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Summaries

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Engineers for Switzerland of Tomorrow

M. De Senarclens, Zurich

In Switzerland there is an acute lack of engineers. At present this is attributed partly to demographic reasons as it is also to the skepticism of the population towards technology. The engineers' positions in industry also play a role, where they are, in many cases, labeled as «technocrats» as well as there being little creative demanding working conditions, inflexible hierarchy and management structures which are only conform to financial success criteria. After explaining these assumptions, the author tries to recommend solutions for the improvement of this situation.

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Field Study of Possible Damaging Effects on the Forest from Microwave Fields

Ch. Stäger, Jegenstorf

After the publication of two studies in connection with possible damaging effects on the forest by electromagnetic fields in the FM radio and television broadcast frequency range, a further field study of possible effects by microwave frequencies was carried out. Because of the directional effect of microwave radio link installations, it was easier in this study than in earlier works to select forest sites with normal microwave field strength and control sites practically free of microwaves and to compare the damaging trends with one another. With the help of forest specialists from the Canton of Freiburg, 14 double sites at Mt. Gibloux and Riaz, which are as similar to one another as possible concerning crop and ecology but per pair differing essentially in the respective local field strength values, were selected. The coarse and the fine evaluation of sample and control surfaces of a little more than 60,000 individual trees was made with the help of the «Sanasilva» damage map which is based on optical assessment of infrared aerial photographs of the forest. Thanks to the large number of samples it was possible to make statistically safe statements. It showed up that the damage development in the microwave loaded sample fields and in the unloaded control fields are practically identical. The conclusion can be made from this that the present forest damage in both cases must be due to other influences. Because the Mt. Gibloux radio link site is typical for Swiss conditions, additional studies concerning microwave radio links are unnecessary.

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Skeleton Regulations for a Coordinated Introduction of Office Automation by the PTT

B. Schneiter, Berne

Today office automation is no more a foreign expression and hardly a day goes by without something new in this area being made known. The PTT is pursuing a fashionable trend with the introduction of this new method, it is striving to rationalise, simplify and accelerate the working routine in management and business. This is not attainable without co-ordination of strategy and objectives. Certain principles regarding the communication between the different installations should also be taken into consideration. The purpose of this article is to discuss the different aspects of the problems involved.

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Credibility Test for Telephone Bills

H. Zobrist, Berne

For years the telephone bills have been examined for their credibility before they were sent to the customer. The test procedure has been improved several times. In the present article the author comments on the considerations which have led to the latest test procedure and explains the mathematical formula for the calculation of the signalizing limit.

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The Microelectronic Business Field

F. D. Maier, Heilbronn

First the author explains the importance of microelectronics for Daimler-Benz/AEG. How important it is to master corresponding production technologies is also explained. A general account follows about economic aspects and forecasts up to the year 2000. In conclusion, considerations about the evolution and new developments in this important area of production are expounded upon.

News Items

Telephone

The **Natel-C base stations Aigle, Beromünster, Herzogenbuchsee, Hochdorf, Langenthal, Pieterlen, Roggwil, Rüti ZH, St-Maurice and Susten** were put into operation in October.

The **acceptance tests of the CCITT no. 7 signalling system (SS)** in the international EWSD exchanges is now to a great degree finished and the network between the four digital international exchanges in Switzerland is also to a great degree equipped with SS no. 7. At present already 220 effective channels with SS no. 7 are operating with England and 60 with the USA.

Teleinformatics

The **field test with MEGACOM,** the arranged 2 Mbit/s network with supply points in **Basle, Geneva** and **Zurich** has been established by the end of September. The operational test with customers will begin 1st January 1990. MEGACOM covers first requirements for automatic dialling video conference, medium rate data transfer, picture transmission etc. until switched 2 Mbit/s connections are available from approximately 1995 in the ISDN.

At the end of September, a meeting was held in Copenhagen between representatives from Denmark, Norway, Sweden, Finland and Switzerland on the **integrated system of transmitted 2 Mbit/s networks** (MEGACOM). At the same time the participation at the International Switching Symposium (ISS, May/June 1990) in Stockholm was also discussed.

The Swiss PTT has decided to **participate in the Firm INFONET** which is active in the area of international value added services (International Value Added Network Services = IVANS). The aim is an extensive solution for the data communication service and for the access to the value added services. For this, above all, the electronic message service (Message Handling System/X.400) and the electronic data exchange EDI (Electronic Data Interchange) is necessary. On the 5th October the PTT concluded the contract with the Computer Sciences Corporation (CSC) for a five percent participation in INFONET and will take up its duties for the commercializing and support of the services from INFONET in the first half of 1990. The INFONET, an American enter-

prise existing since 1970, offers it services in 34 countries and five continents. Nine new partners are now participating in INFONET: apart from Switzerland they are Teleinvest (Scandinavia), RTT Belgium, Telecom Australia, Singapore Telecom, Transpac (France), Telefonica (Spain), German Federal Post (FRG) and the PTT Telecom (the Netherlands).

Radio, Television, Radiocommunications

On the 21st September the 195 m high **medium wave antenna tower in Sottens was put out of operation and blown up.** The antenna, which was built in 1947, will be replaced by a new 188 m high mast with a cage antenna. Until the new antenna planned for the middle of 1990 is put into operation, the RSR 1 programme will be transmitted over the reserve antenna with 200 kW.

On the 2nd October the **Chandolin UKW (FM) station was put into operation.** It furnishes the Val d'Anniviers with the RSR 3 programme in stereo on the 93.6 MHz frequency.

In October **the directional radio installations were replaced** on the **Jungfraujoch—Monte Generoso** section of the national television radio link network. This concerns seven installations for wide band channels in the 2 GHz band. At the same time a new IF-protection system has been installed on this section. The **television radio link** installations in the 2 GHz band have also been replaced on the section **La Dôle—Geneva/Studio** by one channel each per direction.

Following lengthy legal proceedings, the **Höhronen multipurpose installation (MZA)** can now be built. After the Federal Court came to a positive decision in January of this year, the PTT board of trustees has now also given the green light. At the time a redimensioning of the project was ordered because of the large opposition. The revised building project was agreed upon and can be realised at an estimated cost of 8.7 mio francs. It is a multipurpose installation which will serve mainly for the connection of the Zurich-Herdern long distance centre and the planned new Zurich-Binz centre to the Swiss directional beam network. The construction work is to be done as quickly as possible so that the installations can be operational in 1992.

Miscellaneous

The **15th Meeting of the INTELSAT assembly of parties** (International Telecommunications Satellite Organization) consented, at its October meeting in Amsterdam, to the **coordination** with several regional and national satellite networks upon recommendation of the Board of Governors. Amongst the regional networks is also that of the EUTELSAT in which Switzerland participates as well.

The **Board of Governors of INTELSAT** approved the **acquisition of a new satellite working in the K-band (11.7...12.2 GHz)** at its 80th meeting. The satellite, called INTELSAT, will be optimized particularly for the North Atlantic region (Europe and North America) and used mainly for the transmission of television programmes (Satellite News Gathering, SNG). It will be put into orbit in the second half of 1991.

On the occasion of a video conference on 18th October, the **German Bundespost TELEKOM and the Swiss PTT** have agreed to work closely together in the future in the introduction, use and further development of the digital satellite radio (DSR-System). Its aim among others is the transmission of radio programmes in CD-quality. With this agreement, the PTT and the German Bundespost want to achieve an optimal quality of transmission and reproduction, an expanded service comfort and a unified transmission standard with the distribution of radio programmes over satellite and cable network in the DSR standard.

The mutual **telecommunication relationships between Europe and the USA after 1992** were discussed in Montreux from 15 to 17 October. Leaders from politics, management, industry and telecommunication user organizations from both sides of the Atlantic met together at a forum on the effects of the future EG domestic market which was organised within the framework of the **«Annenberg Washington Program»**

The **ITU-COM 89,** the first world exhibition of the electronic media, closed its gates in **Geneva** on 8th October. During this exhibition, which officially opened on 3rd October, there was also a three part symposium at which political, technical and legal aspects of the electronic media were discussed. At the exhibition one could study closer the applications which were discussed at the symposium: electronic communication, digital sound radio, satellite radio, HDTV (High Definition TV), cable television network etc. The 15,660 visitors consisted mostly of experts in the trade. 1520 experts, researchers, lawyers and users registered for the symposium as speakers as well as participants. 152 exhibitors presented their equipment, services and publications in an area of 10,000 m². 123 countries were represented by 445 ministers, ambassadors and personalities of management, broadcasting stations and industry.