IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

STORMBORN TECHNOLOGIES LLC Plaintiff, v. **BAICELLS TECHNOLOGIES, INC.,** Defendant.	Civil Action No.: **TRIAL BY JURY DEMANDED**

COMPLAINT FOR INFRINGEMENT OF PATENT

Now comes, Plaintiff, Stormborn Technologies LLC ("Plaintiff" or "Stormborn"), by and through undersigned counsel, and respectfully alleges, states, and prays as follows:

NATURE OF THE ACTION

1. This is an action for patent infringement under the Patent Laws of the United States, Title 35 United States Code ("U.S.C.") to prevent Defendant Baicells Technologies, Inc. (hereinafter "Defendant" or "Baicells"), from infringing and profiting, in an illegal and unauthorized manner, and without authorization and/or consent from Plaintiff from U.S. Patent No RE44,199 (the "'199 Patent" or the "Patent-in-Suit"), which is attached hereto as Exhibit A and incorporated herein by reference, and pursuant to 35 U.S.C. §271, and to recover damages, attorney's fees, and costs.

THE PARTIES

2. Plaintiff is a Texas limited liability company with its principal place of business at 6205 Coit Road, Ste 300 – 1028, Plano, Texas 75024.

3. Upon information and belief, Defendant is a corporation organized under the laws

of Delaware, having a place of business at 5700 Tennyson Parkway – Suite 300, Plano, Texas 75024. Upon information and belief, Defendant may be served with process c/o Registered Agent Solutions, Inc., 9 East Loockerman Street – Suite 311, Dover, Delaware 19901.

JURISDICTION AND VENUE

4. This is an action for patent infringement in violation of the Patent Act of the United States, 35 U.S.C. §§1 *et seq*.

5. The Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§1331 and 1338(a).

6. This Court has personal jurisdiction over Defendant by virtue of its systematic and continuous contacts with this jurisdiction and its incorporation in this District, as well as because of the injury to Plaintiff, and the cause of action Plaintiff has risen in this District, as alleged herein.

7. Defendant is subject to this Court's specific and general personal jurisdiction pursuant to its substantial business in this forum, including: (i) at least a portion of the infringements alleged herein; (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct, and/or deriving substantial revenue from goods and services provided to individuals in this forum state and in this judicial District; and (iii) being incorporated in this District.

8. Venue is proper in this judicial district pursuant to 28 U.S.C. §1400(b) because Defendant resides in this District under the Supreme Court's opinion in *TC Heartland v. Kraft Foods Group Brands LLC*, 137 S. Ct. 1514 (2017) through its domicile, and regular and established place of business in this District.

FACTUAL ALLEGATIONS

9. On May 7, 2013, the United States Patent and Trademark Office ("USPTO") duly and legally issued the '199 Patent, entitled "Variable throughput reduction communications system and method" after a full and fair examination. The '199 Patent is attached hereto as Exhibit A and incorporated herein as if fully rewritten.

10. Plaintiff is presently the owner of the '199 Patent, having received all right, title and interest in and to the '199 Patent from the previous assignee of record. Plaintiff possesses all rights of recovery under the '199 Patent, including the exclusive right to recover for past infringement.

11. As identified in the '199 Patent, previous communications systems, namely in packet-communications spread-spectrum multi-cell systems, high-speed data would be implemented with a method of parallel channels, using parallel chip-sequence signals. Ex. A, 1:37-41. By using multiple correlators or matched filters, multiple-orthogonal chip-sequence signals would be sent simultaneously thereby increasing the data rate while still enjoying the advantage of a high processing gain. Ex. A, 1:41-44. The multiple chip-sequence signals behaved as multiple users in a single location. Ex. A, 1:44-45. Multipath was ameliorated by a RAKE receiver, and the interference to be overcome by the processing gain was that generated by other users, in the same or adjacent cells. Ex. A, 1:46-48.

12. In previous communication systems, when a remote station was within a cell or cell sector, the path differences from base stations located in the adjacent cells ensured that the interference was small enough so as not to cause the error rate of the wanted signal to deteriorate below a usable level. Ex. A, 1:50-54. When the remote station was near the edge of the cell,

however, the interference would be substantial as the interference can result from two adjacent cells. Ex. A, 1:54-57.

13. One previous method that was used to overcome this problem in a conventional spread-spectrum system was to increase the processing gain in order to increase the immunity from interference. Ex. A, 1:58-61. To do this, in a fixed bandwidth system, the data rate was reduced, and the integration time of the correlator or the length of the matched filter was increased accordingly. Ex. A, 1:61-63. This method, however, changed the length of the correlator sequence, or changes the size of the matched filter; both of which impact the architecture of the receiver. Ex. A, 1:63-66. In addition, with increased integration times, the chip-tracking loop and phase-tracking loop would have to function flawlessly and the allowable frequency offset must have been reduced, requiring at least a frequency locked loop. Ex. A, 1:66-2:3.

14. The invention claimed in the '199 Patent addresses these needs and inefficiencies by providing an improved communication system.

15. Claim 18 of the '199 Patent states:

> "18. A method for transmitting a wireless signal forming transmitted signals having a data rate, including the steps of demultiplexing input data into a plurality of independent data channels;
>
> FEC encoding and interleaving the plurality of data channels as a plurality of FEC encoded and interleaved channels, respectively;
>
> processing the plurality of FEC encoded and interleaved channels as a plurality of modulated channels;
>
> receiving an error rate dependent data rate control signal generated from a remote terminal; and
>
> adjusting the data rate of the transmitted signal in accordance with the data-rate control signal." See Ex. A.

16. Claim 20 of the '199 Patent states:

> "20. The method of claim 18 wherein the FEC encoding is set to varying code rates." See Ex. A.

17. Claim 21 of the '199 Patent states:

> "21. The method of claim 18 wherein the data rate processor changes the transmitted data rate by changing the FEC encoding rate." See Ex. A.

18. At least claim 18 of the '199 Patent recites a non-abstract method for a communication system.

19. The method of Claim 18 in the '199 Patent is an improvement on prior solutions because the command processor circuitry is responsive to the error rate.

20. The '199 Patent highlighted this unique and discrete idea during its prosecution.

21. At least Claim 18 of the '199 Patent provide the inventive concept of a method for a communication system.

22. The '199 Patent's advantages and benefits are inventive, unexpected and superior because it provides improvements to existing computer functionality, provides specific non-conventional and non-generic arrangements of known, conventional pieces to overcome an existing problem; provides ordered combination of claimed steps in the receiver using unconventional rules that are different than previously used; and provides improved technological results.

23. The '199 Patent provides improvements to then existing computer network functionality.

24. Claim 18 in the '199 Patent specifically identifies how the improved computer functionality is carried out in an unexpected way.

25. These specific elements of Claim 18, as combined, accomplish the desired result of increased immunity at the intended receiver, from interference generated by nearby transmitters and from multipath interference produce by the same transmitter, transmitting signals that are reflected from multiple objects between receivers in adjacent cells.

26. These specific elements of Claim 18 also accomplish the desired result increasing immunity from interference that was a then existing problem in the relevant field of spread-spectrum communication systems.

27. Claim 18 in the '199 Patent provides other benefits over conventional receivers, including increased flexibility, faster transmission times and data transfer, as well as reduced manufacturing requirements.

28. The '199 Patent provides specific non-conventional and non-generic arrangements of known, conventional pieces to overcome an existing problem.

29. Claim 18 in the '199 Patent specifically identify how the improved computer functionality is carried out in an unexpected way. Prior art methodologies would simply increase processing gain to try to overcome interference, however this required more processing power and changing the architecture of the receiver.

30. Claim 18 provides specific elements that were an unconventional arrangement of elements because the prior art methodologies would simply increase processing gain to try to overcome interference, however this required more processing power and changing the architecture of the receiver.

31. Claim 18 of the '199 Patent was able to unconventionally generate a data-rate control signal based on an error-rate of the encoded channels.

32. Claim 18 in the '199 Patent provides a receiver that would work with many types of spread-spectrum communications systems, and is adjustable, either continually or periodically, depending on the needs of the system designer; is simpler to manufacture than the preexisting receivers that required architectural changes to overcome interference; and reduces transmission errors. Claim 18 in the '199 Patent provides a method that would not preempt all ways of

transmitting information between a transmitter and a receiver because the data-rate control signal is based on the error-rate.

33. Claim 18 in the '199 Patent provide specific non-conventional and non-generic arrangements of known, conventional pieces to overcome an existing problem because receiver that would not preempt all ways of throttling or limiting information between a transmitter and a receiver.

34. There are other ways to throttle or limit information between a transmitter and a receiver because that do not have a data-rate control signal based on the syndrome (error-rate) of the encoded channels. There may be other ways to limit information between a transmitter and a receiver because other receivers could have the data-rate control signal based on the transmission of a known pilot signal. In this instance, an additional receiver, measures the distortion/attenuation of the pilot and that receiver sends back to the Transmitter information to control the data rate. The pilot signal is indirectly related to the actual received data.

35. Claim 18 does not preempt all throttling or limiting information between a transmitter and a receiver because the data-rate control signal could be based on other timing information from other channels, such as those that use pilot signals.

36. The '199 Patent provides improved technological results.

37. The data-rate control signal being based on error-rate in the encoded channels is a specific implementation of varying the way the control signal is generated that improves the ability of prior art transmission of data signals between a transmitter and a receiver.

38. The '199 Patent encompasses patent eligible subject matter inasmuch as at least Claims 18, 20 and 21 of the '199 Patent are not an abstract idea but rather are an inventive idea of a novel and proper design of a method thereof to employ a command processor circuitry responsive

to the (syndrome) error rate of the encoded channels for generating a data-rate control signal to produce a desired data rate to be sent by the data symbol transmitter of the signal.

39. Further, at least Claims 18, 20 and 21 of the '199 Patent provide inventive concepts.

40. At the pleading stage, the '199 Patent has been held, when considered in light of the specification, to be not functionally defined without a specific implementation; it is tied to a concrete structure, the command processor. And if it was directed to an abstract idea, it still provides a specific technological solution that improves the way spread-spectrum communication systems operate. *See Stormborn Technologies, LLC v. TopCon Positioning Systems, Inc.*, 2020 WL 1274965, 19-cv-07804-WHO, Docket Entry No. 35 (March 17, 2020).

41. Defendant commercializes, inter alia, devices or methods that perform all the steps recited in at least one claim of the '199 Patent. More particularly, Defendant commercializes, inter alia, methods that perform all the steps recited in Claims 18, 20 and 21 of the '199 Patent. Specifically, Defendant makes, uses, sells, offers for sale, or imports a device or method that encompasses that which is covered by Claims 18, 20 and 21 of the '199 Patent.

DEFENDANT'S PRODUCT(S)

42. Defendant offers solutions, such as "Baicells' Nova-436 Outdoor TDD eNB" (the "Accused Product"), that practices a method for transmitting a wireless signal (e.g., wireless signal of various E-UTRA frequency bands) forming transmitted signals having a data rate which infringe the '199 Patent literally or under the doctrine of equivalents. A non-limiting and exemplary claim chart comparing the Accused Product of Claim 18 of the '199 Patent is attached hereto as Exhibit B and is incorporated herein as if fully rewritten.

43. As recited in one step of Claim 18, the Accused Product practices demultiplexing input data into a plurality of independent data channels. See Ex. B.

44. As recited in another step of Claim 18, the Accused Product practices FEC encoding and interleaving the plurality of data channels as a plurality of FEC encoded and interleaved channels, respectively. See Ex. B.

45. As recited in another step of Claim 18, the Accused Product practices processing (e.g., modulating and/or modulation mapping) the plurality of FEC encoded and interleaved channels as a plurality of modulated channels (e.g., multiple QPSK/16QAM/64AQAM modulated data streams). See Ex. B.

46. As recited in another step of Claim 18, the Accused Product practices receiving (e.g., through antenna of the Accused Product), an error rate dependent data rate control signal (e.g., 4-Bit CQI signal which controls data rate and code-rate) generated from a remote terminal (e.g., user equipment, also abbreviated as UE, for example, an LTE equipped smartphone, tablet, etc.). See Ex. B.

47. As recited in another step of Claim 18, the Accused Product practices adjusting the data rate of the transmitted signal in accordance with the data-rate control signal (e.g., 4-Bit CQI signal which control code-rate and data rate). See Ex. B.

48. As recited in Claim 20, the code rates of FEC encoders will be set different code rates based on CQI index received from the user equipment. See Ex. B.

49. As recited in Claim 21, the transmitted data rate changes based on the CQI index received. Since a CQI index corresponds to a modulation scheme and a code rate, the code rate of FEC encoder causes change in the data transmission rate. See Ex. B.

50. The elements described in the preceding paragraphs are covered by at least Claims 18, 20 and 21 of the ‘199 Patent literally or under the doctrine of equivalents. Thus, Defendant’s use of the Accused Product is enabled by the method described in the ‘199 Patent.

INFRINGEMENT OF THE PATENT-IN-SUIT

51. Plaintiff realleges and incorporates by reference all of the allegations set forth in the preceding paragraphs

52. In violation of 35 U.S.C. § 271, Defendant has directly infringed the '199 Patent literally or under the doctrine of equivalents.

53. Defendant has had knowledge of infringement of the '199 Patent at least as of the service of the present Complaint.

54. Defendant has directly infringed at least one claim of the '199 Patent by using, at least through internal testing or otherwise, the Accused Product without authority in the United States. As a direct and proximate result of Defendant's direct infringement of the '199 Patent, Plaintiff has been damaged.

55. Upon information and belief, Defendant has induced others to infringe the '199 Patent, literally or under the doctrine of equivalents, by encouraging infringement, knowing that the acts Defendant induced constituted patent infringement, and its encouraging acts actually resulted in direct patent infringement.

56. Upon information and belief, Defendant materially contributed to their own customers' infringement of the '199 Patent, literally or under the doctrine of equivalents, by selling the Accused Products to customers for use in a manner that infringed one or more claims of the '199 Patent. Moreover, the Accused Products are not a staple article of commerce suitable for substantial non-infringing use.

57. By engaging in the conduct described herein, Defendant has injured Plaintiff and is thus liable for infringement of the '199 Patent, pursuant to 35 U.S.C. § 271.

58. Defendant committed these acts of infringement without license or authorization.

59. As a result of Defendant's infringement of the '199 Patent, Plaintiff has suffered monetary damages and is entitled to a monetary judgment in an amount adequate to compensate for Defendant's past infringement, together with interests and costs.

60. Plaintiff reserves the right to modify its infringement theories as discovery progresses in this case; it shall not be estopped for infringement contention or claim construction purposes by the claim charts that it provides with this Complaint. The claim chart depicted in Exhibit B is intended to satisfy the notice requirements of Rule 8(a)(2) of the Federal Rule of Civil Procedure and does not represent Plaintiff's preliminary or final infringement contentions or preliminary or final claim construction positions.

DEMAND FOR JURY TRIAL

61. Plaintiff demands a trial by jury of any and all causes of action.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff prays for the following relief:

a. That Defendant be adjudged to have directly infringed the '199 Patent either literally or under the doctrine of equivalents;

b. That Defendant be adjudged to have induced infringement of the '199 Patent either literally or under the doctrine of equivalents;

c. That Defendant be adjudged to have contributorily infringed the '199 Patent either literally or under the doctrine of equivalents;

d. An accounting of all infringing sales and damages including, but not limited to, those sales and damages not presented at trial;

e. An assessment of pre-judgment and post-judgment interest and costs against Defendant, together with an award of such interest and costs, in accordance with 35 U.S.C. §284;

f. That Defendant be directed to pay enhanced damages, including Plaintiff's attorneys' fees incurred in connection with this lawsuit pursuant to 35 U.S.C. §285; and

g. That Plaintiff be granted such other and further relief as this Court may deem just and proper.

Dated: February 23, 2021

Respectfully submitted,

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