

Acorn Rules the Airwaves

A green-tiled two-storey brick shack looms on the banks of the foggy Tyne: a familiar sight to commuters backed up along the A1 Western by-pass in Gateshead, Tyne and Wear. Many, as they pass, are prompted to tune in to the traffic news originating from that very building - on the most listened-to radio station in the North East, METRO FM. As the traffic bulletin ends, and the music resumes, scarcely a soul will realise that the track which soothes, enrages, cheers or mellows their morning mood has been selected especially for them by... an A5000. Few would care to know that the Acorn machine in question is one of fifteen 32-bit RISC computers bringing order into the hectic world of programme control on their preferred frequency.

But consider this - controlling the play order of tracks broadcast on METRO FM and its sister stations is a sophisticated business. Imagine the depth of choice available to the programme controllers at the station, and to the DJs themselves. How can they be sure that the listener is receiving variety, hearing the most popular tunes often enough, not being bombarded consistently with the same thud - thud? And how does the listener know that what he hears isn't merely a reflection of

the DJ's own tastes or current frame of mind? This used to be the very scenario. In the bad old days, the listening choice was at the whim of the DJ, who prepared for his show by picking records from a trolley wheeled into the studio, often ignoring the playlist itinerary set out for him. The Programme Controller decided that the system needed overhauling.....

..... It was 1985. In Metro FM's workshop was a BBC computer, a victim of torture for the experiments of the station's engineers. One such experiment

Acorn machines lend a touch of dependability in the busy world of commercial radio.

A report by
Kathy Brown

written by Metro Radio Engineer, Dave Elliott. Elliott has been with Metro Radio for fourteen years, and has witnessed the growth of the station from a parochial affair to a local radio group drawing audiences from as far afield as Grimsby, Chesterfield, Durham and Berwick.

The Metro Group now comprises seven local radio stations, including five FM stations (Metro, Hallam Radio in Sheffield, TFM in Teesside, Viking FM in Humberside and The Pulse in Bradford), broadcasting to the 18-35 age group. The Group's AM

transmissions in the shape of Great North Radio and Great Yorkshire radio offer an easy listening alternative to some ten counties. These are not small fry of the broadcasting world. Metro FM is more popular amongst its target audience than BBC Radio One. And there at the hub of a rather

MUSCOM (D.E 1990) - METRO		FAMILIAR INVENTORY SORT/SEARCH	29 Jul 1994
Code	Title	Artist	Publisher
ABAB	TILL I LOVED YOU	B.STREISAND & D.JOHNSON	VESTON
B290	LOVE SHACK	B52'S	RONDOR
A930	LOVE IN THE FIRST DEGREE	BANANARAMA	IN A BUNCH
AB8F	LOVE - TRUTH & HONESTY	BANANARAMA	IN A BUNCH
B3C2	ONLY YOUR LOVE	BANANARAMA	IN A BUNCH
AD06	LOVE SONGS ARE BACK AGAIN	BAND OF GOLD	VARIOUS
A93E	LOVE INSIDE	BARBRA STREISAND	RSD
B284	WE'RE NOT MAKIN' LOVE ...	BARBRA STREISAND	BOLTON/WARNER
A389	WOMAN IN LOVE	BARBRA STREISAND	STIGMOOD
AD18	IF I SHOULD LOVE AGAIN	BARRY MANILOW	CHAPPELL
A457	GIVE A LITTLE LOVE	BAY CITY ROLLERS	UTOPIA
A49D	SUMMERLOVE SENSATION	BAY CITY ROLLERS	MARTIN/COULTER
AD8C	MAYBE I'M A FOOL TO LOVE	BAY CITY ROLLERS	BAY CITY/CARLIN
A4B3	SHE LOVES YOU	BEATLES	NORTHERN
A4B9	CAN'T BUY ME LOVE	BEATLES	NORTHERN
A546	LOVE ME DO	BEATLES	MPL
AR70	P.S. I LOVE YOU	BEATLES	MPL
AD93	AND I LOVE HER	BEATLES	NORTHERN
AD9E	IT'S ONLY LOVE	BEATLES	NORTHERN
ADAB	WORDS OF LOVE	BEATLES	SOUTHERN

MUSCOM in action

involved the writing of a program which would provide the station's Programme Controller with the control for which he yearned. What started as a sideline activity developed into a mature, complex but extremely effective music scheduling system. MUSCOM (Music on Computer) was born,

large wheel sits an A5000 file server. And MUSCOM.

Elliott wrote MUSCOM to the Programme Controller's own specification. The resulting application is a database of some 8000 music tracks, covering the full gamut of popular music tastes. The catalogue is subject to regular filtering and updating, thanks to a fortnightly postal research effort undertaken by Metro. The research, known affectionately within the station as *Hooker*, is a cassette-tape sampler of fifty hooklines, digitally compiled using Acom machines from a variety of current, medium-old and golden oldie records. The sampler is sent to a panel of radio listeners for grading.

Using MUSCOM, the Group's Music Organiser and Controllers are able to schedule tracks for rotation not only on artist and title



Areas covered by Metro Group (red) and Broadland Group (green)

Several commercial plotting packages are available off-the-shelf, but Elliott is (inevitably) quick to defend his own utility. It comes down to the way in which the plotting is carried out, he explains. Other packages tend to look at the time available then pick out a track that fits. MUSCOM allows the parameters to be defined for a succession of tracks and then allocates them to the time available. It's the positive side of scheduling versus the negative.

Anyway, the system must work. After Metro implemented MUSCOM in the middle eighties, the audience figures soared. The listeners simply liked the variety of music on offer. Advertising income spiralled. Subsequently the station bought out TFM (Tees FM), with the other stations of the Group being brought into the fold in 1990.

Metro use fifteen Acom machines groupwide. These are linked internally by Econet and externally by ISDN (Integrated Services Digital Network) phone lines. Via this medium the computers can dial up and transmit data from one file serving machine to another at a different location - rather like sending a fax. In this case, the Gateshead A5000 transmits to Hallam Radio in Sheffield, and to the file servers at Viking, Pulse and TFM, then receives backups of the logs from each station. Before Metro took over Hallam, Viking and Pulse in 1990, record scheduling at these stations was a matter of individual DJ choice, as it had been at Metro.

When Metro took programming in hand for the other stations, they were initially obliged to communicate by floppy disc and snail mail. Monday is traditionally play list generation day. Once the weekly play list inventory had been updated, and the tracks plotted, the data was copied onto five floppy discs which were posted in



An A5000 running MUSCOM in the Metro Radio studio

basis, but also according to a mind-numbing variety of permutations covering length of track, tempo, era, sex of lead singer, specific words used in the title, former or current chart positions, and so on. After broadcast, the MUSCOM-

generated log is used as certification to calculate royalties owing to the Performing Rights Society and PPL (record companies royalties).

The way in which MUSCOM allocates tracks to the daily schedule is called plotting.

the evening to arrive, hopefully the following day, at each of the stations.

Needless to say this procedure was both inefficient and risky. The

environment.

The Metro Group are by no means the only commercial radio station to benefit from the inherent RISC OS dependability. A couple

blind spot if it's not a PC.

In one of the rooms at Broadland, a postcard sardonically quotes the axiom 'To err is human - to really foul up requires a computer'. But the users of some of the fifty or so Acorn machines networked within the group insist that the converse is usually true. Graham, one of Broadland's newsreaders, tells of the time when a whole day's news was mistakenly binned. By him. In fact in the three years the newsroom have been on the network with the rest of the Group, Graham estimates only two minutes have passed during which the system was off line, and that was

Commercial scheduling at Broadland using Acorn

introduction, earlier this year, of ISDN interfacing has meant that updates to the programme schedule can be organised on a daily basis, if required, across the Group. Elliott has experienced few, if any, hitches with this set-up.

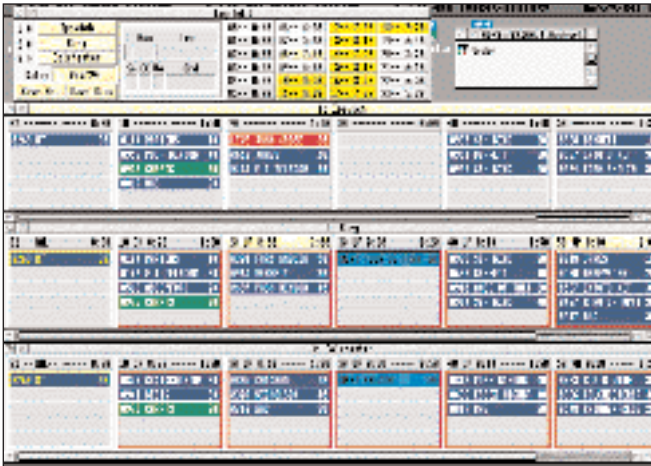
The beauty of the Acorn machine is that it's so reliable, he says. Colleagues' PCs seem to suffer from an interminable stream of crashes and fatal errors, but it's relatively rare on the Acorns. But surely the networking element invites a few glitches? Apparently not. Our commercial scheduling is carried out by an IBM BS400 Mainframe, which we used to have connected by Ethernet to the offices and studios. One day a whole section of commercials got wiped out en route to broadcast. The reason - a printer ribbon had run out in one of the offices. But the Acorn system's been fine. It's good to know that a machine which is regularly ignored by the business world is able to hold its own in this highly pressured professional

of hundred miles away, in Norwich, the sentiment is echoed. Brian Barr is a freelance consulting engineer for Broadland Radio and the other East Anglian Radio stations, which together dominate the radio listening population of East Anglia. The East Anglian Group constitutes one of the largest Acorn networks outside of Vision Park. The worst part of my job is getting over to people about the machine and how good it is, says Barr. People have a real

deliberate - and forward notice was given to all concerned. Quite a track record.

Luckily for Broadland and the other stations where Barr is a regular influence, he has exerted enough sway over a long enough period of time for the Acorn machines to have taken root and proved themselves. Again, at Broadland, their presence dates from BBC days, and indeed Masters still have a role to play.

The Managing Director was



Order: E007910224 - Scheduled													
Header: WOODS X20													
Order: E007910224 Exec: RPA Client: SFRPA Type: S Start: 200791 End: 200794													
Client Detail													
Product: ORDER NO 05 102410 Client: SFR PAULSON THEATRE Status: OK													
Seq	Time	Band	Ch	Te	Re	Th	Fr	Sa	Su	Start	End	Set	Rate
C	2008-2200									200794	200794	9	9.60
C	2008-2200									200794	200794	6	9.60
Total 110.31													

always very keen that we utilised everything we had. The Masters now run on a sub-network, as they tend to slow everything down, Barr explains. The BBC Masters still serve a hotchpotch of functions, including the automated alignment of aerials with the outside broadcast van, link-up with the burglar alarm system to monitor the building late at night, maintaining a record of people using the security entry system - and the broadcast of the prevailing temperatures at various locations groupwide direct to the studios. Additionally the sub-network operates as a news collation and editing facility for the newsrooms of the three main stations. The Masters receive bulletins over satellite from IRN, then broadcast the news around the building, into the newsrooms, where A3000s are installed for editing, logging and collation, and to the studios.

Alarming uses

Other applications common to machines throughout the network are a notify-based message system for internal communication, and the !Alarm utility, set by the atomic clock in Rugby. A further couple of applications are permanently loaded in the newsroom and transmission studios: !Liveline is used for broadcasting live sports results direct to the presenters from the newsroom; and on a more sombre note, an obituary alarm has been set up to convey news of dignitaries' deaths direct to studio for newflashes.

RISC OS prevails almost everywhere. The only areas within Broadland where Acorn machines are not used, are (ironically considering the situation at METRO FM) the music scheduling and (less ironically) for accounts. Barr has considered writing a bespoke RISC OS accounts package for the group but quite

simply hasn't had the time. Hardly surprising when you consider that between them, Barr and incumbent Chief Engineer Robert Mullander have written hundreds of applications and utilities for the Broadland suite. How many? grins Barr. We've lost count! It's not a static process, either. Having engineers on site means the users of the system are regularly suggesting updates and improvements, which Barr and Mullander are swift to implement where practical. This is not to say the software is patchy or badly thought-out. On the contrary, a tour around Broadland FM takes you through offices and studios which quite simply exude efficiency and confidence in their systems.

No PCs

Broadland is one of the few stations in the world applying a non-PC scheduling system for advertising commercials. Field Sales Executives go out and sell radio advertising time - also taking on board the clients' other requirements such as day(s) of the week to broadcast, number of spots per day and so on. The executives enter this information onto the computer (A3020s, A5000s and Arcs are all connected to the main A5000 file server). The commercial is then scheduled according to the variables selected, using a daily compiler, into the days, hours and single breaks it must go out on air. The commercials are coded to avoid voice and category clashes. The compiled log is in turn linked to the studios, and at the required times, the commercials are played from hard disc. The scheduling software is also linked to the Group's stations in Ipswich and Colchester. After the commercial is aired the software can produce transmission certificates for clients, and the pertinent information goes to accounts for invoicing.

The commercial scheduling system at Broadland is almost uniquely digital. Audio samples are made and controlled from the RISC OS desktop and are stored in a 4:1 compression format called APTX. This equates to just under 2 Megabytes per minute of audio. The 3.6 Gigabyte drives that store and play back the commercials provide some 26 hours' worth of storage. These are conventional fixed hard discs, a main and standby, connected externally to an A5000 using Morley SCSI interfaces. The digitally recorded material is transferred between stations within the group using Kilostream, which like ISDN lines transmits data at 64000 bits per second, but instead of dialling up a destination, provides a permanent and private link between servers.

Blinkered

The whole set-up is efficient, flexible and cheap to run. So why doesn't every commercial radio station in Britain use Acorn-based systems? Barr is unequivocal about his regrets in this respect.

Some stations are willing to pay hundreds of thousands on their computer systems. But for some reason the Acorn badge stands in the way. They prefer PC-based kit, because they think they can get parts for it just down the road. These off-the-shelf systems don't do any more than the Acorns do, and don't even have the advantage of being highly customisable the way my hard disc solutions can be. Barr admits he has considered putting his RISC OS commercial scheduling systems in an unbadged box to disguise their identity. People are blinkered to the capabilities of the Arc. This is a hauntingly familiar comment in the commercial Acorn world.

Yet if the feelgood atmosphere and



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commercial success of large broadcasting concerns like the Metro Group and Broadland are anything to go by, then people had better get unblinkered PQ. It's clear that what matters at the blunt end of the commercial radio business, as elsewhere, are results and reliability, rather than brandname badges. And so to conclude, (as Dave Nice would undoubtedly say in a situation like this) Let's rock!