IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

MENTONE SOLUTIONS LLC,	§	
	§	
Plaintiff,	§	Case No: 1:19-cv-10211
	§	
vs.	§	PATENT CASE
	§	
GENERAL ELECTRIC COMPANY	§	JURY TRIAL DEMANDED
	§	
Defendant.	§	
	§	

COMPLAINT FOR INFRINGEMENT OF PATENT

Plaintiff Mentone Solutions LLC ("Plaintiff" or "Mentone") files this Complaint against General Electric Company ("Defendant" or "GE") for infringement of United States Patent No. 6,952,413 (hereinafter "the '413 Patent").

PARTIES AND JURISDICTION

1. This is an action for patent infringement under Title 35 of the United States Code. Plaintiff is seeking injunctive relief as well as damages.

2. Jurisdiction is proper in this Court pursuant to 28 U.S.C. §§ 1331 (Federal Question) and 1338(a) (Patents) because this is a civil action for patent infringement arising under the United States patent statutes.

3. Plaintiff is a Texas limited liability company with its office address at 15922 Eldorado Pkwy, Suite 500-1534, Frisco, Texas 75035.

4. On information and belief, Defendant is a Massachusetts corporation with a principal place of business in Boston Massachusetts.

5. On information and belief, this Court has personal jurisdiction over Defendant because Defendant has committed, and continues to commit, acts of infringement in this District,

has conducted business in this District, and/or has engaged in continuous and systematic activities in this District.

6. On information and belief, Defendant's instrumentalities that are alleged herein to infringe were and continue to be used, imported, offered for sale, and/or sold in this District.

VENUE

7. Venue is proper in this District pursuant to 28 U.S.C. § 1400(b) because Defendant is deemed to be a resident of this District. Alternatively, acts of infringement are occurring in this District and Defendant has a regular and established place of business in this District.

COUNT I
(INFRINGEMENT OF UNITED STATES PATENT NO. 6,952,413)

8. Plaintiff incorporates paragraphs 1 through 7 herein by reference.

9. This cause of action arises under the patent laws of the United States and, in particular, under 35 U.S.C. §§ 271, *et seq*.

10. Plaintiff is the owner by assignment of the '413 Patent with sole rights to enforce the '413 Patent and sue infringers.

11. A copy of the '413 Patent, titled "Extended dynamic resource allocation in packet data transfer," is attached hereto as Exhibit A.

12. The '413 Patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

13. On information and belief, Defendant has infringed and continues to infringe one or more claims, including at least Claim 5, of the '413 Patent by making, using (at least during internal testing and maintenance), importing, selling, and/or offering computer devices which are covered by at least Claim 5 of the '413 Patent. Defendant has infringed and continues to infringe the '413 patent directly in violation of 35 U.S.C. § 271.

14. Regarding Claim 5, Defendant sells, offers to sell, and/or uses computing devices including, without limitation, GE MDS Orbit Industrial Cellular Routers, and any similar devices ("Product"), which infringe at least Claim 5 of the '413 Patent. The Product is a mobile station that practices a multiple access communication method (e.g., time division multiple access). The Product has Dual Carrier HSPA+ (also referred to as DC-HSPA+) capability. Certain aspects of these elements are illustrated in the screen shots below and/or in screen shots provided in connection with other allegations herein.

http://www.gegridsolutions.com/products/brochures/MDS/MDS_Orbit_MCR-ECR_GEA12740C_LR.pdf

Supported Cellular Radios on Orbit

Cellular Modem Type	ECR	MCR	Protocol / Frequencies	Fallback Support	Approvals/Certifications	Max Rate down/up Mbps	# S Sl
3G GSM World	Yes	Yes	GSM/GPRS/EDGE:850/900/1800/1900MHz UMTS/HSPA/HSPA+: 800/850(B6&19)/900 AWS1700/1900/2100 MHz	2G GSM	AT&T, Bell, Telus, Rogers, Global PTCRB, GCF, regional carriers	21/5	1 o
4G LTE Verizon	No	Yes	LTE Release 8 700MHz Band 13 (MIMO) CDMA Band class 0 (850 MHz) & class1 (1900 MHz)	3G CDMA	U.S Verizon, FCC	50/25	1
4G LTE North America	Yes	Yes	FDD LTE (Cat 3) Bands 2,4,5,13,17,25 DC-HSPA+ (42/5.76 Mbps) 1,2,4,5,8 EVDO Rev A/ CDMA 1x BC0, BC1, BC10 Quad-band EDGE/GPRS/GSM	2G/3G GSM and CDMA	AT&T, Bell, Telus, Rogers, Verizon*, Sprint*, FCC, CE, PTCRB, GCF	100/50	1
4G LTE EMEA /APAC	2015	Yes	FDD LTE (Cat 3) 1,3,7,8,20 DC-HSPA+ (42/5.76 Mbps) 1,2,5,8 Quad-band EDGE/GPRS/GSM	2G/3G GSM	Europe/Australia Telstra, CE, GCF	100/50	1

*2015 Roadmap

http://www.gegridsolutions.com/products/brochures/MDS/MDS_Orbit_MCR-ECR_GEA12740C_LR.pdf

15. Dual Carrier HSPA+ has been defined in ETSI Release 8 as shown below. Also as

shown below, the use of shifted USF has been approved in Release 8 (TS 45.002 version 8.1.0) and Release 9 (version 45.002 9.5.0) in combination with dual carrier.

Dual-Carrier HSPA+

3GPP Release 8 defines dual-carrier or dual-cell high-speed downlink packet access (DC-HSDPA) to allow the network to transmit HSDPA data to a mobile device from two cells simultaneously, doubling achievable downlink data rate to 42 Mbits/s. Dual-carrier operation is characterized as simultaneous reception of more than one HS-DSCH transport channel. Dual-cell operation may be activated and deactivated using HS-SCCH orders.

https://www.electronicdesign.com/communications/understanding-hspa-cellular-technology#5

ETSI TS 145 002 V8.1.0 (2011-04)

Technical Specification

Digital cellular telecommunications system (Phase 2+);
Multiplexing and multiple access on the radio path
(3GPP TS 45.002 version 8.1.0 Release 8)

https://www.etsi.org/deliver/etsi_ts/145000_145099/145002/08.01.00_60/ts_145002v080100p.pdf

1 Scope

The present document defines the physical channels of the radio sub-system required to support the logical channels. For the Flexible Layer One, it defines the physical channels of the radio sub-system required to support the transport channels. It includes a description of the logical channels, transport channels and the definition of frequency hopping, TDMA frames, timeslots and bursts.

https://www.etsi.org/deliver/etsi_ts/145000_145099/145002/08.01.00_60/ts_145002v080100p.pdf

0151	1	A	Rel-8	8.0.0	8.1.0	Clarification of Shifted USF operation in combination with Dual Carrier DL	GP-49	GP-110464	approved	G1	G1-49	GP-110464	agreed	2011-03-03	TEI7	-	2011-03-14
0152	-	-	Rel-9	-	-	Clarification of receiver characteristics for multicarrier BTS equipped with multicarrier receiver	-	-	-	-	G1-49	GP-110193	revised	2011-03-03	-	-	2011-03-14
0152	1	A	Rel-9	9.4.0	9.5.0	Clarification of Shifted USF operation in combination with Dual Carrier DL	GP-49	GP-110465	approved	G1	G1-49	GP-110465	agreed	2011-03-03	TEI7	-	2011-03-14
0153	-	-	Rel-9	-	-	Clarification of Shifted USF in combination with EFTA	-	-	-	-	G1-49	GP-110194	revised	2011-03-03	-	-	2011-03-14
0153	1	F	Rel-9	9.4.0	9.5.0	Clarification of Shifted USF in combination with EFTA	GP-49	GP-110454	approved	G1	G1-49	GP-110454	agreed	2011-03-03	TEI9	-	2011-03-14

http://www.3gpp.org/DynaReport/45002-CRs.htm
Release-8, 8.1.0: http://www.3gpp.org/ftp/tsg_geran/TSG_GERAN/GERAN_49_Chengdu/Docs/GP-110464.zip
ETSI Source: https://www.etsi.org/deliver/etsi_ts/145000_145099/145002/08.01.00_60/ts_145002v080100p.pdf

Note: In case of extended dynamic allocation, the MS needs to support USF monitoring on the downlink PDCHs corresponding to (i.e. with the same timeslot number as) all assigned uplink PDCHs as defined in 3GPP TS 44.060.

In a dual carrier configuration, all the downlink timeslots on both radio frequency channels shall be assigned within a window of size "d" and all the uplink timeslots on both radio frequency channels shall be assigned within a window of size "u" where "d" and "u" are defined in Table 6.4.2.2.1. The maximum number of timeslots that may be assigned depends on the multislot class of the MS (or the Equivalent multislot class if different from the Signalled multislot class as described in B.4).

In a dual carrier configuration, Shifted USF operation shall be determined per carrier according to the number of downlink and uplink timeslots assigned on each carrier.

Release TS 44.060
Source:https://www.etsi.org/deliver/etsi_ts/144000_144099/144060/08.07.00_60/ts_144060v080700p.pdf

16. The Product practices receiving an assignment of at least a first PDCH (e.g., first assigned uplink PDCH) and a second PDCH (e.g., second assigned uplink PDCH). These elements are illustrated in the screen shots below and/or in screen shots provided in connection with other allegations herein.

When Shifted USF operation is used, the USF for the first assigned uplink PDCH shall be sent on the downlink PDCH corresponding to (i.e. with the same timeslot number as) the second assigned uplink PDCH. The MS shall monitor this downlink PDCH for the USF corresponding to both the first assigned uplink PDCH and the second assigned uplink PDCH. If the USF corresponding to the first assigned uplink PDCH is detected then the mobile station shall transmit on the first assigned uplink PDCH and all higher numbered assigned uplink PDCHs. Otherwise, operation shall be as described in sub-clause 8.1.1.2.1.

The USF value corresponding to the first assigned uplink PDCH shall be different from the USF value corresponding to the second assigned uplink PDCH.

When Shifted USF operation is used, PACCH operation shall be as described in sub-clause 8.1.1.2.2 except that the network shall transmit all PACCH messages on the PDCH carried on the downlink timeslot corresponding to the second lowest numbered timeslot in the uplink assignment, and the mobile station shall attempt to decode every downlink RLC/MAC block on that downlink PDCH.

If a PACKET PDCH RELEASE message releases the second uplink PDCH in the current timeslot configuration of a mobile station using Shifted USF operation then the first uplink timeslot shall also be considered released. If any PDCHs remain in the new timeslot configuration then normal USF operation shall continue starting on the lowest available timeslot.

https://www.etsi.org/deliver/etsi_ts/144000_144099/144060/08.07.00_60/ts_144060v080700p.pdf

8.1.1.2.1 Uplink PDCH Allocation

The PACKET UPLINK ASSIGNMENT and MULTIPLE TBF UPLINK ASSIGNMENT messages assign to the mobile station a subset of 1 to N uplink PDCHs (when the uplink TBF operates in BTTI configuration) or uplink PDCH-pairs (when the uplink TBF operates in RTTI configuration), where N depends on the mobile station multislot class.

An uplink TBF that operates in RTTI configuration may receive the assigned USFs either in BTTI USF mode or in RTTI USF mode. The indication of whether BTTI USF mode or RTTI USF mode is to be used is provided during the assignment of the corresponding uplink TBF.

https://www.etsi.org/deliver/etsi_ts/144000_144099/144060/06.20.00_60/ts_144060v062000p.pdf

17. The Product practices monitoring (e.g., reading the header of each RLC/MAC block on a downlink PDCH) an assigned PDCH to detect a USF (uplink state flag). This is illustrated in in the screen shot below and/or in screen shots provided in connection with other allegations herein.

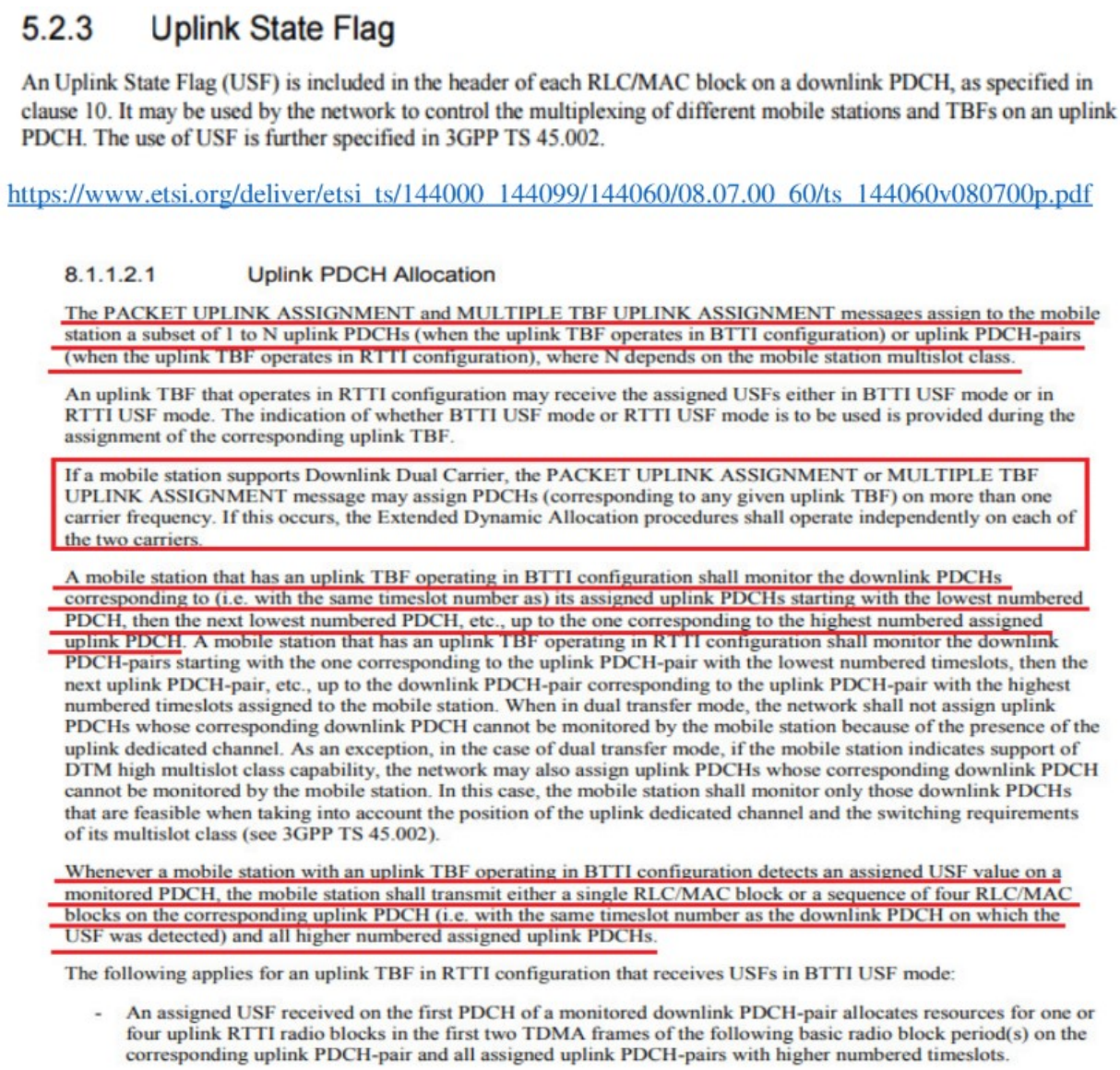
5.2.3 Uplink State Flag

An Uplink State Flag (USF) is included in the header of each RLC/MAC block on a downlink PDCH, as specified in clause 10. It may be used by the network to control the multiplexing of different mobile stations and TBFs on an uplink PDCH. The use of USF is further specified in 3GPP TS 45.002.

https://www.etsi.org/deliver/etsi_ts/144000_144099/144060/08.07.00_60/ts_144060v080700p.pdf

18. The Product practices monitoring a first assigned PDCH to detect a USF corresponding to the first assigned PDCH and transmitting on the assigned PDCH corresponding

to the USF if shifted USF operation is not used. The Product will monitor the USF of the downlink PDCH corresponding to the assigned PDCH having the same slot number because there is no shifting operation. This is illustrated in in the screen shots below and/or in screen shots provided in connection with other allegations herein.



5.2.3 Uplink State Flag

An Uplink State Flag (USF) is included in the header of each RLC/MAC block on a downlink PDCH, as specified in clause 10. It may be used by the network to control the multiplexing of different mobile stations and TBFs on an uplink PDCH. The use of USF is further specified in 3GPP TS 45.002.

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8.1.1.2.1 Uplink PDCH Allocation

The PACKET UPLINK ASSIGNMENT and MULTIPLE TBF UPLINK ASSIGNMENT messages assign to the mobile station a subset of 1 to N uplink PDCHs (when the uplink TBF operates in BTTI configuration) or uplink PDCH-pairs (when the uplink TBF operates in RTTI configuration), where N depends on the mobile station multislot class.

An uplink TBF that operates in RTTI configuration may receive the assigned USFs either in BTTI USF mode or in RTTI USF mode. The indication of whether BTTI USF mode or RTTI USF mode is to be used is provided during the assignment of the corresponding uplink TBF.

If a mobile station supports Downlink Dual Carrier, the PACKET UPLINK ASSIGNMENT or MULTIPLE TBF UPLINK ASSIGNMENT message may assign PDCHs (corresponding to any given uplink TBF) on more than one carrier frequency. If this occurs, the Extended Dynamic Allocation procedures shall operate independently on each of the two carriers.

A mobile station that has an uplink TBF operating in BTTI configuration shall monitor the downlink PDCHs corresponding to (i.e. with the same timeslot number as) its assigned uplink PDCHs starting with the lowest numbered PDCH, then the next lowest numbered PDCH, etc., up to the one corresponding to the highest numbered assigned uplink PDCH. A mobile station that has an uplink TBF operating in RTTI configuration shall monitor the downlink PDCH-pairs starting with the one corresponding to the uplink PDCH-pair with the lowest numbered timeslots, then the next uplink PDCH-pair, etc., up to the downlink PDCH-pair corresponding to the uplink PDCH-pair with the highest numbered timeslots assigned to the mobile station. When in dual transfer mode, the network shall not assign uplink PDCHs whose corresponding downlink PDCH cannot be monitored by the mobile station because of the presence of the uplink dedicated channel. As an exception, in the case of dual transfer mode, if the mobile station indicates support of DTM high multislot class capability, the network may also assign uplink PDCHs whose corresponding downlink PDCH cannot be monitored by the mobile station. In this case, the mobile station shall monitor only those downlink PDCHs that are feasible when taking into account the position of the uplink dedicated channel and the switching requirements of its multislot class (see 3GPP TS 45.002).

Whenever a mobile station with an uplink TBF operating in BTTI configuration detects an assigned USF value on a monitored PDCH, the mobile station shall transmit either a single RLC/MAC block or a sequence of four RLC/MAC blocks on the corresponding uplink PDCH (i.e. with the same timeslot number as the downlink PDCH on which the USF was detected) and all higher numbered assigned uplink PDCHs.

The following applies for an uplink TBF in RTTI configuration that receives USFs in BTTI USF mode:

- An assigned USF received on the first PDCH of a monitored downlink PDCH-pair allocates resources for one or four uplink RTTI radio blocks in the first two TDMA frames of the following basic radio block period(s) on the corresponding uplink PDCH-pair and all assigned uplink PDCH-pairs with higher numbered timeslots.

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19. The accused product practices monitoring a second assigned PDCH to detect the USF corresponding to the first assigned PDCH and a USF corresponding to the second assigned

PDCH (e.g., USF corresponding to both PDCHs are monitored on a second assigned PDCH) if the shifted USF operation is used. This is illustrated in in the screen shots below and/or in screen shots provided in connection with other allegations herein.

Note 0	If the downlink timeslots assigned (allocated) to the mobile station are not contiguous, d shall also include the number of downlink timeslots not assigned (allocated) to the mobile station that are located between assigned (allocated) downlink timeslots. Similarly, if the uplink timeslots assigned (allocated) to the mobile station are not contiguous, u shall also include the number of uplink timeslots not assigned (allocated) to the mobile station that are located between assigned (allocated) uplink timeslots.
Note 1	Normal measurements are not possible (see 3GPP TS 45.008).
Note 2	Normal BSIC decoding is not possible (see 3GPP TS 45.008) except e.g. in case of a downlink dual carrier capable MS operating in single carrier mode using its second receiver for BSIC decoding.
Note 3	TA offset required for multislot classes 35-39.
Note 4	TA offset required for multislot classes 40-45.
Note 5	Shifted USF operation shall apply (see 3GPP TS 44.060).
Note 6	The network may fallback to a lower multislot class and may not apply T_{ra}. A multislot class 38 or 39 MS shall in this case use T_{ta} for timing advance values below 31.
Note 7	For dual carrier operation the Applicable Multislot class is the Signalled multislot class or the Equivalent multislot class (if different from the Signalled multislot class) as defined in Table B.2.
Note 8	These configurations can only be used for assignment to an MS supporting Flexible Timeslot Assignment (see 3GPP TS 24.008). For allocation additional restrictions apply.
Note 9	These configurations can be used only in RTTI configuration.
Note 10	These configurations can be used in RTTI configurations only when the timeslots of the corresponding downlink PDCH-pair are contiguous.
Note 11	These configurations can be used only in RTTI configurations when the timeslots of the corresponding downlink PDCH-pair are not contiguous.

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8.1.1.2.4 Shifted USF operation

In some instances (see 3GPP TS 45.002), Shifted USF operation shall apply.

When Shifted USF operation is used, the USF for the first assigned uplink PDCH shall be sent on the downlink PDCH corresponding to (i.e. with the same timeslot number as) the second assigned uplink PDCH. The MS shall monitor this downlink PDCH for the USF corresponding to both the first assigned uplink PDCH and the second assigned uplink PDCH. If the USF corresponding to the first assigned uplink PDCH is detected then the mobile station shall transmit on the first assigned uplink PDCH and all higher numbered assigned uplink PDCHs. Otherwise, operation shall be as described in sub-clause 8.1.1.2.1.

The USF value corresponding to the first assigned uplink PDCH shall be different from the USF value corresponding to the second assigned uplink PDCH.

When Shifted USF operation is used, PACCH operation shall be as described in sub-clause 8.1.1.2.2 except that the network shall transmit all PACCH messages on the PDCH carried on the downlink timeslot corresponding to the second lowest numbered timeslot in the uplink assignment, and the mobile station shall attempt to decode every downlink RLC/MAC block on that downlink PDCH.

If a PACKET PDCH RELEASE message releases the second uplink PDCH in the current timeslot configuration of a mobile station using Shifted USF operation then the first uplink timeslot shall also be considered released. If any PDCHs remain in the new timeslot configuration then normal USF operation shall continue starting on the lowest available timeslot.

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Note: In case of extended dynamic allocation, the MS needs to support USF monitoring on the downlink PDCHs corresponding to (i.e. with the same timeslot number as) all assigned uplink PDCHs as defined in 3GPP TS 44.060.

In a dual carrier configuration, all the downlink timeslots on both radio frequency channels shall be assigned within a window of size "d" and all the uplink timeslots on both radio frequency channels shall be assigned within a window of size "u" where "d" and "u" are defined in Table 6.4.2.2.1. The maximum number of timeslots that may be assigned depends on the multislot class of the MS (or the Equivalent multislot class if different from the Signalled multislot class as described in B.4).

In a dual carrier configuration, Shifted USF operation shall be determined per carrier according to the number of downlink and uplink timeslots assigned on each carrier.

https://www.etsi.org/deliver/etsi_ts/145000_145099/145002/08.01.00_60/ts_145002v080100p.pdf

20. Defendant's actions complained of herein will continue unless Defendant is enjoined by this court.

21. Defendant's actions complained of herein are causing irreparable harm and monetary damage to Plaintiff and will continue to do so unless and until Defendant is enjoined and restrained by this Court.

22. Plaintiff is in compliance with 35 U.S.C. § 287.

JURY DEMAND

Plaintiff, under Rule 38 of the Federal Rules of Civil Procedure, requests a trial by jury of any issues so triable by right.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff asks the Court to:

(a) Enter judgment for Plaintiff on this Complaint on all causes of action asserted herein;

(b) Enter an Order enjoining Defendant, its agents, officers, servants, employees, attorneys, and all persons in active concert or participation with Defendant who receive notice of the order from further infringement of United States Patent No. 6,952,413 (or, in the alternative, awarding Plaintiff a running royalty from the time of judgment going forward);

(c) Award Plaintiff damages resulting from Defendant's infringement in accordance with 35 U.S.C. § 284;

(d) Award Plaintiff pre-judgment and post-judgment interest and costs; and

(e) Award Plaintiff such further relief to which the Court finds Plaintiff entitled under law or equity.

Dated: January 31, 2019

Respectfully Submitted,

By: */s/ Gustavo A. Chico-Barris*
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