

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

SMARTSKY NETWORKS, LLC,

Plaintiff,

v.

**GOGO BUSINESS AVIATION, LLC and
GOGO INC.,**

Defendants.

Case No. 1:22-cv-00266-JDW

MEMORANDUM

Plaintiff SmartSky Networks, LLC and Defendants Gogo Business Aviation, LLC and Gogo Inc. (together "Gogo") have presented claim constructions that affect three of the Asserted Patents in this case: U.S. Patent Nos. 9,954,600, 9,973,262, and 8,032,135. I held a *Markman* hearing on May 4, 2026, and now resolve the disputed constructions.

I. LEGAL STANDARD

In a patent case, the determination of the scope of the claims in the patent is a question of law for the court to resolve. *See Phonometrics, Inc. v. N. Telecom Inc.*, 133 F.3d 1459, 1464 (Fed. Cir. 1998). When construing a claim, a court "generally" gives the words of the claim "their ordinary and customary meaning," which "is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (internal quotations marks omitted). "The court should look first to ... the patent itself, including

the claims, the specification[,] and, if in evidence, the prosecution history.” *Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001).

II. CONSTRUCTION OF DISPUTED TERMS

A. U.S. Patent No. 9,954,600

1. “signal-to-noise ratio”

Claim Term	SmartSky’s Construction	Gogo’s Construction	Court’s Construction
“signal-to-noise ratio” (Claims 1, 13)	“ratio of signal power to noise power, not including interference”	No construction necessary	No construction necessary

Claim 1 of the ‘600 Patent provides for “[a] non-transitory computer readable medium” with “instructions that when executed by a computer processor ... cause the computer processor to: command a[/the] directional antenna installed on the aircraft and a transceiver disposed within the aircraft to measure a first[/ second] signal-to-noise ratio of a first[/second] communication channel corresponding to a first[/second] location on the ground.” (D.I. 652-1 at 15:55–16:16.) Claim 13 also includes the term “signal-to-noise ratio” in providing for “[a] computer system comprising one or more processors and/or transceivers configured to[] retrieve ... a forward-link user capacity matrix comprising a plurality of forward-link user capacity estimates each associated with a respective signal-

to-noise ratio measurement of a respective communication channel.” (D.I. 652-1 at 18:41-62.) The Parties dispute whether the term “signal-to-noise ratio” includes interference.

The term “signal-to-noise ratio” does not include interference. There is no dispute about the meaning of “signal” or “noise.” (*See* D.I. 673 at 5–6.) Nor is there a dispute that a “ratio” is a mathematical relationship between two or more things, wherein one thing is divided by the other(s). (*See id.*) Thus, a “signal-to-noise ratio” is the undisputed term “signal” divided by the undisputed term “noise.” *See LoganTree LP v. Fossil Grp. Inc.*, No. 1:21-cv-00385-JDW, 2023 WL 2139788, at *2 (D. Del. Feb. 21, 2023) (“Where a term’s plain meaning is clear to a [POSA], the Court need not construe it.”).

The real dispute here is over the term “measuring,” which immediately precedes the term “signal-to-noise ratio.” In particular, the Parties disagree on whether “measuring” the signal-to-noise ratio includes measuring the signal-to-noise-plus-interference ratio. But the Parties did not submit briefing on the meaning of the term “measuring.” They only asked me to construe the term “signal-to-noise ratio” as it appears in Claims 1 and 13. To the extent the Parties disagree over the meaning of “measuring,” that is a dispute best left for a later day, with briefing about that term specifically.

2. **“calculate a first/second forward-link user capacity estimate using the first/second signal-to-noise ratio of the first/second communication channel”**

Claim Term	SmartSky’s Construction	Gogo’s Construction	Court’s Construction
“calculate a first/second forward-link user capacity estimate using the first/second signal-to-noise ratio of the first/second communication channel” (Claim 1)	“calculate a first/second estimate of the maximum rate of information transfer that can be achieved over time for the first/second communication channel using the first/second ratio of signal power to noise power, not including interference”	“calculate a first/second estimated available forward-link data rate using the first/second signal-to-noise ratio of the first/second communication channel”	“calculate a first/second estimated available forward-link data rate using the first/second signal-to-noise ratio of the first/second communication channel”

Claim 1 of the ‘600 patent provides for “[a] non-transitory computer readable medium” with “instructions that when executed by a computer processor ... cause the computer processor to: ... calculate a first [and second] forward-link user capacity estimate using the first [and second] signal-to-noise ratio of the first [and second] communication channel.” (D.I. 652-1 at 15:55–16:16.) The Parties dispute whether the term “forward-link user capacity estimate” should be limited to an “estimate of the maximum rate of information transfer that can be achieved over time.” This limitation has two parts: (1) whether a forward-link user capacity estimate is a data “rate” “that can be achieved over

time;” and (2) whether the estimate is an “estimate of the maximum rate” or just an estimate of a rate.

With respect to the first part of the limitation, there’s no need to include the phrase “over time” because both SmartSky and Gogo agree that this term concerns a “rate.” A POSA would understand that the word “rate” refers to a measurement of something (in this case, data) over a particular amount of time. The word “rate” implies that the measurement is over a period of time, so I would only introduce ambiguity by adding the phrase “over time” to the construction.

As for the claim language “forward-link user capacity estimate,” it refers to the forward-link data rate available at a particular time, given the real-world conditions that the aircraft is encountering. Figure 5 of the patent provides important context. That figure includes a matrix that the specification explains “depicts the case where expected data rate for S ground stations ... is characterized” to “estimate the expected data rate for each sub-band and the total expected data rate for each [ground station].” (*Id.* at 9:45–51.) The specification’s emphasis on an “expected” data rate indicates that the “forward-link user capacity estimate” is the expected rate, not some theoretical maximum. I use the word “available” in the construction to indicate that it is the highest data rate available at a point in time, accounting for external variables.

SmartSky relies on the declaration of Dr. Paul Min to support its position that a forward-link user capacity estimate must focus on a maximum data rate. In proceedings

before the PTAB, Dr. Min explained that the term “user capacity” means “channel capacity,” and that channel capacity, in turn, is “the theoretically maximum data rate for a reliable communication.” (D.I. 652-6 at ¶¶ 34, 35.) However, the context of Dr. Min’s statements shows that neither he nor Gogo purported to limit the forward link user capacity estimate to a theoretical maximum. Instead, the point of Dr. Min’s statements was to distinguish the ‘600 Patent from prior art that disclosed a measurement of signal quality rather than channel capacity. The difference in those terms did not turn on whether a channel capacity is a theoretical maximum. I therefore cannot read Dr. Min’s declaration to require that the term “forward-link user capacity estimate” refers to a theoretical maximum, particularly in the face of a specification that demonstrates otherwise.

One other aspect of the specification appears to refute SmartSky’s proposed construction. The specification uses the term “maximum” to describe a capacity matrix that tracks return-link data rates. (D.I. 652-1 at 7:29–36.) But it does not use that term in describing forward-link data rates or the matrix tracking them. From that, I conclude that the inventors knew how to specify a maximum rate, and they chose not to do so.

3. “forward-link user capacity matrix”

Claim Term	SmartSky’s Construction	Gogo’s Construction	Court’s Construction
“forward-link user capacity matrix” (Claims 1, 13)	“two-dimensional index with both rows and columns that allow systematic organization and comparison of forward-link capacity estimates across multiple sub-bands of the communication channel”	“two-dimensional index with both rows and columns that allow systematic organization and comparison of forward-link user capacity estimates across multiple dimensions”	“two-dimensional index with both rows and columns that allow systematic organization and comparison of forward-link user capacity estimates across multiple dimensions”

Claim 1 of the ‘600 Patent provides for “[a] non-transitory computer readable medium” with “instructions that when executed by a computer processor ... cause the computer processor to: ... calculate a forward-link user capacity matrix using the first forward-link user capacity estimate and the second forward-link user capacity estimate.” (D.I. 652-1 at 15:55–16:16.) Claim 13 also includes the term “forward-link user capacity matrix” in providing for “[a] computer system comprising one or more processors and/or transceivers configured to[] retrieve ... a forward-link user capacity matrix comprising a plurality of forward-link user capacity estimates each associated with a respective signal-to-noise ratio measurement of a respective communication channel.” (D.I. 652-1 at 18:41–62.) The Parties dispute whether the term “forward-link user capacity matrix” must include

forward-link user capacity estimates across multiple sub-bands of a communication channel.

The best interpretation of the term “forward-link user capacity matrix” is a “two-dimensional index with both rows and columns that allow systematic organization and comparison of forward-link user capacity estimates across multiple dimensions.” The language of Claims 1 and 13 makes clear that the matrix contains capacity estimates that correspond to “communication channels,” not “sub-bands.” Claim 1 concerns processes for measuring signal-to-noise ratios for a “first communications channel” and a “second communications channel,” along with calculating “forward-link user capacity estimate[s]” for the respective communications channels, which are then used to generate the “forward-link user capacity matrix.” (D.I. 652-1 at 15:55–16:16.) Similarly, Claim 13 requires that the “forward-link user capacity matrix” be comprised of capacity estimates that are “each associated with a respective signal-to-noise ratio measurement of a respective communication channel.” (*Id.* at 18:41–62.) Nothing in the claim language concerns sub-bands, let alone anything about the matrix containing estimates of multiple sub-bands within a given communication channel. At best, there are some embodiments in the specification that include estimates across multiple sub-bands, but that does not mean the claim language requires those estimates.

SmartSky relies on Gogo’s response to SmartSky’s IPR petition to argue that the forward-link user matrix must include capacity estimates across multiple sub-bands of the

communication channel. According to SmartSky, Gogo argued that the '600 Patent was different than prior art references because the prior art did not "compar[e] user capacity based on [signal-to-noise ratios] across multiple bands, as the ['600 Patent] claims require." (D.I. 651 at 13.) SmartSky, however, takes Gogo's argument out of context. Gogo made this statement to distinguish one-dimensional rankings or lists from the matrix structure that the '600 Patent claims. Gogo was arguing that its claimed matrix requires a two-dimensional organization, not that the two dimensions must always include sub-bands and ground stations. The inclusion of sub-bands of channels exemplified what a matrix dimension could be, but it did not require that one of the dimensions in the forward-link user capacity matrix must be capacity estimates across sub-bands of a channel.

4. “Reverse-link noise matrix”

Claim Term	SmartSky’s Construction	Gogo’s Construction	Court’s Construction
“reverse-link noise matrix” (Claim 7)	“a spatially organized data structure that indexes noise estimates corresponding to different azimuth/elevation pairs across multiple sub-bands of the communication channel”	“a spatially organized data structure that indexes noise estimates”	“a spatially organized data structure that indexes noise estimates corresponding to different azimuth/elevation pairs”

Claim 7 of the ‘600 Patent provides for “[a] computer-implemented method” that includes a “computer processor” that calculates “a reverse-link noise matrix.” (D.I. 652-1 at 17:10–42.) The Parties agree that the “reverse-link noise matrix” is a spatially organized data structure that indexes noise estimates corresponding to different azimuth/elevation pairs. (D.I. 651 at 23.) However, they dispute whether the “reverse-link noise matrix” must have noise estimates across “multiple sub-bands of the communication channel.” (D.I. 651 at 23.)

Like the term “forward-link user capacity matrix,” nothing in the claim language mandates the reverse-link capacity matrix have noise estimates across sub-bands of the communication channel. True, Figure 7 in the specification includes an example of a

reverse-link noise matrix that includes noise estimates across sub-bands. But the specification says this is merely an “exemplary” embodiment. (D.I. 652-1 at 3:39–41.) And the Federal Circuit has “repeatedly warned against confining the claims [of a patent] to th[e] embodiments” listed in the specification. *Phillips v. AWH Corp.*, 415 F.3d 1303,1323 (Fed. Cir. 2005). I will therefore not limit the term “reverse-link noise matrix” to require noise estimates “across multiple sub-bands of the communication channel.”

SmartSky argues that Dr. Min’s declaration supports its proposed construction. SmartSky focuses on the section of Dr. Min’s declaration titled “Matrix.” In that section, Dr. Min stated that “[i]f the forward link capacity is organized ... without further categorizing in terms of the sub-bands ... the result would not be a matrix.” (D.I. 652-6 at ¶ 54.) According to SmartSky, this statement makes clear that the “reverse-link noise matrix” requires estimates across sub-bands. But SmartSky takes Dr. Min’s statement out of context. He made this statement in the context of explaining Figure 5 of the specification. Figure 5, however, just like Figure 7, is an exemplary embodiment of the claims. So just because Dr. Min described an exemplary embodiment of a matrix that categorized in terms of sub-bands does not mean that the claim itself requires that the reverse-link noise matrix be categorized by multiple sub-bands across a communication channel.

5. “out-of-band communication channel”

Claim Term	SmartSky’s Construction	Gogo’s Construction	Court’s Construction
“out-of-band communication channel” (Claim 5)	“channel using a licensed band that guarantees good reliability”	No construction necessary	No construction necessary

Claim 5 of the ‘600 Patent depends from Claim 1 and for provides a non-transitory computer readable medium that includes a “computer processor” that “transmit[s] the forward-link user capacity matrix to a ground station controller using an out-of-band communication channel.” (D.I. 652-1 at 16:53–61.) The Parties dispute whether the term “out-of-band communication channel” must be a channel that uses a licensed band that guarantees good reliability. (D.I. 651 at 31.)

The term “out-of-band communication channel” means what it says: a channel for communications other than the plurality of channels being measured. The language of Claim 1 (the independent claim) and the language of Claim 5 (the dependent claim) make clear that “out-of-band” is an adjective used to describe the relationship between the communication channels that Claim 1 describes and the channel that Claim 5 describes. Claim 1 provides for “[a] non-transitory computer readable medium” with “instructions that when executed by a computer processor ... cause the computer processor to: command a directional antenna” and “a transceiver ... to measure” “a first signal-to-noise ratio of a first communication channel” and “a second signal-to-noise ratio of a second

communication channel” to calculate a “forward-link user capacity matrix.” (D.I. 652-1 at 15:55–16:16.) Claim 5, in turn, provides for “additional processor ... instructions that ... cause the computer processor to command the directional antenna and the transceiver to transmit the forward-link user capacity matrix ... using an out-of-band communication channel.” (*Id.* at 16:53–61.) When read in the context of the claim from which it depends, the “out-of-band” adjective found in Claim 5 means a channel from a different band than the first and second communication channels used to calculate the forward-link user capacity matrix.

SmartSky bases its argument to the contrary on the fact that the specification includes a definition for “out-of-band transmission” as “transmission using a licensed band that guarantees good reliability.” (*Id.* at 5:56–57.) But in defining various terms, the specification explains that the terms “**may** include their associated definitions” (*Id.* at 5:16–18 (**emphasis added**)). “May,” not “must,” “shall,” or some other mandatory language. The Federal Circuit has recognized that there is “a heavy presumption that a claim term carries its ordinary and customary meaning.” *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (internal quotation marks omitted). And while it’s true that a patentee can overcome this presumption by choosing “to be his or her own lexicographer by clearly setting forth an explicit definition for a claim term,” *Johnson Worldwide Associates, Inc. v. Zebco Corp.*, 175 F.3d 985, 990 (Fed. Cir. 1999), the inventor

must do so “with reasonable clarity, deliberateness, and precision,” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

By using a permissive word like “may,” the patentee in this case did not use such clarity, deliberateness, or precision. Instead, the definition in the specification is more like a preferred embodiment. That is, the definition lays out one example of a way to interpret the term “out-of-band transmission” as being in a licensed band of spectrum. But that’s not the only way to interpret it. It could also be a portion of unlicensed spectrum.

SmartSky also argues that the specification indicates that the out-of-band communication channel requires licensed spectrum because it refers to “a high reliability out-of-band link.” (D.I. 652-1 at 4:53–58.) According to SmartSky, the term “high reliability” must refer to licensed spectrum because the definition in the specification refers to a “licensed band that guarantees good reliability.” (*Id.* at 5:56–57.) The argument misreads the definition, though. The definition does not say that all licensed spectrum guarantees good reliability. The word “that” implies a limitation. In other words, the definition limits out-of-band transmissions to transmissions in certain parts of licensed spectrum that ensure good reliability. It does not necessarily define all licensed spectrum to be spectrum that provides good reliability.

Ultimately, because the specification is not clear and precise about limiting the term, I will reject SmartSky’s proposed limits on this claim term. It will apply to any out-of-band communication channel, whether in licensed or unlicensed spectrum.

B. U.S. Patent No. 9,973,262

1. "Mapping, to a respective forward link of a plurality of forward links..."

Claim Term	SmartSky's Construction	Gogo's Construction	Court's Construction
"mapping, to a respective forward link of a plurality of forward links, each portion of a plurality of portions of a content...to be delivered to the device...the mapping based on a respective content type of at least one portion of the requested content" (Claim 1)	"assigning, a priori (i.e., beforehand), portions of content to be delivered to the device to respective different forward links based on a content type of at least one portion of the content"	No construction necessary	"assigning a specific forward link to receive portions of content before delivering that content"

Claim 1 of the '262 Patent, in relevant part, provides for "[a] method of distributively delivering content to devices being transported by vehicles" by "mapping, to a respective forward link of a plurality of forward links, each portion of a plurality of portions of a content that is requested, via a user interface device." (D.I. 651-2 at 37:59–38:11.) In the Joint Claim Construction Brief, the Parties dispute (a) whether the term "mapping" means "assigning, a priori (i.e., beforehand)" selecting a particular forward link from the mapped forward links and transmitting data using the selected forward link; and (b) whether the

term “respective” requires a one-to-one relationship between each portion of content and each forward link. (See D.I. 651 at 35–43.) At the *Markman* hearing, however, the Parties told me there is no disagreement about the order of mapping and selecting. (See D.I. 673 at 64–66.) The Parties agree that mapping must occur before selection even if it happens immediately beforehand. (See D.I. 673 at 66.) With that issue resolved, the Parties only dispute the meaning of the word “respective” in Claim 1.

A POSA would understand the term “respective” in Claim 1 to mean “corresponding,” meaning that each portion of content must have a corresponding forward link. The forward link that corresponds to a particular portion of content can differ from the forward link corresponding to another portion of content. The claim language, however, does not require that the forward links be different links. It just requires that each portion of content be assigned to a forward link, even if the portions of content are assigned to the same forward link.

SmartSky disagrees. According to SmartSky, the word “respective” requires that each portion of content be mapped to a “different” forward link, such that no two portions of content can share a forward link. But the language of the ‘262 Patent does not support that position. The specification describes an embodiment in which a second forward link transmission “may be the same forward link” as a first forward link transmission. (D.I. 651-2 at 18:34–36.) And the Federal Circuit has said that a claim construction that excludes a disclosed embodiment is “rarely, if ever correct.” *Kaufman v. Microsoft Corp.*, 34 F.4th

1360, 1372 (Fed. Cir. 2022). This is not such a rare occasion. I therefore hold that no construction of this term is necessary.

2. "type of data"

Claim Term	SmartSky's Construction	Gogo's Construction	Court's Construction
"mapping...based on one of a first type of data...or a second type of data..." (Claim 1)	"mapping...based on a first or second type of data, which are separate from the content type"	Not indefinite, no construction necessary	No construction necessary
"wherein a particular forward link...is selected based on one of a first type of data...or a second type of data..." (Claim 11)	"a particular forward link is selected based on a first or second type of data, which are separate from the content type" Alternatively: Indefinite		

Claim 1 of the '262 Patent also provides for "[a] method of distributively delivering content to devices being transported by vehicles, the method comprising: mapping ... a first portion of the plurality of portions of the requested content to the respective forward link corresponding to the first portion is based on one of a first type of data included in the first portion, or a second type of data included in a second portion of the plurality of portions of the requested content." (D.I. 652-2 at 37:59–38:11.) Claim 11, in turn, provides for "[a] method of distributively delivering content to devices being transported by

vehicles, the method comprising: receiving ... a plurality of portions of a content that has been requested [by] a device on-board the vehicle ... wherein a particular forward link ... is selected based on one of a first type of data included within a first portion of the plurality of portions of the requested content or a second type of data included in a second portion of the plurality of portions of the requested content.” (D.I. 652-2 at 39:11–33.) The Parties dispute whether the claim term “type of data” must be “separate from the content type.” (D.I. 651 at 44.)

A POSA would understand the “type of data” described in the claim language to be a subset of the content type. SmartSky argues that both Claims 1 and 11 should be construed so as to make clear that the term “type of data” is “separate from the content type.” (D.I. 651 at 44.) But such a construction is unnecessary. The claim language already makes clear that the “type of data” is not the same as “content type.” Indeed, both Claim 1 and 11 explain that the “type of data” is “included in” or “included within” the “portion” of content. In other words, the “type of data” cannot be the same as the “content” because the “type of data” has to be within the “portion” of content. Because the language of the claims distinguishes “type of data” and the type of “content,” I need not provide a clarifying construction.

C. U.S. Patent No. 8,032,135

1. “dynamically adjust” / “bandwidth distribution protocol”

Claim Term	SmartSky’s Construction	Gogo’s Construction	Court’s Construction
“dynamically adjust an amount of bandwidth supplied by said data signals...based upon a first one of the bandwidth distribution protocols when the aircraft is in a first one of the terrestrial regions...[and] based upon a second one of the bandwidth distribution protocols when the aircraft is in a second one of the terrestrial regions” (Claims 1, 16) “dynamically adjusting a bandwidth size of said data signal...based upon a first one of the bandwidth distribution protocols when the	“adjusting, in real time, the amount of bandwidth supplied to an aircraft based on real time conditions... according to a first procedure for dictating how bandwidth is distributed based upon specific situations or conditions while the aircraft is in a first terrestrial region...and according to a second procedure, different from the first procedure, for dictating how bandwidth is distributed based upon specific situations or conditions while the aircraft is in a	No construction necessary	No construction necessary

aircraft is in a first one of the terrestrial regions...[and] based upon a second one of the bandwidth distribution protocols when the aircraft is in a second one of the terrestrial regions" (Claim 25)	second terrestrial region"		
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Claims 1, 16, and 25 of the '135 Patent describe "[a] wireless communication system for providing high-speed data services to an aircraft," "[a] system for providing wireless high-speed data communication with an aircraft," and "[a] method of wirelessly providing high-speed data services within an aircraft." (D.I. 652-3 at 6:21–50, 7:41–8:2, 8:42–9:2.) Each of these claims requires "dynamically" adjusting an amount of bandwidth based upon first and second "distribution protocols." (*Id.*) The Parties dispute whether the term "dynamically" adjusting an amount of bandwidth requires an adjustment to be made in real time.¹

The specification uses the term "dynamically" at least six times. Every time it does so, it references an adjustment made in response to the conditions that the equipment

¹ The Parties also dispute whether the first and second bandwidth distribution protocols that the claims describe must be different procedures. But this dispute overlaps with the next claim term, so I will address it in the following section.

detects. (*E.g. id.* at 5:5–13, 5:66–6:2.) In contrast, nothing in the specification or the claim language suggests that a POSA would understand the term “dynamically” to require that the adjustment be made “in real time.” The claim language does not say anything about adjustments being immediate. They just have to be ongoing and in response to some condition. That change could happen in real time, but it could also happen on preset intervals. Therefore, I conclude that a POSA would understand the term “dynamically” to mean “in response to detected conditions.”

SmartSky contends otherwise. *First*, SmartSky argues that the word “dynamically” must impose a real time adjustment because the word “adjustment” would otherwise be mere surplusage. But I disagree. An adjustment could happen on a pre-planned basis, not based on changes in circumstances (*e.g.*, as an aircraft changes altitude or direction). On the other hand, an adjustment that happens based on pre-scheduled measurements of conditions is still dynamic because it responds to the measured conditions.

Second, SmartSky contends that the specification’s explanation that bandwidth can be adjusted “depending on the circumstances” supports its real-time construction. True, the specification describes how the bandwidth allocation to an aircraft can be adjusted when “a greater than average number of aircraft within the same region [are] seeking high-speed data service.” (D.I. 651-3 at 5:12–14.) But this example does not require the adjustment to be made in real time. That’s one way to do it, but as SmartSky conceded at the *Markman* hearing, an adjustment to the allocation of bandwidth to an aircraft in a

certain region could still be made every few minutes and that scheme would still fit within the claim language. (See D.I. 673 at 87–88.)

Third, SmartSky argues that the prosecution history supports its proposed real-time restriction. According to SmartSky, the word “dynamically” means “real time” because Gogo distinguished a prior reference that disclosed “increasing the bandwidth of the communication connection” by arguing that the prior art’s “attempts to maximize capacity of the static bandwidth ... fails to teach or suggest ‘dynamically adjusting’ an amount of bandwidth ‘based upon’ a plurality of ‘bandwidth protocols.’” (D.I. 651 at 55–56 (quoting D.I. 652–7 at 9).) But this statement from the prosecution history says nothing about “real time” adjustments. Rather, it distinguishes between dynamic and static adjustments without specifying the timing of the dynamic adjustments.

2. “second bandwidth distribution protocol”

Claim Term	SmartSky’s Construction	Gogo’s Construction	Court’s Construction
“second bandwidth distribution protocol” (Claims 1, 16, 25)	“a second bandwidth distribution protocol that is different from the first bandwidth distribution protocol”	No construction necessary	No construction necessary

Claims 1, 16, and 25 of the ‘135 Patent provide for a “system controller” or “method” that “dynamically adjust[s]” an amount of bandwidth “based upon a first one of

the bandwidth distribution protocols when the aircraft is in a first one of the terrestrial regions” and “based upon a second one of the bandwidth distribution protocols when the aircraft is in a second one of the terrestrial regions.” ((D.I. 652-3 at 6:21–50, 7:41–8:2, 8:42–9:2.) The Parties dispute whether the second bandwidth distribution protocol must be different from the first bandwidth distribution protocol.

The ordinary meaning of the claim language does not require that the first and second protocols be different. A POSA reading the claims would understand that the second bandwidth distribution protocol is the bandwidth protocol associated with the second terrestrial station, just as the first bandwidth distribution protocol is the bandwidth protocol associated with the first terrestrial station. The protocols associated with each station might be the same, or they might be different. But what matters, for purposes of the claims, is their assignment to different terrestrial stations.

SmartSky argues that the phrase “a plurality of bandwidth distribution protocols” in the claim language means that there must be different protocols. But, the term “plurality” does not mean the protocols must be different; it means there must be two or more. *See Dayco Prods., Inc. v. Total Containment, Inc.*, 258 F.3d 1317, 1328 (Fed. Cir. 2001). And, under the ordinary meaning of the claim term, there are two or more protocols even if they happen to be the same protocol assigned to different stations. The first protocol is associated with the first terrestrial station and the second protocol is associated with the second terrestrial station.

SmartSky also insists that the specification's description of using different protocols in different regions supports the notion that the protocols must be different. But that's a stretch. True, the claims use the article "the" when saying that the bandwidth is dynamically adjusted based on "a first one of **the** bandwidth distribution protocols" when the aircraft is in a first terrestrial area, and based on "a second one of **the** bandwidth distribution protocols" when the aircraft is in a second terrestrial region (D.I. 651 at 60 (**emphasis added**)), but the article "the" does not mean the first bandwidth distribution protocol must be different from the second bandwidth distribution protocol. The word "the" means "the" bandwidth distribution protocol associated with a particular terrestrial base station.

III. CONCLUSION

I will construe the disputed claims as described above. An appropriate Order follows.

BY THE COURT:

/s/ Joshua D. Wolson

JOSHUA D. WOLSON, J.

July 22, 2026