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## Summaries

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### Flexible measuring system

A. Tanner and M. Lehmann, Berne

In many locations in the PTT Enterprise computer controlled measuring systems are being set up. Simple, inexpensive and individually adaptable interfaces are lacking considerably on the market. The authors describe a module system of the Eurocard size which should fill this gap.

p. 450...460

### Replacement of the equipment for telegramme registration by telephone

E. Brechbühl, H. Heinzen  
and W. Schmutz, Berne

The equipment from 1977 for the receiving of telegrammes by telephone will be replaced. The new installation is comparable to a complex word processing system with communication part. This new equipment is at the same time the first step towards the replacement of the Ateco-system which was put into operation in 1971.

p. 461...469

### Proof of the electromagnetic waves 100 years ago

H. Severin, Bochum

Hertz's experiments during the years of 1885-1889 are an important milestone in the history of natural sciences, they brought the irrefutable verification of Maxwell's field theory controversial up to this date. In remarkable short time and from the present viewpoint with relatively simple measuring equipment Hertz proved at first experimentally that the displacement current postulated by Maxwell was really existent in a dielectric and in air, then he realized electromagnetic waves and confirmed Maxwell's electromagnetic theory of light. The importance of Hertz's work for the history of technical science was hardly less significant. Already a few years later the wireless telegraphy and with it the development of the telecommunication technique followed. G. Marconi accomplished 1899 a wireless connection across the Channel and 1901 across the Atlantic. F. Braun improved 1898 the spark transmitter substantially by applying coupled circuits and enlarged the sensitivity of the receiver by the invention of the crystal detector. About from 1915 machine transmitters generating undamped highfre-

quent vibrations dominated the long distance transmission with long waves and were displaced by the tube transmitters

not earlier than around 1930. On this first great period of the telecommunication technique is reported in the article.

## News Items

### Telephone

During the **Summer Olympic Games 1988 in Seoul** (18 September – 2 October) the **sport bulletins from tel. no. 164** were brought up-to-date every two hours from 5.00 to 13.00 o'clock and the last bulletin was produced around midnight.

At the end of August/beginning of September, as a result of the **continuously increasing demand** for telecommunications service, the **additional cable requirements 1988** (39 pc. more than originally predicted) were discussed with representatives of the three Swiss cable manufacturers. The supply for 1989 came up for discussion.

A further mobile **video conference studio** has been made available in the **World Trade Centre in Basle** recently for video conferences in addition to those in St. Gallen and in the permanent studios in Zurich and Geneva.

The firm **Gfeller** has installed its **500th digital subscriber exchange installation GDX**; it expects the 1000th order for this type of switchboard by the end of this year.

On the 1st of September the **140 Mbit/s directional beam connections Arbedo—Savièse, Basle—Lucerne and Lausanne—Leuk** were put into operation.

In order to supply the West—East and North—South axis, **further base stations for the mobile telephone Natel C** were put into operation. In greater Zurich there are now 32 of the planned 33 base stations in operation and in the rest of Switzerland 82 of the planned 106 base stations are in operation.

The **fully automatic telephone traffic with Guinea** was opened the 1st October. For this purpose two double directional **satellite connections** via Leuk are available.

### Teleinformatics

In the future the PTT will deliver the Fax (facsimile) models **UF-100T and UF-200T with built in telephone instead of the Panafax models 100 and 200**. The sales price for both models has been lowered. There is also a (private) encoding apparatus available for the 200 type.

The **data packet switching service** has been introduced with **Panama**. With **Norway** it now runs via a **direct connection** to the Norwegian Datapak network; up to now the traffic was routed via London.

Since September **New Zealand has not participated in the (office facsimile) Bu-rofax/Intelpost service** any more.

### Radio, Television, Radiocommunication

The **television directional beam network in the Tessin** for the elimination of disturbances due to terrain has been **altered**. A new 2.5 GHz installation has been set up between the multi purpose installations (MZA) Tamaro, Cardada and Ceneri and also a 14 GHz installation between the TV studio and the MZA Gen-eroso and San Salvatore. The whole reconstruction consists of 67 directional radio channels and the necessary protective circuit sections.

In the **Val d'Anniviers a new transmitter mast has been erected in Chandolin** over which, besides the three national television programmes, also foreign television programmes can be beamed into the valley.

### Miscellaneous

The **PTT Enterprise** was guest of honour at the **Swiss Trade Exhibition in Lausanne** in 1988. First prize was awarded for its stand. At the same time three **communication days** took place/were organized based on the themes «Youth» as well as «Communications-Model Community». That of the telecommunications service was mainly devoted to the theme «**EC-Domestic Market 1992 and Telecommunication Switzerland**». Apart from speakers from at home and abroad, representatives from business and politics as well as from the media also participated.

A heavy **storm** put the **Weissbad telephone exchange (in the Säntis region) under water**. Thanks to the efforts of the fire-brigade, the employees of the telecommunications administration in St. Gallen as well as the storage battery which remained in working order, the breakdown lasted only a few hours for most of the subscribers.