



SMPTE TASK FORCE REPORT ON 3D TO THE HOME



In August 2008 the Society of Motion Picture and Television Engineers (SMPTE) established a Task Force to explore the standards that need to be set for 3D content that may be distributed via broadcast, cable, satellite, packaged media and the Internet. The Task Force, chaired by Bill Zou of DTS, attracted nearly 200 members from many parts of

the broadcast, cable, and computer, industries, professional and consumer equipment manufacturers, content producers, and others. They have now finished their investigations and have prepared a report, which will be published shortly. A summary of the report follows, with extracts from the introduction, end-to-end system description, and recommendations.

The report is organized as follows:

- Section 1 is the introduction
- Section 2 presents a definition of terms and concepts that are used in this report.
- Section 3 presents a high level description of the end-to-end supply chain of the 3D content, and defines the scope of the task force's consideration in view of this high level view of the chain.
- Section 4 lists use cases considered by the task force, and also whether and to what extent each use case impacts the specification of the 3D Home Master.
- Section 5 lists the requirements for the 3D Home Master as identified by the task force for consideration in a subsequent standardization effort by SMPTE to generate technical specifications for the master.
- Section 6 provides additional context to the completed effort of the task force and lists specifically areas that were not considered due to the nascent aspect of the field. Caveats and areas for further study are indicated.
- Section 7 contains recommendations on standardization activity that SMPTE needs to pursue to support commercially successful deployment of 3D content to the home.
- The report includes an appendix that cross-references the use cases to the requirements generated by the task force. This is meant to provide the subsequent standards generation activities detailed context for the requirements.

Introduction

"This report has been generated by the SMPTE Task Force on 3D to the Home. The effort was initiated on Aug 19, 2008. At the initiation of the effort, the task force was chartered with defining 'what standards would be needed to establish rapid adoption of stereoscopic A/V content from content mastering to consumption in the home via multiple types of distribution channels (e.g., packaged, broadcast, satellite, cable, Internet) with consideration for downward scalability (e.g. portable/mobile).' The charter was broad and potentially included standards for content mastering and distribution formats, common interfaces for 3D display, performance

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requirements related to human factors, and backwards compatibility related to distribution infrastructure and legacy devices.

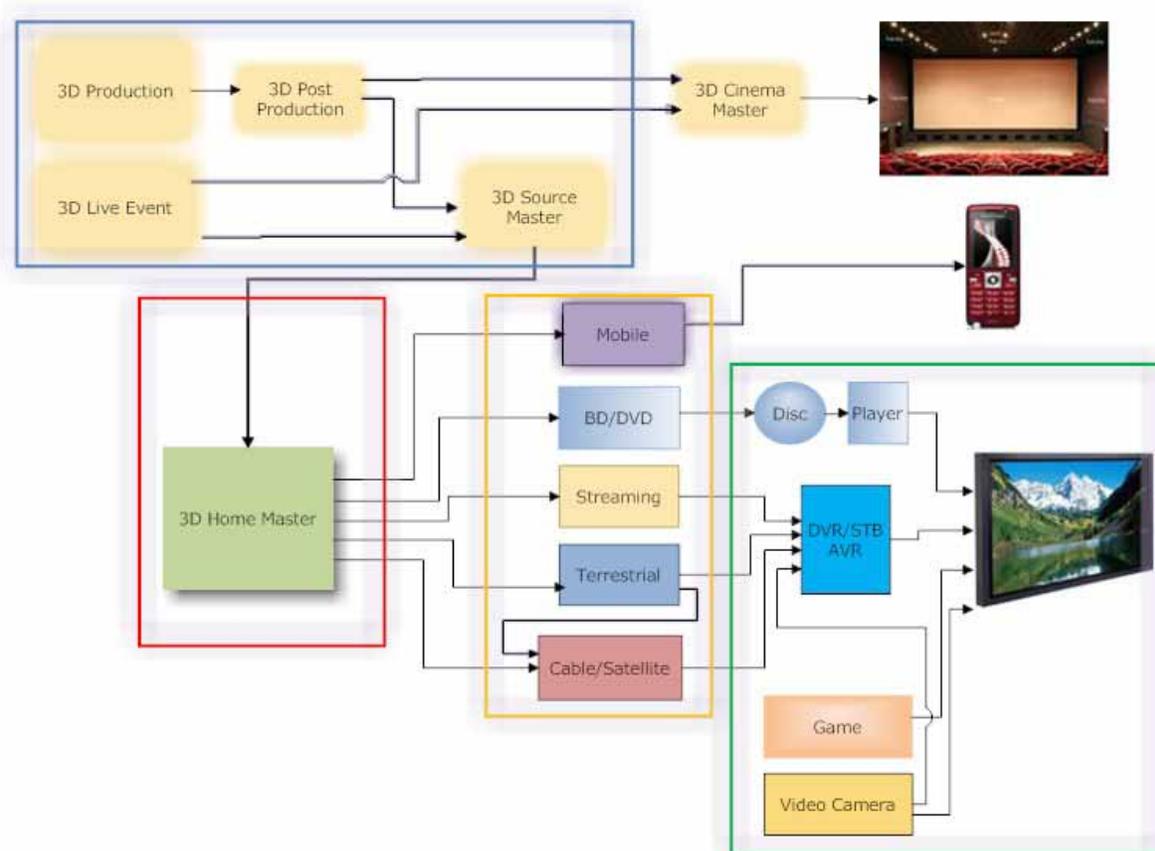
During the initial phase of this effort, the task force redefined the scope and goals of the effort to be more sharply focused, and to specifically address the standards needed for the 3D Home Master that would be distributed after post production to the ingest points of the distribution channels, e.g., Blu-ray Disc or DVD authoring facility, or an ingest center of a broadcast operator. The 3D content will be rendered on different types of 3D displays. It is important to note that neither the 3D Home Master itself, nor the format used to store/represent 3D content in the Master is meant for distribution to the home. The ingest point in each of the types of distribution networks are expected to convert the content in the 3D Home Master into the appropriate format as needed by the distribution system.

The 3D Home Master is defined later in the document to be an ‘uncompressed and unencrypted image format or file package derived from a 3D Source Master. The 3D Home Master is intended to be used in the creation of 3D Distribution Data.’ The primary objective of the task force has been to generate requirements for the 3D Home Master, which would drive specifications for the 3D Home Master in a subsequent phase of SMPTE standardization activity.

The task force first identified various use cases from the perspective of various entities in the supply chain of the 3D content to the home, and those use cases that had an impact on the format of the master were used to generate requirements. In generating use cases, priority was given to distribution via physical media, broadcast channels, and online mechanisms. Consumer viewing of the content on TV-type devices was also given a higher priority than viewing on mobile devices such as mobile phones and in-car devices. However, the task force did consider use cases and requirements that included downward scalability (e.g., portable/mobile).”

End-to-End System

Section 3 of the report includes a conceptual signal flow diagram for 3D content distribution systems as shown below. The scope of the effort of the task force is shown outlined in red, and consists of the requirements for the format of the 3D Home Master provided to each distribution system (outlined in yellow) leading to the home.



The report states that it is assumed that a single 3D Home Master is used for all distribution channels but states that any future standards creation should adequately study this to ensure that it is feasible to create a single 3D Home Master versus multiple masters (each for a different distribution channel or set of channels).

The report states that generally the master package will undergo additional processing (compression, storage and physical transport) before being ingested into the distribution system. Ultimately each distribution system will adapt and format the 3D Home Master to meet their specific uses.

Recommendations

The recommendations from the report are as follows:

“SMPTE should undertake standardization effort to generate specifications for the 3D Home Master that meet the requirements listed above. The intent of the standards creation should be to create a single 3D Home Master versus multiple masters.

SMPTE should establish liaisons as needed with other relevant Standards Development Organizations (SDOs), as well as industry consortia and forums to:

- (a) ensure compatibility/interoperability with the technical solution/specifications/standards being developed by those organizations,
- (b) to foster the use of the 3D Home Master (resulting from future SMPTE standardization activity) for content creation, storage and ingest in downstream authoring and distribution,
- (c) align terminology and concepts with the work of these organizations, and
- (d) Identify gaps in standards required that fall within SMPTE's charter and generate solutions for these gaps.

The types of organizations SMPTE should consider for liaison activity include those that consider distribution formats (broadcast, online, physical media), device interfaces, display technologies, etc., within the 3D content to the home eco-system.

SMPTE should continue to study and investigate solutions to the issues and challenges listed in this report in the course of developing a 3D Home Master standard. SMPTE should also embark on a review of how 3D content to the home affects the body of SMPTE publications.”

The full report comprises 76 pages, including appendices, and is recommended for anyone seeking a comprehensive introduction to many aspects of 3D systems and the issues that need to be considered in planning for 3D to the home. It will be available for purchase next week at the SMPTE Booth L28 at the NAB Convention (see www.nabshow.com), and from about April 18 will also be available for download from the online SMPTE Store (<https://store.smpete.org>). The price is \$20.

Radio Heard Here exhibit at NAB Show to feature FM Radio in cell phones



While you are at the 2009 NAB Show (April 18 - 23, 2009) www.nabshow.com be sure to check out the Radio Heard Here exhibit in the north hall of the Las Vegas Convention Center, booth N6138. A number of cell phones that have built-in FM radios will be on display including those with integrated FM antennas. Register for a daily drawing for either a Motorola Cell Phone with Integrated FM Radio or a Sony HD Radio.



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Program Overview, 7:45 am - 8:45 am

Vertical Real Estate: Tall Towers Mean Tall
Dollars, 9:00 am - 10:15 am