



Business Communications and new services

Iberpac

The Iberpac packet switching data transmission network continued to grow during 1992. There were 47 new centres and a 13.7% growth in the number of new applications attended. A 8.6% increase in network capacity for all types of user connections was achieved. All the extensions were carried out on the Iberpac X.25 network, which carries internationally standardized protocols.

During the year, direct access connections went up by 4.9%. At the same time, international access was extended from the Iberpac network to 157 public networks in 78 countries.

Iberpac also serves as back up for a variety of data communication services, such as the X-28 and X-32 services, and the Electronic Transfer of Funds and Ibertex services. As regards the X-28 service, during 1992, the 047 and 048 accesses were installed over the whole country. The estimated number of terminals is 20,000, of which 3,000 belong to users working in the identified mode. The



New services grew significantly

growth in connection time stood at 65%. As for the X-32 (DATEX 32) service, during the year, the 042 access opened at a national level.

In 1992 the extension to the plant of the TESYS B system, version I, was authorized for transit applications. This new system will bring major improvements to the TESYS AX. It has a switching capacity of up to 60,000 packets/second and incorporates standard protocols defined by the CCITT. Also authorized is the TESYS B in its office version (TB-500).

The Iberpac-UNO service continued to expand. This service aims to meet the virtual private data network needs of our corporate clients. At the end of 1992, we had contracted 12,581 direct access connections with 24 clients.

Ibercom

During 1992 the number of lines in service grew by 28.4%, representing, in terms of new Ibercom Access Networks, an increase of 37%. The number of front-end Centres rose by 25.7%.



The Caixa Data Network links up all its branches

In order to improve customer service, a new version of the Ibercom Control System and the Ibercom Alarm Retrieval Plant Terminal were incorporated. Apart from increasing the range of MD-110 exchanges in operation, this version allows improvement in alarm treatment.

In 1992, version EC.6 of the MD-110 system was made available with a pre-ISDN connection. This new product offers notable advantages over previous versions, both in price and technical facilities, incorporating an ISDN (308 + D) connection and automatic distribution of calls.

Among the range of new services introduced into the Ibercom Service during the year, special mention should be made of the Ibercom Plus. This enables users to establish voice, data and image communications within their organization at a fixed cost.

Ibermic

During 1992 the Ibermic Network implantation plan continued. Coverage was extended so that currently almost all the local telephone exchanges



24-hour banking thanks to data transmission services



Interactive television through the Ibertex network

have access centres. Provision to the different centres also increased with the installation of multiplex distributors and numeric distributors which give greater flexibility in the formation of point-to-point circuits. This activity was carried out to meet the growing demands of the last few years for leased circuits. The trend has moved towards digital circuits with most demand being for the highest speeds of the range.

Satellite communications

In 1992 we put the finishing touches to a series of supplementary installations, which enabled the satellite communications infrastructure to reach its maximum operational capacity, with the reliability required to cope with the great events held in Spain during the year. The aerials of the Seville Teleport and the Barcelona-8 aerial came into service, all of them designed to provide business services via EUTELSAT.

The modernization plan progressed. The INTELSAT and EUTELSAT satellite stations were digitized in order to provide all types of public services. Also worthy of mention was the incorporation of 5 digital Portable Earth Stations housed in the Guadalajara SCC. These are designed to provide temporary business services, videoconferencing, special events, etc.



Fibre optics ensure high quality image and sound. RTVE television broadcasting control in the Prado del Rey centre

As regards the VSAT networks for corporate clients, the CAMPASA II, Diario MARCA and DATASAT networks all entered into service.

Ibertex

The Ibertex service continued to grow during 1992, with an increase over the previous year of 50% in the number of calls and 35% in the number of usage hours.

The opening of access level 034 within the "kiosk" system proceeded. There was also a 50% increase in the number of service centres offering their information through the IBERTEX network, representing a 60% increase in services available.

Telefax

40,000 Telefax lines were contracted in 1992. This service continues to be a basic, essential tool for companies and professionals.

Electronic funds transfer

By the end of the year there were over 183,000 terminals for business transactions with credit cards (dataphone) connected to the network, representing an approximate 7% rise over the year before.

Mobile services

Mobile services, especially Automatic Mobile Telephony (TMA), consolidated their position as one of the fastest growing sectors within telecommunications. In December 1992 the TMA service had 180,296 subscribers, representing a 66.2% growth over the previous year.

Also incorporated into the plant was the user equipment for Closed Group Radiotelephony (RTGC) which supported the service during the Olympic Games and the EXPO.

Tests on the new Pan-European cellular digital mobile communications system (GEM) were completed and the service is due to be launched in 1993. Work also continued on a new Pan-European Digital One-way, Radiomessage Unified System (ERMES) and the Aircraft Communications Public Service.

Videoconferencing

During 1992 15 new videoconferencing rooms came into operation, 9 of which included new generation codecs which provide digital speeds of 64

Mobile Telephony brings us a new lifestyle



Kbit/s to 2Mbit/s. Traffic flow was 42.6% up on the previous year, with 766 hours of videoconferencing taking place.

International videoconferencing agreements have now been reached with 16 countries. Service provision increased from the initial 2 Mbit/s to 384 and 768 Kbit/s. During 1992 there were 419 transmissions representing 47,455 minutes and a rise of 177% over the previous year.

AUDIO-VISUAL COMMUNICATIONS

This item includes temporary radio and television broadcasts. There were 3,854 international radio operations, totalling over 500,000 minutes and 4,087 international TV transmissions, 29 of which were broadcast via portable earth stations, with a duration of over 194,000 minutes. A total of 305 domestic transmissions were also broadcast via portable earth stations.

The activity carried out during the Olympic Games deserves special mention. 466 leased circuits of various types and duration were put into service. Of these, there were 46 digital circuits at

The Castellbisbal International Communications Complex (Barcelona)



64 Kbit, which amounted to 208 equivalent basic circuits. Over 80% were installed immediately on application, despite the heavy demand. 40 permanent TV channels were made available for international distribution via Telefónica Earth Stations, together with 148 TV channels for the contribution network from the various CIRTV centres.

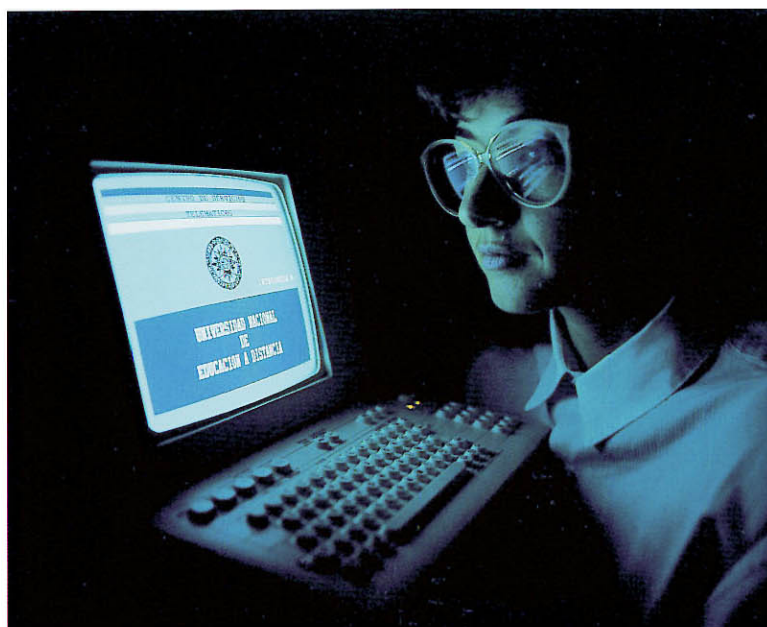
There were also 408 programs available for temporary broadcasts with a duration of over 29,000 minutes and 205 temporary broadcasts to 19 countries were handled.

As regards the EXPO in Seville, apart from the specific infrastructures for the direct and diversified connection to the international network, 30 temporary and 11 permanent leased circuits were installed. Of the latter, particular mention should be made of the three 2 Mbit/s and the one 256 Kbit/s circuits.

Value added Services

During the second half of 1992 we piloted a new easy, simple to operate,

The Distance Learning University (UNED) supports its students via the Ibertex service



radiomessage service designed for the public at large. This service named the "Fonobuzón" service was piloted in the provinces of Barcelona, Malaga and Madrid.

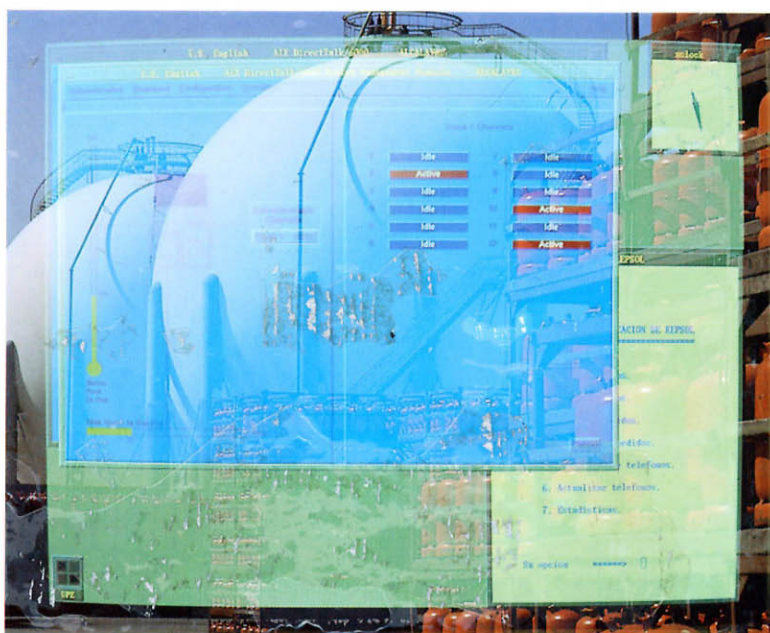
Virtual private networks

During 1992 the International Virtual Private Network was launched on a trial basis, with the connection of Ibercom to the virtual public networks of the American operators, ATT, MCI and US Sprint, the Japanese operators KDD and the United Kingdom operator BT.

Business networks

In line with our policy of participating in any feasible initiatives or joint ventures proposed between the world's leading telecommunications operators, Telefónica joined the FNA (Financial Network Agreement), together with 11 operators. The FNA aims to provide telecommunications back-up to companies in the financial sector.

Repsol Butano has automated its ordering service





Credit card payment is widespread through Electronic Funds Transfer

Integrated Service Digital Network

During 1992 we introduced new ISDN-NB switching centres into the network and also continued work on establishing a ISDN development plan for the incorporation of supplementary services adapted to ETSI standards. The testing of an ISDN began with the participation of 40 clients with basic access and the integration of Ibercom IAN's into the ISDN.

The ISDN was the basic telecommunications infrastructure used in the 1992 events held in Spain. In the case of the Seville EXPO this infrastructure was of particular interest to manufacturers of terminals, telecommunications equipment, the computing sector and business services sector, who were able to try out their equipment, software and services through this technology. At the Olympic Games it was designed particularly for the press, radio and television, using group 4 multimedia, videoconferencing, videotelephony and fax.