

Petitioner's Demonstratives

Tesla, Inc. v. Graphite Charging Co. LLC
IPR2024-00387 (U.S. Patent No. 8,103,391)

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

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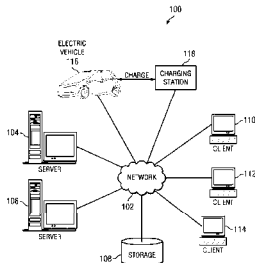
Agenda

- Overview of the '391 Patent
- Claim construction
- The prior art
 - Kimura (grounds 1-3)
 - Keith (grounds 4-6)
- Patent Owner's motions
- Conclusion

Overview of the '391 Patent

'391 Patent (Ex-1001), Cover Page

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

 US008103391B2	
(12) United States Patent Ferro et al.	(10) Patent No.: US 8,103,391 B2 (45) Date of Patent: Jan. 24, 2012
(54) SYSTEM FOR DETECTING INTERRUPT CONDITIONS DURING AN ELECTRIC VEHICLE CHARGING PROCESS	
(75) Inventors: Erica Huefner Ferro , Boulder, CO (US); Mark William Trebholz , Aurora, CO (US); Paul Stuart Williamson , Round Rock, TX (US)	6,081,305 A 6/2000 Williams 6,234,932 B1 5/2001 Kuroda et al. 6,252,380 B1 6/2001 Koenck 6,301,554 B1 10/2001 Perno et al. 6,307,349 B1 10/2001 Koenck et al. 6,373,380 B1 4/2002 Robertson et al. 6,446,044 B1 9/2002 Iordani et al. 6,727,809 B1 4/2004 Smith 6,766,949 B2 7/2004 Terranova et al. 6,789,733 B2 9/2004 Terranova et al. (Continued)
(73) Assignee: International Business Machines Corporation , Armonk, NY (US)	FOREIGN PATENT DOCUMENTS JP 2001359203 A 12/2001
(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 667 days.	OTHER PUBLICATIONS USPTO office action for U.S. Appl. No. 12/139,575 dated Oct. 8, 2010. (Continued)
(21) Appl. No.: 12/194,325	
(22) Filed: Aug. 19, 2008	
(65) Prior Publication Data US 2010/0049306 A1 Feb. 25, 2010	Primary Examiner: Sarah B McPartlin (74) Attorney, Agent, or Firm: Yee & Associates, PC; David A. Mims, Jr.
(51) Int. Cl. G06F 7/00 (2006.01) G06F 19/00 (2011.01)	(57) ABSTRACT Illustrative embodiments disclose managing a charging process of an electric vehicle. Begin by monitoring a set of operational parameters of the charging process during the flow of electricity for one or more interruptions in response to receiving, from an energy transaction execution engine, a request signaling the start of the charging process. The process then detects the one or more interruptions during the flow of electricity from the set of operational parameters, which conform to a set of predefined interrupt conditions. In one embodiment, the one or more interruptions include at least one of a device capability interruption, a preference interruption, and a data services interruption. The process sends a response to the energy transaction execution engine to terminate the charging transaction in response to detecting the one or more interruptions.
(52) U.S. Cl. 701/1; 701/33; 701/123	
(58) Field of Classification Search 701/1, 33, 701/123 See application file for complete search history.	
(56) References Cited U.S. PATENT DOCUMENTS 3,867,682 A * 2/1975 Yamuchi et al. 320 139 4,389,608 A * 6/1983 Dahl et al. 320 137 4,433,278 A 2/1984 Lowndes et al. 4,532,418 A 7/1985 Moore et al. 5,422,634 A 6/1995 Smith 5,563,491 A 10/1996 Juerg 5,736,833 A * 4/1998 Harris 320 163 6,067,008 A 5/2000 Smith	20 Claims, 6 Drawing Sheets
	

Overview of the '391 Patent Subject Matter

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SYSTEM FOR DETECTING INTERRUPT CONDITIONS DURING AN ELECTRIC VEHICLE CHARGING PROCESS

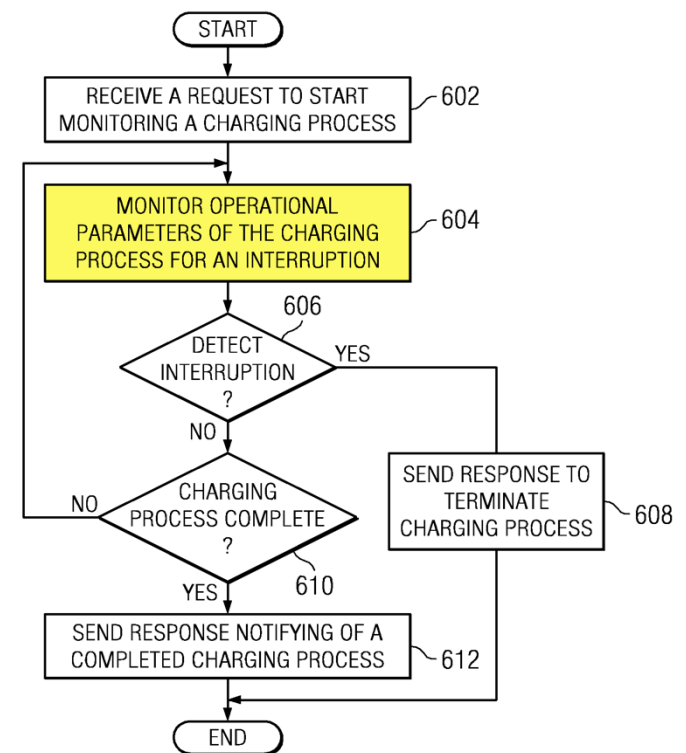
BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention is related generally to an improved data processing system, and in particular, to a method and apparatus for managing electric vehicle charging transactions. More particularly, the present invention is directed to a computer implemented method, apparatus, and computer usable program code for **monitoring a charging process for interrupt conditions that terminate the charging process.**

'391 Patent at 1-14, fig. 6

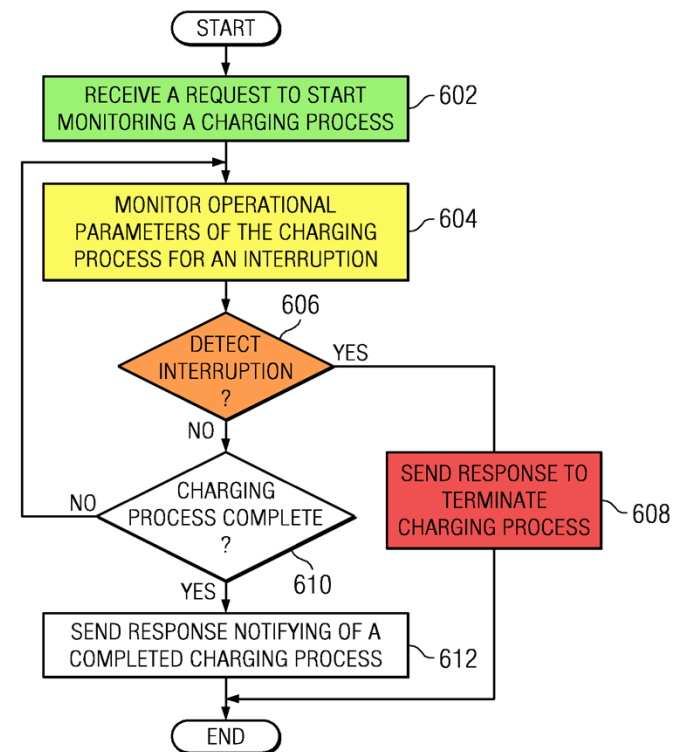
DEMONSTRATIVE EXHIBIT—NOT EVIDENCE



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Overview of the '391 Patent Independent Claim 1

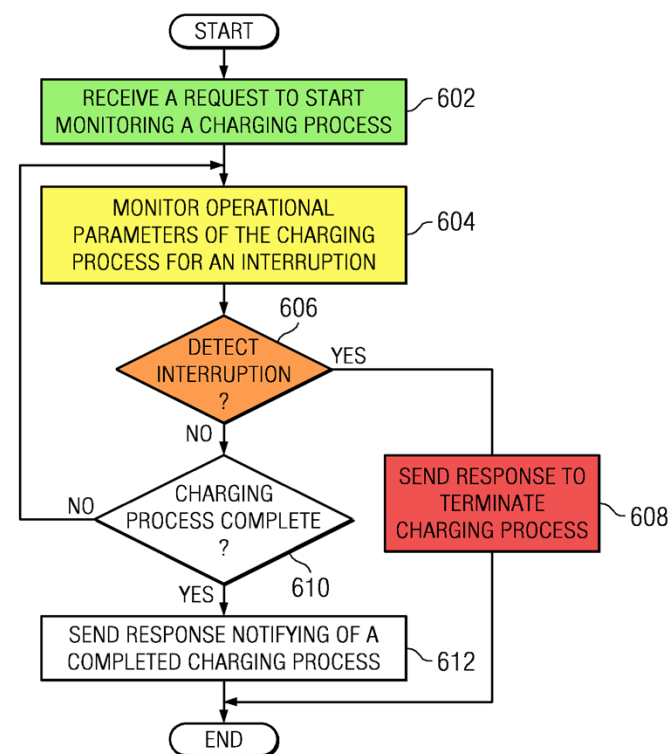
Claim	Limitation(s)
1[P]	A computer implemented method of managing a charging process of an electric vehicle, the computer implemented method comprising:
1[A]	responsive to receiving , from an energy transaction execution engine, a request signaling the start of the charging process , monitoring a set of operational parameters of the charging process during the flow of electricity for one or more interruptions;
1[B]	detecting the one or more interruptions during the flow of electricity from the set of operational parameters which conform to a set of predefined interrupt conditions;
1[C]	wherein the one or more interruptions comprise at least one of a device capabilities interruption, a preference interruption, and a data services interruption; and
1[D]	responsive to detecting the one or more interruptions, sending a response to the energy transaction execution engine to terminate the charging process .



Overview of the '391 Patent

Other Independent Claims

Claim	Limitation(s)
8	A computer program product ... comprising: ... first program instructions to monitor a set of operational parameters ... in response to receiving ... a request signaling a start of the charging process ; second program instructions to detect the one or more interruptions ...; [and] third program instructions to send a response ... to terminate the charging process
15	An apparatus comprising: ... a processing unit ... [that] monitor[s] a set of operational parameters ... in response to receiving ... a request signaling a start of the charging process ; detect[s] the one or more interruptions ...; and send[s] a response ... to terminate the charging process
20	A system ... comprising: ... an energy transaction interrupt monitor ... [that] monitors a set of operational parameters ... in response to receiving ... a request signaling a start of the charging process ; detects the one or more interruptions ...; and send[s] a response ... to terminate the charging process



Overview of the '391 Patent Dependent Claims

Claim	Limitation(s)
2 (9, 16)	... wherein the one or more interruptions is a manual override interruption , and wherein the computer implemented method further comprises: responsive to receiving, from a user, the manual override interruption, terminating the charging process.
3 (10, 17)	... further comprising: storing the set of operational parameters in a storage device.
4 (11, 18)	... wherein the one or more interruptions is the device capabilities interruption , and the device capabilities interruption originates from at least one component of an electric vehicle transaction infrastructure.
5 (12)	... wherein the one or more interruptions is the preference interruption , and the preference interruption is detected from a violation of a preference selected by a participant to the charging process.
6 (13)	... wherein the one or more interruptions is the data services interruption , and the data services interruption originates from a failure in data transmission.
7 (14, 19)	... wherein the one or more interruptions are detected by identifying an operational parameter from the set of operational parameters that conform to the set of predefined interrupt conditions .

Overview of the '391 Patent Grounds for Unpatentability

Ground	Prior Art	Basis	Claims
1	Kimura	35 U.S.C. § 103	1, 4-8, 11-15, and 18-20
2	Kimura and Hotta	35 U.S.C. § 103	2, 5, 9, 12, and 16
3	Kimura and King	35 U.S.C. § 103	3, 10, and 17
4	Keith	35 U.S.C. § 102	1, 2, 4-9, 11-16, and 18-20
5	Keith	35 U.S.C. § 103	3 and 8-19
6	Keith and Nor	35 U.S.C. § 103	6 and 13

Overview of the '391 Patent

Non-Limiting Specification

The **terminology** used herein is for the purpose of describing particular embodiments only and is **not intended to be limiting of the invention**. As used herein, the singular forms claimed elements as specifically claimed. The **description** of the present invention has been presented for purposes of illustration and description, but is **not intended to be exhaustive or limited to the invention in the form disclosed**. Many modifications and variations will be apparent to those of ordinary skill in the art without departing from the scope and spirit of the invention. The embodiment was chosen and

Claim Construction

'391 Patent, cols. 15-16

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In addition, the implementation of an energy transaction interrupt monitor may protect the integrity of components of an electric vehicle transaction infrastructure. For example, dangerous conditions that may arise from malfunctioning components may be detected. Subsequently, a charging process may be terminated to prevent the dangerous condition from further escalating and causing irreparable harm to components of the electric vehicle transaction infrastructure.

The flowchart and block diagrams in the figures illustrate the architecture, functionality, and operation of possible implementations of systems, methods and computer program products according to various embodiments of the present invention. In this regard, each block in the flowchart or block diagrams may represent a module, segment, or portion of code, which comprises one or more executable instructions for implementing the specified logical function(s). It should also be noted that, in some alternative implementations, the functions noted in the block may occur out of the order noted in the figures. For example, two blocks shown in succession may, in fact, be executed substantially concurrently, or the blocks may sometimes be executed in the reverse order, depending upon the functionality involved. It will also be noted that each block of the block diagrams and/or flowchart illustration, and combinations of blocks in the block diagrams and/or flowchart illustration, can be implemented by special purpose hardware-based systems that perform the specified functions or acts, or combinations of special purpose hardware and computer instructions.

The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the invention. As used herein, the singular forms "a," "an" and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the terms "comprises" and/or "comprising," when used in this specification, specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof.

The corresponding structures, materials, acts, and equivalents of all means or step plus function elements in the claims below are intended to include any structure, material, or act for performing the function in combination with other claimed elements in specifically claimed. The description of the present invention has been presented for purposes of illustration and description, but is not intended to be exhaustive or limited to the invention in the form disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art without departing from the scope and spirit of the invention. The embodiment was chosen and described in order to best explain the principles of the invention and the practical application, and to enable others of ordinary skill in the art to understand the invention for various embodiments with various modifications as are suited to the particular use contemplated.

The invention can take the form of an entirely hardware embodiment, an entirely software embodiment or an embodiment containing both hardware and software elements. In a preferred embodiment, the invention is implemented in software, which includes but is not limited to firmware, resident software, microcode, etc.

Furthermore, the invention can take the form of a computer program product accessible from a computer-readable or computer-readable medium providing program code for use by or in connection with a computer or any instruction execution system. For the purposes of this description, a computer-readable or computer-readable medium can be any tangible

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apparatus that can contain, store, communicate, propagate, or transport the program for use by or in connection with the instruction execution system, apparatus, or device.

The medium can be an electronic, magnetic, optical, electromagnetic, infrared, or semiconductor system (or apparatus or device) or a propagation medium. Examples of a computer-readable medium include a semiconductor or solid-state memory, magnetic tape, a removable computer diskette, a random access memory (RAM), a read-only memory (ROM), a rigid magnetic disk and an optical disk. Current examples of optical disks include compact disk-read only memory (CD-ROM), compact disk-read/write (CD-RW) and DVD.

A data processing system suitable for storing and/or executing program code will include at least one processor coupled directly or indirectly to memory elements through a system bus. The memory elements can include local memory employed during actual execution of the program code, bulk storage, and cache memories, which provide temporary storage of at least some program code in order to reduce the number of times code must be retrieved from bulk storage during execution.

Input/output or I/O devices (including, but not limited to, keyboards, displays, pointing devices, etc.) can be coupled to the system either directly or through intervening I/O controllers.

Network adapters may also be coupled to the system to enable the data processing system to become coupled to other data processing systems or remote printers or storage devices through intervening private or public networks. Modems, cable modems and Ethernet cards are just a few of the currently available types of network adapters.

The description of the present invention has been presented for purposes of illustration and description, and is not intended to be exhaustive or limited to the invention in the form disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art. The embodiment was chosen and described in order to best explain the principles of the invention, the practical application, and to enable others of ordinary skill in the art to understand the invention for various embodiments with various modifications as are suited to the particular use contemplated.

What is claimed is:

1. A computer implemented method of managing a charging process of an electric vehicle, the computer implemented method comprising:
responsive to receiving, from an energy transaction execution engine, a request signaling a start of the charging process, monitoring a set of operational parameters of the charging process during the flow of electricity for one or more interruptions;
detecting the one or more interruptions during the flow of electricity from the set of operational parameters which conform to a set of predefined interrupt conditions, wherein the one or more interruptions comprise at least one of a device capabilities interruption, a preference interruption, and a data services interruption; and
responsive to detecting the one or more interruptions, sending a response to the energy transaction execution engine to terminate the charging process.
2. The computer implemented method of claim 1, wherein the one or more interruptions is a manual override interruption, and wherein the computer implemented method further comprises:
responsive to receiving, from a user, the manual override interruption, terminating the charging process.
3. The computer implemented method of claim 1, further comprising:

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Claim Construction

Crux of the Case

Patent Owner's arguments for the patentability of **claims 1, 4-8, 11-15, and 18-20** rest entirely on claim construction positions. **If these positions fail**, then Petitioner's challenges for these claims are left unrebutted.

Claim Construction

Patent Owner's Positions

- **“Request”** and **“response”** refer to messages which include respective headers and bodies (claims 1, 8, 15, and 20)
- **“Data services interruption”** is defined by the '391 Patent to require an inability to exchange data with a third party (claims 1, 6, 8, 13, 15, and 20)
- **“Manual override interruption”** is defined by the '391 Patent to require an instruction (and not just manipulating a switch) (claims 2, 9, and 16)
- **“Preference interruption”** is defined by the '391 Patent to require a violation of a user-specified preference (claims 1, 5, 8, 12, 15, and 20)
- **“Identifying an operational parameter”** means doing so before every charging transaction (claims 7, 14, and 19)

Claim Construction

Request and Response

Patent Owner's construction—

Both the request and response “must be **messages** ... [that] include[] a **header** and a **body**.” Response at 27-28 (emphasis added).

Note—

The claims say nothing regarding the request and response being a message or requiring a header or body.

Claim	Limitation(s)
1[P]	A computer implemented method of managing a charging process of an electric vehicle, the computer implemented method comprising:
1[A]	responsive to receiving, from an energy transaction execution engine, a request signaling the start of the charging process, monitoring a set of operational parameters of the charging process during the flow of electricity for one or more interruptions;
1[B]	detecting the one or more interruptions during the flow of electricity from the set of operational parameters which conform to a set of predefined interrupt conditions;
1[C]	wherein the one or more interruptions comprise at least one of a device capabilities interruption, a preference interruption, and a data services interruption; and
1[D]	responsive to detecting the one or more interruptions, sending a response to the energy transaction execution engine to terminate the charging process.

Response at 27-28; Reply at 15-16; '391 Patent, 16:43-59

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Claim Construction—Request and Response

Patent Owner's Reasoning

Patent Owner's reasoning—

For figure 4, the '391 Patent states that “[r]equest 414 is a message” and “[r]esponse 418 is a message.”

Messages are more suitable for complex circumstances than are signals. See '391 Patent, 6:65-7:2.

response to receiving request 414. Request 414 is a message signaling the start of charging process 404. Request 414 is

416. Response 418 is a message that may instruct energy transaction execution engine 416 to terminate charging process 404. However, in the event that energy transaction inter-

vehicle. The illustrative embodiments recognize that charging electric vehicles will frequently be conducted under much broader and more complex sets of circumstances than this simple scenario and infrastructure is needed to accommodate these complex transactions. For example, owners and opera-

Claim Construction—Request and Response

Non-Limiting Specification

First—

Patent Owner relies on illustrative language specific to figure 4. This language does not constrain the claims.



Federal Circuit—

“[A] court may not import limitations from the written description into the claims.” *Laitram*, 163 F.3d at 1347.

FIG. 4 is a system for managing a charging process of an electric vehicle in accordance with **an illustrative embodiment**. System **400** is a data processing system, such as net-

response to receiving request **414**. Request **414** is a message signaling the start of charging process **404**. Request **414** is

416. Response **418** is a message that may instruct energy transaction execution engine **416** to terminate charging process **404**. However, in the event that energy transaction inter-

The terminology used herein is for the purpose of describing particular embodiments only and is **not intended to be limiting of the invention**. As used herein, the singular forms

Claim Construction—Request and Response

No Support for Header or Body

Second—

The '391 Patent says nothing about headers or bodies (which Patent Owner's expert admits).



Dr. Cameron—

“Q: [T]he words header and body, do they appear in the '391 Patent? A: [T]he word **header** does not appear. The word **body** does not appear.” Ex-1021, 63:22-64:1 (emphasis added).

FIG. 4 is a system for managing a charging process of an electric vehicle in accordance with an illustrative embodiment. System 400 is a data processing system, such as net-

response to receiving request 414. Request 414 is a message signaling the start of charging process 404. Request 414 is

416. Response 418 is a message that may instruct energy transaction execution engine 416 to terminate charging process 404. However, in the event that energy transaction inter-

The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the invention. As used herein, the singular forms

Claim Construction—Request and Response

Prosecution History Issue

Third—

The prosecution history supports a broad reading of “request” because the Examiner read it as including signals. User input via a keyboard generates a signal (not a message).



Examiner McPartlin—

“Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Pellegrino et al. ... With respect to claim 1, Pellegrino et al. disclose ... **a request** signaling a start of the charging process (**user input** through either display (80), **keyboard (85)** or through optical reader (100)...).” Ex-1007 at 54 (emphasis added).

Claim Construction—Request and Response

Technical Dictionary Definitions

Finally—

A POSA would have understood that “response” could refer to a signal.

response 1. A change in the behavior, operation, or function of a component, circuit, device, piece of equipment, system, mechanism, process, material, or the like, as a consequence of a change in its external or internal environment. For example, a change in output resulting from a change in input. 2. A quantified response (1), such as a frequency response. 3. The automatic emission of the appropriate signals when specified trigger signals are received, as seen, for instance, in a responder (1). Also called reply.

responses Signals or interrupts generated by a device to notify another device of an asynchronous event. Responses contain

Claim Construction

Lexicography and Interruptions

Patent Owner's position—

The '391 Patent provides “explicit definitions” for (i) data services interruptions, (ii) manual override interruptions, and (iii) preference interruptions.

The patentee acted as its own lexicographer in defining these types of interruptions. Accordingly, the claims are constrained by the given definitions.

Claim	Limitation(s)
2	... wherein the one or more interruptions is a manual override interruption , and wherein the computer implemented method further comprises: responsive to receiving, from a user, the manual override interruption, terminating the charging process.
5	... wherein the one or more interruptions is the preference interruption , and the preference interruption is detected from a violation of a preference selected by a participant to the charging process.
6	... wherein the one or more interruptions is the data services interruption , and the data services interruption originates from a failure in data transmission.

Claim Construction—Lexicography and Interruptions Ignoring Reference Numbers



Dr. Cameron—

“Q: Are you overlooking the reference number [506?] ...

[I]t’s referring to something specific in the figure.

“A: We already know at this point in the patent that Figure 5 is exemplary ... [so] **you read it without the 506.**” Ex-1021, 94:3-16 (emphasis added).

tion **506**. **Data services interruption 506** is a set of one or more interruptions caused by the inability for information to be exchanged with data services sources. Data service sources

override interruption **422**. **Manual override interruption 422** is an instruction that causes energy transaction execution engine **416** to terminate charging process **404**. User **420** may

504. **Preferences interruption 504** is a set of one or more interruptions that are caused from a violation of a user-specified preference. The user-specified preference may be, for

Claim Construction—Lexicography and Interruptions

Non-Limiting Specification



Federal Circuit—

“[A] court may not import limitations from the written description into the claims.” *Laitram*, 163 F.3d at 1347.



Dr. Cameron—

Event Patent Owner’s expert recognized that it would be “ill-advised” to “generalize [elements of a figure] across the entire patent, description, claims, [and] everything.”

tion **506**. Data services interruption **506** is a set of one or more interruptions caused by the inability for information to be exchanged with data services sources. Data service sources

override interruption **422**. Manual override interruption **422** is an instruction that causes energy transaction execution engine **416** to terminate charging process **404**. User **420** may

504. Preferences interruption **504** is a set of one or more interruptions that are caused from a violation of a user-specified preference. The user-specified preference may be, for

The terminology used herein is for the purpose of describing particular embodiments only and is **not intended to be limiting of the invention**. As used herein, the singular forms

Claim Construction—Lexicography and Interruptions

Note on Cameron Patent Definitions

(12) **United States Patent**
Cameron et al.

(10) Patent No.: **US 8,918,657 B2**
(45) Date of Patent: **Dec. 23, 2014**



DEFINITIONS

the following terms are used substantively herein, the accompanying definitions apply. These terms and definitions are presented without prejudice, and, consistent with the application, the right to redefine these terms via amendment during the prosecution of this application or any application claiming priority hereto is reserved. For the purpose of interpreting a claim of any patent that claims priority hereto, each definition in that patent functions as a clear and unambiguous disavowal of the subject matter outside of that definition.

(12) **United States Patent**
Ferro et al.

(10) Patent No.: **US 8,103,391 B2**
(45) Date of Patent: **Jan. 24, 2012**

response to receiving request **414**. Request **414** is a message signaling the start of charging process **404**. Request **414** is **416**. Response **418** is a message that may instruct energy transaction execution engine **416** to terminate charging process **404**. However, in the event that energy transaction interruption **506**. Data services interruption **506** is a set of one or more interruptions caused by the inability for information to be exchanged with data services sources. Data service sources override interruption **422**. Manual override interruption **422** is an instruction that causes energy transaction execution engine **416** to terminate charging process **404**. User **420** may **504**. Preferences interruption **504** is a set of one or more interruptions that are caused from a violation of a user-specified preference. The user-specified preference may be, for

Ex-1020, 9:53-19:42; '391 Patent, 12:3-4, 12:12-14, 13:38-40, 12:26-28, 13:22-24

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Claim Construction—Lexicography and Interruptions

Note on Cameron Patent Definitions



Dr. Cameron—

Regarding the Cameron Patent, Dr. Cameron indicated that “we decided to [include definitions] to make it clear to the reader ... how[] we were using certain terms.” Ex-1021, 132:3-13. He acknowledged the lack of such definitions in the ’391 Patent, suggesting that “the authors of the ’391 [P]atent decided to do it in **a different way**.” *Id.*, 131:2-17, 132:3-13 (emphasis added).



PTAB—

The Board found no “implied lexicography” where the expert “read[] portions of the specification and extrapolate[d].” *Resmed*, IPR2022-00994, Paper 68 at 30.



PTAB—

The Board found no lexicography and refused to “limit the scope of claim 1 by importing aspects of [an] embodiment into the claim.” *Yita*, IPR2023-00172, Paper 70 at 18-20.

Claim Construction

Data Services Interruption

Patent Owner's construction—

A data services interruption is an interruption “caused by the inability for information to be exchanged with ... **third party data sources.**”
Response at 20-22 (emphasis added).

Note—

The claims say nothing regarding data services interruptions requiring third-party data sources.

Claim	Limitation(s)
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6	... wherein the one or more interruptions is the data services interruption , and the data services interruption originates from a failure in data transmission.
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Federal Circuit—

“[If the patentee] wanted to limit the memory device to a single chip component, it could have expressly done so. **It did not**, and this court will not do so here.” *In re Rambus*, 694 F.3d at 47 (emphasis added).

Claim Construction

Data Services Interruption

Patent Owner's reasoning—

The '391 Patent describes data services interruptions 506 as being “caused by the inability for information to be exchanged with data services sources.”

The '391 Patent states that “[d]ata service sources are sources of data, such as, ... energy data services 308.”

The '391 Patent states that “[e]nergy data services 308 are a set of one or more third party data sources.”

tion 506. Data services interruption 506 is a set of one or more interruptions caused by the inability for information to be exchanged with data services sources. Data service sources are sources of data, such as, for example, energy data services 308 in FIG. 3. Data services interruption 506 may be caused

Energy data services 308 are a set of one or more third party data sources providing information relevant to the energy transaction. Energy data services 308 may include, without

Claim Construction—Data Services Interruption

Non-Limiting Specification

First—

Patent Owner relies on illustrative language specific to figure 3—an example (energy data services 308) from an example (data service sources) from an example (data services interruption 506). This language does not constrain the claims.

tion 506. Data services interruption 506 is a set of one or more interruptions caused by the inability for information to be exchanged with data services sources. Data service sources are sources of data, such as, for example, energy data services 308 in FIG. 3. Data services interruption 506 may be caused

Energy data services 308 are a set of one or more third party data sources providing information relevant to the energy transaction. Energy data services 308 may include, without

claimed elements as specifically claimed. The description of the present invention has been presented for purposes of illustration and description, but is not intended to be exhaustive or limited to the invention in the form disclosed. Many

Claim Construction—Data Services Interruption

Energy Data Services Interruptions

Second—

Patent Owner’s construction ignores the indication that energy data services 308 is just one example of a source of data.

Additionally, the claimed interruption is not limited to energy data services interruptions. This further calls into question Patent Owner’s attempt to limit the claim term based on the description of energy data services 308.

tion **506**. Data services interruption **506** is a set of one or more interruptions caused by the inability for information to be exchanged with data services sources. Data service sources are sources of data, **such as, for example,** energy data services **308** in FIG. 3. Data services interruption **506** may be caused

Claim	Limitation(s)
6	... wherein the one or more interruptions is the data services interruption, and the data services interruption originates from a failure in data transmission.

Claim Construction—Data Services Interruption Other Infrastructure Components

Third—

Patent Owner’s construction would exclude preferred embodiments. The “other components” depicted in Figure 3 include parties to the charging transaction, not just third parties.

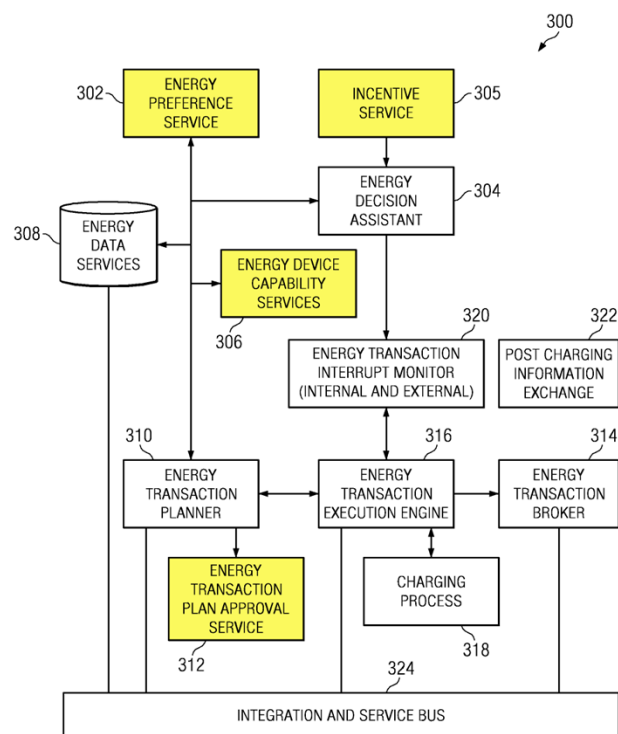
tion **506**. Data services interruption **506** is a set of one or more interruptions caused by the inability for information to be exchanged with data services sources. Data service sources are sources of data, such as, for example, energy data services **308** in FIG. 3. Data services interruption **506** may be caused by power outages, broken transmission lines, or **any other problems preventing a data service from exchanging information with other components of an electric vehicle transaction infrastructure.**



Federal Circuit—

“[A] claim construction that excludes the preferred embodiment is **rarely, if ever, correct**” *SynCor*, 709 F.3d at 1378-79 (emphasis added).

Claim Construction—Data Services Interruption Other Infrastructure Components



tion **506**. Data services interruption **506** is a set of one or more interruptions caused by the inability for information to be exchanged with data services sources. Data service sources are sources of data, such as, for example, energy data services **308** in FIG. 3. Data services interruption **506** may be caused by power outages, broken transmission lines, or **any other problems preventing a data service from exchanging information with other components of an electric vehicle transaction infrastructure.**



Federal Circuit—

“[A] claim construction that excludes the preferred embodiment is **rarely, if ever, correct**” *SynCor*, 709 F.3d at 1378-79 (emphasis added).

Claim Construction—Data Services Interruption Prosecution History Issue

Finally—

The prosecution history supports a broad reading of “data services interruption” because the Examiner read it as not requiring a third party. Inputs from a user are not generated by a third party.



Examiner McPartlin—

“Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Pellegrino et al. ... With respect to claim 1, Pellegrino et al. disclose ... a data services interruption (i.e.,) **manual inputs from user** via user interface.” Ex-1007 at 54-55 (emphasis added).



Federal Circuit—

“Because the prosecution histor[y] ... do[es] not support the narrow reading of the [claimed] limitation, we conclude that the district court erred in [narrowly] construing the [claimed] limitation.” *Cordis Corp.*, 339 F.3d at 1359-60 (relying on the patent examiner’s broader reading of the claim language and the patentee’s failure to dispute said reading).

Claim Construction

Manual Override Interruption

Patent Owner's construction—

A manual override interruption is an “**instruction** that causes energy transaction execution engine to terminate the charging process.” Response at 22-25 (emphasis added). And this requires more than merely opening or closing a switch.

Note—

The claims say nothing regarding manual override interruptions being instructions or requiring more than opening or closing a switch.

Claim	Limitation(s)
2	... wherein the one or more interruptions is a manual override interruption , and wherein the computer implemented method further comprises: responsive to receiving, from a user, the manual override interruption, terminating the charging process.

Response at 22-25; Reply at 8; '391 Patent,
16:60-63

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

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Claim Construction

Manual Override Interruption

Patent Owner's reasoning—

The '391 Patent describes manual override interruption 422 as being “an instruction that causes energy transaction execution engine 416 to terminate charging process 404.”

Also, Patent Owner's expert indicates that “instruction” means “an encoding of a series of operational steps specifying the details to be executed according to those operational steps.”

override interruption 422. Manual override interruption 422 is an instruction that causes energy transaction execution engine 416 to terminate charging process 404. User 420 may generate manual override interruption 422 by interacting with a user interface located at the charging station or on the electric vehicle. In addition, user 420 may generate manual

Claim Construction—Manual Override Interruption

Non-Limiting Specification

First—

Patent Owner relies on illustrative language specific to figure 4. This language does not constrain the claims.

override interruption 422. Manual override interruption 422 is an instruction that causes energy transaction execution engine 416 to terminate charging process 404. User 420 may generate manual override interruption 422 by interacting with a user interface located at the charging station or on the electric vehicle. In addition, user 420 may generate manual

The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the invention. As used herein, the singular forms

claimed elements as specifically claimed. The description of the present invention has been presented for purposes of illustration and description, but is not intended to be exhaustive or limited to the invention in the form disclosed. Many

Claim Construction—Manual Override Interruption Prosecution History Issue

Finally—

The prosecution history supports a broad reading of “manual override interruption” because the Examiner read it as not excluding the opening or closing of a switch.

“Any sort of input” includes switches.



Examiner McPartlin—

“Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Pellegrino et al. ... With respect to claim 2, ... the manual override interruption is provided by way of a user interface and can consist of **any sort of input** by the user.” Ex-1007 at 55 (emphasis added).



Federal Circuit—

“Because the prosecution histor[y] ... do[es] not support the narrow reading of the [claimed] limitation, we conclude that the district court erred in [narrowly] construing the [claimed] limitation.” *Cordis Corp.*, 339 F.3d at 1359-60 (relying on the patent examiner’s broader reading of the claim language and the patentee’s failure to dispute said reading).

Claim Construction

Preference Interruption

Patent Owner's construction—

A preference interruption is an interruption “caused from a violation of a **user-specified preference**.”
Response at 25-27 (emphasis added).

Note—

The claims say nothing regarding the preference interruption being selected by a user.

Claim	Limitation(s)
5	... wherein the one or more interruptions is the preference interruption , and the preference interruption is detected from a violation of a preference selected by a participant to the charging process .

Claim Construction

Preference Interruption

Patent Owner's reasoning—

The '391 Patent describes preference interruption 504 as being “caused from a violation of a user-specified preference.”

504. Preferences interruption 504 is a set of one or more interruptions that are caused from a violation of a user-specified preference. The user-specified preference may be, for

Claim Construction—Preference Interruption

Non-Limiting Specification

First—

Patent Owner relies on illustrative language specific to figure 5. This language does not constrain the claims.

504. Preferences interruption 504 is a set of one or more interruptions that are caused from a violation of a user-specified preference. The user-specified preference may be, for

The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the invention. As used herein, the singular forms

claimed elements as specifically claimed. The description of the present invention has been presented for purposes of illustration and description, but is not intended to be exhaustive or limited to the invention in the form disclosed. Many

Claim Construction—Preference Interruption

Other-Party-Selected Preferences

Second—

Patent Owner’s reading excludes preferences specified by “[o]ther parties,” the violation of which can also cause a preference interruption.



Dr. Cameron—

Patent Owner’s expert conceded this point, stating that “other parties” could refer to “the attendant,” “[t]he charging station, the charging facility,” “[t]he utility company,” and “[o]ther third parties.”

preference interruption 504. Other parties may also specify preferences, the violation of which results in identification of preference interruption 504. Preferences for the user or third parties may be set in an energy transaction plan or stored in a data storage device accessible to the energy transaction interrupt monitor.



Federal Circuit—

“[A] claim construction that excludes the preferred embodiment is **rarely, if ever, correct**” *SynCor*, 709 F.3d at 1378-79 (emphasis added).

Claim Construction—Preference Interruption

Participant-Selected Preferences

Third—

Not only does the specification describe preference selection by “other parties,” but the claims themselves cut against Patent Owner’s user-only construction. They allow for a participant to select the preference (as opposed to just a user).

Claim	Limitation(s)
5	... wherein the one or more interruptions is the preference interruption, and the preference interruption is detected from a violation of a preference selected by a participant to the charging process .
12	... wherein the one or more interruptions is the preference interruption, and the preference interruption is detected from a violation of a preference selected by a participant to the charging process .

Claim Construction—Preference Interruption Infringement Complaint Position

Finally—

Patent Owner's reading is inconsistent with its infringement position. In its complaint, Patent Owner indicated that a dynamic load management configuration would qualify as a preference interruption.

But this is not a user-specified preference. Rather, this preference is managed by firmware.

89. Defendant's EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App meet the Claim No. 8 element of "...wherein the one or more interruptions comprise at least one of a device capabilities interruption, a preference interruption, and a data services interruption..." Defendant's EV Tesla Charging Stations detect at least a device capabilities interruptions (such as a battery malfunction, over-temperature of a transformer etc.) as well as preference conditions (such as dynamic load management configurations, and/or a specific charge amount,) and upon information and belief, data services interruptions. *Id.* at 6; *See also Supercharger Support*, <https://www.tesla.com/support/supercharger> (last accessed July 20, 2023), attached as **Exhibit 14**.

Claim Construction

Identifying an Operational Parameter

Patent Owner's construction—

Identifying an operational parameter means “identifying an operational parameter before each charging transaction.” Additionally, operational parameters must be “changeable” and cannot include factory presets.

Note—

The claims say nothing regarding identification occurring before each charging transaction, not to mention requiring changeable parameters or excluding factory presets.

Claim	Limitation(s)
7	The computer implemented method of claim 1, wherein the one or more interruptions are detected by identifying an operational parameter from the set of operational parameters that conform to the set of predefined interrupt conditions.

Response and 33-34; Reply at 13-15; Sur-Reply at 13-14; '391 Patent, 17:17-20

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

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Claim Construction

Identifying an Operational Parameter

Patent Owner's reasoning—

The '391 Patent states that, “[d]uring the pre-charge phase of decision enablement, all parties are presented with the conditions governing the charging transaction.”

Also, Patent Owner's expert explained that a POSA would understand claim 7 as requiring the proposed construction.

The illustrative embodiments recognize that the charging transactions by which electric vehicles obtain electricity from an off-vehicle charging station to charge the electric vehicle requires a much more complete, flexible, and interoperable system governing all aspects of the charging transaction. Electric vehicle charging transactions can be divided into the pre-charge phase, the charge phase, and the post-charge phase. During the pre-charge phase of decision enablement, all parties are presented with the conditions governing the charging transaction. Electricity flows to the electric vehicle

Claim Construction—Identifying an Operational Parameter

Non-Limiting Specification

First—

Patent Owner relies on illustrative language. This language does not constrain the claims.

The **illustrative embodiments** recognize that the charging transactions by which electric vehicles obtain electricity from an off-vehicle charging station to charge the electric vehicle requires a much more complete, flexible, and interoperable system governing all aspects of the charging transaction. Electric vehicle charging transactions can be divided into the pre-charge phase, the charge phase, and the post-charge phase. During the pre-charge phase of decision enablement, all parties are presented with the conditions governing the charging transaction. Electricity flows to the electric vehicle claimed elements as specifically claimed. The description of the present invention has been presented for purposes of illustration and description, but is **not intended to be exhaustive or limited to the invention in the form disclosed**. Many

Claim Construction—Identifying an Operational Parameter Potentially Fixed Parameters

Second—

Patent Owner's reading excludes immutable operational parameters, as well as parameters that may continue to change during the charging process.

The '391 Patent offers examples of operational parameters 408, with no indication that these parameters are "changeable."

Operational parameters 408 may include, for example, prices of electricity, available incentives, data transmission speeds, connectivity of components to the electric vehicle transaction infrastructure, or deviations from an energy plan. Operational

Claim Construction—Identifying an Operational Parameter Prosecution History Issue

Finally—

The prosecution history supports a broad reading of “operational parameter” because the Examiner read it as including non-changeable parameters.

“[B]attery [and] vehicle type” are non-changeable parameters.

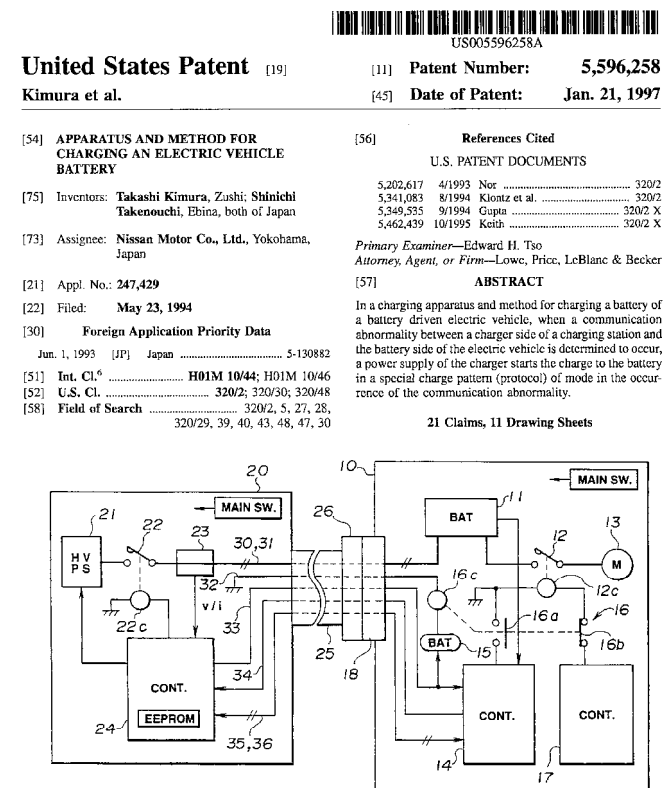


Examiner McPartlin—

“Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Pellegrino et al. ... With respect to claim 1, Pellegrino et al. disclose ... operational parameters (1110) of the charging process ... (the operational parameters may include **battery or vehicle type**, price for charging, account status and information ...)

The Prior Art

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE



46

The Prior Art Overview of Kimura

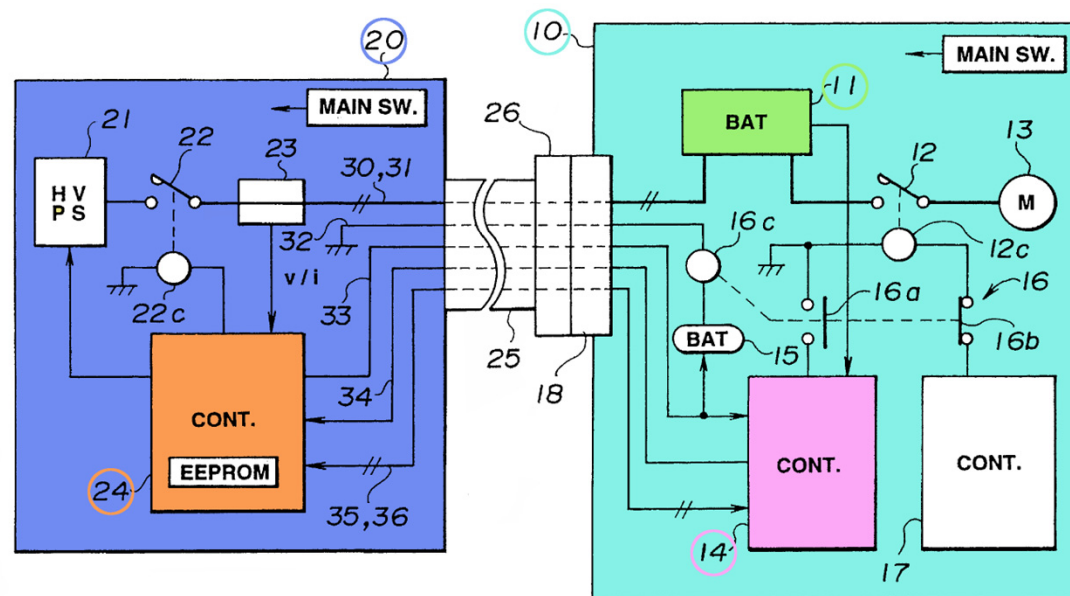
The Kimura reference—

“[A] charging apparatus and method of charging a battery of an electric car [vehicle].” Ex-1002, 1:11-13.

In Figure 1, Kimura illustrates using a **charger** and **charger controller** to charge the **battery** of an **electric vehicle** (which has a **battery controller**).

Note—

Patent Owner waived arguments regarding motivation and expectation. See Reply at 16-17.



The Prior Art—Kimura

Obviousness



Dr. MacCarley—

“In my opinion, ... [c]laims 1, 4-8, 11-15, and 18-20 are obvious over Kimura alone.”
Ex-1009 ¶ 42.

No standalone arguments—

Patent Owner’s arguments for independent claims 1, 8, 15, and 20 rest entirely on its claim construction position regarding “request” and “response” being messages (and not signals). Patent Owner’s arguments for dependent claims 4-7, 11-14, 18, and 19 likewise depend on claim construction positions. As discussed, these positions are incorrect. *Supra* Slides 10-45.

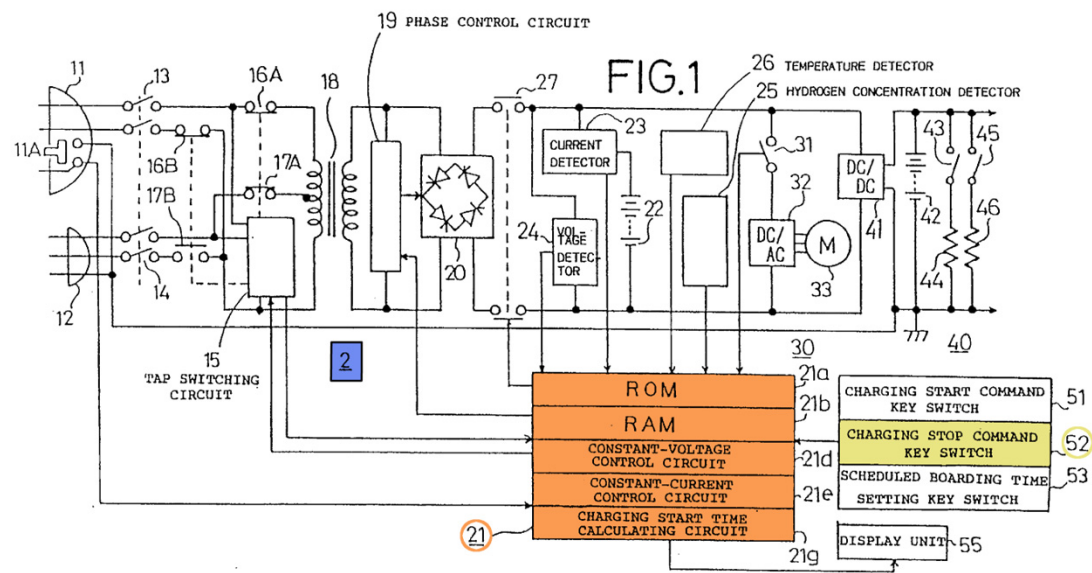
Patent Owner raises no standalone arguments against Kimura for these claims. *See* Reply at 15-16; Sur-Reply at 14. Accordingly, Kimura renders the claims obvious for the reasons Petitioner raised in its petition.

The Prior Art Overview of Hotta

The Hotta reference—

In Hotta, an **electric vehicle charger** includes a **controller** with a **charging stop command key switch**. Ex-1003, 3:30-31.

Hotta explains, “[i]f the charging stop command key switch 52 is turned on, then the constant-current operation is stopped.” *Id.*, 15:42-47.



The Prior Art—Kimura and Hotta

Obviousness



Dr. MacCarley—

“In my opinion, ... [c]laims 2, 5, 9, 12, and 16 are obvious over Kimura in view of Hotta.”
Ex-1009 ¶ 42.

Response at 27-38; see Reply at 15-16; Sur-
Reply at 14

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

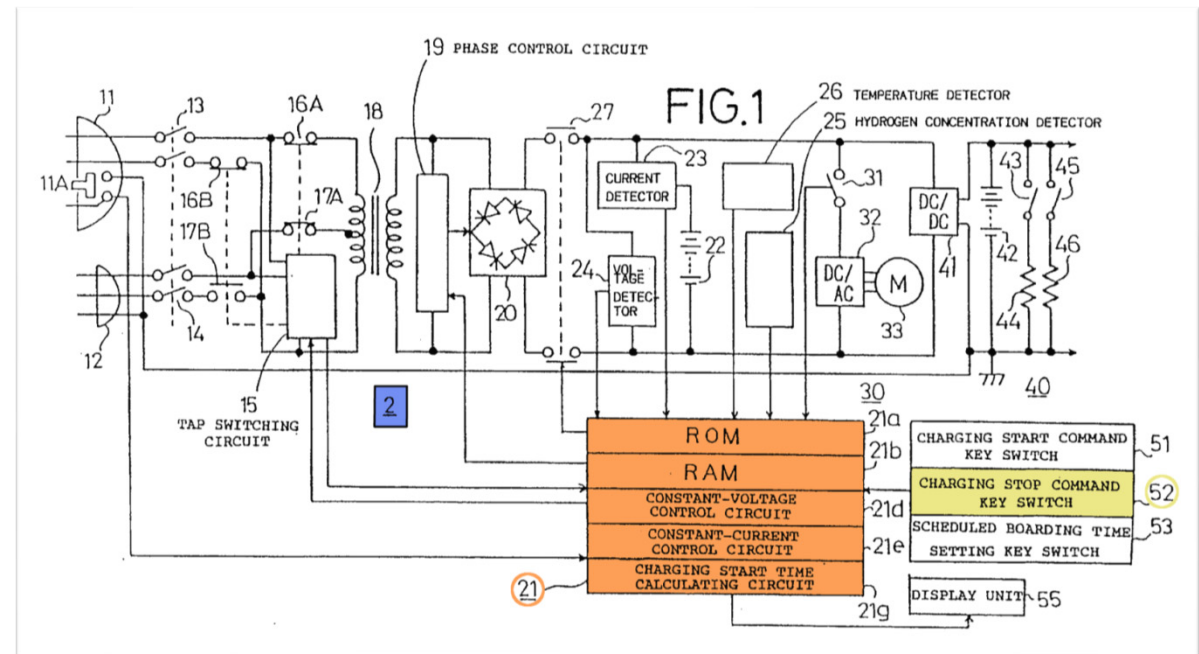
50

A PHOSITA would have found it obvious to combine Kimura and Hotta

PO's arguments:

- 1) “boilerplate” about “various changes and modifications” cannot provide motivation since Hotta discloses a two-stage charging subroutine.
- 2) A POSITA would not look outside the Kimura reference for the “main switch” implementation, since Kimura’s main switch is an on/off switch.
- 3) Not a simple substitution since Hotta uses two-stage charging subroutines.

Paper 27 (Sur-Reply) at 15-17

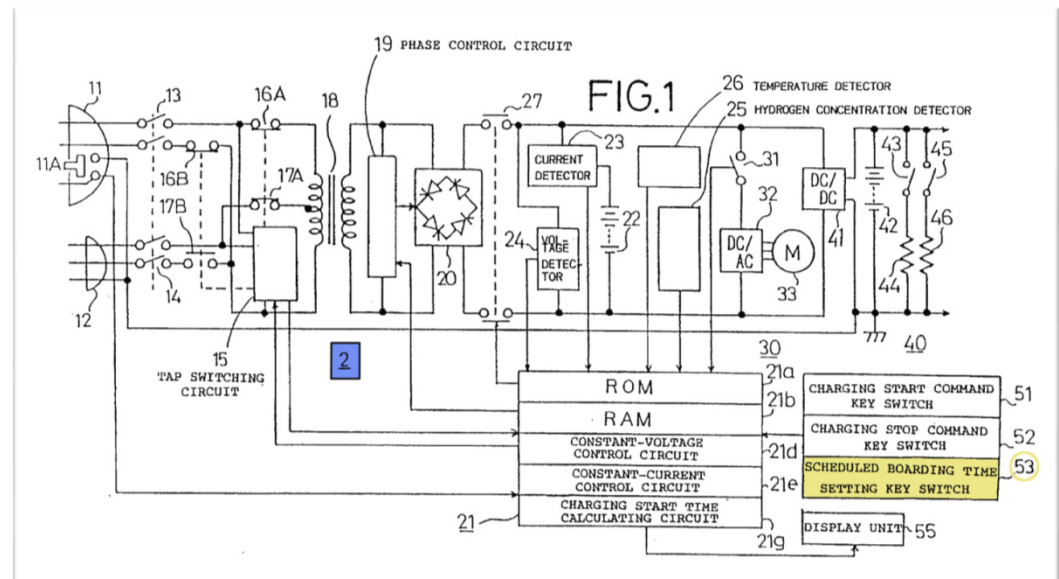


1

Hotta is not relied on for teachings related to the two-stage charging subroutines

“PO appears to protest that Hotta’s two-stage charging subroutines are purportedly ‘different from both the ’391 Patent and Kimura,’ which is immaterial as **Hotta is relied on for teachings related to functions of command keys, not for its charging routines.**”

Paper 26 (Reply Brief) at 16

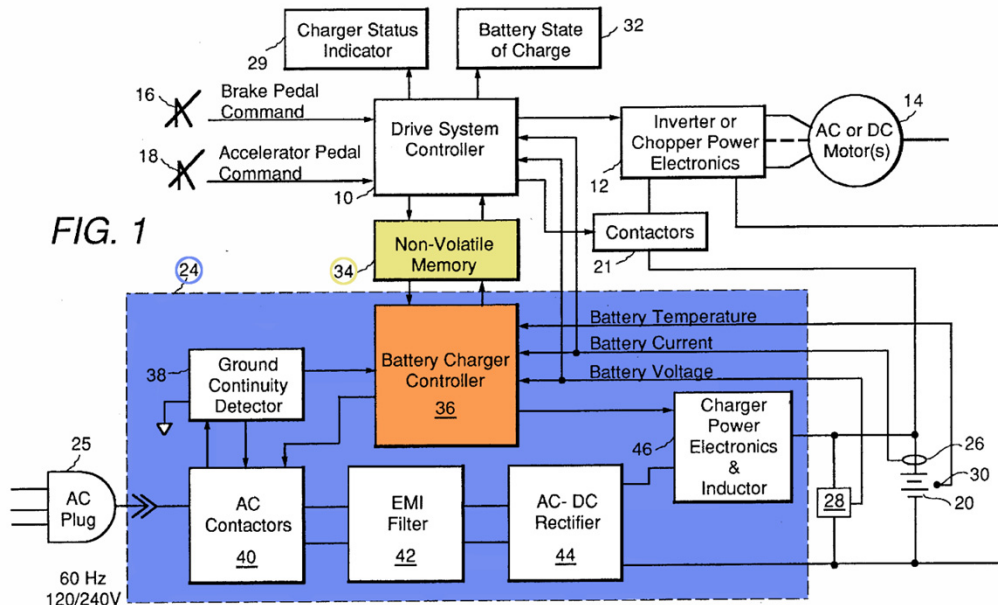


2

The alleged limitations of Kimura's "main switch" does not affect the motivation to combine

"Kimura's main switch is an on/off switch, and a POSITA would not need to seek additional implementation details for merely 'opening and closing [it],' as Dr. Cameron's un rebutted testimony shows."

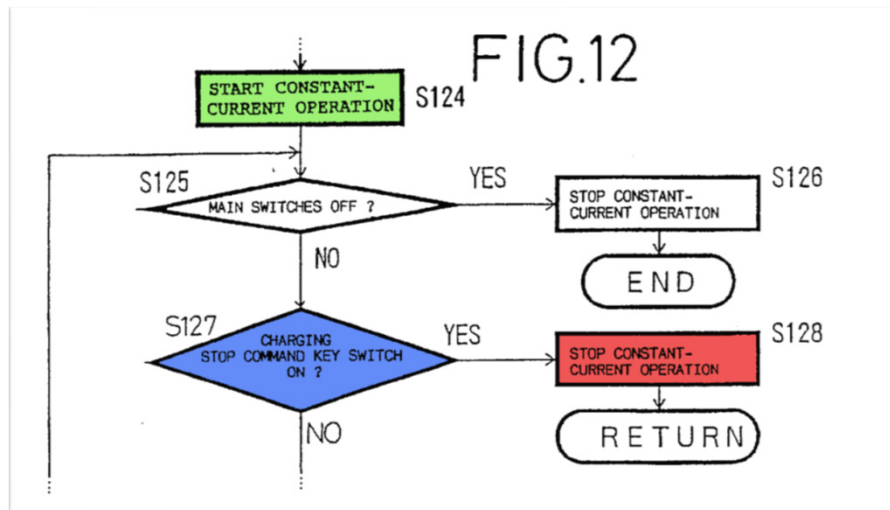
Paper 27 (POR) at 15-17



[Claim 2] Hotta discloses “a manual override interruption” that is can be received from a user to terminate the charging process

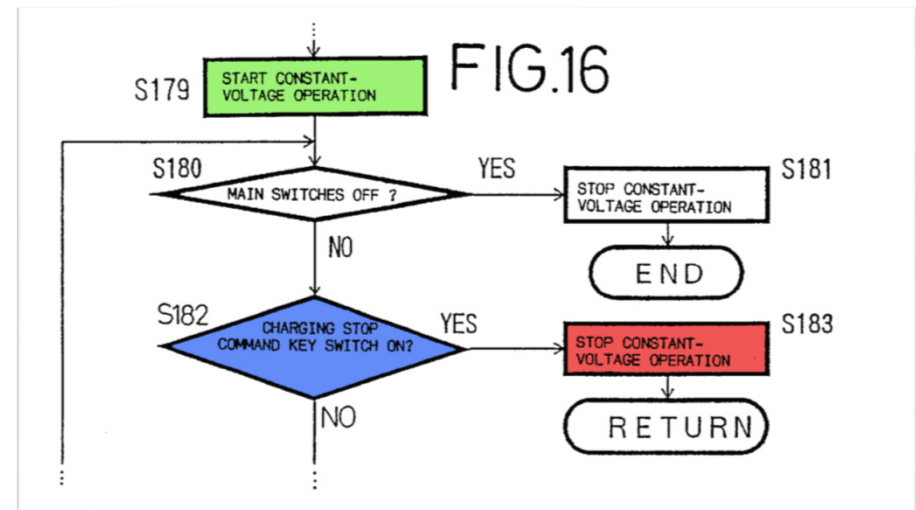
“Hotta indicates that charging stop command key switch 52 is ‘for stopping charging the storage battery’ and that this occurs when ‘the charging stop command key is manually pressed,’ e.g., by an operator/ user of a vehicle involved in the charging process.”

Paper 2 (Petition) at 56-57



Ex-1003, Fig. 1

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE



[Claim 2] PO incorrectly asks the Board to disregard the opinions of Petitioner's Expert on SAE J1772

“PO generally overlooks that the intrinsic record includes a reference to J1772 (Ex-1025 ¶0036), and specifically overlooks that the Petition did cite to Dr. MacCarley's discussion of J1772, so there was no improper incorporation.”

Paper 26 (Reply Brief) at 16

“[T]here is no prohibition on expert declarations that provide more discussion of claim limitations than a petition.”

Samsung v. Netlist, IPR2022-01427, Paper 48, 61

“Confirming my opinion as to the presence of a *request signaling the start of the charging process* in Kimura, standards pre-dating the '391 Patent (e.g., SAE J1772) demonstrate that a request signaling the start of the charging process was part of the common general knowledge for a POSA and would have been necessary in the design of the charging systems...”

Ex-1009 at ¶ 56



[Claim 5] PO incorrectly asks the Board to disregard the opinions of Petitioner's Expert on SAE J1772

PO's arguments:

- 1) In Hotta, the scheduled time for boarding and using the vehicle are input before the charging begins, i.e., not during the flow of electricity.
- 2) Hotta teaches meeting the preferences instead of failure to do so.

Paper 24 (POR) at 41-42

Reply Brief:

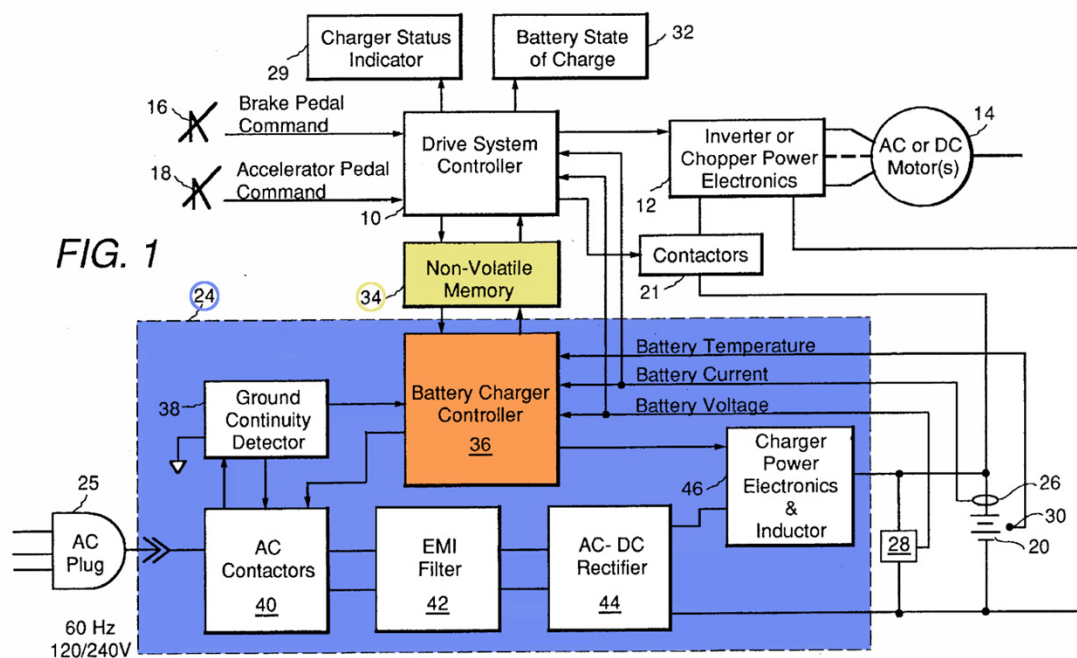
- 1) The Petition does not rely on Hotta as teaching interruptions during the flow of electricity for the Kimura-Hotta combination – only for teaching **user selection of a preference in the charging process**.
- 2) The scheduled Boarding time was not the only preference interruption identified in the Petition.

Paper 26 (Reply Brief) at 16

The Prior Art Overview of King

The King reference—

In King, a **charger** with a **battery charger controller** operates according to various operational parameters. Each of these parameters is stored in a **non-volatile memory**.



Petition at 61-63; Ex-1004, 4:66-5:1, 5:49-51,
fig. 1

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

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The Prior Art—Kimura and King

Obviousness



Dr. MacCarley—

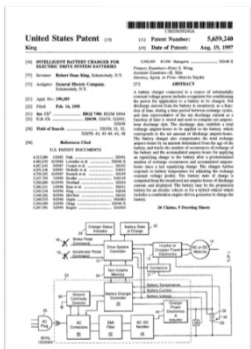
“In my opinion, ... [c]laims 3, 10, and 17 are obvious over Kimura in view of King.”
Ex-1009 ¶ 42.

Response at 27-38; see Reply at 15-16; Sur-
Reply at 14

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

58

PO's attack on Kimura-King



King

PO argues that the “measured parameters” in King have “nothing to do with monitoring and detecting interruptions.

Paper 24 (POR) at 44-45

Claim No.	Claim Limitation(s)
3, 10, 17	storing the set of operational parameters in a storage device.

Paper 24 (POR) at 44-45

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

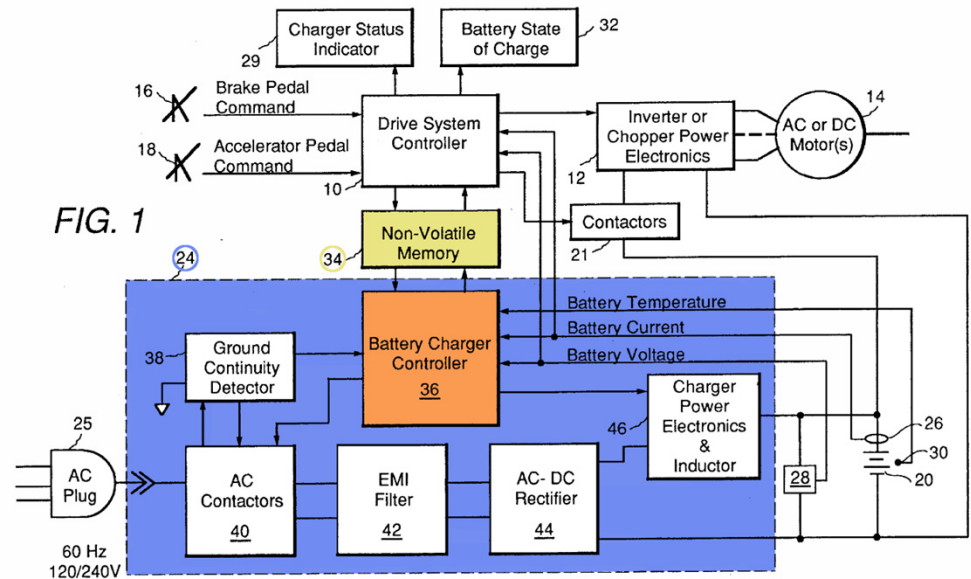
59

King is only Relied upon for the Teaching of Storing the Operation Parameters in Non-Volatile Memory



“[T]here was ample motivation for a POSA to simply replace Kimura’s EEPROM with King’s more generic, non-volatile memory 34 and to implement King’s teachings related to using this memory to store the operational parameters during a charging process.”

Ex-1009 at ¶ 168



Ex-1009 at ¶ 168

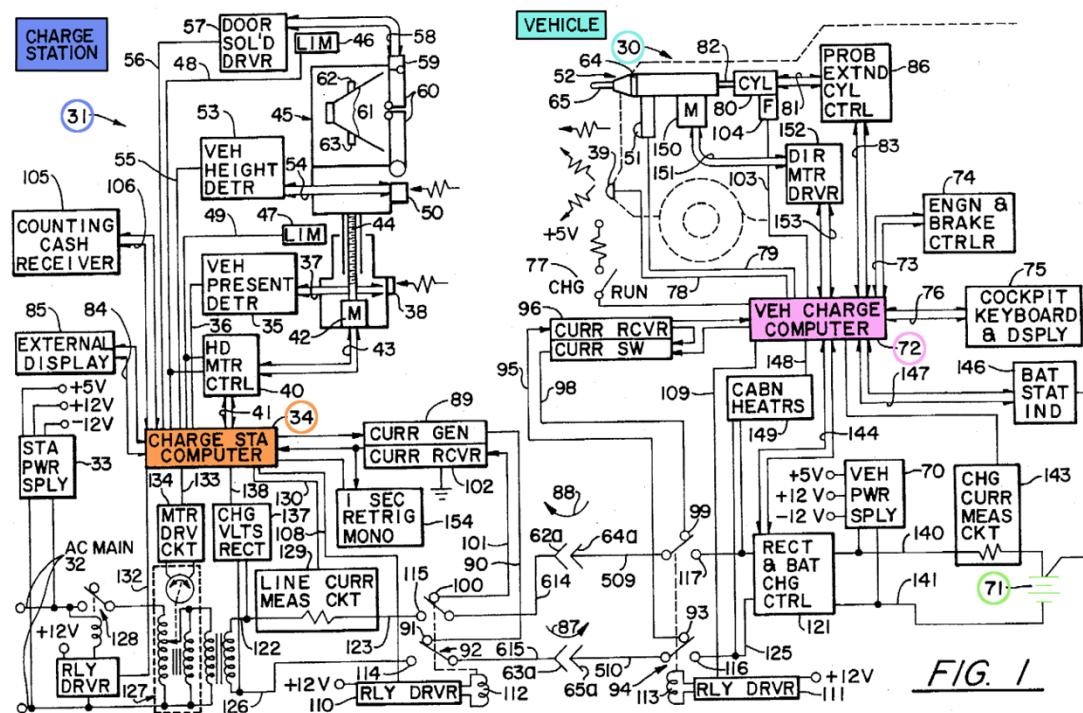
DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

60

The Prior Art Overview of Keith

The Keith reference—

In Keith, the charging process involves a **charge station** charging the **battery** of an **electric vehicle**. Ex-1005, 4:65-5:2. This process is implemented by **charge station controller** and **battery station controller**. *Id.* 7:32-40.



Petition at 63-64; Ex-1005, 4:65-5:2, 7:32-40,
fig. 1

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

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The Prior Art—Keith

Anticipation and Obviousness



Dr. MacCarley—

“In my opinion, ... [c]laims 1, 2, 4-9, 11-16, and 18-20 are anticipated by Keith. [Additionally, c]laims 3 and 8-19 are obvious over Keith alone.” Ex-1009 ¶ 42.



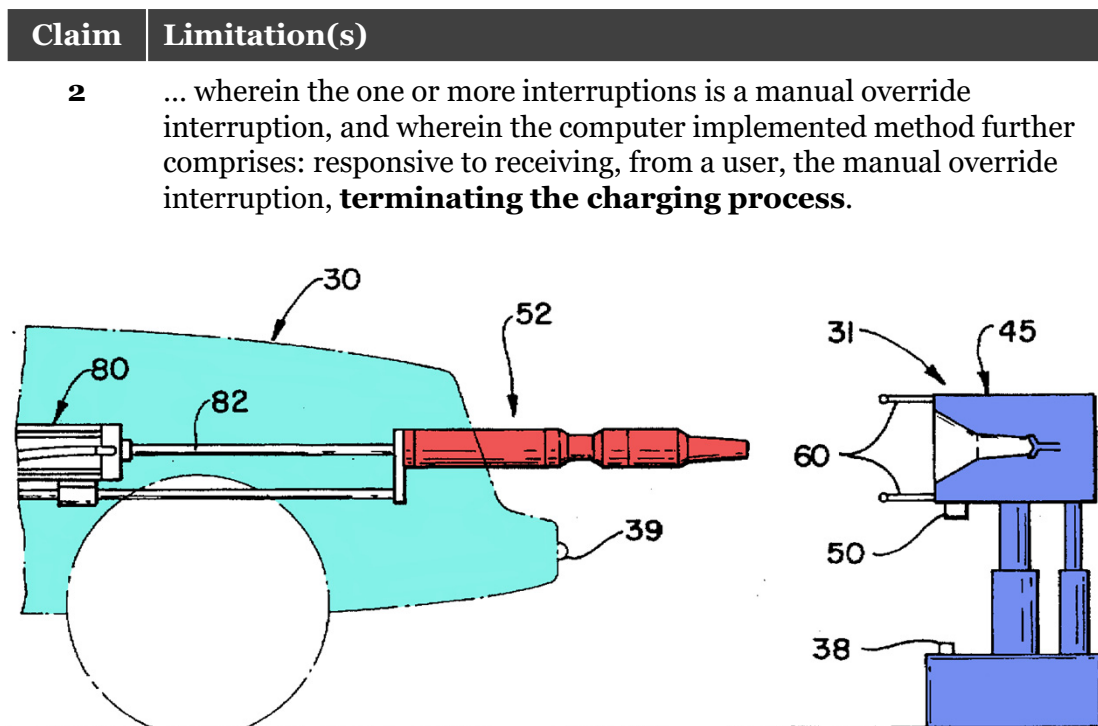
PTAB—

The Board held “**no proof of motivation is required** ... because [the prior art reference] expressly teaches [the] combination[.]” *Philip Morris*, IPR2020-00921, Paper 32 at 34 (emphasis added).

The Prior Art—Keith Claims 2, 9, and 16

Note—

The **vehicle** computer deenergizes the vehicle contact relay and retracts the **charging probe**. Ex-1005, 23:29-41. When the **charge station** computer determines that the probe is released, **termination** occurs. *Id.*



Petition at 69; Ex-1001, 16:60-63; Ex-1005, 23:29-41, fig. 19

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

63

The Prior Art—Keith

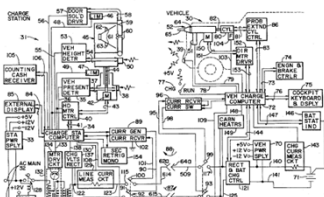
Claims 2, 9, and 16

Note—

“[C]harging process” includes more than just the mere flow of electricity.

Claim	Limitation(s)
2	... wherein the one or more interruptions is a manual override interruption, and wherein the computer implemented method further comprises: responsive to receiving, from a user, the manual override interruption, terminating the charging process.
	charging station. The activities of charging process 318 may include, for example, identification of parties and preferences, the authenticating data, storing data, analyzing data, or any other event or condition that is directly related to or incidental to the exchange of electricity. In the simplest form,

			
United States Patent			
Koith		[31] Patent Number:	5,996,367
		[22] Date of Patent:	Dec. 9, 1997
CLAIMING MATTERS OF ELECTRIC VEHICLES			
[41] Inventor: Arle K. Koith, Jr., 208 Box, Lind Spc., Calif. 92044		<i>Attorney, Agent, or Firm</i> J. P. FRYMAN	
[52] Int. Cl. No. H01M 3/00, H01M 50/00, H01M 50/02, H01M 50/04, H01M 50/06, H01M 50/08, H01M 50/10, H01M 50/12, H01M 50/14, H01M 50/16, H01M 50/18, H01M 50/20, H01M 50/22, H01M 50/24, H01M 50/26, H01M 50/28, H01M 50/30, H01M 50/32, H01M 50/34, H01M 50/36, H01M 50/38, H01M 50/40, H01M 50/42, H01M 50/44, H01M 50/46, H01M 50/48, H01M 50/50, H01M 50/52, H01M 50/54, H01M 50/56, H01M 50/58, H01M 50/60, H01M 50/62, H01M 50/64, H01M 50/66, H01M 50/68, H01M 50/70, H01M 50/72, H01M 50/74, H01M 50/76, H01M 50/78, H01M 50/80, H01M 50/82, H01M 50/84, H01M 50/86, H01M 50/88, H01M 50/90, H01M 50/92, H01M 50/94, H01M 50/96, H01M 50/98, H01M 50/100, H01M 50/102, H01M 50/104, H01M 50/106, H01M 50/108, H01M 50/110, H01M 50/112, H01M 50/114, H01M 50/116, H01M 50/118, H01M 50/120, H01M 50/122, H01M 50/124, H01M 50/126, H01M 50/128, H01M 50/130, H01M 50/132, H01M 50/134, H01M 50/136, H01M 50/138, H01M 50/140, H01M 50/142, H01M 50/144, H01M 50/146, H01M 50/148, H01M 50/150, H01M 50/152, H01M 50/154, H01M 50/156, H01M 50/158, H01M 50/160, H01M 50/162, H01M 50/164, H01M 50/166, H01M 50/168, H01M 50/170, H01M 50/172, H01M 50/174, H01M 50/176, H01M 50/178, H01M 50/180, H01M 50/182, H01M 50/184, H01M 50/186, H01M 50/188, H01M 50/190, H01M 50/192, H01M 50/194, H01M 50/196, H01M 50/198, H01M 50/200, H01M 50/202, H01M 50/204, H01M 50/206, H01M 50/208, H01M 50/210, H01M 50/212, H01M 50/214, H01M 50/216, H01M 50/218, H01M 50/220, H01M 50/222, H01M 50/224, H01M 50/226, H01M 50/228, H01M 50/230, H01M 50/232, H01M 50/234, H01M 50/236, H01M 50/238, H01M 50/240, H01M 50/242, H01M 50/244, H01M 50/246, H01M 50/248, H01M 50/250, H01M 50/252, H01M 50/254, H01M 50/256, H01M 50/258, H01M 50/260, H01M 50/262, H01M 50/264, H01M 50/266, H01M 50/268, H01M 50/270, H01M 50/272, H01M 50/274, H01M 50/276, H01M 50/278, H01M 50/280, H01M 50/282, H01M 50/284, H01M 50/286, H01M 50/288, H01M 50/290, H01M 50/292, H01M 50/294, H01M 50/296, H01M 50/298, H01M 50/300, H01M 50/302, H01M 50/304, H01M 50/306, H01M 50/308, H01M 50/310, H01M 50/312, H01M 50/314, H01M 50/316, H01M 50/318, H01M 50/320, H01M 50/322, H01M 50/324, H01M 50/326, H01M 50/328, H01M 50/330, H01M 50/332, H01M 50/334, H01M 50/336, H01M 50/338, H01M 50/340, H01M 50/342, H01M 50/344, H01M 50/346, H01M 50/348, H01M 50/350, H01M 50/352, H01M 50/354, H01M 50/356, H01M 50/358, H01M 50/360, H01M 50/362, H01M 50/364, H01M 50/366, H01M 50/368, H01M 50/370, H01M 50/372, H01M 50/374, H01M 50/376, H01M 50/378, H01M 50/380, H01M 50/382, H01M 50/384, H01M 50/386, H01M 50/388, H01M 50/390, H01M 50/392, H01M 50/394, H01M 50/396, H01M 50/398, H01M 50/400, H01M 50/402, H01M 50/404, H01M 50/406, H01M 50/408, H01M 50/410, H01M 50/412, H01M 50/414, H01M 50/416, H01M 50/418, H01M 50/420, H01M 50/422, H01M 50/424, H01M 50/426, H01M 50/428, H01M 50/430, H01M 50/432, H01M 50/434, H01M 50/436, H01M 50/438, H01M 50/440, H01M 50/442, H01M 50/444, H01M 50/446, H01M 50/448, H01M 50/450, H01M 50/452, H01M 50/454, H01M 50/456, H01M 50/458, H01M 50/460, H01M 50/462, H01M 50/464, H01M 50/466, H01M 50/468, H01M 50/470, H01M 50/472, H01M 50/474, H01M 50/476, H01M 50/478, H01M 50/480, H01M 50/482, H01M 50/484, H01M 50/486, H01M 50/488, H01M 50/490, H01M 50/492, H01M 50/494, H01M 50/496, H01M 50/498, H01M 50/500, H01M 50/502, H01M 50/504, H01M 50/506, H01M 50/508, H01M 50/510, H01M 50/512, H01M 50/514, H01M 50/516, H01M 50/518, H01M 50/520, H01M 50/522, H01M 50/524, H01M 50/526, H01M 50/528, H01M 50/530, H01M 50/532, H01M 50/534, H01M 50/536, H01M 50/538, H01M 50/540, H01M 50/542, H01M 50/544, H01M 50/546, H01M 50/548, H01M 50/550, H01M 50/552, H01M 50/554, H01M 50/556, H01M 50/558, H01M 50/560, H01M 50/562, H01M 50/564, H01M 50/566, H01M 50/568, H01M 50/570, H01M 50/572, H01M 50/574, H01M 50/576, H01M 50/578, H01M 50/580, H01M 50/582, H01M 50/584, H01M 50/586, H01M 50/588, H01M 50/590, H01M 50/592, H01M 50/594, H01M 50/596, H01M 50/598, H01M 5			



PO argues that Keith does not anticipate Claim 2 because:

- a) Physically moving a charge/run switch is not the same as generating an instruction.
- b) Keith's "suitable keyboard input through the cockpit keyboard" is not an instruction.
- c) Keith does not disclose that switching a charge/run into the open position causes ETEE to terminate charging.

Paper 24 (POR) at 46-47

Claim No.	Claim Limitation(s)
2[A]	wherein the one or more interruptions is a manual override interruption, and wherein the computer implemented method further comprises:
2[B]	responsive to receiving, from a user, the manual override interruption, terminating the charging process

Paper 24 (POR) at 46-47

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

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PO's attacks on Claim 2 are Meritless

1

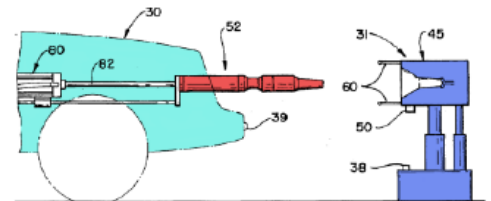
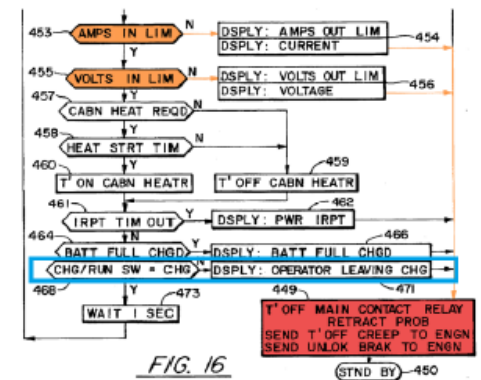
PO's two leading points are based on erroneous claim construction.

2

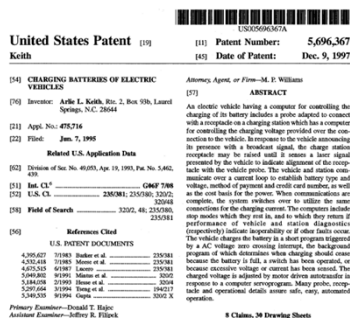
PO's relies on a faulty premise that *the charging process and the flow of electricity* are the same thing.

3

Keith does not disclose that transferring a charge/run switch into the open position causes *ETEE* to terminate charging.



PO's attack on Keith for Dependent Claim 5



Petitioner's argument fails because even assuming that charging the battery until the cash deposit is exhausted is a preference, stopping the charging process when the cash deposit is exhausted *meets* that preference instead of violating it.

Paper 24 (POR) at 53-54

Claim No.	Claim Limitation(s)
5	The computer implemented method of claim 1, wherein the one or more interruptions is the preference interruption, and the preference interruption is detected from a violation of a preference selected by a participant to the charging process.

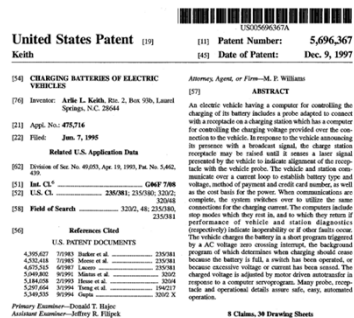
Keith

Paper 24 (POR) at 46-47

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

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PO's attack on Claim 5 are Meritless



One preference interruption in Keith involves exhaustion of the cash deposited by the user for charging. Ex-1005, 22:27-28. This is a preference selected by a participant to the charging process. Keith explains, “the operator [of the vehicle 30] ... deposit[s] cash into a counting cash receiver” and “[t]he charge ... continue[s] until ... the credit established by the counting cash receiver 105 is exhausted.”

Paper 2 (Petition) at 84

The POR correctly acknowledges the Petition’s explanation that “[o]ne preference interruption in Keith involves exhaustion of the cash deposited by the user for charging,” but PO then narrows the example preference to only “charging the battery until the cash deposit is exhausted.” POR 53-54. **That was not the Petition’s argument.** Instead, the example preference is that the **user does not want to incur fees beyond their initial cash deposit, which involves monitoring for exhaustion of the cash deposited as in Keith.** And this avoidance of extra fees is just like the example of a preference in the ’391 patent, e.g., “a user may specify a preference for a threshold cost for charging an electric vehicle.”

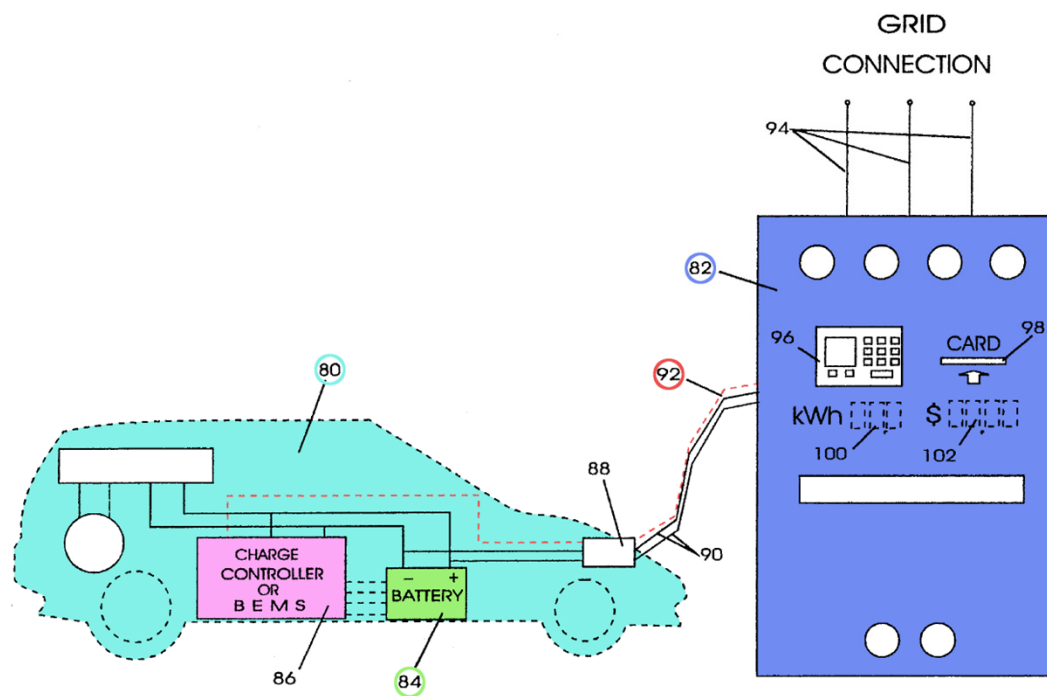
Paper 26 (Reply) at 19

Keith

The Prior Art Overview of Nor

The Nor reference—

In Nor, a data services interruption occurs when the **battery charge controller** of the **electric vehicle** fails to communicate with the **charging station**. Ex-1006, 4:52-63.



The Prior Art—Keith and Nor

Obviousness



Dr. MacCarley—

“In my opinion, ... [c]laims 6 and 13 are obvious over Keith in view of Nor.” Ex-1009 ¶ 42.

Response at 27-38; see Reply at 15-16; Sur-
Reply at 14

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

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Witness Credibility

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

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Witness Credibility

Dr. MacCarley's Experience



Dr. MacCarley—

“I received a Bachelor of Science (B.S.) in Engineering and a Master of Science (M.S.) in Electrical Engineering from the University of California, Los Angeles Thereafter, I earned a Doctor of Philosophy (Ph.D.) in Electrical Engineering from Purdue University in 1987, with a specialty in **Computer-Based Control Systems**. While at Purdue, I was the recipient of the David Ross Fellowship for doctoral study and focused my research on microprocessor-based control systems and indirect sensing methods for **automotive applications**. I am currently an Emeritus Professor of Electrical and Computer Engineering at the California Polytechnic State University (Cal Poly) I served on the faculty of the California Polytechnic College of Engineering from 1988 to 2019, receiving tenure in 1994. Since 2019, I have continued to teach electronics, control systems, and **automotive engineering** courses part time at Cal Poly in addition to consulting in forensic **automotive electronics**. I also continue to teach mechanical engineering and electrical engineering courses as part of the International Summer School Program at the Munich University of Applied Sciences in München, Germany, as I have done every summer since 2014.”
Ex-1009 ¶¶ 7-8 (emphasis added).

Witness Credibility

Dr. MacCarley's Experience



Dr. MacCarley—

“I have published **95 technical papers and articles** in refereed journals, in conference proceedings, and as book chapters, **all in the field of automotive and transportation electronics and control systems**. My research activities have focused on electric vehicle power and control systems, as well as indirect sensing methods for low-emission engine control. ... Among my funded research projects was a feasibility study and a preliminary design of **automated battery exchange and charging systems**, resulting in two journal papers that have been recognized among the most downloaded publications by Research Gate and LinkedIn: (1) ‘Review and Assessment of Battery Interchange Methods for Electric Vehicles,’ Proc. SAE Future Car Conference 2000, Society of Automotive Engineers, Washington, DC. January 2000 and (2) ‘Battery Interchange Alternatives to In-Vehicle Charging: Technical, Safety and Economic Considerations,’ Proc. FISITA 2000 World Automotive Congress, Seoul, Korea, June 2000.” Ex-1009 ¶¶ 12-13 (emphasis added).

Witness Credibility

Dr. MacCarley Credibility

Patent Owner's position—

“Dr. MacCarley’s testimony should be given little—if any—weight due to bias because he has received material support for his academic activities and other benefits from Tesla—Petitioner in this IPR.”



Dr. MacCarley—

“My compensation is **not contingent** on the outcome of the IPR or on the substance of my opinions. I have **no financial interest** in the Petitioner or the Patent Owner.” Ex-1009 ¶¶ 4-5 (emphasis added).

“Q: Do you recall receiving any other type of support from Tesla? ... A: **They didn’t give us money**, nor did they offer to give us money.” Ex-2007, 79:7-8, 81:22-23 (emphasis added).



PTAB—

Even though the patent owner’s expert was **a former member of patent owner’s board**, the Board found that the witness was credible because he testified under oath and subject to cross examination. XY, IPR2018-00250, Paper 35 at 10.

Response at 70-71; Ex-1009 ¶¶ 4-5; Ex-2007, 79:7-8, 81:22-23; Reply at 16 n. 6.

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

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Patent Owner's Motions

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner

v.

GRAPHITE CHARGING COMPANY, LLC,
Patent Owner

Case No. IPR2024-00387
U.S. Patent No. 8,103,391

PATENT OWNER'S MOTION TO EXCLUDE

Mail Stop PATENT BOARD
Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
Submitted Electronically via PTAB E2E

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE

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Patent Owner's Motions

Legal Standard



Federal Regulations—

All relevant evidence is generally admissible. 37 C.F.R. §§ 42.62, 351.10(a). When a party believes certain evidence is inadmissible, the party can move to exclude the evidence. *Id.* § 42.64(c).

However, the moving party bears the burden of proving the evidence is irrelevant or otherwise inadmissible. *Id.* § 42.20(c).

Motion to Exclude

Overview of the Motion

Patent Owner's position—

The Board should exclude the SAE J1772 Standard (Ex-1011) and U.S. Patent No. 8,918,657 (Ex-1020; “Cameron Patent”) in their entirety. Additionally, the Board should exclude portions of other documents that pertain to these two exhibits.

For the SAE J1772 Standard—

Patent Owner argues that the standard should be excluded because (i) it is unauthenticated, (ii) it is hearsay, (iii) it is irrelevant, and (iv) the petition relies on it to a lesser extent than the declaration does.

For the Cameron Patent—

Patent Owner argues that the patent should be excluded because (i) it is unauthenticated, (ii) it is “potentially hearsay,” and (iii) it is irrelevant.

Motion to Exclude SAE J1772 Standard

For the SAE J1772 Standard—

Patent Owner argues that the standard should be excluded because (i) it is **unauthenticated**, (ii) it is hearsay, (iii) it is irrelevant, and (iv) the petition relies on it to a lesser extent than the declaration does.

Regarding Authentication—

The standard is authentic. Petitioner’s expert repeatedly cites to the standard, confirming it that is what it purports to be. Additionally, the standard satisfies the authentication requirement as an ancient document. *See* Fed. R. Evid. 901(b)(8).



Federal Rules—

Evidence satisfies the authentication requirement if it (i) “is in a condition that creates no suspicion about its authenticity,” (ii) “was in a place where ... it would likely be,” and (iii) “is at least 20 years old.” Fed. R. Evid. 901(b)(8).



Dr. MacCarley—

“[T]he J1772 standard ... is Ex-1011.” *See also* Ex-1009 ¶¶ 56, 68, 269, and 270 (citing various parts of the standard).

Motion to Exclude SAE J1772 Standard

For the SAE J1772 Standard—

Patent Owner argues that the standard should be excluded because (i) it is unauthenticated, (ii) it is **hearsay**, (iii) it is irrelevant, and (iv) the petition relies on it to a lesser extent than the declaration does.

Regarding Hearsay—

The standard is not hearsay because it is not offered as evidence of automotive industry standards. Rather, Petitioner and its expert cite the standard as corroborating evidence of a POSA's knowledge. Even if it were hearsay, the standard would still be admissible as a compilation generally relied on by people in the automotive industry. Fed. R. Evid. 802, 803(17).



Federal Rules—

Hearsay is “a statement offer[ed] to prove the truth of the matter asserted in the statement.” Fed. R. Evid. 801(c).



PTAB—

The Board found that an industry standard satisfies the hearsay exception under Rule 803(17). *Toyota Motor Corp.*, IPR2022-01130, Paper 41, at 16.

Motion to Exclude SAE J1772 Standard

For the SAE J1772 Standard—

Patent Owner argues that the standard should be excluded because (i) it is unauthenticated, (ii) it is hearsay, (iii) it is **irrelevant**, and (iv) the petition relies on it to a lesser extent than the declaration does.

Regarding Relevance—

The standard is relevant because it informs the question of a POSA's knowledge and provides corroborating support for a POSA's motivation to combine various elements from the prior art.



Dr. Cameron—

Patent Owner's expert confirmed that a POSA would not only be aware of regulations in their industry but would strive to adhere to them, as well.



Dr. MacCarley—

“[The standard] confirms the existence of the motivations discussed [for combining Keith and Nor,] as remaining standards[-]compliant also would have guided a POSA to the use of [a particular feature], as taught by Nor.”

Motion to Exclude SAE J1772 Standard

For the SAE J1772 Standard—

Patent Owner argues that the standard should be excluded because (i) it is unauthenticated, (ii) it is hearsay, (iii) it is **irrelevant**, and (iv) the petition relies on it to a lesser extent than the declaration does.

Regarding Relevance—

Notably, the intrinsic record of the '391 Patent also suggests general knowledge of the standard. During prosecution, the patentee cited US 2009/177580 (“Lowenthal”) in an IDS. And Lowenthal repeatedly indicates that its invention is compatible with the standard.

(19) United States

(12) Patent Application Publication Lowenthal et al.

[0036] The Smartlet™ 110 comprises an electrical receptacle 112 and indicator lights 114. Alternatively, the indicator lights 114 may be replaced with a display. The electrical receptor 112 and the electrical connector 152 are configured to make an electrical connection allowing safe flow of electrical power between the Smartlet™ 110 and the electrical vehicle 150. Examples of suitable receptacles are those conforming to the NEMA (National Electrical Manufacturers Association) standards 5-15, 5-20, 14-50 and SAE (Society of Automotive Engineers) standard J1772. Although, other receptacles will be used for systems outside the United States which operate at voltages other than 110V (for example 220V) and which are required to meet different standards. In preferred embodiments the electrical receptacle 112 has a cover. The cover is lockable and is released by the Smartlet™ 110 upon receipt of a request for charging of an electrical vehicle 150 by the electric vehicle operator 160. This request may be made by the mobile communication device 162, as described above.

(10) Pub. No.: US 2009/0177580 A1
(43) Pub. Date: Jul. 9, 2009

[0044] The electrical cable 116 and vehicle receptacle 154 are configured to make an electrical connection allowing safe flow of electrical power between the Smartlet™ 110 and the electrical vehicle 150. Examples of suitable receptacles are those conforming to the NEMA (National Electrical Manufacturers Association) standards 5-15, 5-20, 14-50. Furthermore, examples of suitable receptacles and cables are those conforming to SAE (Society of Automotive Engineers) standard J1772. Although, other receptacles will be used for systems outside the United States which operate at voltages other than 110V (for example 220V) and which are required to meet different standards. The electrical cable 116 may be lockable to the Smartlet 110, and is released on instructions from the payment station 135, thus allowing the vehicle operator 160 to connect the electric vehicle 150 to the Smartlet™ 110 with the electrical cable 116.

Motion to Exclude SAE J1772 Standard

For the SAE J1772 Standard—

Patent Owner argues that the standard should be excluded because (i) it is unauthenticated, (ii) it is hearsay, (iii) it is irrelevant, and (iv) the petition **relies** on it to a lesser extent than the declaration does.

Regarding Reliance—

The petition properly cites to the standard and discussions thereof found in the declaration.

Additionally, Petitioner's expert providing the standard as further factual support for his opinions is no basis for exclusion.



Federal Regulations—

The Federal Regulations encourage expert testimony that “discloses the underlying facts or data [for an] opinion.” 37 C.F.R. § 42.65(a).



PTAB—

The Board gave little weight to expert testimony that “merely offered conclusory opinions without underlying factual support.” *Bytemark, Inc.*, IPR2022-00624, Paper 12, at 5.

Motion to Exclude Cameron Patent

For the Cameron Patent—

Patent Owner argues that the patent should be excluded because (i) it is unauthenticated, (ii) it is “potentially hearsay,” and (iii) it is irrelevant.

Note—

In arguing for exclusion of the Cameron Patent, Patent Owner does little more than repeat the objection it made following the introduction of the patent at the deposition of Dr. Cameron, its expert.

Patent Owner does not explain why the patent should be excluded and thus fails to meet its burden. It also falls short for substantive reasons.



PTAB—

“A motion to exclude must state why the evidence is inadmissible ... and **explain** the objection.” *Veeam Software Corp.*, IPR2013-00150, Paper 54 at 32-33 (emphasis added).

Motion to Exclude Cameron Patent

For the Cameron Patent—

Patent Owner argues that the patent should be excluded because (i) it is **unauthenticated**, (ii) it is “potentially hearsay,” and (iii) it is irrelevant.



Federal Rules—

“The following items of evidence ... require no extrinsic evidence of authenticity in order to be admitted: Official Publications. A book, pamphlet, or other publication purporting to be issued by a public authority.” Fed. R. Evid. 902(5).



Federal Regulations—

“Certification is not necessary as a condition to admissibility when the evidence to be submitted is a record of the [Patent] Office to which all parties have access.” 37 C.F.R. § 42.61.

Regarding Authentication—

The patent is self-authenticating because it is an official publication. Moreover, certification is unnecessary because the patent is a record of the Patent Office, and both parties have access to it.

Motion to Exclude Cameron Patent

For the Cameron Patent—

Patent Owner argues that the patent should be excluded because (i) it is unauthenticated, (ii) it is “potentially **hearsay**,” and (iii) it is irrelevant.

Regarding Hearsay—

The patent is not hearsay because it is not offered as evidence of the invention detailed therein. Rather, Petitioner offers the patent as highlighting an inconsistency in Patent Owner’s expert’s understanding of lexicography. *Supra* Slide 22.



Federal Rules—

Hearsay is “a statement offer[ed] to prove the truth of the matter asserted in the statement.” Fed. R. Evid. 801(c).

Motion to Exclude Cameron Patent

For the Cameron Patent—

Patent Owner argues that the patent should be excluded because (i) it is unauthenticated, (ii) it is “potentially hearsay,” and (iii) it is **irrelevant**.

Regarding Relevance—

The patent is relevant because it highlights an inconsistency in Patent Owner’s expert’s understanding of lexicography. *Supra* Slide 22.

Additionally, the reply was Petitioner’s earliest opportunity to address the inconsistency as it was not introduced until Patent Owner’s response. Patent Owner therefore timely submitted the patent as reply evidence.

Motion to Exclude Other Documents

For the Other Documents—

Patent Owner argues that portions of other documents that pertain to the SAE J1772 Standard or Cameron Patent should be excluded because they pertain to supposedly inadmissible evidence.

Regarding Admissibility—

The portions of other documents that pertain to the SAE J1772 Standard or Cameron Patent are admissible because the standard and patent are themselves admissible.

Even if inadmissible, the portions should still be presented to the Board because their probative value substantially outweighs any prejudicial effect they might have. *RTI Surgical, Inc.*, IPR2019-00571, Paper 75 at 7-9. As a non-jury tribunal with technical and administrative expertise, the Board is well-positioned to determine and assign the appropriate weight to the portions without danger of unfair prejudice, confusion, or being misled. *See Google LLC*, IPR2019-00730, Paper 72 at 30.

Motion to Strike

Overview of the Motion

Patent Owner's position—

The Board should strike U.S. Patent No. 8,918,657 (Ex-1020; “Cameron Patent”), the excerpt from *Wiley Electrical and Electronics Engineering Dictionary* (Ex-1022; “Wiley Dictionary”), the excerpt from *The Authoritative Dictionary of IEEE Standard Terms* (Ex-1023; “IEEE Dictionary”), the *Supercharger Support* page (Ex-1024), and U.S. Patent App. Pub. No. 2009/017780 (Ex-1025; “Lowenthal”) in their entirety. Additionally, the Board should strike portions of the Reply (Paper 26) relating to Exhibits 1020 through 1024.

Motion to Strike “Opportunity to Respond”



Federal Circuit—

The Court vacated and remanded IPR decisions, holding that “the Board’s refusal to consider **new arguments and evidence** was erroneous.” *Axonics, Inc. v. Medtronic, Inc.*, 75 F.4th 1374, 1381 (Fed. Cir. 2023) (emphasis added). In particular, the Court held that the Board “must give a petitioner **an opportunity to respond to [a] new [claim] construction**” and “[i]n particular, the petitioner must be afforded a reasonable opportunity in reply to present argument and evidence under that new construction.” *Id.* (emphasis added).

Motion to Strike Motion is Duplicative



PTAB—

“Many of the documents listed in Patent Owner’s email already are the subject of Patent Owner’s Motion to Exclude [Paper 32] The motion [to strike] authorized by this email shall contain **no duplication**, and [it] is only to address matters not already the subject of the previously filed motion to exclude.” Email from Board (Apr. 25, 2025 at 10:41 AM PT) (emphasis added).

Note—

Notwithstanding explicit instructions from the Board, Patent Owner included the Cameron Patent in both its motion to exclude and its motion to strike.

Motion to Strike Motion is Untimely



Trial Practice Guide—

“Generally, authorization to file a motion to strike should be requested **within one week** of the allegedly improper submission[s].” Trial Practice Guide at 81 (emphasis added).

Note—

Petitioner introduced the evidence at issue in its Reply, which was filed on January 31, 2025. Accordingly, Patent Owner’s motion was filed more than **two months too late**—on April 30, 2025.

Conclusion

DEMONSTRATIVE EXHIBIT—NOT EVIDENCE



US008103391B2

(12) **United States Patent**
Ferro et al.

(54) **SYSTEM FOR DETECTING INTERRUPT CONDITIONS DURING AN ELECTRIC VEHICLE CHARGING PROCESS**

(75) Inventors: **Erica Huefner Ferro**, Boulder, CO (US); **Mark William Treholt**, Aurora, CO (US); **Paul Strickland**, Round Rock, TX (US)

(73) Assignee: **International Business Machines Corporation**, Armonk, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 667 days.

(21) Appl. No.: **12/194,325**

(22) Filed: **Aug. 19, 2008**

(65) **Prior Publication Data**
US 2010/0049396 A1 Feb. 25, 2010

(51) **Int. Cl.**
G06F 7/00 (2006.01)
G06F 19/00 (2011.01)

(52) **U.S. Cl.** 701/1; 701/33; 701/123

(58) **Field of Classification Search** 701/1, 33, 701/123
See application file for complete search history.

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(57) **ABSTRACT**
Illustrative embodiments disclose managing a charging process of an electric vehicle. Begin by monitoring a set of operational parameters of the charging process during the flow of electricity for one or more interruptions in response to receiving, from an energy transaction execution engine, a request signaling the start of the charging process. The process then detects the one or more interruptions during the flow of electricity from the set of operational parameters, which conform to a set of predefined interrupt conditions. In one embodiment, the one or more interruptions include at least one of a device capability interruption, a preference interruption, and a data services interruption. The process sends a response to the energy transaction execution engine to terminate the charging transaction in response to detecting the one or more interruptions.

20 Claims, 6 Drawing Sheets

