

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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COMMSCOPE TECHNOLOGIES LLC.

Petitioner

v.

BELDEN INC.

Patent Owner

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Case IPR2023-01061  
Patent No. 6,998,537 B2

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**EXPERT DECLARATION OF KENNETH CORNELISON IN SUPPORT  
OF PETITIONER REPLY**

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I, Kenneth Cornelison, declare as follows,

**I. INTRODUCTION**

1. I have been retained by Petitioner, CommScope Technologies LLC, (“CommScope” or “Petitioner”) to provide expert opinions in connection with a petition for *inter partes* review before the United States Patent and Trademark Office. I understand that this declaration involves my expert opinions and expert knowledge related to U.S. Patent No. 6,998,537 (“the ’537 Patent”), titled “Multi-Pair Data Cable with Configurable Core Filling and Pair Separation,” and its field of endeavor.

2. I have reviewed the response of Patent Owner (“PO”) and the Expert Declarations of Dr. Charles A. Eldering (Ex-2001 and Ex-2007, collectively “Eldering Declaration”). The statements made herein are in response and are based on my own knowledge and opinions. I did not find the arguments in the Patent Owner response and Eldering Declaration persuasive, and the arguments did not change my opinion that the challenged claims are invalid as I explained in my First Declaration.

**II. QUALIFICATIONS**

3. My Qualifications and background are set forth in my first Declaration in Support of Inter Partes Review (Ex-1007) (“First Declaration”). My Resume has been included as Ex-1008.

4. As in my First Declaration, my opinions in this declaration are based on the perspective of a person of ordinary skill in the art in the 1999 timeframe (and specifically prior to February 25, 1999). This is true even if my statements are in the present tense.

### **III. MATERIALS CONSIDERED**

5. My technical review, analysis, insights, and opinions are based on my experience and other qualifications discussed above, as well as my study of relevant materials.

6. I have reviewed and am familiar with the materials discussed in my First Declaration, as well as any additional materials discussed in this Reply Declaration.

7. I have also reviewed and am familiar with the Eldering Declaration, as well as the exhibits cited therein.

### **IV. RELEVANT LEGAL PRINCIPLES**

8. My understanding of the relevant legal principles is set forth in my First Declaration.

### **V. CLAIM CONSTRUCTION**

9. I understand that in the decision to institute this *inter partes* review, the Board preliminarily construed the term “twisted pair of insulated conductors”

as a “pair of insulated conductors that are twisted together.” Paper 10, 12. As I explained in my First Declaration, twisted pairs of insulated conductors were ubiquitous in the communications cable prior art. The preliminary definition provided by the Board is consistent with the ordinary meaning of that term at the relevant time.

10. I also understand that Dr. Eldering has proposed a construction for “twisted pair of insulated conductors” to be “two insulated conductors twisted together around one another to form a balanced transmission line.” Eldering Declaration, Ex-2007, ¶159; *see also id.* ¶¶147-158. This proposed construction is not inconsistent with the ordinary meaning of a “twisted pair of insulated conductors” at the relevant time. *E.g.*, Ex-1017, 18 (“twist also helps keep the conductors of the pair balanced”); Ex-1018, 6 (same); Ex-1016, 7 (pairs are twisted “to decrease unbalanced mutual capacitance”); Ex-1029, 25 (“cables with twisted pairs are used where balanced signal transmission is required...”).

11. My opinions do not change and would not change whether one or the other definition is applied.

## VI. RESPONSIVE OPINIONS

### A. GROUND 1: Beggs in view of Jachimowicz

#### 1. A POSITA Would Have Understood that Beggs Discloses the Separator Tape Can Be Foamed Polymer

12. Dr. Eldering posits three reasons that Beggs' teaching that the buffer system can be comprised of foamed polymer applies only to the preform (55) and (58) embodiments and not the tape embodiment described in Beggs. Ex-2001, ¶¶105-108; Ex-2007, ¶¶160-163. A POSITA would not agree with any of these reasons.

13. First, Dr. Eldering posits that the disclosed tape in Beggs must be "flexible and stretchable enough" to be wrapped about the conductor pairs in an S-shape. Ex-2001, ¶¶105-107; Ex-2007, ¶160. A POSITA would have understood that a foamed polymer tape would have been flexible and stretchable enough to be wrapped around conductor pairs. Beggs itself teaches that the tape separator can be "wrapped about the conductor pairs" (Ex-1015, 6:52-56), indicating that the tape is flexible enough to be wrapped. I also explained in my prior declaration that the Jachimowicz reference "indicates...that the tape is 'appl[ied]' to hold pairs together in a bundle...indicating that the tape was substantially flat [and] could be configured (e.g. wrapped or folded) around the pairs." Ex-1007, ¶81; *see also* Ex-1014, 2:50-54. This also supports what a POSITA would understand about the tape

Beggs discloses—that it could be a foamed tape and such a tape would be capable of being wrapped around pairs.

14. Second, Dr. Eldering posits that preforms (55) and (58) have “different functions” from the tape embodiment, because the conductors are “inserted” into the preform embodiments while the tape embodiment is “wrapped” around the conductors. Ex-2001, ¶108; Ex-2007, ¶¶161-163. Dr. Eldering does not indicate how this would be relevant to POSITA’s understanding of whether the tape embodiment can be foamed polymer. Dr. Eldering merely states that a “POSITA would understand that a tape is ‘wrapped’ around conductors...” Ex-2007, ¶161. A POSITA would not have understood the teaching that conductors are “inserted” into the preforms while the tape is “wrapped” around the conductors to indicate what material the buffer system can be made from. A POSITA would have expected that in either case (preform or tape), the buffer could be made of a foamed polymer. As I previously explained, Jachimowicz specifically teaches that foamed polymer tape could be wrapped around pairs. Ex-1007, ¶81; *see also* Ex-1014, 2:50-54.

15. Third, Dr. Eldering posits that claim 19 of Beggs is directed to only the foamed polymer preforms (55) and (58) embodiments of the buffer system, and “not” the alternative tape embodiment. Ex-2001, ¶108; Ex-2007, ¶¶162-163. I disagree. A POSITA reading the Beggs patent would understand that claim 19

depends from claim 1, which just refers to a “buffer system.” Ex-1015, claims 1, 19. Beggs describes the tape buffer as an example of “the buffer system.” Ex-1015, 6:52-56. So, a POSITA would understand claim 19 to be an additional indication of what Beggs already taught, which is that the buffer system, including the tape buffer embodiment, could be a foamed polymer.

16. Dr. Eldering also references claim 18, which claims a buffer system where the buffer is a tape. Ex-2007, ¶163. A POSITA would not see this as any indication that the tape buffer cannot be foamed polymer. Each of claims 18 and 19 depend separately from claim 1 (through claim 3). The fact that claim 18 says the buffer system can be a tape, and claim 19 says the buffer system can be foamed polymer, does not mean that they are mutually exclusive. The tape buffer system could certainly also be a foamed polymer (and that is what a common-sense reading of the specification of Beggs would indicate to a POSITA).

17. In my opinion, Dr. Eldering’s reading of Beggs is unnaturally constricted and is not how a POSITA applying common sense would understand Beggs. Beggs teaches various embodiments of “buffering” between twisted pairs, such as the preform (55) and the S-shaped preform (58) shown at Figs. 6 and 7. Ex-1015, 5:64-6:11. Beggs then explains that the buffer system may be comprised of foamed polymer (“expanded polyvinyl chloride plastic material”). Ex-1015, 6:1-3 and claim 19. Beggs then explains that the S-shaped preform (58) could

alternatively be “a tape.” Ex-1015, 6:52-56. To a POSITA, the ordinary, common-sense understanding of this teaching in Beggs is that the buffer system can be comprised of foamed polymer, whether the buffer is preform (55), preform (58), or tape.

**2. Beggs and Jachimowicz Each Disclose Substantially Flat Tape Separating Twisted Pairs**

18. Dr. Eldering argues that Jachimowicz’s “jacket” does not separate twisted pairs and is not “substantially flat,” implying that this means a POSITA would not use a substantially flat tape to separate twisted pairs as claimed. Ex-2001, ¶¶110-119; Ex-2007, ¶¶165-169. I do not agree, for several reasons.

19. First, Dr. Eldering incorrectly focuses on Jachimowicz’s teaching that a foamed polymer “jacket” may be “extruded” over the bundle of twisted pairs to “lock” the pairs together. Ex-2001, ¶110-119; Ex-2007, ¶¶165-169. In my First Declaration, I focused on Jachimowicz’s alternative teaching that pairs can also “be held together in the bundle...by applying a tape made of foamed thermoplastic supported by a film such as Mylar or polypropylene, or other material.” Ex-1014, 2:46-59, Figs. 1, 2; *see also e.g.*, Ex-1007, ¶¶81, 93-107. Jachimowicz’s discussion of the extruded foamed polymer “jacket” is just a different embodiment.

20. Second, as I explained in my First Declaration, Beggs itself already discloses a “substantially flat” separator tape (and that the separator can be foamed polymer). Ex-1007, ¶88; Ex-1015, 6:52-56. Jachimowicz then provides another

example of a foamed polymer tape, and additionally teaches that such tape used in cabling can be made of multiple materials (e.g., mylar-backed foamed polymer).

Ex-1014, 2:50-54; Ex-1015, 6:52-56, Fig. 7.

21. The Patent Owner points to my statement during deposition that preform 55 is not “substantially flat.” Paper 20, 26. Whether the preform 55 is substantially flat or is not substantially flat is not relevant to my opinion. I pointed to a *different* embodiment of Beggs that discloses the S-shaped buffer shown at Figure 7, where the buffer is formed of a “tape,” that is undisputedly substantially flat. Ex-1007, ¶88.

22. Dr. Eldering also argues that Jachimowicz does not disclose a substantially flat tape. Ex-2001, ¶¶114-116; Ex-2007, ¶164. I disagree. A POSITA would understand that Jachimowicz discloses a substantially flat foamed polymer tape.

23. Dr. Eldering focuses on Jachimowicz’s teaching that a foamed polymer “jacket” may be “extruded” over the bundle of twisted pairs to “lock” the pairs together. Ex-2001, ¶¶111-113, 118, Ex-2007, ¶¶165-167. However, that argument misses the point, because in my First Declaration, I focused on Jachimowicz’s alternative teaching that pairs can also “be held together in the bundle...by applying a tape made of foamed thermoplastic.” Ex-1014, 2:50-54; *see also e.g.*, Ex-1007, ¶¶81, 96, 128, 134, 159. Dr. Eldering also contends that a

POSITA would understand that the “jacket” needs to “be of sufficiently rigid composition” to make the pairs “locked.” Paper 20, 23, 28-29; Ex-2001, ¶¶111-113; Ex-2007, ¶165-167. A POSITA would expect that the foamed polymer tape Jachimowicz teaches for holding twisted pairs together (which is an alternative to the extruded “jacket”) could very easily be applied as the buffer/separator shown in Beggs. Ex-1014, 2:50-54; *see also* Ex-1007, ¶¶93, 105-106. The term “tape” itself would have indicated a more than sufficient degree of flexibility to a POSITA.

24. Dr. Eldering also contends that a POSITA would understand Jachimowicz’s foamed tape to have an “undulating surface” and therefore is not substantially flat. Ex-2001, ¶¶114-116; Ex-2007, ¶172. A POSITA would disagree for several reasons. First, the foamed polymer 20 shown in Figure 1 of Jachimowicz shows a cross section of Jachimowicz’s embodiment using an “extruded” jacket of “foamed polyethylene 20,” not the alternative option using “tape.” Ex-1014, 2:46-50. Dr. Eldering points to the wrong embodiments. A POSITA would understand that Figure 1 of Jachimowicz, which shows the extruded foam jacket, shows the interior surface of the extruded foam as undulating because during the extrusion process the foam would conform to the twisted pairs it was being extruded over. A foamed tape, by contrast, would be flat to begin with (i.e., before being wrapped around the twisted pairs). While the foamed tape may compress and conform to the twisted pairs after being wrapped

around them (potentially creating some indentations in the foam), it would be expected to be flat before it was applied.

25. Second, Patent Owner attempts to mischaracterize my statement at my deposition—that I did not know whether “all tapes” are substantially flat—to argue that Jachimowicz’s tape is not substantially flat. Paper 20, 25-26. A POSITA would understand the “tape” referenced by Jachimowicz is a substantially flat tape. Ex-2004, 103:1-8 (referencing ¶93 of Ex-1007); *see also* Ex-1007, ¶¶134, 159. During my deposition, I explained I was familiar with Mylar-backed foamed tapes like that described by Jachimowicz, due to my experience in the industry. Ex-2004, 103:4-104:16. Such tapes were substantially flat.

26. Also, even if a tape did have an “undulating surface” such as Dr. Eldering depicts at ¶115, a POSITA would still have considered that tape to be “substantially flat.” Ex-2001, ¶115. The term is “substantially flat,” not “flat.” A POSITA would understand this to mean that the claim term does not require a tape to be completely flat. There is nothing in the patent specification or prosecution history that indicates that “substantially flat” was intended to require a completely flat surface. A POSITA would have understood the specification and prosecution history to indicate the opposite. For example, Figure 4 of the ’095 and ’537 patent specifications shows “pair separator 14” as a ridged tape and yet describes it as a “flat configurable tape.” Ex-1004, Fig. 4, 5:48-49. The ’095 and ’537 patents’

specification also refers to a prior art cable jacket with small valleys in its top and bottom surfaces as having a “flat” configuration. Ex-1004, Fig. 1, 2:6-19 (“jacket 102 that has a wide, flat configuration”). In view of the plain language of the claim, a POSITA would have understood a tape with an undulating or ridged surface such as what is shown at ¶115 of Ex-2001 (the drawing in Dr. Eldering’s declaration) to be “substantially” flat.

27. Dr. Eldering alleges that I had an “erroneous understanding” of the function performed by the alternative “tape” embodiment in Jachimowicz. Ex-2007, ¶166. Dr. Eldering is wrong. As I noted in my deposition, Jachimowicz’s specific description of the two alternative embodiments describes the function of the extruded foamed jacket as to “lock” the pairs, while noting that alternatively the pairs can be “held together in the bundle” by a foamed polymer tape. Ex-2004, 106:16-112:2; *see also* Ex-1014, 2:46-54. Dr. Eldering incorrectly attributes the “locking” and “h[olding] together” functions to a purported ridged structure on the surface of the foam. Ex-2001, ¶¶111-113; Ex-2007, ¶¶165-166. Jachimowicz never mentions or describes any ridged features with respect to either the extruded foam or the foamed tape, much less indicates that the locking or holding together is caused by ridged features.

28. A POSITA would have actually understood that the ridged surface of the foam shown in the cross section of Figure 1 of Jachimowicz is merely the

physical result of extruding foam over a bundle of twisted pairs. A POSITA would have understood that the “locking” function is performed by the physical presence of the extruded foam over the twisted pairs, not by any deliberate creation of ridges. As to the foamed polymer tape embodiment described by Jachimowicz, a POSITA would have understood that the tape performs the function of holding the pairs together by the applications of mechanical pressure caused by the wrapping of the tape, not by any ridges on the tape.

**3. A POSITA Would Have Been Motivated to Combine the Teachings of Beggs and Jachimowicz**

29. Dr. Eldering argues that Jachimowicz discloses the “opposite” of separating pairs, using a “jacket” to “lock” them together. Ex-2001, ¶¶111-113; Ex-2007, ¶¶165-168. As I explained in my First Declaration, Beggs already teaches a POSITA to use a tape “buffer” for the purpose of separating twisted pairs. Ex-1007, ¶¶90-92. I do not rely on Jachimowicz for the disclosure of a tape separating twisted pairs. I rely on Jachimowicz’s teaching of a foamed tape that consists of two non-conductive, dielectric materials. Ex-1007, ¶93. It is also common sense to a POSITA in the field that a foamed polymer tape that can be wrapped around a group of twisted pairs to hold them together (as Jachimowicz explains) could also easily be formed into an S-shape to wrap individual twisted pairs, as described in Beggs.

30. Dr. Eldering also argues that the foamed polymer jacket or tape in Jachimowicz “needs to be of sufficiently rigid composition” that the pairs are “unable to move” (i.e. “locked”) and therefore nothing in Jachimowicz teaches that the “jacket” “could or would be used for separating conductor pairs.” Ex-2001, ¶¶111-113. Dr. Eldering does not explain why the foamed polymer tape of Jachimowicz would be expected to be so “rigid” as to not work as a separator tape like that taught by Beggs. And a POSITA would not expect it to be. The term “tape” would connote to a POSITA that it would be more than sufficiently flexible, as “tapes” were known to come on rolls and to be designed to be flexible enough to be wrapped around things. Mylar-backed foamed polymer tape was not “rigid.” It was flexible, and fully capable of bending, folding, and wrapping. It came on a roll, and it was often used by feeding it out of the roll and into cable assemblies. Jachimowicz itself confirms this. As I explained in my First Declaration, Jachimowicz “indicates...that the tape is ‘appl[ied]’ to hold pairs together in a bundle...indicating that the tape was substantially flat [and] could be configured (e.g. wrapped or folded) around pairs.” Ex-1007, ¶81.

31. Dr. Eldering provides no evidence or explanation for why POSITA would expect Mylar backing to add any “rigidity” at all, much less so much rigidity that the tape would become incapable of being wrapped in an S-shaped fashion. He only cites my testimony that a Mylar-backed foamed polymer tape

would “provide enhanced tensile strength properties” that would “decrease the tendency for the foamed tape to stretch or break.” Ex-2007, ¶168; Ex-2001, ¶119.

It is true that a Mylar-backed foamed polymer tape would “provide enhanced tensile strength properties” that would “decreas[e] the tendency for the foamed tape to stretch or break.” But this not mean that it would also be so *rigid* as to be incapable of being wrapped in an S-shape around twisted pairs such as shown in Beggs. To the contrary, a POSITA would have known that Mylar-backed foamed polymer tape like that described in Jachimowicz was flexible and more than capable of being wrapped in an S-shaped fashion as shown in Beggs.

32. Dr. Eldering also argues that Beggs “already has a jacket” that “provides mechanical protection for the cable.” Ex-2001, ¶119. I do not think this is relevant to my opinions. My First Declaration did not talk about what material a POSITA would use as a cable jacket to provide mechanical protection.

33. Dr. Eldering also claims to disagree with the five reasons I identified for why a POSITA would have been motivated to combine the teachings of Beggs and Jachimowicz, but his arguments do not make sense and are not supported by evidence. Ex-2001, ¶¶120-123.

34. As to the first motivation, Dr. Eldering contends that Beggs “does not provide any evidence that the dielectric tape can be a foamed polymer.” Ex-2001, ¶121. I disagree. As I previously explained, Beggs clearly teaches that the buffer

separating twisted pairs can be a foamed polymer and that the buffer can be a dielectric tape. Ex-1007, ¶¶87-92, 97; Ex-1015, 6:1-14, 6:52-56, claim 19. Any POSITA reading Beggs' teachings, using ordinary common sense and ordinary inferences, would understand that the tape buffer could be made of a foamed polymer. *See* Ex-1007, ¶97.

35. Dr. Eldering attempts to dismiss the second motivation (the benefit of improved mechanical properties provided by a plastic film backing) by again arguing that the buffer must have “flexibility and the ability to be stretched and wrapped around the conductor pairs.” Ex-2001, ¶122; Ex-2007, ¶169. However, Dr. Eldering does not provide any explanation as to why a POSITA would expect a plastic backing (such as Mylar) to be so rigid as to make a foamed polymer tape incapable of being wrapped in an S-shaped fashion. As I explained above and in my First Declaration, a POSITA would have expected such a tape to be more than sufficiently flexible. *E.g.*, Ex-1007, ¶81. The plastic backing (for example, a Mylar backing) would have been expected to improve the ability of the foamed polymer tape to do this by improving its mechanical integrity and ability to withstand movement, stress and strain, while retaining the flexibility needed for wrapping.

36. Dr. Eldering also contends that an “undulating surface” of the tape would not be suitable for separating pairs. Ex-2007, ¶169. That is incorrect. As I explained above, a POSITA would not understand the Jachimowicz tape to have an

“undulating” surface. But even if it did, the undulations Dr. Eldering shows are very mild and would not have been expected to affect the ability of the foamed tape to effectively separate twisted pairs. Dr. Eldering contends that the undulating surface “would result in variable and uneven separation of the conductors, which would lead to unpredictable electrical characteristics of the resulting cable.” Ex-2007, ¶169. Dr. Eldering provides no explanation for why this would be the case. And a POSITA would expect such a tape would still easily maintain a distance between the pairs on either side of the separator to effectively reduce crosstalk.

37. Dr. Eldering tries to disregard the third through fifth motivations by contending that Beggs “already” discloses using a foamed polymer separator with the non-tape buffer embodiments, and therefore there would be no motivation to modify Beggs’ tape embodiment to include “an additional or redundant solution.” Ex-2001, ¶¶123-127. This just confirms that a POSITA would have been motivated to use a foamed polymer tape. Dr. Eldering acknowledges that Beggs teaches the benefits of using a foamed polymer separator between twisted pairs, and he cannot deny that Beggs teaches that the separator could be a tape. Given this, a POSITA would certainly be motivated to make the tape option a *foamed polymer* tape, to obtain the benefits of a foamed polymer separator that Beggs teaches with the tape separator option (that Beggs also teaches). As I explained in

my First Declaration, doing so would have been a very minor and obvious modification with predictable benefits. Ex-1007, ¶¶96-104, ¶107.

38. Dr. Eldering also states that a POSITA would have been motivated to retain the Beggs preform (58) “rather than switch to any kind of tape.” Ex-2001, ¶¶124-125. Dr. Eldering’s argument is contradicted by Beggs itself. Beggs expressly teaches that another option for the buffer between twisted pairs is a “tape.” Ex-1015, 6:52-56; Ex-1007, ¶¶86-107. So to a POSITA, Beggs already teaches “switch[ing]” to a tape. And my First Declaration explained all the reasons a POSITA would be motivated to use a *foamed polymer* tape. Ex-1007, ¶¶86-107. Dr. Eldering provides no reason that a POSITA would confine Beggs to only one of the disclosed embodiments and to ignore the others.

39. Dr. Eldering contends that I failed to provide any “quantitative analysis” of the advantages of using foamed tape over a (non-foamed) tape, “including reduced flammability.” Ex-2007, ¶170. A POSITA would not have needed a “quantitative analysis” to understand that foaming a material would have predictable advantages for communications cables. For example, I explained the concept that “foam tends to have more air in it and be less dense. Therefore, it would result in less flammable material in the cable in general.” Ex-2004, 202:9-15; *see also id.* 203:6-18 (same). This is also exactly what the Gingue reference teaches. Ex-1013, 3:20-25.

40. Patent Owner contends that I “admitted” that consideration of the specific materials used is a consideration in determining flammability. However, I explained that Gingue teaches foaming “decreases the amount of flammable material employed *for a given volume of material*.” Ex-1007, ¶104, ¶46 (quoting Ex-1013, 3:20-26) (emphasis added). A POSITA would have understood this to be true of any material—the fact that different materials may be more or less flammable does not affect the point that foaming them would have been expected to be beneficial in reducing overall flammability. Material A may be more flammable than Material B. But for a given volume occupied by Material A in a cable, using Material A in foamed form rather than solid form would be expected to require less overall material of Material A and therefore make the overall cable less flammable; the same would be true of Material B.

41. Dr. Eldering contends that I “admitted” that a non-foamed tape can be thicker than a foamed tape. Ex-2007, ¶170. That is very misleading. What I actually said is that in my experience with tapes *that were used in the cabling art*, foamed tapes are typically thicker than non-foamed:

Q. Is it possible to have a non-foamed tape that is at least as thick as or thicker than a foamed tape?

A. There is a -- opening the concept of tape to beyond that typically used in cables of this type and expanding the range of possible tapes, one might consider or find a

tape that's not foamed to be thicker than a foamed tape. But, typically, in my experience, for these types of cables forming separators in this case, the foamed tape would be typically thicker than a non-foamed tape.

Ex-2004, 104:6-16; *see also id.* 103:12-13 (“In my experience, foamed tapes are consistently thicker than non-foamed tapes”). Dr. Eldering did not dispute this. Moreover, that one in theory could potentially make a non-foamed tape thicker than a foamed one does not negate the known benefit of foamed polymer in providing and maintaining physical distance between twisted pairs.

42. A POSITA would have known that using a substantially flat foamed polymer tape as recited in claim 19 was just using a known component with known benefits to predictably obtain those benefits.

**B. GROUND 2: Claims 20 and 22 (Ground 1, Further in View of Gingue)**

43. Dr. Eldering contends that claims 20 and 22 each require a substantially flat foamed polymer “tape” and that Beggs and Jachimowicz fail to disclose such a tape that can be used as a twisted pair separator. Ex-2001, ¶127; Ex-2007, ¶¶172-176. As I explained in my First Declaration and above, Beggs already teaches and suggests using a substantially flat foamed polymer tape to separate twisted pairs. As I also explained in my First Declaration and above,

Jachimowicz also discloses a substantially flat polymer tape, and additionally teaches that a foamed polymer tape can include at least two materials.

44. Dr. Eldering also argues that because Gingue teaches foamed polymer for use as “insulation” surrounding bare metal conductors, it cannot render claims 20 and 22 (which each recite flame-retardant and/or low-dielectric constant properties of foamed polymer tape) obvious. Ex-2007, ¶¶174-176. Dr. Eldering does not provide any explanation for this conclusion. He also does not dispute that Gingue discloses the claimed properties of foamed polymer, and he does not provide anything disputing that a POSITA would be motivated to provide those same properties in a foamed polymer tape. For the reasons explained in my First Declaration, a POSITA would be motivated to do that.

**C. GROUND 3: Yanagita in View of Jachimowicz**

**1. Jachimowicz Does Disclose a Substantially Flat Foamed Polymer Tape That Can Be Used as a Separator**

45. Dr. Eldering contends that because Jachimowicz “fails to disclose a substantially flat, foamed polymer tape,” Ground 3 fails. Ex-2007, ¶177. As I explained in my First Declaration and above, Jachimowicz does disclose a substantially flat foamed polymer tape. §VI.A.2, *supra*.

46. Patent Owner also argues that I “admitted” that Mylar and foamed polymers are flammable. Paper 20, 36. During my deposition I merely explained

that “some plastics are flammable, and some are deemed to be relative[ly] inflammable,” and that Mylar and foam polyethylene are flammable “[t]o some extent.” Ex-2004, 129:15-130:1. This does not impact the fact that a POSITA would have been motivated to use a foamed polymer as claimed. Foamed polymers, such as Mylar backed foamed polymer tape, were known and used in communications cabling. *E.g.*, Ex-1013, 3:20-26 (Gingue), 4:32-37; Ex-1014, 2:50-54 (Jachimowicz). And in my First Declaration, I provided two reasons a POSITA would make the combination, based on the known benefits of foamed polymer: (1) to predictably improve the electrical performance of the cable and (2) to beneficially lower crosstalk. Ex-1007, ¶¶139-140. I also explained that Gingue teaches that foamed polymer could be provided with a “flame retardant” additive. Ex-1007, ¶46 (citing Ex-1013, 4:37-48). Dr. Eldering did not dispute any of this evidence. The fact that Mylar and foamed polymer, as materials, may be flammable to some extent does not negate their known benefits when used in communications cabling, and as I have explained, a POSITA would be motivated to use a two-material foamed polymer tape as claimed.

## **2. Yanagita Teaches Twisted Pairs As Claimed**

47. Dr. Eldering argues that Yanagita’s discussion of stranded “pairs” merely describes the prior art. Ex-2001, ¶69; Ex-2007, ¶182. A POSITA would not understand Yanagita’s disclosure that “alternatingly twisted”/“alternatedly

stranded”<sup>1</sup> cables can use either individual straight wires or stranded “pairs” or “quads” to be merely describing the prior art. Rather, a POSITA would understand Yanagita to be describing the types of cables that the invention can be used with. The paragraph discussing stranded “pairs” is immediately under the heading “Detailed Explanation of the Invention.” Ex-1012, 1. The paragraph also begins by stating that “the present invention relates to an improvement of an alternately twisted cable,” and then proceeds to describe the “alternately twisted cable” to which the invention is directed in the very next sentence and includes alternatively twisted cables using stranded pairs or quads. Ex-1012, 1. A POSITA would not have read Yanagita as Dr. Eldering contends.

48. Dr. Eldering also argued that Yanagita discloses only “straight-line conductors” and the only twisting described is of the overall cable components as they follow along the shape of the twisted core material 2. Ex-2001, ¶¶62, 64-77; Ex-2007, ¶¶178-182. A POSITA would understand that Yanagita is not limited to “only individual straight-line conductors.” A POSITA would understand Yanagita to disclose two types of twisting: a cable where the overall cable core components are alternately stranded, and also that wires themselves can be either straight-line wires or twisted pairs or quads. For example, Yanagita distinguishes between the overall “twisted cable” created by the shape of the core material 2 (underlined text

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<sup>1</sup> “Alternately stranded” is another term for SZ-stranding.

below), and the options for the individual wires that are laid alongside that core material (in italicized text below):

[A] first invention thereof is an alternatingly twisted cable wherein a large number of insulated wire strands, *or that wherein the insulated wire strands are twisted together*, are laid, while twisting along the surfaces, along both surfaces of a core material. . .

Ex-1012, 1.

49. In particular, when describing the options for the wires that are laid along the core material surface (italicized text), Yanagita clearly uses the word “or” to indicate alternative options. Either the wires are individual straight wires “or” they are groups of “twisted together” wires (meaning twisted pairs or quads):

[A] first invention thereof is an alternatingly twisted cable wherein a large number of insulated wire strands, ***or that wherein the insulated wire strands are twisted together***, are laid, while twisting along the surfaces, along both surfaces of a core material. . .

Ex-1012, 1.

50. Yanagita consistently repeats these alternative options for the wires (I’ve italicized this text)—that they can be either straight wires “or” twisted pairs or quads. This is evident from Ex-1012 (a certified English-language translation obtained for this IPR) and it is corroborated by and consistent with Ex-1055. While the translations use various phrasings (for example, “pairs thereof or quad strands,” “strands are twisted together,” “stranded pairs or stranded quad,” “stranded

groupings of such”), a POSITA would understand the disclosures to clearly indicate that the invention may be used with a cable having twisted pairs. Below are examples of Yanagita explaining that (i) the overall cable components are alternately twisted (underlined text) and (ii) the wires of the cable may be straight wires<sup>2</sup> (*italics*) or twisted pairs or quads (***bold italics***):

| Ex-1012, 1                                                                                                                                                                                                                                                                                                                                                                                                                                   | Ex-1055, 1                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>“The present invention relates to an improvement of an <u>alternately twisted cable</u>...There is trend to often using, as communication cables, so-called ‘alternately twisted cables,’ wherein that wherein <i>a large number of strands of insulated wires <b>or pairs thereof or quad strands</b></i>, or units thereof, are <u>twisted together so as to reverse the direction of twisting</u> thereof with given periodicity.”</p> | <p>“The present invention relates to a favorable <u>alternately stranded cable</u>...As communications cable, there is a tendency to use <i>a plurality of either insulated element wires <b>or else stranded pairs or stranded quad of such</b></i>, or otherwise to use so-called alternately stranded cable with which units of the wires <u>are stranded in a manner so that the stranding direction is reversed</u> at points in time within a fixed cycle.”</p> |

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<sup>2</sup> I note that while Yanagita has a very broad disclosure that includes straight wires, a POSITA would not have expected that configuration to work very effectively, particularly for longer distance transmission.

|                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>“first invention thereof is an <u>alternatingly twisted cable</u> wherein <i>a large number of insulated wire strands</i>, <b><i>or that wherein the insulated wire strands are twisted together</i></b>, are laid, <u>while twisting along the surfaces, ...</u>”</p> | <p>“first invention constitutes an <u>alternatedly stranded cable...</u>; onto both surfaces of the core material, <i>a plurality of either insulated element wire</i> <b><i>or else stranded groupings of such</i></b> are vertically <u>run along the surfaces while being twisted</u>”</p> |
| <p>“1 is an insulated wire <b><i>or that wherein insulated wires are twisted together</i></b>, <u>laid divided onto both sides of a core material 2</u>”</p>                                                                                                              | <p>“reference numeral 1 <i>constitutes an insulated element wire</i> <b><i>or stranded groupings of such</i></b>; <u>these are divided and longitudinally run along both surfaces of core material 2</u>”</p>                                                                                 |

If the bolded text merely referred to the twisting (stranding) of all the cable components, it would be redundant of the other (underlined) text that already says that.

51. That Yanagita is, unsurprisingly, including in its disclosure the common and conventional use of twisted pairs is evident in its repeated use of “or” to describe the options for the configurations of the wires that are laid about the plastic core. Yanagita repeatedly says that the components that are laid along the plastic core comprise “an insulated wire ***or*** that insulated wires are twisted together.” Ex-1012, 1. Ex-1055, the other English translation that I understand the

Patent Owner used in previous proceedings, says the same thing: “numeral 1 constitutes an insulated element wire *or* stranded groupings of such.” Ex-1055, 1. I understand that Dr. Eldering has argued that this “or” clause is just redundant, and instead refers again to the overall stranding of the components along the twisting plastic core. Ex-1070, 205:1-22. This would not make sense to a POSITA.

Yanagita consistently uses this same phrasing, with the two options for the components that are laid along the plastic core—straight wires, “or” stranded groupings of such (i.e., twisted pairs or quads). Yanagita even repeats this phrasing in both claims. Ex-1012, claims 1, 2; Ex-1055, claims 1, 2. A POSITA would understand that in Yanagita “or” means “or,” as in an alternative option.

52. Patent Owner contends that I admitted during my deposition that Yanagita is not clear in what it means by “stranding” and “twisting.” *See* Paper 20, 43, 42. This is a mischaracterization of what I said. I explained in both my First Declaration and during my deposition that Yanagita is “clear” with respect to disclosing twisted pairs. *See* Ex-2004, 121:5-8, 210:16-211:14. Patent Owner cited my response when asked whether there was anything in Yanagita that was not “perfectly” clear. I noted that the words “stranding” and “twisting” would need close attention. Ex-2004, 121:9-122:2. I in no way said that Yanagita is not “clear” with respect to its disclosure of twisted pairs.

53. I also note that by the date of the Yanagita patent most communication cables used twisted pairs or quads. For example, Ex-1017, 11 (“The most commonly used transmission media in present-day digital loop applications is twisted pair metallic (copper) cable”); Ex-1019, 1:10-15 (“A typical telephone cable is constructed of twisted pairs of metal conductors for signal transmission....”); Ex-1016, 7; Ex-1023, 1:4-7 (“...each unit conventionally being a twisted pair of conductors...”); Ex-1020, 1:7-14, 1:34-39, 2:31-34, 2:55-59 (“A plurality of copper wires insulated with paper, cotton, silk, or other suitable material, usually twisted together in pairs, are stranded together loosely to form a group or bundle 5”); *see also* Ex-1021, 1:13-17, 1:43-47; Ex-1029, 23, 25, 32, 33 Fig. 55.1; Ex-1014, 1:30-32; Ex-1072 (ANSI standard); Ex-1073 (REA standard). Yanagita discloses an invention for use with “communications cables.” To a POSITA, it would have been implausible to read Yanagita as limiting its invention to only use with cables having bundles of straight wires (and excluding twisted pairs). This is particularly true given that both translations of Yanagita expressly refer to stranded “pairs.” Ex-1012, 1 (“strands of insulated wires or pairs thereof”); Ex-1055, 1 (“either insulated element wires or else stranded pairs ...of such”). In the context of Yanagita (a large number of “pairs” of conductors bundled together without individual shielding between each pair), a POSITA would have understood

the description of the wires could be “pairs”/“stranded pairs” to refer to twisted pairs.

**D. GROUND 4: Claims 20 and 22 (Ground 3, Further in View of Gingue)**

54. Dr. Eldering contends that claims 20 and 22 require a substantially flat foamed polymer “tape” and that Jachimowicz fails to disclose such a tape that can be used as a twisted pair separator. Ex-2001, ¶77; Ex-2007, ¶¶184-186. But as I explained in my First Declaration and above, Jachimowicz does disclose a substantially flat tape, and a POSITA would have been motivated to combine the teachings of Yanagita and Jachimowicz. Ex-1007, ¶¶133-142.

55. Dr. Eldering also repeats his argument that because Gingue teaches foamed polymer for use as “insulation” surrounding bare metal conductors, it cannot render claims 20 and 22 obvious. Ex-2007, ¶¶173-174, 186. For the reasons I explained above with respect to Ground 2, Dr. Eldering’s argument is not supported by any evidence and is incorrect.

**E. GROUND 5: GmbH-866 in View of Roberts, Gingue, and/or Jachimowicz**

**1. A POSITA Would Have Been Motivated to Combine the Teachings**

56. Dr. Eldering argues that Jachimowicz does not disclose a substantially flat foamed polymer tape. Ex-2007, ¶187. As I explained above, it does. §VI.A.2,

*supra*. Also, as I previously explained in my First Declaration, GmbH-866 itself already taught “substantially flat” separator members to separate twisted pairs. Ex-1007, ¶178.

57. Dr. Eldering also argues that “without quantitative analysis of the impacts” on crosstalk of the replacement of the metallic shieldings in GmbH-866 with a foamed polymer tape separator “a POSITA would not be motivated to make such a change.” Ex-2007, ¶188. That is incorrect. I explained in detail in my First Declaration that “while the modification (replacing metalized partial shieldings 11, 12 with foamed polymer tape) may result in some loss of crosstalk protection, the cable of GmbH-866 would have been expected to perform as intended.” Ex-1007, ¶170; *see also* Ex-1007, ¶¶168-172. I also cited substantial supporting evidence, including Ex-1015 (Beggs), 3:48-51, 7:52-62, 9:32-36, 9:41-44; Ex-1048, Figs. 1-2, 5-6; Ex-1036, 4:5-16; Ex-1023, 3:12-14, 3:17-31; and Ex-1049, Figs. 1-3, 3:52-56, 2:31-34. Dr. Eldering did not respond to any of this evidence. All of this evidence shows that high-speed cables having twisted pairs either with no separator or with a dielectric-only separator would have been expected to work, including in the transfer range GmbH teaches. Specific numerical, quantitative analysis would not have been needed.

58. Patent Owner contends that I was “unable to answer” specifically “whether replacing a metallic shield with a dielectric separator in a cable would

have an impact on crosstalk...” Paper 20, 51. This conclusion is misleading and inaccurately summarizes my testimony. I was being asked about whether placing a dielectric “between two conductors” would reduce crosstalk, not whether a separator between *pairs* would have an impact on crosstalk. Ex-2004, 58:1-64:12. This line of questioning that the attorney was pursuing—how placing a dielectric between conductors (rather than between twisted pairs) would affect crosstalk—is not the relevant issue for this IPR, and it is also a challenging question for a POSITA to answer, without more context.

## **2. GmbH-866 Discloses and Suggests Separating Twisted Pairs**

59. Dr. Eldering argues that GmbH-866 does not disclose twisted pairs. Ex-2001, ¶¶79-96. This is incorrect.

60. As I noted in my First Declaration, GmbH-866 expressly discloses twisted pairs in at least three different places:

Data transfer cables of this kind typically consist of four pairs of two stranded isolated copper conductors or wires....

A data transfer cable according to the invention, shown in Fig. 1, comprises four pairs 1, each consisting of two isolated, stranded copper conductors 2 or wires. ...

[T]he invention can also comprise just two pairs of stranded conductors.

Ex-1010, 2, 3, 4; *see also id.* Figs. 1-5; *see also* Ex-1007, ¶¶174-176.

**3. GmbH-866's Description of "Pairs" that Each Consist of "Two Stranded Isolated Copper Conductors or Wires" Discloses Twisted Pairs**

61. Dr. Eldering contends that the word "stranded" in GmbH-866's description of "*pairs*" of "*two stranded isolated copper conductors or wires*" does not mean each of the two wires are stranded (twisted) around each other, but rather refers to the conductive core an insulated wire of the pair consisting of multi-filament smaller-diameter copper wires. Ex-2001, ¶¶80-82. Dr. Eldering is wrong. When describing a pair as consisting of "two stranded... copper conductors or wires," to a POSITA, GmbH-866 is plainly describing twisted pairs.

62. Patent Owner says that I admitted that "stranded" wire can mean where you have multiple fine filaments braided together to make up an overall larger conductor. It is true, as I stated at my deposition, that in certain contexts stranded can have that meaning. But as I further explained during my deposition, it is clear that in GmbH-866 "stranded" means twisted.

63. GmbH-866 consistently uses the word "stranded" to mean twisted. GmbH-866 consistently uses stranded/stranding to refer to twisted and twisting in various portions. *E.g.*, Ex-1010, 3 ("The stranding of the pairs 1 can consist in what is known as a helix stranding or in an SZ stranding..."), 4 ("the invention can also comprise just two pairs of stranded conductors."), 8 claim 11 ("the conductor pairs (1) are stranded in a helical or SZ-like manner."). Despite these consistent

uses, Dr. Eldering argues that where GmbH-866 explains that each “pair” consists of “stranded...conductors or wires,” a POSITA would understand GmbH-866 uses stranded to mean multi-filament wire. Ex-2001, ¶¶79-82. A POSITA would not agree with Dr. Eldering. There is no indication in GmbH-866 that it is suddenly using stranded in a different sense when talking about the pairs of “conductors or wires.” A POSITA would have understood that GmbH-866 uses the words stranded/stranding consistently across the patent to refer to components that are twisted around each other.

64. Dr. Eldering’s interpretation of the sentences describing “*stranded isolated copper conductors or wires*” from GmbH-866 are also contradictory and do not make sense as a matter of ordinary sentence structure. *See* Ex-1010, 2, 3. On the one hand, Dr. Eldering focuses on the word “isolated” and argues that it shows that GmbH-866’s use of the word “isolated” “teaches away” from the conductors or wires being “intertwined” or twisted. Ex-2001, ¶83. In doing so, he appears to be arguing that “isolated” modifies **both** the subsequent “conductors” and “wires” options. At the same time, Dr. Eldering argues that the word “stranded” modifies **only** “conductors” and **not** “wires”: “the conductor pairs in GmbH-866 are disclosed as consisting of either stranded copper conductors or solid wires.” Ex-2001, ¶80. This interpretation of “stranding” as modifying only

the “conductors” option but “isolated” modifying both is contradictory and does not make sense.

65. In reality, a POSITA would have understood each of the words “stranded,” “isolated” and “copper” to modify each of the “conductors” or “wires” options that followed:

four pairs of two **stranded isolated copper** *conductors*  
*or wires...*

four pairs 1, each consisting of two **isolated, stranded**  
**copper** *conductors 2 or wires...*

Ex-1010, 2, 3 (emphasis added). This sentence structure is also additional indication that in the context of GmbH-866 “stranded” is twisted. Given that “stranded” plainly modifies both of the “conductors or wires” options, it would not make sense for stranded to mean multifilament braided wire (as Dr. Eldering argues). If it did, then the “conductors or wires” options would be nonsensically redundant (as they would both be comprised of braided filaments).

66. It would also not make sense for GmbH-866 to be disclosing straight (untwisted) “pairs.” As I explained at my deposition, in my 40-plus years in the industry industry (most of that time working with twisted pair cabling specifically), I have never seen a four-pair data cable of the type disclosed by GmbH-866 that did not use twisted pairs. Ex-2004, 215:15-216:7. To a POSITA, it would be implausible to read GmbH-866 as excluding cables with twisted pairs. I am not

aware of any high-speed, four-pair data cables of the type GmbH-866 discloses (e.g. transfer speeds up to 100 or 600 MHz) that did not use twisted pairs. This is not surprising, because standards for four-pair data cables like those shown in GmbH-866 and within the 1-100 MHz transfer speed range described by GmbH-866 required twisted pairs or quads. E.g., Ex-1074, 15, 25, 43 (1995 ISO/IEC 11801 standard, a common data cable standard used in Europe, defining “pair” as “a twisted pair” (at 3.1.31) and stating that each cable unit has at least four “pairs”); *see also id.*, 34 (speeds up to 100 MHz); Ex-1079, 14-15, 30, 34, 54-55, 59, 78-79, 83, 89, 121 (TIA/EIA-568-A standard, a common data cable standard used in the United States). I am familiar with the ISO/IEC 11801 and TIA/EIA-568-A standards from my many years of experience in the industry.

67. It is true that in some contexts “stranded wire” can mean wire with a multi-filament braided copper core (as opposed to a solid copper core), as I acknowledged at my deposition. Ex-2004, 213:3-214:4. And I do not read GmbH-866 to exclude that option—that is what a POSITA would understand GmbH-866 to be referring to with its alternative of “wires.” In other words, GmbH is describing a “pair,” where each pair consists of stranded (meaning twisted) set of two [solid] conductors or [multi-filament braided] wires. In the context of the GmbH-866 reference, a POSITA would understand “stranded” to mean twisted, for

all of the reasons I have previously explained. Ex-2004, 151:8-21, 214:5-16, 215:15-216:7; Ex-1007, ¶¶175-176.

68. Dr. Eldering argues that GmbH-866 “teaches away” from twisted pairs because it describes the pairs as consisting of “two isolated conductors in each case.” Ex-2001, ¶¶83-84. A POSITA would not have agreed with Dr. Eldering. A POSITA would have instead understood “isolated” conductors to refer to the fact that both of the conductors are insulated from each other, not that they are somehow physically separated from each other. In fact, all the figures in GmbH-866 show that for each “pair 1” each insulated conductor 2 is touching or nearly touching the other one of the pair, not “isolated” in the sense of individualized or separated from it. Ex-1010, Figs. 1-5. Isolated was a known way to refer to conductors of the pair being electrically insulated from one another.

69. Dr. Eldering also contends that because GmbH-866 does not specifically teach that the “insulation (3)” covering each of the copper conductors or wires is twisted or stranded, that indicates that the copper conductors or wires of each pair are not a twisted pair. Ex-2001, ¶87. A POSITA would not agree. A POSITA would not have expected a reference to separately describe the stranding of the conductors and *the insulation* that covers the conductors. A POSITA would know that the insulation is part of (adhered to) the conductor. GmbH-866 explains

this: “The copper conductors or wires preferably *have* an insulation 3 consisting of a thermoplastic polymer...” Ex-1010, 3.

**4. GmbH-866’s Statement that the Invention that “*Can Also Comprise Just Two Pairs of Stranded Conductors*” Is Describing Stranding (Twisting) the Conductors of Each Pair, Not the Stranding (Twisting) of the Overall Cable Components**

70. A POSITA would recognize that GmbH-866 consistently refers to the “stranded” “conductors or wires” when it is talking about the wires being stranded into twisted pairs, and GmbH-866 consistently refers to the “stranding” of the “pairs,” when it is talking about stranding the cable components together about a central axis. I have put together the chart below that shows this:

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stranded modifies<br>“conductors or wires” | <ul style="list-style-type: none"> <li>• “four pairs of two <b>stranded</b> isolated copper <b>conductors or wires</b>” Ex-1010, 2.</li> <li>• “four pairs 1, each consisting of two isolated, <b>stranded copper conductors 2 or wires</b>” Ex-1010, 3</li> <li>• “just two pairs of <b>stranded conductors</b>” Ex-1010, 4</li> </ul>                                                                                                                                                                                                                                                                           |
| Stranding modifies<br>“pairs”              | <ul style="list-style-type: none"> <li>• “<b>stranding</b> and/or the longitudinally extending deformation of the conductor <b>pairs</b>” Ex-1010, 3</li> <li>• “The <b>stranding</b> of the <b>pairs 1</b> can consist in what is known as a helix stranding or in an SZ stranding...” Ex-1010, 3</li> <li>• “In the case of an SZ <b>stranding</b> of the <b>pairs</b>...” Ex-1010, 3</li> <li>• “with the <b>stranding</b> or the conductor <b>pairs 1</b>...” Ex-1010, 5</li> <li>• “in the case of the <b>stranding</b> of the conductor <b>pairs</b> in the SZ stranding method...” Ex-1010, 5-6</li> </ul> |

|  |                                                                                                                                                            |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> <li>• “conductor <u>pairs (1)</u> are <u>stranded</u> in a helical or SZ-like manner.” Ex-1010, 8 (claim 11)</li> </ul> |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------|

71. As I explained in my First Declaration, GmbH-866 teaches both that the insulated wires of each pair are stranded (twisted) around each other to form a twisted pair, and that the components of the overall cable (the twisted pair units and the shieldings) are themselves stranded (twisted) about a central axis. Ex-1007, ¶¶176-176; Ex-1010, 2-4, 5.

72. Patent Owner alleges that I admitted that GmbH-866 refers to “cable assembly as ‘stranding’ four (4) times throughout the specification” and cites to my deposition (Ex-2004) at 149:2-22, 150:17-152:13; 153:8-155:2, and 156:1-157:1. Paper 20, 55. I accurately answered that these portions of GmbH-866 refer to cable assembly. Patent Owner did not ask me about the portions of the specification where the stranding modifies “conductors or wires.” I also explained that an earlier (different) portion of one of the paragraphs Patent Owner asked me about did disclose that the conductor pairs were also stranded (twisted) themselves. Ex-2004, 150:17-152:13.

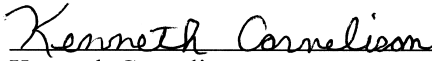
73. The paragraph on pages 3-4 of Ex-1010 (GmbH-866) does discuss stranding “of the pairs 1” and also discusses stranded “conductors.” Ex-1010, 3-4. A POSITA would have understood that when stranding modifies “the pairs,” it refers to stranding the twisted pair units about a central axis of the cable, while

when stranded modifies “the conductors,” it refers to stranding the two conductors of the pair into a twisted pair.

Reply Declaration Regarding IPR2023-01061

74. I declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 19 of the United States Code.

Executed on: July 9, 2024

  
Kenneth Cornelison