Australia

PAY-TV

Three organizations are now set up in Australia to provide pay television.

Australis

Australis has the license to supply pay-television programs by satellite and DBS terrestrial means. The satellite delivery systems, either direct to homes or to DBS head ends, will use the American Digicipher for video compression. Until a PAL version is available, NTSC signals will be used with standards converters at the individual homes or the DBS head ends.

Telecom

Until recently, Telecom was Australia's only telecommunications network. Plans are under way to supply large areas with coaxial cable for the consumer. Rupert Murdoch's News Ltd. organization has an agreement with Telecom to join in its pay television venture.

Optus

Optus is a relative newcomer that provides an Australia-wide telecommunications network via satellite and fiber optics. It plans to put coaxial cables into customer's homes and has an agreement with Kerry Packer's broadcast media and publication organization.

World Cup Coverage

The World Cup soccer competition was covered for Australia by the Special Broadcasting Service (SBS). Some 180 hours of coverage was relayed back to Australia, with broadcasters in New Zealand, Singapore, and Malaysia also taking the feed. A small crew was set up at the Dallas International Broadcast Center, while production and master control facilities were set up in San Francisco. Five ENG crews traveled around the various World Cup venues.

Robotics

The Australian Broadcasting Corp. (ABC) signed a large contract with Radomec EPO for the supply of robotic camera equipment. Studios in Brisbane, Adelaide, Perth, and Hobart will be installed with the robotics for news and current affairs as a first stage in equipping all such studios in the ABC network.

International Digital Circuits

Both TVNZ and the Nine Network in Australia have started using the NTL System 2000 compression scheme to relay television signals internationally into New Zealand and Australia. These circuits, using 8 Mbits/sec per program, are carried on an Intelsat Indian Ocean satellite. Prior to this, the Nine Network often took signals from Europe back to Australia via the U.S. and the Pacific satellites using Vidiplex.

Film Equipment Orders

Film is alive and well in Australia, as indicated by the international success of many recent feature films. The use of film for television programs is also in good shape. Several companies have invested over the year in new telecine machines; among these are Videolabs and Omnicon, which have both purchased Rank Cintel Ursa Gold machines. Commercials now appear at the cinema and on television in a widescreen format; television uses letterbox to show the whole frame.

Australian Film and Television Industry Improving

The 1994 conference and exhibition of the Australia North Section of the SMPTE, held July 5 to 8 at the Sydney Convention and Exhibition Centre in Darling Harbour, was an unqualified success, with a record turnout of approximately 6,500. The attendance at the event and significant business reported at the exhibit would seem to forecast growth for the Australian film and television industry.

A special feature of the event was a one-day seminar on production techniques for widescreen television held at the Australian Film, Television and Radio School. The seminar featured presentations by senior executives of the European HDTV group Vision 1250, as well as leaders of the Australian industry.

From reports at SMPTE '94, it appears that the country's leading commercial television network, the Nine Network, has embarked on a major reequipment program. Sony announced that the network has ordered 45 digital Betacam VTRs, two BVC-1000A Library Management Systems, and one Flexicart. BTS-Broadcast Television Systems GmbH will supply four Saturn digital presentation switchers, a Venus digital router, and a Jupiter integrating machine control and routing switcher. In the graphics area, Nine will purchase six Silicon Graphics workstations. Sony also reported that the fledgling pay-TV operator Australis Media has ordered 30 digital Betacam machines.

In the D-5 format world, GEC Video Systems announced a significant order from post-production facility Image East, for three AJ-D350 D-5 VTRs and an Abekas A83 digital component switcher. In the nonlinear area, the Australian debut of the ImMix VideoCube resulted in an order for 12 systems.

The level of sales activity reported at SMPTE '94 was the strongest any industry observers had seen since the heady days of the mid-1980s. It would appear that the film and television industry has made a full recovery from a devastating recession. In 1994, all the commercial networks reported strong profits and successfully exported programs. The Australian film industry is buoyed by the success of such features as *The Piano; Strictly Ballroom; The Sum of Us;* and *The Adventures of Priscilla, Queen of the Desert,* and the emerging pay-television industry is due to begin delivering programs very shortly. Under these conditions, both equipment suppliers and program producers are feeling very confident about the future of their industry.

Belgium

The Dutch-language public broadcaster BRTN has inaugurated its new transmitter mast. The transmitters in the 300-m tall concrete structure cover the central part of Belgium with five radio and two television programs; provisions are also made for future DAB transmissions. In addition the tower is equipped with fixed microwave

antennas for the transport of radio and TV signals. There are also remotely operated, adjustable antennas for radio and television ENG and an auto-tracking dish for a helicopter transmitter.

The French-language public broadcaster RTBF has installed two digital continuity suites, 19 digital Betacam recorders, and an FDL 90 telecine equipped with a Renaissance corrector. The annual film production of approximately 45,000 m is gradually being converted from 16mm to Super 16. On September 27, 1994, the transmission of PALplus programs was started. The year also saw the introduction of Dolby Surround and Teletext.

Germany — Institut für Rundfunktechnik (IRT)

Research and Development

Today, both in film and in television engineering, the modulation transfer function (MTF) is normally used to evaluate the quality of camera lenses with regard to definition characteristics and detail resolution. To determine the MTF, sinusoidal or square-wave line patterns are imaged under operational conditions, and the amplitude reduction that results with increasing spatial frequency is measured. However, in practice, the MTF values obtained this way do not automatically correlate with the visual impression of sharpness gained when real objects are imaged. In addition to the dependence on the image content and the viewing conditions when the image is reproduced, other system parameters, especially those concerning the transmission and reproduction chain, play an important role in visual impression of sharpness.

For conditions specifically applicable to modern television image recording and reproduction, the IRT has investigated the major influences on the perception of sharpness when images of real objects are transmitted and the form these could take when the MTF is evaluated. A new qualitative way of evaluating the quality of a television camera lens was discovered by manipulating the lens' MTF in defined defocusing steps while forcing subjects to choose between paired comparisons of pictures on the basis of image sharpness.

ZDF

In 1994 three major projects were concluded at ZDF. A new post-production complex in digital component technology was completed. The new digital OB van, ö1, was put into operation. At the end of 1994 a satellite uplink to ASTRA 1A was finished.

3sat Uplink for ASTRA 1A

3sat is the joint German-language satellite program of ZDF, ARD, SRG, and ORF. It will be transmitted directly from the ZDF Sendezentrum at Mainz beginning in 1995 on transponder 10 of the ASTRA satellite 1A with audio subcarriers of Deutschlandradio Berlin and Deutschlandradio Köln.

All RF-equipment is sheltered in the existing air-conditioned room beneath the EBU station. From there the RF power is transmitted to the antenna feed via waveguide. The waveguide switching system and the power budget is planned to transmit the 3sat carrier with the option of upgrading to one additional carrier in the 14-GHz or 13-GHz band on either horizontal or vertical polarization without interruption of service. An antenna position- and heating-control subsystem is installed. The modulation process takes place within the ZDF broadcasting center, about 1 km from the earth station. From there the combined video and audio signals are transmitted to the shelter by a fiber-optic system on 70-MHz IF level. Like all other transmitting equipment, these links are built up in a 1:1 redundancy. The complete uplink is monitored and controlled by a real time control system from the main control room as well as from the the shelter of the earth station.

NETWORKS

CBS

During the year progress continued in the transition to all-digital systems. The CBS Broadcast Origination Center was further expanded to provide 12 separate computer-controlled outputs, with all playback originating from digital VCRs.

The design of the CBS Net-Q system was completed. This system provides affiliated stations with a complete network switching schedule with accurate timing information for the next 24-hr broadcast day. Any immediate changes to the schedule are transmitted instantly to the local stations. The schedule information is sent as data packets in the VBI and is processed by the local Net-Q computer system. If desired, the local station can set this terminal to initiate the playback of local station breaks, on command from New York. Shipment of equipment is now in progress.

CBS Engineering took delivery of the first Hewlett-Packard video server system, and the evaluation is now completed. Employing MPEG-2 and operating at a data rate of 15 Mbits/sec, the server stores 20 hrs of programming, sufficient for approximately 3,000 commercials. An additional buffer store is provided, with 6 hrs of storage, adequate for a full day's schedule of commercials. The first system will be installed in a CBS owned station.

The studio cameras in New York have been replaced with Ikegami HK 377 cameras. These have the special feature of independent and automatic control of facial flesh tones and detail. CBS News increased its use of nonlinear editing systems with equipment supplied by Avid, ImMix, and D-Vision. For the coverage of the Congressional elections, the SGI Onyx Video File Server was successfully used for the real-time generation of all graphics.

With the addition of three more production studios in TV City, CBS now has a total of 22 stages in Studio City, 9 in TV City, and 9 in New York. One studio in TV City has been reequipped with Hitachi digital cameras, a digital switcher, and digital VTRs. The sensitivity of the cameras allows shooting with only 30 to 50 fc of light.