

Issue 39 • Quarter 2, 2023

Standards Quarterly Update:

What you need to know now for the future of your network

Welcome to the 39th edition of the *Standards Advisor*. This report is issued quarterly and provides updates on the standards relevant to the structured cabling industry, and the impact they have on your network design, planning and operations.

This summary represents standards meetings held during the second quarter of 2023 and reports on activities from all aspects of the cabling industry. These activities range from the applications standards (IEEE 802.3 and T11 Fiber Channel) to the cabling standards (ANSI/TIA, ISO/IEC, IEC, ITU-T and CENELEC). It also covers new developments in the world of multi-source agreements (MSAs).

If you have any questions regarding CommScope's involvement in Standards committees or the content below, please email sunny.xu@commscope.com.

74th ISO/IEC JTC1/SC25 WG3: No meetings during Q2, 2023

The next scheduled ISO/IEC JTC1/SC25 WG3 meeting will be held October 9-12, 2023, with the plenary October 13, in Berlin, Germany, face-to-face only with no remote attendance option.

TIA TR-42: June 5-9, 2023, Omaha, NE, USA (Hybrid Meeting)

Copper Activities

- A proposal to change the DC resistance requirements of single-pair cabling was not accepted. It was accepted to combine three documents, ANSI/TIA-568.0, ANSI/TIA-568.1 and ANSI/TIA-862, into one document. TR42.1 agreed to publish a TSB with tables of applications supported by copper and fiber cabling classes. Progress continues on the 1-pr industrial and heating documents, and the revisions of the data center and physical security standards.

Fiber Activities

- Many documents are due for re-affirmation (some over 15 years old). No action taken during the week of the TIA TR42 meetings, follow-up activities will be led by the fiber committee leadership. Ongoing conversation around the Tier 1 vs. Tier 2 and LSPM vs. OTDR testing requirements continues. QSFP-DD and OSFP MSAs were discussed offline during the week of the meetings, specifically for Dual LC pitch and overall width requirements proposal. Additional interim meetings are planned to work towards a unified proposal for the MSA groups.

- The following were approved for ballot, re-ballot, or default ballot:
 - ANSI/TIA-942-C, Data Centers
 - ANSI/TIA-570-E, Residential cabling
 - ANSI/TIA-569-E, Pathways and Spaces
 - ANSI/TIA-607-D, Grounding and Bonding
 - ANSI/TIA-568.5-1, addendum to ANSI/TIA-568.5 Single Twisted-pair Cabling
 - ANSI/TIA-4920000-C, adoption of IEC 60793-2 Optical fibres – Production specifications
- The following were published or approved for publication or reaffirmation:
 - ANSI/TIA-621.1, adoption of IEC 61755-1:2022 SM connector optical interfaces – General and guidance
 - ANSI/TIA-622.1, adoption of IEC 61755-2-1:2022 SM connector optical interfaces – Non-angled physical contact fibre
 - ANSI/TIA-622.2, adoption of IEC 61755-2-2:2022 SM connector optical interfaces – Angled physical contact fibre
 - ANSI/TIA-1179-A, Healthcare
 - ANSI/TIA-4920000-C, adopt with modification of IEC 60793-2:2019 Optical Fibres - Part 2: Product specifications - General

1. TR-42.1 Commercial Building Cabling

- Ballot ANSI/TIA-5017-A Security: Comments were resolved at an interim meeting and a ballot was circulated, which is still open.
- Resolved comments and approved publication of ANSI/TIA-1179-B Healthcare.
- Resolved comments and approved a default ballot circulation on ANSI/TIA-942-C Data Centers.
- Reviewed draft and authorized recirculation ballot for ANSI/TIA-570-E, Residential cabling, update to ANSI/TIA-570-D
- Authorized new project for TSB for application tables
- Agreed to merge ANSI/TIA-568.0, ANSI/TIA-568.1, and ANSI/TIA-862, initial draft to be reviewable in September.

2. TR-42.3 Pathways and Spaces

- Reviewed draft of ANSI/TIA-569-E Pathways and Spaces, further review will take place in September.
- Resolved comments on industry ballot, and authorized default ballot, for ANSI/TIA-607 Grounding and Bonding.

3. TR-42.5 Definitions

- Modified definition for catcher.
- Updated some acronyms.

4. TR-42.7 Copper Cabling Systems

- Resolved most comments for TIA TSB-184-A-2, power delivery over single-pair, holding document pending progress on ANSI/TIA-568.5-1.
- Resolved comments and authorized re-circulation ballot for ANSI/TIA-568-5-1, addendum to ANSI/TIA-568.5.
- Resolved comments and authorized re-circulation ballot for ANSI/TIA-568.2-E, revision of ANSI/TIA-568.2-D
- Approved project for revision of TSB-190, shared sheath

5. TR-42.9 Industrial Telecommunications Infrastructure

- Resolved comments for ANSI/TIA-568.7 Industrial single-pair in interim meeting, re-circulation ballot is still open.
- Resolved comments on ANSI/TIA-1005-B, document is being held awaiting progress on ANSI/TIA-568.7.

6. TR-42.11 Optical Fiber Systems

- Contributions on the topic of OTDR vs. LSPM Testing
 - Recommendation for a ballot at the next meeting so that formal comments can be collected and documented.
- Contribution on the topic of Polarity and Symbols
 - Healthy debate regarding best symbology to represent different component polarity types. No formal conclusion reached. Ad Hoc group to be created to continue to review.
- PAR approved for addendum to ANSI/TIA 568.3-E to be (-1).
 - Call for contributions to be included/discussed in addendum.

7. TR-42.12 Optical Fibers and Cables

- ~30 FOTP documents have passed the stability date, will need to be reaffirmed or adopt IEC documents.
 - Collaboration with ICEA to determine which documents need to be revised in order to retain or reobtain ANSI accreditation.

- 7 FOTP's requiring immediate attention to be revised for ANSI accreditation.
 - FOTP-25: Impact Testing of Optical Fiber Cables
 - FOTP-41: Compressive Loading Resistance of Optical Fiber Cables
 - FOTP-98: Fiber Optic Cable External Freezing Test
 - FOTP-84: Jacket Self-Adhesion (Blocking) Test for Optical Fiber Cable
 - FOTP-89: Optical Fiber Cable Jacket Elongation and Tensile Strength
 - FOTP-91: Fiber Optic Cable Twist-Bend Test
 - FOTP-38: Measurement of Fiber Strain in Cables Under Tensile Load
- FOTP's to be harmonized with respective IEC procedures where applicable.

8. TR-42.13 Passive Optical Devices and Metrology

- Many documents due for re-affirmation (some are more than 15 years old). A task group was formed to review further and provide recommended actions to the subcommittee.
- "Modeled Connector Loss in Bend Optimized Multimode Fiber Links"
 - Study impact of fiber parameters on connector insertion loss
 - Exploration of multi-connector links with this fiber
 - Conclusion: OFS Monte Carlo simulation shows lower loss values than existing IEC Hanson Conte Model
 - Lower Loss = more connections allowed in the system
 - Conclusion: existing Hanson Conte Model shows worst case, so is a good starting point to build standard around
- "Development of Best Practices and Guidelines for the Use of Expanded Beam Connectors in Data Center Applications – iNEMI Presentation"
 - Conclusion: Expanded Beam connectors are less sensitive to dust and easier to clean than corresponding direct contact connectors
 - Total cost of install/ownership of expanded beam connector in data center needs to be further evaluated
 - Optical performance and cost of the expanded beam connector should continue to improv, making it more and more viable as an option for data center application
- Long list of IEC adoption projects continue to progress, many were approved during meetings this week
- QSFP-DD and OSFP MSA dual duplex LC and MPO pitch and total width continued to be discussed offline during the week of the meetings
 - Proposals being put together for the MSA groups

The next TIA TR-42 meeting will be held September 25-29 2023, in Tulsa, Oklahoma.

CLC TC86BXA: Fibre optic interconnect, passive and connectorised components**1. WG1 - Connector sets and interconnect components to be used in optical fibre communication systems**

- The following revised documents were reviewed and will be harmonized with the latest IEC 61753-021 performance documents and IEC 61755-3-1 and -2 optical interface documents:
 - EN 50377-2-1: “Connector sets and interconnect components to be used in optical fibre communication systems - Product specifications - Part 2-1: Type FC-PC terminated on IEC 60793-2 category B1 singlemode fibre
 - EN 50377-2-2: “Connector sets and interconnect components to be used in optical fibre communication systems - Product specifications - Part 2-2: FC/APC 8 terminated on IEC 60793-2-50 category B1.1 and B1.3 singlemode fibre, with full zirconia ferrule, category C”
- The above mentioned revised documents will be used as maintenance template for all other singlemode connector specifications in the EN 50377 series that require a revision as there are:
 - EN 50377-6-1: “SC-RJ terminated on IEC 60793-2 category A1a and A1b multimode fibre”
 - EN 50377-6-2: “SC-RJ single mode terminated on IEC 60793-2-50 category B1.1 and B1.3 singlemode fibre, category U”
 - EN 50377-11-1: “MF terminated on IEC 60793-2-50 category B1.1 and B1.3 singlemode fibre for category C”
- EN 50377-17-1: “FPFT (factory polished field terminated) simplex connector factory terminated with EN 60793-2-50 category B1.3 fibre and field mounted onto IEC 60793-2-50 category B1.3 or B6a_1 or B6a_2 singlemode fibre, category C”

2. WG2 - Fibre management systems and protective housings to be used in optical fibre communication systems

- The following new work item was rejected by CCMC as there was a Vilamoura procedure started by France for a similar product. TC86BXA has to wait till document is offered by the French National Committee to WG2:
 - EN 50411-3-10: “Fibre management systems and protective housings to be used in optical fibre communication systems - Product specifications – Part 3-10: Free-breathing terminals, category A, for FTTH optical drop cable networks.”
- The following revised document is prepared for a 3-month enquiry in the National Committees. It contains the latest changes from the IEC 61753-111-08 standards:
 - EN 50411-2-10: “Fibre management systems and protective housings to be used in optical fibre communication systems - Product specifications - Part 2-10: Sealed optical fibre splice closures for category G”.
- The following document will be submitted to the national committees for final voting (if the secretary does his work this time as this was already agreed in the last 2 meetings):
 - EN 50411-3-1: “Fibre management system, splice wall box, for category C & A”.

The next scheduled CLC TC86BXA meeting will be held December 2023, Brussels, Belgium.

IEEE 802.3 Ethernet: Interim meeting—May 15-18, 2023, San Antonio, TX (Hybrid Meeting)

Interim Task Force Meetings from April 1- May 31, 2023 (Virtual Meeting)

IEEE 802.3 WG and Task Forces resumed face-to-face meetings (w/ remote access) in May 2023. Remote access and interim task force telephonic meetings are expected to continue.

Optical Fiber Standards

- IEEE P802.3cw 400 Gb/s Operation over DWDM Systems Task Force**
 - This project was split from P802.3ct for the 400G objective.
 - The main objective is:
 - 400 Gb/s operation on a single wavelength capable of at least 80 km over a DWDM system (400GBASE-ZR).
 - DP-16QAM coherent modulation format will be used for 400GBASE-ZR.
 - Draft 2.1 was reviewed by the WG.
 - Updated timeline targets publication in late 2024.
 - If approval to proceed to SA Ballot at the Nov 2023 Plenary is not requested, then actions will be taken to withdraw the 802.3cw PAR.
- IEEE P802.3cz Multi-Gigabit Optical Automotive Ethernet Task Force**
 - This project defined the performance characteristics of an automotive link segment and an optical PHY to support 2.5, 5, 10, 25, and 50 Gb/s over 40 m of automotive cabling.

- The work of the IEEE P802.3cz Multi-Gigabit Optical Automotive Ethernet Task Force completed with the approval of IEEE Std 802.3cz-2023 by the IEEE-SA Standards Boards on 30 March 2023.

3. IEEE P802.3df 400 Gb/s and 800 Gb/s Ethernet Task Force

- This Task Force was split into P802.3df and P802.3dj.
- The objectives for P802.3df include
 - 400G over 4 pairs of SMF up to 2 km
 - 800G over 8 pairs of MMF up to 50 m
 - 800G over 8 pairs of MMF up to 100 m
 - 800G over 8 pairs of SMF up to 500 m
 - 800G over 8 pairs of SMF up to 2 km
- Draft 2.1 was reviewed by the WG.

4. IEEE P802.3dj 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet Task Force

- This Task Force was split from P802.3df.
- The objectives for P802.3dj will include
 - 200G over 1 pair of SMF up to 500 m
 - 200G over 1 pair of SMF up to 2 km
 - 400G over 2 pairs of SMF up to 500 m
 - 400G over 2 pairs of SMF up to 2 km
 - 800G over 4 pairs of SMF up to 500 m

- 800G over 4 pairs of SMF up to 2 km
- 800G over 1 pair of SMF with 4 wavelengths over 2 km
- 800G over 1 pair of SMF up to 10 km
- 800G over 1 pair of SMF up to 10 km with a single wavelength (coherent)
- 800G over 1 pair of SMF up to 10 km with four wavelengths (direct detection)
- 800G over 1 pair of SMF up to 40 km
- 1.6T over 8 pairs of SMF up to 500 m
- 1.6T over 8 pairs of SMF up to 2 km
- Baseline proposals are being considered.

5. IEEE Greater than 50 Gb/s Bidirectional Optical Access Task Force

- This Study Group will investigate 100G and 400G over 10, 20, and 40 km using bidirectional transmission.
- The objectives for P802.3dk will include
 - 100G and 200G bidirectional over one SMF up to 10 km, 20 km, and 40 km.
- Baseline proposals are being considered.

The next scheduled meeting of IEEE 802.3 will be a hybrid IEEE 802.3 interim meeting September 11-14, 2023 in Campinas, Brazil. IEEE 802.3 Task Force electronic Interims are expected to continue telephonically in the meantime, and through November 2023. Information on plenary and WG interims can be found at <https://www.ieee802.org/3/interims/index.html> and information on electronic access to 802.3 interims and task force meetings is at <http://www.ieee802.org/3/calendar.html>.

INCITS Fiber Channel T11.2: June 13-15, 2023, Palm Beach Gardens, FL, USA (Hybrid Meeting)

1. FC-PI-8 (128GFC)

- Public Review closed, currently in post editing stage. Target publication in August 2023.

2. FC-PI-9 (256GFC)

- Document structure will remain the same as FC-PI-8. Clause owners were assigned. Target RFC ballot in December 2024.
- Sixteen contributions (mostly from IEEE 802.3) toward electrical development – Chip-to-chip (C2C) and Chip-to-Module (C2M) study on channel loss, level of equalization needed, and various FEC locations with associated allowable BER. A proposal for in-band link training was shared and will be presented to IEEE to gain more traction.

- Currently, there is one MM variant and two SM variants (2km & 10km) for 256GFC. There could be an additional MM BiDi variant pending IEEE802.3 progress and 200G VCSEL development.

The next scheduled INCITS T11 meeting will be hybrid on August 1-4, 2023, Albuquerque, NM, USA.

IEC SC48B: March 13-15, 2023, Paris, France (Hybrid Meeting)

- IEC 63171 ED2 for balanced single-pair data transmission with current-carrying capacity connectors general requirements and tests is under preparation at the CD stage. The CC document is under review by WG committee.
- IEC 63171-1 ED2 detail specification for 2-way, single-pair requirements for Type 1 (Copper LC style) connectors document is under preparation and the CDV is approved and will be registered as a FDIS by 2023-09-22.
- IEC 63171-7 ED1 detail specification requirements Type 7 single-pair connector FDIS is approved.
- IEC 60352-6 ED2 for Solderless connections – Part 6: Insulation piercing connections – General requirements, test methods and practical guidance FDIS is approved. A type of this insulation piercing (IP) connection commonly used within RJ45 plugs.
- IEC 60352-2 ED3 for Solderless connections – Part 2: Crimped connections; general requirements, test methods and practical guidance CDV is approved.
- Committee work is ongoing for clarifying contact resistance

measuring points and vibration fixturing in several IEC documents for typical connector measurement to help ensure clear measuring points and improvement of figures per standard documents.

- Committee work is ongoing for clarification of insertion speed requirements values in testing with respect to endurance (wear down effect) per base test documents IEC 60512-9-1/3 (Test 9a: Mechanical operation and Test 9c: Mechanical operation (engaging/separation) with electrical load) and respect to plug insertion and withdraw forces per base test documents IEC 60512-13-1/2 (Test 13a: Engaging and separating forces and test 13b: Insertion and withdrawal forces).

The next scheduled IEC SC48B meeting will be virtual on October 23 through 27, 2023.

1. IEC 61156-1 Ed 4

- The fourth edition of IEC 61156-1 titled "Multicore and symmetrical pair/quad cables for digital communications - Part 1: Generic specification" has been published.

2. IEC 61156-1-2 Ed 2

- Editorial comments were reviewed leading to the draft technical specification (DTS) being registered as a technical specification titled "IEC TS 61156-1-2 Ed 1.0: Multicore and Symmetrical Pair/Quad Cables for Digital Communications - Part 1-2: Electrical transmission characteristics and test methods of symmetrical pair/quad cables".

3. IEC/TR 61156-1-3 / A1 Ed2

- Comments related to "Amendment 1- Multicore and symmetrical pair/quad cables for digital communications - Part 1-3: Electrical transmission parameters for modelling cable assemblies using symmetrical pair/quad cables" were discussed and a further CD is planned for the end of September 2023.

4. IEC 61156-7 and 61156-8

- The second editions of IEC 61156-7 and 61156-8 covering the performance of horizontal and work area cables with transmission characteristics up to 1200 MHz have been published.

5. IEC 61156-11 Ed 2

- "Multicore and symmetrical pair/quad cables for digital communications - Part 11: Symmetrical single pair cables with transmission characteristics up to 1,25 GHz - Horizontal floor wiring - Sectional specification" has reached FDIS status and

was approved. One important editorial comment received was to withdraw the change from T1-C to T1-D and from T1-B to T1-C. The conclusion of this effort triggers the start of work on the standard covering work area cables of the same performance type (IEC 61156-12 Ed2) will begin.

6. IEC 61156-13 Ed1

- "Multicore and symmetrical pair/quad cables for digital communications - Part 13: Symmetrical single pair cables with transmission characteristics up to 20 MHz - Horizontal floor wiring – Sectional specification" reached FDIS status. As this effort draws to a close, the start of work on the standard covering work area cables of the same performance type (IEC 61156-14 Ed1) will begin.

7. IEC 61156-15 Ed1

- A CD for the document titled "Multicore and symmetrical pair/quad cables for digital communications - Part 15: Symmetrical pair/quad cables for horizontal floor wiring with transmission characteristics up to 1 000 MHz and resistance to fire performance characteristics - Sectional specification" was circulated and comments discussed. A CDV will be prepared and circulated. The possibility of work on an IEC 61156-16 document that covers similar characteristics but for work area cabling is under discussion.

The next scheduled IEC TC46 SC46C/WG7 meeting will be held September 26, 2023, Virtual Meeting.

1. IEC SC86A/WG1: Optical Fibres

Documents in revision

- IEC TR 62284 Ed2: Effective area measurements of Single Mode Fibres – Guidance
- IEC TR 63309 Ed1: Active fibres – Characteristics and measurement methods – Guidance
- IEC 60794-1-302 Ed1: Optical fibre cables - Part 1-302: Generic specification – Basic optical cable test procedures – Cable element test methods – Ribbon dimensions and geometry – Visual method, Method G2

2. IEC SC86A/WG3: Fibres and Cables

IEC TR 63431 Ed 1

- Technical reference document for Microduct Technology. This document was created to provide guidance for design, testing, implementation, and repairs, and also provides a new benchmark for standard sizing of microducts as well as color standards. Comments around this document were of editorial and technical nature. Specific technical comments included cable weight should be included for aerial microduct testing, lack of minimum bend radius requirements, and lack of specifics regarding a new blowing test, "nx45m".

IEC 60794-1 series restructuring

- Progress continues on the document restructuring and renumbering project. All individual test methods within IEC 60794-1-21, -1-22, -1-23 and -1-24 are being split into standalone documents. IEC 60794-1-21 to become IEC 60794-1-1xx series; IEC 60794-1-22 to become IEC 60794-1-2xx series; IEC 60794-1-23 to become IEC 60794-1-3xx series; and IEC 60794-1-24 to become IEC 60794-1-4xx series.

Documents in revision

- IEC 60794-1-110 Ed1: Basic optical cable test procedure – Mechanical test methods - Kink, Method E10 (CD)
- IEC 60794-1-214 Ed1: Basic optical cable test procedure – Environmental test methods – UV resistance test, Method F14 (CD)
- IEC 60794-1-216 Ed1: Basic optical cable test procedure – Environmental test methods – Compound flow (drip), Method F16 (CD)

Published documents

- IEC 60794-1-1 Ed5: Optical fibre cables – Part 1-1: Generic specification - General
- IEC 60794-2-10 Ed3: Optical fibre cables – Part 2-10: Indoor optical fibre cables – Family specification for simplex and duplex cables

The next scheduled IEC SC86A meeting will be held November 15-20, 2023 in Milan, Italy.

The next scheduled IEC SC86B meeting will be held
November 15 - 24, 2023, Milano, Italy.

IEC SC86C/WG1: April 17 & 19, 2023 (Virtual Meeting)

1. IEC 61280-4-1 Multimode fibre optic cable plant attenuation measurement

- A corrigendum was published. The launch cable length has been modified from "2m to 5m" to "2m to 10m".

2. IEC 61280-4-2: Single-mode fibre optic cable plant attenuation measurement

- WG completed comment resolution of previous CD ballot and agreed for document to move to CDV stage.
- Major changes since last draft:
 - Uncertainty values for 1-cord, 2-cord and 3-cord reference methods were modified for various distances ranging from 0.5km to 120km.
 - Uncertainty values for OTDR test method were modified for various distances.
 - Further clarification on bidirectional OTDR testing being recommended and not required.
 - The test limit adjustments were corrected for 2-cord and 3-cord test methods.

3. IEC TR 61282-14 Determination of the uncertainties of the attenuation measurement

- Uncertainty calculations related to PON attenuation measurement were added.
- CD will be circulated for review.

The next scheduled IEC SC86C/WG1 meeting will be held on
November 18 & 20, 2023, Milano, Italy

ITU-T SG15 WP2: April 17-28, 2023, Geneva, Switzerland

Technologies and Infrastructures for Transport, Access and Home

1. SG15Q5 Characteristics and test methods of optical fibres and cables, and installation guidance

- Revision of ITU-T G.657 recommendation (bend insensitive singlemode fibers).
 - Purpose of the revision is to clarify the different use of the G.657.A2 and the B2 fibers. B2 fibers are hardly used and some delegates proposed to delete the B2 (and only keep B3), but China insisted to keep them in the G.657 document. The recommendation from all delegates was not to change the optical macrobend performance limits.
- Request for investigation of fiber characteristics on G.652.D fiber.
 - Discussion in Q5 on the zero dispersion wavelength for chromatic dispersion in ITU-T G.652. A contribution from China in Q2 asked to investigate if the wavelength range of the zero chromatic dispersion could be made narrower. This would help the industry to obtain higher transmission speeds in G.652 fibers (link lengths about 10 km, wavelength of transmission in C-band). Q5 does not want to change it without getting more information from the fiber suppliers first. Today the whole zero-chromatic wavelength range is used by the different suppliers (but each supplier has a different distribution within this wavelength range). The transmission technology that wants to use this new proposal is anyhow not considered mature. Request was made for more contributions before deciding to make a revision of G.652.D. A liaison statement to IEEE 802.3 was prepared.

2. SG15Q7: Connectivity, operation and maintenance of optical physical infrastructures

- Draft of new recommendation L.pcc (pre-connectorized cabling products)
 - A first draft was prepared on pre-connectorized cabling products. In the previous meeting the impression was given that only connectivity solutions for drop cables were going to be described with focus on hardened connectors, but it became a very general document that reviews all possibilities of pre-connectorized products (with focus on the currently in-force standards for these products).
- Multiple path interference issues seen when upgrading networks from 10 Gb/s to 50 Gb/s
 - Via e-mail from the Q2 reflector a contribution from China Mobile was distributed. They blamed the connectors for the increased MPI issues by stating that all connectors show degradation over time in outside plant. This statement is not correct at all. Pictures showed FC/PC connections with severe corrosion of the metal parts and dirty endfaces which clearly did not make physical contact between the fibers. These were initially wrong and bad installations. It is nice example why we always recommend the use of APC connectors in outside plant optical networks to keep them future proof.

The next scheduled ITU-T SG15 meeting will be held on
November 20 till December 1, 2023, Geneva, Switzerland.

Acronyms:

- WG: Working Group
- SC: Subcommittee
- CC: Committee Comments
- CD: Committee Draft (1CD = first CD, 2CD = second CD, etc)
- CDV: Committee Draft for Vote
- FDIS: Final Draft International Standard
- WD: Working Draft

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