

Introduction

The Task Force Final Report

By William C. Miller, SMPTE Engineering Vice-President



The motion imaging industry is poised at the verge of a technological change that will be as profound as the one the print industry underwent in the past thirty years. In some parts of our industry, such as electronic graphics, computerization came early and the changeover is well under way. In others, such as live studio production, there has been hardly any impact. With the adoption of digital film intermediate techniques by studios worldwide, film production and post-production, both for features and for television, will be affected as well.

With the introduction of digital broadcasting, TV systems worldwide will have to be rebuilt over the next three to ten years. As this happens, there will be an unprecedented opportunity to take advantage of the benefits offered by the ability to exchange program material and related data as bitstreams. The benefits of such full exchange is undisputed; even so, it is unclear whether their magnitude is fully appreciated throughout our industry.

Until now, digital TV systems have largely been designed and constructed in the same manner as traditional analog systems, with the simple replacement of analog program paths with digital ones. Where implemented, full exchange of metadata and control along with the program material has been restricted to islands within the plant. Usually, this is because the systems involved have been closed due to differences in implementation among different manufacturers. The few facilities that have been built to take full advantage of the benefits offered by these technologies have generally been designed, built, and provisioned by a single large manufacturer, so compatibility has not been an issue.

The work of the EBU/SMPTE Task Force for Harmonization of Standards for the Exchange of Program Material as Bitstreams has been focused on isolating and identifying the roadblocks to interoperability so they can be removed through development and implementation of standards. Most of this work will be undertaken by SMPTE. Indeed, SMPTE is in the process of reorganizing its television technology committees and their subgroups in order to expedite the handling of the flood of work brought forward by the Task Force. The leaders of the Task Force will be deeply involved in the new technology committees, and I know they will bring to the effort all the energy and zeal they displayed in driving the creation of this report.

Much remains to be done. In particular, the shift of technologies will create a tremendous need for training. The existing skill sets of most technicians in the industry are ill matched to the needs of the plants of the future. In a digital

world, there is no place for the "machine operator." The pace of the changeover makes the need for training even more urgent. It is likely that in ten years' time, the conversion will be complete, and the industry will have undergone a change greater than that experienced with the introduction of videotape. As the organization that will define the standards to which future plants will be designed, SMPTE has both the opportunity and the obligation to educate its members and potential members worldwide. If, as Alan Kay said, "the best way to predict the future is to invent it," then we in SMPTE have a firm grasp of the future of motion imaging.

In this issue of the *SMPTE Journal* is the Final Report of the Task Force. This joint effort of SMPTE and the European Broadcasting Union (EBU) is, we believe, one of the most significant achievements in the history of the two organizations, rivaling in importance the work that led to the standardization of component digital video systems in ITU-R BT 601. The scope and consequence of this report are underscored by the fact that over 200 individuals, meeting 17 times over the past two years, have contributed to its creation.

Last year at the NAB Convention, the Task Force presented its first report, which set forth the user requirements for standardized bitstream exchange technology for our industry. As they assembled that report, the Task Force members realized that the opportunity existed to carry the effort further and to answer some of the questions that the report raised. They determined to harness the momentum they had built up and to continue the work to the point where it could be handed off to SMPTE's technology committees or to other standards-making bodies, as appropriate. The report that follows these remarks is the result of that effort.

I would like to particularly acknowledge the extraordinary contributions of the co-chairmen of the Task Force, S. Merrill Weiss and Horst Schachlbauer. These two remarkable gentlemen kept the Task Force focused and productive, even as the scope of the work expanded to a size not imagined at the start. That a work of this size and complexity could have been produced in just over a year's time is testament to their talent and dedication. I must also acknowledge the work of the Task Force's secretariat, Roger Miles, who kept track of the sea of contributions and discussions, and managed the Herculean task of assembling them all into the document which follows. The Society and the industry it serves owe a great deal to these men and to all the volunteers who contributed to the work.

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