RFP for Category 6A ISO Structured Cabling System

Town of Durham
15 Newmarket Road
Durham, NH 03824

RFP#RenovatedTownHall2014

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1 INTRODUCTION

1.1 GENERAL BACKGROUND

Durham is seeking qualified candidates to submit proposals for installation, termination and certification of structured cabling at the future site of the Durham Town Hall, 8 Newmarket Road. The structured cabling system will support a myriad of services within and external to this building. This document describes the system requirements to be met in the proposals of the structured cabling vendors to secure under contract all materials, design, engineering, and installation for the structured cabling system that is a turn-key solution.

1.2 TERMS AND CONDITIONS OF BIDS

This is an invitation to submit a bid based on the materials, systems and equipment described in this document. All bids must be submitted in accordance with the specifications and information contained herein, as well as with any addenda, if required, issued by the Town. The bid package should be accompanied by a presale warranty commitment binding the awarded contractor and manufacturer to the customer selected, extended warranty package not less than 7 years in length. It is the intent of the Drawings and Specifications to provide a complete workable structure cabling system ready for the Town's use. Any item not specifically shown on the Drawings or called for in the Specification, but normally required for a complete system, are to be considered a part of the contract. Consideration other than cost alone will be used in making the determination of award. These factors will include financial stability, availability, design support, project management and field supervision. The Manufacturers and Products specified in the document are to be used. No substitutions of components specifically referenced will be allowed, without prior written customer consent after submittal review.

1.3 INSTRUCTIONS TO THE BIDDER

Bids shall be valid for 60 days and other factors such as material and labor rate increases during the duration of this project must be taken into account. The Bidder shall consider the nature and amount of work to be done as well as the difficulties involved in its proper execution. The bid shall include all costs deemed necessary to cover all contingencies essential to the installation of the specified system. Total cost for installation materials, labor project management, and other miscellaneous items must be listed separately.

A complete materials list, including description, manufacturer, part number, quantity, unit price and total price must also be included. A statement of estimated labor hours and prevailing hourly labor rates must be included.
All products and materials shall be new, clean, free of defects and free of damage and corrosion.

Where discrepancies are found during the bid process, the most stringent requirements must be included in the bid. Any cost encountered, which is not specifically itemized in the bid, shall not be incurred unless specifically agreed upon, in writing by both parties. No additional compensation will be allowed for extra work incurred on the part of the

Contractor due to the bidder's failure to notice any existing condition, which may cause additional labor.

Bid responses shall be concise following the format and numbering of this specification. Items not requiring responses shall be acknowledged by the bidder as being understood. Bidders must notify the Town as soon as detected any omissions or errors in the specification so corrective addenda may be issued. Such notification must be received by the Town, at least (7) days prior to the date for receipt of bids.

Bids will be accepted by Luke Vincent at 15 Newmarket Road, Durham, NH 03824 by 3:00 p.m., on February 14, 2014. Bids received after this time will be returned unopened. Inquiries and requests for clarifications should be directed to lvincent@ci.durham.nh.us by 5:00 p.m. on Wednesday, February 5, 2014 with the subject being RFP#RenovatedTownHall2014.

1.4 RIGHTS OF THE TOWN

The Town reserves the right to accept any bid or, at its discretion, reject any or all bids for whatever reason it deems appropriate.

The Town reserves the right to purchase ALL or PART of the cabling materials and hardware needed for the project.

Receipt of a bid response does not obligate the Town to pay any expenses incurred by the bidder in preparation of the bid response or obligate the Town in any other respect.

The Town reserves the right to modify the specifications contained in the Request for Proposal anytime during the bidding period.

Only changes issued as an addendum will be binding upon the Town. No verbal instructions or interpretations of requirements shall be accepted.

1.5 SCHEDULE OF EVENTS

The schedule below indicates the critical dates that must be satisfied by the Contractor. The Contractor must staff its work crews appropriately to meet the project's completion. The Contractor shall also have staff available to provide coverage during the cut over period.

EVENT	DATE
Release of this RFP	01-24-2014
RFP/BID Question Deadline	02-05-2014
RFP/BID Question Response	02-12-2014
Proposal Due & Bid Opening	02-14-2014

1.6 VENDOR REQUIREMENTS

The vendor must meet or exceed all minimum qualification requirements. All submitted quotes must provide at a minimum, all requested information in this quote document. Any portion not included will be cause for elimination from the quote process. Each response will be reviewed to determine if it is complete prior to actual evaluation. The information should be organized as indicated in the quote requirements. Any portions of the submitted quote, which are to be treated by the Town as proprietary

and confidential information, must be clearly marked as such. The Town reserves the right to eliminate from further consideration any response, which is deemed to be substantially or materially unresponsive to the request for information, contained in this section.

Vendors must include three (3) references for a project of similar implementation that has been completed within the past five (5) years.

- Job Location
- Contact name and telephone number
- Date of contract
- Project Description
- Equipment/Service Installed

1.7 QUOTE EVALUATION

Each response will be reviewed prior to the selection process for completeness and adherence to format. A response will be considered complete if all requested sections are included in the proper order and properly completed. Vendors may also provide any and all recommendations for consideration such as installation, maintenance, support and design that is relevant to the total solution of the Town's technology needs.

1.8 EVALUATION CRITERIA

The successful bidder will be chosen based upon but not limited to the following criteria:

- Price of eligible goods and services
- Prior experience and references
- Personnel qualifications (number of certifications, longevity within the sector, etc.)
- Local vendor (within a 75 mile radius)
- Past History with the Vendor

Preference will be given to a company that owns its own equipment and provides its own services. The Town reserves the right to reject any or all bids.

QUALITY ASSURANCE

1.9 CONTRACTOR QUALIFICATIONS

The Contractor shall at a minimum possess the following qualifications:

Be in business a minimum of five (5) years.

Contractor shall demonstrate satisfaction of sound financial condition and can be adequately bonded and insured if the project deems necessary.

Possess those licenses/permits required to perform structured cable installations in the specified jurisdiction.

Personnel knowledgeable in local, state, province and national codes and regulations. All work shall comply with the latest revision of the codes or regulations. When conflict exists between local or national codes or regulations, the most stringent codes or regulations shall be followed.

Must possess the following minimum insurance requirements and name the Town of Durham as an Additional Insured.

1) Workmen's Compensation

Part One: Workers Compensation	Statutory
Part Two: Employer's Liability	
Bodily Injury by Accident	$100,000 each accident
Bodily Injury by Disease	$300,000 policy limit
Bodily Injury by Disease	$100,000 each employee

2) General Liability $1,000,000 per occurrence
$2,000,000 policy aggregate

3) Auto Liability CSL

CSL (liability and property damage)	$1,000,000 per accident
Uninsured Motorists	$1,000,000 per accident

4) Professional Liability (if applicable) $1,000,000 per claim

Contractor must be registered with BICSI and have at least one RCDD on staff.
Must have personnel fluent in the use of Computer Aided Design, 3D modeling software (such as Sketch Up) and possess and operate CAD software using .DWG or .DXF format or an equivalent interchange format.
No work will be subcontracted.

1.10 REQUIRED CONTRACTOR TRAINING

The Contractor shall be fully conversant and capable in the cabling of low voltage applications such as, but not limited to data, voice and imaging network systems. The Contractor shall at a minimum possess the following qualifications:

Personnel trained and certified in the design of structured cabling systems.

Personnel trained and certified to install the structured cabling system.

Provide references of the type of installation provide in this specification.

Personnel trained and certified in fiber optic cabling, splicing, termination and testing techniques. Personnel must have experience using an optical light source and power meter plus OTDR.

Personnel trained in the installation of pathways and support for housing horizontal and backbone cabling.

The lead installer on this project must possess at least BICSI level 2 certification.

1.11 CONTRACTOR RESPONSIBILITY

Contractor shall be obligated to exercise the highest standard of care in performing its obligations as defined in this request for proposal.

Contractor acknowledges that Town of Durham will rely on contractor’s expertise, ability and knowledge of the system being proposed and shall be obligated to exercise the highest of standard care in performing its obligation as defined in the following Scope of Work.

1.12 MANUFACTURER QUALITY & PRODUCT SUBSTITUTIONS

All structured cable connecting hardware must be made by an ISO 9001:2000 Certified Manufacturer.

All products must meet the technical requirements listed in sections 5-7. Any products not meetings these requirements will not be considered.

2 GENERAL REQUIREMENTS

2.1 COMFORMITY WITH RFP

All Proposals must conform to the requirements presented in this RFP. Proposals not in conformity may be rejected. Exceptions to any requirement must be clearly noted in vendors' response.

2.2 UNIFORMITY OF PROPOSALS

To facilitate evaluation, all proposals must be submitted in a uniform format as described in Section 7 of this RFP.

2.3 ADDITIONAL INFORMATION

All inquiries or requests for information relative to this RFP should be directed by mail to the Town of Durham, Attn. Luke Vincent, 15 Newmarket Road, Durham, NH 03824; or by email to lvincent@ci.durham.nh.us . All material submitted by the Town of Durham must be treated as confidential and cannot be used for any other purpose than the response to this RFP. Information submitted by a vendor will be considered confidential to the Town of Durham and will not be used for any other purpose than evaluating vendor responses. Copies of this RFP can also be found online at https://ci.durham.nh.us on the "bids and rfps" page under the "doing business" heading located on the main website.

2.4 CONTRACT

The selected vendor MAY BE REQUIRED TO EXECUTE A CONTRACT WRITTEN FOR AND BY the Town of Durham. The Town of Durham may elect not to execute the vendor's standard contract. All Proposals should contain a statement indicating the vendor's willingness to accept a written contract. The vendor should indicate if this RFP and the vendor's written material could be included in the contract. Any exemptions to this requirement must be noted in the vendor's response.

2.5 RIGHT TO REJECT PROPOSALS

The Town of Durham reserves the right to reject any or all proposals, to waive technicalities or informality and to accept any proposal deemed to be in the best interest of the Town.

2.6 LIABILITY AND INSURANCE

When identified, the selected contractor will be notified of the necessity to provide required insurance as outlined in 1.9 above. Proof of insurance shall be provided within 15 days of date of written notification to the contractor.

2.7 PRICE PROTECTION

Prices quoted in the proposal shall be firm prices and not subject to increase during the term of any contractual agreement arising between the Town of Durham and a vendor. Vendors will quote on prices less any Federal Excise Tax. Vendors should stipulate the expiration date of their quoted price. All prices will include shipping and handling.

2.8 RIGHT TO PURCHASE FROM ANY SOURCE

The Town of Durham reserves the right to purchase any desired equipment, software, or services from any source or sources in part or in whole as set forth in the Town's purchasing policy.

2.9 DELIVERY DATE

Vendors will specify in proposals the delivery date of their equipment, services and/or products (i.e., how long from time of order to delivery of hardware and/or software). Delivery times will be correlated to actually placing the order after approval for funding is granted.

2.10 VENDOR COMMITTMENT

Vendors must state their commitment to maintain, support and upgrade their services at the current or the public-released level for at least the term of the contract.

2.11 MAINTENANCE AND SUPPORT

Vendors must supply the names and addresses of all service organizations that will provide support and maintenance on all products proposed herein. If appropriate, vendors must also specify the maximum time to elapse between the time a service call is made and the time a service representative arrives on site.

2.12 SYSTEMS RESPONSIBILITY

Notwithstanding the contents of the RFP, it is the responsibility of the vendor to verify the completeness, accuracy, and suitability of the vendor's proposal to meet the requirements of the Town of Durham. The vendor without claim for additional payment shall provide any additional equipment required after installation to meet the project requirements, even if not specifically mentioned herein. It is understood that a complete solution for the network, which operates effectively and to the satisfaction of the Town of Durham's Information Technology Department, is required. The successful vendor will be obligated to provide a turn-key solution that meets all guarantees in their proposal for the price contained therein and that all products provided operate successfully with the Town of Durham's existing telecommunication infrastructure and related systems and networks. All products must be completely new.

2.13 RIGHTS TO SUBMITTED MATERIALS

All proposals, responses, inquiries, or correspondence relating to or in reference to this RFP, and all reports, charts, displays, schedules, exhibits, and other documents provided by vendors will become the property of the Town of Durham when received. Supporting technical manuals will be returned at the request of the vendor. The Town of Durham retains the right to use any or all system ideas presented in any proposal, whether amended or not amended. Selection or rejection of a proposal does not affect this right.

2.14 DISCALIMER AND CANCELLATION

The Town of Durham reserves the right to waive any informality received where such acceptance, rejection, or waiver is considered to be in the best interest of the Town of Durham. The Town of Durham also reserves the right to reject any proposal where evidence or information submitted by the

Vendor does not satisfy the Town of Durham that the vendor is qualified to carry out the requirements of the contract documents.

This RFP does not commit the Town of Durham to any specific course of action. The Town of Durham reserves the right to not select any vendor or purchase any goods or services resulting from this RFP.

3 SCOPE OF WORK

3.1 CABLING:

- Demolish and remove all existing telecommunication and data Category 3, 5 and 5e cabling.
- Install, terminate, and certify approximately 350 runs of new Category 6A cabling. Organized into mainly four-plex drops at marked locations. In addition, there will also be a number of single or double panel terminated runs for in-ceiling wireless equipment and various other devices that may or may not be drawing power over Ethernet. New cabling will consist of at least a drop at each occupied and designated office with the majority containing 2 or more drops. Some locations will require more cables or drops and will be determined on a case-by-case basis.
- Cable will be terminated in Contractor supplied patch panels.
- Contractor will supply cable ladder, racks, lacing bar, cable managers, and all other needed supplies to install the structured cable system in an organized, aesthetically pleasing and profession manner.

4 SYSTEM DESIGN REQUIREMENTS

4.1 HORIZONTAL CABLING

The Horizontal Subsystem is the portion of the structured cabling system that extends from the work area outlet/connector to the horizontal cross-connect in the data room. It consists of the data outlet/connector, the horizontal cables, optional consolidation point, and that portion of the cross-connect in the data room serving the horizontal cable. All cabling, within reason, should be terminated in the basement Data Room.

TWISTED-PAIR CABLING

- All qualified cables shall surpass the most severe category 6A requirements provided in the Industry Standards by meeting or exceeding the performance listed in ANSI/TIA/EIA 568-B.2-10.

4.2 DATA ROOM

- The Data Room is generally considered to be a floor serving facility. The Horizontal Cross-connect links the Horizontal Subsystem and the Backbone Subsystem together.
- The Horizontal Cross-connect shall consist of rack mounted wiring blocks or panels for termination of copper cables or rack interconnect centers or fiber management panels/trays for the termination of optical fibers.
- Cross-connect spaces include the labeling of hardware for providing circuit identification and patch cords or cross-connect wire used for creating circuit connections at the cross-connect.
- The data room shall be equipped to contain data equipment, cable terminations, and associated cross-connects.
- Separation from sources of EMI shall be in accordance with ANSI/TIA/EIA-569-B and local codes.
- Communication grounding / earthing and bonding shall be in accordance with applicable codes and regulations. It is recommended that the requirements of IEC/TR3 61000-5-2 - Ed. 1.0, ANSI-J-STD-607-A, or both be observed throughout the entire cabling system.
- The data room shall be dedicated to the data function. Access to data rooms shall be restricted to authorized service personnel and shall not be shared with building services that may interfere with the data systems or be used for building maintenance services.

4.3 ENTRANCE FACILITY

- The entrance facility shall be equipped to contain telecommunications equipment, cable terminations, and associated cross-connects.
- Separation from sources of EMI shall be as specified ANSI/TIA/EIA-569-B.
- Communication grounding / earthing and bonding shall be in accordance with applicable codes and regulations. It is recommended that the requirements of IEC/TR3 61000-5-2 - Ed. 1.0, ANSI-J-STD-607-A, or both be observed throughout the entire cabling system.
- The entrance facility shall not be shared with building services that may interfere with the telecommunications systems or be used for custodial services.

- The entrance facility shall be located in a dry area not subject to flooding and should be as close as possible to the electrical service room in order to reduce the length of the bonding conductor to electrical grounding system.

5 INSTALLATION

5.1 SITE SURVEY

Prior to placing any cable pathways or cable, the Contractor shall survey the site to determine job conditions will not impose any obstructions that would interfere with the safe and satisfactory placement of the cables. The arrangements to remove any obstructions with the Information Technology Manager need to be determined at that time.

5.2 PHYSICAL INSTALLATION

CABLE PATHWAYS

- Pathways shall be designed and installed to meet applicable local and national building and electrical codes or regulations.
- Grounding / Earthing and bonding of pathways shall comply with applicable codes and regulations.
- Pathways shall not have exposed sharp edges that may come into contact with data cables.
- The number of cables placed in a pathway shall not exceed manufacture specifications, nor, will the geometric shape of a cable be affected.

  Pathways shall not be located in elevator shafts.

HORIZONTAL CABLE ROUTING

- All horizontal cables, regardless of media type, shall not exceed 90 m (295 ft) from the data outlets in the work area to the horizontal cross connect.
- The combined length of jumpers, or patch cords and equipment cables in the data room and the work area should not exceed 10m (33 ft) unless used in conjunction with a multi-user data outlet.
- It is recommended that a minimum horizontal cable distance of 15m (49 ft.) shall be maintained between the data room and the work area.
- Horizontal pathways shall be installed or selected such that the minimum bend radius of horizontal cables is kept within manufacturer specifications both during and after installation.
- In open ceiling cabling, cable supports shall be provided by means that is structurally independent of the suspended ceiling, its framework, or supports. These supports shall be spaced no more than 1.5 m (5 ft) apart.
- UTP ONLY: Data pathways, spaces and metallic cables, which run parallel with electric power or lighting, which is less than 3kVA, shall be installed with a minimum clearance of 203mm (8 in).
- UTP ONLY: Data pathways, spaces and metallic cables, which run parallel with electric power or lighting, which is more than 3kVA but less than 6kVA, shall be installed with a minimum clearance of 1.5 m (5 ft).
- UTP ONLY: Data pathways, spaces and metallic cables, which run parallel with electric power or lighting, which is more than 6kVA, shall be installed with a minimum clearance of 3 m (10 ft).
- Cables shall be run using a star topology from the data room serving that floor to every individual information outlet. The Information Technology Manager prior to installation of the cabling shall approve all cable routes.

- The Contractor shall observe the bending radius and pulling strength requirements of the 4-pair balanced twisted-pair and fiber optic cable during handling and installation.
- Each run of balanced twisted-pair cable between horizontal portions of the cross-connect in the telecommunication closet and the information outlet shall not contain splices.
- In a false ceiling environment, a minimum of 75 mm (3 in) shall be observed between the cable supports and the false ceiling.
- Continuous conduit runs installed by the contractor should not exceed 30.5 m (100 ft) or contain more than two (2) 90 degree bends without utilizing appropriately sized pull boxes.
- All horizontal pathways shall be designed, installed to meet applicable local and national building and electrical codes.
- The number of horizontal cables placed in a cable support or pathway shall be limited to a number of cables that will not cause a hindrance to the geometric shape of the cables.
- Maximum conduit pathway capacity shall not exceed a 40% fill. However, perimeter and furniture fill is limited to 60% fill for move and changes.
- Horizontal distribution cables shall not be exposed in the work area or other locations with public access.

WORK AREA TERMINATION

- All balanced twisted-pair cables wired to the data outlet/connector, shall have 4-pairs terminated in eight-position modular outlets in the work area. All pairs shall be terminated.
- The data outlet/connector shall be securely mounted at planned locations.
- The height of the data faceplates shall be to applicable codes and regulations.

PULLING TENSION

- The maximum cable pulling tensions shall not exceed manufacturer’s specifications.

BEND RADIUS

- The maximum cable bend radii shall not exceed manufacturer’s specifications.
- In spaces with balanced twisted-pair cable terminations, the maximum bend radius for 4-pair cable shall not exceed four times the outside diameter of the cable and ten times for multi-pair cable. This shall be done unless this violates manufacturer specifications.
- During the actual installation, bend radius on 4-pair cable shall not exceed eight times the outside diameter of the cable and ten times for multi-pair cable. This shall be done unless this violates manufacturer specifications.

SLACK

- In the work area, a minimum of 300 mm (12 in) should be left for balanced twisted-pair cables, while 1 m (3 ft) be left for fiber cables.

- In data rooms a minimum of 3m (10 ft) of slack should be left for all cable types. This slack must be neatly managed on trays or other support types.

CABLE TIE WRAPS

- Tie wraps shall be used at appropriate intervals to secure cable and to provide strain relief at termination points. These wraps shall not be over tightened to the point of deforming or crimping the cable sheath. In all cases, use of hook and loop ties or other approved malleable securing systems is encouraged.
- Hook and loop cable managers should be used in the closet where reconfiguration of cables and terminations may be frequent.

GROUNDING

- All grounding / earthing and bonding shall be done to applicable codes and regulations.

FIRE PROTECTION

- Properly installed firestop systems shall be installed to prevent or retard the spread of fire, smoke, water, and gases through the building. This requirement applies to openings designed for data use that may or may not be penetrated by cables, wires, or raceways.
- Fire stops shall be done to applicable code.

WORKMANSHIP

- All work shall be done in a workman like fashion of the highest standards in the data industry.
- All equipment and materials are to be installed in a neat and secure manner, while cables are to be properly dressed.
- Workers must clean any debris and trash at the close of each workday.

6 TESTING

Testing of all newly installed cable channels shall be performed prior to system cutover.

6.1 COPPER TESTING

- All category 6A field-testing shall be performed with a Fluke Networks DTX-1800 tester or better.
- All balanced twisted-pair backbone cables exceeding 90 m (295 ft) or 100 m (328 ft) shall be 100% tested for continuity if applications assurance is not required.
- Category 6A balanced twisted-pair horizontal and backbone cables, whose length does not exceed 90 m (295 ft) for the basic link, and 100 m (328 ft) for the channel shall be 100 percent tested according to ANSI/TIA/EIA-568-B.1. Test parameters include wire map plus ScTP shield continuity (when present), length, NEXT loss (pair-to-pair), NEXT loss (power sum), ELFEXT loss (pair-to-pair), ELFEXT loss (power sum), return loss, insertion loss, propagation delay, and delay skew.

TEST EQUIPMENT CRITERIA

- All balanced twisted-pair field testers shall be factory calibrated each calendar year by the field test equipment manufacturer as stipulated by the manuals provided with the field test unit. The calibration certificate shall be provided for review prior to the start of testing.
- Autotest settings provided in the field tester for testing the installed cabling shall be set to the default parameters
- Test settings selected from options provided in the field testers shall be compatible with the installed cable under test.

6.2 FIBER OPTIC TESTING

HORIZONTAL FIBER TESTING

- Fiber horizontal cables shall be 100% tested for insertion loss and length
- Insertion loss shall be tested at 850 nm or 1300 nm for 50/125μm and 62.5/125μm multimode cabling in at least one direction using the Method B (1-jumper) test procedure as specified in ANSI/TIA/EIA-526-14A.
- The horizontal link must be guaranteed to meet 10G-BASE-FL performance requirements.

7 ADMINISTRATION & DOCUMENTATION

7.1 LABELING

- All cables shall be labeled at each end. The cable or its label shall be marked with its identifier.
- A unique identifier shall be marked on each faceplate to identify it as connecting hardware.
- Each port in the faceplate shall be labeled with its identifier.
- Each port on the connecting hardware shall be labeled with its identifier.

7.2 DRAWINGS

As-built drawings shall be supplied by the contractor showing the locations of and identifiers for all:

- Horizontal cable routing and terminations
- Data outlets/connectors
- Backbone cable routing and terminations

7.3 RECORDS AND REPORTS

All records shall be created by the installation contractor and turned over at the completion of work

The format shall be computer based and both soft copies and hard copies shall be part of the As-built package. The minimum requirements include:

- Cable records must contain the identifier, cable type, termination positions at both ends, splice information as well as any damaged pairs/conductors.
- Connecting hardware and connecting hardware position records must contain the identifier, type, damaged position numbers, and references to the cable identifier attached to it.
- Test documentation on all cable types shall be included as part of the As-built package.

All reports shall be generated from the computer-based program used to create the records above. These reports should include but not limited to:

- Cable Reports
- Cross-connect Reports
- Connecting Hardware Reports

8 WARRANTY

Either a basic link or channel model configuration may be applied to the horizontal and/or backbone sub-systems of the structured cabling system. Applications assurance is only applied to a channel model configuration. All channels are to be qualified for linear transmission performance up to 250 MHz to ensure that high-frequency voltage phase and magnitude contributions do not prove cumulative or adversely affect channel performance.

8.1 SYSTEM WARRANTY

A ten (10) year or greater warranty available for the category 6A structured cabling system shall be provided for an end-to-end channel model installation which covers applications assurance, cable, connecting hardware and the labor cost for the repair or replacement thereof.

8.2 PRODUCT WARRANTY

The manufacturer of passive data equipment used in a manner not associated with the Systems Warranty must have a minimum five (5) year Component Warranty on all its product. The Products Warranty covers the components against defects in material or workmanship under normal and proper use.

8.3 APPLICATIONS SUPPORTED

Existing and future applications supported for a channel model warranty include those approved by the Institute of Electronic and Electrical Engineers (IEEE), the Asynchronous Transfer Mode (ATM) Forum, the American National Standards Institute (ANSI) or the International Organization of Standards (ISO) that specify compatibility with the cable referenced herein.