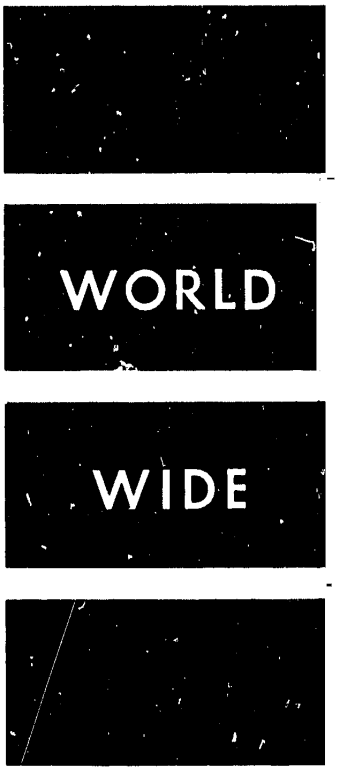
JPRS L/8342

19 March 1979



TRANSLATIONS ON TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

(FOUO 4/79)

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WORLDWIDE AFFAIRS

NONALINED RADIO MEETING TO BE HELD IN HAVANA

PA242318 Havana PRELA in Spanish 1855 GMT 24 Jan 79 PA--FOR OFFICIAL USE ONLY

[Pool item by Leopoldo Formoso]

[Text] Havana, 24 Jan (PL)--The representatives of 11 nonalined countries will meet here in early February--only 7 months away from their sixth summit meeting--to discuss important matters connected with the field of radio communications.

Two groups of experts from the cooperation committee of the nonalined countries radio broadcasting organization will participate in these discussions and, among other things, will discuss the redistribution of radio frequencies at the international level.

This and other topics will be analyzed by the world administrative radio conference, which is slated to be held in Geneva, Switzerland, in October.

The first of the two groups will be presided over by representatives of Algerian radio and television service and the second by representatives of "All India Radio," which specializes in radio broadcasting by satellite.

The sessions will be held from 2 to 6 February at the "Havana Libre" Hotel in this capital. Delegations from the Democratic People's Republic of Korea, Cuba, Guyana, Iraq, Kenya, Nigeria, Tunisia, Yugoslavia and Zambia will also participate in the event.

The nonalined countries' first radio broadcasting conference was held in Sarajevo, Yugoslavia, from 27 to 30 October 1977, and was attended by 54 member countries. On that occasion, an action program for the world radio conference, which is to be held in Geneva, was outlined and a coordinating committee presided over by Yugoslavia organized. That committee included Tunisia, Algeria, Guinea, Nigeria, Togo, Tanzania, Zaire, Kenya, Zambia, India, Afghanistan, Democratic Korea, Jordan, Iraq, Malaysia, Cuba, Peru, Panama and Yugoslavia.

Last year in Algiers, the group of experts held their first meeting. This same group will now meet in this capital to begin a joint coordinated effort in connection with the aforementioned Geneva conference. The final declaration of the Algiers meeting condemned the idea of former colonial powers maintaining radio stations in the territories of nonalined countries and, because of their interventionist nature, likened

these stations to the presence of neocolonial military bases. The "pirate" work carried out by the radio stations of certain Western countries, which produce interference on the nonalined countries' local frequencies, was also denounced. On the other hand, the document expressed solidarity and support for the radio programs broadcast from various parts of the world by the national liberation movements. One topic that was broadly discussed and which will be debated once again here concerns the adoption of measures aimed at guaranteeing a more equitable distribution of the frequencies at the international level.

Both in the nonalined countries movement and in UNESCO, the unjust distribution of radio frequencies and the monopolization of the information and communications services by the large centers of economic power, particularly the transnational companies, has been denounced.

The participants at these meetings will also take part in activities, including a visit to the Palace of Congresses, which is currently under construction and will be used as seat of the sixth nonalined summit next September.

CSO: 5500

NEC CROSS-BAR EXCHANGE SALES TO THAILAND RECOUNTED

Tokyo NIKKAN KOGYO SHINBUN in Japanese 1 Feb 79 p 1

/Text/ Nippon Electric Company, Limited, (NEC) (Tadao Tanaka, president), announced that it signed a contract with Thailand Telegraph & Telephone Public Corporation /TTTCP/ on January 31, following a successful bid for 40,000 cross-bar exchange circuits and related equipment at 3.25 billion yen, the largest award yet under Thailand's exchange project. Since 1967, NEC has received orders from TTTPC, on a yen loan basis, for about 330,000 circuits for 40 stations as part of the telephone exchange equipment for Thailand's metropolitan area. Orders for cross-bar exchanges, including the latest transaction, now total 12 billion yen. NEC now has supplied 92 percent of all the telephone networds in Thailand's metropolitan area. Delivery will begin within 10 months from the signing of contract and will be completed in 2 1/2 years.

In 1967, the Government of Thailand negotiated a loan from Japan for the construction of the telephone network. Ever since NEC began to receive orders in that same year for the initial project by TTTCP, it has enjoyed preferential treatment. It has dispatched 150 of its own technicians and project managers and is training TTTPC technicians, about 100 in Tokyo and 150 in Bangkok.

According to NEC, TTTPC's plan calls for cross-bar exchanges for about 30,000 circuits annually.

9097
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AFRICA-EUROPE-SOUTH AMERICA SUBMARINE CABLE SYSTEM

Paris MARCHES TROPICAUX ET MEDITERRANEENS in French 9 Feb 79 p 315

/Text/ A meeting of experts from seven countries which last September signed an agreement for a submarine cable system linking South America, Africa, and Europe was held in Dakar from 30 January to 1 February. It was decided that the telephone link will begin to operate in 1982 at the latest.

The total cost is estimated at 50 billion CFA /African Financial Community Monetary Unit/ francs. Senegal will pay about 5 percent of the costs.

The experts agreed on the number of circuits needed -- between 1,200 and 1,800.

On 5 September 1978 Brazil, Argentina, Senegal, the Ivory Coast, France, Italy, and Portugal signed an agreement of intent to develop a "submarine cable communications system" linking the three continents. Later several other countries, including the United Kingdom, Switzerland, Germany, and Nigeria, joined the first group after weighing the advantages of such a system: in addition to increasing communications among these countries, the development of high capacity cables provides telephone and telegraph circuits at very competitive prices.

The system in question consists of two main sections: the Recife (Brazil)-Dakar (Senegal) section, 1,800 nautical miles long (3,330 km) and the Dakar-Lagos (Portugal) section, 1,650 nautical miles in length (3,053 km). This configuration was chosen after technical and economic studies were done, based on two factors. The first is the diversification of traffic

routing between cables and satellites in order to improve the security and reliability of communications among the three continents.

The second factor was the selection of Dakar as an intermediate point in order to concentrate the Brazil-Europe and Africa-Europe traffic in one large-capacity cluster of channels. This will reduce the cost of a channel and will also provide direct links via submarine cable between West Africa and South America.

The system now linking Dakar to Morocco and to France, on one hand, and to the Ivory Coast and soon Nigeria, on the other, may well be saturated within the next 3 or 4 years.

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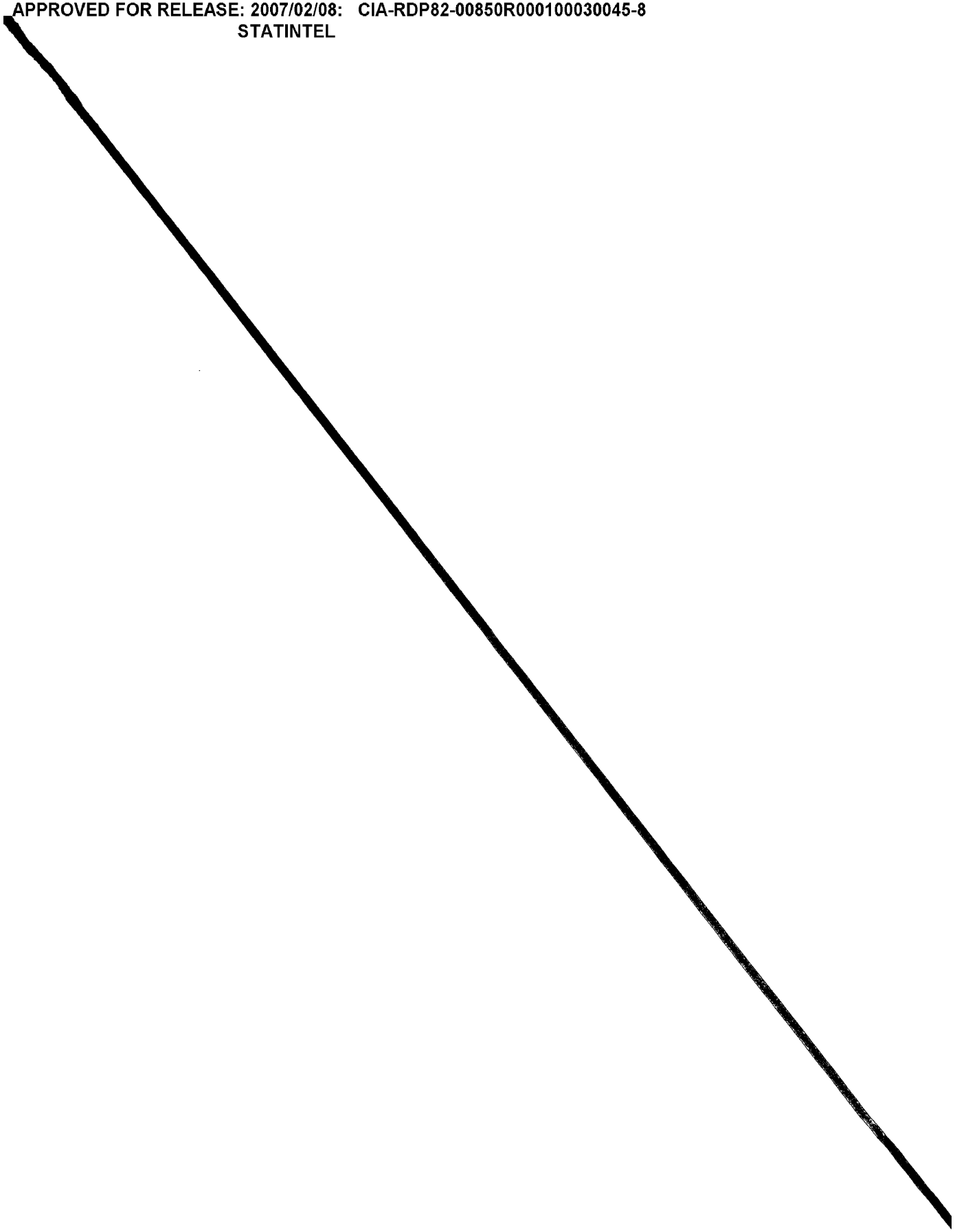

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STATINTEL

JAPAN

UTILITY COMPANY PRESIDENT CRITICIZES U.S. PROCUREMENT PRESSURE

Tokyo ASAHI SHINBUN in Japanese 1 Feb 79 Morning Edition p 9 OW

[Text] The United States is strongly demanding that Japan change the Nippon Telegraph and Telephone Public Corporation's [NTTPC] present supply system to a competitive bidding system so U.S. enterprises can take part in the bidding. At present the NTTPC procures materials by discretionary contract.

At the Tokyo round of the GATT multilateral trade negotiations, this practice was a subject of controversy. Regarding the U.S. demand, NTTPC President Akikusa told the press on 31 January that neither the Ministry of Posts and Telecommunications nor the NTTPC intend to make any concessions and bitterly criticized the high-handed U.S. political pressure. The following is a summary of his statement:

1. It is a common practice of all EC countries to procure domestically machinery, such as communications equipment, that requires a continuous and stable supply. They procure such equipment not through competitive bidding but by discretionary contract. The United States is not asking the EC countries to change their procurement system so U.S. firms can participate in the bidding. In the United States, ATT procures its equipment only from Western Electric, its 100 percent affiliate.

2. Several cabinet members of the Carter administration came from IBM, and we have the impression that IBM is behind the strong U.S. political pressure.

3. The NTTPC does not totally exclude foreign products from its procurement. In fact, it purchases 3 billion yen worth of equipment from abroad annually. In marketing goods, the seller must invest years of effort. In promoting sales, U.S. firms prepare lists of specifications and conduct sales negotiations in English, virtually telling the buyer, "You do the translation." We cannot tolerate the high-handed attitude of telling us to buy their products without their making any promotional effort. At any rate, it will take another (?month) or two to settle this issue.

CSO: 5500

JAPAN

BRIEFS

SATELLITE ORDERS--Mitsubishi Electric Corporation has received a 6 billion yen order for an INTELSAT standard-A earth station from Saudi Arabia and a 2 billion yen order for a similar earth station from Malaysia. Both stations, slated for completion in April 1980, will be used for communications with Japan and North America via IV-A and V satellites. [Tokyo NIHON KEIZAI SHINBUN in Japanese 31 Jan 78 morning edition p 8 OW]

NEW-TYPE COMPUTER--Three Japanese firms--Nippon Electric, Tokyo Shibauru Electric and Nichiden Toshiba Information System--announced on 6 February that they will put on sale a new-type medium-to-small-sized computer "ACOS System 250" beginning next July, in rivalry with IBM's 4300-type. The Japanese type is the first of its kind produced domestically and, according to Nichiden which developed it, its efficiency is "30 to 40 percent higher than the IBM version." Firm officials think that they can sell 2,000 units of the new computer in 4 years. The price is 30.8 million to 132 million yen per units, and the rent will be 700,000 to 3 million yen per month. [Tokyo TOKYO SHINBUN in Japanese 7 Feb 79 morning edition p 3 OW]

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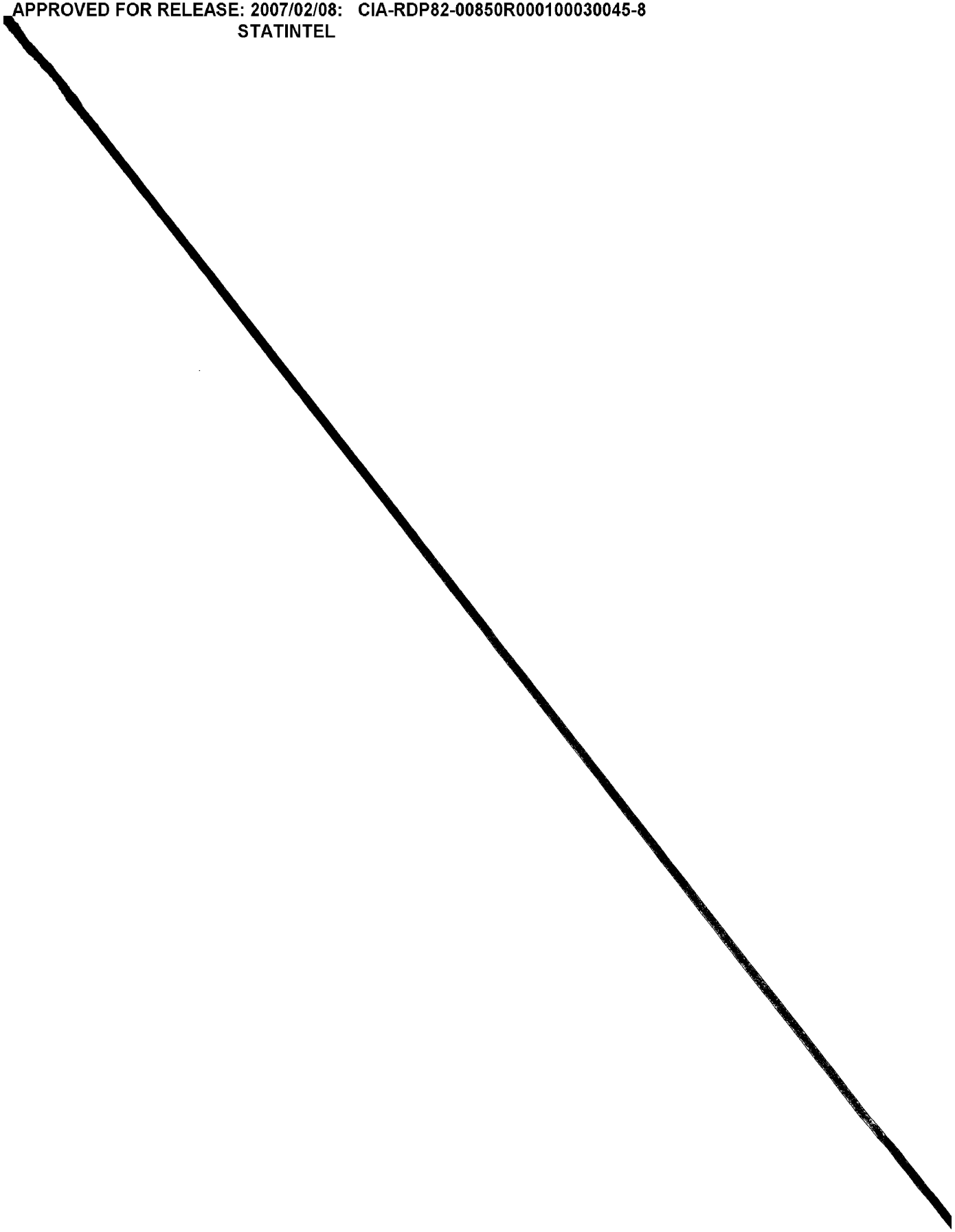

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CUBA

NEW COMMUNICATIONS FACILITIES FOR NONALINED SUMMIT

PA072219 Havana PRELA in Spanish 2017 GMT 7 Feb 79 PA--FOR OFFICIAL USE ONLY

[Text] Havana, 7 Feb (PL)--Cuba will guarantee a high technical level in communications during the sixth nonalined summit conference to be held in September. This remark was made by Cuban Communications Minister Pedro Quelmes during his closing speech at the third meeting of radio broadcasting experts held here from 2 to 6 February. According to Quelmes his ministry is making considerable investments and conducting a complex and well-planned program to insure telephone, telegraph, radiophoto, radio and television communications.

The program is based on experience obtained in communications services during preceding summit meetings in Algiers and Sri Lanka. A modern telephone central is now being established to serve international traffic. The center has the equipment necessary to guarantee speed and quality.

A new automatic telephone central is being completed. This will allow the Cuban telephone operators to dial the requested numbers in those countries linked with the international traffic centers. The ministry is also installing new telephone and telegraph equipment to be used by a satellite tracking station. This will allow the broadcast of radio and television programs to those countries who so desire it.

Two fully equipped telephone rooms with a considerable number of telephone booths, radiophoto and other services will be available to the hundreds of newsmen who will cover the meeting.

The Palace of Congresses, where the important meeting will be held, will have other installations for radio and television broadcasts as desired. It will also have a room with international telex equipment located in a section of the press room which, like other rooms of the palace, will be equipped with television monitors connected to a closed-circuit color television system.

The minister said that the urban telephone network is being expanded and that private, automatic medium- and large-sized panels for communications service will be installed throughout the area in which the meeting will be held. These panels will be hooked up to national and international systems. He said that a group of engineers, technicians and workers are installing a complex, high quality communications system which will connect hotels, hospitals, airports and other service installations.

He said finally that the respective coordination is being established with the departments that will serve as international traffic channels in order to link Cuba with all the countries in the movement so as to best serve the nonalined summit.

CSO: 5500

USSR

NEW TV TRANSMITTING EQUIPMENT

Moscow VESTNIK SVYAZI in Russian No 11, Nov 78 pp 29-31

[Article by V. I. Avdeyev, chief technologist in GKRU [Main Administration of Cable-Line and Radio Relay Communications Facilities], USSR Ministry of Communications, and V. P. Popovich, GKRU leading engineer: "Special Features of New Television Transmitting Equipment Development and Operation." Paragraph in slantlines printed in boldface]

[Text] /Providing high quality transmission of color TV programs is a vital task at the present time. One way to accomplish this is creation of new types of TV stations. The Zona-II and ATRS-5/1 TV stations fall in this category. They will permit increased quality transmission of the color TV picture./

Modern principles in the development of TV transmitting equipment are embodied in the Zona-II and ATRS-5/1 TV stations (Figure 1). As a result the basic indicators of these stations (see Table) correspond to the values accepted by the GOST [All-Union State Standard]. However, the new TV stations also retain principles proven during construction of the previous equipment generation. Thus, common for the two types of stations is use of operating and spare oscillator assemblies (the passive stand-by circuit) and of two autonomous parallel amplifiers for the picture and audio radio channels, the power outputs of which are added at the output (the active redundancy circuit).

The problems of adding the power of the transmitters and of the subassemblies as a whole, as well as of the output couplers, have been solved just as they were in equipment previously produced. The signals from the picture and audio channels at the output of each subassembly are added in a common load with the aid of a filter (FVCh) [upper frequency filter]. Its output is switched to the adding bridge (MS) input of the subassembly power. The adding bridge coupling system (UK6; UK7) makes it possible for two power output subassemblies to simultaneously operate to the antenna. If one fails the operable subassembly can be switched to the antenna via an adding bridge bypass. The capability of loading the transmitter and the faulty subassembly to the dummy antenna has been envisioned.

Parameters	ATRS-5/1	Zona-II
Frequency band	I-III	III
Picture channel power, kw	5	5
Audio channel power, kw	1	0.6
Carrier stability for 1 month without adjustment, Hz, no worse than	±100	± 500
Ratio of the peak-to-peak picture signal to background interference at a background level at input up to 50%, db, at least	42	46
Varied amplifications of the brightness and color signal, db, not to exceed	±1	±1
Distortion factor for the brightness signal, %, not to exceed	15	15
Distortion of the differentiated amplification type, %, not to exceed	10	10
Input power without the ventilation system, kw, not to exceed	20	25
Dimensions, mm	3020x870x2298	2790x1240x2000

Figure 1. ATRS-5/1 TV Station

As opposed to old equipment, the maximum amount of transistorization, restriction in the number of electronic tubes, wide use of integral circuits in the logical control circuits, and automatic switching to a spare are common for the new TV stations. Transmitters and dummy antennas are air cooled at these stations and the capability has been envisioned to locate the equipment both in two- as well as in one-story buildings. Easy access to the main components has been provided.

At the same time construction of the oscillators, input stabilizing circuits, and the multiplication and modulating stages in each station has its own peculiarities. Thus, for the Zona-II (Figure 2) a combined oscillator has been used for the picture and audio transmitters, to which the picture and audio signals are fed via input couplers (UK1; UK2).

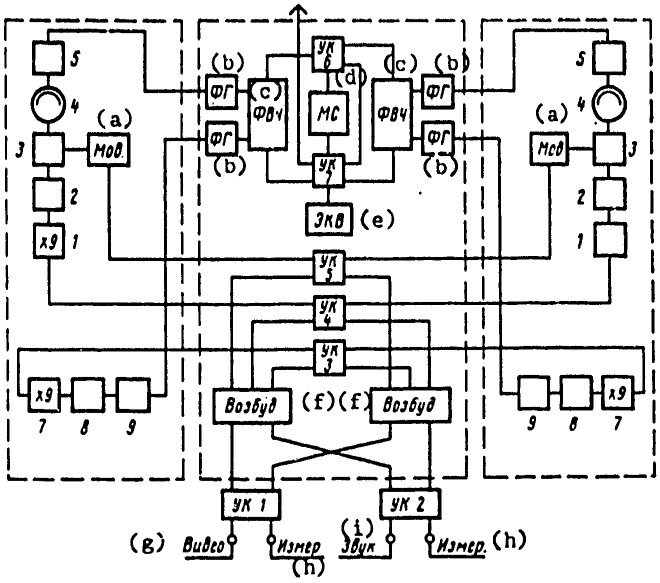

Figure 2. Structural Schematic of a Zona-II TV Station. (a) - modulator; (b) - harmonic filter; (c) - upper frequency filter; (d) - adding bridge; (e) - 3 kw; (f) - oscillator; (g) - video; (h) - gauge; (i) - audio.

The signal processed in the oscillator via a coupler (UK4) reaches transistorized multiplier 1 in which a carrier signal of 5-10 watts is formed and aplified. Amplifier stage 2 consisting of an RE 025 XA tube is beyond the multiplier. Modulation through a control grid and amplification of the signal to 300 watts is accomplished in third stage 3 consisting of a push-pull circuit made of the same tubes. The significant nonutilization of the

power in the second stage tubes makes it possible to use a tank, which causes relatively great attenuation between stages 2 and 3. This insures stable noncritical alignment of each stage.

Circulator 4 is placed between modulating stage 3 and final amplifier 5 and is intended for their mutual decoupling. The final stage consists of an RE 5XN tetrode using a circuit with a grounded grid providing amplification to 2.5 kw.

The video signal is fed from the oscillator to the transistorized modulator input and reaches a peak of 60 watts at the modulator output. Modulation directly on the carrier frequency is accomplished at a sufficiently high power level. The result achieved should be considered very good for transmitters of this type. Here the station's high frequency tract has only 3 tube stages and only 2 tube stages in the audio tract.

The transmitter's audio tract is analogous to the picture tract. Beyond tube preliminary stage 8 and final stage 9 modulated in frequency approximately 300 watts power is achieved on the audio carrier.

In the ATRS-5/1 TV station (Figure 3) the picture and audio signals are fed to the oscillator via the input lines block (BVL), where the quality and presence of these signals are monitored. This block has a device for automatic cutting in of the station when the program signal is fed to its input and for cutting it off five minutes after the program signal is removed.

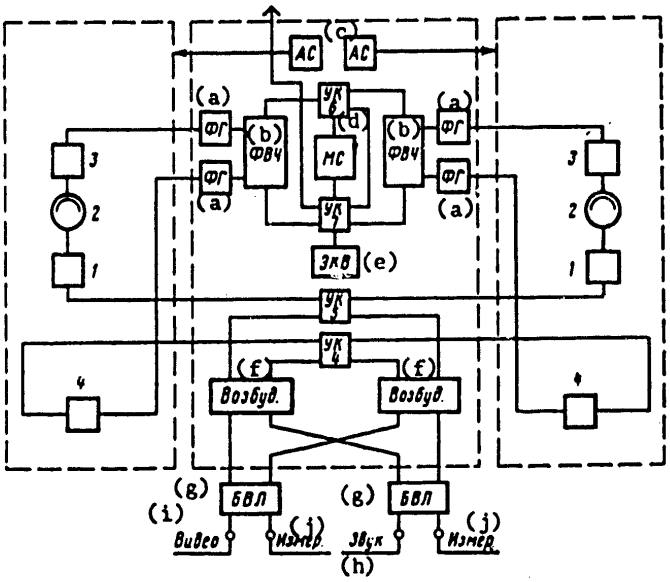

Figure 3. Structural Schematic of an ATRS-5/1 TV Station.
(a) - harmonic filter; (b) - upper frequency filter;
(c) - signal analyzer; (d) - adding bridge; (e) - 3 kw;
(f) - oscillator; (g) - input line block; (h) - audio;
(i) - video; (j) - gauge.

The modulated picture carrier signal is fed from the oscillator output via a coupler (UK5) to the inputs of 2 power amplifier subassemblies. The picture tract in each subassembly contains 2 tube stages: penultimate 1 made of tetrode GU-74B and final 3 made of tetrode GU-73B. Circulator 2 is cut in between the cascades to provide mutual decoupling. The FM audio carrier signal via a coupler (UK4) is fed to the inputs of final power amplifiers 4 constructed in a manner analogous to stage 1. Harmonic filters (FG) have been installed in the ATRS-5/1 and in the Zona-II at the input of the picture and audio channels in each subassembly in order to reduce them by at least 60 db.

One of the chief advantages of the ATRS-5/1 TV station is the ability to operate without the continual presence of service personnel. Among the special features of the station's design is the use of modulation at a small level of the radio frequency signal and on a lower intermediate frequency with subsequent shifting of the spectrum of the operating frequency channel set aside for broadcast. The station envisions automated monitoring of basic parameters, which control the stand-by system and others.

This station has the capability of selecting automatic, remote, or local (manual) control.

In the first instance personnel do not become involved in station operation. It cuts in after receiving the program signal at its input (the trigger reacts to the presence of the sync pulses in the transmitted signal). If the program signal drops the transmitter operates for 5 minutes in the black area transmission mode and automatically cuts off if the signal remains absent. The entire station as well as the oscillator assemblies and power amplifier subassemblies are cut in and cut off in the remote control mode. Given local control step-by-step (unit-by-unit) control of the station and feeder switches is accomplished.

The basic parameters of the output signal are automatically monitored by signal analyzers (AS) in each subassembly: the power output level in the audio channel and picture channel (other than peak power output), the relative peak-to-peak value of the synchronization signals, background level, presence of modulation, and unmodulated carrier level. The corresponding output power subassembly automatically cuts out if one of the signal analyzers registers a deviation in these indicators from the assigned tolerance. If such a deviation is simultaneously registered by two signal analyzers, this signifies a fault in an operating oscillator assembly. In this event a spare oscillator is cut in with the aid of couplers (UK4, UK5). If an increase in failures occurs the failures are registered but the equipment does not cut off.

The ATRS-5/1 TV station includes new monitoring and measuring equipment of the Yakhont (Figure 4) and SKZ-27 type. Use of this equipment makes it possible to carefully measure qualitative indicators in the picture and audio channels.

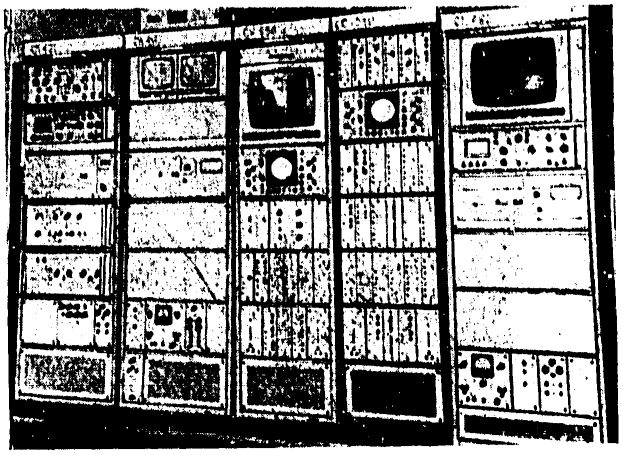

Figure 4. Yakhont Monitoring and Measurement Complex.

Experimental models of the Zona-II and ATRS-5/1 TV stations were installed for testing in 1976 at the radio and television stations (RTS) in the cities of Orel and Volgograd. Results from operating the Zona-II TV station in Orel, as well as know-how in operating the first series-produced models, indicated high equipment reliability, parameter stability, and ease in maintenance. Testing of ATRS-5/1 TV stations continues.

The television stations described are among the best in operation in our country and are being introduced more widely into the transmitting network. By early 1979 approximately 20 Zona-II television stations will be installed at the RTS in various cities. Series production of ATRS-5/1 TV stations will begin soon.

7869
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PARIS-BONN TV SATELLITE CONSTRUCTION DEBATED

Paris AIR & COSMOS in French 3 Feb 79 p 36

[Article by Pierre Langereux: "Will Paris and Bonn Build a Direct TV Broadcasting Satellite?"]

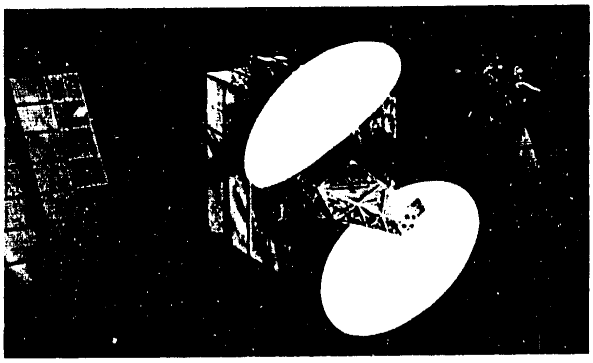
[Text] The European H-Sat direct television broadcast satellite project is stymied. The preliminary project definition study conducted by the Eurosatellite consortium--Aerospatiale, MBB [Messerschmitt-Boelkow-Blohm], and ETCA [Aerospace Engineering and Manufacturing Company of Beligum]--under a European Space Agency (ESA) contract of approximately 6.5 million dollars, was submitted to the agency in December 1978. In January, ESA recommended that work on the project be continued. This recommendation was totally rejected by the two major interested parties, France and Germany.

In France's view, development of a national or European direct TV broadcasting satellite, or France's participation in such a project, is linked to a much broader context involving necessary expenditures for other higher priority national space projects such as the SPOT earth resources observation satellite and the Telecom-1 satellite. Germany, on the other hand, no longer has a large national project of its own and sees an opportunity to assume leadership of an operation offering attractive export prospects for its industry. This is why Bonn advocates direct construction of an operational TV broadcasting satellite instead of first going through the stage of building an experimental satellite like the H-Sat. Hence interest in the European project has greatly diminished. Especially since Germany has already completed its own study of an operational direct TV broadcasting satellite, namely the TV-Sat project. A detailed proposal for this satellite was submitted to Volker Hauff, the FRG's minister of research and technology, on 18 December 1978.

The proposal was the result of a 6-million Deutsche mark definition study funded by the BMFT [Ministry of Research and Technology] and conducted by the German firms AEG-Telefunken, Dornier System, ERNO, and SEL, with MBB as prime contractor.

The German project calls for a geosynchronous satellite weighing about 1 ton. It would have a transmitting power of 235 watts per channel--supplied by a 3-kilowatt solar generator--capable of transmitting color TV programs directly to small community or individual receivers equipped with antennas only 70 to 90 centimeters in diameter. The satellite is of modular design, uses a platform (bus) with a life of 10 years obtained by a three-fold redundancy for electronic components and electric thrust units for attitude control. The satellite is also equipped with a combined bipropellant propulsion system derived from the one developed by MBB for the U.S. probe, Gallileo.

The proposal submitted to the BMFT by MBB calls for development of the TV-Sat between mid-1979 and end-1982 so that it can be launched in 1983 and broadcast TV programs on German territory over three channels. Operational five-channel service would begin in 1986. At least one channel would be used to relay 16 radio programs and two others would be allocated to the two principal German TV networks (ARD and ZDF), thus leaving two channels available for new services.



Configuration of TV-Sat with its central unit fitted with antennas and two large 3-kw solar panels [partly cropped on the drawing]

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