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Data Standards Subcommittee

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DOCSIS Set-Top Gateway (DSG) Specification

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Contents

Tables

Figures

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1 SCOPE

1.1 Introduction and Overview

The DOCSIS Set-top Gateway (DSG) specification defines the interface requirements on a DOCSIS CMTS and DOCSIS CM to support the configuration for transport of a class of service known as “Out-Of-Band (OOB) messaging” between a Set-top Controller (or application servers) and the customer premise equipment (CPE). In general, the CPE is intended to be a digital Set-top Device, but may include other CPE devices, such as Residential Gateways or other electronic equipment. Figure 1-1 provides the context for this specification in relation to the data over cable reference architecture and the other interface specifications in the family.

Traditionally, the physical transport of this Out-Of-Band messaging has been carried over dedicated channels, as specified by [ANSI/SCTE 55-1] and [ANSI/SCTE 55-2]. This specification defines the applicable communications standards and protocols needed to implement an Out-Of-Band messaging interface to the Set-top Device using DOCSIS as a transport. It applies to cable systems employing HFC and coaxial architectures. Specifically, the scope of this specification is to:

- Describe the communications protocols and standards to be employed
- Specify the data communication requirements and parameters that will be common to all units

The intent of this document is to specify open protocols, with a preference for existing, well-known and well-accepted standards. This interface specification is written to provide the minimal set of requirements for satisfactory communication between the Set-top Controller and the Set-top Device over the DOCSIS transport. “DOCSIS Set-top Gateway” (DSG) shall be the general term used to describe this interface.

1.2 Purpose of Document

Cable operators have deployed millions of digital set-top boxes enabling broadcast and interactive services. They have also deployed millions of DOCSIS cable modems with the associated infrastructure, CMTS, routers, and network connectivity. There is significant interest in enabling digital set-top boxes to leverage the existing infrastructure of digital video and DOCSIS networks. This document is one of a series of interface specifications that will permit the early definition, design, development and deployment of data-over-cable and OpenCable™ systems on a uniform, consistent, open, non-proprietary, multi-vendor interoperable basis.

The intended service will allow transparent uni-directional and bi-directional transport of Out-Of-Band messaging over Internet Protocol (IP), between the cable system headend and customer locations, over an all-coaxial or hybrid-fiber/coax (HFC) cable network. This is shown in simplified form in Figure 1-1.