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Investigation of the possible influence of high frequency electromagnetic field on woods

K. Joos, Basle, S. A. Masumy and F. H. Schweingruber, Birmensdorf, and Ch. Staeger, Berne

Since some time, the media has been blaming the electromagnetic field (EM field), source of all kinds of radio communications services, as equally responsible for the decay of woods. Therefore, the PTT conducted field measurements at the extensive woodland south of St. Chrischona (Basle) transmitting station in order to clarify the possible connection between EM fields and the extent of damage done to woods. Due to the diversity of possible influences, general comments only were possible in the first series of enquiries. Therefore, further investigations were carried out within a radius of 1 km to 10 km northeast of Bantiger VHF/FM radio and TV transmitting stations, at three ecologically comparable duplicate sites with **normal** and **low** field strengths. The damage done to spruce, fir, pine and beech trees was studied. The analysis of density of leaves and needles on 800 trees and the research on growth within the annual circles of 232 trees lead to the following results:

1. There is no damaging effect to be noted by electromagnetic fields on the density of leaves of beech, the density of needles of spruce, fir, and pine trees nor on the radial growth of all four kinds of trees. Trees on the sites of **low** field strength cannot be distinguished from trees on sites with **normal** field strength neither by the aspects of their tree-tops nor by their growth pattern in annual circles. Loss in growth within the annual circles does not correlate directly nor with a time lag to the increase in transmitter power.
2. The classification of damage to the tree-tops and the annual circles shows different results: According to infrared aerial photographic analysis, the fir trees are more damaged than the spruce, pine and beech trees. The analysis of annual circles yet proves that pine trees show little, fir and spruce trees medium and beech trees a large increase in growth. Since 1981 no further drop in growth has been occurring practically.

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What is digitization?

K. Vögtli, Berne

The systematic application of digital technique up to the subscriber premises will allow using the same line for different telecommunication services. The author pursues to outline clearly and simply the most important differences between analogue and digital coded signals. What at first sight looks like an unnecessary complication proves to be an efficient means of transmission and switching for voice, music, text, image and computer data. Further advantages of this system are the immunity to noise as well as the possibility of simple data processing and interlocking at regular intervals.

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Télégenève's primary fibre optic network

A. Käser and U. Stettler, Berne

Recently, a cable television network came into operation in Geneva. It covers the entire city. A fibre optic network was installed for the main distribution of TV and radio programmes from the receiving station to the central offices. However, the transmission of signals to the subscriber still uses the conventional technique of coaxial cables. The authors justify the choice of this hybrid solution and describe the equipment of the primary fibre optic network.

News Items

Telephone

The **traffic data for EWSD and AXE 10 exchanges** were gathered with the **new traffic metering equipment VM 85** at the Sion, Fribourg and Lucerne regional telecommunications directorates for the first time in October. From the beginning of 1988, the traffic data for the IDN exchanges will be compiled by the same means for all directorates.

In November, **30 additional permanent satellite circuits** were established via Leuk earth station: Canada (12), the USA (12), Bogota (2), Beijing (2), Panama (1) and Tokyo (1).

Teleinformatics

Direct automatic telex service was taken up with **equatorial Guinea** on 1 November.

Since October, the PTT has been conducting the commercial **operational trial with the «arCom 400» mailbox service**. At the Telecom 87, several potential customers were met and informed of the system.

A multi-standard software version was implemented for the **comfort telephone Comtel 3210 combined with videotex**. It allows also access to Btx (FRG), Antiope (F) and Prestel (UK). The command language is available in German, French or Italian.

Radio, Television

Since 1 November, the radio programmes of the **Swiss Radio International** have been broadcast **via transmitters in Beijing and Kunming** (Peoples Republic of China). In exchange, the Swiss shortwave transmitters were broadcasting for Europe radio programmes of Radio Beijing from Lenk and Sarnen.

The **Swiss Broadcasting Corporation** is competent, in place of the PTT, for **procurement of studio equipment** on the basis of a **revised license from 1988 onwards**. Therefore, the PTT will receive only 23 pc instead of 30 pc of the license fees for radio and television.

140 Mbit/s radio relay links were taken into operation; one link between **Basle and Berne**, one further between **Basle and Zurich**, two links between **Berne and Besançon**.

A **radio telephone network** in 460 MHz band was implemented for the **Postal courier service «PTT Rapid 142»** in Basle, Berne, and Lausanne. This network consists of a control equipment, a relay station and eight mobile equipment.

Miscellaneous

France and Switzerland decided to install **two optical fibre links** between Basle and Mulhausen (1990) and between Geneva and Annecy (1992).

The **19th and 20th starts of the European carrier rocket Ariane** were again successful. The **3rd Eutelsat satellite came into operation** at 10° East longitude on 1 November. It serves mostly the transmission of international TV programmes. The 20th launch brought into orbit the directly receivable German **broadcast satellite TV Sat 1**, which was positioned at 19° West longitude and will be in operation around March 1988.