system and transmitting said location via said wireless

communication device in response to each query."[89] Thus, by periodically querying the wireless

communications device, the computer disclosed in the *Bush* patent is able to monitor the travel

data associated with the object/vehicle, i.e., its position. Therefore, *Bush* fully anticipates

element 1(a), as well as corresponding system element 2(a), through the above disclosure of the

wireless communication device, global positioning receiver, and a computer to periodically

query them.

Element 1(b) consists of comparing the planned timing of the vehicle along a route to

updated vehicle status information. *Bush* discloses "**comparing the actual location** of shipping

container **26 with the itinerary** for the shipping container."[90] *Bush* later expands upon this,

disclosing "periodically **comparing an actual location** of each remotely originating material

shipment **against a planned location** determined in accordance with an itinerary for each

remotely originating material shipment; and utilizing said computer to automatically alter said

manufacturing schedule in response to a specified variation between said actual location and said

planned location of a remotely originating material shipment."[91] This comparing of an actual

location to a planned location fully anticipates element 1(b). Corresponding system element 2(b)

is disclosed as well because *Bush* specifies that the preceding comparison is performed by

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[88] '377 Patent col. 2:65-3:04 (emphasis added).
[89] '377 Patent col. 7 ll. 21-26.
[90] '377 Patent col. 5 ll. 49-56 (emphasis added).
[91] '377 Patent col. 7 ll. 27-36 (emphasis added).

"communication between computer system 30 and tracking module **20**".[92] Therefore, both

element 1(b) and 2(b) are fully anticipated by *Bush*.

Element 1(c) consists of contacting a user communication device before the vehicle

reaches a stop along the route. *Bush* discloses "after issuing alternate shipping orders or purchase

orders, the process passes to block **56**. Block **56** illustrates the notification of the manufacturing

supervisor by means of an **electronic message** [. . . .]"[93] While the nature of the device the

message is sent to is undefined, it is a communication device possessed by the user of the

system, the supervisor. Thus, *Bush* discloses element 1(c). *Bush* also discloses corresponding

system element 2(c), specifying that these actions are done by computer system 30.[94] Therefore,

Bush anticipates both element 1(c) and 2(c).

Element 1(d) consists of informing the user of vehicle delay and impending arrival at the

stop based on the results of the comparing step. *Bush* discloses that "in the event the current

actual location of a particular shipment is not within a specified variation form the planned

location, the process passes to block **50**. Block **50** illustrates the searching within computer

system **30** for alternate shipping route or source."[95] Then, "after issuing alternate shipping orders

or purchase orders, the process passes to block **56**. Block **56** illustrates the **notification of the**

manufacturing supervisor by means of an electronic message [. . . .]"[96] Regardless of what

action is taken by the system to adjust the manufacturing schedule and change shipping orders,

the supervisor is ultimately notified.[97] When a vehicle is delayed, the *Bush* system will

automatically inform the supervisor of the delay. Therefore *Bush* discloses element 1(d). As

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[92] '377 Patent col. 5 ll. 49-51.
[93] '377 Patent, col. 6 ll. 27-30 (emphasis added).
[94] '377 Patent, col. 5 ll. 44-51.
[95] '377 Patent, col. 6 ll. 1-5.
[96] '377 Patent, col. 6 ll. 27-30 (emphasis added).
[97] '377 Patent, Fig. 4.

before, this is performed by computer system 30, which means that corresponding system element 2(d) is also disclosed. Therefore *Bush* fully anticipates elements 1(d) and 2(d).

Claim 3 is dependent on claim 1, but adds the limitation that the comparing step in 1(b) includes evaluation the vehicle's current location to a scheduled location to determine lateness. *Bush* discloses "the part itinerary for each shipment of parts or material is loaded into computer system **30**."[98] After, the system queries "a part location by communication between computer system 30 and tracking module **20** to determine the actual location of shipping container **26**. The location is then utilized [. . .] to determine whether or not a remotely originating material shipment is on schedule, as determined by **comparing the actual location** of shipping container **26 with the itinerary** for the shipping container."[99] Thus, *Bush* discloses evaluating the vehicle's current location (transmitted from tracking module 20 to computer system 30) to a scheduled location (part of the planned itinerary) to determine if the object/vehicle is on schedule, anticipating claim 3 of the '781 Patent. This disclosure also anticipates corresponding system claim 9 by specifying the role of tracking module 20 and computer system 30. Therefore, *Bush* anticipates claims 3 and 9.

Claim 4, dependent on claim 1, adds the limitation that the comparing step in 1(b) includes evaluating the vehicle's progress along the route in terms of time with respect to a scheduled time. *Bush* discloses "[T]he part itinerary for each shipment of parts or material is loaded into computer system **30**."[100] After, the system queries "a part location by communication between computer system **30** and tracking module **20** to determine the actual location of shipping container **26.** The location is then utilized [. . .] to determine whether or not a remotely originating material shipment is on schedule, as determined by **comparing the actual location**

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[98] '377 Patent col. 5 ll. 45-46.
[99] '377 Patent col. 5 ll. 49-56 (emphasis added).
[100] '377 Patent col. 5 ll. 45-46.

of shipping container **26 with the itinerary** for the shipping container. If the shipment in question is on schedule, as indicated by no more than a minor variation between actual location and planned location," the system determines whether the part shipment is the last part shipment within the manufacturing schedule.[101] Thus, Bush discloses the use of a planned itinerary in the comparing process that includes a scheduled time that a vehicle should reach a location. This anticipates claim 4, and the disclosure that this is performed by computer system 30 anticipates corresponding system claim 10. Therefore, *Bush* anticipates both claim 4 and claim 10.

Claim 5, dependent on claim 1, adds the limitation that a route has a plurality of vehicle stops, and that the comparing step of 1(b) is based upon the vehicle's progress along those stops. *Bush* discloses "[t]he source and itinerary for each shipment of material [. . .] are loaded into the computer system which controls the manufacturing system. Periodically, the location of each shipment is then determined by querying the tracking module for a current actual location which is then compared within the computer system with a planned location, determine from the stored itinerary for that shipment."[102] The stored itinerary for the shipment can contain a plurality of vehicle stops based on the plain meaning of itinerary. According to the Merriam-Webster's dictionary, an itinerary is "the **route** of a journey or tour or the proposed outline of one."[103] Thus, the itinerary in *Bush* is equivalent to the "route" in the '781 Patent, both of which can include multiple stops. The comparison made by the computer between planned location and actual location would inherently include analyzing the vehicle's progress with respect to the vehicle stops on the itinerary. Thus, *Bush* anticipates claim 5, as well as corresponding system claim 11, by disclosing the use of a computer system to perform the method.

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[101] '377 Patent col. 5 ll. 49-58 (emphasis added).
[102] '377 Patent col. 3 ll. 4-11
[103] MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 666 (11th ed. 2009) (emphasis added).

Claim 6, dependent on claim 1, adds the limitation that the travel data comprises scheduled stop information. The itinerary used in *Bush* comprises scheduled stop information. "The source and itinerary for each shipment of material [. . .] are loaded into the computer system which controls the manufacturing system."[104] The itinerary that is input into the computer system includes the scheduled location of the monitored vehicle. The itinerary includes the vehicle's scheduled stop information so that the actual and the planned location of the vehicle or shipment can be monitored, and the actual location can be compared with the scheduled location so that the computer system can determine the next steps to take based on the results of the comparison. Alternatively, *Bush* inherently discloses a method wherein the travel data comprises scheduled stop information. If stops were not included in the itinerary that is loaded into the computer based manufacturing system, then there would no way for the system to know the planned location of a vehicle as it travels, which is integral to the function of the *Bush* system. Therefore *Bush* anticipates claim 6 of the '781 Patent. Further, since *Bush* discloses that the itinerary is loaded to and used by the computer system, *Bush* also anticipates corresponding system claim 12. Thus *Bush* explicitly discloses the elements of claims 6 and 12.

Claim 7, dependent on claim 6 and thus claim 1, adds the limitation that an additional step of updating scheduled stop information based upon the tracking information pertaining to the vehicle is performed. *Bush* discloses that the computer system "[p]eriodically compar[es] an actual location of each remotely originating material shipment against a planned location determined in accordance with an itinerary for each remotely originating material shipment; and utilizing said computer to **automatically alter said manufacturing schedule in response to a specified variation** between said actual location and said planned location of a remotely

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[104] '377 Patent col. 3 ll. 4-5.

originating material shipment."[105] The system determines when the tracked vehicle will reach the

manufacturing facility based on the comparison of the vehicle's current location to the vehicle's

actual location. The system then automatically updates the manufacturing schedule based upon

that comparison. Alternatively, *Bush* inherently discloses a method that updates the scheduled

stop information based upon tracking information pertaining to the vehicle. If the itinerary were

not updated based on the variation, then when the system repeats the querying and comparing

process, the system would not have an accurate stored itinerary to compare the vehicle's current

location to. Therefore *Bush* either discloses or inherently discloses claim 7 of the '781 Patent. As

with previous claims, corresponding system claim 13 is also disclosed because *Bush* explains

that this process is done with a computer system. Therefore *Bush* anticipates claims 7 and 13.

Claim 8, dependent on claim 1, adds the limitation that the method is performed by a

computer system, either a single computer or a plurality of connected computers. *Bush* discloses

"[a] method and system for optimized material movement within a **computer based**

manufacturing system [. . . .]"[106]. The entire system of *Bush* is designed explicitly to be

implemented via a computer system. Therefore *Bush* discloses claim 8, as well as corresponding

system claim 14.

3. <u>In the alternative, *Bush* at least renders obvious any claims 1-14 of the '781 Patent it did not explicitly disclose.</u>

Exhibit 7 maps the relevant disclosures of *Bush* to the claims of the '781 Patent on a

claim-by-claim and element-by-element basis. Exhibit 7 confirms that *Bush* at least renders

obvious claims 1-14 of the '781 Patent. What follows is a summary of the contents presented in

Exhibit 7 that differ from the contents of Exhibit 6. Assuming, *arguendo*, that *Bush* does not

anticipate Claims 1(c), 1(d), 2(c), 2(d), 3, 5-7, 9, and 11-13, it renders them obvious.

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[105] '377 Patent col. 7 ll. 27-36 (emphasis added).
[106] '377 Patent col. 2 ll. 63-65 (emphasis added).

Element 1(c) consists of contacting a user communication device before the vehicle reaches a stop along the route. If a piece of prior art creates a "roadmap" that would lead a person of ordinary skill in the art to develop the claimed invention, then there is a presumption of obviousness even if there are technical differences between the two pieces of art.[107] In *Leapfrog v. Fisher-Price,* the court held that the a toy that let a child hear the phoneme associated with a letter when a button was pressed created a roadmap for another device that accomplished the same task of associating phonemes with letters by using different technology.[108] Similarly, *Bush* lays out a roadmap for communicating updated vehicle arrival times to the user of the system, which is the goal of the '781 Patent.[109] As disclosed in Figure 4 of *Bush*, any deviation from the planned schedule results in a notification sent to the supervisor regarding the vehicle's status and any changes that need to be made.[110] Thus, a person of ordinary skill in the art applying the roadmap of *Bush*—which envisions a system that notifies the relevant user when there is a delay—to the method and system of the '781 Patent would find it obvious to do so. The *Bush* system would render contacting a user of any type of vehicle tracking system obvious. Further, *Bush* discloses the fact that using telephones to contact users for myriad purposes is well known in the art and thus would be obvious to accomplish notification. *Bush* discloses the coupling of computer system **30** with the central telephone system **34** in Figure 3. *Bush* then discloses that "[t]hose having skill in the art will appreciate that the manner by which a computer can communicate remotely via a telephone system such as telephone system **34** is well known to those skilled in the art and consequently, the communication port and the details of this interface

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[107] *Leapfrog v. Fisher-Price*, 485 F.3d 1157, 1162 (Fed. Cir. 2007).
[108] *Id*. at 1162.
[109] '781 Patent, col. 2 ll. 21-28.
[110] '377 Patent, col. 5 ll. 43-58.

are not depicted within FIG. **3**."[111] Since coupling computers to telephone systems was so well known, it would be obvious to a person of ordinary skill in the art that such a system could be used to send telephone messages to users before the vehicle being tracked reaches a stop along its route, as is contemplated in the '781 Patent. Therefore *Bush* at least renders obvious element 1(c). The disclosure of a computer system connected to a telephone system also renders corresponding system element 2(c) obvious, since a person of ordinary skill in the art would find it common sense to use those systems to perform the contacting. Thus *Bush* at least renders obvious elements 1(c) and 2(c).

Element 1(d) consists of informing the user of vehicle delay and impending arrival at the stop based on the results of the comparing step. In *Leapfrog* the court found that prior art that shared a goal with the patent being challenged—encouraging children to associate phonemes with letters—rendered the later device obvious to a person of ordinary skill in the art who examined the prior art.[112] Here, the goal of *Bush* is to use tracking technology to estimate arrival times of vehicles, which will reduce wasted time during computer-based manufacturing.[113] The goal of the '781 Patent is to use tracking technology to estimate arrival times of vehicles, which will allow passengers to reduce time waiting at stops.[114] Just as in *Leapfrog*, a person of ordinary skill in the art would appreciate the similarity of these goals and apply the lessons of *Bush* to the problem presented in the '781 Patent. The difference in field would make it common sense for a person of ordinary skill in the art to send the message through a different medium and to a different user than envisioned in *Bush*, and as discussed above regarding claim 1(c), the technical implementation of contacting a user via phone in a computer based system would be trivial. Thus

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[111] '377 Patent, col. 5 ll. 16-23.
[112] *Leapfrog* 485 F.3d at 1161.
[113] '377 Patent, col. 2 ll. 34-48, Abstract.
[114] '781 Patent, col. 1 ll. 25-56.

Bush renders element 1(d) obvious, as well as corresponding system claim 2(d) for the same reasons discussed above for element 1(c).

Claim 3 is dependent on claim 1, but adds the limitation that the comparing step in 1(b) includes evaluation the vehicle's current location to a scheduled location to determine lateness. Even if the examiner concludes that the scheduled location is not equivalent to a planned itinerary, a person of ordinary skill in the art would consider it obvious that a scheduled location could be used in place of an itinerary. The '781 Patent and *Bush* are identical in purpose for this claim; each is trying to determine how far off schedule a vehicle is. Having similar goals can establish that a person of ordinary skill in the art would find variations in implementation to achieve that same goal obvious.[115] Since *Bush* discloses a method for determining the actual location of vehicles, a person of ordinary skill in the art would consider it obvious to compare that information to a scheduled location to accomplish the goal of determining how far off schedule a vehicle is. As with all other aspects of comparing in the *Bush* system previously discussed, this would be performed by the computer system. Thus *Bush* at least renders obvious claim 3 and corresponding system claim 9.

Claim 5, dependent on claim 1, adds the limitation that a route has a plurality of vehicle stops, and that the comparing step of 1(b) is based upon the vehicle's progress along those stops. *Bush* discloses "The source and itinerary for each shipment of material [. . .] are loaded into the computer system which controls the manufacturing system. Periodically, the location of each shipment is then determined by querying the tracking module for a current actual location which is then compared within the computer system with a planned location, determine from the stored itinerary for that shipment."[116] The stored itinerary for the shipment can contain a plurality of

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[115] *Leapfrog*, 485 F.3d at 1161.
[116] '377 Patent, col. 3 ll. 4-11.

vehicle stops based on the plain meaning of itinerary. According to the Merriam-Webster's dictionary, an itinerary is "the **route** of a journey or tour or the proposed outline of one"[117] A person of ordinary skill in the art would understand that even if an itinerary is not required to include a plurality of stops, it can easily have multiple stops. Applying the *Bush* method and system to an itinerary with multiple stops would be a trivial difference that a person of ordinary skill would find obvious when applying the roadmap of *Bush* to a fixed bus route system.[118] Since this disclosure addresses both the method and means for incorporating a plurality of vehicle stops, *Bush* at least renders obvious claim 5 and corresponding system claim 11.

Claim 6, dependent on claim 1, adds the limitation that the travel data comprises scheduled stop information. In *Bush*, "a source of each remotely originating material shipment and an itinerary is loaded into a computer."[119] If stops were not included in the itinerary that is loaded into the computer based manufacturing system, then there would no way for the system to know the planned location of a vehicle as it travels, which is integral to the function of the *Bush* system. This would be common sense to a person of ordinary skill in the art. Even if scheduled stop information were not part of the term itinerary in *Bush*, a person of ordinary skill in the art would find it obvious to take the lesson that travel data is uploaded to a computer from *Bush* and apply it to a fixed route bus system contemplated in the '781 Patent by incorporating scheduled stop information. Therefore incorporating schedule stop information into the travel data used by *Bush* is obvious. [120] These disclosures render obvious claim 6, as well as corresponding system claim 12 through the disclosure of a computer means.

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[117] MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 666 (11th ed. 2009) (emphasis added).
[118] *See Leapfrog*, 485 F.3d at 1162.
[119] '377 Patent, col. 7 ll. 18-19.
[120] *See Leapfrog*, 485 F.3d at 1162.

Claim 7, dependent on claim 6 and thus claim 1, adds the limitation that an additional step of updating scheduled stop information based upon the tracking information pertaining to the vehicle is performed. *Bush* discloses that the computer system "[p]eriodically compar[es] an actual location of each remotely originating material shipment against a planned location determined in accordance with an itinerary for each remotely originating material shipment; and utilizing said computer to **automatically alter said manufacturing schedule in response to a specified variation** between said actual location and said planned location of a remotely originating material shipment."[121] The goal of *Bush* is to compare schedules to reduce wait time for supervisors in a manufacturing setting via vehicle tracking; the goal of the '781 Patent is to reduce wait time for vehicle passengers via vehicle tracking. A similarity of goals between two methods or systems can be grounds for an obviousness finding, since a person of ordinary skill in the art would be likely to use common sense to link them.[122] A person of ordinary skill in vehicle tracking would understand that the schedule updated in *Bush* is analogous to the schedule updated in the '781 Patent, and find it obvious to accomplish the similar goal by updating the analogous schedule. This is performed by the computer. Therefore *Bush* at least renders obvious claim 7 and corresponding system claim 13.

4. *Bush* is enabled.

Prior art patents are presumed enabled.[123] *Bush* is an issued prior art patent, therefore it is presumed enabled. Furthermore, *Bush* enabled one of skill in the art to practice all claims of the '781 Patent because a skilled person, upon reading the patent, would have understood that success could be achieved merely by replicating the vehicle tracking and notification system and

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[121] '377 Patent, col. 7 ll. 27-36 (emphasis added).
[122] *Leapfrog*, 485 F.3d at 1161.
[123] *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 457 F.3d 1293, 1305 (Fed. Cir. 2006).

method described in the Patent. *Bush* provided a disclosure of at least the same general level of

detail as found in the '781 Patent. Therefore, *Bush* is enabled.

E.   **Combined, *Bush* and *NBCA* renders obvious claims 1-14 of the '781 Patent.**

1. Combined, *Bush* and *NBCA* renders obvious any claims of the '781 Patent
   they do not anticipate.

Exhibit 8 maps the relevant disclosures of *Bush* and *NBCA* to the claims of the '781

Patent on a claim-by-claim and element-by-element basis. Exhibit 8 confirms that *Bush*

combined with *NBCA* renders obvious claims 1-14 of the '781 Patent if neither piece of prior art

anticipates or renders obvious the claims individually. What follows is a summary of the

contents presented in Exhibit 8 that are not presented in Exhibits 3 or 6. The combination of

NBCA and *Bush* at least render 1(b), 1(c), 1(d), 2(b), 2(c), 2(d), 3, and 9 obvious.

Element 1(b) consists of comparing the planned timing of the vehicle along a route to

updated vehicle status information. In *Leapfrog v. Fisher-Price,* the court held that a prior art toy

that let a child hear the phoneme associated with a letter when a button was pressed served as a

"roadmap" for the invention at issue when the invention at issue also allowed children to

associate phonemes with letters , but employed different technology.[124] The "roadmap" prior art

toy, in part, rendered the invention at issue obvious.[125] Applying the roadmap of *Bush* to the

problem of bus routes with "[u]nreliable timetables" which "are the bane of many public transit

systems [. . . .]" in the *NBCA* would lead a person of ordinary skill in the art to compare the

planned timing of the vehicle to the updated vehicle status information.[126] The lesson of

"**comparing the actual location** of shipping container **26 with the itinerary** for the shipping

container" and "**comparing an actual location** of each remotely originating material shipment

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[124] 485 F.3d 1157, 1162 (Fed. Cir. 2007).
[125] *Id.*
[126] *NBCA* at 1.

against a planned location" using a computer as applied to the bus routes described in *NBCA*

would obviously consist of comparing planned timing of a vehicle to updated vehicle status

information such as location.[127] This would be performed by a computer system. Therefore the

combination of *Bush* and *NBCA* at least renders obvious element 1(b) and corresponding system

element 2(b) obvious.

     Element 1(c) consists of contacting a user communication device before the vehicle

reaches a stop along the route. Even if there are technical differences between two methods, if

the goals and outcomes of those methods are the same, then there is a presumption of

obviousness.[128] The goals of *Bush*, the *NBCA*, and the '781 Patent are identical: to use vehicle

tracking in order to prevent users from wasting time.[129] The user in *Bush* is the supervisor with a

computer who receives electronic messages regarding vehicle status if there is any delay.[130]

Within the Nextbus System described in the *NBCA,* the users are bus passengers receiving

notifications.[131] In the '781 Patent, users in the preferred embodiment are school bus passengers

receiving notifications.[132] While the specific methods of contact vary between the systems, the

identical goal and information being transmitted would make it obvious to a person of ordinary

skill in the art to contact users before a vehicle reaches a stop along a route by using a computer.

Further, all of the systems use a computer. Therefore, under *Leapfrog*, *Bush* combined with

NBCA renders element 1(c) and corresponding system element 2(c) obvious.

     Element 1(d) consists of informing the user of vehicle delay and impending arrival at the

stop based on the results of the comparing step. Obtaining the information from the comparing

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[127] '377 Patent, col. 5 ll. 49-56, col. 7 ll. 27-36 (emphasis added).
[128] *Leapfrog*, 485 F.3d at 1161.
[129] '377 Patent, col. 6 ll. 27-30; *NBCA* at 2; 781 Patent, col. 11 ll. 40-50.
[130] '377 Patent, col. 6 ll. 27-30.
[131] *NBCA* at 2.
[132] '781 Patent, col. 11 ll. 40-50.

step is obvious for the reasons discussed regarding claim 1(b) above. With information regarding the difference between planned and actual arrival times in hand, *Bush*, *NBCA,* and the '781 Patent have the goal of informing the relevant user of any delay or impending arrival. Under *Leapfrog*, this similarity of goals signals a presumption of obviousness.[133] This is especially true here, where a person of ordinary skill in the art of vehicle tracking would recognize the uses of the information obtained from the comparing step. As with all prior steps, this notification would be sent by a computer for each system. Therefore *Bush* combined with *NBCA* renders element 1(d) and corresponding system element 2(d) obvious.

Claim 3 is dependent on claim 1, but adds the limitation that the comparing step in 1(b) includes evaluation the vehicle's current location to a scheduled location to determine lateness. In *Leapfrog v. Fisher-Price,* the court held that a prior art toy that let a child hear the phoneme associated with a letter when a button was pressed served as a "roadmap" for the invention at issue when the invention at issue also allowed children to associate phonemes with letters , but employed different technology.[134] The "roadmap" prior art toy, in part, rendered the invention at issue obvious.[135] Applying the roadmap of *Bush* to the problem of bus routes with "[u]nreliable timetables" which "are the bane of many public transit systems [. . . .]" in the *NBCA* would lead a person of ordinary skill in the art to compare the planned timing of the vehicle to the updated vehicle status information.[136] The lesson of "**comparing the actual location** of shipping container **26 with the itinerary** for the shipping container" and "**comparing an actual location** of each remotely originating material shipment **against a planned location"** as applied to the bus routes described in *NBCA* would obviously consist of comparing the current of a vehicle to a

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[133] *Leapfrog*, 485 F.3d at 1161.
[134] 485 F.3d 1157, 1162 (Fed. Cir. 2007).
[135] *Id*.
[136] *NBCA* at 1.

scheduled location.[137] Planned location would be viewed by a person of ordinary skill in the art

as analogous to the scheduled location when applying the roadmap of *Bush* in light of *NBCA*.

This would be performed by a computer system, as previously disclosed. Therefore *Bush*

combined with *NBCA* at least renders obvious claim 3 and corresponding system claim 9.

> 2. <u>A person of ordinary skill in the art would have been motivated to combine *Bush* with *NBCA*.</u>

One of ordinary skill in the art of vehicle tracking and notification would consider *Bush*

when thinking about public transportation methods and systems, such as the Nextbus

Information System disclosed in the *NBCA*. "[P]rior art relevant to the obviousness inquiry is not

strictly limited to the specific field of endeavor of the invention at issue, but extends to fields

logically related to the general problem facing the inventor."[138] Evidence of how broad tracking

and notification is as a field can be seen in how ArrivalStar, the assignee of the '781 Patent, has

asserted this family of patents in litigation. This family of patents has been asserted against

airlines, airports, parcel delivery services, retailers, freight companies, auto manufacturers, and

railways, among others.[139] An ArrivalStar attorney has stated that he believes it would be

difficult to create a useful vehicle tracking and notification system of any sort without infringing

ArrivalStar's patents.[140] Actions by ArrivalStar and its agents make clear that vehicle tracking is

a remarkably broad field, of which *Bush* is a part. This gives a person of ordinary skill in the art

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[137] '377 Patent, col. 5 ll. 49-56, col. 7 ll. 27-36 (emphasis added).

[138] *Oatey Co. v. IPS Corp.*, 665 F.Supp. 2d 830, 849 (N.D. Ohio 2009).

[139] *See e.g. ArrivalStar v. US Airways Inc.*, No. 1:10-cv-24266 (S.D. Fla. filed Nov. 30, 2010); *ArrivalStar v. Dallas-Fort Worth Int'l Airport Inc.*, No. 3:07-cv-00464 (N.D. Tex. filed Mar. 14, 2007); *ArrivalStar v. USA*, No. 1-11-cv-00784 (Ct. Cl. filed Nov. 22, 2011)(against the United States Postal Service); *ArrivalStar v. Burlington Coat Factory Warehouse Corp.*, No. 1:12-cv-20300 (S.D. Fla. filed Jan. 25, 2012); *ArrivalStar v. Freightview, LLC*, No. 1:12-cv-20684 (S.D. Fla. filed Feb. 17, 2012); *ArrivalStar v. Ford Motor Co.*, No. 1:10-cv-04359 (N.D. Ill. filed July 13, 2010); *ArrivalStar vs. Canadian Nat'l Ry. Co. et al.*, No. 1:08-cv-01086 (N.D. Ill. filed Feb. 21, 2008).

[140] J.J. Barrow, *Track This (Litigation) Vehicle: ArrivalStar Has Filed More Than 100 Patent Lawsuits*, (Sept. 2011) available at http://patentexaminer.org/2011/09/arrivalstar-and-melvino-technologies-have-filed-more-than-100-patent-lawsuits/.

motive to combine *Bush* with other prior art that more closely reflects the preferred embodiment of the patent at issue, such as *NBCA*.

3. *Bush* combined with *NBCA* is enabled.

As shown above, *Bush* enabled one of skill in the art to practice all claims of the '781 Patent because a skilled person, upon reading the patent, would have understood that success could be achieved merely by replicating the vehicle tracking and notification system and method described in the patent and taking additional obvious steps. *Bush* provided a disclosure of at least the same general level of detail as found in the '781 Patent.

As shown above, *NBCA* enabled one of skill in the art to practice all claims of the '781 Patent because a skilled person, upon reading the article, would have understood that success could be achieved merely by replicating the system and method described in the publication. Particularly when combining *NBCA* with *Bush*, a person of ordinary skill in the art would be able to fully implement the technical aspects of a vehicle tracking and notification system from *Bush* applied to alerting passengers of transportation vehicles through the communication devices disclosed in *NBCA*.

Therefore, for at least the foregoing reasons, *Bush* combined with *NBCA* enable one of ordinary skill in the art to perform claims 1-14 of the '781 Patent.

V. CONCLUSION

In view of the substantial new questions of patentability raised by *SotA92* (Labell), *NBCA* (Walker), *Schmier* (U.S. Patent No. 6,006,159), and *Bush* (U.S. Patent No. 5,835,377), EFF

respectfully submits that a new *ex parte* reexamination should be instituted pursuant to 35 U.S.C.

§ 304 and claims 1-14 of the '781 Patent cancelled as anticipated and obvious.

Dated: September 14, 2012   Respectfully submitted,

ELECTRONIC FRONTIER FOUNDATION

Julie P. Samuels

CERTIFICATE OF SERVICE

I, Stephanie Shattuck, declare that I am employed in the city and county of San Francisco, California. My business address is 454 Shotwell Street, San Francisco, CA 94110. I am over the age of 18 years and am not a party to the within action.

On September 14, 2012, at the above-referenced address, I served the following documents:

- **REQUEST FOR *EX PARTE* REEXAMINATION (with Exhibits and Appendices)**

by placing the documents listed above in a sealed envelope with postage thereon fully prepaid, in accordance with the firm's practice of collection and processing correspondence with the United States Postal Service, which in the normal course of business provides for the deposit of all correspondence and documents with the United States Postal Service on the same day they are collected and processed for mailing to the persons at the addresses set forth below:

George Thomas
James Kayden
Scott Horstemeyer
Steven Kerr
David Sudderth
James Vaughn
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP
400 Interstate North Parkway SE
Suite 1500
Atlanta, GA 30339

I hereby certify that I am employed in the office of a member of the Bar of this Court at whose direction the service was made.

Dated: September 14, 2012

_____
Stephanie Shattuck
Legal Secretary