ATIS-0600012.02

ATIS Standard on -

Electrical Protection for Ethernet Systems

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Electrical Protection for Ethernet Systems

Alliance for Telecommunications Industry Solutions

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Abstract

The purpose of this ATIS Standard is to assist the service provider in choosing appropriate protection methods for Ethernet communications circuits. This ATIS Standard describes protector characteristics that may impact Ethernet systems for outside plant, intra- and inter-building applications, and the services provided over these links. These protectors are categorized by technology type and configurations. This document describes protectors in their non-operating state and their effect on these services, and also considers the effects of protector response to a surge event and how that operation may affect these services. This is a subtending document and is intended to be used with the Broadband umbrella document, ATIS-0600012, *Electrical Protection Considerations for Broadband Systems*.

Foreword

The Alliance for Telecommunication Industry Solutions (ATIS) serves the public through improved understanding between providers, customers, and manufacturers. The Sustainability in Telecom: Energy and Protection (STEP) Committee – formerly the Network Interface, Power, and Protection (NIPP) Committee – engages industry expertise to develop standards and technical reports for telecommunications equipment and environments in the areas of energy efficiency, environmental impacts, power, and protection. The work products of STEP enable vendors, operators, and their customers to deploy and operate reliable, environmentally sustainable, energy efficient communications technologies. STEP is committed to proactive engagement with national, regional, and international standards development organizations and forums that share its scope of work.

The mandatory requirements are designated by the word shall and recommendations by the word should. Where both a mandatory requirement and a recommendation are specified for the same criterion, the recommendation represents a goal currently identifiable as having distinct compatibility or performance advantages. The word may denotes an optional capability that could augment the standard. The standard is fully functional without the incorporation of this optional capability.

Suggestions for improvement of this document are welcome. They should be sent to the Alliance for Telecommunications Industry Solutions, STEP, 1200 G Street NW, Suite 500, Washington, DC 20005.

At the time it approved this document, STEP, which is responsible for the development of this Standard, had the following leadership:

J. Krahner, Cisco, STEP Vice-Chair (Cisco)

J. Fuller, NEP Chair (AT&T)

E. Gallo, NEP Vice Chair (Ericsson)

The Network Electrical Protection (NEP) Subcommittee was responsible for the development of this document.

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1 Scope, Purpose, & Application

1.1 Scope

1.1.1 Electrical Protection

The purpose of this ATIS Standard is to assist the service provider in choosing appropriate protection methods for Ethernet communications circuits. This ATIS Standard describes protector characteristics that may impact Ethernet systems for outside plant, intra- and inter-building applications, and the services provided over these links. These protectors are categorized by technology type and configurations. This document describes protectors in their non-operating state and their effect on these services, and also considers the effects of protector response to a surge event and how that operation may affect these services. This is a subtending document and is intended to be used with the Broadband umbrella document ATIS-0600012, *Electrical Protection Considerations for Broadband Systems*.

1.1.2 Equipment Covered

This ATIS Standard applies to the electrical protection at all Ethernet network equipment locations. Examples include: Ethernet equipment at Central Office (CO) type facilities, remote sites, and at the customer location [including the entrance or interface point and Customer Premises Equipment (CPE)]. This equipment may interface with various types of cable media, such as coaxial cable or twisted pair that provides the Ethernet signal and possible power.

Although a variety of existing and proposed Ethernet equipment types are considered, the merits of the different technologies, and/or architecture types, are not covered.

The following are examples of equipment/items included in this ATIS standard:

- Primary protectors.
- Secondary protectors.
- CO equipment.
- Remote terminal equipment.
- Cell Site equipment.
- NIDs, iNIDs, NIUs, ONTs, ONUs, BETs, and other points of demarcation.
- CPE such as Set Top Boxes (STBs), xDSL splitters, telephones, etc.
- Traffic security cameras, WiFi, Wi-max, and hot spots.

2 References

The following standards contain provisions that, through reference in this text, constitute provisions of this ATIS Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this ATIS Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

ATIS-0600012, *Electrical Protection Considerations for Broadband Systems.*[1]

[1] This document is available from ATIS at: < https://www.atis.org/docstore/product.aspx?id=25717 >.