	Uppgjord - *Prepared*	Datum - *Date*	Rev	Dokumentnr - *Document no.*
RX-11	KK/ETX/TT/MXH E Tesfay/VU 96304	1986-11-17	A	TT/MXH 61106
	Godkänd - *Approved* / Kontr - *Checked*			Tillhör/referens - *File/reference*
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OPTIONS OF DIRECT COMMUNICATION BETWEEN ERITREA AND THE OUTSIDE WORLD

1 GENERAL

Before answering the guestion of what kind of services are to be provided (telophone, telefax etc), the more important guestion as to what kind of telecommunications access possibilites there are has to be clarified.

Wilthout going into technicalities, two alternative means of providing communication between Eritrea and the outside world can be envisaged. These are:

a) Point-to-point connections between Eritrea and the offices (or persons).

b) Accessing the international telecommunication network by providing a link between Eritrea and the Sudan (or away other country which will act as the gateway to the international network).

2 POINT-TO-PONT CONNECTIONS (SEE FIG 1)

Point-to-point services between Eritrea and offices in different countries can be implemented using radio communication. To be able to use radio communication for long distances the high frequency band (HF) has to be used. This would mean that relatively high power transmitters and relatively large antennas have to be used both in Eritrea and the offices in the different countries.

Besides frequencies which are alloted by a special organ of the ITU (Internatinal Telecommunication Union) have to be applied for and obtained. Even the offices in the different conntries have to seek permission to use radio communication.

Once such a radio communication facility is established such services as telephone, telegraph (telex), telefax, telecopy can be provided on a point-to point basis. The number of telephone channels that can be provided per HF transmitter/receiver is normaly one which means that the capacity is low.

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In addition HF-communication is valnerable to atmospheric and solar (activity) variations which can affect the services from time to time.

2 USING THE INTERNATIONAL TELECOMMUNICATIONS NETWORK (SEE FIG 2)

Each country in Africa and elsewhere has a telecommunications network providing different services for both national and international traffic.

A subscriber in any country can dial-up and communicate with another subscriber in another country and that communication could transit a number of countries. Each country helping to provide means for such a communication is paid for the services in accordance with internationaly agreed tariffs.

Let us assume that the nearest access point to the internatio-nal network (as for as Eritrea is concerned is) is the Sudan which has a national network covering (more or less) the whole country including Kessela. Then from the centres in Eritrea, a radio-link facility could be established to Kessela. Type of radio-link will depend on number of channels needed and the prevailing geographical and strategic conditions.

A simple microwave radiolink could easily provide thirty such channels. Microwave radio is a line-of-site type of facility i.e there must be a line-of-site between transmitter and receiver. But this is not a big limitation as relay sta-tions could be used at intermediate points. Antenna towers do not have to be big and high (and easily detectable from the air).

In kessela the microware link will terminate in the local exchange and (thus provide access to the national and interna-tional network on an automticallydialed basis or on a manual basis with the help of telphone operators.

In this arrangement, the distant offices in the different countries are normal telephone subscribers. As tlephone sub-scribers, they are allowed to have and use teletypewriters, telefax apparatus, and others in addition to the telphone apparatus. Each office could then have the machines that are needed specifically, and in some cases this machinary can be obtained on a lease basis. For the event that such communication is to be protected against eavesdropping addi-tional cryptogram equipment can be connected at both ends.

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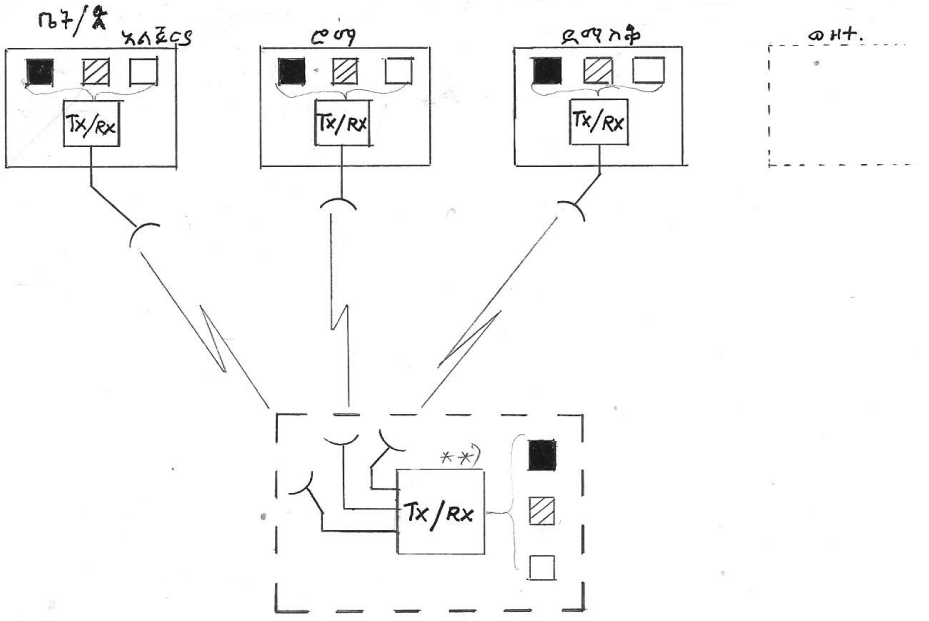

Center in Eritrea.

Fig. 1 Point-to-point communication.

Tx/Rx HF radio transmitter receiver

telephone apparatus

telefax app.

teletypewriter

**) The same transmitter receiver can be used in the center in Eritrea for the different offices on a time schedule basis. But dedicated antennas directed towards each office would be needed.

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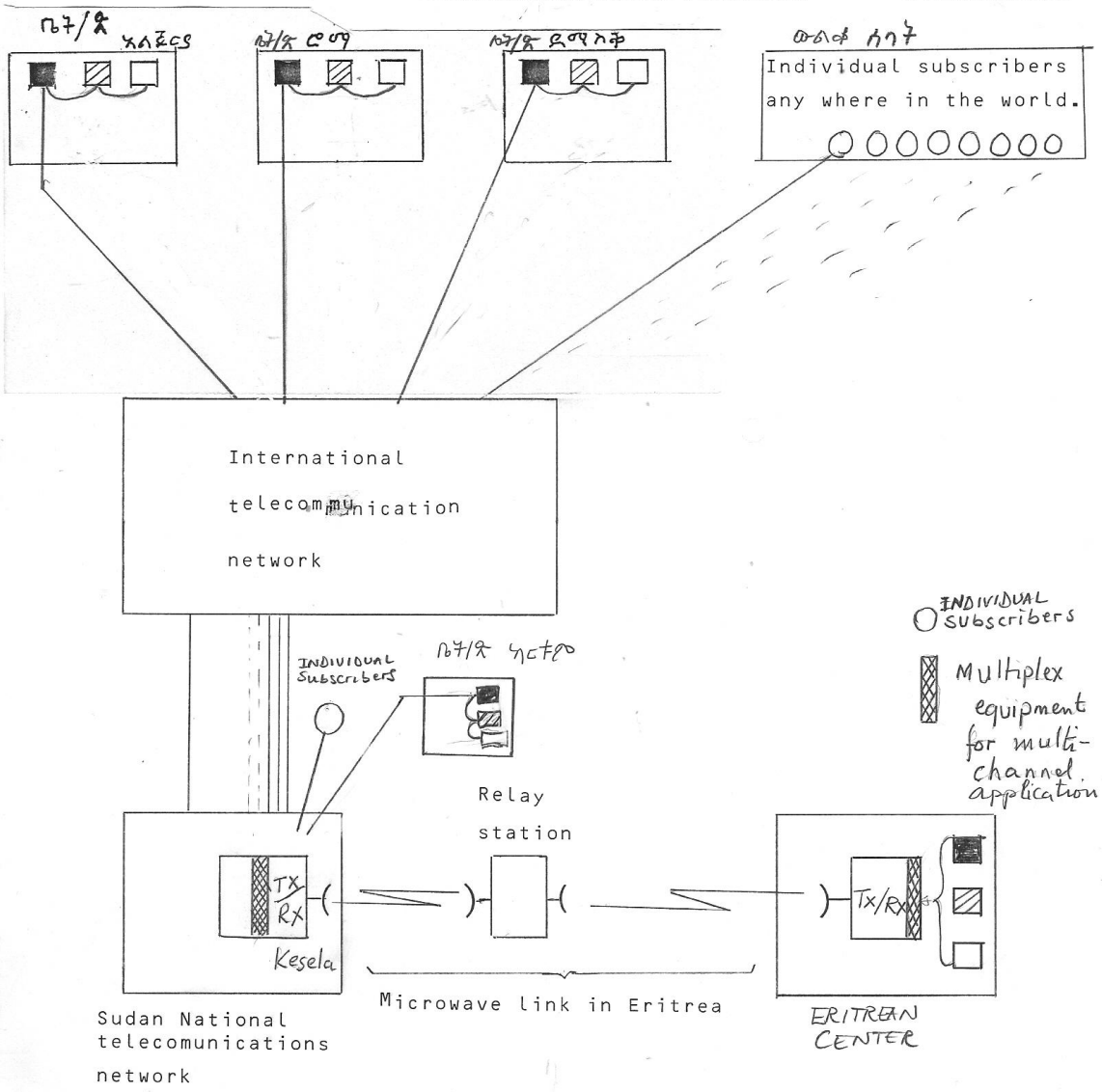

Fig. 2 Acces to the international telecommunications network.

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