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Communications protocol to transport satellite delivered signals over IP networks

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National foreword

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A list of organizations represented on this committee can be obtained on request to its secretary.

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Kommmunikationsprotokoll zum Transport von Satellitensignalen über IP-Netze

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Foreword

This document (EN 50585:2014) has been prepared by CLC/TC 209 "Cable networks for television signals, sound signals and interactive services".

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- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2015-03-24
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2017-03-24

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Introduction

This standard describes a new communication protocol for the distribution of satellite signals onto IP networks. It effectively “translates” TV signals, received from satellites in the DVB-S and DVB-S2 formats and supplied in the first intermediate frequency range (1st IF range), into signals for use on internet-based devices in the IP world. This technology enables the reception of satellite TV on devices that do not have an integrated satellite receiver. Satellite signals can thus be transported via every IP infrastructure with or without cable.

This way, the entire satellite household can be provided with TV and sound radio programmes on tablets, PCs, laptops, smart phones, connected TVs, game consoles and media players.

This technology concept is commonly referred to as **SAT>IP** [1)].

1) **SAT>IP** is a short-term which covers the complete system for the transposition of SAT-IF signals to IP-based signals. This term is used in a widespread manner for marking software and hardware components used in such systems. More details are given in informative Annex E.

1 Scope

This European Standard describes the SAT>IP communication protocol. It enables a SAT>IP server to forward satellite delivered signals to SAT>IP clients over IP networks. The typical use case would be the transport of television programs that were received from the satellite by the SAT>IP server to the SAT>IP client via the IP network. SAT>IP specifies a control protocol as well as the media transport (Figure 1).

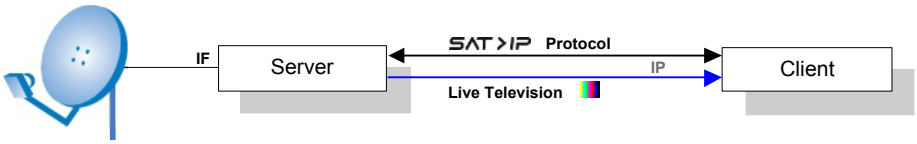

Figure 1 — Basic principle of the SAT>IP system

SAT>IP is **not** a device specification.

The SAT>IP protocol distinguishes between SAT>IP clients and SAT>IP servers.

SAT>IP Clients

SAT>IP clients may reside in set-top boxes equipped with an IP interface or may be implemented as software applications running on programmable hardware such as Tablets, PCs, Smartphones, Connected Televisions.

SAT>IP Servers

SAT>IP servers may take various forms ranging from large MDU headends servicing whole buildings or communities to in-home IP multiswitches to simple IP adapters for a set-top box to, ultimately, IP LNBs.

Actual devices may be clients or servers or both depending on their feature set.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 29341-1-1, *Information technology — UPnP Device Architecture — Part 1.1: UPnP Device Architecture Version 1.1*

ETSI TS 101 154 V1.9.1, Digital Video Broadcasting (DVB); Specification for the use of Video and Audio Coding in Broadcasting Applications based on the MPEG-2 Transport Stream

RFC 2113 – IP Router Alert Option (Internet Engineering Task Force (IETF))

RFC 2131 – DHCP (Dynamic Host Configuration Protocol) (Internet Engineering Task Force (IETF))

RFC 2250 – RTP Payload Format for MPEG1/MPEG2 Video (Internet Engineering Task Force (IETF))

RFC 2279 – UTF-8, a transformation format of ISO 10646 (Internet Engineering Task Force (IETF))

RFC 2326 – Real Time Streaming Protocol (RTSP) (Internet Engineering Task Force (IETF))

RFC 3376 – Internet Group Management Protocol, Version 3 (Internet Engineering Task Force (IETF))

RFC 3550 – RTP: A Transport Protocol for Real-Time Applications (Internet Engineering Task Force (IETF))

RFC 4566 – SDP: Session Description Protocol (Internet Engineering Task Force (IETF))

draft-cai-ssdp-v1-03 – Simple Service Discovery Protocol/1.0 (Internet Engineering Task Force (IETF))