IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

PPC BROADBAND, INC.,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Civil Action No. 22-1517-GBW-SRF
	)	
CHARLES INDUSTRIES, LLC and AMPHENOL CORPORATION,	)	
	)	
	)	
Defendants.	)	

REPORT AND RECOMMENDATION

Pending before the court is the parties' claim construction dispute regarding the single term "drop cable" in United States Patent No. 9,008,483 ("the '483 patent"). The '483 patent is generally directed to a drop interface box ("DIB") used to provide slack storage compartments for excess optical fiber network cable length. ('483 patent, col. 3:9-12) Plaintiff PPC Broadband, Inc. ("Plaintiff") brought this patent infringement action against defendants Charles Industries, LLC ("Charles") and Amphenol Corporation ("Amphenol;" together with Charles, "Defendants") on November 21, 2022, alleging that Amphenol's CFIT-Flex™ Series of fiber enclosures (the "Accused Products") infringe the '483 patent. (D.I. 1) This decision sets forth the court's recommendation for the construction of "drop cable" following a review of the parties' joint claim construction brief and consideration of the arguments presented at the *Markman* hearing held on January 3, 2024. (D.I. 50)

For the reasons set forth below, I recommend that the court find that no construction is necessary for the term "drop cable," in accordance with Plaintiff's proposal.

I. BACKGROUND OF THE TECHNOLOGY

The '483 patent discloses a DIB that provides organized optical fiber cable storage and routing for three types of cables: drop, feed, and distribution cables. ('483 patent, Abstract & col. 2:1-6) Previously, metal cabling was used to deliver network access to customer homes, but the '483 patent specification acknowledges that optical fiber is increasingly used to provide network access all the way to customers' homes. (*Id.*, col. 1:33-38) To achieve this, the optical fiber service provider runs a drop optical fiber cable from a larger distribution point to the customers' building. (*Id.*, col. 1:39-42) The drop cable is then broken into individual fiber connections for residents in a multi-dwelling building. (*Id.*, col. 1:44-49)

The specification explains that optical fiber cables are increasingly "pre-connectorized," or shipped from a factory with terminating connectors already installed. (*Id.*, col. 1:50-52) As a result, the length of the cable is pre-determined, and installers must find a way to store any excess optical fiber cable length. (*Id.*, col. 1:52-54) Storage of excess cable length and the organization of drop, feed, and distribution cables is challenging because optical fiber cables can be damaged from bending. (*Id.*, col. 1:59-64) The design of the DIB disclosed in the '483 patent is intended to overcome these storage obstacles by providing a place to store the drop cable, breakout cables, and distribution cables separately in a weatherproof enclosure while maintaining minimum bend radius in the cables to limit strain. (*Id.*, col. 2:6-10)

The routing and storage of drop, feed, and distribution cables in an exemplary DIB is depicted in Figure 5-4 from the '483 patent:

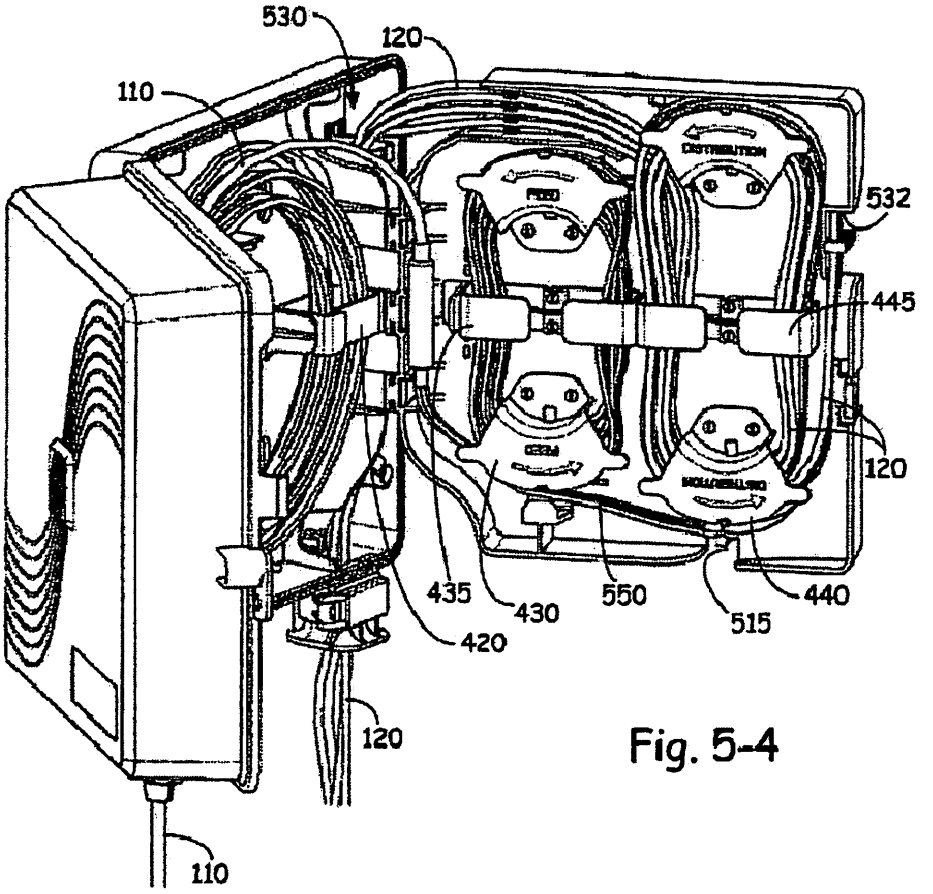

Fig. 5-4

('483 patent, Fig. 5-4) The drop cable (110) enters through a point large enough to accommodate a pre-connectorized drop and/or distribution cable. (*Id.*, col. 3:60-65) The drop cable is then fed around the storage clips (420). (*Id.*, col. 4:58-62) Figure 4-1 depicts how the drop cable next passes through a break-out plug (450) near the upper hinge, which divides the drop cable into multiple individual feed cables (550):

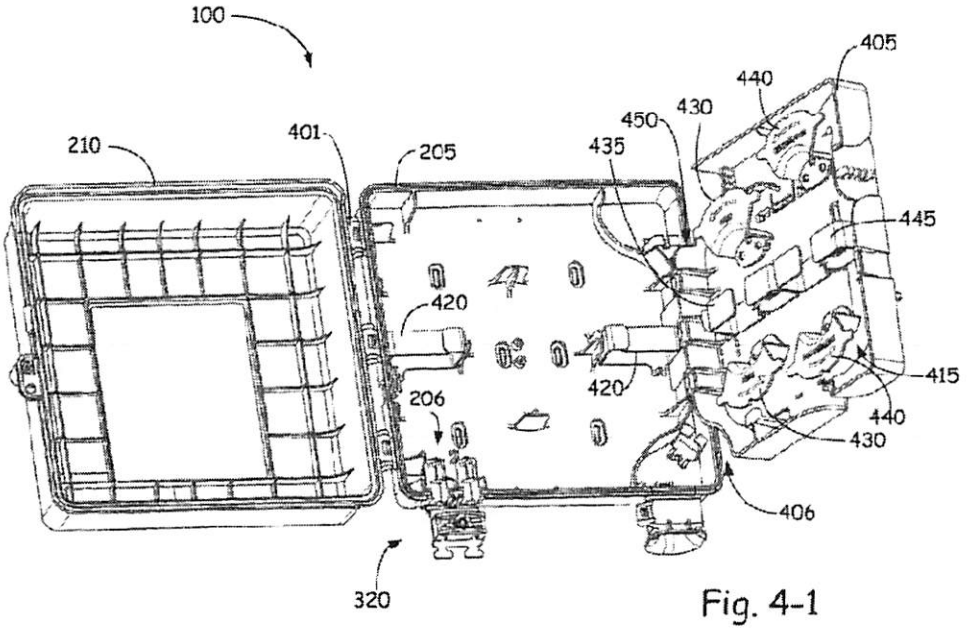

Fig. 4-1

(*Id.*, Fig. 4-1, col. 4:66-5:2) These individual feed breakout cables are then wound around spools (430) and secured with another set of storage clips (435). (*Id.*, col. 4:64-65) Cable adapters or connectors (465) are used to connect the feed breakout cables to distribution cables (120), which are stored on yet another set of spools (440) and storage clips (445):

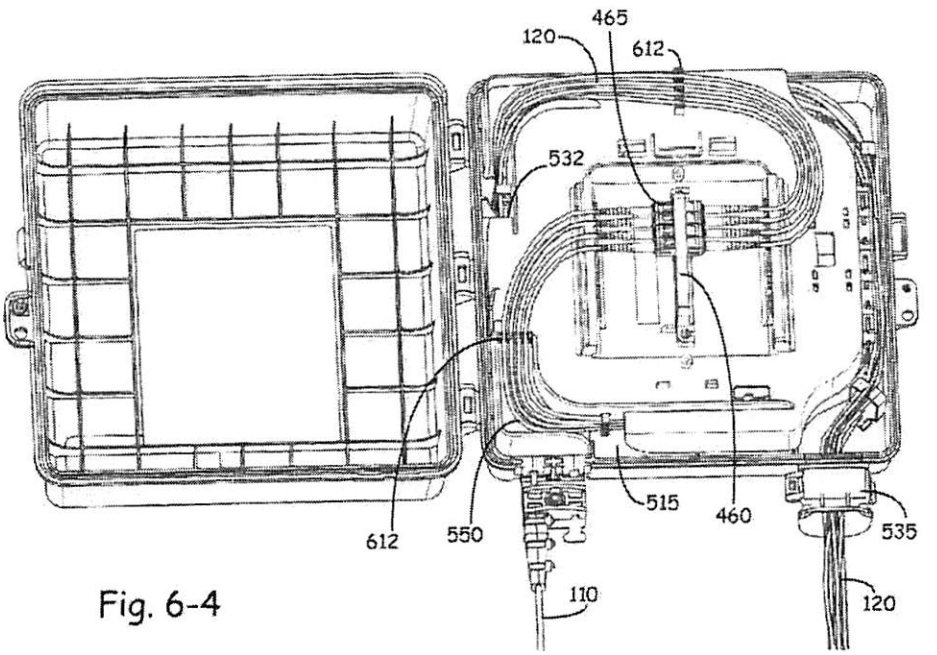

Fig. 6-4

(*Id.*, Fig. 6-4; col. 5:5-10; 5:33-43)

Plaintiff asserts claims 1, 2, and 10-13 of the '483 patent. (D.I. 50 at 1) Independent claim 1 recites:

> A drop interface box configured to be mounted to a structure and to receive a drop cable from an optical fiber service provider distribution point and a plurality of distribution cables which distribute the optical fiber service, the drop interface box comprising:
>
> a base unit having a drop cable entrance configured to receive the drop cable and having drop cable retaining mechanisms spaced apart and configured to retain a length of drop cable looped around the drop cable retaining mechanisms;
>
> a cover having a hinged connection to the base unit to selectively enclose a storage area provided in the base unit; and
>
> a fiber storage panel having a hinged connection to the base unit on a side opposite the hinged connection of the cover to the base unit such that the fiber storage panel is moveable relative to the base unit and the cover, the fiber storage panel having first spools positioned to store a plurality of feed break-out cables coupleable to the drop cable, the fiber storage panel further having second spools positioned to store a plurality of distribution cables coupleable to the plurality of feed break-out cables.

('483 patent, col. 7:23-46) Claims 2 and 10-13 are dependent claims of claim 1.

II. LEGAL STANDARD

The purpose of the claim construction process is to "determin[e] the meaning and scope of the patent claims asserted to be infringed." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370, 388-90 (1996). Construing the claims of a patent presents a question of law, although subsidiary fact finding is sometimes necessary. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 837-38 (2015) (citing *Markman*, 52 F.3d at 977-78). An actual dispute regarding the proper scope of a claim term must be resolved by a judge, as opposed to the jury. *Markman*, 52 F.3d at 979.

"[T]here is no magic formula or catechism for conducting claim construction." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1324 (Fed. Cir. 2005). Instead, the court may attach the appropriate weight to appropriate sources "in light of the statutes and policies that inform patent law." *Id.* The words of the claims "are generally given their ordinary and customary meaning," which is "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1312-13 (internal citations and quotation marks omitted). If the meaning of a claim term is not readily apparent, the court considers sources including "the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004).

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (internal quotation marks omitted). Accordingly, "the claims themselves provide substantial guidance as to the meaning of particular claim terms." *Id.* at 1314. Claim terms are typically used consistently throughout the patent, and "usage of a term in one claim can often illuminate the meaning of the same term in other claims." *Id.* Also, "[d]ifferences among claims can also be a useful guide . . . . For example, the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." *Id.* at 1314-15 (internal citation omitted).

The claims must be read in view of the specification, which "is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the

meaning of a disputed term." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). "[T]he specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs." *Phillips*, 415 F.3d at 1316 (citing *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)). The specification may also contain a disclaimer or disavowal of claim scope. *Id.* However, "[e]ven when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction." *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004) (internal quotation marks omitted). The specification "is not a substitute for, nor can it be used to rewrite, the chosen claim language." *SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004).

III. CONSTRUCTION OF "DROP CABLE"

Claim term	**Plaintiff's proposal**	**Defendants' proposal**	**Court's construction**
"drop cable" ('483 patent, claims 1, 2, and 10-13)	No construction necessary, or in the alternative to the extent construction is necessary: "a cable that connects the drop interface box to an optical fiber service provider"	"externally jacketed (e.g., heavy, hardened, or outdoor jacket) multi-fiber cable"	No construction necessary

The parties present two disputes regarding the proper construction of the term "drop cable." First, they dispute whether the term "drop cable" is a limiting term requiring construction. Next, the parties challenge the merits of their competing constructions. For the

following reasons, I recommend that the court find the term "drop cable" is not a structural limitation requiring a construction by the court.

A. "Drop Cable" Is Not a Structural Limitation.

Plaintiff maintains that the term "drop cable" requires no construction because nothing in the asserted claims requires the presence of a drop cable to infringe. (D.I. 50 at 25) Rather, Plaintiff contends that a DIB configured to receive a drop cable is infringing regardless of the type of cable actually used by the service provider. (*Id.* at 26) Defendants respond that the term "drop cable" must be construed because a definition of the term is necessary to determine whether the claimed DIB is configured to receive the drop cable, loop the drop cable around the retaining mechanisms, and couple the drop cable to the feed breakout cables. (*Id.* at 34)

Plaintiff discusses Federal Circuit case law in support of its position that "drop cable" is not limiting. In *Eko Brands, LLC v. Adrian Rivera Meynez Enterprises, Inc.*, the parties disputed whether the district court erred in construing the asserted claim as not requiring a "single-serve beverage brewer." 946 F.3d 1367, 1376 (Fed. Cir. 2020). The preamble of the challenged claim recited "[a] beverage brewing device for use with a single serve beverage brewer . . . the beverage brewing device comprising . . ." *Id.* The Federal Circuit upheld the district court's conclusion that the term "single-serve beverage brewer" was not limiting, stating that the claim "on its face does not require a beverage brewer, even if the preamble is limiting" because it mentions the beverage brewer "only as a 'reference point' to define the purpose and structure of the brewing device." *Id.* at 1377. A review of the claim in its entirety confirms that references to the "single serve beverage brewer" were also made throughout the body of the asserted claim. *Id.* (citing U.S. Patent No. 8,707,855, claim 8).

Plaintiff also relies on the Federal Circuit's decision in *C.R. Bard, Inc. v. M3 Sys.*, 157 F.3d 1340 (Fed. Cir. 1998) to support its position that the term "drop cable" is non-limiting. In *Bard*, the invention at issue was a needle assembly for use with a biopsy needle firing gun. *Id.* at 1348. The preamble recited the structure of the gun "housing" that contained the biopsy needles, and the body of the claim referred back to "said housing" in describing the positioning of the needle assembly. *Id.* at 1348-49 (quoting U.S. Patent No. RE34,056, claim 21). The defendant argued that the asserted claim was invalid as anticipated because the preamble made no reference to a cocking mechanism. *Id.* at 1350. The Federal Circuit determined that the preamble "recites the portion and structure of the gun housing into which the needles fit, and provides reference points in the gun that aid in defining the needles as set forth in the body of the claim." *Id.* Because the question of anticipation related to the needles, as opposed to the gun, the Federal Circuit concluded that the cocking structure had no bearing on the anticipation analysis. *Id.*

Similarly, claim 1 of the '483 patent describes the "drop cable" as a non-limiting reference point to explain the configuration of the DIB. Just as the claimed beverage brewing device in *Eko Brands* was configured to receive a single serve beverage brewer, and the housing in *Bard* provided a reference point for defining the claimed needles, the DIB of the '483 patent recites "a base unit having a drop cable entrance configured to receive the drop cable." ('483 patent, col. 7:28-29) As long as the DIB and its associated components are capable of receiving the drop cable, the claim requirements are met and the presence or lack of an actual drop cable in the DIB is irrelevant. *See DSC Commc'ns Corp. v. Pulse Commc'ns, Inc.*, 170 F.3d 1354, 1368 (Fed. Cir. 1999) (explaining that asserted claims 2 and 5 of U.S. Patent No. 5,263,081 "do not require that the claimed apparatus actually include a 'telephone instrument'; the pertinent

language simply requires the apparatus to provide POTS-type service that uses DC signaling to a telephone instrument."). Consequently, no construction of the term "drop cable" is needed.

In the briefing, Defendants' response to each of the cases cited by Plaintiff is to note that the challenged terms appeared only in the preamble, as opposed to the body, of the claims. (D.I. 50 at 34-35) Because language in a preamble does not generally limit a claim, Defendants argue that the holdings in the cases cited by Plaintiff are distinguishable from the circumstances presently before the court. (*Id.*) But this alleged distinction ignores the fact that the Federal Circuit's ruling in *Eko Brands* rested on the assumption that the preamble language was limiting. *Eko Brands*, 946 F.3d at 1377 ("But claim 8 on its face does not require a beverage brewer, even if the preamble is limiting."). And as Plaintiff observes, the challenged terms in *Eko Brands*, *Bard*, and *DSC* appeared throughout the body of the claims as well as in the preamble. (D.I. 50 at 41-42)

During the *Markman* hearing, Defendants argued that the Federal Circuit's decisions in *Eko Brands*, *DSC*, and *Bard* are distinguishable because none of those cases dealt with disputed claim language. (1/3/2024 Tr.) The Federal Circuit nonetheless addressed the merits of claim constructions made by the district court or proposed by a party and analyzed the impact of specific terms on the scope of the claims. *See Eko Brands*, 946 F.3d at 1376-77; *Bard*, 157 F.3d at 1350. The Federal Circuit's discussion of terms that serve as a "reference point" to define the purpose and structure of claim limitations are therefore relevant to the dispute presently before the court.

Defendants maintain that the court must construe "drop cable" because a fundamental dispute exists regarding its scope, presenting a legal issue that cannot appropriately be resolved by the jury. (D.I. 50 at 33-34) In support of this argument, Defendants cite *O2 Micro*

International Ltd. v. Beyond Innovation Technology Co., Ltd., for the general principle that the court has a duty to resolve a fundamental dispute regarding the scope of a claim term. 521 F.3d 1351, 1361-62 (Fed. Cir. 2008); *see also Every Penny Counts, Inc. v. Am. Express Co.*, 563 F.3d 1378, 1383 (Fed. Cir. 2009) (same). For the reasons set forth above, however, the specification does not support Defendants' position that the term "drop cable" limits the scope of the DIB. Moreover, the limitations proposed by Defendants do not provide greater clarity on what is covered by the claims, nor are they sufficiently supported by the specification of the '483 patent. *See* § III.B, *infra.*

B. Defendants' Proposed Construction Imports Limitations from the Specification into the Claims.

Defendants argue that, even if the court accepts Plaintiff's position that the term "drop cable" is merely a reference point and not a listed claim requirement, construction of the term is necessary because the factfinder must understand what a drop cable is to determine whether the claimed mechanisms for receiving, retaining, and coupling a drop cable to a feed break-out cable exist in the accused products. (D.I. 50 at 35) To provide the requisite clarity, Defendants propose limiting the term "drop cable" to an externally jacketed, multi-fiber cable in accordance with all the disclosed embodiments in the specification and the broader purpose and context of the invention. (*Id.* at 30-33)

Plaintiff maintains that limiting "drop cable" to an externally jacketed, multi-fiber cable would require importing limitations from the specification into the claims. (D.I. 50 at 28-29) In the absence of a clear and unambiguous disavowal or redefinition of "drop cable," Plaintiffs argue that Defendants' proposed construction should be rejected. (*Id.* at 29)

The specification of the '483 patent does not sufficiently support Defendants' proposed limitations on the term "drop cable." A claim term may be limited in scope by statements in the

specification describing the invention as a whole, even in the absence of express lexicography or disavowal. *See C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 864 (Fed. Cir. 2004) ("Statements that describe the invention as a whole, rather than statements that describe only preferred embodiments, are more likely to support a limiting definition of a claim term."). But it is not enough to show that all disclosed embodiments include the proposed limitations, unless the specification "uses words that manifest a clear intention to restrict the scope of the claims to that embodiment." *Info-Hold, Inc. v. Applied Media Techs. Corp.*, 783 F.3d 1262, 1267 (Fed. Cir. 2015).

Here, the specification does not manifest a clear intention to restrict the scope of "drop cable" to a jacketed, multi-fiber cable. Instead, it repeatedly confirms that the background information and disclosed embodiments are not intended to limit the scope of the claimed subject matter. ('483 patent, cols. 1:65-67; 2:15-20; 2:55-63; 7:8-15); *see Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1345 (Fed. Cir. 2001) (declining to limit the claim language to a preferred embodiment where "[t]he inventor was careful to consistently use phrases throughout the written description" to confirm that the invention could be practiced or carried out in various ways). Statements that the drop cable is "typically a heavy jacketed or hardened multi-fiber cable" confirm that the drop cable is not required to have these characteristics. (*Id.*, col. 1:42-43); *see i4i Ltd. P'ship v. Microsoft Corp.*, 598 F.3d 831, 844 (Fed. Cir. 2010) (explaining that "[t]he specification's permissive language . . . does not clearly disclaim systems lacking these benefits."). Because the patent teaches that "[t]he invention is capable of other embodiments and of being practiced or of being carried out in various ways," the disclosed embodiments featuring externally jacketed, multi-fiber drop cables are nonlimiting examples. (*Id.*, col. 2:59-61)

The specification's description of the claimed drop cable entrance and retaining mechanisms confirms that the configuration of the DIB is not dependent on the drop cable having an external jacket or multiple fibers. The drop cable entrance is configured with an aperture sufficient "to accommodate pre-connectorized cables" because "[m]any conventional enclosures require cable to be fed through slots or apertures of a size which cannot accommodate pre-connectorized cables." ('483 patent, col. 3:58-65) The specification does not suggest that a cable jacket or multi-fiber structure has any bearing on the configuration of the drop cable entrance—instead, it is the connector attached at the end of a pre-connectorized drop cable that requires a sufficient entrance into the DIB. Defendants' proposed construction does not include a requirement that a drop cable must be pre-connectorized, and the specification expressly states that "[u]se of the disclosed DIB is not limited to use with these pre-connectorized optical cables." (*Id.*, col. 3:14-16)

Defendants maintain that the drop cable must feature an external jacket because the claimed retaining mechanisms, such as mounting brackets and clamp blocks, "engage[ ] the cable jacket" of the drop cable. (*Id.*, col. 4:18-23; 1/3/2024 Tr.) But requiring the drop cable to feature an external jacket would mean that any portion of the cable without a jacket would not meet the definition of a "drop cable." This result is not supported by the technology primer, which explains that "field-connectorized" fiber optic cables are connected on-site in a process that may include removing the outer layers of the fiber optic cable, among other steps. (D.I. 50 at 3; *see also id.* at 14 (describing a "field-connectorized" drop cable as having its protective jacket removed at the box entrance)). Factories manufacturing pre-connectorized cables also prepare the fiber optic cable by removing its outer layers. (*Id.*) Nothing in the intrinsic record supports a conclusion that the entire length of the drop cable must be jacketed, or that the

removal of a portion of the drop cable's external jacket renders it anything other than a drop cable. Thus, Defendants' proposed construction of the term "drop cable" would require the importation of limitations from the specification into the claims.

IV. CONCLUSION

For the reasons set forth above, I recommend that the court find that no construction is necessary for the non-limiting term "drop cable."

This Report and Recommendation is filed pursuant to 28 U.S.C. § 636(b)(1)(B), Fed. R. Civ. P. 72(b)(1), and D. Del. LR 72.1. The parties may serve and file specific written objections within fourteen (14) days after being served with a copy of this Report and Recommendation. Fed. R. Civ. P. 72(b)(2). The objections and responses to the objections are limited to ten (10) pages each. The failure of a party to object to legal conclusions may result in the loss of the right to de novo review in the District Court. *See Sincavage v. Barnhart*, 171 F. App'x 924, 925 n.1 (3d Cir. 2006); *Henderson v. Carlson*, 812 F.2d 874, 878-79 (3d Cir. 1987).

The parties are directed to the court's Standing Order For Objections Filed Under Fed. R. Civ. P. 72, dated March 7, 2022, a copy of which is available on the court's website, http://www.ded.uscourts.gov.

Dated: January 8, 2024

Sherry R. Fallon
UNITED STATES MAGISTRATE JUDGE