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THE BROADCASTING WHITE PAPER

Broadcasting in the UK is likely to change rapidly in the 1990s due to technological and other developments. The Government's plans for broadcasting legislation were published in early November in a White Paper entitled "Broadcasting in the 90's: Competition, Choice and Quality". The aim of the Government's proposals is to change the framework of regulations to allow a much wider range of programmes and services on both television and radio.

The BBC is seen in the white Paper as being "for the foreseeable future, the cornerstone of British broadcasting". Nevertheless, the Government proposes a number of significant changes which will affect the BBC in the coming decade. The following changes are most likely to affect us on the technical side although the timing of many of the proposals are not defined in any great detail:

The BBC will continue to be financed by the licence fee, but the Government looks forward to its eventual replacement (by a subscription system).



A picture scrambled by active line rotation a possible system for future subscription services (see page 3).

The BBC will be encouraged to develop further night-time subscription services.

The night hours on one of the BBC's television channels will be assigned to the new Independent Television Commission (ITC).

BBC Radio will have to surrender the MW services of Radios 1 and 3, which will be re-assigned for two national commercial channels.

Transmission arrangements for both television and radio will be reformed to give scope for greater private sector involvement.

Some of the Government's other proposals, although not directly aimed at the BBC, are also likely to affect us.

A fifth television channel will start up by 1993 with a coverage of 65-70% of the population. It will be a national service (not regional), but different companies will provide the programmes at different times of day. It will be transmitted on UHF. If technically feasible, a limited coverage 6th channel will follow.

Radio listeners will be offered more choice. Eventually, there could be three new national services (two on MW and one on FM) and several hundred new local independent stations.

The Government has asked for comments on its proposals and the BBC will be submitting its formal response in February 1989. It is anticipated that the Bill will be brought to Parliament in the 1989/90 session.

Henry Price, HELD

LICENCE AGREEMENTS

The following agreements have been struck since the autumn issue of 'Eng Inf' went to print:

MINIATURE LOUDSPEAKER, LS3/5A

The evergreen LS3/5A miniature loudspeaker is once again the subject of a licensing agreement, this time with Harbeth Acoustics of Haywards Heath, Sussex. This unit has now come full-circle as Dudley Harwood who worked on the original design while at Research Department founded Harbeth Acoustics in 1977 and remains associated with the company today.

This agreement means that the BBC still maintains at three, the number of licensees for the LS3/5A, the other two being Rogers (Swisstone) and Spondor.

BAND 11 IF BANDPASS FILTER, FL2/28

This 10.7 MHz bandpass filter, licensed to Eddystone Radio Ltd of Birmingham, can be employed as an alternative to the original IF filter of the RC5/9 Band 11 re-broadcast receiver. It mounts inside the chassis of the host receiver, and includes a low noise 2.5 dB amplifier.

It is particularly useful in applications where the link might otherwise suffer from excessive adjacent channel interference.

SHOT-CHANGE DETECTOR, RP3/511

Digi-Grade Systems Ltd of Farningham has become the third licensee for the Digiscan shot-change detector, following Rank Cintel and Digi-Tel Systems (UK) Ltd. This card, which mounts inside the electronics rack of a Cintel Mk. III Digiscan telecine, detects changes of shot and outputs a logic pulse to other equipment for example, a colour corrector.

DIGITAL VISION MIXER, EP5M/529

Vistek Electronic Ltd of Bourne End has agreed to the terms of a licence for D&ED's digital vision mixer. The deal was made in September, just in time for IBC 88 and includes not only the complete mixer (with the associated analogue conversion sub-system), but also the chromakey (cso)

extension, currently being developed at Avenue House.

There are now four of these mixers in BBC service - in TV News Graphics (two units), TC5 Sports Graphics, and the Electronic Caption Preparation Area (ECPA). The TV News facility, described in 'Eng Inf' issue 28, uses the most recent variant of the mixer and it is this type which has been licensed to Vistek.

For further details of these and other licence agreements, please contact the D&ED Liaison Engineer, Peter Jefferson, on Avenue House 375.

TRANSMITTER NEWS

The following stations/services have opened since 1 October:

Television

Berrynarbor	N. Devon
Dromore	Co. Down
Ederly	Co. Fermanagh
Kelvindale	Glasgow
Luscombe Valley	near poole
Trefor	near Caernarvon
Upper Killay	near Swansea

FM Radio

Keighley	W. Yorkshire
Newhaven	E. Sussex

Stereo radio finally reached NW Scotland on 1 December (the Melvaig and Skriaig F-sites). The areas covered include WestE. Ross, Skye and the Outer Hebrides.

(Ton Pentre, in the Rhondda Valley, opened on 26 August and, regretablely, was omitted from Transmitter News in our previous issue.)

Radio 1 FM

Black Mountain	near Belfast
Oxford	Beckley, Oxon

Local Radio

Radio Gloucestershire opened on 11 October with FM transmitters at Churchdown Hill (104.7 MHz) and Stroud (95.0 MHz) and an MF transmitter at Gloucester (603 kHz).

GLR's FM transmitter at Crystal Palace doubled its erp on 2 December.

TELEVISION DOWNLOADING

'Downloading' is the name for a new commercial venture being developed and marketed by BBC Enterprises. In the spirit of the new competitive philosophy of making the maximum possible use of broadcasting resources, BBC Enterprises is able to offer, on a wholly commercial basis, the use of night-time television broadcasting hours.

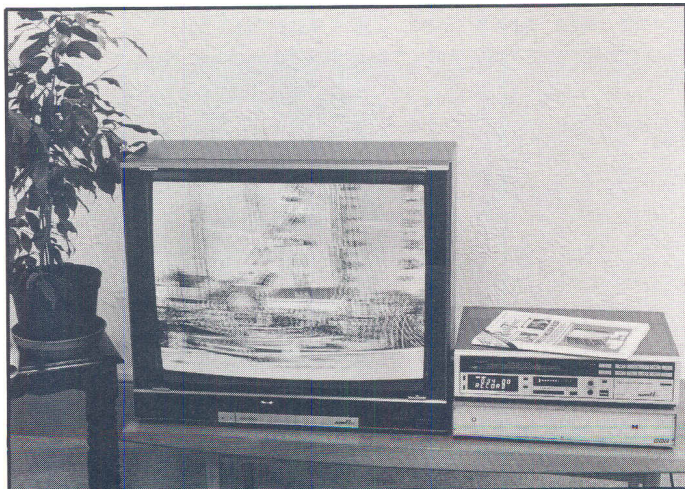
The use of BBC transmission facilities is paid for by a Service Provider who makes pre-recorded programme material which the BBC transmits in a scrambled form to be 'downloaded' (received, descrambled and recorded) by subscribers to the service.

I~ The Present Situation

The Home Office has approved an experimental two year trial period for British Medical Television (BMTV), of Woking, to provide an information service for the medical profession, mainly General Practitioners. The 'Medical Downloading' information comprises the latest medical news, data and developments and is available on subscription from BMTV.

BMTV provides the programme information to the BBC on U-matic video cassettes for transmission on BBC2 during the night. On transmission, the video and sound are scrambled by the Discret 12 system which is similar to that in use by the French pay-TV channel, Canal-Plus. The scrambling inverts the audio spectrum and imposes a pseudo-random Jitter sequence on the video (after the blanking and colour burst) whilst rigorously maintaining the timing of the line sync pulses.

At the subscriber's premises the recording



A picture scrambled by Discret 12

process is automated. The present generation of descrambler recognises a code, initiates an automatic power-up, and sets the subscriber's vcr into Record mode. At the end of the transmission, the descrambler initiates a power-down sequence. The programmes are then ready to view the following morning.

What Of The Future?

A fully automated system is currently being installed in TV Centre by Central Systems Section, of P&ID Tel, to provide the sequential playing of a number of cassettes. At present, the U-matic tape is replayed by manually operating the machine.

A new generation of scrambler, which will have a number of encryption algorithms, is being developed by BBC Engineering Research Department. The algorithms scramble the video using the technique of active line rotation which was demonstrated at IBC88.

Each programme on a source cassette will be intended for a particular subscriber group - identified by a unique combination of user bits in a time-code sequence laid down on a time-code track. The user bits determine which encryption algorithm is employed for the transmission of that programme. In this way, a number of service providers could be offered a completely secure service. In addition each provider could address a particular section of its subscriber group - if the material was to be of interest to a limited number of subscribers only.

An invaluable contribution to this project has been made by TV Network department which has devised techniques to ensure that Downloading programmes are transmitted to schedule, prior to automation early in 1989. TV Network department has also played a major part in the design of a practical system which had to be carefully integrated with the existing facilities in CAR.

The author gratefully acknowledges the excellent working cooperation and liaison with Jim Day of BBC Enterprises.

Jon Melmoth
Project Manager; P-ID Tel

PSC EDITING AND CONFORMING

For more than 20 years, 16mm film has been the main format for shooting television productions on location. Today, video cameras, recorders and electronic production techniques are increasingly taking over from film on many types of programme. Television Film Department, based in Ealing, currently performs some 20% of its location work using video and this has led to the conversion of film cutting rooms into psc editing suites at Lime Grove, Woodstock Grove and in the East Tower at Television Centre.



A simple psc editing suite

The simplest suites consist of a playback machine connected to a recorder via an edit controller; the edited tape simply comprises blocks of material assembled from the master tape(s). This arrangement permits editing in the CTDM (compressed time division multiplex) mode. More sophisticated editing, including wipes and dissolves, requires two playback machines, one recorder and a vision mixer, which means that editing must take place in the component (Y,U,V) mode rather than CTDM.

Film Department currently has four two-machine suites, one simple three-machine suite and five dual-gauge (Betacam and U-matic) suites. Betacam, and more recently, Betacam SP machines are replacing U-matics in these areas; a few U-matics have been retained for replaying archive material.

The type of editing just described is known as 'on-line'. This refers to a system where editing takes place in one of the broadcast formats the resulting edited tape being the one which is actually transmitted. It is an expensive approach, as broadcast quality equipment

is needed, and there is little opportunity for producers/editors to tryout different ways of putting the programme together.

With film editing, an 'off-line' technique is employed where a 'work print' or 'cutting copy' is made from the original negative. The copy inevitably gets dirty and scratched in the cutting room, yet the viewer doesn't see this, as it is not used for transmission. Instead, it is sent for 'negative cutting', where the positions of all its cuts are matched (cut for cut) on the original negative, by means of the key numbers at the edge of the film. Thus, the negative undergoes 'conforming' to become an accurate representation of the edited print.

Film Department has recently opened a new video editing suite, in the East Tower, which to some extent mimics the aforementioned off-line technique for film. The new suite is known as PECA, an acronym for 'PSC Editing and Conforming Area'. The original video recordings (picture and sound) are copied to the VHS format, which enables relatively cheap equipment to be used for editing. Although the edited VHS tapes are not good enough for transmission, information derived from time-code is used to conform the original broadcast-quality tape(s).

The Off-Line Editing Equipment

JVC recently introduced the 'Editmaster', VHS system which claims good frame accuracy during editing. It relies on VITC (Vertical Interval Time-Code) whereby a code is generated to identify every single frame and is inserted digitally in the field-blanking (vertical) interval, in much the same way as teletext.

PECA's tape machines and control desk