UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF TEXAS
DALLAS DIVISION

SWIRLATE IP LLC, Plaintiff, v. **CORNING OPTICAL COMMUNICATIONS LLC,** Defendant.	C.A. NO. _____ **JURY TRIAL DEMANDED** **PATENT CASE**

ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Swirlate IP LLC files this Original Complaint for Patent Infringement against Corning Optical Communications LLC and would respectfully show the Court as follows:

I. THE PARTIES

1. Plaintiff Swirlate IP LLC ("Swirlate" or "Plaintiff") is a Texas limited liability company having an address at 6009 W Parker Rd, Ste 149 – 1090, Plano, TX 75093-8121.

2. On information and belief, Defendant Corning Optical Communications LLC ("Defendant") is a limited liability company organized and existing under the laws of North Carolina, with a place of business at 5940 Optical Way, Fort Worth, TX 76244. Defendant has a registered agent at Corporation Service Company d/b/a CSC-Lawyers Incorp,, 211 E. 7th Street, Suite 620, Austin, TX 78701.

II. JURISDICTION AND VENUE

3. This action arises under the patent laws of the United States, Title 35 of the United States Code. This Court has subject matter jurisdiction of such action under 28 U.S.C. §§ 1331 and 1338(a).

4. On information and belief, Defendant is subject to this Court's specific and general personal jurisdiction, pursuant to due process and the Texas Long-Arm Statute, due at least to its business in this forum, including at least a portion of the infringements alleged herein. Furthermore, Defendant is subject to this Court's specific and general personal jurisdiction because it has a place of business within this District, including at 5940 Optical Way, Fort Worth, TX 76244.

5. Without limitation, on information and belief, within this District and state, Defendant has used the patented inventions thereby committing, and continuing to commit, acts of patent infringement alleged herein. In addition, on information and belief, Defendant has derived revenues from its infringing acts occurring within the Northern District of Texas and Texas. Further, on information and belief, Defendant is subject to the Court's general jurisdiction, including from regularly doing or soliciting business, engaging in other persistent courses of conduct, and deriving substantial revenue from goods and services provided to persons or entities in the Northern District of Texas and Texas. Further, on information and belief, Defendant is subject to the Court's personal jurisdiction at least due to its sale of products and/or services within the Northern District of Texas. Defendant has committed such purposeful acts and/or transactions in the Northern District of Texas and Texas such that it reasonably should know and expect that it could be haled into this Court as a consequence of such activity.

6. Venue is proper in this district under 28 U.S.C. § 1400(b). On information and belief, Defendant has a place of business at 5940 Optical Way, Fort Worth, TX 76244. On information and belief, from and within this District Defendant has committed at least a portion of the infringements at issue in this case.

7. For these reasons, personal jurisdiction exists and venue is proper in this Court under 28 U.S.C. § 1400(b).

III. COUNT I
(PATENT INFRINGEMENT OF UNITED STATES PATENT NO. 7,154,961)

8. Plaintiff incorporates the above paragraphs herein by reference.

9. On December 26, 2006, United States Patent No. 7,154,961 ("the '961 Patent") was duly and legally issued by the United States Patent and Trademark Office. The '961 Patent is titled "Constellation Rearrangement for ARQ Transmit Diversity Schemes." A true and correct copy of the '961 Patent is attached hereto as Exhibit A and incorporated herein by reference.

10. Swirlate is the assignee of all right, title and interest in the '961 patent, including all rights to enforce and prosecute actions for infringement and to collect damages for all relevant times against infringers of the '961 Patent. Accordingly, Swirlate possesses the exclusive right and standing to prosecute the present action for infringement of the '961 Patent by Defendant.

11. The invention in the '961 Patent relates to the field of Automatic Repeat reQuest ("ARQ") transmission techniques in wireless communication systems. (Ex. A at col. 1:6-8). In particular, it relates to a method for transmitting data using transmit diversity schemes in which data packets are transmitted using a first and second transmission based on a repeat request and the bit-to-symbol mapping is performed differently for different transmitted diversity branches. (*Id.* at col. 1:8-12). The inventors recognized a problem in prior art of the use of ARQ transmission techniques in wireless communication systems with unreliable and time-varying channel conditions and the invention results in an improved performance avoiding transmission errors. (*Id.* at col. 1:12-15).

12. In telecommunications, in order to improve the reliability of data transmissions, the prior art had several transmit diversity techniques in which redundant versions of identical data

are transmitted in at least two diversity branches by default without explicitly requesting further diversity branches. (*Id.* at col. 1:19-24). Such transmit diversity techniques included (i) site diversity (transmitted signal originates from different sites), (ii) antenna diversity (transmitted signal originates from different antennas), (iii) polarization diversity (transmitted signal is mapped onto different polarization), (iv) frequency diversity (transmitted signal is mapped on different carrier frequencies or frequency hopping sequences), (v) time diversity (transmitted signal is mapped on different interleaving sequences), and (vi) multicode diversity (transmitted signal is mapped on different codes). (*Id.* at col. 1:24-42). The diversity branches would then be combined in order to improve the reliability of the received data. These diversity combining techniques included (a) selection combining (selecting the diversity branch with the highest Signal-to-Noise Ratio ("SNR") for decoding and ignoring the remaining ones), (b) equal gain combining (combining received diversity branches with ignoring the differences in received SNR), and (c) maximum ratio combining (combining received diversity branches taking the received SNR of each diversity branch into account).

13. The prior art also had techniques for error detection/correction with respect to the transmission of data. For example, the prior art would use ARQ schemes together with Forward Error Correction (FEC),[1] which is called hybrid ARQ ("HARQ"). If an error is detected within a packet by the Cyclic Redundancy Check ("CRC"), the receiver requests that the transmitter send additional information (*e.g.*, retransmission) to improve the probability to correctly decode the erroneous packet. (*Id.* at col. 1: 59-63).

[1] FEC is a technique used for controlling errors in data transmission over unreliable or noisy communication channels. The general idea of FED is that a sender encodes the message in a redundant way, most often using an error correction code. The redundancy allows the receiver to detect a limited number of errors that may occur anywhere in the message, and to potentially correct these errors without re-transmission.

14. The '961 discussed a particular prior art reference that had the shortcomings of the prior art. WO-02/067491 A1 disclosed a method for HARQ transmission that averages the bit reliability over successively requested retransmissions by means of signal constellation rearrangement. (*Id.* at col. 1: 64-67). The reference showed that when more than 2 bits of data were mapped onto one modulation symbol, the bits have different reliability depending on the chosen mapping. (*Id.* at col. 2: 1-5). For most FEC schemes, this leads to a degraded decoder performance compared to an input of more equally distributed bit reliabilities. (*Id.* at col. 2:5-7). As a result, in conventional communications systems the modulation dependent variations in bit reliabilities are not considered and, therefore, usually the variations remain after combining the diversity branches at the receiver. (*Id.* at col. 2:8-11).

15. The inventors therefore developed a method that improved performance with regard to transmission errors. (*Id.* at col. 2:15-18). The idea of the invention is to improve performance at the receiver by applying different signal constellation mappings to the available distinguishable transmit diversity branches and ARQ retransmissions. (*Id.* at col. 2:20-23). The invention is applicable to modulation formats in which more than 2 bits are mapped onto one modulation symbol, since this implies a variation in reliabilities for the bits mapped onto the signal constellation. (*Id.* at col. 2:23-29).

16. **Direct Infringement.** Upon information and belief, Defendant has been directly infringing at least claim 1 of the '961 patent in Texas and the Northern District of Texas, and elsewhere in the United States, by performing actions comprising at least performing the claimed ARQ re-transmission method by performing the steps of the claimed invention using the SpiderCloud SCRN-310 Radio Node products to transmit data ("Accused Instrumentality") (*e.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf).

17. The Accused Instrumentality uses an ARQ retransmission method in a wireless communication system in which data packets are transmitted from a transmitter to a receiver using a first transmission and at least a second transmission based on a repeat request. For example, at least in its internal testing and usage, the Accused Instrumentality uses an HARQ method in an LTE network in which data is transmitted from the Accused Instrumentality to an LTE base station using at least an HARQ transmission and an HARQ retransmission based on a repeat request, such as an HARQ retransmission request in the form of a negative acknowledgement ("NAK"). (*E.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf; http://www.techplayon.com/hybrid-automatic-repeat-request-harq-in-lte-fdd/; https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

18. Upon information and belief, the Accused Instrumentality performs the step of modulating data packets at the transmitter using a first modulation scheme to obtain first data symbols. For example, at least in its internal testing and usage, the Accused Instrumentality uses 16QAM and/or 64QAM to obtain first data symbols for the purposes of an LTE transmission. (*E.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf; https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

19. Upon information and belief, the Accused Instrumentality performs the step of performing the first transmission by transmitting the first data symbols over a first diversity branch to the receiver. For example, at least in its internal testing and usage, the Accused Instrumentality when performing an HARQ transmission transmits the first data symbols over a first diversity

branch using multi-antenna processing which maps from assigned resource blocks to the first available number of antenna ports. (*E.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf; https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

20. Upon information and belief, the Accused Instrumentality performs the step of modulating the data packets at the transmitter using a second modulation scheme to obtain second data symbols. For example, at least in its internal testing and usage, the Accused Instrumentality on a repeat request, *i.e.*, receiving the retransmission request in the form of NAK, enables a second mapping of a higher order modulation scheme (*i.e.*, an adaptive re-transmission having a different Modulation Coding Scheme (MCS) than the one used for HARQ transmission such as first higher order modulation scheme, *e.g.*, 64QAM). (*E.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf; https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

21. Upon information and belief, the Accused Instrumentality performs the step of performing the second transmission by transmitting the second data symbols over a second diversity branch to the receiver. For example, at least in its internal testing and usage, the Accused Instrumentality transmits second data symbols over a second or later diversity branch using multi-antenna processing which maps from assigned resource blocks to the later available number of antenna ports. (*E.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf;

https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

22. Upon information and belief, the Accused Instrumentality performs the step of demodulating the received first and second data symbols at the receiver using the first and second modulation schemes respectively. For example, the Accused Instrumentality, at least in its internal testing and usage, uses a base station which practices demodulation of first data symbols (*e.g.*, output of modulation block performing said first modulation scheme) and second data symbols (*e.g.*, output of modulation block using a second modulation scheme) at the LTE base station using the first and second modulation scheme, *i.e.*, Modulation Coding Scheme (MCS) which are distinct for transmission and Adaptive Re-transmission (*i.e.*, an Adaptive Re-transmission having a different MCS than the one used for transmission, *i.e.*, first higher order modulation scheme). (*E.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf; https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

23. Upon information and belief, the Accused Instrumentality performs the step of diversity combining the demodulated data received over the first and second diversity branches. For example, the Accused Instrumentality, at least in its internal testing and usage, uses a base station which performs a diversity combining, *i.e.*, Hybrid ARQ soft-combining of data from multiple received antenna ports. (*E.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf; https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

24. Upon information and belief, the Accused Instrumentality performs the step using modulation schemes that are 16 QAM and a number of $\log_2$ (M) modulation schemes. For example, the Accused Instrumentality, at least in its internal testing and usage, uses 16 QAM and 64 QAM wherein the M-ary Quadrature Amplitude Modulation is basically a $\log_2$ (M) modulation schemes, *i.e.*, 16QAM stands for $\log_2$ (16) modulation schemes and 64 QAM stands for $\log_2$ (64) modulation schemes. (*E.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf; https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

IV. COUNT II
(PATENT INFRINGEMENT OF UNITED STATES PATENT NO. 7,567,622)

25. Plaintiff incorporates the above paragraphs herein by reference.

26. On July 28, 2009, United States Patent No. 7,567,622 ("the '622 Patent") was duly and legally issued by the United States Patent and Trademark Office. The '622 Patent is titled "Constellation Rearrangement for ARQ Transmit Diversity Schemes." The '622 patent issued from an application that is a continuation of the application leading to the '961 patent. A true and correct copy of the '622 Patent is attached hereto as Exhibit B and incorporated herein by reference.

27. Swirlate is the assignee of all right, title and interest in the '622 patent, including all rights to enforce and prosecute actions for infringement and to collect damages for all relevant times against infringers of the '622 Patent. Accordingly, Swirlate possesses the exclusive right and standing to prosecute the present action for infringement of the '622 Patent by Defendant.

28. The ‘622 patent shares the same specification as the ‘961 patent and therefore the background information regarding the ‘961 patent in paragraphs 11 through 15 are incorporated by reference.

29. During the prosecution history, applicant explained the benefits of the claimed invention. The claim “defines an ARQ retransmission method in which more than two data bits are mapped onto one data symbol in each of the initial transmission and a retransmission. The symbols of the initial transmission and the retransmission represent the same bit information, but are different symbols due to different bit mappings. Since different bits of a modulation symbol have different communications reliabilities, the claimed subject matter supports averaging the communication reliabilities for each bit mapped onto a transmission symbol and a retransmission symbol so as to improve the likelihood of receiving the bit.” (Ex. C at 16).

30. An advantage of the claimed subject matter “lies in reducing the overall data traffic, since the claimed retransmission is only needed in situations where any initial transmission cannot be successfully received by a receiver. The claimed subject matter employs retransmission and diversity combining only when the initial transmission is not received properly, whereas [the prior art] communications scheme always transmits identical data over three parallel paths for diversity combining by a receiver and does not retransmit data in accordance with a repeat request by a receiver.” (Ex. C at 17).

31. **Direct Infringement.** Upon information and belief, Defendant has been directly infringing at least claim 1 of the ‘622 patent in Texas and the Northern District of Texas, and elsewhere in the United States, by performing actions comprising at least performing the claimed ARQ re-transmission method by performing the steps of the claimed invention using the SpiderCloud SCRN-310 Radio Node products to transmit data (“Accused Instrumentality”) (*E.g.*,

https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf; https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

32. The Accused Instrumentality uses an ARQ re-transmission method in a wireless communication system wherein data packets are transmitted from a transmitter to a receiver using a higher order modulation scheme wherein more than two data bits are mapped onto one data symbol to perform a first transmission and at least a second transmission based on a repeat request. For example, the Accused Instrumentality uses an HARQ method in an LTE network in which data packets are transmitted from the Accused Instrumentality to an LTE base station using a higher order modulation scheme (*e.g.*, 16QAM and 64 QAM) wherein more than two data bits are mapped onto one data symbol to perform a first transmission and at least a second transmission (*e.g.*, HARQ retransmission) based on a repeat request (*e.g.*, HARQ retransmission request in the form of NAK). (*E.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf; http://www.techplayon.com/hybrid-automatic-repeat-request-harq-in-lte-fdd/; https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf). For example, the Accused Instrumentality, at least in its internal testing and usage, performs a higher order data modulation such as 16QAM and 64 QAM wherein has more than two data bits are mapped onto one data symbol (*i.e.*, in case of 16QAM it transmits 4 bits per symbol whereas in the case of 64QAM it transmits 6 bits per symbol). (*Id.*).

33. Upon information and belief, the Accused instrumentality performs the step of modulating data packets at the transmitter using a first mapping of said higher order modulation scheme to obtain first data symbols. For example, the Accused Instrumentality, at least in its

internal testing and usage, performs a higher order data modulation such as 16QAM and 64 QAM which have more than two data bits are mapped onto one data symbol (*i.e.*, in case of 16QAM it transmits 4 bits per symbol whereas in the case of 64QAM it transmits 6 bits per symbol) so as to obtain a said first data symbols which is the output of the modulation block. (*E.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf; https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

34. Upon information and belief, the Accused Instrumentality performs the step of performing the first transmission by transmitting the first data symbols over a first diversity branch to the receiver. For example, the Accused Instrumentality, at least in its internal testing and usage, when performing an HARQ transmission, transmits the first data symbols over a first diversity branch using multi-antenna processing which maps from assigned resource blocks to the first available number of antenna ports. (*E.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf; https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

35. Upon information and belief, the Accused Instrumentality performs the step of receiving at the transmitter the repeat request issued by the receiver to retransmit the data packets in case the data packets of the first transmission have not been successfully decoded. For example, the Accused Instrumentality, at least in its internal testing and usage, receives a repeat request (*e.g.*, an HARQ retransmission request in the form of a NAK) issued by the receiver to retransmit the data packets in case the data packets of the first transmission have not been successfully decoded (*e.g.*, there was an error indication in the data received). (*E.g.*,

https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf; https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

36. Upon information and belief, the Accused Instrumentality performs the step of modulating, in response to the received repeat request, said data packets at the transmitter using a second mapping of a higher order modulation scheme to obtain second data symbols. For example, the Accused Instrumentality, at least in its internal testing and usage, upon receiving a retransmission request in the form of a NAK, enables a second mapping of a higher order modulation scheme (*i.e.*, an adaptive re-transmission having a different Modulation Coding Scheme (MCS) than the one used for transmission, *i.e.*, first higher order modulation scheme). (*E.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf; https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

37. Upon information and belief, the Accused Instrumentality performs the step of performing, in response to the received repeat request, the second transmission by transmitting the second data symbols over a second diversity branch to the receiver. For example, the Accused Instrumentality, at least in its internal testing and usage, in response to a retransmission request in the form of a NAK, transmits second data symbols over a second or later diversity branch using multi-antenna processing which maps from assigned resource blocks to the later available number of antenna ports. (*E.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf;

https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

38. Upon information and belief, the Accused Instrumentality performs the step of demodulating the received first and second data symbols at the receiver using the first and second mappings respectively. For example, the Accused Instrumentality, at least in its internal testing and usage, uses a base station which practices demodulation of first data symbols (*e.g.*, output of modulation block performing said first modulation scheme) and second data symbols (*e.g.*, output of modulation block using a second modulation scheme) at the LTE base station using the first and second modulation scheme, *i.e.*, Modulation Coding Scheme (MCS) which are distinct for transmission and Adaptive Re-transmission (*i.e.*, an Adaptive Re-transmission having a different MCS than the one used for transmission, *i.e.*, first higher order modulation scheme). (*E.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf; https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

39. Upon information and belief, the Accused Instrumentality performs the step of diversity combining the demodulated data received over the first and second diversity branches. For example, the Accused Instrumentality, at least in its internal testing and usage, uses a base station which performs a diversity combining, *i.e.*, Hybrid ARQ soft-combining of data from multiple received antenna ports. (*E.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf; https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

40. Upon information and belief, the Accused Instrumentality performs the step using first and second mapping of said higher order modulation schemes that are pre-stored in a memory table. For example, the Accused Instrumentality, at least in its internal testing and usage, uses higher order modulation schemes (*e.g.*, 16QAM and 64 QAM) that are pre-stored in a memory table such as those schemes used by a MAC scheduler. (*E.g.*, https://www.corning.com/catalog/coc/documents/product-specifications/LAN-2310-AEN.pdf; https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/08.00.00_60/ts_136302v080000p.pdf).

41. Plaintiff has been damaged as a result of Defendant's infringing conduct. Defendant is thus liable to Plaintiff for damages in an amount that adequately compensates Plaintiff for such Defendant's infringement of the '961 patent and '622 patent, *i.e.*, in an amount that by law cannot be less than would constitute a reasonable royalty for the use of the patented technology, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

42. On information and belief, Defendant has had at least constructive notice of the '961 patent and '622 patent by operation of law and marking requirements have been complied with.

IV. 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.

V. PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests that the Court find in its favor and against Defendant, and that the Court grant Plaintiff the following relief:

a. Judgment that one or more claims of United States Patent No. 7,154,861 have been infringed, either literally and/or under the doctrine of equivalents, by Defendant;

b. Judgment that one or more claims of United States Patent No. 7,567,622 have been infringed, either literally and/or under the doctrine of equivalents, by Defendant;

c. Judgment that Defendant account for and pay to Plaintiff all damages to and costs incurred by Plaintiff because of Defendant's infringing activities and other conduct complained of herein;

d. That Plaintiff be granted pre-judgment and post-judgment interest on the damages caused by Defendant's infringing activities and other conduct complained of herein;

e. That Plaintiff be granted such other and further relief as the Court may deem just and proper under the circumstances.

April 24, 2020

Respectfully submitted,

/s/ Jay Johnson

JAY JOHNSON
State Bar No. 24067322
D. BRADLEY KIZZIA
State Bar No. 11547550
KIZZIA JOHNSON, PLLC
1910 Pacific Ave., Suite 13000
Dallas, Texas 75201
(214) 451-0164
Fax: (214) 451-0165
jay@kpllc.com
bkizzia@kpllc.com

Attorneys for Plaintiff Swirlate IP LLC

OF COUNSEL:

David R. Bennett
(Request for admission *pro hac vice* to be filed)
Direction IP Law
P.O. Box 14184
Chicago, IL 60614-0184
(312) 291-1667
dbennett@directionip.com