

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TC TECHNOLOGY LLC,

Plaintiff,

v.

SPRINT CORPORATION and SPRINT
SPECTRUM, L.P.,

Defendants.

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Civil Action No. 16-153-WCB

MEMORANDUM OPINION AND ORDER

Before the court is a dispute between the parties over the meaning of the “mutually exclusive” limitation in the two claims of U.S. Patent No. 5,815,488 (“the ’488 patent”), both of which are asserted in this case. The parties, plaintiff TC Technology LLC (“TC Tech”) and defendants Sprint Corporation and Sprint Spectrum, L.P., (collectively, “Sprint”) submitted a series of briefs and letters concerning the dispute. After reviewing the parties’ briefs and letters, I have concluded that the parties’ dispute actually relates to the interpretation of another claim phrase, “set of orthogonal baseband frequencies.” This order provides a tentative construction for that term and directs the parties to submit supplemental briefing directed to the construction of that term.

BACKGROUND

The ’488 patent discloses a communication protocol that enables a plurality of remote locations to transmit data simultaneously to a central location over a shared channel. ’488 patent, col. 4, ll. 41–67. At each remote location, the data to be transmitted to the central location is translated into a transform coefficient associated with a particular frequency. *Id.* at col. 3, ll. 49–

57. That frequency is chosen from a subset of orthonormal baseband frequencies that is allocated to the remote location. *Id.*

Claims 1 and 2 of the '488 patent recite a method for conducting the “upstream” transmissions, i.e., data that is transmitted from remote locations to a central location over a shared communication channel. Claim 1 reads as follows in pertinent part:

1. A method for enabling a plurality of remote locations to transmit data to a central location comprising the steps of:

at each remote location, coding data to be transmitted by translating each group of one or more bits of said data into a transform coefficient associated with a particular baseband frequency in a particular subset of orthogonal baseband frequencies allocated to the remote location, the particular subset of orthogonal baseband frequencies allocated to each remote location being chosen from a set of orthogonal baseband frequencies, the subsets of baseband frequencies allocated to each remote location being mutually exclusive;

'488 patent, col. 10, ll. 47–58; *see also id.* at col. 11, ll. 12–22 (independent claim 2 containing identical language).

During a claim construction proceeding before Judge Andrews in 2017, the parties initially disagreed about the construction of the phrase “the subsets of baseband frequencies allocated to each remote location being mutually exclusive” in claims 1 and 2. Dkt. No. 71, at 5–21. Subsequently, however, the parties agreed on a construction for that phrase. The agreed-upon construction was: “for any given time slot, no individual baseband frequency is allocated to more than one remote location.” Dkt. No. 93, at 4. In September of 2017, Judge Andrews issued a claim construction order consistent with the parties’ proposed construction. Dkt. No. 95, at 1.

During summary judgment proceedings, Judge Andrews addressed the construction of the “mutually exclusive” limitation. Sprint argued that its accused LTE technology did not infringe the asserted claims of the '488 patent, because certain frequencies in the upstream path of its LTE network were not allocated in a “mutually exclusive” manner. Dkt. No. 272, at 2–3, 16 (redacted

version of Dkt. No. 258). Sprint contended that TC Tech’s infringement theory was solely focused on the transmission scheme conducted over Sprint’s “Physical Uplink Shared Channel (PUSCH)” and improperly ignored the transmission scheme conducted over Sprint’s “Physical Uplink Control Channel (PUCCH).” *Id.* at 14–16. According to Sprint, there could be no infringement because the claims did not permit TC Tech to “artificially exclude from its infringement allegations the [transmission scheme conducted over] PUCCH.” *Id.* at 14.

In a summary judgment order dated April 15, 2019, Judge Andrews rejected Sprint’s noninfringement argument. He stated that the parties’ dispute over excluding PUCCH “appears to be a factual dispute over whether certain elements of Sprint’s LTE network meet the ‘mutually exclusive’ limitation.” Dkt. No. 354, at 10. Judge Andrews added: “Sprint’s noninfringement theory assumes that the limitation must be met by both the PUSCH and PUCCH frequencies. Because Sprint has failed to show that the limitation must be met by the PUCCH frequencies, it has failed to meet its burden on summary judgment with respect to literal infringement.” *Id.*

On August 21, 2020, after this case was transferred to me, Sprint revived the dispute over the “mutually exclusive” limitation by filing a memorandum requesting that I “preclude TC Tech from arguing to the jury that the claims permit any frequencies to be allocated to more than one remote location in a time slot.” Dkt. No. 524, at 15. Subsequent to that opening memo, the parties submitted five more briefs and letters addressing the dispute. *See* Dkt. Nos. 530, 535, 539, 543, 544. In the first rounds of briefing, the parties raised several issues relating to the “mutually exclusive” limitation. Those issues included whether Sprint’s request constitutes a duplicative motion for summary judgment, *see* Dkt. No. 530, at 1, whether a literal interpretation of Judge Andrews’ prior claim construction settles the issue at hand, *see* Dkt. Nos. 524, at 9, and 535, at 1–3, whether TC Tech had forfeited its current position as a result of arguments it made in a prior

inter partes review, *see* Dkt. No. 524, at 12–15, and whether there is a relevant distinction between “user data” and “control data” for purposes of the parties’ dispute, *see* Dkt. Nos. 524, at 4–5, and 535, at 5–7.

In the subsequent rounds of briefing, the parties moved past those four issues and began focusing on the actual dispute at hand—the construction of the phrase “a set of orthogonal baseband frequencies.” As to that phrase, TC Tech’s position is that the “claims on their face require only that a ‘set’ of frequencies be allocated to remote locations in a mutually exclusive way.” Dkt. No. 530, at 11. According to TC Tech, the “claims do not require that all frequencies in all frequency sets used by the network be allocated in a mutually exclusive way.” *Id.* More explicitly, TC Tech asserts that “[t]he claims successively require (1) that ‘each remote location’ be allocated a ‘particular subset’ of frequencies from a ‘set’ of frequencies (the ‘Set’ limitation); and that (2) the ‘subsets’ allocated to those different remote locations be ‘mutually exclusive’ from one another (the ‘mutually exclusive’ limitation). . . . Thus, as Judge Andrews recognized when he rejected Sprint’s arguments the first time, the claims require only that frequencies in the claimed ‘set’ (not ‘all’ frequencies in the system) be allocated in a mutually exclusive manner.” Dkt. No. 539, at 1.

Sprint counters by arguing that TC Tech is wrong in contending that “there may be multiple ‘subsets’ of frequencies allocated to a remote—some from the recited ‘set’ and some from outside that ‘set’ (which TC Tech says are not claimed).” Dkt. No. 535, at 2. TC Tech’s position is wrong, according to Sprint, because the patent unambiguously discloses that “the claimed ‘set’ of frequencies from which the subsets allocated to each remote are chosen constitutes the set of all of the available frequencies, not just some subset of available frequencies.” *Id.* at 3. Alternatively, Sprint submits that even if TC Tech is correct that there could be subsets of frequencies allocated

outside the claimed set, “[that] would not help TC Tech because those frequencies also must be mutually exclusive.” *Id.* at 2. According to Sprint, the “mutually exclusive limitation at issue here applies to ‘the subsets of baseband frequencies allocated to each remote location,’ without exception and not limited to the ‘particular’ subsets allocated from the claimed ‘set.’” *Id.* at 2–3. Thus, according to Sprint, “all frequencies allocated to remotes must be mutually exclusive, even if a ‘particular subset’ were chosen from a set that constituted fewer than all available frequencies.” *Id.* at 3.

In response, TC Tech asserts that the specification supports its position that the upstream band of frequencies can have multiple sets of frequencies, some of which are allocated in a mutually exclusive manner and some of which are not. Dkt. No. 539, at 2. TC Tech first points to the ’488 patent’s statement at column 4, line 51, that the “upstream band” is, for example, 5–40 MHz. TC Tech then points to Figure 3 and column 5, lines 37–43, of the patent, which demonstrate an allocated range of frequencies for upstream transmissions that is only 4 MHz wide. The contrast between those two disclosures, TC Tech argues, demonstrates that there can be multiple allocated sets of frequencies within the upstream channel, some of which may not be allocated in a mutually exclusive manner. In that situation, according to TC Tech, the system infringes as long as all the multiple frequencies within a particular set are allocated in a mutually exclusive manner. *See* Dkt. No. 539, at 2. TC Tech provided a declaration of Dr. Zhi Ding in support of its assertions. *See* Dkt. No. 540.

DISCUSSION

Before turning to the parties’ principal dispute, I briefly address the four peripheral issues raised by the parties. First, TC Tech contends that Sprint’s request is a disguised motion for summary judgment that should be denied as duplicative and untimely. Dkt. No. 530, at 1. I

disagree. To be sure, granting the request in Sprint’s opening memo would have the same effect as granting partial summary judgment by precluding TC Tech from litigating a particular issue at trial. But that is frequently the consequence of a pretrial claim construction ruling. Sprint has been careful to frame its position as relating to claim construction, and its briefing is best interpreted as directed to the construction of a claim term. For example, in its reply memo, Sprint concludes by stating that TC Tech should be precluded from asserting its “current claim construction.” Dkt. No. 535, at 8. And in its letter in response to TC Tech’s surreply brief, Sprint requests “oral argument on the claim construction issue.” Dkt. No. 543, at 2. Given those statements, and in light of parallel statements in TC Tech’s briefing, *see, e.g.*, Dkt. No. 544, at 2, I conclude that the parties’ dispute is best viewed as raising a claim construction issue rather than a duplicative motion for summary judgment, a motion to exclude certain expert testimony, or a motion to strike certain infringement theories.

Second, Sprint argues that Judge Andrews’ prior construction of the claim term “subsets of baseband frequencies allocated to each remote location being mutually exclusive” necessarily requires that the “mutually exclusive” limitation applies to all frequencies that are allocated to the remote locations and not just to a particular set of those frequencies. Dkt. No. 524, at 9; Dkt. No. 535, at 1–3. I disagree that Judge Andrews’ prior construction disposes of the present issue. Judge Andrews’ prior construction, which provided that “no individual baseband frequency is allocated to more than one remote location,” must be applied within the context of the surrounding claim language. *See Conoco, Inc. v. Energy & Env’t Int’l, L.C.*, 460 F.3d 1349, 1362 (Fed. Cir. 2006). The claim language surrounding the term construed by Judge Andrews makes clear that the “subset of orthogonal baseband frequencies” comes from a “set of orthogonal baseband frequencies.” Because a “set” of frequencies could encompass only some of the frequencies used to transmit

data from the remote locations to the central location, that suggests that infringement may be possible even if there are other frequencies outside the “set of orthogonal baseband frequencies” that are not allocated in a mutually exclusive manner. To resolve that possibility, I must construe the phrase “set of orthogonal baseband frequencies.”

Third, Sprint asserts that TC Tech’s patent owner response in a prior *inter partes* review constituted a disclaimer of claim scope with respect to the “mutually exclusive” limitation. *See* Dkt. No. 524, at 12–15 (analyzing Dkt. No. 529-1, Exh. J, at 56–60). I disagree. In that patent owner response, TC Tech distinguished the ’488 patent from a prior art patent by John M. Cioffi, U.S. Patent No. 5,625,651. The heading of the relevant section of that response states that “Cioffi does not teach allocating mutually exclusive subsets of baseband frequencies to a plurality of remotes.” Dkt. No. 529-1, Exh. J, at 56. TC Tech argued that Cioffi “[was] not concerned with the details of allocating the remaining tones to the remotes,” and that Sprint’s citation to a single sentence in Cioffi was insufficient to support Sprint’s assertion that Cioffi disclosed the “mutually exclusive” limitation. *Id.* TC Tech continued:

Further, nothing else in Cioffi states or implies that the [sic] each remote’s subset of tones are or must be mutually exclusive. On the contrary, Cioffi teaches that all of the remotes share at least the overhead subchannels. Specifically, Cioffi provides a representative “DMT transmission band” having “a multiplicity of subchannels” for communication and “dedicated overhead subchannels 33 and 34 to facilitate synchronization:”

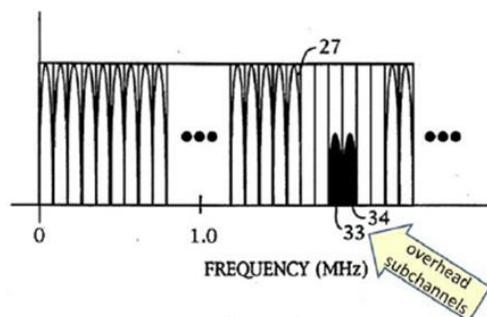


Figure 2

Cioffi FIG. 2 (annotated), 4:65-5:5; Subchannels 33 and 34 are not mutually exclusive; they are shared by all of the remotes. Cioffi 5:3-9.

Dkt. No. 529-1, Exh. J, at 57.

The most reasonable reading of that passage is that TC Tech was responding to Sprint's reliance on Cioffi by explaining that Cioffi did not sufficiently disclose how its frequencies were allocated and that Cioffi therefore did not disclose the "mutually exclusive" limitation. TC Tech highlighted Cioffi's shared overhead subchannel frequencies to demonstrate that, within the scant discussion in Cioffi concerning allocation, the most explicit discussion actually taught the opposite of what was required by the claims of the '488 patent. Contrary to Sprint's assertion, TC Tech was not arguing to the Patent Office that if only one of the allocated frequencies is shared, then the "mutually exclusive" limitation is not satisfied. Moreover, even if individual statements in TC Tech's patent owner response could be read to stand for such a proposition, TC Tech's statements do not rise to the level of a clear and unmistakable disclaimer of claim scope when examined in the context of the entire response. *See Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1361–64 (Fed. Cir. 2017) (noting that statements made in an *inter partes* review must be "both clear and unmistakable" to constitute a prosecution disclaimer).

Fourth, the parties dispute whether there is a relevant distinction between "user data" and "control data." *See* Dkt. No. 524, at 4–5; Dkt. No. 530, at 5–7; Dkt. No. 535, at 4–5. Despite having previously argued that the claim term "data" refers only to "user data," *see* Dkt. No. 262-16, Exh. P, ¶ 44, TC Tech now takes the position that "data" covers both "user data" and "control data," *see* Dkt. Nos. 530, at 7, and 527-1, Exh. I, at 1. Nonetheless, TC Tech argues that the distinction between "user data" and "control data" is relevant to the patent's disclosures concerning the phrase "set of orthogonal baseband frequencies." I concur with TC Tech's conclusion but disagree with its reasoning. The portion of the specification relied upon by TC Tech, '488 patent,

col. 8, ll. 42–53, does not teach that the way “control data” is transmitted from the remote locations to the central location differs from the way “user data” is transmitted. In fact, that portion of the specification does not teach the transmission of control data at all. Instead, it describes control signals that are sent internally within the remote locations. It states, in relevant part, that the “processing circuit **138** also includes control circuitry for sending control signals to the frequency synthesizer **136** and timing adjuster generator **135.**” *Id.* at col. 8, ll. 42–44 & Fig. 6.

While the specification does not describe the remote locations transmitting control data to the central location, it describes the central location transmitting control data to the remote locations. *See id.* at col. 9, ll. 15–26 (describing how the controller **204** of the central location transmits “addressed commands” and “discrete frequency allocation information” to the remote locations). The transmission of that control data is accomplished by modulating the control data onto an RF carrier, but not by first translating the control data into a transform coefficient associated with a particular frequency, as is done in the case of “data” in the claimed transmission methods. *Compare id.* at col. 9, ll. 15–26, *with id.* at col. 10, ll. 47–67. The specification therefore discloses sending control data over the downstream path without first distributing that data across a frequency space, thereby eliminating the need to allocate frequencies for the control data in a “mutually exclusive” manner. As explained in more detail below, the disclosure of that process tends to support TC Tech’s interpretation of the phrase “set of orthogonal baseband frequencies” with respect to the “mutually exclusively” limitation.

Turning to the matter that is the principal subject of the parties’ briefing, I understand the essence of the parties’ dispute to be captured by the following question: Must the claimed “set of orthogonal baseband frequencies” encompass all frequencies in the upstream band that are allocated to the remote locations, or do the claims permit the allocation of frequencies other than

those in the claimed “set”? If the former interpretation is correct, then a system with remote locations sharing particular frequencies for upstream transmissions would fall outside the scope of the claims. If the latter interpretation is correct, such a system would not necessarily fall outside the scope of the claims. There is support in the specification for both interpretations.

Portions of the specification tend to support the conclusion that the referenced “set” must encompass all frequencies in the upstream band that are allocated to the remote locations. The specification states that the “present invention permits a plurality of remote locations (e.g., A, B, C) to simultaneously share the upstream band for transmission to the headend with a high degree of immunity to channel impairments.” ’488 patent, col. 4, ll. 57–60. From that passage, a person of ordinary skill in the art could infer that the phrase “remote locations . . . simultaneously share the upstream band” means that all frequencies available in the upstream path must be split up among the remote locations according to the “present invention,” i.e., with a “mutually exclusive” allocation of frequencies. That inference, if adopted, would indicate that the claims do not read on a system in which additional frequencies outside a designated “set” are allocated to remote locations for upstream communications in a non-mutually-exclusive manner.

The specification also states that “[i]n some embodiments of the invention, all of the *n* values [of frequencies] may be allocated to a different remote location in each different time slot. . . . This latter embodiment really amounts to a TDMA scheme of transformed data wherein only one remote location can transmit to the headend in a time slot.” *Id.* at col. 6, ll. 3–12. A person of ordinary skill could infer from the reference to “one remote location . . . transmit[ting] to the headend in a time slot” that the general term “transmit” covers all data transmissions in the upstream path, and that those transmissions are conducted according to the “invention.” That inference would also eliminate the possibility that additional frequencies outside the claimed “set”

could be allocated to remote locations for upstream communications in a non-mutually-exclusive manner.

Further, the specification describes how the “central location keeps track of which baseband frequencies are allocated to which remote location for subsequent translation of each transform coefficient.” *Id.* at Abstract. The singular reference to a “remote location” suggests that multiple “baseband frequencies” cannot be allocated to more than one remote location. If no frequencies are shared, then all frequencies must be allocated in a mutually exclusive manner, eliminating the possibility that additional frequencies outside the “set” could be allocated for upstream communications in a non-mutually-exclusive manner. That conclusion, however, is undercut by a nearly identical passage at column 4, lines 6 through 10, that uses the plural “remote locations.” That passage reads: “The central location keeps track of which baseband frequencies are allocated to which remote locations.”

Other portions of the specification tend to support the conclusion that the claims permit the allocation of frequencies to remote locations other than those frequencies in the claimed “set.” As mentioned above, a portion of the specification discusses how control data is transmitted over the downstream path without first distributing that data across the frequency space and thus without first allocating frequencies in a “mutually exclusive” manner. *See id.* at col. 9, ll. 15–26. A person of ordinary skill could infer from that discussion that if it were necessary to transmit control data over the upstream path, such a transmission could be carried out in a manner similar to the transmission of control data over the downstream path, i.e., without distributing the control data across a frequency space in a manner that is mutually exclusive to the remote locations. Such an inference suggests that the claimed “set of orthogonal baseband frequencies” to which the

“mutually exclusive” limitation applies does not necessarily encompass all frequencies used by the remote locations to transmit data over the upstream path.

The specification also discusses the code division multiple access (“CDMA”) multiplexing protocol. CDMA is another technique besides the invention’s frequency-division multiplexing scheme that “allow[s] multiple receivers to use the same bandwidth resource simultaneously.” *Id.* at col. 1, ll. 12–16; *see also id.* at col. 1, ll. 42–45 (describing CDMA as a proposed transmission scheme for multiple user, multiple access upstream transmissions); *id.* at col. 1, ll. 32–35 (describing how CDMA works). The specification notes that “CDMA transmissions are rugged to many of the above-mentioned impairments, but suffer from poor spectral efficiency, expressed in bits of data per second, per Hertz of bandwidth.” *Id.* at col. 2, ll. 11–14. It is also well known that CDMA schemes do not allocate frequencies in an exclusive manner. *See High Point SARL v. Sprint Nextel Corp.*, 817 F.3d 1325, 1327 (Fed. Cir. 2016) (“CDMA allows a large number of cellphone users to share the same radio frequency by associating each user with a single code.”). Thus, as demonstrated by the cited passages, the specification acknowledges the existence and at least moderate usefulness of CDMA, a transmission scheme that does not allocate frequencies in a mutually exclusive manner. It is not unreasonable to posit that the patent comprehends the communication of certain data, such as control data, from the remote locations to the central location over shared frequencies in a CDMA scheme, wherein those frequencies are outside the claimed “set” of frequencies. *See* ’488 patent, col. 9, ll. 15–26 (describing how control signals are transmitted over the downstream path without first distributing those signals across the frequency space, but not identifying a specific transmission scheme).

Finally, and most notably, the ’488 patent contains an illustrated embodiment that tends to support the conclusion that the claims permit the allocation of frequencies to remote locations

other than those frequencies in the claimed “set.” As a preliminary step, the specification characterizes the invention as a “communication method [that] enables a plurality of remote locations to transmit data to a central location,” in which “[t]he remote locations simultaneously share a channel.” *Id.* at Abstract; *see also id.* at col. 1, ll. 6–9; *id.* at col. 3, ll. 45–48; *id.* at col. 10, ll. 33–35 (also stating that the invention concerns remote locations sharing a “channel”). When describing Figure 1, the specification states that “[t]he channel **14** between the headend and the remote locations” is generally “divided into a downstream band (e.g. 54–550 MHz) and an upstream band (e.g. 5–40 MHz).” *Id.* at col. 4, ll. 41–51; *see also id.* at col. 1, ll. 39–42 (stating that upstream signals “use the lower frequencies, such as [5–40] MHz”¹). The specification uses Figure 3 to “explain[] how the individual remote locations generate the time domain baseband signals that are transmitted to the headend.” *Id.* at col. 5, ll. 28–30. Figure 3 illustrates that the “frequency space” can be broken down into N discrete values and that, for example, a total bandwidth of N = 512 frequency components results in a 4 MHz range. *Id.* at col. 5, ll. 36–43. The specification then states that the allocation of the discrete frequencies within that range must be done in a “mutually exclusive” manner. *Id.* at col. 5, ll. 44–54.

To summarize the embodiment illustrated in Figures 1 through 3, the specification addresses the “mutually exclusive” limitation immediately after describing a “frequency space” that is 4 MHz wide, stating that the “N frequency space values” can be broken down into assignments of frequencies “n” to each remote location, and explaining that those assignments must be mutually exclusive. *See id.* I understand those assignments to represent the “subset of orthogonal baseband frequencies” described in the claims. *See id.* at col. 5, ll. 45–47 (“For

¹ The text reads “540MHz,” but that appears to be a typographical error; from the context, it is clear that the text was intended to read “5–40 MHz.”

example, the values $n=1, 3, 5 \dots N-1$ are allocated to the remote location A. The values $n=2, 6, 10, \dots$ are allocated to the remote location B.”). The “set,” therefore, appears to be the “frequency space” that is 4 MHz wide. Given that the upstream channel is 35 MHz wide (5–40 MHz), a person of ordinary skill could reasonably conclude that other frequencies in the 35 MHz-wide channel besides those in the 4 MHz-wide “set” can be allocated to the remote locations.

After weighing the above disclosures, my tentative conclusion is that the patent favors an interpretation of “set of orthogonal baseband frequencies” that permits the allocation of frequencies to remote locations for upstream communications other than those frequencies included in the claimed “set.” Put differently, the term “set” is not required to encompass all frequencies used in the upstream channel. I find the patent’s discussion spanning column 5, lines 22–67, to be persuasive in this regard.

Sprint makes an alternative argument that even if there could be subsets of frequencies allocated from outside the claimed set, that would be of no moment, because those frequencies also must be allocated in a mutually exclusive manner according to the plain language of the claims and Judge Andrews’ prior construction. *See* Dkt. No. 535, p. 2. In other words, Sprint argues that the limitation “the subsets of baseband frequencies allocated to each remote location being mutually exclusive” requires that *any* frequency allocated to the remote locations be allocated in a mutually exclusive manner regardless of whether that frequency is within the claimed “set of orthogonal baseband frequencies.” I disagree with that reading of the claims. Interpreting the “mutually exclusive” limitation in such a way requires that the surrounding claim language be disregarded. A person of ordinary skill reading the claims in the ’488 patent would most reasonably conclude that the “mutually exclusive” limitation applies to the frequencies within the “subsets of baseband frequencies allocated to each remote location,” and that those “subsets” come

from the “set of orthogonal baseband frequencies.” Therefore, contrary to Sprint’s suggestion, the claim language does not dictate that all frequencies allocated to the remote locations for upstream communications must be allocated in a mutually exclusive manner.

Accordingly, I tentatively construe “set of orthogonal baseband frequencies” to mean “a set of distinct orthogonal baseband frequencies that can be used to transmit data from the remote locations to the central location, wherein the set is not required to span all orthogonal baseband frequencies that could be used to transmit data from the remote locations to the central location.”

CONCLUSION AND DIRECTIVE

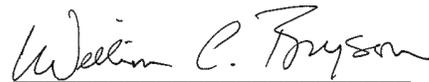
It is apparent from the parties’ briefs that the focus of the current dispute between the parties has shifted over the course of the briefing. As indicated above, it now appears to me that the true nature of the dispute between the parties is a disagreement about the proper construction of the claim phrase “set of orthogonal baseband frequencies.” Because the parties’ briefs to date have not focused squarely on that claim construction issue, I direct the parties to submit supplemental briefing addressing whether my tentative construction should be adopted, rejected, or modified, and why. I am interested in hearing the parties’ arguments regarding how my tentative construction comports with the entirety of the claims, the patent specification, the prosecution history, and any relevant extrinsic evidence. Expert testimony is not required but will be considered if submitted.

In view of the fact that the parties’ previous briefs and letters already contain some discussion of the phrase “set of orthogonal baseband frequencies,” and this order contains further discussion of the construction of that phrase, the supplemental briefing will be conducted in only two rounds. The parties are directed to file and serve simultaneous opening briefs of no more than 15 pages on that issue. Those briefs will be due by 5 pm ET on May 17, 2021. The parties shall

file and serve simultaneous responsive briefs of no more than 10 pages. Those briefs will be due by 5 pm ET on May 27, 2021. No reply briefs (or letters) will be entertained.²

IT IS SO ORDERED.

SIGNED this 26th day of April, 2021.



WILLIAM C. BRYSON
UNITED STATES CIRCUIT JUDGE

² TC Tech has submitted a letter, Dkt. No. 544, objecting to a post-briefing letter filed by Sprint, Dkt. No. 543. TC Tech's letter refers to Sprint's letter as a "sur-surreply" and notes that no sur-surreply briefing was authorized by the court. Treating TC Tech's letter as a motion to strike Sprint's letter, the motion is denied. Although Sprint's letter was substantive in part, it consisted principally of a request for a hearing or further briefing in light of what Sprint regarded as a new argument in TC Tech's surreply brief. Moreover, the substantive discussion in Sprint's letter was directed to the reason Sprint requested oral argument or additional briefing. In any event, because I am directing further briefing, TC Tech has suffered no prejudice from Sprint's use of the letter to advance any further substantive argument.