

member states are not pulling their weight. Germany, France and the United Kingdom share 80 per cent of Community research and development expenditure while the combined efforts of Belgium, Denmark, Ireland and Greece amount to as little as 6 per cent. The conclusions are being studied in preparation for the next EEC science council of ministers on 30 June.

Jasper Becker

## Luxembourg in space

### TV plan delay

Luxembourg is falling behind in the race to provide the first satellite broadcast for Europe. Unresolved wrangles about the relative sizes of French, Belgian and West German shareholdings in the projected £200 million Luxembourg system have now put back the earliest possible launch date until late 1986.

By then, the national satellites planned jointly by France and West Germany will probably have been up for a year. Also by late 1986, the new all-British Unisat, with two BBC channels, might be aloft.

Radio Tele-Luxembourg (RTL), the commercial company in charge of all broadcasting in Luxembourg, insists that its satellite project is a matter of when, not if. It plans to beam three channels of films, news, entertainment and advertising to a wide swathe from Benelux to Bavaria, and possibly to south-east England. It knows, however, that this ambition represents a big gamble for a small country. RTL, whose current radio and television programmes reach a weekly audience of 40 million in Europe, contributes 5 per cent (about £25 million) of the annual income of the Luxembourg government. Commercial broadcasting has been a major source of revenue for the 50 years since Luxembourg, accustomed to living on its wits, recognized that its central location, plus national sovereignty over its broadcasting policy, permitted it to send radio advertisements and popular music into countries whose governments prohibited one or both by their own broadcasting organizations. It was in 1932 that Radio Luxembourg began spoiling the determination of Lord Reith, the BBC's first director-general, that the British people should have no light radio entertainment on Sunday.

Now, however, with commercial radio and television sprouting all over Europe and eroding its audience, RTL must find a new service to sell or see its profits and contribution to the national purse atrophy. But even if its satellite succeeds in pulling in audiences and advertising revenue, the heavy costs of depreciation of the start-up years is going to hurt Luxembourg's economy, already in trouble with its first unemployment since the Second World War.

RTL cannot proceed, however, until it decides upon a new financial structure to

## Monsanto hands out \$23.5 million

St Louis

The Monsanto Company has awarded \$23.5 million to the medical school at Washington University in St Louis, Missouri, for five years of research into how proteins and peptides affect cell regulation. The grant, announced on 3 June, approximately doubles the research funds from non-federal sources at the medical school for that period, and is one of the largest from a single company to a university.

Monsanto's award is an obvious boon to the university's research programme: two-thirds of the money will go to applied research and one-third to basic research. Work will be selected by an eight-member committee — four university faculty members and four people from Monsanto — headed by Dr David M. Kipnis, head of the department of internal medicine at the university medical school. University researchers will be at liberty to publish the results of work funded under the grant, but if the material contains potentially patentable technical developments Monsanto can review it, and request a short delay before submission for publication. Monsanto will have exclusive rights to any licences

arising from patents on the work, but patents will be the exclusive property of the university, which will be able to receive royalties from Monsanto licences. Royalties will go to the university's research and education programmes — not to individual researchers.

Meanwhile, as many as "a couple of dozen" Monsanto scientists may work at the university and some may spend several years there. Monsanto's move clearly shows an interest in medical products, and Dr Howard A. Schneiderman, Monsanto's senior vice-president for research and development, says that while the company does not now market health-care products, it hopes to do so in future.

Monsanto launched a \$1.8 million project with Washington University earlier this year for research using monoclonal antibodies for diagnostic work. The company is also working with Dr Mary-Dell Chilton, of the university biology department, on genetic engineering in plants. Schneiderman did not, however, confirm rumours that a major new grant from Monsanto was imminent to support Chilton's research.

Karen Freeman

accommodate the necessary infusion of new capital. Although the company is registered in Luxembourg and has, by law, a majority of Luxembourg nationals on its board, its largest shareholder is predominantly Belgian. Also, French investors, notably in the form of Havas-IP, Compteurs Schlumberger and Paribas, are in a strong if not controlling position. RTL's problem now is how to introduce a

Once the go-ahead is given, RTL will invite tenders for the system (two satellites plus a spare). It will also decide whether to devote one of the three television channels to broadcasting in English. Any deregulatory move by the Hunt committee now inquiring into the expansion of cable television in Britain would undoubtedly sway the decision. Elsewhere, RTL insists, a vast expansion of cable television in Europe is not necessary to the success of its plan. It expects half of its audience to buy a rooftop dish to receive its programmes.

Brenda Maddox



big new outside investor — as a group of West German publishers (which does not include the giants) has offered about £50 million — without disrupting the delicate Franco-Belgian balance of power. The French hope to avoid excessive dilution of their own influence. But they, and the whole board, know that the matter will have to be sorted out next month if further delay is not to occur.

## Jobs and automation

### US faces facts

Washington

The effect that new electronic technology is having on jobs, which has been an issue of intense debate in Europe, is now a cause for concern in the United States.

A new study by the government's General Accounting Office (GAO) suggests that the recent revolution in electronics will be felt not just in manufacturing — the sector most affected so far by automation — but also in office and service jobs. And even within manufacturing, the spectrum of fixed automation introduced in the 1950s, and the initial applications of robots lately have tended to be in tasks that were considered menial, or monotonous or unsafe, for human workers. Spray painting