Court File No.

FEDERAL COURT OF APPEAL

BETWEEN:

AGI SURETRACK, LLC

Appellant

-and-

FARMERS EDGE INC.

Respondents

NOTICE OF APPEAL

TO THE RESPONDENTS: FARMERS EDGE INC.

A LEGAL PROCEEDING HAS BEEN COMMENCED AGAINST YOU by the appellant. The relief claimed by the appellant appears on the following page.

THIS APPEAL will be heard by the Court at a time and place to be fixed by the Judicial Administrator. Unless the Court directs otherwise, the place of hearing will be as requested by the appellant. The appellant requests that this appeal be heard at (place where Federal Court of Appeal (or Federal Court) ordinarily sits).

IF YOU WISH TO OPPOSE THIS APPEAL, to receive notice of any step in the appeal or to be served with any documents in the appeal, you or a solicitor acting for you must prepare a notice of appearance in Form 341 prescribed by the Federal Courts Rules and serve it on the appellant's solicitor, or where the appellant is self-represented, on the appellant, WITHIN 10 DAYS of being served with this notice of appeal.

IF YOU INTEND TO SEEK A DIFFERENT DISPOSITION of the order appealed from, you must serve and file a notice of cross-appeal in Form 341 prescribed by the Federal Courts Rules instead of serving and filing a notice of appearance.

Copies of the *Federal Courts Rules*, information concerning the local offices of the Court and other necessary information may be obtained on request to the Administrator of this Court at Ottawa (telephone 613-992-4238) or at any local office.

IF YOU FAIL TO OPPOSE THIS APPEAL, JUDGMENT MAY BE GIVEN IN YOUR ABSENCE AND WITHOUT FURTHER NOTICE TO YOU.

Dated: September 17, 2024

Issued by:_____
(Registry Officer)

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APPEAL

THE APPELLANT APPEALS to the Federal Court of Appeal from the judgment of the Honourable Justice McHaffie dated June 18, 2024, in Court File No. T-449-17.

THE APPELLANT ASKS that the Court:

1. Allow the appeal;

2. Set aside the June 18, 2024 Judgment and Reasons of Justice McHaffie and if necessary, to return this matter back to the Trial Judge;

3. Award the Appellant its costs of this appeal and in the Court below;

4. Award all applicable taxes; and

5. Grant such further and other relief as this Honourable Court may deem just.

THE GROUNDS OF APPEAL are as follows:

A. History of Proceedings

6. The Appellant, AGI Suretrack, LLC ("**AGI**") commenced Court File No. T-449-17 against the Defendant, Farmers Edge Inc. ("**Farmers Edge**") alleging infringement by Farmers Edge of Canadian Patent 2,888,742 (the "**742 Patent**"). Farmers Edge responded with a counterclaim alleging invalidity of the 742 Patent.

7. The trial was heard in Vancouver, British Columbia on August 8, 2022 to August 23, 2022 and September 15-16, 2022, by Justice McHaffie (the "**Trial Judge**").

8. A draft copy of confidential reasons was provided to counsel on June 18, 2024. After determining that the draft confidential reasons did not contain confidential information, the public versions of the reasons issued on July 4, 2024 (the "**Reasons**").

B. The Parties

9. At the time of the trial, the 742 Patent was owned by Farmobile, LLC, which later merged into AGI. In the decision, the Trial Judge referred to the Plaintiff as

Farmobile. Hereinafter, the Appellant will be referred to as AGI.

10. Based in Winnipeg, Farmers Edge is an agricultural technology company. Farmers Edge was alleged to infringe the 742 Patent through the manufacture, sale, and use of its CanPlug device and associated FarmCommand computer system.

C. Canadian Patent 2,888,742

11. The 742 Patent is owned by AGI and is entitled "Farming Data Collection and Exchange System". It has a deemed Canadian filing date of September 22, 2014, claiming priority to two US priority applications filed on September 23, 2013. The claim date for all claims of the 742 Patent is September 23, 2013.

12. Relating to construction, infringement, and validity, Dr. George Edwards acted as an expert witness on behalf of AGI and Mr. Aaron Ault acted as an expert witness on behalf of Farmers Edge.

13. Generally, the 742 Patent relates to a relay device and computer-based system that can gather, relay, and process agronomic data (e.g. flow rate from a sprayer or the amount of seed planted) from electronic sensors and control units attached to a communication bus on modern farming equipment.

14. Gathering and processing agronomic data from farming implements was known prior to the claim date of the 742 Patent. Networking standards for agricultural equipment, such as ISO 11783, were created and published to define protocols that allow electronic components to interpret data and communicate with each other.

15. The ISO 11783 provides standards for the layers of the onboard communication network. The physical layer comprises wires, connectors, and power sources all of which are known as the ISOBUS.

16. The ISOBUS is not the only messaging bus used on farming equipment. Any onboard network to which devices can connect via a plug is called a "message bus" or "communication bus". Electronic control units (ECUs) can communicate via electronic messages sent on the message bus. These electronic messages can be captured by electronic components connected to the message bus.

17. The message format standards of ISO 11783 identify the type of data in a message by reserving a parameter group number or PGN for particular messages. Importantly, compliance with the ISO 11783 standard is entirely voluntary. For manufacturers, such as John Deere, its commercial interests lie in selling more implements to farmers who have previously purchased a John Deere tractor. It is not in the interest of such a manufacturer to allow its farming equipment to communicate with the equipment from competing brands. Thus, at the claim date, the promise of interoperability from ISO 11783 of allowing machines of different manufacturers to communicate with each other was not borne out because most manufacturers chose to utilize proprietary message types as opposed to confining their equipment to standard messaging formats.

18. Moreover, different manufacturers may have different proprietary messaging formats for different types of implements, i.e. the messaging format for a sprayer may be different than for a planter. Furthermore, different versions or models of a particular manufacturer's implement may use different proprietary messaging formats. For example, John Deere's 2016 sprayer model may use different messaging formats than its 2020 sprayer model. The 742 Patent discloses and claims devices and systems allowing for the gathering and processing of agronomic messages irrespective of the manufacturer, device type, or version of an implement.

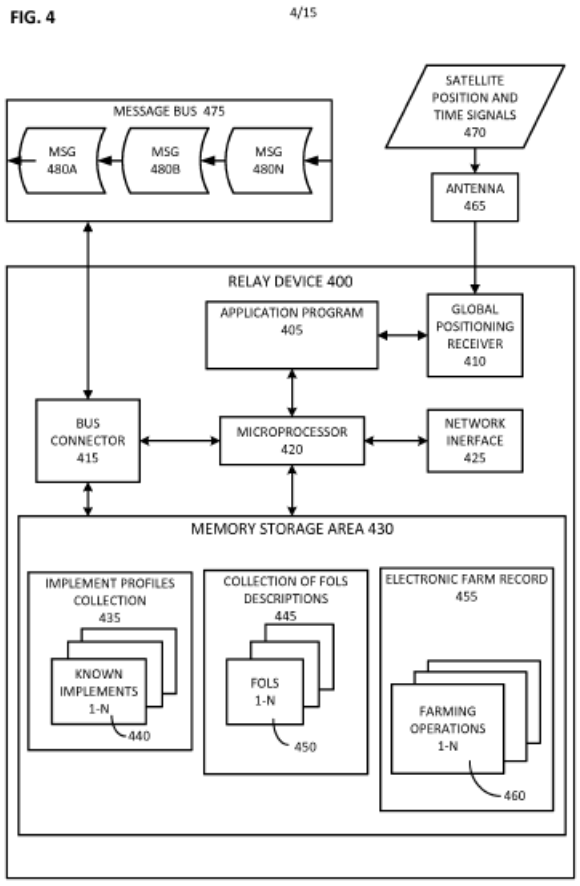
19. Dr. Edwards and Mr. Ault agreed that it is within the skillset of the person skilled in the art to be able to understand ISO 11783 messaging formats and to reverse engineer proprietary agronomic message formats being sent over communication buses on agricultural equipment.

20. The 742 Patent has three independent claims, namely claims 1, 20, and 38. Each of these independent claims were asserted against Farmers Edge. Claim 1 generally relates to a relay device whereas claims 20 and 38 relate to networked systems.

21. In a very general sense, each of these independent claims require a relay device capable of being connected to a communication bus while the farming implement is performing a farming operation. The relay device can intercept and gather electronic messages sent by ECUs associated with the farming implement. In order

to know what language is being spoken by the implement to which the relay device is connected, it is important for the system to know which implement is talking (i.e. sending messages).

22. The 742 Patent discusses having a collection of implement profiles. Each implement profile contains a communication profile for a specific implement from a particular manufacturer. In the event the particular implement is wholly compliant with the ISO 11783 standard, the communication protocol for that implement will solely be the ISO 11783 standard. In the event a particular manufacturer uses a proprietary messaging format for a particular device type and version of a particular implement, the communication protocol will be obtained through the reverse engineering of messages sent by that implement. The collection of implement profiles contemplated by the 742 Patent is depicted in box 435 of Figure 4:



23. Thus, the three independent claims require the system to have implement profiles, each defining for a known farming implement, a known manufacturer code, a

known device class, a known version and a known communication protocol, for each implement for which the claimed device or system is intended to interact.

24. When in use, the system will use information sent by the implement on the communication bus to determine the matching implement profile which contains the correct communication protocol for that implement. In this manner, the system of the 742 Patent now knows which implement is attached to the relay device. The system can then obtain the correct implement specific communication protocol from the implement profile. Now armed with the communication profile of the farming implement to which the relay device is attached, subsequent agronomic messages can be gathered, understood, and processed as contemplated by the particular claim requirements of the 742 Patent.

25. The system of the 742 Patent also requires a global positioning system receiver (GPS). The system can stamp or overlay time and position signals from the GPS onto agronomic data gathered by the relay device. In this manner, the system can now determine where and when the implement is performing agronomic functions.

26. All independent claims refer to farming operations. A farming operation is defined in the 742 Patent as "any farming job, task, chore, assignment or activity performed on or over land or water at the farming business, including without limitation, activities such as clearing land, tilling soil, mowing grass, irrigating or crop-dusting a field, feeding, herding or transporting animals, or fertilizing, planting, spraying or harvesting a crop."

27. Independent claims 1 and 20 refer to operating events. Also, as noted by the Trial Judge in para. 206 of the Reasons, the disclosure of the 742 Patent distinguishes between operating events and operating parameters.

28. The 742 Patent provides examples of operating events as including "deactivating the implement, activating and/or deactivating certain sections or row units on the implement, receiving a signal or instruction from the farming vehicle, a transmission by the implement of a signal representing a low-feed, low-fuel or power-fail condition, an increase or decrease in volume or pressure readings, etc."

29. Moreover, the software or application program/parameter extraction program referred to by the claims utilize operating parameters as described in the 742 Patent:

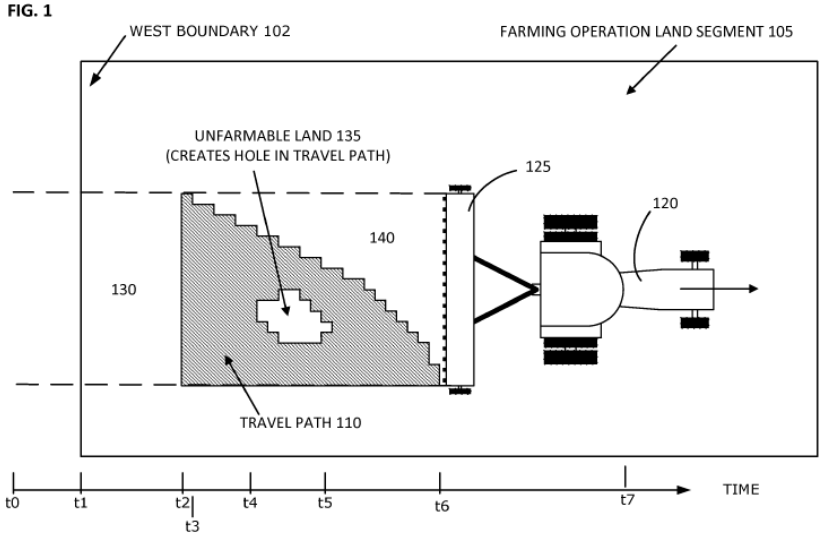
> In general, the application program is configured to derive operative events based on changes in operating parameters for the farming implement or farming vehicle that occur while the farming operation is being performed. For example, if the application program of the relay device interprets a message (in accordance with the communication protocol) to indicate that a "flow rate" operating parameter associated with a particular nozzle on a sprayer implement has dropped to zero, then the application program may be configured to record the change in the flow rate operating parameter as a "deactivation" operating event for the nozzle.[1]

30. Each of the independent claims require the relay device or system to determine a travel path. A travel path is defined in the 742 Patent as a specific area of land on the earth where a farming operation (e.g. planting corn) is performed by the farming vehicle or farming implement. The travel path does not include any areas of land where the farming implement travelled but was not performing farming operations or where the farming vehicle or implement did not travel.

31. Fig 1 shows an example of how a travel path is determined. The tractor is towing a sprayer. At t2 all nozzles on the sprayer are activated as is shown by the hatched area. At various times, individual nozzles on the sprayer boom are either activated or deactivated. The travel path for the spraying operation only includes areas where the spraying takes place and excludes places where the implement travelled with deactivated nozzles or a deactivated sprayer boom.

[1] Canadian Patent 2,888,742, p. 7, ll. 5-12

FIG. 1



32. The claims also refer to a farming operation land segment (FOLS). The disclosure defines a FOLS as a "a contiguous or non-contiguous parcel of land on the earth where a farming operation takes place, and as such, may comprise a farm, field, lot or pasture, or a combination of two or more farms, fields, lots or pastures."

33. Independent claim 20 of the 742 Patent reads:

> 20. A farming data exchange system, comprising:
>
> (a) a microprocessor;
>
> (b) a first data store for storing a user account and an electronic farming record for a farming business;
>
> (c) a second data store for storing descriptive information about a farming operation land segment associated with the farming business;
>
> (d) a third data store for storing an implement profile defining, for a known farming implement, a known manufacturer code, a known device class, a known version and a known communication protocol;
>
> (e) a network interface configured to receive message data, position data and time data acquired by a remote relay device connected to a farming vehicle or farming implement while the farming vehicle or farming implement are used to perform a farming operation at the farming business; and

(f) an application program having programming instructions that, when executed by the microprocessor, will cause the microprocessor to automatically:

(i) extract content from the message data and use the extracted content to determine that there is a match between the farming implement used to perform the farming operation and the known farming implement of the implement profile;

(ii) use the extracted content, the position data, the time data and the known communication protocol defined by the implement profile for the known farming implement to determine a set of operating events and a travel path for the farming operation, the travel path including only those areas of land on the farming operation land segment where the farming vehicle and farming implement traveled while performing the farming operation, and does not include any areas of land on the farming operation land segment where the farming vehicle and farming implement did not travel during the farming operation,

(iii) use the set of operating events, the travel path and the descriptive information stored in the database to determine that the farming operation occurred on the farming operation land segment, and

(iv) record the farming operation and the descriptive information for the farming operation land segment in the electronic farm record.

34. The third data store must be capable of storing implement profile(s) for a known implement. An implement profile must include a known manufacturer code, a known device class, a known version and a known communication protocol for each implement that the claimed system intends to interact.

35. The system contemplates having a remote relay device connected to the farming vehicle or implement while the vehicle or implement is being used to perform a farming operation.

36. The system also has a network interface configured to receive message data, position data and time data acquired by a remote relay device. Message data

includes agronomic data circulating over the communication bus. That message data can be stamped with position and time data from a GPS receiver. Recall that agricultural manufacturers may choose to utilize ISO 11783 communication standards or they may choose to use proprietary messaging formats. As such, the agronomic meaning of time stamped electronic messages still needs to be deciphered by the system.

37. The claimed system contemplates having a communication protocol for each implement with which the system can interact. Recall that different manufacturers may utilize different proprietary message formats for different implement types (i.e. device class) and for different models or versions of those device classes.

38. When a relay device is connected to a communication bus on a particular farming implement, the system must first determine which implement is connected so that the system can locate a corresponding implement profile containing a communication protocol for that implement. That is performed by extracting context from message data to determine there is a match between the implement performing the farming operation and the implement profile of a known farming implement. In this manner, once a match has been confirmed, the system now has access to the communication protocol for the implement performing the farming operation. The system can then understand the "language used" and thus determine where and when particular farming operations are being performed.

39. The system can then understand and use the time and position GPS stamp extracted agronomic data to determine a set of operating events and a travel path for the farming operation.

40. The second data store of the claimed system contains descriptive information about a FOLS associated with the faming business. The system can use the set of operating events, the travel path and the descriptive information to determine that the farming operation occurred on a particular FOLS.

41. The system can then record the farming operation and the descriptive information for the FOLS in the electronic farm record for the farming business.

42. The other independent system claim is claim 38 which reads:

> 38. A server system for collecting and processing farming operation data for a farming business, the server system comprising:
>
> (a) a database configured to store a user account and an electronic farming record for the farming business, the electronic farming record including entries representing farming operations performed at the farming business and descriptions of farming operation land segments for said farming operations;
>
> (b) an implement profile for a known farming implement on the server system, the implement profile defining a known manufacturer code, a known device class, a known version and a known communication protocol for the known farming implement;
>
> (c) a farm traffic controller configured to receive and store in the database messages produced by a remote relay device associated with the user account, the messages comprising geo-location data, time data and electronic control unit messages generated bya farming implement while said farming implement is used at the farming business to perform a new farming operation; and
>
> (d) a parameter extraction program that:
>
> > (i) determines a farming operation land segment for the farming operation based on the implement profile, the geo-location data, the time data and electronic control unit messages, and
> >
> > (ii) creates a new entry in the electronic farming record for the farming business, the new entry including an identifier for the farming operation and a description of the farming operation land segment for the farming operation.

43. The farm traffic controller of claim 38(c) functions in the same way as the network interface of claim 20(e). The messages captured by the remote relay device comprise ECU messages. For example, a task controller is a type of an ECU that can control equipment or log data while the farming implement performs a task. ECUs are responsible for the sending, receiving, and logging of agronomic data.

44. The parameter extraction program of claim 38(d) is essentially the same as the application program of claim 20(f) but is required to perform the actions prescribed by 38(d)(i) and 38(d)(ii).

45. The other independent claim is claim 1 which relates to a relay device for tracking farming operations. Claim 1 reads as follows:

> 1. A relay device for tracking farming operations for a farming business, comprising:
>
> (a) a microprocessor;
>
> (b) a bus connector for connecting the relay device to a message bus on a farming vehicle or farming implement, wherein the message bus is configured to carry messages generated by the farming vehicle or the farming implement while the farming vehicle and the farming implement are used to perform the farming operation;
>
> (c) a global positioning system receiver that receives position and time signals from space-based satellites while the farming operation is performed;
>
> (d) a memory storage area that stores (i) an electronic farm record for the farming business, (ii) descriptive information about a farming operation land segment associated with the farming business, and (iii) an implement profile defining, for a known farming implement, a known manufacturer code, a known device class, a known version and a known communication protocol; and
>
> (e) an application program comprising programming instructions that, when executed by the microprocessor, will cause the microprocessor to automatically
>
> > (i) extract content from one or more messages transmitted on the message bus and use the extracted content to determine that there is a match between the farming implement used to perform the farming operation and the known farming implement of the implement profile;
> >
> > (ii) use the extracted content, the position and time signals and the known communication protocol defined by the implement profile for the known farming implement to determine a set of operating events and a travel path for the farming operation,

> (iii) use the set of operating events, the travel path and the descriptive information stored in the memory storage area to determine that the farming operation occurred on the farming operation land segment, and
>
> (iv) record the farming operation and the descriptive information for the farming operation land segment in the electronic farm record.

46. Claim 1 requires that the relay device have a microprocessor, bus connector, GPS receiver, a memory storage area and an application program. Claim 1 contemplates that matching between the implement performing the farming operation and the implement profile be done by the microprocessor on the relay device. Similarly, claim 1 contemplates the determination of a set of operating events and a travel path for the farming operation as well as the determination that the farming operation occurred on the FOLS and the recording of the farming operation in the electronic farm record to be done on the relay device. One of the issues to be addressed on appeal will be whether the Trial Judge erred in determining that it is essential that all processing must be done on the relay device alone as opposed to elsewhere in the system.

D. Farmers Edge's Activities and Errors Concerning Construction and Infringement

47. Farmers Edge has a device called the CanPlug which it utilizes as part of its FarmCommand system and it is these aspects which are the subject of infringement allegations.

48. The CanPlug is connected to the message bus on farming equipment and is marketed as being "brand independent" in that it can capture and relay agronomic data from agricultural equipment from various manufacturers. The CanPlug includes a microprocessor that runs software, computer memory, a GPS unit, a cellular modem, and a Bluetooth transceiver.

49. FarmCommand is a computer-based farm management information software system used to manage and analyze data to evaluate and plan farming operations, generate maps and reports, and improve decision making. Users can access the data

collected from the CanPlug via the FarmCommand system, either through a website or a mobile app.

50. Regarding claim 20, FarmCommand is a farming data exchange system, comprising (a) a microprocessor; (b) a data store for storing a user account and an electronic farming record for a farming business; (c) a data store for storing descriptive information about a FOLS; (e) a network interface configured to receive message data and other data from a remote relay device connected to a farming vehicle or farming implement; and (f) an application program having programming instructions that when executed by the microprocessor, will cause it to take certain steps.

51. Using the "In-Cab Tool" on the FarmCommand mobile app, users can access harvest yield maps in real time on their mobile device. The data generated from the CanPlug can be viewed and stored in other ways.

Pre-April 2021

52. Farmers Edge updated the software in FarmCommand and on the CanPlug from time to time. Different versions of software are alleged to utilize different claims.

53. Prior to April 2021, Farmers Edge was alleged to infringe claims 20, 26-27, 31-37, 38, 39, and 41-44.

54. For each implement stored by FarmCommand, the alleged implement profile includes the name of the manufacturer and type of implement. As will be addressed, the Trial Judge erred in restricting the construction of "manufacturer code" and "device class" to a numeric code as designated by ISO 11783. For example, the ISO 11783 numeric code for John Deere is 12 and for the sprayer the numeric code is 6. In this regard, FarmCommand stores, for example, "John Deere, sprayer". In light of the Trial Judge's erroneous construction, he found there to be no infringement by FarmCommand through its use of a non-numeric messages or codes.

55. As will be discussed, in addition to his construction of manufacturer code and device class, the Trial Judge erred in concluding that AGI conceded that the "manufacturer code" and "device class" claim elements are essential. In actuality, during closing, AGI submitted that these terms are non-essential and therefore can be substituted for anything designating the manufacturer and type of implement.

> MR SMITH:
>
> So my friend's position starting today was that the manufacturer code, device class, version had to be the ones assigned by ISO, and for manufacturer code and device class it's got to be a number.
>
> He basically conceded that under your hypothetical, just missing by one, that would be an obvious variant to what his construction is, that it's got to be ISO assigned. But the implications of that is that that's a concession that manufacturer code device class are non-essential and can be varied, and that would be an obvious equivalent.
>
> If that's the case then he also says that the matching has to be done on the basis of the manufacturer code and if the manufacturer code is non-essential then you can use information -- other information on the bus to achieve that effect, and the implication of that concession is his construction would be the same as ours, is that the matching step can be done with any information on the message bus and the manufacturer code is not limited to what is in ISO standards. That's the first point.[2]

56. Farmers Edge uses message data in the form of the PGN, source address, and opcode, and/or the CanPlug ID which is a unique identifier assigned to and acquired by a CanPlug unit to match between the implement performing the farming operation and the communication protocol for that implement. But for the errors in his construction and the mistake concerning a concession on the essentiality of manufacturer code and device class, the Trial Judge would have found infringement for AGI. Correcting the Trial Judge's mistakes on construction will also change the outcome concerning infringement for the pre-April 2021 period.

[2] Revised Trial Transcript, September 16, 2022, p. 214, ll. 18-28 – p. 215, ll. 1-10

After April 2021

57. In April 2021, Farmers Edge implemented a software update to the FarmCommand and CanPlug system. The update transferred to the CanPlug the processing done previously by FarmCommand's servers. Before that, the CanPlug sent raw or unprocessed data to a server of FarmCommand called Vanessa for processing. After the update, the raw CanPlug data would be processed by a function called "pgn2ble" found on the CanPlug and the relay device sends the processed data to the FarmCommand system for storage.

58. AGI pleaded that Farmers Edge amended system infringes device claims 1, 3, 4, 9, 13, 17, 18 and 19 of the 742 Patent. For the same reasons discussed above, in the pre-April 2021 code, the Trial Judge found the CanPlug/FarmCommand system does not store a manufacturer code or device class because he mistakenly and narrowly construed those claim terms (which also includes his error concerning the essentiality of these claim terms). Correcting these errors in construction will result in a determination that the CanPlug infringes claims 1, 3, 4, 9, 13, 17-19 of the 742 Patent for the April 2021 code changes.

After July 2021

59. In July 2021, Farmers Edge made further updates to the software used by CanPlug/FarmCommand. The aspects of the CanPlug software that Dr. Edwards had identified as performing the elements of claim 1(e) (iii) (i.e. using the set of operating events, the travel path and the descriptive information stored in the memory storage area to determine that the farming operating occurred on the farming operation land segment) were removed from the CanPlug and, once again, performed on FarmCommand servers. AGI alleged that it is not essential that all processing be done on the CanPlug for claims 1, 3, 4 ,13, 17, 18, and 19.

60. As will be discussed, the Trial Judge erred by finding it was essential for claim 1 and its dependant claims that all processing must be done on the CanPlug. Correcting the construction errors associated with manufacturer code and device class discussed above and correcting his essentiality analysis concerning where the

processing takes place will change the infringement analysis for the July 2021 code changes.

E. The Trial Decision and Issues on Appeal

61. The Trial Judge recognized that the 742 Patent relates to the collection, processing, and recording of farming specific data (i.e. agronomic data) generated by electronic sensors and ECUs found on most modern farming equipment. He also recognized that equipment from different manufacturers will often speak different languages and that the equipment speaking a proprietary language can be reverse engineered and he concluded that "One aspect of the '742 Patent involves ensuring the right language, or *communication protocol*, is used to translate and analyze the data from the implement."[3] Correctly interpreting messages on the bus is crucial for this invention to work.

62. Regarding the experts, the Trial Judge said that each of Dr. Edwards and Mr. Ault took positions that he did not adopt and that each provided helpful evidence to put the Court in the position of the skilled reader to whom the 742 Patent is addressed, namely someone with knowledge and experience in precision agriculture, software, and networking communications.

63. As it relates to the common general knowledge, the Trial Judge discussed: (i) precision architecture and modern farming equipment; (ii) the ISO 11783 standard; and (iii) mapping and farm management information systems/software.

64. ISO 11783 sets out network and data protocols for use in agricultural equipment. The communication bus prescribed by the ISO 11783 standard is called the ISOBUS and, as with other communication buses, was intended to allow ECUs to communicate with each other. However, the promise of interoperability to which ISO 11783 was directed was not borne out in reality because manufacturers chose to use proprietary messaging formats. In this regard, John Deere found it advantageous to not communicate with most other equipment. Having John Deere equipment only communicate with John Deere equipment was considered an

[3] Trial Decision, para. 29 (emphasis in original)

advantage to drive sales of John Deere implements. In this regard, if a farmer has a John Deere tractor, the farmer may be more likely to purchase John Deere implements if that is the only equipment that communicates with the John Deere tractor.

65. Regarding messaging formats, ISO 11783 prescribes the use of a header indicating the type of message being sent. The header is known by its "parameter group number" or "PGN". PGNs are used for both standardized messages as well as proprietary messages.

66. One type of message prescribed by ISO 11783 is an "address claim message", which is a message sent by a device on the communication bus to claim an address for itself within the system. Included in an address claim message is an eight-byte NAME message/data that contains fields for industry group, device class, function, manufacturer code, and an identity number. ISO 11783 codes for manufacturers and device classes are represented by numbers.

67. Regarding claim construction, the Trial Judge was inconsistent in his approach. In paragraph 81(b) of the Reasons, he said claim construction was to be done by "adhering to the language of the claims, read and understood in the context of the patent as a whole including its disclosure and other claims…". Yet, in paragraphs 119-122, he held that resort to the specification is not necessary when a claim term is clear and unambiguous. It is an error of law to construe a claim term divorced from the specification as a whole.

68. He also recognized that claim construction is required to be purposive; yet he only applied a purposive construction for some claim terms and not for the claim terms manufacturer code and device class. It was an error of law for the Trial Judge to not apply a purposive construction.

69. As it relates to claim 1, the Trial Judge discussed the following claim terms: (i) relay device; (ii) farming operations; (iii) farming business; (iv) microprocessor; (v) bus connector; (vi) message bus; (vii) farming vehicle; (viii) farming implement; (ix) global positioning system; (x) memory storage area; (xi) electronic

farm record; (xii) farming operation land segment; (xiii) implement profile; (xiv) known manufacturer code; (xv) known device class; (xvi) known version; (xvii) known communication protocol; (xviii) application program; (xix) automatically; (xx) match; (xxi) set of operating events; and (xxii) travel path.

70. As it relates to claim 20, the Trial Judge also discussed the following claim terms: (i) farming data exchange system; (ii) data store; (iii) network interface; (iv) message data; (v) remote relay device; and (vi) database.

71. For claim 38, the additional claim terms discussed include: (i) server system; (ii) farm traffic controller; (iii) parameter extraction program; and (iv) electronic control unit messages.

72. At trial and on appeal, a principal area of disagreement relates to the claim elements that must be included in an implement profile, namely, manufacturer code, device class, and version; and depending upon how these terms are construed, whether they are non-essential and thus substitutable. Also at issue for claim 1 is whether it is essential that all processing be performed by the microprocessor on the relay device.

73. As it relates to "known manufacturer code", and "known device class", and "version" which are required elements to be included in an "implement profile", AGI submitted that the Court should apply a purposive construction. Because manufacturers have different communication protocols for different versions or types of implements, it is necessary to have distinct communication protocols for each specific manufacturer/device type and version of the implement to be utilized in the claimed system or devices. As such, manufacturer code, device class, and version should be construed as anything designating a manufacturer, type of device, and version of that device.

74. Farmers Edge, on the other hand, submitted that manufacturer code and device class should be restricted to how these terms are defined in the ISO 11783 standard. They suggested the Court should use the more limited manner in which these terms are

used in claims 2 and 21 and extend that narrow construction to the broader language of claims 1 and 20.

75. The Trial Judge noted that these terms are not defined in the disclosure in the 742 Patent yet the Trial Judge effectively ignored Fig 7 where these terms are used in a manner inconsistent with the ISO 11783 standard. AGI submits that the Trial Judge erred when he found these terms should be restricted to the meaning set out in the ISO 11783 standard of numeric codes appearing in the NAME field messages/data sent by ECUs and assigned to particular manufacturers and device types respectively. Moreover, he erred when he concluded that these claim terms are essential and thus non-substitutable.

76. The Trial Judge rejected Farmers Edge's argument that "message bus" be construed as limited to the ISOBUS prescribed by the ISO 11783 standard. Rather, the Trial Judge held that this term should be construed more generally as any communication bus allowing communication between devices on agricultural machines. It is inconsistent for the Trial Judge to have said that it is not necessary for the messaging bus to be ISOBUS, yet the general language chosen for manufacturer code and of device class be restricted to ISO11783 standardized message formats. Moreover, the Trial Judge never identified the purpose that manufacturer code and device class play in the overall scheme of the devices or systems claimed by the 742 Patent. This amounts to an error of law.

77. As it relates to infringement for the pre-April 2021 FarmCommand system, the Trial Judge identified the issue as whether FarmCommand comprises a data store for storing an implement profile as set out in element 20(d) and whether the application program causes the microprocessor to automatically take the steps set out in element 20(f) including the match of element 20(f)(i). This same analysis is applicable for the asserted claims dependent upon claim 20.

78. For claim 38, the Trial Judge identified the principal dispute as being whether FarmCommand comprises an implement profile as set out in element 38(b), and, in particular, whether the implement profile defines a known manufacturer code, a known device class, and a known version. There is also a dispute as to whether the

parameter extraction program of FarmCommand determines the FOLS for the farming operation based on the implement profile and other data, as set out in element 38(d)(i). This same analysis applies to asserted claims dependent upon claim 38.

79. While FarmCommand lists the manufacturer and device type in its database, the Trial Judge mistakenly construed manufacturer code and device class as being limited to the numeric codes defined as part of the NAME field in ISO 11783 and effectively ignored Fig 7. Moreover, the Trial Judge erred when he found that Farmers Edge's use of the PGN, source address, and opcode, and/or CanPlug ID were not sufficient for the matching steps required of these asserted claims. In the result, once the errors associated with the construction of the 742 Patent are corrected, the Trial Judge should have found infringement of asserted claims 20 and 38 and for those asserted claims which are dependent upon claims 20 and 38.

80. For the April 2021 to July 2021 CanPlug, AGI asserted that Farmers Edge infringed claims 1, 3, 4, 9, 13, 17, 18, and 19. The Trial Judge mistakenly concluded that the match required by element 1(e)(i) involve one or more of the items that must be included in the implement profile, namely the known manufacturer code, known device class, or known version as he mistakenly construed those terms. In essence, the Trial Judge erred in his construction and conclusion regarding infringement for the same reasons discussed above for claims 20 and 38.

81. For the July 2021 to April 2022 version of the CanPlug and FarmCommand system, the Trial Judge found that there is nothing in the disclosure or specification of the 742 Patent indicating that it is essential that all processing contemplated by claim 1 must be done on the microprocessor found on the relay device. The Trial Judge made factual findings that it was common general knowledge for a skilled person to change the location of processing from off an edge device such as a remote relay device. In the result, the Trial Judge should have been consistent and found that it is not essential that all processing be done on the remote relay device. For this reason and for the same reasons as identified above for the April 2021 code update, the Trial Judge's infringement analysis is flawed and must be corrected.

82. If this Court decides that it cannot make the determination the Trial Judge should have made on infringement, AGI asks that the matter be returned to the Trial Judge for redetermination.

83. As it relates to validity, the Trial Judge only dealt with anticipation and obviousness.

84. For anticipation, Farmers Edge relied upon John Deere's GreenStar 3 2630 Display (GS3). In this regard, the Trial Judge erred in law by combining various documents to mosaic what constitutes the GS3. The Trial Judge's conclusion that the GS3 anticipates claim 1, 3, 4, 7 to 13, 15, 17 and 19 amounts to an error and must be corrected. The claims of the 742 Patent reflect that the problem of interoperability is solved by having the system match the implement that is connected from one of a number of implement profiles. The Trial Judge's errors in construction including that the claims contemplate matching being done by comparison to a system containing a single implement profile amounts to an error and affects his anticipation analysis.

85. The GS3 represents John Deere's proprietary system whose details or internal workings are kept confidential, which Defendant did not dispute. The Trial Judge's reliance upon unsupported comments by Mr. Ault represents an error in principle and/or a palpable and overriding error of fact.

86. Regarding anticipation, the Trial Judge erred in many legal and factual ways including:

    a. while he correctly stated that anticipation requires a comparison to a single prior art reference, in actuality he performed his anticipation analysis without confining himself to a single prior art disclosure for the GS3;

    b. finding that the GS3 "John Deere Implement Detection" function operates the same as the matching function required by the claims;

    c. finding that agronomic data from the GS3 system could be accessed remotely via a cellular network using JD Link;

d. finding that there was no evidence as to why John Deere keeps its system confidential;

e. finding that the enablement requirement of anticipation does not require a skilled person to be able to reproduce the prior art;

f. that the inventive concept, interoperability, or having the capacity to match a plurality of implement profiles, is not relevant to the anticipation analysis;

g. determining that anticipation does not require the prior art to be addressing the same solution offered by the claimed invention;

h. in determining that it is irrelevant that the GS3 cannot be used with non-John Deere implements that use proprietary messages;

i. in determining without any admissible evidence that the GS3 has an implement profile containing a communication protocol;

j. in determining that Mr. Ault was not cross-examined on aspects of the GS3 system, when in reality Mr. Ault conceded that he had no personal knowledge of the GS3 system;

k. in failing to identify where and how the memory storage capabilities of GS3 are stored or processed including an implement profile;

l. in determining that matching occurs with the GS3 or that matching based on a unique identifier or otherwise qualifies as a manufacturer code, device class, and version as how those terms should be properly construed;

m. in failing to give effect to the fact the GS3 manual says that the GS3 system can change from region to region and failing to identify which regional version of the GS3 is being evaluated for anticipation;

n. in failing to determine that the ability to process non-John Deere and non ISO-compliant implements is included within the inventive concept of the claims of the 742 Patent;

o. in including aspects of infringement within his anticipation analysis;

p. in failing to consider the matching function required by an implement profile;

q. in confusing the disclosure and enablement aspects of anticipation and thereby allowing trial and error experimentation at the disclosure stage;

r. in finding without admissible evidence that the GS3 automatically detects an implement by matching the manufacturer code, device class, and unique identifier (within the scope of a version) which loads an implement profile and thereafter reads messages using a communication protocol;

s. in finding that the GS3's as applied mapping function excludes areas where the vehicle travels while not performing a farming operation and misunderstood the colouring on as applied maps in that the GS3's maps also include areas where the vehicle travelled while it was not performing a farming operation;

t. in determining that the "recording source" is automatic or that the GS3 automatically determines in which field farming operations are being performed on; and

u. in failing to distinguish between the GS3 Pro mode and virtual terminal modes which operate independently of each other.

87. Regarding obviousness, the Trial Judge combined the GS3 system with the Ag Leader SMS system and found that all claims not otherwise rendered anticipated were found to be obvious. The Trial Judge erred in law in his construction of the inventive concept of the claims of the 742 Patent by effectively reading out the concept of interoperability as well as by erring in law and/or palpable and overriding errors of fact regarding his understanding of the GS3 and Ag Leader SMS systems. Based upon this error, the Trial Judge's conclusion regarding obviousness is fundamentally flawed and must be corrected.

88. Regarding obviousness, the Trial Judge erred including the following:

a. in failing to properly apply the principle that the inventive concept is not limited to the essential elements of a claim;

b. in failing to address obviousness objectively and purposively having regard to the problem addressed in the patent;

c. in failing to include the concept of interoperability as part of the inventive concept of the claims of the 742 Patent yet indicating that different implements can speak different languages and that this is relevant to the inventive concept;

d. in applying a single inventive concept to all claims;

e. in including the concept of having multiple implement profiles and having to match from one of a number of implement profiles as part of the inventive concept of the claims of the 742 Patent;

f. in failing to recognize that a transfer of agronomic data by memory stick is not relevant to claim 13, claim 20 and 38 and any claim dependent upon claims 20 and 38.

g. in failing to appreciate the ability to transfer data without a portable storage device is relevant to claims 20 and 38 and these claims dependant upon either claim;

h. in making errors of fact concerning how the Ag Leader SMS system operates and carrying over to his obviousness analysis his misunderstanding of how the GS3 system works as he discusses in anticipation and as more fully described above in this Notice of Appeal;

i. in being inconsistent in his dealing with the essentiality of where processing takes place in claim 1 yet concluding that it would be obvious for a PSIA to change the location of processing from off an edge device;

j. in concluding that it would be obvious to use the matching step to match to an implement profile containing a communication protocol as is disclosed and claimed in the 742 Patent; and

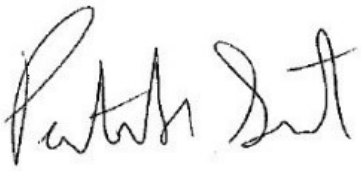
k. in confusing between parsing machine data from parsing agronomic data.

Conclusion

89. AGI asks that the appeal be allowed and if necessary that this action be returned to the Trial Judge for redetermination.

90. The Appellant proposes the hearing of the appeal take place in Vancouver, British Columbia.

Dated: September 17, 2024



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