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Alberto Gil Solla
Rafael G. Sotelo Bovino

TV-Anytime

Paving the Way for Personalized TV

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TV-Anytime

Paving the Way for Personalized TV

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To our families

Preface

Television is a mature mass media that has been around for 55 years in Spain and Uruguay, while it has now been close to eight decades of regular broadcasts since its beginnings in the UK and the USA.

Spurred by the spectacular growth of the Internet and social networks, it has become more and more frequent in recent times to hear the echo of critical voices that question both the impact of television on new generations and the future projection of its influence in society. However, the decline of the influence television still exerts on most of the population is a conjecture all the same, supported by scant studies and without important numbers to rely on. Television in fact remains the leading channel for entertainment and information in any developed society, exerting an unparalleled influence on public opinion.

What is clear is that television has been, until recently, a media phenomenon with a rather slow evolution regarding the interaction with its users, and that this is beginning to change. Until now, viewers historically limited its use to the reception and playback of images complemented in many cases by the latest capability to record contents. The digital transition has rushed things, and the computational capacity of televisions and set-top boxes has increased the possibilities of communication and implementation of services of the users' equipment.

But to use this processing capacity effectively and elevate the discrete improvements we are experiencing today to the category of revolution, it is necessary for the software that provides intelligence to have within its reach information it can manipulate and understand, and not only signals to reproduce. It is essential to characterize the environment (content, users, devices, etc.) by means of formal descriptions, on which it is possible to apply the comparison and reasoning processes that allow the software to identify the most attractive contents for each user and properly resolve any issues so that they can be accessed transparently.

At the same time, to promote economies of scale that give a well-founded hope of recovering the necessary investments, it is essential to ensure interoperability between equipments (which entails sharing of information formats and protocols). By doing this, users can purchase equipment with the assurance that they will be

able to have universal access to the services provided by operators or third parties, and not just to niches artificially established by the initiatives of manufacturers or TV platforms.

This book provides a general introduction to the resources and capabilities of the TV-Anytime standard, a regulating effort that is aimed at making a homogenizing proposal for certain information formats and communication protocols to create a framework on which to easily develop the intelligent services that are coming into the audiovisual market. The purpose of this standard is to achieve a consensus on the formats of the information that must feed the reasoning processes inherent to an intelligent system, thereby ensuring manufacturers and creators that their products will aspire to the widest possible market, without fear of being constrained by the wars of interest typical for emerging technologies.

Throughout the book, the successive chapters provide a detailed revision of the most important contributions of the standard. To start with, Chap. 1 focuses on the actual state and future trends of the television industry and on the vision and structure of the TV-Anytime standard. Then, Chap. 2 presents a general outline of the standard, showing the logical architecture of a possible platform that deploys TV-Anytime services and describing the main elements involved, together with the information they handle. It can be considered, partly, a summary of the book, where the contents of the following chapters are presented to get a general overview of their relationships.

The next chapters present the main tools provided by the standard. Chapter 3 is devoted to the mechanism defined in TV-Anytime for the unambiguous reference to contents and the resolution of such references to get locators that make it possible to acquire the contents. Chapter 4 is entirely focused on the description of metadata, which is standardized to describe audiovisual contents.

After introducing the main tools, several frameworks to support advanced audiovisual services are covered. Chapter 5 presents different elements and procedures to implement customized smart services related to audiovisual contents: features to manage the customization processes, mechanisms for the dynamic substitution of advertisements, and a coupon system to promote offers related to the announced contents or products. Following this, Chap. 6 deals with content packaging, a procedure to group and coordinate many contents aimed at being consumed in a joint and synchronized way.

Chapter 7 deals with different aspects of the delivery of TV-Anytime metadata in unidirectional contexts, at the destination.

The last chapters are devoted to issues related with the communication of TV-Anytime devices with the outside world. Chapter 8 deals with the characteristics of communication with external services that provide metadata, which are accessible through bidirectional networks, and the procedures for sharing user profiles. Chapter 9 covers the remote programming of a receiver (which belongs to a user or to a service provided by third parties) and the formats of information exchange with applications that do not meet the TV-Anytime regulations. Finally, Chap. 10 closes the book with brief conclusions.

This book is not a reference manual of the standard, and it does not contain complete and thorough descriptions of all aspects covered in the TV-Anytime specifications (unapproachable because of its length and inadvisable—in an informative work such as this one—because of the thoroughness that would be required). Its sole purpose is to arouse the reader’s curiosity about the promising capabilities of this initiative, provide a brief description of the mechanisms and elements involved, and present simple examples to clarify what is described and to show its scope. We hope that this book helps readers resolve their doubts with respect to possible projects, or at least gain a more accurate vision of what the future may hold for them in this scenery.

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Contents

1	Introduction	1
1.1	And Television Awoke	1
1.1.1	An Unquestionable Importance	1
1.1.2	The Importance of the Digital Transition	4
1.1.3	The PDR and Non-linear Consumption of TV	6
1.1.4	The Importance of Standardization	7
1.2	TV-Anytime	8
1.3	New Business Models	10
1.3.1	TV-Anytime Phase 1	11
1.3.2	TV-Anytime Phase 2	12
1.4	Organizing the Standard	13
1.5	Book Contents	16
2	Architecture and Components	19
2.1	Introduction	19
2.1.1	Phase 1	20
2.1.2	Phase 2	21
2.2	Content Reference IDentifier (CRID)	22
2.2.1	What Is a CRID?	22
2.2.2	Resolution of a CRID	24
2.3	Metadata	26
2.3.1	Metadata Defined in Phase 1	28
2.3.2	Metadata Defined in Phase 2	30
2.4	Metadata Transport	31
2.4.1	Requisites for Transport Mechanisms	32
2.4.2	Segmentation and Delivery of TV-Anytime Information	32
2.5	Bidirectional Services	34
2.5.1	Metadata Provision Services	34
2.5.2	Remote Programming	35