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Summaries

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Model Communities for Telecommunications

Willy BOHNENBLUST, Berne

On the initiative of the PTT, together with industry, economy, non profit organizations and the population in 12 model communities, as many as possible of the communications projects submitted are to be reviewed, tried out in practice and finally the solutions to the problems attained will be successively made known. The author describes the aim of the project, the necessary measures to be pursued for its realization, the ensuing costs, the possible applications and the development of the project up to now.

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Coexistence of Terrestrial Radio Links with Satellite Radio Transmission

Viktor DENZLER, Bern

The satellite and the radio link services use to some extent the same frequencies. Both services can therefore interfere with each other. Beginning with the permitted interference level, the author points out the possibilities of assessing the permitted radiated power of an interfering transmitter. Approximation formulas for the calculation of the side lobe in the radiation diagram of parabolic antennae and the corresponding measuring results are given. Simple propagation models for interference connections from the interference source to the disturbed receiver are explained. Results from model calculations are compared with results of some propagation measurements.

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Intermodulation Measurements on Passive Microwave Components and Antenna Feeders

Jürg SIEGENTHALER, Bern

With passive microwave components of high quality, linear electrical behaviour is assumed in the first approximation. Unwanted intermodulation products are very small compared to the information signals involved. In order to measure such intermodulation products, measuring equipment is necessary with a large dynamic range and low internal intermodulation values. If intermodulation products on antenna feeders were to be measured and even their origin found the measuring

device must be switchable to pulsed operation (radar principle). Two such measuring set-ups in the 11 GHz band and in the 7 GHz band have been developed. With a transmitting power of 2×20 W, intermodulation ranges of up to 150 dB are measurable. In the pulsed operation sources of intermodulation on antenna feeders can be determined with an accuracy of 0.8 m.

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System Simulator for the Acceptance Tests of NMT-900 (Natel C) Components

Hans-Rudolf MAAG and Peter HERZIG, Bern

The Natel C, introduced in autumn of 1987, has developed into a great success. The research and development division of Swiss PTT is responsible for testing the equipment parts. The authors describe the System Simulator NMT-900 (SS) which is used for acceptance testing of Natel C equipment. The utilized test units and their electrical characteristics are explained in detail. The first experiences with this test system are also noted by the authors.

News Items

Telephone

This summer **university students will be employed at the information service 111 and 114** of the Geneva telecommunications office in order to meet the demand for personnel and to keep the waiting time for customers low.

Four further **approvals for private telephone** apparatuses could be granted in the first six months of this year. Thus there have been a total of 28 approvals for private telephone apparatuses granted since 1 January 1988.

In July the following nine **Natel C base stations** were put into operation in the East sector within the framework of phase 3: Grono, Klosters, Küblis, Meggen, Merishausen, Mesocco, San Bernardino, Walenstadt and Walenstadtberg.

The four **Natel-exchanges already in existence have been expanded** to handle 35,000 customers each. With the introduction of a new software package in the Lausanne MTX-exchange, the problem of lines remaining erroneously on standby after the connection has been cut has

been eliminated. With the same package, a new function has also been introduced which results in that an optical indicator appears at the mobile station in case of active diversion of calls. In the remaining MTX-exchanges this software package was also introduced during the month of July.

Teleinformatics

The system for the **automatic telegramme switching (ATECO)** was set up in Zürich-Wiedikon in the years 1971/72. Part of the installations, namely the necessary display terminals including communications part for the recording of telegrammes taken on telephone 110, were already replaced in 1988. This new equipment, which still shows a certain reserve capacity, has proved reliable in operation. With hardware and software additions the present system can now be expanded such that it can take over the telegramme communication from the old processors. The work for this replacement is being done in cooperation with the suppliers. It is expected that this phase will be completed by the end of 1990. Later on the telex machines in the telegraph offices and post offices will then be replaced with modern terminal types. In addition to this the equipment will be prepared so that the messages which are given over telephone 110 or at the post office and TT counters can be given into the message communications system, arCom 400.

A new **network centre was installed in the telecommunications office Basle** in July for a stock exchange information system. A further one is on order for Lugano. Up to now 24 customer systems have been installed for this system in Zürich, Geneva and Basle and 11 of which have been ordered.

Radio, Television and Radio communications

In July the **Schüpfheim FM station** was put into operation. It serves Schüpfheim as well as Entlebuch and Escholzmatth with the DRS 3 programme on 104.6 MHz.

In July a **DRAVAP transponder was put into operation** at each of the **Casaccia, Ca d'Faret and Gondo** stations for the diffusion of the RTL-Plus programme supplied from a satellite receiving installation. At the Amden station a similar transponder was put into operation for the ORF 2 programme.

For the **business communications**, a 64 kbit/s digital link was put into operation via the Geneva/Vernier satellite earth station (IBS/INTELSAT 307) one each with the USA and Canada. The following circuits were put into operation via the Leuk satellite earth station during the months of June and July: 2 with Hong-kong (FDMA), 36 with the USA (FDMA) and 23 with Turkey (TDMA). At the same time 36 FDMA circuits with the USA on another carrier were disconnected.

The first **digital high capacity radio link** in Switzerland, which was put into operation in 1976 between Lausanne and Berne, has been shut down in June of this year.

In July the **radio link installations for the national television network** was replaced on the section **Bantiger—Olten (Engelberg)**. Three wide band channels in the 2 GHz range and one channel in the 6.2 GHz range are concerned.

In July the **Davos-Jakobshorn Eurosignal transmitting station** for supplying the Davos-Landwasser valley and the Upper Prättigau — as well as the corresponding radio link (Arosen Weissshorn—Weissfluh peak—Davos-Jakobshorn) — were put into operation. In the same period the Auto call and Eurosignal station in Ticino was moved from Monte Lema to the Monte Tamaro.

Miscellaneous

At the **13th Plenipotentiary Conference of the International Telecommunication Union (ITU)** which convened from mid May to the end of June in Nice, France, the participants compiled telecommunications charter as well as a telecommunications treaty and set the dates for the most important conferences up to 1995. In the area of radio, the conference emphasized the necessity for interference protection measures with electrical apparatuses. It further confirmed a WARC 1992 (World Administrative Radio Conference) to examine the frequency range plan 0.5 to 3 GHz as well as a HF-BC Planning Conference. Finally the revision of certain long distance shortwave air radio assignment plans was dealt with which is 20 years overdue. Nothing was changed for the time being on the basic structures of the IFRB (International Frequency Registration Board) and the different CCIs (International Consultative Committees).

The **CCITT Commission VI (exterior installations)** held their first meeting of the new study period in Geneva in June at which 66 delegates from 24 countries participated. The discussions were concerned with the organization of the commission work. Most of the questions to be dealt with concern the construction, the testing, the building and maintenance of glass fibre cables.

The **CCITT Commission SG.XVIII 'Digital Network and ISDN'** held their general meeting of the new study period in Geneva from 19 to 30 June at which approximately 500 delegates and experts participated in 8 work groups. A worldwide agreement could be reached in the area of fundamental characteristics for future wide band integrated digital networks (B-ISDN), which is strongly aimed at the new transmission method ATM (Asynchronous Transfer Mode) like the subscriber interface. Progress was also reached in the compiling of the basis for possible service in the wide band-ISDN as well as for network architecture and functions. With regards 64 kbit/s ISDN, the study included a range of new areas, i.e. intelligent networks, mobile networks and their relation to ISDN, an introduction of voice transmission with 7 kHz bandwidth in the 64 kbit/s time slot, etc. Further work was devoted to the clearing up of various existing recommendations.

During the year 1988, a total of **8.9 million telephone conversations** on about 60 publicly served PTT counters have taken place, 357,000 publifax connections and 140,000 telex connections placed. From the publifax locations, a total of 141,017 messages with 341,573 A4 pages were transmitted in the first 4 months of the present year — this corresponds to an increase of 27.50 % compared with the same period the previous year.