

Information technology

Germany increases investment

DRASTIC steps to strengthen West German information technology are outlined in a document now published by its Ministry of Research and Technology (BMFT). The measures proposed are a compromise, intended to counter the failure of West Germany to hold its own against Japanese and US competition, between the Minister of Research and Technology, Dr Heinz Riesenhuber, and the monetarist Minister of Economics, Dr Otto Graf Lambsdorff.

Graf Lambsdorff, who, while at the Organisation of Economic Cooperation and Development (OECD), criticized industrial targeting as a subtle form of protectionism, opposes direct state support for research as a distorting influence on market forces. Dr Riesenhuber, a more traditional pragmatic conservative and a consistent advocate of the government's policy of directing the balance of support away from direct to indirect measures, such as tax concessions, intends, nevertheless to channel DM 3,000 million (£750 million) into information technology over the next five years.

The new BMFT report stresses the crucial role of the European Economic Community (EEC) in creating a more homogeneous rationalized market for European companies, now hampered by the small size of their national markets and the mutual incompatibility of their pro-

ducts. The report asserts that liberalization of European public purchasing policy in fields such as education, science, telecommunication and defence may be more important even than the collaborative Esprit programme (*Nature* 309, 100; 1984). A key question is the normalization of standards (see below) and whether or not this will make European products compatible with IBM. A recent article in the weekly *Die Zeit* highlights the difficulty of a major German institution, the Dresdner Bank, in making the investment decision involved in the choice between IBM and the major non-compatible contender, Siemens.

West Germany will begin work at home. The government intends to adopt a more creative domestic acquisitions policy and will insist on conformity with official norms for products and interfaces and the free flow of information needed to ensure compatibility.

The West German post office is to embark on five-year and ten-year programmes for the digitalization of telecommunications and the introduction of optoelectronic communications. Integrated Services Digital Network (ISDN) will be tested in 1985, introduced from 1987 and should be complete in ten years. The introduction of a broad-band ISDN will begin in 1989. Optic communication

systems are already being tried out and the results of the trials are expected in 1985-87. BMFT estimates that there will be 1 million West German subscribers to the European mobile radio telephone system. One tender for this system, presented this week by Standard Elektrik Lorenz of Stuttgart, AEG-Telefunken, and SA de Telecommunication (SAR), Paris, claims to offer a revolutionary new digital systems that could open a much wider market.

BMFT itself is to support a research communications network linking academic and research institutes, while the Deutsche Forschungsgemeinschaft will increase support for basic research in this field by DM 100 million.

Specific provisions for research and development from BMFT's five-year budget include DM 90 million for interfaces, DM 90 million for optoelectronics, DM 200 million for components, and DM 530 million for industrial automation. Applied research will be mainly by the Heinrich Hertz Institute and the Society of Mathematics and Data Processing of the Fraunhofer Gesellschaft, which will put about one quarter of its budget into microelectronics. It will coordinate microelectronics within its 30 institutes and with the business, academic, institutional and *Länder* regional communities.

Meanwhile Siemens, with Nixdorf one of the main competitors to IBM in the home microelectronics market and the only European producer of 64-kilobit microchips, last week announced that it will be taking on 100 new employees at its development and pilot plant at Perlach, Munich, where work will begin this year on a 256-kilobit chip. It plans to invest DM 600 million in a 256-kilobit chip production plant at Regensburg. Nixdorf, which goes public this year, plans that some DM 500 million of its new capitalization will be spent on research and development. The outcome will not, however, be soon enough to relieve the shortages of microchips caused by economic recovery in West Germany, as elsewhere, and which Siemens considers may last until the second half of 1985. Canny customers have ordered ahead, but deliveries of equipment have been seriously delayed.

The BMFT report notes that the government's pilot project on the founding of small high technology businesses with private capital lays special stress on information technology. Although small microelectronics companies trickle onto the stock exchange, the Christian Democrats-Free Democratic coalition's continued aim is to create international and national frameworks for the faster translation of high technology into industrial wealth.

A Swiss analyst group estimates that the fact that Europe lags behind Japan and the United States in microelectronics costs four million jobs and that three-quarters of all jobs within the EEC are dependent directly or indirectly on microelectronics.

Sarah Tooze

Europe sets a new standard

Brussels

EUROPE's major computer firms have taken a far-reaching step to create a real European market in information. Twelve leading information technology companies have jointly proposed to the European Commission a programme for the implementation from 1985 of standards that should enormously increase the possibilities for intercompatibility of products.

The twelve companies — AEG, Bull, CGE, GEC, ICL, Nixdorf, Olivetti, Philips, Plessey, Siemens, Stet and Thomson — have been the driving force behind the European Commission's Esprit programme.

They have now agreed on an Open System Interconnection (OSI), described by the Commission as a "standard for standardizers". Basically defined by a CCITT/ISO standard, it will permit easier exchange of information between terminals, computers, people and networks and will allow the maximum interaction between all aspects of computing, from the data processing and process control systems of today through to electronic mail, telex (supertex), and the automated office of tomorrow.

OSI will cover seven "layers". The first relates to the physical layer, whether telephone wire, optical fibre, bus, coaxial

cable or satellite. Higher layers cover data link, network, transport of communications, session, presentation and application functions.

The twelve information technology companies have proposed that a selection of OSI standards should be implemented from next year with OSI eventually



producing a full catalogue of interworking products. They want to define demonstrator projects which will show the interworking of such products in action. Public procurement, they say, should be based on these standards as this represents a critical market for its success.

For its part, the Commission is studying the practical aspects and intends to consult governments, national authorities, industry and other users.

David Price