

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMMSCOPE TECHNOLOGIES LLC,
Petitioner,

v.

BELDEN INC.,
Patent Owner.

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

PATENT OWNER SUR-REPLY

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	THE CHALLENGED CLAIMS ARE NOT OBVIOUS.	1
A.	Patent Owner’s Expert Is At Least A POSITA.....	1
B.	Regarding Grounds 1 Through 5, Neither Beggs Nor Jachimowicz Render Obvious A Substantially Flat, Foamed Polymer Tape That Can Be Used As A Twisted Pair Separator.....	1
1.	Taken Alone or In Combination, Beggs Cannot Render Obvious The Claimed Substantially Flat, Foamed Polymer Twisted Pair Separator Limitations.....	1
2.	Jachimowicz Cannot Render Obvious A Substantially Flat, Foamed Polymer Tape That Can Be Used As A Twisted Pair Separator.....	5
3.	Petitioner Failed To Establish An Objective Motivation To Combine Jachimowicz’s Jacket With Beggs.	8
C.	Regarding Grounds 3 and 4, The Combination Of Yanagita And Jachimowicz Cannot Render Claim 19 Obvious.	10
1.	Petitioner Ignored PO’s Proper Claim Construction And Failed To Show How Yanagita Discloses Twisted Pairs Under That Construction.....	10
2.	Petitioner’s Cherry-Picked, Out-Of-Context Snippets From Yanagita Fail To Disclose “Twisted Pairs.”	12
D.	Regarding Ground 5, The Combination Of GmbH-866 In View Of Roberts, Gingue And/Or Jachimowicz Cannot Render Claims 19, 20 Or 22 Obvious.....	19
1.	PO’s Previous Statements Concerning GmbH-866 Were Based On A Substantively Different, Uncertified Translation.	19
2.	“Stranded Copper Conductors” In GmbH-866 Do Not Necessarily Teach “Twisted Pairs.”	23

TABLE OF AUTHORITIES

CASES

<i>Ex parte Gerlach</i> , 212 USPQ. 471 (PTAB 1980)	3
<i>Polaris Indus. v. Arctic Cat, Inc.</i> , 882 F.3d 1056 (Fed. Cir. 2018)	3
<i>Salazar v. Procter & Gamble Co.</i> , 414 F.3d 1342 (Fed. Cir. 2005)	19

RULES

37 C.F.R. § 42.24	1
37 C.F.R. § 42.6(e)	1
37 C.F.R. § 42.61	18
37 C.F.R. § 42.63	18, 23, 26
37 C.F.R. § 42.64(b)	1

EXHIBIT LIST

EXHIBIT	DESCRIPTION
EX-1001	U.S. Patent No. 6,570,095 (the “’095 patent”)
EX-1002	Excerpt of Prosecution History of U.S. Patent No. 6,570,095: Nov. 8, 2002 Notice of Allowance
EX-1003	Excerpt of Inter Partes Reexamination No. 95/000,474 of U.S. Patent No. 6,570,095: Sept. 20, 2011 Action Closing Prosecution
EX-1004	U.S. Patent No. 6,998,537 (the “’537 patent”)
EX-1005	Excerpt of Prosecution History of U.S. Patent No. 6,998,537: Nov. 2, 2004 Notice of Allowance
EX-1006	Excerpt of Inter Partes Reexamination No. 95/000,476 of U.S. Patent No. 6,998,537: Sept. 20, 2011 Action Closing Prosecution
EX-1007	Declaration of Kenneth Cornelison
EX-1008	Curriculum Vitae of Kenneth Cornelison
EX-1009	U.S. Patent No. 3,622,683 (“Roberts”)
EX-1010	English language translation of German Patent No. 297,19,866 U1 (“GmbH-866”), and attached Declaration of translator Anthea Heyes
EX-1011	German Patent No. 297,19,866 U1 (untranslated original)
EX-1012	English language translation of Japanese Patent Publication S43015470 (“Yanagida”), and attached Declaration of translator Anthea Heyes
EX-1013	U.S. Patent No. 5,670,748 (“Gingue”)
EX-1014	U.S. Patent No. 3,894,172 (“Jachimowicz”)
EX-1015	U.S. Patent No. 4,755,629 (“Beggs”)
EX-1016	Electronic Wire & Cable - A Users’ Guide: Performance and Selection, Section 5: Multiconductor Cables, AT&T (1987)
EX-1017	Whitham D. Reeve, Subscriber Loop Signaling and Transmission Handbook – Digital, IEEE Telecommunications Handbook Series (1995)
EX-1018	Whitham D. Reeve, Subscriber Loop Signaling and Transmission Handbook – Analog, IEEE Telecommunications Handbook Series (1992)
EX-1019	U.S. Patent No. 5,380,591
EX-1020	U.S. Patent No. 1,727,972
EX-1021	U.S. Patent No. 1,956,730
EX-1022	U.S. Patent No. 3,803,340 (Jachimowicz-340)

EXHIBIT	DESCRIPTION
EX-1023	Canadian Patent Application No. 2,058,046
EX-1024	U.S. Patent No. 4,262,164
EX-1025	U.S. Patent Pub. No. 2006/0169478
EX-1026	U.S. Patent No. 4,253,890
EX-1027	U.S. Patent No. 5,283,390
EX-1028	U.S. Patent No. 5,969,295
EX-1029	G.F. Moore, Electric Cable Handbook, BICC Cables (3d. ed. 1997)
EX-1030	The New IEEE Standard Dictionary of Electrical and Electronics Terms (5th ed. 1993)
EX-1031	Neil Sclater and John Markus, Electronics Dictionary, McGraw-Hill (6th ed. 1997)
EX-1032	S. Yonechi et al., Application of Spacer Forming Technique to Communication Cables, International Wire & Cable Symposium Proceedings (1980)
EX-1033	U.S. Patent No. 7,179,999 (the “’999 patent”)
EX-1034	Excerpt of Inter Partes Reexamination No. 95/000,475 of U.S. Patent No. 7,179,999: Oct. 14, 2011 Action Closing Prosecution
EX-1035	Alcatel Cable Systems Product Catalog
EX-1036	U.S. Patent No. 5,789,711
EX-1037	Excerpt of Prosecution History of U.S. Patent No. 6,570,095: Oct. 22, 2001 Non-Final Office Action
EX-1038	Excerpt of Prosecution History of U.S. Patent No. 6,570,095: April 3, 2002 Final Office Action
EX-1039	Excerpt of Prosecution History of U.S. Patent No. 6,998,537: March 3, 2004 Non-Final Office Action
EX-1040	Excerpt of Prosecution History of U.S. Patent No. 6,998,537: Terminal Disclaimer
EX-1041	Excerpt of Prosecution History of U.S. Patent No. 6,998,537: May 18, 2004 Amendments
EX-1042	Excerpt of Prosecution History of U.S. Patent No. 6,998,537: June 17, 2004 Final Office Action
EX-1043	Excerpt of Prosecution History of U.S. Patent No. 6,998,537: September 20, 2004 Request for Continued Examination
EX-1044	Excerpt of Prosecution History of U.S. Patent No. 6,998,537: Sept. 9, 2005 Amendment
EX-1045	Excerpt of Inter Partes Reexamination No. 95/000,474 of U.S.

EXHIBIT	DESCRIPTION
	Patent No. 6,570,095: Feb. 24, 2012 Decision Granting Petition to Terminate Inter Partes Reexamination Proceeding
EX-1046	Excerpt of Inter Partes Reexamination No. 95/000,476 of U.S. Patent No. 6,998,537: Feb. 24, 2012 Decision Granting Petition to Terminate Inter Partes Reexamination Proceedings
EX-1047	Excerpt of Inter Partes Reexamination No. 95/000,475 of U.S. Patent No. 7,179,999: Feb. 24, 2012 Decision Granting Petition to Terminate Inter Partes Reexamination Proceedings
EX-1048	U.S. Patent No. 5,814,768
EX-1049	U.S. Patent No. 6,037,546
EX-1050	Excerpt of Inter Partes Reexamination No. 95/000,474 of U.S. Patent No. 6,570,095: Jan. 11, 2010 Third Party Requester's Comments to Patent Owner's Response
EX-1051	Excerpt of Inter Partes Reexamination No. 95/000,476 of U.S. Patent No. 6,998,537: Jan. 22, 2010 Third Party Requester's Comments to Patent Owner's Response
EX-1052	Belden Techs. et al. v. Superior Essex Comm'cns LP et al., No. 08-63-SLR, Dkt. 215 (D. Del. Aug. 8, 2010) – Claim Construction Order
EX-1053	Belden Inc. v. CommScope, Inc. et al., No. 22-783-RGA, Dkt. 292 (D. Del. May 26, 2023) – Scheduling Order
EX-1054	Declaration of Sylvia D. Hall-Ellis, PhD
EX-1055	English Translation of Japanese Patent Publication No. S43-15470 used in prior reexamination of US 6,998,537
EX-1056	Japanese Patent Publication No. S43-15470 (untranslated original)
EX-1057	English language translation of German Patent No. 297,19,866 U1 used in prior reexamination of US 6,998,537
EX-1058	Excerpts from the reexamination of the '537 patent
EX-1059	Excerpts from the reexamination of the '095 patent
EX-1060	Declaration of Peter M. Kohlhepp in Support of Petitioner's Unopposed Motion for <i>Pro Hac Vice</i> Admission
EX-1061	Plaintiffs Belden Technologies, Inc.'s and Belden CDT (Canada), Inc.'s Memorandum in Support of Their Motion for Partial Summary Judgment No. 2: No Patent Invalidity by Anticipation from <i>Belden Technologies, Inc. v. Superior Essex Inc.</i> , Case No. 08-0063-SLR, Dkt. 139 (D. Del. Dec. 11, 2009)
EX-1062	Excerpts from Jury Trial Transcript Volume F from <i>Belden</i>

EXHIBIT	DESCRIPTION
	<i>Technologies, Inc. v. Superior Essex Inc.</i> , Case No. 08-0063-SLR, Dkt. 306 (D. Del. Jun. 27, 2011)
EX-1063	Excerpts from Jury Trial Transcript Volume G from <i>Belden Technologies, Inc. v. Superior Essex Inc.</i> , Case No. 08-0063-SLR, Dkt. 306 (D. Del. Jun. 27, 2011)
EX-1064	Summary Judgment Memorandum Opinion from <i>Belden Technologies, Inc. v. Superior Essex Inc.</i> , Case No. 08-0063-SLR, Dkt. 216 (D. Del. Aug. 24, 2010)
EX-1065	Petitioner’s Requests for Production
EX-1066	<i>Belden v. Superior Essex</i> , Excerpts from Jury Trial Transcript, Day 6, 9/14/2010
EX-1067	Excerpts, German Technical Dictionary (Routledge), Volume One
EX-1068	Excerpts, German-English Technical and Engineering Dictionary (DeVries and Herrmann), Second Ed.
EX-1069	Exhibit 1069 from the deposition of Charles Eldering
EX-1070	Transcript from the June 21, 2024 Deposition of Charles Eldering, Ph.D. in IPR2023-01061
EX-1071	Transcript from the May 21, 2024 Deposition of Charles Eldering, Ph.D. in IPR2023-01056
EX-1072	ANSI/ICEA Standard S-84-608-1994
EX-1074	REA Specification for Filled Telephone Cables with Expanded Insulation, Federal Register Vol. 58, No. 96. 5/20/1993
EX-1074	International Standard ISO/IEC 11801 (first edition corrected and reprinted 1995-07-15) (excerpt)
EX-1075	Excerpt from the File History of US Patent No. 6,570,095
EX-1076	<i>Belden v. Superior Essex</i> , Docket No. 226, Joint Statement of Facts
EX-1077	<i>Belden v. Superior Essex</i> , Belden’s Supplemental Response to Interrogatories 6, 7, & 23
EX-1079	TIA/EIA Standard 568-A (1995) – Commercial Building Telecommunications Cabling Standard
EX-1080	Reply Declaration of Kenneth Cornelison Regarding IPR2023-01061
EX-2001	Declaration of Dr. Charles A. Eldering in Support of Patent Owner Preliminary Response (“Eldering”)
EX-2002	Definition of “twisted pair” from Webster’s New World Telecom

EXHIBIT	DESCRIPTION
	Dictionary, 2008
EX-2003	U.S. Patent No. 10,170,220
EX-2004	Deposition Transcript of Kenneth Cornelison, March 6, 2024
EX-2005	U.S. Patent No. 4,800,236
EX-2006	U.S. Patent No. 4,340,771
EX-2007	Supplemental Declaration of Dr. Charles A. Eldering in Support of Patent Owner Response (“Eldering”)
EX-2008	Email Correspondence Between Counsel Regarding <i>Superior Essex</i> Discovery
EX-2009	English language translation of German Patent No. 297,19,866 U1 used in the <i>Superior Essex</i> litigation, <i>Belden Technologies, Inc. v. Superior Essex Inc.</i> , Case No. 08-0063-SLR
EX-2010	<i>Superior Essex</i> Claim Construction Memorandum Order, <i>Belden Technologies, Inc. v. Superior Essex Inc.</i> , Case No. 08-0063-SLR, Dkt. 215 (D. Del. Aug. 24, 2010)
EX-2011	<i>Superior Essex</i> JMOL Memorandum Opinion, <i>Belden Technologies, Inc. v. Superior Essex Inc.</i> , Case No. 08-0063-SLR, Dkt. 310 (D. Del. Aug. 12, 2011)
EX-2012	Belden Technologies, Inc.’s and Belden CDT (Canada) Inc.’s Rebuttal Expert Report of Mark Horenstein Ph.D. Regarding Validity, <i>Belden Technologies, Inc. v. Superior Essex Inc.</i> , Case No. 08-0063-SLR (Redacted)
EX-2013	Deposition Transcript of Kenneth Cornelison, July 25, 2024

I. INTRODUCTION

Petitioner's obviousness theories are based on what a person of ordinary skill in the art at the time of the claimed invention ("POSITA") **could** have modified the prior art to do, not what a POSITA **would** have done. Despite its twenty-seven page Reply brief (Paper 30) and **forty page** supplemental expert declaration, Petitioner failed to establish that any claims are unpatentable.

II. THE CHALLENGED CLAIMS ARE NOT OBVIOUS.

A. Patent Owner's Expert Is At Least A POSITA

Petitioner attempts to criticize the industry experience of Dr. Eldering, but never alleged that he was not qualified to opine from the perspective of a POSITA, nor objected under 37 C.F.R. § 42.64(b) to any testimony presented in his declarations. Dr. Eldering has a Ph.D. in electrical engineering and testified regarding his significant industry experience with twisted pair data cables. EX-2001 ¶¶12-15, Appendix A (CV) 1; EX-1070 201:1-202:7. Dr. Eldering's education and experience meet or exceed the qualifications of a POSITA.

B. Regarding Grounds 1 Through 5, Neither Beggs Nor Jachimowicz Render Obvious A Substantially Flat, Foamed Polymer Tape That Can Be Used As A Twisted Pair Separator.

1. *Taken Alone or In Combination, Beggs Cannot Render Obvious The Claimed Substantially Flat, Foamed Polymer Twisted Pair Separator Limitations.*

Petitioner wrongly alleged that Beggs discloses a substantially flat separator

tape. Reply 5. In reality, Beggs is *silent about such a claimed shape of the tape*. Instead, it merely discloses “a tape which is made of a dielectric material and which is wrapped about the conductor pairs to cause each pair to be enclosed substantially in a dielectric portion of the buffer system.” Beggs 6:52-56. Petitioner’s expert (Kenneth Cornelison) admitted that he did not know whether all tapes in the field of communications cables are substantially flat. EX-2013 128:19-129:13. Cornelison also admitted that he did not know whether the S-shaped preform 58, which the tape in Beggs replaces, is substantially flat. *Id.* 117:15-118:8, 121:13-17.

Cornelison further theorized that tapes are flat because “‘tapes’ were known to come on rolls.” EX-1080 ¶30. But on cross-examination, Cornelison admitted that Beggs teaches that another “preform 55 may be provided in a supply roll to a manufacturing line,” and is not substantially flat when supplied to the manufacturing line. EX-2004 97:18-101:5; Beggs 5:64-6:9. So admittedly, Beggs itself teaches that material supplied on a “roll” is not always substantially flat under Petitioner’s proposed construction. EX-2013 128:19-129:13.

As Patent Owner (“PO”) demonstrated in its Response (Paper 20), nothing in Beggs renders obvious the claimed *foamed polymer* tape limitations. Petitioner took the position that the claimed separator must have more than one non-conductive, dielectric material (Pet. 15-20, Response 15-16), and admitted that “Beggs does not expressly teach that the dielectric separator that includes a foamed polymer is

comprised of multiple dielectric ‘materials_s,’ as recited by [19.b]” (Pet. 27 (emphasis in original)). For this reason, Petitioner proposed combining Beggs with an alleged two-layer tape in Jachimowicz to try to make up for this missing claim element.

Tellingly, in Reply Petitioner resorted to relying upon an “alternative” obviousness theory that the Beggs tape could have been modified to be made of a “foamed polymer.” But this theory is wrong for several reasons. First, Petitioner and its expert failed to provide any evidence regarding why a POSITA would find it obvious to use a foamed polymer tape in Beggs that is “comprised of multiple dielectric ‘materials_s,’ as recited by [19.b].” Pet. 27 (emphasis in original). Indeed, Petitioner specifically relied on the alleged Jachimowicz two-layer tape precisely for that reason. Second, Petitioner applied an erroneous obviousness theory that “Beggs’[s] Tape Could Be Foamed Polymer,” not that it would be a foamed polymer.¹ Reply 3. It is well settled that “mere capability” to modify the prior art to meet the claim limitations is not sufficient to establish obviousness. *See, e.g., Ex parte Gerlach*, 212 USPQ 471, 471 (PTAB 1980); *see also Polaris Indus. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1068-69 (Fed. Cir. 2018). Accordingly, Petitioner failed to show that it would have been obvious for the S-shaped buffer embodiment in Beggs to be a foamed polymer tape, let alone a “foamed polymer [] comprised of

¹ All emphasis herein has been added unless otherwise noted.

multiple dielectric ‘materials,’ as recited by [19.b],” as Petitioner asserts. Pet. 27 (emphasis in original).

Likewise, Petitioner’s theories regarding the functions performed by preforms (55) and (58) disclosed in Beggs relative to the tape embodiment in Beggs are wrong. PO demonstrated that the conductors are inserted into the fixed foamed polymer preforms in Beggs. By contrast, the dielectric replacement tape operates in a different manner and is wrapped around the conductors, where such differing functional requirements would have taught a POSITA that such preforms and tape necessarily would **not** be constructed of the same material. Response 21-22. Compare Beggs 5:64-6:14 and FIGS. 6 and 7 (instructing that conductors 42—42 are “**inserted**” into the preform) with Beggs 6:52-56 (tape is “**wrapped**” about the conductor pairs to cause each pair to be enclosed substantially”); Eldering ¶¶105-107, 160.² Moreover, Cornelison’s opinions about foamed polymer tapes are based on mere unsupported and conclusory theories. EX-1080 ¶¶30-38.

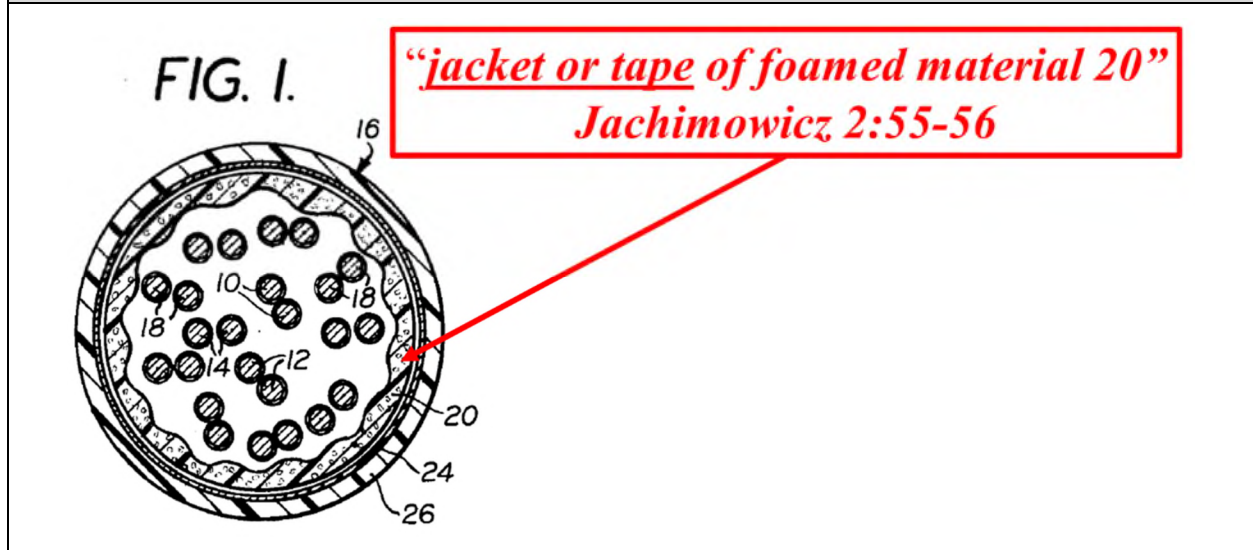
Petitioner alleged “Claim 18 says that the buffer system of claim 1 can be a tape; Claim 19 says the buffer system of claim 1 can comprise foamed polymer. This does not mean that the tape ***cannot also be*** a foamed polymer.” Reply 4. Here

² “Eldering” refers to the Declarations of Dr. Charles A. Eldering in EX-2001 ¶¶1-129 and EX-2007 ¶¶130-195.

again, Petitioner missed the point. It is not what **could** be within the scope of Claim 19, it is what a POSITA would understand and do based on the teachings of Beggs as a whole. PO showed that Claim 19 fails to teach or render obvious that the buffer system can be a foamed polymer tape. Reply 17-22; Eldering ¶ 109.

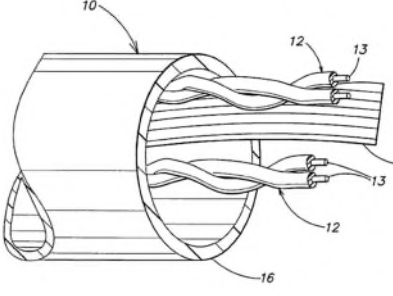
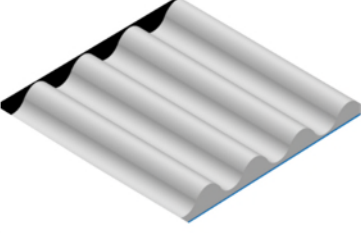
2. *Jachimowicz Cannot Render Obvious A Substantially Flat, Foamed Polymer Tape That Can Be Used As A Twisted Pair Separator.*

In its Response, PO demonstrated how Petitioner and its expert relied on an erroneous understanding of the function of the tape in Jachimowicz (*i.e.*, the foamed polyethylene “locks” the pairs in place while the tape merely holds them together). Response 22-28. Petitioner ignored the fact that the “jacket” and “tape” in Jachimowicz are used ***interchangeably***, are consistently described in the ***same*** manner as performing the ***same*** function, and are both labeled as element (20), as shown in Figure 1:



“One of the advantages of the jacket or tape of foamed material 20, in addition to holding the pairs assembled in the bundle . . .” Jachimowicz 2:54-59; *see also* Jachimowicz 2:46-53, 3:50-52. Petitioner and its expert are thus wrong in attempting to distinguish between the jacket and tape as if they were separate and distinct from one another since in reality Jachimowicz teaches that they are both the same element “20.”

Petitioner and its expert’s conclusory allegation that a POSITA would understand PO and its expert’s depiction of the tape described in Jachimowicz as “substantially flat” is simply implausible, going so far as to compare Figure 4 of the ’537 Patent with PO’s depiction and claiming they are similar—when they clearly are not.

'537 Patent, Figure 4	'537 Patent, Figure 5 (excerpt)	POSITA's Understanding of Jachimowicz's Foamed Tape (Eldering ¶115)
		

Moreover, nothing in the '537 Patent indicates that the surface of “pair separator 14” is “ridged,” as Cornelison wrongly theorizes. EX-1080 ¶26; see EX-1004 FIGS. 4 and 5, 3:49-52 (showing the smooth “cross-sectional view” of the embodiment in FIG. 4 with no visible “ridges” of any kind). PO’s expert applied Petitioner’s own construction of “substantially flat,” did not rely on Petitioner’s alleged but undisclosed “implied claim construction,” and demonstrated that the undulating surface of the Jachimowicz tape is not “substantially flat.” Eldering ¶¶110-117, 164-167. In its Reply, Petitioner telling resorted to a new and belated theory about a nebulous degree of flatness required to be substantially flat. Reply 7; EX-1080 ¶26. But if Petitioner wanted to establish a level of flatness necessary to constitute “substantially flat,” it should have sought such an interpretation in its own proposed claim construction. But it did not do so, and should not now be permitted to sandbag this proceeding with such a new and belated theory.

3. *Petitioner Failed To Establish An Objective Motivation To Combine Jachimowicz's Jacket With Beggs.*

Petitioner's theories on why a POSITA would combine the Jachimowicz tape with Beggs all relied on improper hindsight reasoning and were based on what a POSITA could modify the prior art to do using the claimed invention as a roadmap, not what a POSITA would have modified the prior art to do, as Petitioner admits in its Reply: "Moreover, it is common sense that foamed polymer tape could be used in the manner taught by Beggs, and there is no evidence it could not." Reply 8. But as PO demonstrated, Jachimowicz's jacket, whether it be extruded foamed polymer or tape, locks the plurality of conductor pairs tightly together so that they cannot move (*i.e.*, the ***opposite*** of separating the conductor pairs). Jachimowicz 2:46-53, 3:50-56; Eldering ¶¶111-112, Response 28-34. And as PO also demonstrated on cross-examination, Cornelison's entire analysis of the Jachimowicz tape was fundamentally flawed because of his erroneous reading of Jachimowicz. Response 26-28. A POSITA would not be motivated to use the undulated locking tape disclosed in Jachimowicz to perform the ***complete opposite function*** of weaving through and ***separating*** conductor pairs in Beggs. Nor is there any teaching or suggestion that would instruct a POSITA to do so. Response 28-34.

Moreover, Petitioner glossed over the fact that the very reason it relies on the Jachimowicz tape at all is because, as Petitioner admitted, "Beggs does not expressly

teach that the dielectric separator that includes a ***foamed polymer is comprised of multiple dielectric ‘materials,’*** as recited by [19.b]” (Pet. 27 (emphasis in original)). To try to show “multiple dielectric materials,” Petitioner had to start with Beggs’ disclosure that “the S-shaped preform 58 in FIG. 7 may be replaced with a tape which is made of a dielectric material.” Beggs 6:52-54; Pet. 24. But as PO established in its Response, and as further demonstrated *supra*, Beggs fails to even teach or suggest replacing S-shaped preform 58 with a ***foamed polymer tape***. Response 17-22. Undisputedly, the alleged tape of Beggs constitutes a single material, which forced Petitioner to have to extend its speculative theories and ***further*** allege that a POSITA would replace the single dielectric material tape in Beggs, which is not a foamed polymer, with the two-layer tape in Jachimowicz. But as PO demonstrated, Petitioner failed to provide any motivation for why a POSITA ***would*** replace a single-layer foamed polymer tape for separating conductor pairs with a ***different*** two-layer tape that instead locks groups of conductor pairs together. Response 28-34.

As PO established, the Jachimowicz tape ***locks*** groups of conductor pairs together. Response 22-28. Cornelison ***admitted*** that “the Mylar film backing [of Jachimowicz’s jacket] would provide enhanced tensile strength properties to the foamed tape, ***decreasing the tendency for the foamed tape to stretch*** or break.” EX-2004 (“Cornelison Tr.”) 106:16-112:1; Pet. 51; EX-1007 ¶98. Nothing about

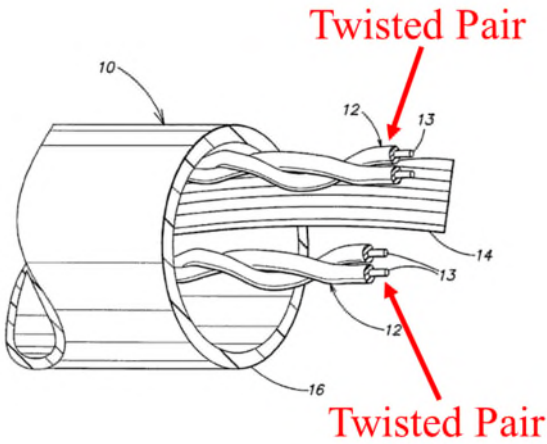
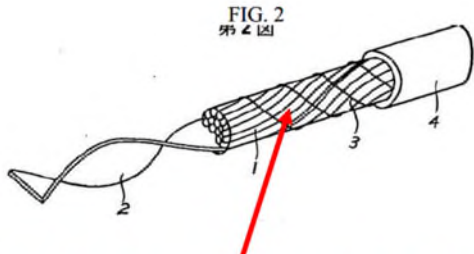
locking pairs of conductors together would in fact motivate a POSITA to use the Jachimowicz tape as a buffer to **separate** conductor pairs, especially in the S-shape configuration of FIG. 7, which requires flexibility and the ability to be stretched and wrapped around the conductor pairs. Response 28-34. Nor would a POSITA even consider the undulating and uneven surface of the Jachimowicz tape to be suitable for use in separating conductor pairs. Eldering ¶¶122, 166-169; Response 28-34. On cross-examination, Cornelison admitted that the spacing between pairs of wires impacts the degree of crosstalk between those wires. EX-2013 95:14-94:6. An undulating surface provided by Petitioner’s proposed combination would result in variable and uneven separation of the conductors, which would undesirably lead to unpredictable electrical characteristics, notably crosstalk, of the resulting cable. Eldering ¶169.

C. Regarding Grounds 3 and 4, The Combination Of Yanagita And Jachimowicz Cannot Render Claim 19 Obvious.

1. *Petitioner Ignored PO’s Proper Claim Construction And Failed To Show How Yanagita Discloses Twisted Pairs Under That Construction.*

The words “twisted pair[s]” **never appear** in the English translation (EX-1012) of the underlying Japanese language Yanagita patent application. And admittedly, Yanagita never even mentions crosstalk. EX-2004 127:14-21; EX-2013 145:18-146:6. The fact that individual wires are “twisted together” (as the wires in

FIG.2 of Yanagita are shown), does not teach or instruct a POSITA that the individual conductors are “twisted together around one another to form a balanced transmission line,” as shown in FIG. 4 of the ’537 Patent:

'537 Patent FIG. 4 (annotated) – Twisted Pairs	Yanagita FIG. 2 (annotated) – Twisted Cable
 The diagram shows a cross-section of a cable with multiple twisted pairs. Two specific pairs are highlighted with red arrows and the text "Twisted Pair". The pairs are labeled with numbers 10, 12, 13, 14, and 16. The pairs are twisted around each other in a helical pattern.	 The diagram shows a cross-section of a cable with a central core material (2) and multiple twisted wires (1) laid on both sides. A red arrow points to the twisted wires with the text "insulated wires are twisted together, laid divided onto both sides of a core material 2". The diagram is labeled "FIG. 2" and "第 2 圖". “insulated wires are twisted together, laid divided onto both sides of a core material 2” Yanagita 1 (col. 1).

Eldering ¶¶65, 158-159, 179-180. Petitioner and its expert (Cornelison) identified two potential constructions for “twisted pairs”: (i) the Board’s preliminary construction in the Institution Decision, and (ii) Dr. Eldering’s from his supplemental declaration. Reply 1, EX-1080 ¶¶9-10. But while making the conclusory statement that his analysis would not change under either construction (EX-1080 ¶11), on cross-examination Cornelison refused to explain *why* the two constructions are allegedly “consistent,” and admitted that he failed to provide any analysis of how either construction would result in the same conclusion. EX-2013 39:8-80:9, 80:19-81:6. Simply twisting a group of wires along the longitudinal axis

of the cable does not form “twisted pairs” as claimed, and Petitioner failed to explain how Yanagita discloses this limitation. Eldering ¶¶65-67.

2. *Petitioner’s Cherry-Picked, Out-Of-Context Snippets From Yanagita Fail To Disclose “Twisted Pairs.”*

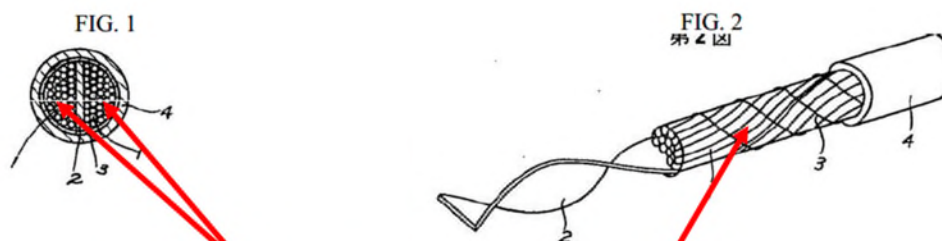
As an initial matter, Yanagita was filed in 1965, and nearly all of the extraneous, cherry-picked publications Petitioner relies on to try to show the use of twisted pairs in communications cables post-date Yanagita by decades. See EX-1017 5 (1995); EX-1019 1 (1992); EX-1023 1 (1991); EX-1024 1 (1979); EX-1029 3 (1997); EX-1072 3 (1995); EX-1073 1 (1993). EX-1012 1; EX-1080 ¶53; *see also* EX-1016 14 (1987); EX-1018 2 (1992); EX-1074 1 (1995); EX-1079 1 (1995). Tellingly, on cross-examination Petitioner’s expert was unable to identify a single telecommunications standard from the time of Yanagita’s filing that required the use of twisted pairs. EX-2013 33:16-35:4.

Moreover, while continuing to allege that Yanagita discloses twisted pairs, Petitioner and its expert tried to hedge their bet by resorting to a new and belated theory that is based on their admission that Yanagita discloses straight-line wires after all. Reply 15-16; EX-1080 ¶¶48-50. While both parties now **agree** that Yanagita discloses straight wires that are twisted around a core material, what Yanagita fails to teach or suggest are the “twisted pairs” limitations at issue. Yanagita never uses that term, and the ambiguous English translation of the Japanese

language Yanagita in EX-1012 is admittedly far from clear. In fact, on cross-examination, in response to the question “[i]s there anything in Exhibit 1012 that isn’t perfectly clear, in your opinion”—which tellingly did not even mention stranding or twisting—Petitioner’s expert admitted that: “There are terms used, ***particularly “stranding” and “twisting,”*** that are, I would say in my view, ***difficult to translate consistently*** across languages with different meanings and different contexts.” EX-2004 121:9-122:2.

To try to support their new theories, Petitioner and its expert embarked on an extraneous and cherry-picked English diction journey based on speculative hindsight reasoning. For example, Petitioner relied on the expanded phrase “1 is an insulated wire ***or*** that wherein insulated wires are twisted together, laid divided onto both sides of a core material 2.” Reply 16 (EX-1012 column, upper cite (emphasis omitted)). But in reality, the cited language states that element (1) is an insulated ***wire***—meaning a single insulated wire—***or*** insulated wires—meaning more than one wire. The remainder of the phrase merely explains how the two groups of insulated wires are laid on opposite sides of the core material (2) and collectively twisted along the surfaces of the core material in a longitudinal direction, as is clearly shown in FIGS. 1 and 2. Eldering ¶¶74-76.

Yanagita FIGS. 1 and 2 (annotated)



In fact, the first part of the cited phrase, which Petitioner ignored entirely, specifically points to the illustrations in FIGS. 1 and 2, stating: “Explaining this for an *illustrated embodiment* . . .” Yanagita 1 (col. 1). Although the English translation in EX-1012 is ambiguous, the illustration of the invention in FIG 2 is identical between the Japanese patent application in EX-1056 and the translation in EX-1012:

Yanagita FIG. 2 (EX-1056)	Yanagita FIG. 2 (EX-1012)

And while Petitioner and its expert tried to parse the ambiguous English translation of Yanagita, they wholly ignored FIG. 2, which depicts the “alternatingly *twisted*

cable” in which all of the conductor wires (*i.e.*, strands) are twisted together and running along the surfaces of that twisted core. FIG. 2 does not depict two insulated wires being twisted together around one another to form a balance transmission line.

Furthermore, the remainder of the paragraph in which the cited phrase is found goes on to further clarify how the twisting of the insulated wires occurs with the laying of the insulated wires along the sides of the twisted core, **not** the twisting of the wires together around one another to form a balance transmission line:

In laying the insulated wires, while twisting depending on the direction of the surface . . . the core material may be twisted reciprocatingly . . . and the revolving plate may be rotated reciprocatingly, to match the twist of the core material . . .

Yanagita 1 (col. 2). The twisting of the insulated wires therefore occurs with the laying of those wires along the twisted core, as Dr. Eldering explained, and as clearly illustrated in FIGS. 1 and 2. Eldering ¶¶65-67. Petitioner wrongly and misleadingly stated that Dr. Eldering testified the “or” in the cited sentence (*i.e.*, “1 is an insulated wire **or** that wherein insulated wires are twisted together, laid divided onto both sides of a core material 2”) was redundant. Reply 17. But the transcript makes it clear how he was specifically being asked about a **different**, single instance of the word “or” that appears in a different part of Yanagita. EX-1070 205:1-22. The only thing “not credible” here, as Petitioner alleged, is Petitioner’s attribution of testimony to Dr. Eldering that does not exist.

For the first time, Petitioner's Reply belatedly relied on a new citation to Yanagita not relied on in the Petition or in Cornelison's first declaration. Reply 16 (EX-1012 column, second cite). But that language, and the paragraph in which it is found, simply summarizes the teachings found in the first citation and related paragraph, as discussed *supra*. As Dr. Eldering testified, the translation in EX-1012 here introduces "the first invention," and then provides "a further description of the first invention" with additional detail. EX-1070 203:5-208:5. Dr. Eldering never testified that the "or" was "redundant," as Petitioner erroneously alleged. *Id.* In fact, when asked "[s]o you read that or clause as just redundant of what is already stated in the sentence; is that accurate," Dr. Eldering responded "***[t]hat is a mischaracterization of what I've stated***, but I'll be glad to explain it again if that's helpful to you." EX-1070 207:10-208:10.

Petitioner's expert admitted, "a large number of insulated wire strands" means a large number of insulated wires. EX-2013 138:19-139:12. And the only "twisting" described or depicted in Yanagita is the twisting of the wire bundles along the contoured sides of the core material, which is repeatedly described and shown in the Figures. Here again, Petitioner's second citation fails to teach or suggest "twisted pairs," as properly construed.

Additionally, Petitioner's expert cited to an expanded third citation in Yanagita to try to support its made-up twisted pair theory: "There is trend to often

using, as communication cables, so-called ‘alternatingly twisted cables,’ wherein that wherein a large number of strands of insulated wires . . .”. EX-1080 ¶50. Petitioner’s comment that the language appears under a heading “Detailed Explanation of the Invention” is of no merit since in reality no section titled “Background of the Invention” even exists. And as PO and its expert demonstrated, the citation merely describes well-known, prior art cables in which individual straight-line conductors, or pairs of those conductors, or quads of those conductors, or other “units thereof” are all twisted together along the longitudinal axis of the cable in an alternating manner that periodically reverses the direction of that cable twisting. Response 43-46.

Petitioner’s expert also admitted that “a strand of wire” can mean an individual wire. EX-2013 137:14-138:6. Furthermore, the language cited in Yanagita (*i.e.*, “a large number of insulated wire strands”) does **not** recite “a large number of strands of insulated wires or ***stranded*** pairs thereof or ***stranded*** quad, or ***stranded*** units thereof.” In fact, nothing about the cited language teaches a POSITA that any of the individual insulated wires that make up the “large number of strands of insulated wires” are twisted together, other than how they are **all** collectively twisted together along the length of the cable as in the prior art. EX-2013 140:12-141:7 (admitting that “twisting together so as to reverse the direction of twisting” refers to twisting all of the components of the cable”).

Petitioner and its expert further belatedly attempted to expand the record and looked to a prior, uncertified translation of Yanagita in EX-1055 for support, citing entire passages not relied on in either the Petition or Cornelison’s initial declaration. *Compare* Pet. 39-40 with Reply 16; EX-1007 ¶131 with ¶50. In its Response, PO objected to Petitioner’s reliance on EX-1055 based on inadmissibility grounds. Response 38; 37 C.F.R. § 42.63 and 37 C.F.R. § 42.61 (stating that a certification of the translation “**must**” be filed, and if not, the uncertified translation is “**not admissible**”). The translations in EX-1012 and EX-1055 are admittedly different. EX-2013 132:12-133:3. But despite these differences, PO’s arguments regarding EX-1012 apply with equal weight to EX-1055. And neither Petitioner, nor its expert, explained why EX-1055 provides more clarity to the issues than EX-1012 on which the Petition is based. On cross-examination, Petitioner’s expert was unable to establish which translation is truer to the original Japanese language, and he did not know if either of the translators was a POSITA sufficiently skilled in the art to be able to understand the original Japanese disclosure and translate it correctly into English. EX-2013 133:16-135:6.

Finally, Petitioner also wrongly stated that PO agreed in prior proceedings that the previous, uncertified translation of Yanagita discloses twisted pairs. PO **never** did so. Petitioner’s only evidence—out of **thousands** of pages from that prior proceeding—is one snippet taken out of context from a single sentence that

paraphrases the language in Yanagita, stating: “JP 15470 discloses an alternately stranded cable comprising stranded pairs and a core material of which a plate body is formed such that the facing of its surface becomes changed into a reciprocatingly twisted state, as shown in Figure 2.” EX1077 48. This in **no way** admits that Yanagita discloses “twisted pairs,” and certainly does **not** admit that they are two wires twisted together around one another to form a balanced transmission line. As discussed *supra*, Yanagita in reality discloses how it is an “alternatingly twisted cable” in which the straight-line wires are twisted and laid along the twisting contour of the core material, as shown in FIG. 2. Petitioner’s insinuation here that PO did not dispute the twisted pair elements is a red herring as PO was free to argue different elements at the time based on the arguments and art presented in that proceeding. *See Salazar v. Procter & Gamble Co.*, 414 F.3d 1342, 1347 (Fed. Cir. 2005) (finding silence during prosecution is not acquiescence). PO’s statements are not inconsistent.

D. Regarding Ground 5, The Combination Of GmbH-866 In View Of Roberts, Gingue And/Or Jachimowicz Cannot Render Claims 19, 20 Or 22 Obvious.

1. PO’s Previous Statements Concerning GmbH-866 Were Based On A Substantively Different, Uncertified Translation.

Petitioner points to statements made by PO during previous litigation and reexamination proceedings concerning GmbH-866. But those statements were

directed towards an uncertified and substantively different translation of the German language GmbH-866 reference that was at issue in those proceedings (EX-1057).

Petitioner could have had the prior uncertified translation of GmbH-866 in EX-1057 certified, but failed to do so. Instead, Petitioner filed a new, certified translation of GmbH-866 for these proceedings (EX-1010). But contrary to Petitioner’s erroneous speculation that differences in those translations “are immaterial” (Reply 22), the new translation filed by Petitioner in EX-1010 contains substantive differences that confirm that GmbH-866 does not disclose twisted pairs. In light of that new evidence, PO’s expert, who is not the same expert who opined in the prior proceedings regarding EX-1057, reached different conclusions regarding what a POSITA would understand reading the certified translation of GmbH-866 in EX-1010. Petitioner’s made-up translation theories are wrong.

Indeed, the translation from the reexaminations (filed by Petitioner as EX-1057) is the same as that used in the prior litigation. *Compare* EX-1057 with EX-2009 (the GmbH-866 translation used in the prior litigation):

Reexam’s Uncertified Translation (EX-1057)	Litigation’s Uncertified Translation (EX-2009)	Petitioner’s Certified Translation (EX-1010)	Substantive Difference Between Translations
“An invention-specific data transmission cable	“An invention-specific data transmission cable	“A data transfer cable . . . comprises four	“ <i>isolated</i> ” in the certified translation teaches

Reexam's Uncertified Translation (EX-1057)	Litigation's Uncertified Translation (EX-2009)	Petitioner's Certified Translation (EX-1010)	Substantive Difference Between Translations
... has four pairs 1 of insulated , stranded copper conductors 2 or cants." (marked p. 4)	... has four pairs 1 of insulated , stranded copper conductors 2 or cants." (p. 3)	pairs 1, each consisting of two isolated , stranded copper conductors 2 or wires." (marked p. 3)	that the conductors are not twisted together
" The stranding of pair 1 can consist of a so-called helix stranding or an SZ stranding (alternating right-left stranding) .[sic]" (marked p. 4)	" The stranding of pair 1 can consist of a so-called helix stranding or an SZ stranding (alternating right-left stranding) .[sic]" (p. 3)	" The stranding of <u>the</u> <u>pairs</u> 1 can consist in what is known as a helix stranding or in an SZ stranding (alternating, right-left stranding)." (marked p. 3)	"stranding of <u>the</u> <u>pairs</u> 1 " (plural) in the certified translation teaches collective stranding of the pairs together rather than stranding a single pair

Critically, Belden's previous expert in the prior litigation (Dr. Horenstein) **relied on the very line cited above** in EX-1057 and its particular use of the word "stranding" in context to determine that the translation at issue in the litigation disclosed twisted pairs:

The '866 Patent discloses stranding of the individual conductors to

form each twisted pair, and specifically discloses using “SZ” stranding. ***The ‘866 Patent states that “the stranding of pair 1 can consist of a so-called helix stranding or an SZ stranding.”*** See (translation of the ‘866 Patent at ¶ 3, p. 3).

EX-2012 ¶334.³ As shown, that very language was ***changed*** in EX-1010. Far from being “immaterial” or a “red herring” as Petitioner speculates, the change of wording from “[t]he stranding of ***pair 1***” (*i.e.*, pair 1 itself is stranded) in EX-1057 to “[t]he stranding of ***the pairs 1***” (*i.e.*, the pairs 1 are collectively stranded) in EX-1010 is substantive and dispositive. PO’s previous expert relied on the uncertified translation in EX-1057, while PO’s current expert relied on the certified correct and substantively different translation in EX-1010 and interpreted the revised language to mean that the pairs are collectively stranded, not that this—or anything else in GmbH-866—discloses twisted pairs. There is no sleight of hand here, as Petitioner insinuates, there is only new and clarifying evidence in EX-1010, which Petitioner itself provided.

While the certified translation of GmbH-866 in this IPR clearly demonstrates that the reference does **not** teach twisted pairs, as the reexamination Examiner noted, “the teachings in GmbH ’866 [in the uncertified translation (EX-1057) which is the

³ The Board authorized the filing of EX-2012 in the August 8, 2024 conference call.

same uncertified translation in the prior litigation (EX-2009)] . . . are ***unclear and confusing.***” EX-1006 at 11. The new certified translation (EX-1010) resolved the ambiguities in the prior translation—GmbH-866 does not disclose twisted pairs.

Tellingly, EX-1057 is not cited, relied on, or discussed in any way in the Petition or Cornelison’s first expert declaration (EX-1007), except for the Exhibit List and Materials Considered, respectively. Now, for the first time in its Reply, Petitioner improperly cites to and quotes the uncertified translation (EX-1057) several times to try and rebut PO’s arguments. Reply 23. Under 37 CFR § 42.63 - Form of evidence, “[w]hen a party relies on a document or is required to produce a document in a language other than English, a translation of the document into English ***and an affidavit attesting to the accuracy of the translation must be filed with the document.***” Petitioner failed to do so.

2. *“Stranded Copper Conductors” In GmbH-866 Do Not Necessarily Teach “Twisted Pairs.”*

Like Yanagita, the words “twisted pair” never appear in GmbH-866. Instead, GmbH-866 separates conductors using a metallic shield, as Cornelison admitted (EX-2004 157:2-158:9, 190:13-191:9), with such a shield improving crosstalk precisely because the conductors are individual, untwisted conductors and ***not*** twisted pairs forming a balanced transmission line.

Faced with this reality, Petitioner alleged that “stranded” was understood to

mean “twisted.” Pet. 58. But on redirect by Petitioner, Petitioner’s expert admitted that “stranded” can mean different things in different contexts. EX-2004 213:3-214:2 (“I know stranding . . . as a verb, or ‘stranded,’ to mean **stranded copper conductors** where you have fine filaments making up an overall larger conductor.”). The first citation in GmbH-866 on which Petitioner’s argument is based (“four pairs 1, each consisting of two isolated, stranded copper conductors 2 or wires”) is **not** referring to twisted pairs as claimed. Instead, it refers to how the conductor pairs in GmbH-866 merely consist of either ***stranded*** copper conductors, or ***solid*** wires. Pet. 58; Eldering ¶80.

Contrary to Petitioner’s and its expert’s unsupported allegations, a POSITA would understand that, in the context of GmbH-866, a “stranded copper conductor” merely refers to a particular **type** of wire composition. Eldering ¶80. In fact, Petitioner now agrees with PO and **admitted** that GmbH-866 discloses each of the disclosed pairs consists of two conductors, and that those conductors can be either stranded copper conductors, or solid wire: “. . . ***the conductive portion of each member of the pair can be either solid copper . . . or multi-filament wire . . .***” Reply 27.

In its Reply, Petitioner attempted a word-by-word parsing of a single snippet from the translation of GmbH-866 in EX-1010 in an attempt to try and support its position, and reached the conclusion that “‘stranded,’ ‘isolated,’ and ‘copper’ ***all***

modify each of the ‘conductors or wires’ options that follow.” Reply 23-24. But Petitioner’s theory fails to account for the glaring fact that GmbH-866 repeatedly discusses conductors **or** wires, and Petitioner failed to explain or provide any evidence regarding why GmbH-866 in EX-1010 discusses alternative “conductors **or** wires” if “‘stranded,’ ‘isolated,’ and ‘copper’ all modify each of the ‘conductors or wires’,” as Petitioner alleges. Petitioner’s interpretation not only contradicts its own admission that GmbH-866 discloses that each of the disclosed pairs consists of two conductors, and that “each member of the pair can be either solid copper . . . or multi-filament wire” (Reply 27), but it would also improperly render the words “conductors” and “wires” redundant, which they are not.

In Reply, Petitioner assumed the role of professional translator and attempted to conduct its own *ad-hoc* translation using two newly introduced German-English dictionaries. Reply 26-27. Tellingly, Petitioner’s expert failed to opine on this new material, and the exercise hardly clarified anything, as other definitions in those same documents do not support Petitioner’s theories. For example, the German term “litzen” can also mean “cable conductor,” not a braided wire or stranded conductor as Petitioner asserted, while “leitern” can refer to the constituent copper wires or conductors, which are further modified by “verseilten” to indicate that those wires or conductors are twisted, *i.e.*, a single stranded conductor:

GmbH-866 Term (EX-1010)	Additional Definitions
“litzen”	EX-1067 8: • Litzenkabel: <Elektrotech> flexible cable EX-1068 9: • Litze: cable conductor
“leitern”	EX-1067 7: • Leiter: <Elektriz, Elektrotech> conductor, wire, core EX-1068 7: • Leiter: conductor, conduit, core of a cable
“verseilten”	EX-1067 9: • Verseilen der Fasern: <Telekom> stranding of the fibers EX-1068 10: • Verseilter Draht: twisted wire

Petitioner’s theories are nothing more than unsupported attorney argument, and translations should be left to qualified translation experts, as 37 CFR § 42.63 requires.

Finally, Petitioner falsely alleged that PO did not rebut Petitioner’s vague obvious to try theory. Reply 20. PO showed, and Dr. Eldering explained, that it would not be obvious to try to replace the metallic shielding of GmbH-866 with dielectric materials. Response 50-52; Eldering ¶188. In reality, what Petitioner actually argued in the Petition is that a POSITA would find it obvious try a “finite” number of combinations of metallic and dielectric separator layers (Pet. 52-53), but Petitioner’s expert testified on cross-examination that the number of combinations

is anything but finite. EX-2004 158:10-160:13 (“The four-layer tape would be possible. A ten-layer tape might be possible. I don’t think that’s practical to consider.”).

Date: August 20, 2024

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CERTIFICATION OF COMPLIANCE WITH WORD COUNT

The undersigned hereby certifies that the foregoing Patent Owner Response complies with the requirements of 37 C.F.R. § 42.24 and contains less than 5,600 words (5,596 words), excluding those contained in the following: Table of Contents, Table of Authorities, Certification of Compliance with Word Count, Certificate of Service, and the Exhibit List.

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CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing **PATENT OWNER SUR-REPLY** was served pursuant to 37 C.F.R. § 42.6(e) via electronic mail on August 20, 2024, on the following:

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