ETSI TR 102 794 V1.1.1 (2010-12)

Technical Report

Media Content Distribution (MCD); 3D Gaming Graphics Delivery Overview

Reference
DTR/MCD-00010

Keywords
content, transport, protocol

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

Individual copies of the present document can be downloaded from:
http://www.etsi.org

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at
http://portal.etsi.org/tb/status/status.asp

If you find errors in the present document, please send your comment to one of the following services:
http://portal.etsi.org/chaircor/ETSI_support.asp

Copyright Notification

Contents

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (http://webapp.etsi.org/IPR/home.asp).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Media Content Distribution (MCD).

The main purpose of the present document is to provide an overview of the topic of 3D Gaming Graphics Delivery. The present document is meant to create an ETSI MCD view on this topic, and includes use cases, high-level requirements, an overview of potential solutions and a gap analysis.

The present document's conclusions should assist in the definition of new Work Item(s) for actual standardization, provided this is necessary and ETSI MCD is the right body.

Introduction

By 2010, there will be over 420 million broadband households worldwide. With the standard set for super-high speed, always-on connectivity, the way people view entertainment has fundamentally changed and created a new standard for consumption. Consumers no longer expect their internet access to be only from a desktop PC, now they want it through the TV in the living room or in the palm of their hand, inside the house and on the go.

Video games are officially a mainstream leisure time activity, and consumers are increasingly demanding their entertainment to be fully networked and available over multiple platforms. Digital distribution of games is growing and is becoming a common way to acquire games. Several game publishers and game retailers are using this model as a way to reach consumers. The main deployment model being used at the moment of writing the present document is where an end consumer buys the game online after which the game executable and (parts of) the game data are downloaded to his PC or game console, using a run-time environment that protects the game from being copied.

Consumer electronics devices, such as set-top boxes, TVs, mobile phones and Netbook PCs are not considered real gaming devices, since they lack the necessary CPU power, graphical performance and memory/storage capacity. So a download distribution model of 3D games is not very likely to be a viable way to reach consumer electronics devices. Also, there is a large catalogue of existing games that simply are not written with these platforms in mind.

In order to play 3D games on this kind of devices a streaming model is more appropriate. So, instead of downloading the game to the end user device, the game is executed on a high-performance server, after which the game output is streamed to the client. Discussion about the nature and content of what is exchanged between servers and clients constitutes the topic of the present document. Several technical solutions could be possible. The present document will describe the benefits and drawbacks of several of these technical solutions.

The end goal of this work is to standardize the protocol(s) needed for streaming the game output to a client. The present document is meant to create an ETSI MCD view on this topic, and includes use cases, high-level requirements, an overview of potential solutions and a gap analysis to see which actual standardization work needs to be performed.