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Telecommunication enclosure

Abstract

The present disclosure relates to features of a telecommunication enclosure. Example features can include mounting plate attachment features, housing latching features, housing hinge features and fiber routing features.

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Background/Summary

CROSS-REFERENCE TO RELATED APPLICATIONS (1) This application is a continuation of U.S. patent application Ser. No. 17/425,231, filed on Jul. 22, 2021, now issued as U.S. Pat. No. 12,019,298, which is a National Stage Application of PCT/US2020/014620, filed on Jan. 22, 2020, which claims the benefit of U.S. Patent Application Ser. No. 62/795,301, filed on Jan. 22, 2019, and claims the benefit of U.S. Patent Application Ser. No. 62/948,034, filed on Dec. 13, 2019, the disclosures of which are incorporated herein by reference in their entireties. To the extend appropriate, a claim of priority is made to each of the above disclosed applications.

BACKGROUND

(1) As demand for telecommunications increases, networks are being extended in more and more areas. In facilities such as single family homes, multiple dwelling units (MDU's), apartments, condominiums, businesses, etc., boxes are used to provide subscriber access points to a telecommunications network. Cables are also used to interconnect the subscriber access points provided by boxes with subscribers at subscriber locations (e.g., at each residence).

(2) Various boxes for telecommunications equipment are known. The boxes used for subscriber access points can have various forms depending on such factors as the environment, the space requirements for containing telecommunications equipment, and the type of technician access needed for the telecommunications equipment. These and other considerations are related to box design and usability.

(3) Optical fiber splice closures (which are sometimes called splice cases or enclosures) generally include a casing which provides a closed space for containing splices between optical fibers. Such closures normally also contain excess lengths of the spliced optical fibers. These excess lengths of optical fibers are normally used to carry out the fiber splicing operation, which is generally performed using splicing equipment next to the closure. Excess fiber also may be used to facilitate organization the fiber splices in the closure. Optical fiber splice closures normally include one or more trays to store the splices in an organized manner. The excess optical fiber associated with the organized splices is stored in the closure in such a way that its bend radius does not fall below a minimum bend radius of the fiber (i.e., the minimum safe radius at which the fiber may be bent without causing damage to the fiber or causing signal loss in the fiber).

(4) There is a continued need for improvement in closures such as splice closure designs or other enclosure designs.

SUMMARY

(5) One aspect of the present disclosure relates to a telecommunications enclosure including a housing having a base and a cover. The telecommunications enclosure includes a plurality of fiber management tabs that detachably mount to the base. When the fiber management tabs are mounted in a fiber retaining arrangement relative to the base, the fiber management tabs are configured to retain or hold or constrain optical fibers within the base. Preferably the fibers are retained along a fiber routing path within the base. In certain examples, the fiber routing path can extend around at least a portion of the perimeter of the base. In certain examples, the fiber routing path can extend around a splice tray mounting location positioned within the base. In certain examples, by detaching the tabs or by orienting the tabs in a non-retaining arrangement in which the tabs do not overlap a fiber routing region, routing or positioning of optical fibers within the base is facilitated. After the optical fibers have been routed within the base, the fiber management tabs can be returned to the retaining arrangement in which at least portions of the tabs oppose or overlie the optical fibers within the base. In this way, the tabs prevent the optical fibers from lifting or raising out of the base and also prevent the optical fibers from being pinched between the base and the cover when the cover is mounted on the base.

(6) Another aspect of the present disclosure relates to a telecommunications enclosure including a housing having a base and a cover. The base includes a floor from which a plurality of bosses project. The bosses are configured for facilitating mounting structures such as plates or panels to the floor of the base. The plates or panels may be configured for supporting optical components such as optical splices, trays, passive optical splitters, cable anchors, wavelength division multiplexers, or splices. In certain examples, the bosses are configured for receiving fasteners. The bosses are preferably tall enough to receive the fasteners without the fasteners extending completely through the floor of the base. In certain examples, the bosses are not initially used, but are provided to allow for mounting different styles or configurations of components in the enclosure at a later date. Thus, the bosses facilitate retrofitting the enclosure at a later date without

requiring the base itself to be modified.
(7) A further aspect of the present disclosure relates to a telecommunication enclosure having first and second housing parts (e.g., pieces such as a base and a cover) that are movable relative to one another between an open position and a closed position. The first and second housing parts pivotally connect with respect to one another at a hinge. The hinge has a configuration that facilitates routing cables into the enclosure adjacent to the location of the hinge.
(8) Another aspect of the present disclosure relates to configurations for mounting modular structures such as cable anchors or fiber optic component holders within a telecommunication enclosure. In certain examples, a plate can be provided with mounting locations for mounting the modules. In certain examples, the plate can be secured to a wall within the interior of the enclosure by a mechanical connection such as a snap-fit connection. In certain examples, snap-fit features such as tabs can be unitarily formed with a housing of the enclosure. In certain examples, the plate can fit within a recess defined within the wall of the housing. In certain examples, the wall of the housing can include a recess for providing clearance for receiving fixation structures of the modules.
(9) A variety of additional inventive aspects will be set forth in the description that follows. The inventive aspects can relate to individual features and to combinations of features. It is to be understood that both the forgoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the broad inventive concepts upon which the embodiments disclosed herein are based.

Description

BRIEF DESCRIPTION OF THE DRAWINGS
(1) The accompanying drawings, which are incorporated in and constitute a part of the description, illustrate several aspects of the present disclosure. A brief description of the drawings is as follows:
(2) FIG. **1** is a perspective view of a telecommunications enclosure in accordance with the principles of the present disclosure;
(3) FIG. **2** is a perspective view of a base of the telecommunications enclosure of FIG. **1** with a cover of the telecommunications enclosure removed;
(4) FIG. **3** is another perspective view of the base of FIG. **2**;
(5) FIG. **4** is a perspective view of another telecommunications enclosure in accordance with the principles of the present disclosure;
(6) FIG. **5** is a perspective view of a base of the telecommunications enclosure of FIG. **4** with a cover of the telecommunications enclosure removed;
(7) FIG. **6** is another perspective view of the base of FIG. **5**;
(8) FIG. **7** is a perspective view of still another telecommunications enclosure in accordance with the principles of the present disclosure;
(9) FIG. **8** is a perspective view of the telecommunications enclosure of FIG. **7** with a cover of the telecommunications enclosure removed;
(10) FIG. **9** is another perspective view of the base of FIG. **8**;
(11) FIG. **10** is a front, perspective view of another enclosure in accordance with the principles of the present disclosure;
(12) FIG. **11** is a rear, perspective view of the enclosure of FIG. **10**;
(13) FIG. **12** is an end view of the enclosure of FIG. **10**;
(14) FIG. **13** is a side view of the enclosure of FIG. **10**;
(15) FIG. **14** shows the enclosure of FIG. **10** in an open configuration;
(16) FIG. **15** is an exploded view of the enclosure of FIG. **10**;
(17) FIG. **16** is a perspective end view of the enclosure of FIG. **10**;

(18) FIG. **17** shows a base of the enclosure of FIG. **10** with a cover of the enclosure removed;
(19) FIG. **18** is an enlarged view of a portion of FIG. **17** showing a snap-fit connection between the housing and a module mounting plate;
(20) FIG. **19** is the view of FIG. **18** with the module mounting removed;
(21) FIG. **20** is a front view of the enclosure of FIG. **10**;
(22) FIG. **21** is a cross-sectional view taken along section line **21-21** of FIG. **20**;
(23) FIG. **22** is a cross-sectional view taken along section line **22-22** of FIG. **20**;
(24) FIG. **23** is a perspective view of the base of the enclosure of FIG. **10** with the module mounting plates and seals removed;
(25) FIG. **24** is a front plan view of one of the module mounting plates of the enclosure of FIG. **10**;
(26) FIG. **25** is a front, plan view of another module mounting plate of the enclosure of FIG. **10**;
(27) FIG. **26** is a rear perspective view of an example component holding module having a connection interface compatible with mating connection interfaces provided in the plate of FIG. **24**;
(28) FIG. **27** depicts a plurality of cable anchor modules having connection interfaces compatible with mating connection interfaces defined by the plate of FIG. **25**;
(29) FIG. **28** is a rear, perspective view of the plate of FIG. **25**; and
(30) FIG. **29** is a cross-sectional view taken along section line **29-29** of FIG. **20**.

DETAILED DESCRIPTION

(31) Reference will now be made in detail to exemplary aspects of the present disclosure that are illustrated in the accompanying drawings. Wherever possible, the same reference numbers will be used throughout the drawings to refer to the same or like parts.
(32) FIG. **1** depicts a telecommunications enclosure **20** in accordance with the principles of the present disclosure. The telecommunications enclosure **20** includes a base **22** and a cover **24**. The telecommunications enclosure **20** is preferably an environmentally sealed enclosure adapted for outside environmental use. It will be appreciated that the cover **24** is removable from the base **22** to provide access to an interior of the enclosure **20**. In certain examples the base **22** and the cover **24** can optionally be coupled together by hinges **26**. The telecommunications enclosure **20** includes opposite sides **28**, **30** that extend between opposite ends **32**, **34** of the enclosure **20**. In the depicted example, the telecommunications enclosure **20** has an elongate configuration along a longitudinal axis **36** of the telecommunications enclosure **20**. Thus, the sides **28**, **30** are longer than the ends **32**, **34**. In certain examples, the hinges **26** are located at one of the sides **28**, **30** of the enclosure **20**. In other examples, hinges **26** could be located at one of the ends **32**, **34**. Additionally, latches can be utilized for securing the cover **24** to the base **22**. The latches can be provided at the side **28** and/or the side **30** and/or the end **32** and/or the end **34**. In certain examples, latches can be used in combination with the hinges **26**. In certain examples, latch configurations can be adapted to mount over the hinges **26**.
(33) Referring to FIGS. **2** and **3**, telecommunications enclosure **20** is depicted as a splice enclosure. In the depicted example, the telecommunications enclosure **20** is a butt-style closure in which fiber optic cables can only enter and exit the telecommunications enclosure **20** through one end of the telecommunications enclosure **20**. In the depicted example, the fiber optic cables can enter and enter the enclosure **20** through the end **34** of the enclosure **20**. The telecommunications enclosure **20** preferably includes a cable sealing arrangement **38** positioned at the end **34**. The cable sealing arrangement can include a cable sealant **39** such as gel for environmentally sealing around fiber optic cables routed into the interior of the enclosure **20** when the enclosure is closed. Volumes (e.g., blocks) of sealant can be provided in both the base **22** and the cover **24** with the cable being sandwiched and sealed between the volumes. The volumes of sealant can deform about the cable to provide sealing.
(34) Referring still to FIGS. **2** and **3**, the base **22** defines a main compartment **40**. The main compartment **40** is positioned above a main base surface **42** and forms a floor-like structure of the base **22**. Various components can be mounted to the main base surface **42**. As depicted, within the

main compartment **40**, the base **22** defines a fiber splicing and fiber storage region **48** as well as a cable anchoring region **50**. The cable anchoring region **50** is positioned adjacent the end **34** where the cables enter and exit the enclosure **20**. The cable anchoring region **50** can include a plurality of cable anchors for securing the fiber optic cables to the base **22**. Cable anchors can include clamps, cable tie locations, cable fasteners, blades for engaging and retaining the cables, and other structures. The fiber splicing and fiber storage region **48** includes a splice mounting location **52** where one or more splice trays **54** are mounted.

(35) The splice trays **54** can be configured for holding optical splices. A typical splice between two optical fibers is protected by a splice protector that may include a heat shrink element, a reinforcing rod and an adhesive material.

(36) The fiber splicing and fiber storage region **48** also includes a fiber routing path **56** that surrounds the splice mounting location **52**. The fiber routing path **56** is located between the cable anchoring region **50** and the first end **32** of the enclosure **20**. It will be appreciated that to perform a fusion splice, a significant length of optical fiber is required to be compatible with existing fusion splicing machines. The fiber routing path **56** surrounding the splice mounting location **52** provides a region where such fiber length can be stored without violating minimum bend requirements. The fiber routing path can also store lengths of uncut optical fiber passed through the enclosure from two different sections of fiber optic cable sealed at the end **34**.

(37) Referring still to FIGS. **2** and **3**, the base **22** defines a perimeter channel **60** that extends about a perimeter of the enclosure **20**. The perimeter channel **60** is adapted for receiving a sealing member such as a gasket **61** for providing a perimeter seal between the base **22** and the cover **24** when the cover **24** is mounted on the base **22**. In certain examples, the cover **24** can include a projection such as a sealing rib or other element that engages the gasket when the cover **24** is mounted on the base **22**. The perimeter channel **60** is defined between an outer wall **62** of the base **22** and an inner wall **64** of the base **22**.

(38) It is desirable to have structure for retaining the optical fibers within the interior of the base **22**. For example, it is desirable to have structures that retain the optical fibers along the fiber routing path **56**. In certain examples, fiber retainers overhang the floor of the base **22** prevent the fibers from lifting upwardly from the fiber routing path. In certain examples, fiber retainers or tabs can be used to prevent the optical fibers from being inadvertently pinched between the base **22** and the cover **24** when the cover **24** is mounted on the base **22**.

(39) Depicted at FIGS. **2** and **3**, the telecommunications enclosure **20** includes a fiber management or containment system including a plurality of fiber management tabs **70**. Each of the fiber management tabs **70** are depicted as a generally L-shaped component having a first leg **72** and a second leg **74** arranged generally perpendicular relative to one another. In certain examples, the first and second legs **72**, **74** can have different lengths. For example, legs **74** can be shorter than legs **72**.

(40) In certain examples, the fiber management tabs **70** can be mounted to the base **22** via a detachable mounting configuration. For example, the fiber management tab **70** can be connected to the base by a sliding connection, a snap-fit connection, a frictional fit configuration, a press fit configuration or other configurations. As depicted, the base **22** defines a plurality of tab receivers **80** in the form of receptacles (e.g., slots) defined within the inner wall **64**. To mount the fiber management tabs **70** to the base **22**, one of the legs **72**, **74** of each of the tabs **70** is inserted into a corresponding one of the tab receivers **80**. As so mounted, the other of the legs **72**, **74** projects inwardly from the inner wall **64** so as to overlie the fiber routing path surrounding the splice mounting location **52** and so as to overlie and oppose the main base surface **42**. Thus, the legs **72**, **74** that are not inserted into the tab receivers **80** project generally into and/or over the main compartment **40**. By selecting which of the two legs **72**, **74** is mounted in the tab receiver **80**, the distance the non-received leg **72**, **74** projects into the compartment **40** can be varied. In certain examples, the portion of the fiber management tab **70** that opposes the main base surface **42** and

that functions to hold optical fibers within the main compartment **40** or hold optical fibers at a fiber routing path can be referred to as a fiber retaining portion.

(41) In certain examples, the fiber management tabs **70** can be mounted in different arrangements. For example, the fiber management tabs can be mounted in a fiber retaining arrangement as shown at FIG. **2** in which fiber retaining portions (e.g., one of the legs **72**, **74**) project into or over the main compartment **40** so as to provide a fiber retaining function. In another example, the fiber management tabs **70** can be mounted in a fiber loading arrangement (e.g., a fiber non-retaining arrangement or configuration or orientation or position) in which the fiber management tabs do not interfere with or obstruct access to the interior of the base **22** and not overlap or overhang the main base surface **42**. For example, as shown in phantom line at FIG. **3**, the fiber management tabs **70** can be mounted in the tab receivers **80** with the non-received leg projecting outwardly from the compartment over the perimeter channel **60**. In this way, optical fibers can be readily loaded into base and routed along the fiber routing path. After all the fibers have been properly routed, the fiber management tabs **70** can be changed from the fiber loading arrangement (e.g., shown in phantom line at FIG. **3**) to the fiber retaining arrangement of FIG. **2** and shown in solid line at FIG. **3**.

(42) FIGS. **4-6** illustrate another telecommunications enclosure **120** in accordance with the principles of the present disclosure. The telecommunications enclosure **120** has the same basic configuration as the telecommunications enclosure **20**, except the telecommunications enclosure **120** is smaller in size. Similar to the telecommunications enclosure **20**, the telecommunications enclosure **120** includes the arrangement of fiber management tabs **72** used for containing optical fibers within a base **122**, particularly when a cover **124** is removed. It will be appreciated that the telecommunications enclosure **120** also includes a plurality of bosses **100** that project upwardly from a main base surface **142** of a main compartment **140** of a base **122** of the telecommunications enclosure **120**. In certain examples, the bosses **100** can include a central opening **102** for receiving a fastener such as a screw. The bosses **100** have a sufficient height and width to accommodate fasteners therein without allowing the fasteners to extend completely through the base **122**. In certain examples, the bosses **100** can cooperate to provide support for a component such as a mounting panel, a mounting plate, or another component desired to be mounted in the interior of the enclosure **120**. The bosses **100** provide sufficient material to allow the components to be readily mounted to the base **122**. In certain examples, the bosses **100** can allow the telecommunications enclosure **20** to be retrofitted to include different component configurations such as different splice mounting configurations, different optical splitting configurations, different wavelength division multiplexing configurations, different splicing configurations and different cable anchoring configurations. Similar to the telecommunications enclosure **20**, the telecommunications enclosure **120** is a butt-style enclosure in which cables enter the enclosure **120** through only one end **134** of the enclosure.

(43) FIGS. **7-9** illustrate still another telecommunications enclosure **220** in accordance with the principles of the present disclosure. The telecommunications enclosure **220** is similar to the enclosures **20** and **120**, except the enclosure **220** has a pass-through configuration which allows fiber optic cables to be routed through opposite ends **232**, **234** of the enclosure **220**. The enclosure **220** includes cable tie-down locations **300** inside and outside of the enclosure **20** for securing fiber optic cables to the enclosure **220** via cable ties, clamps (e.g., hose clamps) or other structures. The telecommunications enclosure **220** includes cable sealing at both ends **232**, **234** of the enclosure **220**. Additionally, the telecommunications enclosure **220** includes a fiber routing region/path **310** that extends around a perimeter of the interior compartment of the enclosure **20**. The fiber routing region **310** can provide loop storage of excess fiber length related to fibers spliced together, and can also provide loop storage for uncut optical fibers that pass-through the enclosure between cable sections located at opposite ends of the enclosure.

(44) Cable anchoring locations are provided at both ends **232**, **234** of the enclosure **220** and a cable splicing region is provided at a middle region of the enclosure **220**. The fiber routing region/path

310 provides loop storage that loops around the fiber splicing region. In certain examples, the fiber routing can extend beneath the interior cable tie-down locations. Additionally, detachable fiber management tabs **70** of the type previously described can be mounted within the interior of the telecommunications enclosure **220** to provide for enhanced fiber retention within the compartment of a base **222** of the enclosure **220**, particularly when a cover **224** is removed. It will be appreciated that the fiber management tabs **70** can provide the same functionality and can be mounted in different arrangements (e.g., fiber retaining arrangements and enhanced access arrangements). Additionally, the fiber management tabs **70** can be readily removed from the enclosure **220** to provide enhanced access. In certain examples, bosses **100** for providing compatibility with future component mounting configurations within the telecommunications enclosure can also be provided. For example, bosses **100** are shown integrated with the floor of the base.

(45) FIGS. **10**-**16** depict another enclosure **400** in accordance with the principles of the present disclosure. The enclosure **400** includes an elongate housing **402** having a length L that extends between opposite first and second ends **404**, **406**. The elongate housing **402** includes first and second housing parts **408**, **410** that cooperate to enclose an interior **412** (see FIG. **14**) of the housing **402**. The first and second housing parts **408**, **410** are movable relative to one another between an open position (see FIG. **14**) and a closed position (see FIGS. **10** and **11**). Referring to FIG. **16**, a hinge **414** is provided at the first end **404** of the housing **402** for allowing the first and second housing parts **408**, **410** to be pivoted between the closed and open positions. The hinge **414** defines a pivot axis **416** about which the first and second housing parts **408**, **410** pivot relative to one another.

(46) Referring still to FIG. **16**, the hinge **414** includes first and second hinge connection locations **418***a*, **418***b* separated by a gap **420**. Each of the hinge connection locations **418***a*, **418***b* includes a hook **422** that engages a hinge pin **424**. In the depicted example, the hooks **422** are unitarily formed with the first housing part **408** and the hinge pin **424** is unitarily formed with the second housing part **410**. In the depicted example, the first housing part **408** forms a base of the housing **402**, and the second housing part **410** forms a cover of the housing **402**.

(47) Referring again to FIG. **16**, a cable pass-through location **426** is provided at the first end **404** of the housing **402**. The cable pass-through location **426** is positioned in alignment with the gap **420** between the first and second hinge connection locations **418***a*, **418***b*. The cable pass-through location **426** as well as the first end **404** of the housing **402** are sealed by an end sealing arrangement **428**. As shown at FIGS. **14** and **15**, the end sealing arrangement **428** includes a first sealing block **430** mounted to the first housing part **408** and a second sealing block **432** mounted to the second housing part **410**. It will be appreciated that the first and second sealing blocks **430**, **432** can be constructed of a sealing material such as rubber, gel or the like. A cable sealing interface through which fiber optic cables **434** routed into the housing **402** extend is defined between the first and second sealing blocks **430**, **432**. FIG. **14** shows the housing **402** in the open position with the cables **434** routed through the cable sealing interface. When the housing **402** is closed, the first and second sealing blocks **430**, **432** deform about the cables **434** to provide sealing about the cables.

(48) It will be appreciated that a perimeter of the housing **402** is also preferably sealed when the housing **402** is in the closed position. To provide perimeter sealing, a perimeter seal **436** such as an elastomeric gasket can be mounted between the first and second housing parts **408**, **410** to provide perimeter sealing when the first and second housing parts **408**, **410** are moved to the closed position. In certain examples, perimeter seal **436** can fit within a channel defined by one of the housing parts **408**, **410**, and can be engaged by a sealing rib defined by the other of the housing parts **408**, **410**. In the depicted example, the perimeter seal **436** coincides with a perimeter path that extends along opposite first and second sides **438**, **440** of the housing **402** and also extends around the second end **406** of the housing **402**. The perimeter seal **436** also preferably contacts the end sealing arrangement **428** at the first end **404** of the housing **402** to provide seal continuity.

(49) Referring to FIG. **10**, the housing **402** includes a pre-latch **442** at the second end **406** of the housing **402** for automatically securing the first and second housing parts **408**, **410** in the closed position when the first and second housing parts **408**, **410** are pivoted to the closed position. The pre-latch **442** includes a latch member **444** unitarily formed with the first housing part **408** and a latch receiver **446** unitarily formed with the second housing part **410**. The enclosure **400** further includes primary latches **448** positioned along the first and second sides **438**, **440** of the housing for latching the housing **402** in the closed position. In certain examples, the primary latches **448** can each include a spring clip or other resilient structure for holding the housing **402** in the closed position and for applying sealing pressure on the perimeter seal **436** such that seal integrity is maintained over time.
(50) Referring to FIGS. **14**, **15**, and **17**, the first housing part **408** includes a main wall **450** and a perimeter wall **452** that projects from the main wall **450**. The perimeter wall **452** includes first and second sidewall portions **454**, **456** respectively at the first and second sides **438**, **440** of the housing **402**. The perimeter wall **452** also includes an end wall portion **458** that extends between the first and second sidewall portions **454**, **456** at the second end **406** of the housing **402**. The first and second sidewall portions **454**, **456** are separated by a width W of the housing **402**.
(51) Referring to FIGS. **17-19** and **21**, plate retention tabs **460** are unitarily formed with the first and second sidewall portions **454**, **456**. The plate retention tabs **460** are configured for securing a component mounting plate **462** at the main wall **450**. The component mounting plate **462** is sized to extend across the width W of the housing and is retained against the main wall **450** at a component plate mounting location **464** within the interior of the housing **402** by a snap-fit connection provided by the plate retention tabs **460**. Specifically, the plate retention tabs **460** corresponding to the first and second sidewall portions **454**, **456** engage opposite edges of the plate **462** to retain the plate **462** against the main wall **450**. When the component mounting plate **462** is pressed into the component plate mounting location **464**, the mounting plate **462** and/or the plate retention tabs **460** flex thereby allowing the edges of the mounting plate **462** to move past the retention tabs **460** and snap into a retained position in which the retention tabs **460** overlap the edges of the plate **462**.
(52) As shown at FIGS. **19**, **21**, **22** and **23**, the main wall **450** defines a plate recess **466** for receiving the component mounting plate **462**. In a preferred example, the plate recess **466** has a depth equal to a thickness of the component mounting plate **462** such that when the component mounting plate **462** is mounted within the plate recess **466**, a front side of the component mounting plate **462** is flush with a primary surface **468** of the main wall **450**.
(53) Referring to FIG. **21**, each of the plate retention tabs **460** includes a ramp surface **470** that angles away from its corresponding sidewall portion **454**, **456** into the interior of the housing **402** as the ramp surface **470** extends in a direction toward the main wall **450**. The ramp surfaces **470** terminate at shoulder portions **472** that oppose the main wall **450**. When the mounting plate **462** is snapped into the plate mounting location **464**, the shoulder portions **472** oppose the front side of the mounting plate **462** thereby retaining the mounting plate **462** within the plate recess **466**.
(54) Referring to FIG. **17**, a keying interface **474** is defined between the component mounting plate **462** and the main wall **450** to ensure that the component mounting plate **462** is mounted at a single pre-determined orientation within the plate recess **466**. The keying interface **474** preferably includes a key **476** provided on one of the main wall **450** and the mounting plate **462** that fits within a key receptacle **478** provided on the other of the main wall **450** and the mounting plate **462**. In the depicted example, the key **476** is integrated with the main wall **450** and projects into the plate recess **466**, and the key receptacle **478** is defined at an edge of the mounting plate **462**. The mounting plate **462** also includes side notches **480** adapted for receiving a tool such as a screwdriver for facilitating removing the mounting plate **462** from the plate recess **466**.
(55) As shown at FIG. **14**, the mounting plate **462** includes a plurality of module mounting locations **482** for mounting modules such as component holding modules **484** to the mounting plate **462**. In certain examples, the modules **484** are secured at the module mounting locations **482** by

connection interfaces that include snap-fit features. FIG. **24** depicts example connection interfaces **483** at the module mounting locations **482**. The connection interfaces **483** are adapted to interlock with connection interfaces **486** (see FIG. **26**) provided at back sides of the modules **484**. In certain examples, the connection interfaces can include mating tongue and groove configurations that are slid together and latched in a locked position by a flexible latch such as a cantilever **488**. Further details about the connection interfaces are disclosed by PCT International Publication No. WO2019/160995, which is hereby incorporated by reference in its entirety. It will be appreciated that the component holding modules **484** can include slots **490** or other structures adapted for holding optical components such as passive optical power splitters, wavelength division multiplexers or optical splice reinforcing sleeves.

(56) Referring back to FIG. **14**, the enclosure **400** further includes an anchor plate mounting location **492** on the main wall **450** adjacent to the first end **404** of the housing **402**. A cable anchor mounting plate **494** is adapted to mount to the main wall **450** at the anchor plate mounting location **494**. The cable anchor mounting plate **494** includes a plurality of anchor modules mounting locations **496** for securing cable anchor modules **498** to the cable anchor mounting plate **494**. The cable anchor modules **498** can include clamps, straps or other structures for attaching the cable anchor modules **498** to the cables **434**. The cable anchor modules **498** can include connection interfaces **500** adapted to interconnect with corresponding connection interfaces **502** provided at each of the anchor mounting locations **496** of the cable anchor mounting plate **494**. In the depicted example, the connection interfaces **502** can include a plurality of sets of slots **504**, and the connection interfaces **500** can include a plurality of hooks **506** configured to engage the slots **504**. The connection interfaces **502** can also include flexible latches **508** for locking the cable anchor modules **498** in retained positions once the hooks **506** have been interlocked with the slots **504**. The connection interface **500** is best shown at FIG. **27**, and the connection interface **502** is best shown at FIG. **25**.

(57) As best shown at FIGS. **22** and **23**, the main wall **450** defines a clearance recess **510** corresponding to the anchor plate mounting location **492**. The clearance recess **510** is recessed relative to the primary surface **468** of the wall **450**. The anchor module mounting plate **494** mounts over the clearance recess **510** and the recess **510** provides clearance for receiving the hooks **506** which project through the slots **504** when engaged with the cable anchor mounting plate **494**. The plate mounting location **492** further includes mounting rails **512** unitary with the main wall **450** and positioned on opposite sides of the clearance recess **510**. The mounting rails **512** define ledges **514** for supporting opposite edges of the mounting plate **494** and for positioning the mounting plate **494** at a predetermined height over the recess **510**. Plate retention tabs **516** are unitary with the mounting rails **512** and function to retain the mounting plate **494** on the ledges **514**.

(58) As shown at FIG. **28**, the bottom side of the mounting plate **494** includes stand-offs **518** for spacing a main body of the mounting plate **494** from the wall **450**. The stand-offs **518** are depicted as elongate projection (e.g., rails) that extend across the width of the mounting plate **494** and project downwardly from the bottom side of the mounting plate **494**. It will be appreciated that the stand-offs **518** are adapted to contact the primary surface **468** of the wall **450**.

(59) Still referring to FIG. **28**, the mounting plate **494** further includes ramp surfaces **520** at the bottom side of the mounting plate **494**. Ramp surfaces **520** are located at opposite side edges of the mounting plate **494**. To install the mounting plate **494** at the mounting location **492**, the mounting plate **494** is pressed downwardly between the mounting rails **512**. As the mounting plate **494** is pressed downwardly between the mounting rails **512**, the ramps **520** engage the plate retention tabs **516** causing the retention tabs **516** for flex outwardly to allow the plate **494** to move past the retention tabs and into engagement with the ledges **514**. Once the plate **494** moves past the retention tabs **516**, the tabs **516** elastically move back (e.g., snap back) to a retaining position in which the tabs **516** overlap a top side of the plate **494**. The plate **494** can also define a ramp surface **522** that can be engaged by a tool such as a screwdriver to facilitate removing the plate **494** from

the plate mounting location **492**.
(60) In certain examples, the mounting location **464** can accommodate module mounting plates of different sizes. Such plates may be larger than the plate recess **466** and can include tabs configured to engage the plate retention tabs **460** to provide for retention of the larger plates.
(61) Referring to FIG. **23**, a fiber management tab **524** is positioned between the cable anchor mounting location **496** and the component plate mounting location **464**. In certain examples, optical fibers may be stored in a fiber loop within the interior of the housing **502** between the fiber management tab **524** and the second end **406** of the housing **402**. The fiber management tab **524** prevents the optical fibers from overlapping with the cable anchoring region.
(62) Referring to FIG. **15**, the enclosure **400** can also include panels **530** that mount to the front of the second housing part **410** to provide labeling of the enclosure.
Aspects of the Disclosure
(63) Aspect 1. A telecommunications enclosure comprising: a housing including a base and a cover; and fiber management tabs that detachably mount to the base. Aspect 2. The telecommunications enclosure of aspect 1, wherein the tabs detachably mount to a perimeter wall of the base. Aspect 3. The telecommunications enclosure of any of aspects 1 or 2, wherein the fiber management tabs are L-shaped. Aspect 4. The telecommunications enclosure of any of aspects 1-3, where the fiber management tabs are L-shaped with first and second perpendicular legs having different lengths. Aspect 5. The telecommunications enclosure of any of aspects 1-4, wherein the fiber management tabs slidably mount in slots defined by the base. Aspect 6. The telecommunications enclosure of any of aspects 1-5, wherein the base defines a fiber routing path, and wherein the fiber management tabs include fiber retaining portions that overhang the fiber routing path. Aspect 7. The telecommunications enclosure of any of aspects 1-6, wherein the base defines a fiber routing path, wherein the fiber management tabs include fiber retaining portions, and wherein the fiber management tabs are mountable in first arrangements in which the fiber retaining portions overhang the fiber routing path and second arrangements in which the fiber retaining portions do not overhang the fiber routing path to facilitate routing optical fibers along the fiber routing path. Aspect 8. The telecommunications enclosure of any of aspects 1-5, wherein the base includes a perimeter channel in which a perimeter seal is positioned, wherein the perimeter channel is defined in part by an inner sidewall, and wherein the fiber management tabs mount to the inner sidewall. Aspect 9. The telecommunications enclosure aspect 8, wherein the fiber management tabs mount within slots defined within the inner sidewall. Aspect 10. The telecommunications enclosure of aspect 8 or 9, wherein the base defines a main compartment inside the inner sidewall, wherein the fiber management tabs include fiber retention portions, wherein the fiber management tabs are mountable to the inner sidewall in first arrangements in which the fiber retention portions overhang the perimeter channel, and wherein the fiber management tabs are mountable to the inner sidewall in second arrangements in which the fiber retention portions overhang the main compartment. Aspect 11. The telecommunications enclosure of any of aspects 1-10, wherein the base defines a main base surface to which components can be mounted, the main base surface corresponding to a main interior of the base, and wherein the fiber management tabs include fiber retention portions that oppose the main base surface when mounted to the base in at least one arrangement. Aspect 12. The telecommunications enclosure of any of aspects 1-11, wherein the fiber management tabs are mountable to the base in another arrangement in which the fiber retention portions project away from the main interior of the base and/or do not oppose the main base surface. Aspect 13. The telecommunications enclosure of aspect 12, further comprising a splice tray and/or a splitter tray, and/or a wavelength division multiplexer tray, and/or a passive optical splitter and/or a wavelength division multiplexer, and/or a cable anchor is/are positioned within the housing. Aspect 14. The telecommunications enclosure of any of aspects 1-13, wherein a fiber routing path extends about at least a portion of a perimeter of the base. Aspect 15. The telecommunications enclosure of any of aspects 1-14, wherein the enclosure includes a cable sealing arrangement for sealing about cables

that enter the enclosure at one end of the closure. Aspect 16. The telecommunications enclosure of any of aspects 1-15, wherein the enclosure includes cable sealing arrangements for sealing about cables that enter the enclosure at opposite ends of the closure. Aspect 17. A telecommunications enclosure comprising: a housing including a base and a cover; and the base defining an inner compartment defined in part by a floor of the base, the floor of the base including a plurality of bosses that project upwardly from a main portion of the floor. Aspect 18. The telecommunications enclosure of aspect 17, wherein a component such as a mounting plate, or a mounting tray, or a splice tray, or a splitter tray, or a wdm tray can be fastened to and supported on the bosses. Aspect 19. The telecommunications enclosure of aspect 17, wherein the bosses are tall and wide enough to accommodate fasteners such as screws therein. Aspect 20. The telecommunications enclosure of aspects 18 or 19, wherein the bosses are initially unused and provide means for updating or retrofitting the enclosure with different tray or component mounting configurations.

(64) The various examples described above are provided by way of illustration only and should not be construed to limit the scope of the present disclosure. Those skilled in the art will readily recognize various modifications and changes that may be made without following the example examples and applications illustrated and described herein, and without departing from the true spirit and scope of the present disclosure.

Claims

1. An enclosure comprising: a housing including first and second housing parts that cooperate to enclose an interior of the housing, the first and second housing parts being moveable relative to one another between an open position and a closed position; a perimeter seal defined between the first and second housing parts when the first and second housing parts are in the closed position; the first housing part including a main wall and a perimeter wall that projects from the main wall, wherein the perimeter wall includes first and second sidewall portions respectively at first and second sides of the housing, wherein the first and second sidewall portions are separated by a width of the housing, wherein plate retention tabs are unitarily formed with the first and second sidewall portions, wherein the enclosure includes a component mounting plate sized to extend across the width of the housing, wherein the component mounting plate is retained at the main wall at a component plate mounting location within the interior of the housing; and wherein the main wall defines a plate recess for receiving the component mounting plate, wherein the plate retention tabs include ramp surfaces that angle from the first and second sidewall portions into the interior of the housing as the ramp surfaces extend in a direction toward the main wall, wherein the ramp surfaces terminate at shoulder portions that oppose the main wall, wherein the shoulder portions retain the component mounting plate within the plate recess.

2. The enclosure of claim 1, wherein the component mounting plate includes a plurality of module mounting locations for mounting component holding modules to the component mounting plate.

3. The enclosure of claim 2, wherein the component holding modules are secured at the module mounting locations by connection interfaces that include snap-fit features.

4. The enclosure of claim 2, wherein the module mounting locations are through-holes through the component mounting plate.

5. The enclosure of claim 4, wherein the module mounting locations include a connection interface which are configured to interlock with a connection interface of the component holding modules.

6. The enclosure of claim 5, wherein the connection interfaces include mating tongue and groove configurations that are slid together and latched in a locked position by a flexible latch.

7. The enclosure of claim 6, wherein the flexible latch is a cantilever.

8. The enclosure of claim 2, wherein the component holding modules are adapted for holding components selected from a group including passive optical power splitters, wavelength division multiplexers, or splice reinforcing sleeves.

9. The enclosure of claim 1, wherein a keying interface is defined between the component mounting plate and the main wall to ensure the component mounting plate is mounted at a single pre-determined orientation within the plate recess.
10. The enclosure of claim 9, wherein the keying interface includes a key, provided on one of the main wall and the component mounting plate, that fits within a key receptacle provided on the other of the main wall and the component mounting plate.
11. The enclosure of claim 10, wherein the key is integrated with the main wall and projects into the plate recess, and the key receptacle is defined at an edge of the component mounting plate.
12. The enclosure of claim 1, wherein the component mounting plate includes side notches adapted for receiving a tool for facilitating removing the component mounting plate from the plate recess.
13. The enclosure of claim 12, wherein the tool comprises a screwdriver.
14. An enclosure comprising: a housing including first and second housing parts that cooperate to enclose an interior of the housing, the first and second housing parts being moveable relative to one another between an open position and a closed position; a perimeter seal defined between the first and second housing parts when the first and second housing parts in the closed position; the first housing part including a main wall and a perimeter wall that projects from the main wall, wherein the perimeter wall includes first and second sidewall portions respectively at first and second sides of the housing, wherein the first and second sidewall portions are separated by a width of the housing, wherein plate retention tabs are unitarily formed with the first and second sidewall portions, wherein the enclosure includes a component mounting plate sized to extend across the width of the housing, wherein the component mounting plate is retained at the main wall at a component plate mounting location within the interior of the housing, and wherein the main wall defines a plate recess for receiving the component mounting plate, wherein a keying interface is defined between the component mounting plate and the main wall to ensure the component mounting plate is mounted at a single pre-determined orientation within the plate recess.
15. The enclosure of claim 14, wherein the component mounting plate includes a plurality of module mounting locations for mounting component holding modules to the component mounting plate.
16. The enclosure of claim 15, wherein the component holding modules are secured at the module mounting locations by connection interfaces.
17. The enclosure of claim 15, wherein the component holding modules are adapted for holding components selected from a group including passive optical power splitters, wavelength division multiplexers, or splice reinforcing sleeves.
18. The enclosure of claim 14, wherein the keying interface includes a key, provided on one of the main wall and the component mounting plate, that fits within a key receptacle provided on the other of the main wall and the component mounting plate.
19. The enclosure of claim 18, wherein the key is integrated with the main wall and projects into the plate recess, and the key receptacle is defined at an edge of the component mounting plate.
20. The enclosure of claim 14, wherein the component mounting plate includes side notches adapted for receiving a tool for facilitating removing the component mounting plate from the plate recess.