



10 DOWNING STREET

(2)

Prime Minister

This letter is from a friend of
mine, who worked in the DoI and
then Cabinet Office, then privatised
himself four years ago and is now
running a very successful firm of
consultants on satellites and telecoms.

He believes that the BBC /
Unisat project is on a disaster course
- that it will ship badly, cost far
more than anyone expects, and, most
important, will throw away the UK's
chances of entering commercial

OVER

space operations ahead of other
countries. I think he may well
prove correct.

I have acknowledged his letter.

ms 30/9

Commercial in confidence

Rt Hon Mrs Margaret Thatcher MP
10 Downing Street
London S W 1

29 September 1983

Dear Prime Minister,

This is to advise you that a group of technical people I am leading, backed up by financial expertise, have submitted proposals to the BBC for an alternative direct-broadcast satellite project to Unisat. The attached summary of our proposals explains the case we are making, and for reference I also enclose a copy of the fuller proposal.

We are convinced that Unisat is a disaster for the UK :

it is an artificial political construct

it jeopardises the entire future of the BBC

it will lose money for the suppliers, and hence tax for HMG

the project may need to be bailed out by Government support

it throws away Britain's chance to enter commercial space operations ahead of other nations, especially on DBS

Instead, we have constructed proposals that will give a real opportunity to let risk capital determine Britain's entry into commercial space operations. Our project will have as much UK content as Unisat. Most importantly, it will be on time and it will work. The venture will yield tax revenue, and is intended to lead almost immediately to a follow-on telecommunications system with the same benefits for Britain.

We are conscious that the political odds are stacked against us, whatever the merits of our proposals. We are threatening Unisat, which involves several of the biggest industrial interests in Britain, and we are challenging a pattern of endless state support and control of space developments. We are nevertheless confident in the merit of our proposals, and certain that our project meets exactly the needs of the BBC and of eventual commercial DBS franchises. It will also head off the risk of a unilateral Irish project.

All we seek is a fair hearing - in the first instance a fair chance for the BBC to consider our proposals properly and without duress from the Unisat consortium and implicit pressure on the BBC to 'keep in line with Government policy'.

It would be inconsistent for us to seek your intervention in any way - it is for us to try at our own risk to persuade the BBC to listen to us and to follow the alternative course of action we propose.

Nevertheless, since we intend to develop our technical and financial case forcefully with the BBC, and to defend our case against inevitable attack from the Unisat camp, in public if necessary, we have felt it prudent to alert you to the fact that Unisat is now under direct challenge.

I know from my own experience in initiating the Mercury project that when we reach the political battles that lie ahead, we can have reasonable confidence of eventual success if our case is sound and well-presented.

At this stage, therefore, we are simply bringing the matter to your personal attention. If possible, we would particularly request that official advice should not be sought at this juncture from the DTI, since on all past form that will lead directly to a leak to Unisat and increased pressure on the BBC to commit precipitately to a project that they know is all wrong.

Yours faithfully

T. G. Anderson

(J G Anderson)



10 DOWNING STREET

From the Private Secretary

3 October 1983

Dear John,

The Prime Minister has asked me to thank you for your letter of 29 September, and for the enclosed paper on the private sector satellite project you are putting together.

The Prime Minister has read your letter with interest, and is grateful to you for letting her have a copy of your paper.

I hope we will keep in touch; I will certainly be interested to hear what progress you make.

Yours sincerely,

Michael Scholar

J. G. Anderson, Esq.

2 SUMMARY

- DBS has far better market prospects than cable in the UK. The BBC has a once-for-all chance to pre-empt both cable and commercial DBS by mounting the first effective DBS channels. page 5
- Successful market entry by the BBC depends crucially on the reliability, timeliness and economy in satellite distribution page 6
- The BBC has to have absolute confidence that the satellite system will meet its full requirements on channel performance and on launch dates page 7
- Power output should be kept high, as there are no real economies in lower power and high standards of introductory customer reception are essential page 7
- The BBC needs to avoid being locked into any an uncertain project containing high technical risk page 8
- The BBC also needs to avoid forced compromises late in the satellite programme on performance or dates page 8
- Full contractual penalties should apply. There has to be total confidence in the system suppliers page 9
- Unisat has major disadvantages, stemming from the way the Government prompted its formation. There is conflict of role with the system suppliers acting also as system organisers, and with British Telecom as user and operator page 10
- The suppliers are out of their depth in DBS technology page 10
- Unisat represents a completely new spacecraft design as well as advanced new payload technology. This creates enormous risk of delay or technical compromise page 11
- The whole project was initiated on the basis of scant definition of the mission and no real estimation of costs page 11
- The suppliers are under heavy pressure on other programmes, especially from the European Space Agency who are staffed to insist on proper progress, and this conflicts with Unisat page 12
- By contrast the BBC has no such control on Unisat page 12

There is virtually no chance at all that Unisat could meet the BBC requirement by autumn 1986. The BBC will therefore lose all its pre-emptive advantage page 13

It is now entirely plausible that the BBC could be delayed by being locked into Unisat, while the commercial DBS channels overtake with a US system page 13

The only sensible alternative is to organise a satellite system geared specifically and exclusively to the BBC's needs, with no question of dual mission for telecoms capacity page 14

The proposed alternative system would use an existing design of spacecraft that will be space-tested well before Unisat is theoretically intended to fly page 14

This eliminates the main project risk. The payload design and channel performance would be defined absolutely by the BBC page 14

There would be as high a level of UK content as applies with Unisat page 15

The alternative can proceed immediately, solely on the basis of commitment by the BBC page 15

The alternative would meet all the technical needs of the BBC, and the BBC would have a full window into the entire project page 16

The BBC would have all the normal contractual safeguards that apply in the world satellite industry, and if necessary even more stringent conditions on delivery dates could be applied page 16

The system would be organised by a UK-owned satellite operating company, and this company would give the BBC a lease on channels at a fixed price with no escalation through cost over-runs or inflation page 16

The system would have a 10 year design life, with options for the BBC to continue usage for any remaining life and to require provision of a follow-on system of identical performance page 17

Assuming no other usage of the system beyond the BBC channels, the fixed price would be twelve million pounds per channel year page 18

If other uses of spare capacity on the system arose, the channel price to the BBC would be abated. It is likely that this could lead to savings of at least seventy million pounds over the life of the system page 18

The equity composition of the satellite operating company would be structured to give the BBC the benefit of tax advantages. Several major UK companies would be willing in principle to join the venture to give financial and managerial backing page 19

Satellite project management expertise would be brought in as necessary on a contract basis page 19

At this stage neither British Telecom nor Mercury are intended to be involved, but if for political reasons this became necessary they would not have control page 19

Absolute confidentiality would be maintained in negotiations with the BBC, and it is fully recognised that careful political handling is essential page 20

If necessary, British Aerospace would be given the appearance of still leading the project, and would be likely to be major sub-contractors to ensure adequate UK content. Other major UK firms could also benefit page 20

These proposals can be discussed in detail with the BBC immediately, on a confidential basis. So long as final agreements were reached by December, there is absolute confidence of system launch by June 1986 page 21

SATELLITE SYSTEM

LEASE PROPOSAL

FOR DBS

23 SEPTEMBER 1983

CONFIDENTIAL

SATELLITE SYSTEM LEASE PROPOSAL FOR DBS

Contents

| | page |
|--|------|
| 1 Introduction | 1 |
| 2 SUMMARY | 2 |
| 3 Prospects for DBS | 5 |
| 4 The satellite system requirement | 7 |
| 5 Unisat | 10 |
| 6 The alternative | 14 |
| 7 Advantages of the alternative system | 16 |
| 8 Corporate structure and financing | 19 |
| 9 Political considerations | 20 |
| 10 Next steps | 21 |

23 September 1983

1 Introduction

1.1 Since late 1982 work has been under way in planning a telecommunications satellite system, to be financed by the UK private sector and to deliver communications services for the UK and for certain overseas markets.

1.2 For political reasons, after initial discussions with Government, the planning work excluded the possibility of offering a competitive option to Unisat for the BBC direct broadcast system. It was clear that the Government, as original sponsors of the Unisat consortium, wished to allow the Unisat organisation the clear opportunity to demonstrate their ability and competence to provide the desired service in full compliance with BBC technical and timescale requirements. It had been expected that voluntary acceptance of this limitation would improve the prospects of obtaining a telecommunications licence under Section 15 of the British Telecommunications Act 1981.

1.3 For this telecommunications satellite project, the markets had been extensively researched; the technical options to meet these markets had been defined; and finance would be available from UK institutional sources. What was needed was a political decision by Government to issue a licence. A formal application for a licence was submitted in May 1983.

1.4 In the event, in spite of cooperation in giving Unisat a monopoly opportunity on the BBC DBS project, the Government has not taken action on the licence question, preferring the separate satellite venture if possible to proceed under the Mercury licence. There have been discussions with Mercury but a mutually satisfactory way forward has not yet been achieved.

1.5 Meanwhile the apparent strains within the Unisat project have become public knowledge. Among the engineering team on the telecommunications project there was concern that the BBC was getting a poor deal, not only in terms of price but in terms of normal contractual assurance that its space segment facilities would be delivered on time and to specification. This would jeopardise the operational success and economic viability of the BBC's entire DBS strategy, and could whittle away its pre-emptive advantage in launching DBS services by 1986.

1.6 Accordingly attention turned to the specific possibility of organising an alternative lease offer for provision of the BBC DBS service, designed to give the BBC exactly what it needs, with unqualified assurances on delivery schedule and at a price consistent with commercial practice in the world satellite industry. Considerable work has already been carried out in defining this alternative. This paper sets out the main conclusions of this work and shows how the alternative project would proceed.

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3 Prospects for DBS

3.1 There is no doubt whatsoever that there will be a strong market for reliable DBS services in the UK. DBS has far greater chance of viability in the UK than cable. The Government's plans for cable have been developed with insufficient time to allow a rational approach to technology, programming and economic viability. The amount of real equity represented by the present batch of cable franchise bids totals no more than some fifty million pounds after account is taken of leasing arrangements, and it is highly unlikely that sufficient capital will go into cable this decade to give extensive CATV coverage of the UK. The only parties likely to gain from cable in the short-term are the manufacturers and installers of cable systems, and British Telecom on leasing of spare duct space.

3.2 There is a lot of froth about cable, but little substance. Specifically, cable has poor immediate prospects because :

- the historic problem of poor off-air reception in much of North America does not apply in Britain
- there will be a dearth of good programming material
- the installation costs of cabling are far beyond the availability of investment
- audience viewing habits are changing
- the Government is imposing extra system costs by looking for switched two-way systems, even though the small market for interactive services can be catered for perfectly well by other means

3.3 Nevertheless, if given enough time to develop and with the eventual emergence of low-cost switching technology, cable could pose a serious long-term threat to the BBC, tending to undermine its traditional place in broadcasting. Additional competition to existing BBC services will also result from commercial DBS channels which could become available in the 1987/88 period.

3.4 The BBC has a once-for-all chance to pre-empt both cable and commercial DBS by mounting the first effective DBS channels. The technology is all playing in the BBC's direction, and the BBC's strength in programming could create an unchallengable market position. While there may be reservations within in the BBC about such a radical change of stance, DBS is now inevitable throughout Europe and medium-power operations will begin in North America by the end of 1983. The opportunity for the BBC is commercially compelling. There is every prospect that the BBC could repeat on a much larger scale its lead on breakfast television, and match the growth of Home Box Office which has gone from obscurity to a turnover of a billion dollars per annum within eight years.

3.5 DBS by definition gives immediate coverage of the whole of Britain, either to households direct or to small community master antennae. The real cost of customer reception equipment will be well below the cost of cable TV delivery per customer hook-up, judging by the BBC's own plans and by comparable plans in North America and Japan. Receiving units in mass production will be available in the United States in 1984 at an initial price of \$500, including security provisions. The prices will fall to under \$300 by 1986. Furthermore, mass ownership or rental of video recorders in Britain greatly increases the value to the customer of premium services, by allowing time-shifting of viewing or recording of material for future use. Also, there is a large but unquantified market for the BBC in mainland Europe for household reception and for cable system reception.

3.6 The BBC should have no hesitation about the principle of entering the DBS market. All the market and technical trends are in its favour, and not to enter the market could well weaken the BBC's long-term place as a broadcasting organisation supported by mandatory licence fees. This would be a disaster not only for the BBC but also for public broadcasting standards in Britain.

3.7 What is essential, however, is that the market entry should be as early as possible, to head off any other bidders and to create customer preference for the BBC channels. If the market entry is successful, there are a variety of ancillary services that the BBC could profitably mount that are just as suitable to satellite distribution. If the market entry is not successful, or is too late, the BBC would be in serious trouble.

3.8 Successful DBS market entry is therefore crucial to the future of the BBC. It depends on :

- imagination and quality of programming, which the BBC should be able to take in its stride
- low-cost reception equipment, already becoming available in North America and Japan through advances in microwave integrated circuitry and volume production
- dropping the C-MAC requirement to achieve low cost and high reliability of customer reception equipment
- reliability, timeliness and economy in satellite distribution

3.9 This proposal deals directly with the last requirement, in sharp contrast to Unisat. Even if this alternative proposal were not eventually pursued, for political or other reasons, its active consideration could improve the BBC's negotiating position vis-a-vis Unisat and on dropping the C-MAC requirement. The central purpose of this proposal, however, is to allow the BBC to have absolute confidence that it can achieve pre-emptive market entry by August 1986, well before cable TV makes any real progress and in advance of commercial DBS channels.

4 The satellite system requirements

4.1 The BBC's requirements for satellite facilities are :

- two channels operational by the autumn of 1986
- high power-output to give the full EIRP levels
- firm competitive prices, without escalation clauses
- confidence that the system will be delivered on time
- confidence that the system will give the full power-output required, with concurrent operation of two full-power channels per satellite throughout operational life
- standard contract terms for commercial satellite systems, including penalty clauses for under-performance or late delivery
- full access by BBC engineers to the specification and development progress of the satellite system

4.2 Taking these requirements in turn :

- September (or preferably August) 1986 is the optimum date for introduction of service, ie the start of the autumn viewing season. Slippage even by a few months would miss this selling window, and could also miss the peak period of consumer expenditure on reception equipment leading up to Christmas 1986
- although it is well known that high quality reception could be achieved with much lower satellite channel power than the 230 watts allowed under the WARC-77 plan, by taking advantage of developments in reception technology, the main economic benefit of a lower-power approach below 100 watts would be to make more channels available on each satellite. However, for the UK the ultimate number of DBS channels is five. This alternative project proposal will provide four channel capability at full power, at essentially the same price as a lower-power system. Thus there is no economic advantage in reductions below the power level demanded by the BBC, and therefore no need to risk patchy reception performance with the crucial introductory service
- it would therefore be false economy to compromise the specifications for the satellite transmission facilities. Nevertheless the space segment costs are a significant element of the total BBC budget for DBS services, and the long lease involved represents a heavy financial

commitment. Without compromising on the power output requirements, the BBC has to have regard to these costs rather than having high costs of satellite distribution imposed by a monopoly supplier

- the BBC must have absolute confidence that the system will be delivered on time, otherwise it will lose its pre-emptive advantage over cable TV and the independent DBS channels. Also, if the satellite system is not operational on schedule, the BBC will suffer heavy costs of terrestrial operations, programme preparation, marketing and administration during any delay, with no revenue. This imperative to synchronise the entire DBS operation means avoiding reliance on high-risk development work or on contractors with whom there is doubt about their technical capability to meet the exacting satellite project requirements on time
- the BBC also needs to avoid any position of being locked in to an uncertain project, where at a late stage in the development work there could be serious problems facing the BBC with a crude choice of accepting delay or putting up with compromises on the technical specification. In the normal course of any satellite development programme, delivery delays are neither identified nor reported until about six months before the first scheduled launch date. In part this is because the technical problems would only become apparent after the long lead-time for procurement of system components, when the real work of integrating and testing the whole system begins
- this risk of technical compromise at a very late stage in project development, in order to stay within the basic spacecraft configuration limits and launch weight limits, could take two forms :
 - a forced decision to accept lower power-output
 - a forced decision to accept only one operational channel on each satellite, in effect a non-backed-up system

Both these choices would obviously be technically unacceptable to the BBC, but the threat of delay in launching DBS services could force the compromise. Even these forced compromises may not assure on-time delivery of any project involving both an entirely new spacecraft design and advanced new transponder technology

- the BBC is well used to purchasing major items of capital equipment, requiring proper contractual terms, and the lease of DBS satellite facilities should be governed by similar contractual safeguards. The supplier should face the normal consequences of poor performance, and prices should be clear and fixed

- to ensure that the BBC is fully in touch with all aspects of technical progress on the project, BBC engineers should have full access to all the engineering work and to all of the suppliers' sites where work is going on

4.3 The DBS space segment facilities represent a very large financial commitment, larger than any other single commitment the BBC has ever faced. Development of a DBS satellite system is a relatively new product for the satellite manufacturers and has some inherent uncertainty related to the frequency and transmission power requirements. It is not sufficient bravely to enter into the development of a DBS system without extensive design and subsystem R and D experience - the construction of a handful of more conventional communications satellites is not enough.

4.4 Even without the fundamental importance of DBS to the whole future of the BBC, it is essential on a project of this scale to obtain the fullest contractual safeguards and to have total confidence in the system suppliers and organisers.

4.5 As part of this critical decision, it is essential to have the final performance specification for the satellite system, with every detail complete and endorsed by BBC engineers, signed off before any lease commitment is entered into, and before any major irrevocable engineering and component commitments are made by the system suppliers.

5 Unisat

5.1 The Unisat system has major disadvantages for the BBC. These disadvantages stem from the way that the Government prompted the formation of the Unisat consortium early in 1982.

5.2 Firstly, the consortium which would own and operate the satellite system contains the two major suppliers. In other words there is none of the normal discipline of arms-length supply to the system operator that applies in North America, and single clear and unqualified responsibility of the prime contractor.

5.3 Secondly, the consortium is led by British Telecom, which is not an equipment development organisation but is the junior service lessee of the system. Again, there is a conflict of role, and Unisat has from the outset been a hybrid system trying to reconcile the BBC's leading-edge DBS requirements with ill-defined telecoms requirements. British Telecom has never been able to establish a clear idea of the market for the telecoms capacity. Without a firm usage plan there can be no firm technical specification for the telecoms capacity - in other words only one half of the hybrid mission is properly defined, causing continuing uncertainty over the entire system design.

5.4 Thirdly, the BBC finds itself as dependent as ever for transmission facilities on the British Telecom monopoly, and for the use of telecoms transponders for normal TV distribution.

5.5 Fourthly, the whole Unisat venture was inspired by Government and leaves the BBC wide open to political pressures to revise its requirements or expectations if progress on the project continues to fall below the operational needs for DBS.

5.6 Finally, quite apart from the artificial nature of the Unisat consortium, the parties involved in Unisat are plainly unfitted to tackle the DBS requirement properly in the timescale needed by the BBC. Specifically :

- British Telecom has nil experience of owning and operating satellites, and has not brought on board requisite experience to fill this gap. The record of the System X development programme for integrated digital switching, central to BT's own service operations, has not been inspiring, and on this track record on such a major project there can be little confidence that British Telecom will make any better progress with Unisat
- British Aerospace has never won a civil satellite order in open competition. Its main line of satellite business has been through public procurement, or as subcontractor North American suppliers

- GEC-Marconi, primarily responsible for the Unisat DBS payload, is out of its depth in this complexity of technology and is not in any way competitive on the world satellite scene. It has never built a transponder at the new and much higher frequencies of DBS, and has no experience of the very much higher power levels required. Procurement of the final channel power amplifiers from a competent sub-contractor is not sufficient to overcome this major risk, since the major task of payload integration would still lie with GEC-Marconi. Further, the company has no experience of the high-frequency uplink requirements for DBS, either in terms of the uplink ground transmission or the satellite uplink receiver

5.7 The consequences of these fundamental weaknesses have become steadily more apparent over the last eighteen months. When the BBC first started to negotiate with the Unisat consortium in the spring of 1982, it was evident that Unisat as a company hardly existed and that little had been done to appraise the BBC requirement properly. A very vague project proposal was put to the BBC, ostensibly a 'stretch' of the existing ECS satellite.

5.8 Even the most cursory analysis of this proposal showed that what was needed, given the very high solar power requirement for DBS, was a completely new design of spacecraft, with all the development and timescale risks that this involves. The fact that Unisat requires the much larger PAM-DII perigee assist rocket demonstrates that Unisat combines two separate sources of risk - a new spacecraft design as well as a novel and hybrid payload.

5.9 Further, the original Unisat cost assessments were based on an undefined technical development plan - almost figures pulled out of the air, and certainly not representative of hard analysis by Unisat. The indicated per-channel charges to the BBC were hopelessly uncompetitive, but when it was suggested that it would be more sensible for the BBC to look overseas for its system Unisat quickly brought down its indicated tariff to twelve million pounds per annum - not because there was inherent excess profitability, but because the Unisat partners were determined to hold on to the BBC at all costs.

5.10 In the nature of a project like Unisat, as long as the technical design remains incomplete, all cost projections are certain to be unsound, and inevitably subject to increases as the specification becomes complete and the full-scale design engineering is initiated. Escalation of costs point up the need to increase the lease rates and causes severe management pressure to make internal cuts in the development programme, especially on the high-risk design work.

5.11 If there is no scope for increasing the lease charges, other than by way of imposing escalation clauses on the user, there is a potential for disastrous short-cuts on the development work that could lead to in-flight failure of the satellite system, or delays on the entire programme. Although there have been

relatively few failures in commercial satellite programmes, almost every one of the failures has occurred in programmes where the contractor was faced with similar cost-reduction problems to Unisat - eg Intelsat III, Satcom III, Insat A and B, and TDRSS.

5.12 These risks must be apparent to Unisat as well as to the BBC. In other words Unisat appears to be more concerned to buy its way into UK domestic space systems - effectively using the expectation of BBC money as the funding for a massive development project. As a project, Unisat has looked from the beginning like so many other UK hi-tech adventures, based more on confused corporate ambitions than on hard commercial reality. Worst of all, the mission for the system is confused, obstructing real system planning work.

5.13 Nevertheless, partly as a result of implicit Government pressure, the BBC has reluctantly gone along with the Unisat proposals, but subsequent developments on the project and continuing negotiations between the parties must have brought out more starkly the fundamental problems - with the Unisat partners trying stage by stage to cement the deal prior to resolving their own internal problems, in order to lock the BBC and the Government into the necessity for unlimited support of the Unisat development project at any cost and any schedule.

5.14 The BBC has seen how the Unisat design is nothing less than a completely new satellite system. British Aerospace on all its past form has no ability to deliver such a new design in under five years' development. The solar power requirement, the dominant factor in the DBS mission, is more than double that of ECS, so in no sense can Unisat be regarded as just another set of spacecraft off the existing ECS production line. With many thousands of components to be integrated into a new spacecraft, this poses all the problems of payload and aeronautical integration that applies in any satellite development. When the time comes in 1985 to start to integrate the design for testing it is inevitable that key variables will need to be changed.

5.15 Also, both British Aerospace and GEC-Marconi are under heavy pressure on other programmes, so the Unisat project is in contention with other military and civil projects for scarce technical and management resources, adding to the risks of delay. Specifically, British Aerospace is now committed to the development of the even more complex 'Olympus' project for the European Space Agency at the same time as developing Unisat. These developments are conflicting rather than mutually supportive. The Olympus (L-Sat) commitment was first made in early 1982, establishing a clear priority over Unisat which is not yet committed. Further, ESA's large, competent and aggressive staff are in a position to enforce demands on British Aerospace for technical priority, development perfection, and assignment of the best personnel to Olympus. By contrast, the BBC has little or no access to the Unisat programme. When the inevitable conflicts arise, Olympus will have priority, not least because it could be far more important as a source of continuing orders.

5.16 In GEC-Marconi's case, the development problems and the lack of any real experience on such a complex payload design have already caused the laying off of much of the Unisat work overseas.

5.17 The dual-mission problems have still not been resolved. British Telecom remains undecided about the applications for the telecommunications transponders, having spent a good deal of time trying unsuccessfully to persuade Intelsat to pre-contract for this capacity. Apparently BT has been trying to obtain the same sort of irrevocable commitment to an undefined project as is being sought from the BBC. As stressed above, the engineering of the design must be closely integrated at the very start of the programme, and without final definition of the telecoms mission the project is inevitably delayed. Normal commercial practice in the satellite industry is to settle the whole mission conclusively, including all details of the specification and configuration, before any substantive work can begin.

5.18 Failure to resolve the dual-mission conflict has set Unisat back by many months, probably a year. Even in early 1982 it was highly doubtful whether the suppliers could hold to the project schedule, even assuming a full contract by mid-1982. After so long a delay on finalising contract terms, and with the payload conflicts still not settled, there is now no practical chance that Unisat can meet the 1986 launch dates. The fact that five shuttle slots have been booked through to the end of 1987 indicates division of objectives and a search for other users. The availability of later shuttle slots clearly tempts delay.

5.19 Latterly, the Unisat consortium collectively, and the aerospace suppliers individually, have been trying to persuade the IBA and possible independent programme contractors to stay with the Unisat design for their requirement - offering to match any price that may be quoted for a North American system. However, as some of these parties may want lower power-output, this only increases the risk that the BBC service will be delayed while IBA requirements are assessed, with diversion of key design staff on to a wider marketing effort. The BBC will know that this diversion of effort is already occurring.

5.20 In sum, there is now virtually no chance at all that Unisat could meet the BBC's requirement by autumn 1986. If it is not on this schedule, with full power and with two DBS channels per satellite, the BBC loses all its pre-emptive advantage. There can now be no engineering confidence in the Unisat solution to the BBC's requirements, whatever the price. Even if Unisat still offers to meet the BBC's deadline, there will not be adequate contract terms to ensure this, nor a full window for BBC engineers into the project. The project will either slip, or will be severely compromised in engineering performance, or both.

5.21 The worst of all worlds for the BBC, but an entirely plausible scenario, will be if the BBC remains locked in to Unisat and its inevitable delay, while the IBA camp catches up or overtakes with an existing US-designed system.

6 The alternative

6.1 The only sensible alternative is to go back to basics and organise a satellite project that puts the BBC's DBS mission first and foremost. The BBC's interests should not be subjugated to the interests of the UK aerospace industry, and in contention with the interests of British Telecom, while the IBA camp are allowed to go wherever they want for their system.

6.2 A full planning assessment, with all detailed costings, has now been made of an alternative solution geared specifically to the BBC requirements. These plans can be discussed with the BBC immediately. In essence, the alternative system has a single mission, namely pure DBS at high power, to avoid all the problems of a hybrid design. All channels in all satellites will be of identical capability. There will be complete channel frequency assignment flexibility for any final power amplifier (TWTA). Each satellite will have four-channel capability, with full redundancy on all satellites. This overall design greatly improves the operational flexibility of the system for future uses. Antenna coverage pattern is simple, solely covering the direct broadcast requirements of the United Kingdom and Ireland.

6.3 The alternative system will be based on a large US-designed satellite bus, with much greater payload power than can be achieved with Unisat. There are two such buses already well down the path of development. Both are due to be launched and space-tested well in advance of the notional Unisat schedule. Both the potential suppliers have a consistent track record of completing such projects in far shorter timescales than could ever be achieved by the current aerospace procedures and organisation in the UK, indeed the existing orders for these spacecraft are well down their 27-month production schedules.

6.4 By basing the BBC design on either of these existing spacecraft designs, a major part of the project risk is eliminated. The payload development specific to the DBS mission can also be tackled and coordinated far better by either of the potential suppliers than by the Unisat members, as a result of the specific DBS developments these organisations have already completed.

6.5 Further, there would be no risk that the BBC would be forced to compromise, either now or well down the project path, on lower power-output levels. Indeed the power output level could if the BBC wished be taken back up to the full 230 watts allowed under the WARC-77 plans. This option is technically achievable and could be negotiated. However, the present assessment has been based on 185 watts per channel as 'promised' by Unisat.

6.6 All necessary analysis has been conducted on system availability and launch availability. This analysis has also

taken account of the political need to secure a reasonable proportion of the contract work for the UK, without compromising the schedule. The proposed project while led by North American designs will have as great a proportion of UK value-added as Unisat. The schedule is maintained, within this likely political constraint, by ensuring that the first satellite of the series is built entirely in the United States. The cost analyses include the extra costs inherent in UK sub-contracting.

6.7 Subject to an early change of course by the BBC, there is now full confidence that the proposed alternative solution will put the BBC back on path to have a full-power system in operational service by August 1986. Only the BBC's commitment is necessary for the project to proceed. The lease offer outlined in this proposal is firm on this basis, and is in no way contingent on obtaining any degree of commitment from any other party for any of the remaining capacity of the system.

6.8 In other words, the system design gives absolute priority to the BBC requirement, and will win back for the BBC its pre-emptive position on DBS by giving solid assurance of operational service by August 1986. The proposed satellite design, based largely on an existing spacecraft design, will be finalised irrevocably in compliance with the channel performance specification required by the BBC. The satellite operating company will incorporate more intensive delivery schedule incentives than normally apply, to further ensure the critical operating schedule by causing the supplier to allocate first priority to this programme against other calls on resources. The satellite operating company would incorporate in the lease agreement with the BBC provisions to share with the BBC any revenue benefits from any subsequent use of the remaining capacity of the system, in the form of rate reductions.

6.9 The alternative project can proceed immediately, solely on the basis of commitment by the BBC. It will not be compromised by the interests of any other parties.

7 Advantages of the alternative system

7.1 The **technical** advantages of the proposed alternative system can best be displayed by showing the BBC's senior engineering executives the details of the system. However, the key advantages can be summarised as :

- entire design oriented to BBC requirements
- full power-output on all channels
- designed exclusively for high-power DBS, ie no conflict of mission
- channel characteristics specified exclusively by the BBC; any subsequent users would have to accept the same specification
- no technical compromises at any stage of development
- 27-month delivery schedule
- rigorous system procurement and project management - the satellite operating company, to be UK-owned, will have no interest in or association with any of the potential system suppliers or sub-contractors
- absolute confidence on the delivery schedule
- a firm and final technical performance specification jointly constructed with the BBC before commitment and before work begins
- a full window for BBC engineers into any aspect of the progress on the project
- in-orbit test of the identical spacecraft design, of either of the two candidate spacecraft suppliers, 9 months before the first BBC launch
- satellite control and uplinks would be freed from British Telecom monopoly control, with technical specifications jointly developed with the BBC and the equipment supplied and operated by the lessor
- uplink installations at BBC facilities if desired

7.2 The **contractual** advantages will include :

- the BBC will have all the contractual safeguards that are normal for North American commercial satellite system contracts

- the system suppliers will face the normal penalties for delay or under-performance - and for a moderate premium, it would be possible to secure even more stringent delivery and system performance terms
- the suppliers will have normal North American incentives on meeting the full specification in orbit, and incentives for full 10-year life of system
- the system supply contract and the resultant lease to the BBC from the system operating company will be fixed-price, with no escalation clauses of the sort that Unisat have sought to impose

7.3 The system will have a 10-year design life, and the term of the channel lease to the BBC would cover this full period. However, in practice the operating life is likely to extend to up to 12 years. The lease contract will include an option for the BBC to extend its use of the system beyond 10 years, at the same rates, subject to a corresponding agreement that the BBC will utilise this option so long as it is still available and the BBC is still providing DBS services.

7.4 To give continuity of service beyond the initial period, the operating company will guarantee to provide DBS satellite lease services to the BBC using replacement satellites of the same performance for an additional 10 years at the BBC's option, so long as this option is exercised at least 4 years before the follow-on service is due to begin. The charges to the BBC would remain at the same level, adjusted by cost of production indices. This option would guarantee the availability of continuing service beyond 1997. Further, the BBC would have the first right of refusal to purchase the full follow-on system according to a pre-agreed valuation formula, if it desires to operate its own system after 1997.

7.5 As a safeguard against the BBC withdrawing for any reason from DBS operations, the lease agreement from the satellite operating company will include provisions allowing the BBC to assign their lease to any other DBS user. In other words, subject to finding another user of service, the BBC would not face a long-term financial commitment if it withdrew from DBS.

7.7 An unquantifiable advantage to the BBC would be the fact that the satellite operating company would intend to bring to its task higher calibre engineering staff than with Unisat, and this staff would be actively collaborating with the BBC staff in the approach to DBS services, and available for consultation on many of the wider issues such as encryption techniques, customer billing and equipment design.

7.7 **Price** advantages are in some ways less significant than the degree of engineering and timescale confidence. However, even assuming that the subcontracting arrangements are deliberately structured to give as large a UK content by value as

applies with Unisat, there are significant economies for the BBC:

- assuming no other usage of the system apart from the two DBS channels taken by the BBC, the cost per channel year would be twelve million pounds per channel year, with no question of escalation
- if one further channel is subsequently taken by any other party, the cost per channel year to the BBC would be abated to some ten million pounds per annum
- if two further channels are eventually taken by other parties, the cost per channel to the BBC would be abated to some seven million pounds per annum

7.6 Therefore, even on the minimum usage case that has to be taken to allow the project to proceed immediately, the price to the BBC would be set at an acceptable level and would not be subject to any escalation - the satellite operating company would impose on the system suppliers the all risks of any cost overruns or any effects of inflation. Further, the satellite operating company will protect itself and the BBC fully by obtaining all appropriate satellite launch and operational insurance, allowing prompt replacement of any space capability loss.

7.7 In practice, it is clear that in due course there would be other users of the system, and the contract would be structured to give direct advantage to the BBC of this sharing of costs. By 1988/89, it is highly likely that the costs to the BBC would be reduced to the order of eight million pounds per annum per channel. This is equivalent to a cumulative saving on lease costs of at least seventy million pounds over the life of the system.

8 Corporate structure and financing

8.1 Instead of Unisat, the system would be organised by a new, predominantly UK-owned satellite operator. The entire project would be structured around the BBC's requirements, and to ensure strong project management an experienced North American satellite system operator would be brought in on a contract basis to back up the key staff within the UK operating company. The choice of this additional project management expertise would be settled in discussion with the BBC; candidates include Telesat, RCA Satcom, Comsat and various other firms.

8.2 Decisions on the composition of ownership of the operating company will in part be based on securing the optimum tax efficiency, in order to be able to secure the best possible end-price to the BBC. Certain major companies have already been discreetly sounded, at senior management level, and are willing in principle to join in promoting the venture, ensuring strong financial and management backing.

8.3 The longer-run objective of the satellite operating company will be to become a leading UK provider of commercial satellite services. These corporate aims are however secondary to meeting the BBC requirement with maximum efficiency and economy - indeed this is the fundamental initial service aim of the company. Wider opportunities could only follow if the BBC needs were met first.

8.4 At this stage it is not intended to involve either British Telecom or Mercury in the ownership of the satellite operating company, but these options are not ruled out and might for example become necessary for political reasons. However, if either were involved this would be only as partners with other investors, and there would be no question of either being effectively in equity or management control of the project.

9 Political considerations

9.1 It is fully recognised that there would be considerable political delicacy in organising an alternative to Unisat. Absolute confidentiality of contract negotiations would be required, to avoid alerting other parties to the possible change of course before the alternative had been properly explored.

9.2 As a measure of the confidentiality already maintained on the earlier proposals to Government for a telecommunications satellite system, it is noteworthy that there has been no public disclosure of the fact that there had been a licence application before Government since May, and that discussions with Government had been under way for many months before.

9.3 Further, some of the team involved with this work had been involved at the inception of the Mercury project in July 1982, and it was many months before British Telecom were alerted to the emergence of a rival telecommunications network.

9.4 Thought has already been given to the political and press handling necessary to allow the BBC to change course. The main argument, of course, would be that the proposed alternative project is so compelling on technical and cost grounds that the BBC have no real option but to avoid all the risks inherent in Unisat. However, this general theme would have to be deployed carefully to Government and subsequently in public, and at this stage the discussions would have to be conducted in absolute confidence to allow proper time to the BBC to evaluate the alternative without coming under unreasonable political pressures.

9.5 One major aspect of the political handling concerns the degree of UK content in the project. Again, there are already specific proposals on this score, for instance in terms of securing substantial work within the project for British Aerospace and even leaving the appearance that they are leading the project, but in practice keeping the project under firm US control to ensure full performance of the contract with the BBC. British Aerospace would in fact make reasonable supplier profit on the project, whereas they stand to lose heavily on Unisat. With mounting British Aerospace pressure on Government for financial assistance with the European Airbus, against a background of a severe public expenditure squeeze, British Aerospace have larger matters to lobby for than Unisat, and there are ways to persuade them that their wider interest lies in relinquishing the design lead on the BBC satellite project without losing work for their plants in system production.

9.6 Other major British firms could gain very substantial sub-contract work, helping to create a countervailing pressure against lobbying from Unisat. Above all, the satellite operating company would act as a buffer to pressure on the BBC.

10 Next steps

10.1 The proposals in this document represent a major change of course for the BBC, but there is confidence that the alternative is both feasible and can be financed. It will be necessary for the BBC to consider whether, at this stage, there is merit in at least examining more closely the proposals, especially the technical details as compared with the technical doubts about Unisat.

10.2 Discussions with the BBC on these proposals can be held as soon as the BBC is ready, and would of course be conducted with total confidentiality.

10.3 If the BBC, in the light of these discussions, wishes to pursue the proposals further, a detailed programme of work for the detailed structuring of the alternative proposal would need to be settled. A formal proposal for the entire system could be submitted during October, and decisions to commit to the alternative system would need to be taken to allow detailed agreements to be reached by the end of December, to ensure system launch by June 1986.

10.4 There would be a contingent risk that the BBC would be prevented from pursuing an alternative. At this juncture it is intended that, subject to an agreement on the sharing of costs if major work has to be aborted, any immediate work to supplement the work already done could proceed without cost to the BBC.

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Brief for the Debate on the Development
of Cable Systems and Services.

Thursday, 30th June 1983.

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29/6

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1. Background

About 2.6 million households in Britain, or 14 per cent of those with television sets receive their television services by means of cable systems. About 1.5 million (8 per cent) are connected to the systems provided by some 440 commercial operators; the remainder are connected to 'non-commercial' systems operated by local authorities, housing associations and so on. An estimated further 2 million homes are passed by cable systems. In recent years there has been a slow decline in the number of subscribers to commercial systems and a rise in those receiving signals from non-commercial systems.

The transmission of radio broadcasts over wire to individual homes began in Britain in the 1930s in order to provide services to areas of poor reception. This 'relay' role was extended to television after the second world war. In general the Home Office has allowed companies to relay only broadcast programmes thus restricting them to providing the existing channels, although there have been experiments with pay-TV in the 1960s and community television in the 1970s. In September 1981 the Government granted a two-year licence for 13 pilot subscription television schemes (see below).

A modern cable system is capable of providing a very large number of services. In addition to providing an increased number of entertainment services, including the relay of both conventional and direct satellite broadcasts, subscription television, and specialised subject channels, cable systems are also capable of providing two-way communication, enabling subscribers in their homes to order shopping, make holiday bookings, bet on televised horse-racing and make use of banking facilities. Practically any substantial minority interest may be able to justify the use of a channel, including, for example, educational services such as the Open University and evening classes provided by the local authorities.

During the last thirty years the number of television channels in Britain has risen from one to four. During the next ten years the range of choice could rise dramatically: 40 channels (or perhaps even double that number) of television and information could become available.

The Potential of Cable. In the longer term, cable systems could carry two-way information services such as electronic banking, shopping from home and household security systems. Mr Baker, Minister of State for Trade and Industry, has spoken of the possibility of developing a national "electronic grid" built on the basis of revenues generated by entertainment television. He has said (31st August 1982) "It is a programme of major investment ... something in the region of £2-3 billion for half the country. This is likely to be an underestimate... These funds can come from the private sector. Indeed this whole project is one of the four major areas which can be financed by private capital... In laying down the grid, much equipment will be needed from the newer industries... There is the prospect of exports not only of

programme material but also of hardware... The electronic grid will provide the basis of the information society."

The Foreign Experience. In the United States about 30 per cent of all households (23 million subscribers) are able to receive cable television. In Canada the proportion is as high as 60 per cent. But the widespread use of cable is by no means confined to North America. In Belgium and Holland cable has already reached the Canadian level. Furthermore, exactly the same interest in cable which now exists in Britain has also arisen in France and West Germany. Within days of the publication of the Hunt Report here, France and Germany announced major plans for the expansion of cable.

Fresh Employment. All the estimates that have been made suggest that the number of new jobs which cable could bring would be substantial. Rediffusion, the largest existing cable operator in Britain, believes that at least 20,000 jobs would be created within five years; and probably far more.

2. Government Initiatives

a. Satellite Broadcasting DBS. On 13th March 1980, the Home Secretary commissioned a Home Office study of DBS, which was published in April 1981. On 4th March 1982, the Government announced that "an early start" would be made by bringing two channels into operation in 1986, which could be increased to five as and when sufficient demand arose. The then Home Secretary, now Viscount Whitelaw, made clear that "as regards finance, the Government expect the capital cost of providing the satellite system to be found in the private sector". (Hansard, 4th March 1982 Col. 414). Mr Kenneth Baker explained that an early start in 1986 "will enable industry to exploit overseas markets. We have a real edge here... It will benefit the British space industry's work load. It will boost the information services... The satellite will be the first privately financed satellite in Europe. It will cost £150 million to £200 million. It will be made and designed entirely in Britain." (Hansard, 20th April 1982, Col. 232).

In no sense is there any conflict or tension between DBS on the one hand, and cable on the other. On the contrary, as Mr Baker has stressed: "DBS and cable systems are mutually supportive. There is not a stark choice of one or the other. We would envisage a mixed system" (20th April 1982, loc cit). If cable systems were in operation by the time satellite broadcasting services start in 1986, they could provide subscribers with a cheaper and more convenient means of reception than would be possible with the individual dish aerials proposed. This point was made forcibly to the Government by its own Information Technology Advisory Panel.

b. Report of Information Technology Advisory Panel (March 1982)
The Panel came out clearly in support of any early start to DBS, and underlined the extent to which DBS and cable could complement one another (see above). As regards cable itself, it concluded that powerful economic and industrial arguments existed for encouraging the installation of cable systems in

Britain. It estimated that it could cost some £2,500 million to provide modern cable services to half the homes in the country (i.e. those living in urban areas), all of which could come from private sources if existing restrictions on the programmes that can be transmitted by cable were lifted. No direct public expenditure would, therefore, need to be involved. This would result in great benefits for the electronics and optical fibre industries as well as for office equipment manufacturers. New jobs would be created in the electronics industry, in cable installation and in providing new programme services.

The Panel acknowledged that cable systems could have a significant impact on existing broadcasting services, and recommended the Government to take urgent steps to examine the possible implications for broadcasting. These, however, should not be allowed to prevent cable systems from developing.

c. Subscription Television Pilot Schemes. The most significant recent practical development in cable television was the previous Home Secretary's decision in 1980 to license 13 pilot subscription television schemes, in which cable operators provide an additional programme service, consisting in general of recent feature films, on payment of an additional monthly subscription by households. All the schemes are now in operation, and are intended to last for two years. They will provide information on the public demand for such extra programme channels and also on the effect on viewing habits and therefore on other programme services.

Referring to this important initiative, Viscount Whitelaw said (9th November 1982): "It is too early to draw any firm conclusions (but) I think it is already clear that at the right price there is a market for more entertainment services to the home. The most recent figures sent to the Home Office show... about 18% of the 100,000 or so connected to the cable systems were taking the pay channel."

d. The Hunt Report. (Cmnd. 8679) which was published on 12th October 1982, proposed expansion subject to a minimum of official restrictions. Its principal recommendations were:

- * A central authority to award franchises to cable system operators and exercise "oversight" by ensuring that operators live up to their promises and by hearing complaints.
- * Franchises awarded on the basis of competitive bidding, initially for 10 years.
- * No enforced separation between providers of physical cable networks, cable operators, programme providers and programme makers.
- * No limit on the number of cable channels offered. Programme diversity encouraged. Operators free to set charges and determine their programmes and services.
- * Decency standards the same as those imposed on the BBC and ITV, with no special impartiality rules. "Premium" channels, available only by special subscription, which the viewer could blank out with an electronic "lock" on the receiver, would not have to comply with such standards.

* Freedom to carry advertising and sponsored programmes. "Pay per view", whereby subscribers pay to watch a particular programme not allowed at present.

* New cable systems required to carry all BBC and ITV channels.

The conclusion of the report was clear: "Cable television is all about widening the viewers' choice. It should be innovative, experimental and sensitive to local feeling. It cannot be run as though it were another branch of public service broadcasting."

THE GOVERNMENT WHITE PAPER "THE DEVELOPMENT OF CABLE SYSTEMS AND SERVICES" (Cmd. 8866): A SUMMARY

The Government published the White Paper on the development of cable systems on 28th April 1983. It covered the entire field, from cable technology to broadcasting standards. It proposes that cable operators should seek the award of franchises for areas, cable providers should be licenced, and that a Cable Authority be set up to award franchises and oversee the services provided.

Further proposals are made concerning cable technology, broadcasting policy with regards to cable, standards of programme content, and the relationship between cable and the national telecommunications structure.

a. Cable Technology

1. The Government does not believe that it would be right at this stage in the development of cable to prescribe a particular type of system design: cable providers may therefore use star switched or tree-and-branch technology. Because of the longer term attraction of the star switched technology it will however be mandatory for all underground ducts for new cable systems to be laid in a star configuration and to be of adequate size to allow for subsequent developments.
2. Coaxial cable and optical fibre will be permitted. It is likely to be some years at least before it will be economic to use optical fibre throughout cable systems.
3. The Government wishes to encourage the development of cable systems which will permit the provision both of programme and interactive services. All cable systems will therefore have to be designed to high performance standards. The Government's final decisions on system specifications would await the completion by the Technical Working Group of the preparation of draft British Standards.
4. The Government believes that cable investment should be privately financed and market led. Estimates of the likely cost and speed of cabling vary but investment will inevitably be spread over a number of years and the private sector ought to be able to finance it from normal sources without any special difficulty. New jobs will be created both in the short term during the construction phase, and in the long term.

c. The Cable Authority

1. A new statutory Cable Authority will be established to award cable franchises and to exercise a measure of oversight over the services provided.
2. The Authority will initially have a Chairman and six other Members. Members will be appointed by the Home Secretary in close consultation with the Secretary of State for Industry. Appointments will be for renewable periods of five years and will be part time. The Authority will be financed by fees paid by franchise holders.

d. The Franchising and Licensing Process

1. The Cable Authority will have the statutory responsibility of awarding franchises to cable operators for the provision of cable services. The cable provider will require a separate telecommunications licence from the Secretary of State for Industry, in consultation where appropriate with the new Office of Telecommunications.
2. It will be for the Cable Authority to determine the size and shape of franchise areas. The Government envisages however that no system would be larger than about half a million homes and expects the majority to be significantly smaller. The Authority will be required to take account both of market forces and of natural community groupings. In determining the precise limits of a franchise area the Authority will be able at the margin to include areas of less economic appeal to the investor. The Authority will not, however, be required at this stage to seek to extend cabling to whole areas which would be uneconomic. It is felt that if the Authority were required to extend cabling to the whole country immediately, it is possible that excessive and premature cross-subsidisation by companies still establishing a profitable operation could actually retard the spread of cable.
3. Companies wishing to obtain licences as cable providers or franchises as cable operators must be under UK/EC control. Central and local government and religious and political groups will be excluded from any stake in the ownership of companies holding franchises or licences.
4. The Cable Authority will, however, have a duty to use its franchising powers in a manner which will prevent concentrations of power in particular areas which would be contrary to the public interest.
5. Cable franchises will run for 12 years in the first instance and 8 years thereafter. Initial cable licenses will be granted for 20 years for switched star systems and 12 years for tree-and-branch systems, extendable to 20 if switches are subsequently installed.
6. The Cable Authority's ultimate sanction will be the non-renewal or premature withdrawal of an operator's franchise. Short of that it will have the power to direct that certain programmes or channels should not appear on cable and, after issuing a warning, to subject an operator for a period to a tighter degree of supervision than normal.

e. Broadcasting Policy and Cable

1. The Government endorses the objective of the BBC and IBA to maintain the range and quality of the broadcasting services now available to all. The broadcasters will themselves be free to play a role in cable and they start from a position of strength. In the longer term the growth of cable could necessitate considerable change in existing broadcasting arrangements but cable has first to establish itself and the Government has no plans to modify the existing duties and obligations of the broadcasters.
2. A wider range of advertising will be possible on cable than on independent broadcasting. With appropriate safeguards some sponsorship will also be permitted. Cable advertising which is analogous to ITV and ILR advertising will be restricted to the amounts allowed under IBA rules. Classified advertising and channels wholly or mainly devoted to advertising will be excluded from this limitation. The Cable Authority will be responsible for drawing up a Code of Practice for cable advertising. It will share a joint statutory advisory committee with the IBA and the two Authorities will be required to ensure that they adopt a common core of rules.
3. Cable operators will not be permitted to obtain exclusive right to certain major national sporting and other events. The Government hopes that the precise list can be agreed between the broadcasters, the Cable Authority and the cable operators. The Home Secretary will have a reserve power to determine the list in default of agreement.
4. Pay per view will be permitted on cable, except that operators will not be allowed to offer a programme on that basis if, as a result, one of the existing public service channels is deprived of an event which it has customarily covered. The Cable Authority will draw up detailed rules. Pay per view will also be available for DBS channels.
5. The Cable Authority will, in considering franchise applications, give particular weight to companies' plans for using and generating programme material of British and European Community origin. It will be required to satisfy itself that a proper proportion of such material is shown on each channel, having regard to the channel's intended character and taking account, as relevant, of BBC/IBA practice.

f. Programme Services and Content, and the Role of the Cable Authority

1. Cable operators will be required to relay the four existing BBC and IBA television channels appropriate for their area. They will also be required to relay BBC and IBA radio services. All systems will have to include provision for the five DBS channels allocated to this country by international agreement. Operators will, on the basis of appropriate financial arrangements agreed with the broadcasters, be required to offer any subscription financed DBS channel to those of their customers who wish to pay for it.

2. The general and positive programme quality obligations which apply to public service broadcasting will not be appropriate for cable. The Government proposes, however, that all cable channels should be subject to the same good taste and decency rules as existing broadcasting. The Government does not believe that so called "adult channels" should be available on cable systems. It will be for the Cable Authority to interpret and apply the taste and decency requirement. The legislation will not provide for the classifications of the British Board of Film Censors to have any formal bearing on the Authority's decisions. The legislation will make it clear that cable channels will be subject to the provisions of the Obscene Publications Act.

3. The Government proposes that the Authority should be required to exclude any bias across the generality of services on a particular system, to ensure that news coverage is accurate and impartial, to see that there is impartiality of access to any community access channel, and to exclude particular religious or political groups from the control of individual channels. Subject to these requirements the Government believes that cable should enable greater freedom for the expression of political and religious viewpoints than has been possible on public service broadcasting.

4. The Cable Authority will need to adopt various methods of supervision according to the particular nature of each of the programme content obligations. In general the Authority will operate on the basis of its own selective sampling and retrospectively in response to complaints. It will, however, have the power to take action before a programme is shown if it comes to its attention that something unsuitable is to be screened. Informal consultation between the Authority and cable operators is likely to develop. The Authority will also need to develop a relationship with programme providers who distribute material to a number of cable operators. The Authority will be able to monitor such material centrally.

5. Cable operators will be allowed to relay foreign broadcasting services though reception cannot be guaranteed protection from radio interference from domestic services. The Cable Authority will have a duty to draw up rules dealing specifically with the relay of non-British channels.

6. Cable operators will be authorised to receive and distribute programme services transmitted by low-powered telecommunications satellites provided the originators of the service give their consent and provided operators follow such procedures as are necessary to ensure that their earth stations do not come to represent a constraint on the development of the terrestrial telecommunications network.

7. Questions of copyright are being considered in the Government's general review of copyright law.

8. The availability of new feature films for cable showing will be for the industry to determine. Other film issues relevant to cable such as the Eady levy are being considered by the Department of Trade in its current review of its relations with the film industry due to be completed in the summer.

9. There are a number of other detailed matters, including the privacy implications of cable, to which the Government intends to give further thought in preparing the cable legislation.

g. Telecommunications

1. Cable's relationship to the national telecommunications structure has to be considered against the background of the Government's wish to increase competition in the provision of telecommunication services and apparatus so that industry and the consumer can benefit from resulting improvements in efficiency.

2. The existing national telecommunications operators, BT and Mercury, will not be given the exclusive right to run cable systems nor will their participation in every cable consortium be mandatory. They will however be free to compete with other potential cable providers. In addition:

- (i) BT and Mercury will retain the exclusive right both to link local cable systems and to provide voice telephony services on local systems;
- (ii) Because of the importance for the revenue of BT and Mercury of providing high density data services in the principal UK business locations there will be restrictions in some areas on the provision of data services by cable operators: in the City of London, the Borough of Westminster and Camden in Central London and the business centres of Manchester and Birmingham cable operators will, for the initial franchise period, be allowed to provide data services only in collaboration with BT or Mercury.

h. The Way Forward

1. The Government proposes to introduce legislation at the earliest practicable opportunity to establish a Cable Authority with the necessary statutory powers.

2. The general development of the Government's cable policy must await the enactment of legislation. But the importance of maintaining momentum is felt to justify some limited pre-legislative steps:

- (i) The Government will be prepared to authorise a limited number of new cable systems - perhaps ten or twelve - as pilot projects in areas proposed by applicants. Proposals will be expected to offer a positive contribution to the application of advanced technology as well as providing a comprehensive range of programme services and the capability for interactive services;
- (ii) Licences will be for 12 years, with the telecommunications licence extendable to 20 years where switches are installed. Areas will normally be expected to cover identifiable and self-contained communities of not more than 100,000. The initiative for cabling will come from the applicant and there will be no process of local

consultation;

- (iii) Programme requirements will in general be those to be embodied in the statutory framework but some modification will be necessary in the absence of a Cable Authority. Licences will be directly accountable to the Home Secretary for any programme services provided before the cable legislation is enacted. This is not in the Government's view an ideal arrangement but it is acceptable on a short term basis.

3. Once Parliament has debated and if it has approved the White Paper existing relay companies will be authorised to offer additional services over their existing systems. Where because of limited capacity this involves removing one or more of the normal "must carry" channels the operator will be required to make satisfactory alternative means of reception available at no extra cost to the viewer. Licences will run in the first instance until 31 July 1986 but will be extendable thereafter at the discretion of the Cable Authority up to a normal maximum of 5 years though further extensions will be possible in special circumstances. The programme service rules will be the same as those for the new systems.

NC/TK