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GENERAL INFORMATION

ITU-T Operational Bulletin

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The address for access to the electronic version of the ITU Operational Bulletin on the ITU Home Page, is modified as follows:

Old address	http://www.itu.int/itu-t/op-bul/index.html
New address	http://www.itu.int/itu-t/bulletin/index.html

Lists annexed to Operational Bulletin

Note from the TSB

The following Lists* have been published by TSB or BR as Annexes to the ITU Operational Bulletin (OB):

OB No.	
659	List of Data Country or Geographical Area Codes (Complement to ITU-T Recommendation X.121) (Position on 31 December 1997)
663	List of Names of Administration Management Domains (ADMD) (In accordance with ITU-T F.400 and X.400 Series Recommendations) (Position on 28 February 1998)
665	Various tones used in national networks (Supplement 2 to ITU-T Recommendation E.180) (Position on 1 April 1998)
669	Five-letter Code Groups for the use of the International Public Telegram Service (According to ITU-T Recommendation F.1 (03/98))
674	Status of Radiocommunications between Amateur Stations of different countries (In accordance with optional provision No. 2731 of the Radio Regulations) (Position on 15 August 1998)
677	List of Issuer Identifier Numbers for the international telecommunication charge card (In accordance with ITU-T Recommendation E.118) (Position on 1 October 1998)
679	Dialling Procedures (International prefix, national (trunk) prefix and national (significant) number) (In accordance with ITU-T Recommendation E.164) (Position on 1 November 1998)
685	List of Mobile Country or Geographical Area Codes (Complement to ITU-T Recommendation E.212 (11/98)) (Position on 1 February 1999)
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693	List of Telex Destination Codes (TDC) and Telex Network Identification Codes (TNIC) (Complement to ITU-T Recommendations F.69 and F.68) (Position on 31 May 1999)
707	List of International Signalling Point Codes (ISPC) (According to ITU-T Recommendation Q.708 (03/99)) (Position on 1 January 2000)
711	List of Signalling Area/Network Codes (SANC) Complement to ITU-T Recommendation Q.708 (03/99)) (Position on 1 March 2000)
714	List of ITU Carrier Codes (According to ITU-T Recommendation M.1400 (02/2000)) (Position on 15 April 2000)

OB No.

714 List of Data Network Identification Codes (DNIC) (According to ITU-T Recommendation X.121) (Position on 15 April 2000)

717 List of ITU-T Recommendation E.164 assigned country codes (Complement to ITU-T Recommendation E.164 (05/1997)) (Position on 1 June 2000)

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* For information, all lists will be updated by numbered series of amendments published in the ITU Operational Bulletin, and will be reissued as necessary.

Furthermore, the lists can be consulted on line (http://www.itu.int/itu-t/bulletin/index.html) in the ITU document database, under the heading "*Operational Bulletin and Lists annexed*".

Approval of ITU-T Recommendations

A.1 By TSB Circular 265 of 10 April 2000 it was announced that the following new or revised ITU-T Recommendations and addenda, amendment and corrigenda to existing ITU-T Recommendations, were approved, in accordance with the procedures outlined in Resolution 1, Section 8, of the WTSC (Geneva, 1996):

- ITU-T Recommendation G.803: Architecture of transport networks based on the synchronous digital hierarchy (SDH)
- ITU-T Recommendation G.805: Generic functional architecture of transport networks
- ITU-T Recommendation G.823: The control of jitter and wander within digital networks which are based on the 2 048 kbit/s hierarchy
- ITU-T Recommendation G.824: The control of jitter and wander within digital networks which are based on the 1 544 kbit/s hierarchy
- ITU-T Recommendation G.825: The control of jitter and wander within digital networks which are based on the synchronous digital hierarchy (SDH)
- ITU-T Recommendation G.827: Availability parameters and objectives for path elements of international constant bit-rate digital paths at or above the primary rate
- ITU-T Recommendation G.828: Error performance parameters and objectives for international, constant bit rate synchronous digital paths
- ITU-T Recommendation G.829: Error performance events for SDH Multiples and regenerator sections
- ITU-T Recommendation G.831: Management capabilities of transport networks based on the Synchronous Digital Hierarchy (SDH)
- ITU-T Recommendation G.967.3: Protocol implementation conformance statements for interfaces at VB5 reference points
- Amendment to ITU-T Recommendation I.311
- ITU-T Recommendation I.356: B-ISDN ATM layer cell transfer performance
- ITU-T Recommendation I.371 – Traffic control and congestion control in B-ISDN
- ITU-T Recommendation I.375.3: Network capabilities to support multimedia services – Examples of multimedia distribution service class, switched digital broadcasting
- ITU-T Recommendation I.480: 1+1 protection switching for cell-based physical layer
- ITU-T Recommendation I.572: VSAT interconnection with the PSTN
- Corrigendum 1 to ITU-T Recommendation I.610
- Addendum 1 to ITU-T Recommendation I.610
- Corrigendum 1 to ITU-T Recommendation I.630
- Addendum 1 to ITU-T Recommendation I.630

– ITU-T Recommendation I.761: Inverse multiplexing for ATM (IMA)

– ITU-T Recommendation I.762: ATM over fractional physical links

– ITU-T Recommendation Y.101: GII Terminology – Terms and definition

– ITU-T Recommendation Y.130: Information communication architecture

– ITU-T Recommendation Y.1310: Transport of IP over ATM in public networks

The conditions governing the approval of ITU-T Recommendations were met and 18 Member States participating in the last meeting of Study Group 13 approved the text of these Recommendations during the Plenary session held on 10 March 2000.

A.2 By TSB Circular 267 of 3 May 2000, it was announced that the following new and revised ITU-T Recommendations were approved, in accordance with the procedures outlined in Resolution 1, Section 8, of the WTSC (Geneva, 1996):

– ITU-T Recommendation E.106: Description of an international emergency preference scheme

– ITU-T Recommendation E.191: B-ISDN Addressing

– ITU-T Recommendation E.193: E.164 country code expansion

– ITU-T Recommendation E.350: Dynamic routing interworking

– ITU-T Recommendation E.351: Routing of multimedia connections across TDM-, ATM-, and IP-based networks

– ITU-T Recommendation E.352: Routing guidelines for efficient routing methods

– ITU-T Recommendation F.116: Service features and operational provisions in IMT-2000

– ITU-T Recommendation F.852: Universal Personal Telecommunication (UPT) – Service description (service set 2)

– ITU-T Recommendation E.411: International network management; Operational guidance

– ITU-T Recommendation E.416: Network Management Principles and Functions for B-ISDN Traffic

– ITU-T Recommendation E.438: Performance parameters and measurement methods to assess N-ISDN 64 kbit/s circuit switched bearer service UDI in operation

– ITU-T Recommendation E.439: Test call measurement to assess N-ISDN 64 kbit/s circuit switched bearer service UDI in operation

– ITU-T Recommendation E.460: Measurements and metrics for monitoring the performance of V.34 Group 3 Facsimile

– ITU-T Recommendation E.527: Dimensioning at a circuit group with multi-slot bearer services and overflow traffic

– ITU-T Recommendation E.651: Reference connections for traffic engineering of IP access networks

– ITU-T Recommendation E.671: Post-selection delay in PSTN/ISDNs using Internet telephony for a portion of the connection

– ITU-T Recommendation E.726: Network grade of service parameters and target values for B-ISDN

– ITU-T Recommendation E.736: Methods for cell level traffic control in B-ISDN

– ITU-T Recommendation E.745: Cell level measurement requirements for the B-ISDN

– ITU-T Recommendation E.750: Introduction to the E.750-series of Recommendations on traffic engineering aspects of networks supporting personal communications services

– ITU-T Recommendation E.760: Terminal mobility traffic modelling

The conditions governing the approval of ITU-T Recommendations were met and 26 Member States participating in the last meeting of Study Group 2 approved the text of these Recommendations during the Plenary sessions held on 13 and 17 March 2000.

Coast Station Identification Numbers

In accordance with Nos. **S19.92** and **S19.94** of the Radio Regulations, the coast station identification numbers 0170 - 0179 have been allocated to Fiji.

Maritime Mobile Service

Singapore

Communication of 10.V.2000:

Singapore Telecom announces the closure of the coast station SINGAPORE RADIO (9VG), as from 1 April 2001.

Assignment of Signalling Area/Network Codes (SANC) (ITU-T Recommendation Q.708 (03/99))

Note from the TSB

At the request of the Administrations of Italy and the United Kingdom, the Director of the TSB has assigned the following signalling area/network codes (SANC) for use in the international part of the signalling systems No. 7 network of these countries/geographical areas, in accordance with ITU-T Recommendation Q.708 (03/99):

Country/geographical area or signalling network	*SANC*
Italy	2-095
United Kingdom of Great Britain and Northern Ireland	2-154

SANC: Signalling Area/Network Code.
Code de zone/réseau sémaphore (CZRS).
Código de zona/red de señalización (CZRS).

Replies to the Second Questionnaire on the status of implementation of time "T" (TSB Circular 196 of 11 June 1999)

Correction: Operational Bulletin No. 713 of 1.IV.2000, pages 7-29

P 18 ***Argentina (Republic)*** **LIR**

CC	max. number of digits N(S)N 31.12.99	plans to expand CC+N(S)N	planned number of digits CC+N(S)N, all numbers	planned expansion date	networks allow subscribers to dial up to 15 digits	planned imple-mentation date	capability to analyse 7 digits	planned imple-mentation date
54	10	no	–	–	yes	–	yes	–

P 18 ***Bolivia (Republic of)*** **LIR**

CC	max. number of digits N(S)N 31.12.99	plans to expand CC+N(S)N	planned number of digits CC+N(S)N, all numbers	planned expansion date	networks allow subscribers to dial up to 15 digits	planned imple-mentation date	capability to analyse 7 digits	planned imple-mentation date
591	7	yes	11, yes	2001	yes	–	yes	–

Report to ITU-T Study Group 2 on the declining use of the international telex service (Resolution 89 PP-98) (ITU Plenipotentiary Conference, Minneapolis, 1998)*

1 Introduction

This report sets out the findings derived from the responses received to TSB Circular 195 of 9 June 1999 and draws a number of conclusions and recommendations. The complete report is based on these responses, bearing in mind that they were received in the period June – September 1999 and the pace of change in the information, computer, and telecommunication (ICT) market generally is quite staggering; accordingly, parameters are constantly varying and it is quite possible that different conditions could be reported and different conclusions drawn if the survey was conducted now.

A total of 83 responses were received, all of excellent quality and providing thorough answers to questions. This made the analysis a lot easier and the author extends his appreciation to all the respondents for their help in this. The author would also like to thank ITU TSB for receiving and collating the replies. All replies are reproduced in Annex.

While this report naturally contains an appropriate analysis of the replies, it is not an analysis of the state of the international telex service at the end of the 20th century. Its objective is to address the specific requirements contained in Resolution 89 PP-98.

2 Recapitulation of Resolution 89 PP-98

The objectives of Resolution 89 PP-98 can be summarized as follows:

i) To determine the scale of continued use (or lack of it) of the international telex service and to form a judgement as to when it may be replaced, with regular updates of the background data;

ii) To identify mechanisms which may be of benefit to developing countries in making the transition from legacy telex networks and the service that it supports to more modern means of telecommunication, possibly supported on IP-based networks, or other data networks;

iii) To examine the feasibility of (transitional) interworking scenarios between telex networks and other networks, particularly IP-based networks, and

iv) To consolidate these findings into a report to Council in 2000.

In order to address these issues, a questionnaire was drafted and approved at the May 1999 meeting of ITU-T Study Group 2, the replies to which are contained in Annex.

3 Basis of questionnaire

To address the above concerns, the strategy behind the construction of Questionnaire of TSB Circular 195 was as follows :

Objective 1 (Current telex service)

Corresponds to Questions 1.1-1.6

To initially determine the continued availability of the telex service[1] throughout the world, any measured decline in customer base and traffic level, what plans exist to continue to provide the service in the short to medium term, what market sectors currently use the service, and how much of the traffic is non-conversational.

It was planned that the responses to these questions would give an indication as to the state of the service, the rate of decline, and whether current users generally operate in a conversational or non-conversational mode (the latter being equivalent to preparing a message and delivering it as an electronic mail).

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[1] All references throughout this report to the 'telex service' should be interpreted as meaning the international telex service as detailed in ITU-T Recommendations.

Objective 2 (Additional service features)

Corresponds to Questions 2.1-2.4

Assuming that a service exists, what scope exists for the delivery of messages via a store-and-forward unit? Again, this is viewed as being equivalent to depositing a message in a mail server for delivery as electronic mail. Additionally, what scope exists for receiving messages into a telex mailbox on a store-and-retrieval basis, again analogous to message delivery and message receipt in the electronic mail (and message handling) environment? Also, what scope is provided for telex users to send (and receive) messages to and from other service environments such as facsimile, data network services, videotex etc. using standardized interworking functions defined in ITU-T Recommendations? Where such devices are found to exist, this would lay the foundation for a migration from telex to these new services and the newer environment would be at least familiar to co-operating telex users.

Objective 3 (Capabilities of telex network)

Corresponds to Questions 3.1-3.4

It was considered desirable to determine, if at all possible, what network infrastructure and technologies existed in each country to support the telex service. Many telex networks possess capabilities additional to the basic needs of telex and can, for example, support data services. Furthermore, some telex service providers carry their services on the ISDN, PSTN that would facilitate a migration to other services on these networks, or to use them for access to other service providers such as ISPs.

Objective 4 (The future)

Corresponds to Questions 4.1-4.4

The objective of these questions is to determine what future is foreseen for the telex service and what plans exist, if any, to close it down in any particular country. What special features exist in telex which would encourage an operator to continue in service, for example by providing an interworking facility to other services such as electronic mail (based on IP networks). On the other hand, where there is a wish to discontinue the service, what would be the preferred service of choice to replace it?

Objective 5 (The market environment)

Corresponds to Questions 5.1 and 5.2

To facilitate alternative services to telex, it is necessary, in the current market environment, to encourage new players on the market. This will generally require ISPs to be active in offering services (as an alternative to telex) in a market which supports such activities through a benign regulatory and pricing environment. For those countries where ISPs (or other players) may not be active, is it relatively easy for them to establish a presence (again based on the regulatory and economic environments as supports for the social fabric of the community at large)?

The overall plan is to determine the current state of the service, what equivalent to e-mail activity may exist, what would be the preferred service of choice if telex was to be discontinued (since, if it is to be discontinued, it clearly must be replaced by some alternative service), and what ISP activity exists as a competitor to the telex service. This is shown in Figure 1.

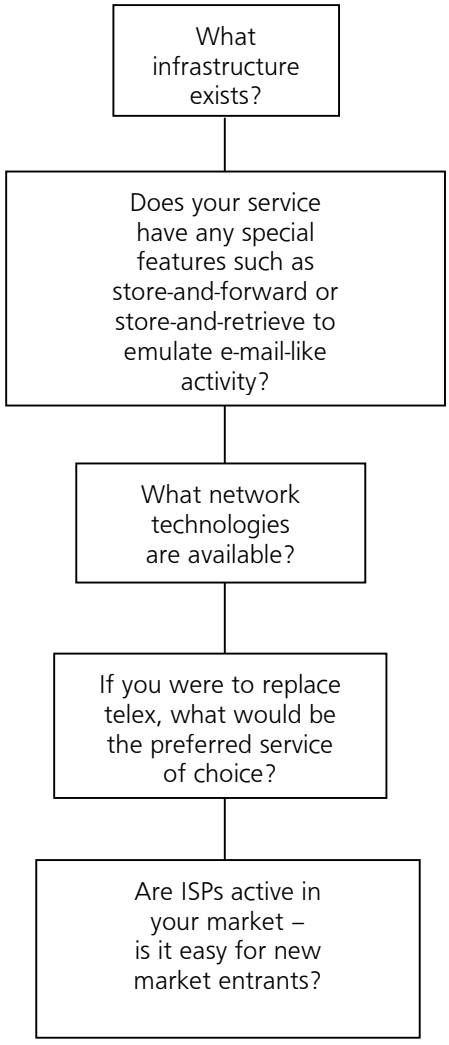

Figure 1 – General thrust of Questionnaire

4 Current status of telex service

4.1 Customer base and traffic levels

For a number of years now, many countries have experienced a dramatic decline in both numbers and traffic levels within the telex service. This was initially due to the rapid deployment of Group 3 facsimile terminals but in latter years the reason can be traced to the availability of convenient electronic mail services offered by Internet Service Providers (ISPs) as part of an overall access to the Internet and World Wide Web (WWW).

Figure 2 depicts the average decline in customer numbers and traffic levels over the previous 5 years as reported by the respondents. The graphs show wide variations but, in all cases, there is a close correlation between loss of customers and fall in traffic volumes.

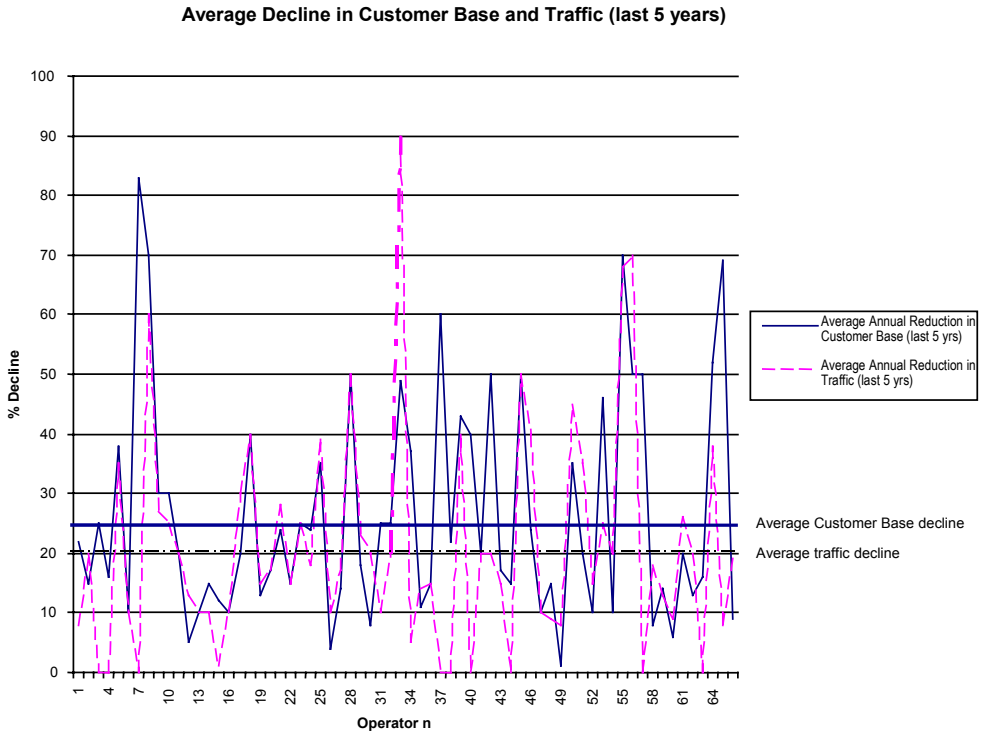

Figure 2 – Average decline in customer base and traffic level

Reduction in customer numbers can be seen to extend from a very reasonable 1% to a quite catastrophic 83%. The average decline in customer numbers across all respondents is 26%. With this rate of decline, on average, less than 40% of the customer base will remain within three years. Depending on the economics of any particular operator, this may or may not be sustainable. However, figures for the absolute number of customers involved were not available to the survey so the precise numbers of customers involved are not known. Accordingly, it is not possible to draw firm conclusions on the basis of these figures, other than to confirm the sustained steady decline in the user base, with some dramatic losses reported by some countries and only moderate ones elsewhere.

It is interesting that the greatest loss was reported by Belgium (at 83%) and the lowest by Senegal (at 1%). Examples of countries reporting *below-average* rates of decline include Angola, Belarus, Côte d'Ivoire, Ethiopia, Iran (Islamic Republic of), Japan, Jordan, Suriname and Zimbabwe. Examples of countries reporting *above-average* rates of decline include Bahrain, Bhutan, Hungary, Italy, Nigeria, Luxembourg, Switzerland, Syria, Yemen and Zambia.

Not surprisingly, the fall in traffic level correlates to the fall in customer numbers. A drop in traffic level can be directly related to a fall in revenue and service profitability. When averaged across all respondents, a drop of 21% in traffic has been reported. Should this be sustained or accelerated, traffic will be virtually gone in about five years time.

Conclusion No. 1 – Marked decline in customer numbers and consequential traffic levels.

4.2 Is there a continuing need for the telex service?

Notwithstanding the reported fall in customer numbers and traffic levels, the respondents were asked to indicate if they could see a continuing need for the telex service, for example over the next five years. A large majority (86%) could clearly see a business need for the continued availability of the service, as shown in Figure 3 and Section 4.3. Strong demand to maintain telex service over next 5 years from the majority of respondents, some citing a legal responsibility to maintain the service. A few felt that there was no great demand (for example, Botswana, Canada, Central African Republic, Côte d'Ivoire, Ecuador, Guyana, Madagascar, Poland, Senegal, Uruguay, Vanuatu and Venezuela.

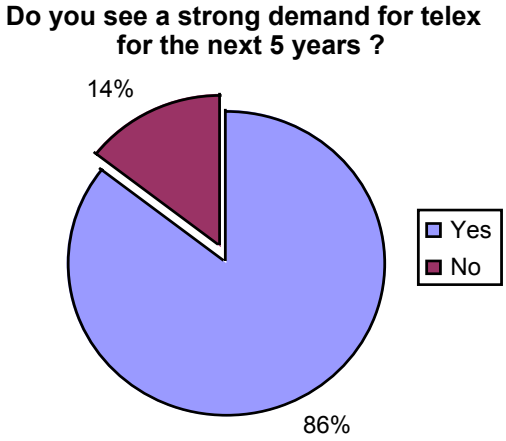

Figure 3 – Continued need for the telex service over next 5 years

Reasons cited for this need varied from the legal obligation to provide the telex service, the legal status of telex messages, and the ability to send telex messages over the most adverse network conditions, particularly in remote areas. The service is also widely used by financial institutions, government agencies, and, to a lesser extent, the maritime community. However, some respondents did qualify their opinion to the effect that it will depend on whatever alternative services are available (presumably with similar characteristics).

Conclusion No. 2 – There is a substantial need to keep the telex service going for at least the next five years.

4.3 Telex service user community

Given that there is a preference to retain the telex service for at least the next five years, it is desirable to know what sectors of the community are the dominant users of the service. Based on the replies received, the use of the service between the various sectors is as shown in Figure 4.

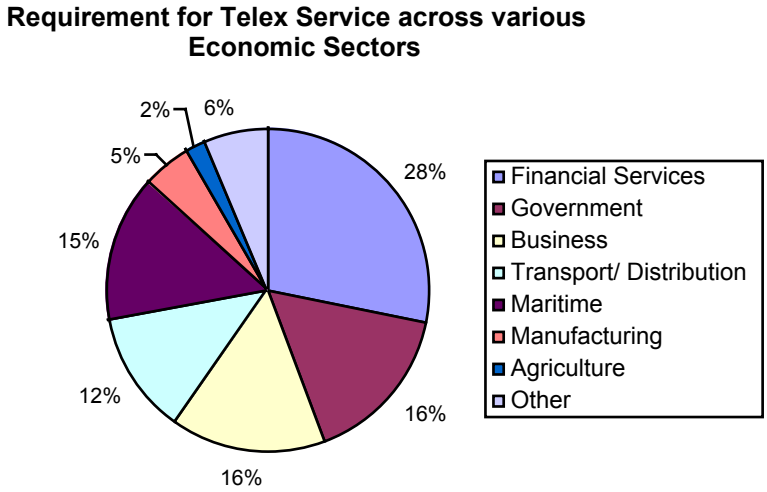

Figure 4 – Use of telex service by various market sectors

From Figure 4, it can be seen that the telex service is predominantly used by the financial services industry, government and the business community. Together these account for 60% of the telex customer user base. It is also to be expected that these users are, generally, located in urban areas where there is a higher probability of access to modern infrastructure and the services it may support.

However, it is necessary to keep sight of the needs of rural-based communities in order to encourage de-centralization across regions and the maintenance of a viable population base in these rural areas with access to a modern telecommunication infrastructure so as not to exacerbate the urban-rural divide. This would be in keeping with the rationale behind Question 14/1 before Study Group 1 of the ITU Development Sector – *The role of telecommunications in social and cultural development, including the protection and promotion of indigenous culture and identity.*

Conclusion No. 3 – The majority of telex activity is concentrated in urban areas serving mainly the financial services, industry, government and the business community.

4.4 Level of non-interactive (non-conversational) traffic

One of the unique features of the telex service is the ability to conduct a 'conversational' call where the caller and recipient can conduct a dialogue in real-time. This is perceived as a minor function in modern communications and, indeed, alternatives such as electronic mail have no capability for dialogue. However, this has not diminished their attractiveness. The question arises as to how closely the operational methods employed in the telex service today mirror those used in electronic mail, for example (or vice versa).

Accordingly, respondents were asked to indicate the level of non-conversational traffic in their networks (where the caller simply connects, validates the connection, sends the message, and clears the call). This finding is shown in Figure 5. While a number of respondents reported a relatively small amount of non-conversational traffic (and, by implication, a relatively large amount of conversational traffic), the majority reported levels in excess of 50%, with the average level of non-conversational traffic standing at 76%.

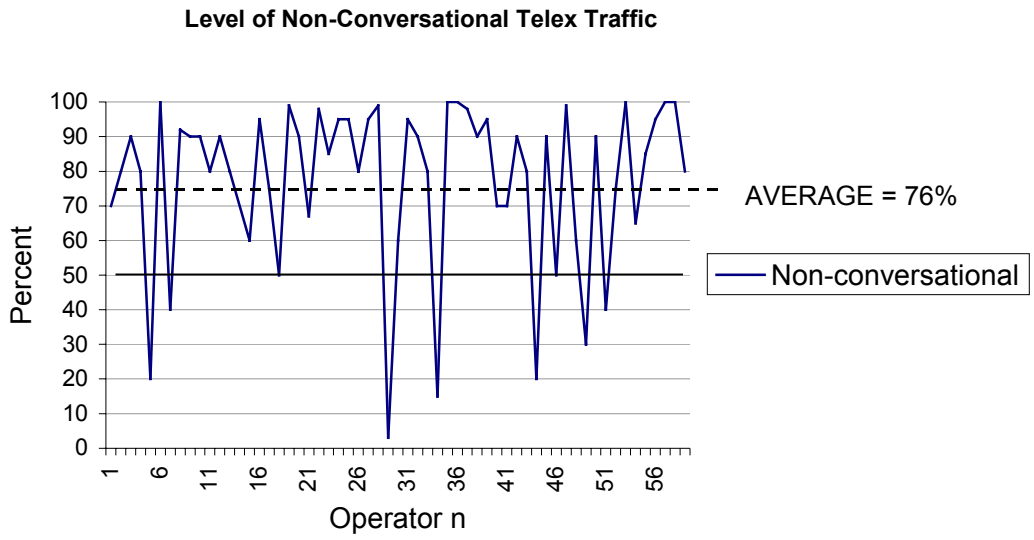

Figure 5 – Degree of non-interactive telex traffic

This indicates that most telex users simply compose their message off-line and send it automatically (though probably with a validation that connection has been made to the correct recipient).

Conclusion No. 4 – Most telex traffic is carried out in non-interactive (non-conversational) mode, analogous to electronic mail transmission.

5 Telex and other networks

All respondents operate a telex network, some dedicated, others co-existing on the PSTN and, to a lesser extent, on the ISDN. Very few telex networks (77%), it is reported, are capable of supporting other services. Some operators, while still continuing to provide a telex service, have closed their physical networks and have outsourced the provision of the service to an operator in another country or region. There are a number of examples of this consolidation of resources indicating that, while a particular operator may not find it economical to continue to support his own network, there is still a business need, and a commercial imperative, to continue to provide the telex service.

40% of respondents indicated that they operated an intelligent network, as well as PSTN and ISDN.

6 Additional features offered in telex service

The telex service has evolved over a large number of years and possesses a large number of additional and enriching features. Some of these have been emulated within newer services and applications such as electronic mail. These include the ability to deposit a message within a store-and-forward unit (SFU) for onward transmission, and the use of a mailbox for the receipt of incoming messages (similar to the inbox in e-mail systems). Furthermore, there are many standardized interworking functions (IWFs) which allow messages (traffic) between telex users and a) interpersonal messaging systems (the precursor of e-mail), b) facsimile, c) services on packet-switched data networks, services on ISDN, and videotex services. Where these are implemented, this should provide telex users with a variety of environments with which they can communicate and be familiar with their various characteristics.

6.1 Telex store-and-forward unit and mailbox (SFU)

In connection with the above interworking capabilities, the respondents replied as shown in Figure 6 in respect of the operation of a telex SFU and an associated mailbox capability. Figure 6 shows that only one in three respondents actually operate a telex SFU with less than one in six also having a mailbox capability. This indicates that, in such networks, telex users are not likely to be exposed, in a purely telex environment, to the standard operational modes used in modern messaging systems such as electronic mail. However, this finding is not saying that ISPs and the services that they provide are not available in those markets, merely that the telex users appear to function in a telex service providing only the basic features of the service.

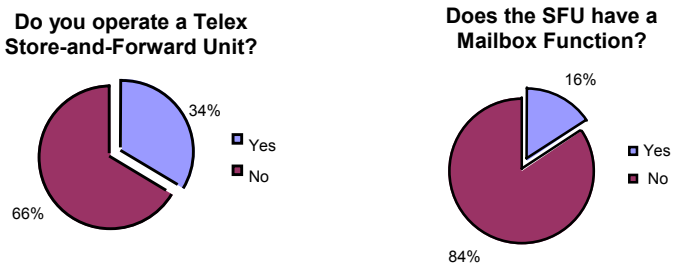

Figure 6 – Use of telex SFU and telex mailbox feature

6.2 Access to other services, including electronic mail (e-mail)

When further asked about the provision of interworking between telex and other networks and services, respondents replied as shown in Figure 7. This shows that only one in four provides access to other services from telex, with only one in ten providing access to electronic mail.

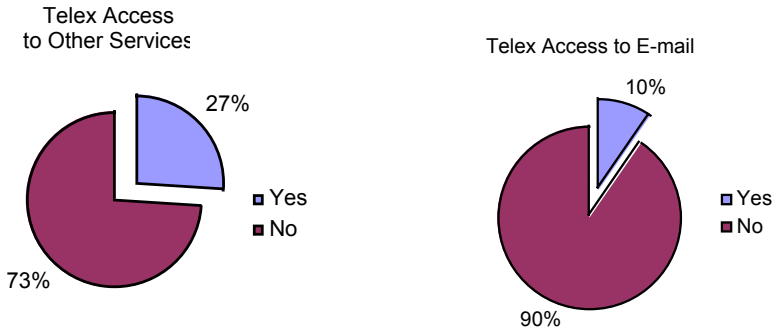

Figure 7 – Telex access to other services, including electronic mail

A number of conclusions can be derived from this. Firstly, that the migration to an all electronic mail (e-mail) environment, for example, would require a large education and training programme. Secondly, where the infrastructure does not exist to support e-mail-type services, this will prove to be an added barrier to the migration to more modern means of (text) communication. However, as above, these figures must again be interpreted with caution and not in isolation as it may well be that such modern means of communication do co-exist with telex in some countries, so the need to provide IWFs to other networks and services may not exist to any great extent.

6.3 Preferred substitute for telex

When asked about their service of choice as a substitute for telex, the respondents choices were categorized as shown in Figure 8. This clearly shows that there is a strong preference (67%) in favour of electronic mail, with facsimile being preferred by 25%. The choice of facsimile is understandable as it represents the choice with the least investment needed, if any, as this can be provided on the PSTN, even where lines are of doubtful quality.

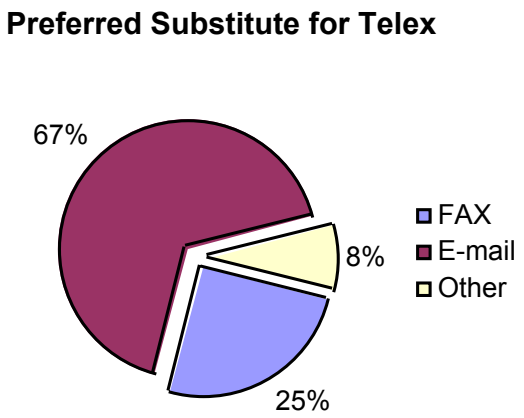

Figure 8 – Substitute service of choice for telex

The preference for electronic mail (e-mail) to replace telex is also understandable. It has already done so in large parts of the developed world (and, indeed, also in some developing countries). Subscription to e-mail services generally brings with it access to the Internet and the World Wide Web with all the information services, e-commerce activities, and educational capabilities which are available in this medium

Conclusion No. 5 – There is not much 'e-mail type' activity within the telex service, as reported, and little or no access from telex to other services and networks. However, there is a strong preference for electronic mail (e-mail) to replace the telex service.

7 Future of the telex service

It was considered important to gather the views of operators on the possible cessation of the service in their region. The replies from those who expressed an opinion came out as follows:

Replace in 2 years	5%
Replace in 2-5 years	10%
Replace in 5-10 years	13%

The remainder indicated no plans to replace the service while some had undertaken various schemes to consolidate their telex resources[2].

A total of 59% would prefer to continue with the service in the short term, possibly supplemented with and interworking capability to electronic mail. 41% were not in favour of this option. Again, the perceived legality of telex documents, its use by the banking community, its inherent reliability, the fact that it works everywhere and is well proven, its relative cheapness, the fact that you can have a dialogue with your correspondent, the fact that it is the only service available in certain destinations, thereby forcing some customers in originating countries to retain the service – all were cited as reasons for needing the service to continue.

Conclusion No. 6 – There is no great rush to discontinue the telex service and many reasons were put forward for its retention (perhaps due to the perceived lack of these qualities in other potential replacement services).

8 The market environment

In many instances, modern services are provided not only by incumbents but also by new market entrants, especially in liberalized and competitive market environments. In many cases, modern services such as electronic mail are provided by ISPs as part of a total package. The regulatory regime in operation must be conducive to encouraging new entrants.

While network operators will play a leading role in the delivery of such services by putting infrastructure in place, it is normal for ISPs (who may also include incumbents) to be the main providers of electronic mail services and Internet access in general. The availability of ISPs in the various markets and the ease of new entrants coming into the market is depicted in Figure 9.

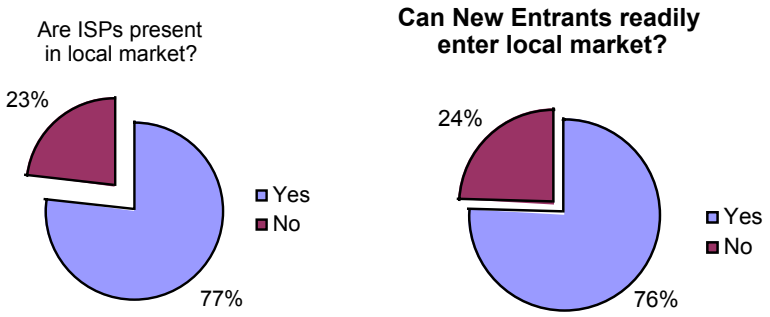

Figure 9 – Market support for ISPs

Over three quarters of respondents indicated that ISPs were present in their market; a similar figure confirmed that new entrants could readily enter the marketplace. From this, it can be concluded that alternative services are available in at least 75% of respondent locations, with ready access for new players into those markets. The corollary to this is that one quarter of respondents do not have ready access to such service providers, nor can they readily enter the market should they wish to do so.

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2 Consolidation of resources may take a number of (transitional) forms, for example:
a) Closure of operator assistance positions for the telex service or telex information services;
b) Closure of telex switching centres and gateways, with subscribers 'long-lined' into other switching centres;
c) Reduction in the hours of operation of the telex service;
d) Provision of new switching centres;
e) Sharing of resources over a large geographical area to establish 'virtual public telex network'.

Conclusion No. 7 – Alternative services such as electronic mail are available in at least 75% of countries, with ready access for new entrants to such markets. Consequently, there is choice in such markets.

9 List of conclusions to be drawn from questionnaire

The following Conclusions have been drawn from the replies received:

Conclusion No. 1 – Marked decline in customer numbers and consequential traffic levels.

Conclusion No. 2 – There is a strong need to keep the service going for at least the next five years.

Conclusion No. 3 – The majority of telex activity is concentrated in urban areas serving mainly the financial services, government and the business community.

Conclusion No. 4 – Most telex traffic is carried out in non-interactive (non-conversational) mode, analogous to electronic mail transmission.

Conclusion No. 5 – There is not much 'e-mail type' activity within the telex service, as reported, and little or no access from telex to other services and networks. However, there is a strong preference for electronic mail (e-mail) to replace the telex service.

Conclusion No. 6 – There is no great rush to discontinue the telex service and many reasons were put forward for its retention (perhaps due to the perceived lack of these qualities in other potential replacement services).

Conclusion No. 7 – Alternative services such as electronic mail are available in at least 75% of countries, with ready access for new entrants to such markets. Consequently, there is choice in such markets.

When these are taken together, it is possible to construct a reply to the questions posed in Resolution 89 PP-98.

10 Replies to Resolution 89 PP-98

10.1 Scale of use of international telex service

In percentage terms, there are significant losses taking place in both the number of customers and the traffic levels being generated by that customer base, especially when viewed on an individual operator (country) basis. On the other hand, the average decline is calculated at 26%, so it will take a number of years before the customer base dwindles to being insignificant (or 'not worth the effort'). Coupled with this, revenues generated by traffic will also continue to fall proportionally and operators will have to seek new revenue streams in order to stay viable.

In spite of this significant decline, there is still a strong desire to keep the service going for at least another five years. This is being driven in particular by the major users of the telex service, namely, the banking institutions, government agencies, and the business community, including the maritime sector. This would indicate that the majority of traffic is concentrated in urban areas.

While there is a telex network, usually a dedicated one, in most countries, there is no evidence of the availability of additional capabilities within the telex service. Of particular interest here is the use of store-and-forward principles to deliver traffic and store-and-retrieve principles to receive messages (telex mailbox). Such features form the basic operational features of electronic mail systems and, if widely used, would make the operational transition from telex to electronic mail relatively painless on the part of the user. However, it appears that most telex messages are converyed in non-interactive mode (namely, compose and send) which is similar to e-mail methods. It is very clear from the replies that electronic mail is the preferred service to replace telex, whenever that happens. This will probably occur on a country-by-country basis, and is already happening.

10.2 When might the service be replaced?

Only 28% of respondents expressed an opinion as to when they see the service being replaced (at least as far as their market is concerned). Even this finding indicates no great desire to replace it, as only 5% would like it replaced within two years with a further 10% opting for replacement within 5 years. The rest expressed no opinion and are probably content to let the market decide.

It can therefore be concluded that there is no indication of pressing concern among operators as to when the service will or should be replaced.

It is probable that the service will disappear on a country-by-country basis. However, it does not seem probable that interworking services will be installed to allow correspondence from these new environments to the legacy telex service as there is no evidence that this has taken place to date. There is little or no interworking between telex and other networks and services.

10.3 Currency of data

In order to monitor the situation through up-to-date knowledge of the state of the service it is desirable to repeat the questionnaire in about 18 months time and thereafter as circumstances dictate.

10.4 Means of transition to modern means of communication

It is interesting to examine why people have migrated from telex to electronic mail, or facsimile, for example. The general answer is cost and convenience. To this is added the less rigorous mentality which presently attaches to e-mails and faxes when compared to the quasi-formal world of telex.

It must be recognised that the telex service has a myriad of features which are probably not available in modern services, and most of these new services have been copied from telex in the first place. However, it is the means of message transfer which has changed dramatically, not to mention the cost.

It is difficult to envisage any one scheme which will facilitate the migration from telex to other services. Possibilities present themselves, namely to:

a) Develop interworking capability between telex and IP-based networks, and

b) Let the market decide.

10.4.1 Interworking between telex and IP-based networks

It is worth remembering that ITU-T (formerly CCITT) has developed a number of Recommendations describing interworking between telex and other networks and services. These are contained in the F.80 and U.200 series of Recommendations. Recommendation U.204, in particular, describes two-way interworking between telex and interpersonal messaging complying with F.421 and F.401 (Naming and Addressing). Recommendation U.203 describes interworking between telex and packet-switched networks complying with X.25, with dial-up access corresponding to X.3, X.28 and X.29. It would not be difficult to put both these two scenarios together to develop an interworking facility between telex and IP-based networks and the services which may be supported on them.

It is doubtful if the market will, of itself, undertake the standardization and development of such a device. It is proposed, however, that this should be considered further, between ITU-T Study Group 2 (currently responsible for services) and ITU-D Study Group 1, and in particular, Question 13/1[3]. Furthermore, the findings and conclusions within this report should be consolidated with the findings of the questionnaire distributed by ITU-D Question 13/1 in June of 1999[4].

10.4.2 Let the market decide!

In all probability, it is most likely that, as infrastructure improves and markets open up to more operators, the availability and ready access to other services will become attractive to telex users and they will migrate on the basis of purely economic terms, as has been done already by tens of thousands of telex users. Business practice will also dictate the need to migrate to services such as e-mail. While other studies[5] have indicated the lack of penetration of modern services within the developing world, they do, nonetheless, exist to a greater or lesser extent.

Customers will not use the telex service simply because it is there; they will use it if there is no alternative or if it gives either price or performance advantages. This has not proved to be the case in many countries and is the reason for the decline in the telex service.

10.5 Interworking scenarios between telex and other networks

As has been stated in Section 10.4.1, the basis already exists for the development of an interworking mechanism between telex IP-based networks and in particular, e-mail. As things stand, this would be a task (currently) for Question 10/2 in ITU-T Study Group 2 which is responsible for the F.80 and U.200 series of Recommendations. Such a scenario appears to be eminently feasible as it will allow telex users to send 'e-mails' to correspondents in the electronic mail world (using IP addresses), and to receive 'e-mails' from the IP world. In the author's opinion, the necessary Recommendation(s) could be developed quite quickly, but it would be for those interested to take it to market. Technically, it is possible, but it may not make commercial sense unless the developing world, and ITU-D, support it. It is probable that there will be more enthusiasm for supporting the spread of the Internet into the developing world than to divert resources into the development of such an interworking device. However, the technical Recommendation appears reasonably straightforward.

11 Summary conclusion

There is a continuing decline in the telex service but no major demand for its replacement as it continues to deliver a number of significant characteristics to a number of market sectors such as financial institutions, government, and also business. There is currently little or no interworking activity between telex and other networks and services; however, there is much in the operational procedures of telex which mirror those in electronic mail. The technical basis for interworking between electronic mail and IP-based networks already exists in a number of ITU-T Recommendations and these should be examined to clarify how applicable these may be. In this regard, there is benefit to be derived from direct liaison between Question 10/2 in ITU-T and Question 13/1 in ITU-D. It is probably felt that market and commercial forces will continue to be brought to bear on telex users and this will determine when and how they will change from telex to other newer services. The emphasis should continue to be placed on improving the infrastructure and developing the business environment in order to remove any disadvantage which may constitute a barrier to trade and to allow all to participate in the information revolution as equals.

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3 ITU-D Question 13/1: Promotion of infrastructures and use of the Internet in developing countries.

4 See Administrative Circular CA/07 of 8 June 1999.

5 *An Overview of Internet Connectivity in Africa*, Mike Jensen, October 1998.
Knowledge Societies – Information Technology from Sustainable Development, Mansel and Wehn, 1998.

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Note from the TSB

In the annex hereto, the short form of the names of the countries/geographical areas responding to the questionnaire has been used, for convenience, and, exceptionally, the countries are listed in English alphabetical order based on the short form. In addition, the texts of the replies received from administrations, recognized operating agencies (ROAs) and other entities are reproduced in the relevant columns in the original language in which they were submitted (English, French or Spanish), without any translation.

ANNEX

Replies to the Questionnaire concerning the declining use of the telex service (Annex to TSB Circular 195 of 9 June 1999)

1 Current Telex Service

Country / geographical area (Administration/ ROA or other entity)	1.1		1.2		1.3		1.4	1.5	1.6
	Do you currently provide a telex service for national and international traffic?		Does the service comply with the relevant ITU-T (formerly CCITT) Recommendations?		In your experience, over the past 5 years and 10 years, what has been the average percentage annual decline in: a) customer base, and b) traffic level		Notwithstanding 1.3 above, is there a strong demand in your country for the service to remain available: a) for the next 2 years b) for the next 5 years	If you answered Yes to any part of 1.4, what sector of your customer base has the dominant requirement: a) Financial services b) Government c) Business/commercial d) Transport and distribution e) Maritime f) Distribution g) Manufacturing h) Agriculture i) Other	In your opinion, what would be the percentage of international telex traffic which is: a) conversational (dialogue-type messages) b) non-conversational
	Yes	No	Yes	No	5 years	10 years			%
Angola	X		X		a) 22% b) 7.7%	a) 17.8% b) 12.9%	a) Yes b) Yes	a), b), c), e), g)	a) 30% b) 70%
Austria (Datakom)	X		X		a) 15% b) 20%	a) 10% b) 15%	a) Yes	a), b), c), d)	Not to verify
Austria (Ministry)	X		X		25%	20%	a) Yes	a), b)	a) 20% b) 80%
Azerbaijan	X		X		a) 15.6% There was growing traffic till 1998		b) Yes	a), b), c), d), e), g)	We think that non-conversational traffic will increase
Barbados	X		X			a) 5% b) 8%	a) Yes b) Yes	a), f), i) (legal)	a) 10% b) 90%
Bahrain	X		X		a) 38% b) 35%	a) 35% b) N/A	a) Yes b) Yes	a), b), c), d), e)	a) 20% b) 80%
Belarus	X		X		a) 10% b) 10%	a) 5% b) 5%	a) Yes b) Yes	a), b), c), d), g), l)	a) 80% b) 20%
Belgium	X		X		a) 83%	a) 90%	a) Yes b) Yes	a), c), d), e), f)	a) 0% b) 100%
Bhutan	X		X		a) 70% b) 60%		a) No b) Yes	a)	a) 60% b) 40%

Country / geographical area (Administration/ ROA or other entity)	1.1		1.2		1.3		1.4	1.5	1.6
	Do you currently provide a telex service for national and international traffic?		Does the service comply with the relevant ITU-T (formerly CCITT) Recommendations?		In your experience, over the past 5 years and 10 years, what has been the average percentage annual decline in: a) customer base, and b) traffic level		Notwithstanding 1.3 above, is there a strong demand in your country for the service to remain available: a) for the next 2 years b) for the next 5 years	If you answered Yes to any part of 1.4, what sector of your customer base has the dominant requirement: a) Financial services b) Government c) Business/commercial d) Transport and distribution e) Maritime f) Distribution g) Manufacturing h) Agriculture i) Other	In your opinion, what would be the percentage of international telex traffic which is: a) conversational (dialogue-type messages) b) non-conversational
	Yes	No	Yes	No	5 years	10 years			%
Botswana	X		X		a) 30% b) 27%	a) 20% b) 19%	a) Yes b) No	a), b), c)	a) 8% b) 90%
Brazil	X		X		a) >100% b) >100%		a) Yes	b)	a) 10% b) 90%
Bulgaria	X		X		a) 30% b) 25%	a) 25% b) 20%	b) Yes	a), b), c), d), e)	N/A
Cambodia	X								
Canada[4)]	X		X		a) 20% b) 20%	a) 10% b) 10% There are less than 10 customers remaining	a) No b) No		a) 10% b) 90%
Central African Rep.	X		X				No		
Colombia	X		X		b), En nivel de tráfico		a) Yes	a), e)	b) 80%
Côte d'Ivoire	X		X		a) 5% b) 13%	a) 6% b) 18%	a) No b) No		a) + b) = 90%
Croatia	X		X		a) 10% b) 10%	a) 10% b) 10%	a) Yes b) ?	a), e)	a) 20% b) 80%
Czech Rep.	X		X		a) 15% b) 10%	a) 30% b) 20%	b) Yes	a), c), d)	a) 30% b) 70%
Denmark	X		X		a) 12%/year b) 1%/year Since 1994		Depends on alternatives	if yes to 1.4 it would be b), d) and e)	

Country / geographical area (Administration/ ROA or other entity)	1.1		1.2		1.3		1.4	1.5	1.6
	Do you currently provide a telex service for national and international traffic?		Does the service comply with the relevant ITU-T (formerly CCITT) Recommendations?		In your experience, over the past 5 years and 10 years, what has been the average percentage annual decline in: a) customer base, and b) traffic level		Notwithstanding 1.3 above, is there a strong demand in your country for the service to remain available: a) for the next 2 years b) for the next 5 years	If you answered Yes to any part of 1.4, what sector of your customer base has the dominant requirement: a) Financial services b) Government c) Business/commercial d) Transport and distribution e) Maritime f) Distribution g) Manufacturing h) Agriculture i) Other	In your opinion, what would be the percentage of international telex traffic which is: a) conversational (dialogue-type messages) b) non-conversational
	Yes	No	Yes	No	5 years	10 years			%
EBU – European Broadcasting Union	X		X		b) 10%	b) 3%	a) Yes	a), i) (TV's publiques)	a) 0% b) 8%
Ecuador[5)]	X		X		a) 20% b) 30%		No		a) 40% b) 60%
Egypt	X		X		a) 100% b) 150%	a) 185% b) 380%	b) Yes	a), b), c), e)	a) 5% b) 95%
El Salvador	X		X		a) 40% b) 40%	a) 50% b) 50%			a) 0% b) 0%
Ethiopia	X		X		a) 13.26% b) 15.23%		b) Yes for the next 5 years	a), b), c), d), e), f)	a) 5% b) 95%
Fiji[3)]									
France (France Telecom)	X		X		15%-20%		a) Yes b) Ne sait pas	a), c), d), e)	a) 25%
Gabon	X		X			a) 9% b) 22%	b) Yes	a)	a) 60% (97) b) 50% (98-99)
Georgia	X		X		a) 24% b) 28%	a) 5% b) 6%	a) Yes	a)	a) 1% b) 99%
Germany	X		X		a) >15% b) >15%	a) >15% b) >15%	a) Yes b) Yes	a), b), c), d), l)	a) 10% b) 90%
Ghana	X		X		a) 25%	a) 23.4% b) 19.2%	a) Yes b) Yes	a), b), c), e)	a) 33.3% b) 66.6%
Guyana	X		X		a) ?? b) 5%	a) ?? b) 13%	a) Yes b) No	a)	a) 2% b) 98%

Country / geographical area (Administration/ ROA or other entity)	1.1		1.2		1.3		1.4	1.5	1.6
	Do you currently provide a telex service for national and international traffic?		Does the service comply with the relevant ITU-T (formerly CCITT) Recommendations?		In your experience, over the past 5 years and 10 years, what has been the average percentage annual decline in: a) customer base, and b) traffic level		Notwithstanding 1.3 above, is there a strong demand in your country for the service to remain available: a) for the next 2 years b) for the next 5 years	If you answered Yes to any part of 1.4, what sector of your customer base has the dominant requirement: a) Financial services b) Government c) Business/commercial d) Transport and distribution e) Maritime f) Distribution g) Manufacturing h) Agriculture i) Other	In your opinion, what would be the percentage of international telex traffic which is: a) conversational (dialogue-type messages) b) non-conversational
	Yes	No	Yes	No	5 years	10 years			%
Hongkong	X		X		a) 23.96% b) 17.76%	a) 20.94% b) 17.20%	a) Yes b) Yes	Financial service; Business/Commercial transport (Shipping)	no statistics are available
Hungary[6)]	X		X		a) 35% b) 39%		see additional information	a), b), c), d)	a) 15% b) 85%
Inmarsat[9)]	X see Note 1		X		a) 4% b) 9.5%	See Note 2	a) Yes b) Yes see Note 3	e)	a) 5% b) 95%
Iran (Islamic Republic of)	X		X		a) 13.6% b) 17.4%	a) 1.4% b) 10%	b) Yes	a), b)	a) 5% b) 95%
Italy (Ministero delle Comunicazioni)	X		X					a), d)	
Italy (Telecom Italia)	X		X		Average 50%	Average 50%			a)2 0% b) 80%
Japan	X		X		a) 18% b) 23%		a) Yes b) Yes	c), e)	a) 5% b) 95%
Jordan	X		X		a) 8% b) 20%	a) 5% b) 15%	b) Yes	a), c), e)	a) 1% b) 99%
Kazakstan	X		X		a) 25% b) 10%		b) Yes	a), d), l)	a) 97% b) 3%
Korea (Rep. of)	X		X		b) 20%	b) 7%	b) Yes	d), e)	a) 40% b) 60%
Kyrgyzstan	X				a) 49% b) 89%		b) No		

Country / geographical area (Administration/ ROA or other entity)	1.1		1.2		1.3		1.4	1.5	1.6
	Do you currently provide a telex service for national and international traffic?		Does the service comply with the relevant ITU-T (formerly CCITT) Recommendations?		In your experience, over the past 5 years and 10 years, what has been the average percentage annual decline in: a) customer base, and b) traffic level		Notwithstanding 1.3 above, is there a strong demand in your country for the service to remain available: a) for the next 2 years b) for the next 5 years	If you answered Yes to any part of 1.4, what sector of your customer base has the dominant requirement: a) Financial services b) Government c) Business/commercial d) Transport and distribution e) Maritime f) Distribution g) Manufacturing h) Agriculture i) Other	In your opinion, what would be the percentage of international telex traffic which is: a) conversational (dialogue-type messages) b) non-conversational
	Yes	No	Yes	No	5 years	10 years			%
Latvia	X		X				a) No b) No		a) 5% b) 95%
Luxembourg	X		X		a) –37% b) +5%	a) –66% b) +10%	a) Yes b) Yes	a), d)	a) 10% b) 90%
Macau	X		X		a) 10.6% b) 14.1%	a) 14.4%	b) Yes	a), d), e), g)	b) 80%
Madagascar	X		X		a) 15%	a) 5%	a) No b) No		
Malaysia (Celcom)		X							
Maldives	X		X		a) 60%	a) 75%	a) Yes	a), b)	a) 85% b) 15%
Mauritius	X		X		a) 22%	a) 17%	a) Yes b) Yes	a), c)	a) <0.1% b) >99.9%
Mauritania	X		X		a) 43% b) 40%	a) 47% b) 40%	a) Yes b) Yes	a), b), e)	b) 100%
Moldova	X		X			a) 12% b) 9%	b) Yes	a), c), d), f), g), h), i)	a) 2% b) 98%
Namibia	X		X		± 40%	± 70%	a) Yes b) Yes	a), b)	a) 10% b) 90%
Netherlands	X		X		a) 20% b) 20%		a) Yes b) Yes	a), e)	a) 5% b) 95%
Nigeria[8)]	X		X		a) 50% b) 20%	a) 20% b) 10%	b) Yes	a), b), g), i)	a) 30% b) 70%

Country / geographical area (Administration/ ROA or other entity)	1.1		1.2		1.3		1.4	1.5	1.6
	Do you currently provide a telex service for national and international traffic?		Does the service comply with the relevant ITU-T (formerly CCITT) Recommendations?		In your experience, over the past 5 years and 10 years, what has been the average percentage annual decline in: a) customer base, and b) traffic level		Notwithstanding 1.3 above, is there a strong demand in your country for the service to remain available: a) for the next 2 years b) for the next 5 years	If you answered Yes to any part of 1.4, what sector of your customer base has the dominant requirement: a) Financial services b) Government c) Business/commercial d) Transport and distribution e) Maritime f) Distribution g) Manufacturing h) Agriculture i) Other	In your opinion, what would be the percentage of international telex traffic which is: a) conversational (dialogue-type messages) b) non-conversational
	Yes	No	Yes	No	5 years	10 years			%
Norway[1)]	X		X		a) 17% b) 15%	a) 16% b) 12% International	a) Yes (From a few) b) No (Supposed)	b) Embassies, d) Shipping, e) Inmarsat	a) 30% b) 70%
Paraguay	X		X		a)	a)	Depende de la política de la actual administración	a), h), i) Poder Judicial	b) b)
Philippines	X		X		10%-20%	a) 10%	a) Yes b) Yes	a), d), e)	a) 10% b) 90%
Poland	X		X		a) 50% b) 50%	a) 80% b) 80%	a) Yes b) No	a), c), e), i)	N/A
Portugal	X		X		a) 24% b) 40%	a) 26% b) 37%	a) Yes b) Yes	a), b), c), d), e)	a) 20% b) 80%
Qatar	X		X		a) 10% b) 10%	a) 10% b) 10%	b) Yes	a), c)	a) 80% b) 20%
Russia	X		X		a) 10-15% b) 8-10%		b) Yes for the next 10 years	a), b), d), e)	a) 10% b) 90%
Senegal	X		X		a) 1% b) 8%		a) No b) No		
Singapore	X		X		a) 35% b) 45%		a) Yes	a), c), e)	a) 50% b) 50% (Estimated)
Slovakia	X		X		a) 20% b) 35%		a) Yes	g)	a) 1% b) 99%
Slovenia	X		X		a)10% b) 15%	a) 6% b) 8%	Telekom Slovenije is obliged by law to provide telex service	b), c), d)	a) 40% b) 60%

Country / geographical area (Administration/ ROA or other entity)	1.1		1.2		1.3		1.4	1.5	1.6
	Do you currently provide a telex service for national and international traffic?		Does the service comply with the relevant ITU-T (formerly CCITT) Recommendations?		In your experience, over the past 5 years and 10 years, what has been the average percentage annual decline in: a) customer base, and b) traffic level		Notwithstanding 1.3 above, is there a strong demand in your country for the service to remain available: a) for the next 2 years b) for the next 5 years	If you answered Yes to any part of 1.4, what sector of your customer base has the dominant requirement: a) Financial services b) Government c) Business/commercial d) Transport and distribution e) Maritime f) Distribution g) Manufacturing h) Agriculture i) Other	In your opinion, what would be the percentage of international telex traffic which is: a) conversational (dialogue-type messages) b) non-conversational
	Yes	No	Yes	No	5 years	10 years			%
Spain	X		X		a) 46% Nacional: b) 25.06% Internacional b) 21.66%-30.64%	a) 40% Nacional: b) 25.24% Internacional b) 23.24%-28.79%	a) Yes No hay fuerte demanda aunque se siguen dando de ALTA nuevos abonados, cada vez en menor cantidad	a), b), c), d), e), f), g), h), i)	a) 70%
Suriname	X		X		a) 10% b) 20%	a) 14% b) 30%	a) Yes b) Yes (Legal aspect)	a), b), c), i) Embassy	a) 10% b) 90%
Switzerland	X		X		a) 70% b) 68% 1994-1999	a) 90% b) 89% 1989-1999	a) Yes b) Yes	a)	a) 60% b) 40%
Syria	X		X		a) 50% b) 70%		b) Yes	a), c), e)	a) 25% b) 75%
Tajikistan	X		X		a) 50%		b) Yes	a), b), c)	b) 100%
Thailand	X		X		a)	a)	b) Yes	a), c), d), e)	a) 35% b) 65%
Tonga[2)]									
Turkey	X		X		a) 8.29% b) 17.66%	a) 6.66% b) 14.89%			
Ukraine	X		X		a) 14.3% b) 13%		b) Yes	b), e), f), g), h)	a) 15% b) 85%
United Arab Emirates	X		X		1988 a) 5.7% b) 9.4%	1993 a) 6.8% b) 7.5%	Yes	a), b), c), d), g), i)	N/A

Country / geographical area (Administration/ ROA or other entity)	1.1		1.2		1.3		1.4	1.5	1.6
	Do you currently provide a telex service for national and international traffic?		Does the service comply with the relevant ITU-T (formerly CCITT) Recommendations?		In your experience, over the past 5 years and 10 years, what has been the average percentage annual decline in: a) customer base, and b) traffic level		Notwithstanding 1.3 above, is there a strong demand in your country for the service to remain available: a) for the next 2 years b) for the next 5 years	If you answered Yes to any part of 1.4, what sector of your customer base has the dominant requirement: a) Financial services b) Government c) Business/commercial d) Transport and distribution e) Maritime f) Distribution g) Manufacturing h) Agriculture i) Other	In your opinion, what would be the percentage of international telex traffic which is: a) conversational (dialogue-type messages) b) non-conversational
	Yes	No	Yes	No	5 years	10 years			%
United Kingdom[7)]	X		X		a) 20% b) 26%	a) 10% b) 20% 7 years worth of data available	a) Yes b) ?	a) e)	a) <5% b) >95%
Uruguay	X		X		a) 12.9% b) 20%	a) 13.8% b) 13%	a) Yes b) No	Se mantiene especialicen te pro razones legales/comerciales	N/A
Vanuatu	X		X		Unsure		a) No b) No	a)	b) 100%
Venezuela	X		X		a) 16%		a) No b) No Tenemos una cartera de abonados (620 entre todas las Gerencias Generales). Los cuales requieren mantener el servicio	En el caso de la Gerencia General de Grandes Clientes la cartera fuerte es la de finanzas.	b) 100%
Yemen	X		X		a) 52% b) 38%	a) 64% b) 67%	b) Yes	a), b)	a) 20% b) 80%
Zambia	X		X		a) 68.87% b) 8.22%	a) 53.41% b) 0.63%	a) Yes b) Yes	a), b), c), i) (News Media)	
Zimbabwe	X		X		a) 9% b) 20%	a) 2% b) 8%	b) Yes Telex can be transmitted over adverse line conditions and in remote areas. It is still the best telecomms mode. The tendency has been to move towards facsimile.	a), b), c), f), g), h), i) (tourism)	

2 Additional Telex Service Features

Country / geographical area (Administration/ ROA or other entity)	2.1		2.2		2.3		2.4	
	Do you provide a telex Store-and-Forward service for international calls?		What % of your international outgoing traffic is via your store and forward unit?		Does your Store and Forward unit support a mailbox capability?		Do you provide any of the Interworking Functions standardized in the F.80/U.200 series of Recommendations, for example, telex interworking with: a) Interpersonal Messaging Service b) Facsimile c) Packet Switched Data Networks d) ISDN e) Videotex	
	Yes	No	%	%	Yes	No	Yes	No
Angola		X	N/A	N/A				X
Austria (Datakom)		X	N/A		N/A		a) e-mail	
Austria (Ministry)		X Ceased in 1994					a)	b), c), d), e)
Azerbaijan		X					c)	
Barbados		X						X
Bahrain	X		N/A			X		X
Belarus		X				X	a)	
Belgium		X						X
Bhutan		X				X		X
Botswana		X				X	b), c), d)	a), e)
Brazil		X				X	b), c)	a), d), e)
Bulgaria		X				X		X
Cambodia		X						X
Canada[4)]		X	80%		X			X
Central African Rep.		X				X		X
Colombia		X	N/A	N/A		X		X
Côte d'Ivoire		X				X		X
Croatia		X						X
Czech Rep.		X				X		X
Denmark	X		0.6%			X		X
EBU	X		100%			X	a), b), d)	
Ecuador[5)]	X		10%			X		X
Egypt		X				X	c)	a), b), d), e)

Country / geographical area (Administration/ ROA or other entity)	2.1		2.2		2.3		2.4	
	Do you provide a telex Store-and-Forward service for international calls?		What % of your international outgoing traffic is via your store and forward unit?		Does your Store and Forward unit support a mailbox capability?		Do you provide any of the Interworking Functions standardized in the F.80/U.200 series of Recommendations, for example, telex interworking with: a) Interpersonal Messaging Service b) Facsimile c) Packet Switched Data Networks d) ISDN e) Videotex	
	Yes	No	%	%	Yes	No	Yes	No
El Salvador	X		100%		X		X	
Ethiopia	X				X			a)
Fiji[3)]								
France (France Telecom)		X						X
Gabon		X				X		X
Georgia		X				X		X
Germany		X					b), e)	
Ghana		X						X
Guyana		X	N/A		N/A			X
Hongkong	X		20%			X		X
Hungary[6)]	X		no significant			X		X
Inmarsat[9)]	X		1%		X		c)	
Iran (Islamic Republic of)		X						X
Italy (Ministero delle Comunicazioni)	X				X			X
Italy (Telecom Italia)	X		5%			X		
Japan		X						X
Jordan		X				X		X
Kazakstan	X		3%		X			X
Korea (Rep. of)		X				X	X	
Kyrgyzstan		X				X		X
Latvia	X					X		X
Luxembourg	X		2%			X		X

Country / geographical area (Administration/ ROA or other entity)	2.1		2.2		2.3		2.4	
	Do you provide a telex Store-and-Forward service for international calls?		What % of your international outgoing traffic is via your store and forward unit?		Does your Store and Forward unit support a mailbox capability?		Do you provide any of the Interworking Functions standardized in the F.80/U.200 series of Recommendations, for example, telex interworking with: a) Interpersonal Messaging Service b) Facsimile c) Packet Switched Data Networks d) ISDN e) Videotex	
	Yes	No	%	%	Yes	No	Yes	No
Macau		X						
Madagascar		X				X		X
Malaysia (Celcom)								
Maldives		X						X
Mauritius		X						
Mauritania		X		X		X		X
Moldova		X				X		X
Namibia		X				X		X
Netherlands		X				X		X
Nigeria[8)]		X	N/A			X		X
Norway[1)]	X							X
Paraguay	X					X		X
Philippines	X		5%		X		b), c), d)	
Poland	X		N/A			X	a)	
Portugal	X		0.5%		X		a), e)	b), c), d)
Qatar	X				X		c)	
Russia	X		2%		X		c)	a), b) d), e)
Senegal		X						X
Singapore	X		1%			X	c)	
Slovakia	X		1%		X			X
Slovenia		X						X
Spain	X				X		b)	
Suriname		X						X
Switzerland	X		0.1%			X	b), c)	a), d), e)
Syria		X				X		X

Country / geographical area (Administration/ ROA or other entity)	2.1		2.2		2.3		2.4	
	Do you provide a telex Store-and-Forward service for international calls?		What % of your international outgoing traffic is via your store and forward unit?		Does your Store and Forward unit support a mailbox capability?		Do you provide any of the Interworking Functions standardized in the F.80/U.200 series of Recommendations, for example, telex interworking with: a) Interpersonal Messaging Service b) Facsimile c) Packet Switched Data Networks d) ISDN e) Videotex	
	Yes	No	%	%	Yes	No	Yes	No
Tajikistan		X				X		X
Thailand		X						X
Tonga[2)]								
Turkey		X				X		X
Ukraine		X					a), b), c)	d), e)
United Arab Emirates	X		N/A			X		X
United Kingdom[7)]	X		38%		X		a), b), c)	d), e)
Uruguay	X					X		X
Vanuatu		X				X		X
Venezuela		X				X		X
Yemen		X	N/A			X	c)	
Zambia		X	N/A		N/A		N/A	
Zimbabwe	X					X		X

3 Telex Network

Country / geographical area (Administration/ ROA or other entity)	3.1		3.2		3.3		3.4	
	Do you operate a dedicated telex network?		Do you provide the telex service on a network other than a dedicated telex network, such as: a) ISDN b) Packet Switched Public Data Network c) PSTN d) Other (please specify)		Is your network capable of supporting other services in addition to the telex service? If Yes, please describe.		Other than a (dedicated) telex network, what other networks exist in your country: a) PSTN b) ISDN c) PSPDN d) CSPDN e) IN	
	Yes	No	Yes	No	Yes	No	Yes	No
Angola	X		b), c)	a), d)	X		a), c), d)	
Austria (Datakom)	X			X		X	a), b), c)	
Austria (Ministry)	X		d) mailbox service				a), b), c), e)	d)
Azerbaijan	X					X	a), b), c)	d), e)
Barbados		X		X		X	a), b)	
Bahrain	X			X	X Virtual Telex Network		a), b), c), e)	
Belarus	X			X		X	a), b), c)	d), e)
Belgium	X			X		X	a), b), c), d), e)	
Bhutan	X			X		X		
Botswana	X			X		X	a), b), c)	d), Planned, e)
Brazil	X			X		X	a), b), c), e)	d)
Bulgaria	X			X			a), b), c)	
Cambodia								
Canada[4)]	X Will be out of service Dec. 31/99		d) AT&T Easylink messaging service	a), b), c)	X All types of voice data, video, image		a), b), c), d), e)	
Central African Rep.	X			X		X		X
Colombia		X		X		X	a), b), c), d)	e)
Côte d'Ivoire	X		c)			X	a), b), c), d), e)	
Croatia	X			X	X Gentex		a), b), c), d), e)	
Czech Rep.	X		c)			X		X
Denmark	X					X	a), b), c), d), e)	

Country / geographical area (Administration/ ROA or other entity)	3.1		3.2		3.3		3.4	
	Do you operate a dedicated telex network?		Do you provide the telex service on a network other than a dedicated telex network, such as: a) ISDN b) Packet Switched Public Data Network c) PSTN d) Other (please specify)		Is your network capable of supporting other services in addition to the telex service? If Yes, please describe.		Other than a (dedicated) telex network, what other networks exist in your country: a) PSTN b) ISDN c) PSPDN d) CSPDN e) IN	
	Yes	No	Yes	No	Yes	No	Yes	No
EBU	X			X		X	a), b), c), d), e)	
Ecuador[5)]	X			X	X DATEX, TELETEX, GENTEX		b)	
Egypt	X		b)	a), c), d)		X		X
El Salvador		X		X		X		X
Ethiopia		X		c)	X		a)	
Fiji[3)]								
France (France Telecom)	X			X			a), b), c), d), e)	
Gabon	X			X		X		
Georgia	X			X		X	a), c)	
Germany	X			a), b), c), d)		X	a), b), c), e)	d)
Ghana	X			X		X	a), b) (by Sept 1999)	c), d), e)
Guyana	X			X		X	a), e)	
Hongkong	X		d) Messaging system	a), b), c)		X	a), b), c), d), e)	
Hungary[6)]	X			X		X	a), b), c), e)	
Inmarsat[9)]	X			X		X	a), b) (see Note 4)	
Iran (Islamic Republic of)	X		Gentex network Inmarsat telex network			X	a), b), c)	
Italy (Ministero delle Comunicazioni)		X		X			d)	
Italy (Telecom Italia)	X						a), b), c), d), e)	
Japan	X		Our telex network is connected with PSTN provided by NTT		X Telegram		a), b), c), d)	

Country / geographical area (Administration/ ROA or other entity)	3.1		3.2		3.3		3.4	
	Do you operate a dedicated telex network?		Do you provide the telex service on a network other than a dedicated telex network, such as: a) ISDN b) Packet Switched Public Data Network c) PSTN d) Other (please specify)		Is your network capable of supporting other services in addition to the telex service? If Yes, please describe.		Other than a (dedicated) telex network, what other networks exist in your country: a) PSTN b) ISDN c) PSPDN d) CSPDN e) IN	
	Yes	No	Yes	No	Yes	No	Yes	No
Jordan		X		X		X	a), b), e)	
Kazakstan	X		b) (X.25)		X		b), c), e)	
Korea (Rep. of)	X			X		X	a), b), c), d), e)	
Kyrgyzstan	X			X		X	a)	
Latvia	X			X			a), b), c), d)	e)
Luxembourg	X			X		X	a), b), c)	
Macau	X			X		X	a), b), c)	
Madagascar	X			X		X	e)	
Malaysia (Celcom)								
Maldives		X	c)		X		a), b)	
Mauritius	X			X		X		a), b), c), e)
Mauritania		X		X	Lignes spécialisées Lignes de conférence à trois ou quatre			
Moldova		X		X		X		X
Namibia	X		a), c) d)	b)		X		
Netherlands	X			X		X		X
Nigeria[8)]	X			X		X		
Norway[1)]	X			X		X	a), b), c), d)	e) Integrated in PSTN/ISDN (IN-nodes)
Paraguay	X			X		X	a), b), c), d), e)	
Philippines	X					X	a), b), c), d), e)	
Poland	X			X		X	a), b), c), e)	

Country / geographical area (Administration/ ROA or other entity)	3.1		3.2		3.3		3.4	
	Do you operate a dedicated telex network?		Do you provide the telex service on a network other than a dedicated telex network, such as: a) ISDN b) Packet Switched Public Data Network c) PSTN d) Other (please specify)		Is your network capable of supporting other services in addition to the telex service? If Yes, please describe.		Other than a (dedicated) telex network, what other networks exist in your country: a) PSTN b) ISDN c) PSPDN d) CSPDN e) IN	
	Yes	No	Yes	No	Yes	No	Yes	No
Portugal	X			a), b), c)	X VIDEOTEX TELEBIP EMAIL (MHS or X400)		a), b), e)	
Qatar	X			X		X		
Russia	X		b)	a), c), d)	X Data transmission and message processing		a) b), c) portions, e) portions	d)
Senegal	X			X		X	a), b), e)	
Singapore	X			X		X	a), b), c), d), e)	
Slovakia	X			X		X	a), b), e)	
Slovenia	X			X		X	a), b), c), e)	d)
Spain		X		X	X TELEFONIA – RTC R. DATOS – RTPC Red DIG SERV INT – RDSI		a), b), c), d), e)	
Suriname		X		X		X		X
Switzerland	X		c)	a), b), d)		X	a), b), e)	c), d)
Syria		X				X	a), b), c), d), e)	
Tajikistan	X			X		X		X
Thailand	X			X		X	a), b)	
Tonga[2)]								
Turkey		X	c)		X Telephone/ data		a), b), c), d)	
Ukraine	X			X		X	a), b), c)	d), e)
United Arab Emirates	X			X	X		a), b), e)	

Country / geographical area (Administration/ ROA or other entity)	3.1		3.2		3.3		3.4	
	Do you operate a dedicated telex network?		Do you provide the telex service on a network other than a dedicated telex network, such as: a) ISDN b) Packet Switched Public Data Network c) PSTN d) Other (please specify)		Is your network capable of supporting other services in addition to the telex service? If Yes, please describe.		Other than a (dedicated) telex network, what other networks exist in your country: a) PSTN b) ISDN c) PSPDN d) CSPDN e) IN	
	Yes	No	Yes	No	Yes	No	Yes	No
United Kingdom[7)]	X			X		X	a), b), c), d), e)	
Uruguay	X			X		X	a), b), c), e)	d)
Vanuatu		X		a), b), c), d)		X	a)	b), c), d), e)
Venezuela		X		a), c), d)		X		a), c), e) Tenemos Red Dedicada de transmisión Digital (RDCD)
Yemen	X		c)			X		X
Zambia	X			X		X	a)	
Zimbabwe	X			X		X Teletext would require addition hardwire	a), c)	

4 Future of Telex Service

Country / geographical area (Administration/ ROA or other entity)	4.1		4.2		4.3	4.4
	Do you have plans to fully cease the telex service in your country (other than consolidation of resources)[1]: a) in next 2 years b) in next 2-5 years c) in next 5-10 years d) as soon as possible		In your particular situation, would you prefer to continue in the short term with the telex service but provide an interworking capability with other services such as electronic mail?		If the answer to 4.2 is Yes, why is this (what are the benefits to you or your customers, for example, are there any unique features of the telex service that you/they wish to retain)?	If you were to replace the telex service within the near future, what would be your service of choice to replace it : a) Facsimile only (including Facsimile store-and-forward) b) Electronic mail (on IP-based network) c) Other (please specify)
	Yes	No	Yes	No		
Angola	a), b), c)	d)	X		While the Banks wait for the SWIFT service, for them the safer way to communicate to the another Banks until now is the Telex service	
Austria (Datakom)	b) may be Have to observe further basic developments		X An interworking capability with other services is provided since long time		Considerateness of their foreign partners; Document-status of message Quick confirmation by aab Conversation	c) E-Mail-System "Telebox" with Interface to several services (in operation)
Austria (Ministry)		X	already available			
Azerbaijan		X	X		There are protection from unauthorised access validity of documents and low prices provided in the dedicated telex network	a) Will be the most preferable
Barbados	d)		X		Legality	b)
Bahrain		b), c), d)	X		Worldwide access via Internet. Telex is still valid document	a), b)
Belarus		X	X		Reliability; Dialogue-type; Cheap	b), c) (X.400)
Belgium		X They are customers which ordered new equipment to be Y2K complaint		X		a), b)
Bhutan		X		X		
Botswana	c)	a), b), d)		X		
Brazil	a)			X	No	a)
Bulgaria	c)			X		
Cambodia						

Country / geographical area (Administration/ ROA or other entity)	4.1		4.2		4.3	4.4
	Do you have plans to fully cease the telex service in your country (other than consolidation of resources)[1]: a) in next 2 years b) in next 2-5 years c) in next 5-10 years d) as soon as possible		In your particular situation, would you prefer to continue in the short term with the telex service but provide an interworking capability with other services such as electronic mail?		If the answer to 4.2 is Yes, why is this (what are the benefits to you or your customers, for example, are there any unique features of the telex service that you/they wish to retain)?	If you were to replace the telex service within the near future, what would be your service of choice to replace it : a) Facsimile only (including Facsimile store-and-forward) b) Electronic mail (on IP-based network) c) Other (please specify)
	Yes	No	Yes	No		
Canada[4)]	a)		This has already been done		The benefit is interworking with telex outside North America, not for features	The vast majority of our customers have already made their choice and moved to fax some years ago, and more recently are moving to e-mail
Central African Rep.		X	X		Moyen juridique, admis dans l'administration. Transfert d'argent de messages officiels	a), b)
Colombia						
Côte d'Ivoire	d)			X		a), b)
Croatia	b)		X		Customers want telex service costs are lower	b)
Czech Rep.	c) Reduction in the hours of operator assistance position for the semi-auto telex service and telex information			X	possibility of dialogue-type messages	b)
Denmark	Under consideration now Y2000 is a problem for telex		Maybe suppl. service		1) ubiquitous (even at sea) 2) legal doc.	1) and 2) above have to be fulfilled before replacement
EBU – European Broadcasting Union	b)		X		Accusés de réception, valeur juridique du télex	a), b)
Ecuador[5)]	d) Por el bajo tráfico y disminución de usuarios			X		a), b)
Egypt	c)	a), b), d)		X	No	c)
El Salvador		X		X		
Ethiopia		c) for the next 5 years	X		Yes, Legal issues	a)

Country / geographical area (Administration/ ROA or other entity)	4.1		4.2		4.3	4.4
	Do you have plans to fully cease the telex service in your country (other than consolidation of resources)[1]: a) in next 2 years b) in next 2-5 years c) in next 5-10 years d) as soon as possible		In your particular situation, would you prefer to continue in the short term with the telex service but provide an interworking capability with other services such as electronic mail?		If the answer to 4.2 is Yes, why is this (what are the benefits to you or your customers, for example, are there any unique features of the telex service that you/they wish to retain)?	If you were to replace the telex service within the near future, what would be your service of choice to replace it : a) Facsimile only (including Facsimile store-and-forward) b) Electronic mail (on IP-based network) c) Other (please specify)
	Yes	No	Yes	No		
Fiji[3)]						
France (France Telecom)		X		X		Ne sait pas
Gabon			X		Commutation en temps réel	
Georgia		X	X		Ready infrastructure of a network	b)
Germany	c)	a), b), d)	X		Telex number; Legal aspects	b)
Ghana		a), b), c), d)	X		Reliability and security	b), c) (PSDDN)
Guyana	b)		X		Speed efficiency	b)
Hungary[6)]	see additional information		see additional information			
Hongkong	No plans yet to fully cease the telex service in the next 2-5 years		Will continue to provide telex service in the next 2-5 years		The customers value the legal status which telex possesses	Electronic mail
Inmarsat[9)]		X		X		
Iran (Islamic Republic of)	b)		X		– Sare communication – Conversation possible – IP is not developed enough	b)
Italy (Ministero delle Comunicazioni)				X		b)
Italy (Telecom Italia)						
Japan		X		X		
Jordan		X		X		
Kazakstan	c)		X		In order to satisfy the subscriber demand with universal data	b)
Korea (Rep. of)		X		X		
Kyrgyzstan	To extent of the subscriber demand		X With consideration of upgrading level		Low price	a), b)
Latvia		X		X		b)

Country / geographical area (Administration/ ROA or other entity)	4.1		4.2		4.3	4.4
	Do you have plans to fully cease the telex service in your country (other than consolidation of resources)[1]: a) in next 2 years b) in next 2-5 years c) in next 5-10 years d) as soon as possible		In your particular situation, would you prefer to continue in the short term with the telex service but provide an interworking capability with other services such as electronic mail?		If the answer to 4.2 is Yes, why is this (what are the benefits to you or your customers, for example, are there any unique features of the telex service that you/they wish to retain)?	If you were to replace the telex service within the near future, what would be your service of choice to replace it : a) Facsimile only (including Facsimile store-and-forward) b) Electronic mail (on IP-based network) c) Other (please specify)
	Yes	No	Yes	No		
Luxembourg		X		X		a), b)
Macau		X	X		No	b)
Madagascar						b)
Malaysia (Celcom)						
Maldives	c)		X		The region our customers frequently communicate with is not ready for other services such as X.25 MDN, S.W.I.F.T.	c) (managed data network – S.W.I.F.T.)
Mauritius		X				
Mauritania		X	X		– dans l'intérêt de la clientèle; – du fait de l'état du Central télex (acquisition nouvelle); – sur un plan juridique: reconnaissance juridique des documents transmis par télex	a), b)
Moldova	d)	a), b), c)		X	No	b)
Namibia		X	X		Only communication available to certain African countries	
Netherlands		X		X		b)
Nigeria[8)]		X	X		Answerback identify guarantees proof of transaction	b)
Norway[1)]	a), d)		X		Our customers need to send and receive telex worldwide	c) Telenor Nextel provides Telex service and also Facsimile, based on E-mail, IP and X.25
Paraguay		X		X Técnicamente no es posible porque no tiene interfase		b), c) Transmisión de datos via la PSTN

Country / geographical area (Administration/ ROA or other entity)	4.1		4.2		4.3	4.4
	Do you have plans to fully cease the telex service in your country (other than consolidation of resources)[1]: a) in next 2 years b) in next 2-5 years c) in next 5-10 years d) as soon as possible		In your particular situation, would you prefer to continue in the short term with the telex service but provide an interworking capability with other services such as electronic mail?		If the answer to 4.2 is Yes, why is this (what are the benefits to you or your customers, for example, are there any unique features of the telex service that you/they wish to retain)?	If you were to replace the telex service within the near future, what would be your service of choice to replace it : a) Facsimile only (including Facsimile store-and-forward) b) Electronic mail (on IP-based network) c) Other (please specify)
	Yes	No	Yes	No		
Philippines	c)		X		Some sectors of the market like Shipping and Banks will always retain a telex service in their office mainly because of its legality; but there are other major businesses who would want to have the newer form of messaging application in their offices.	a) Telex via IP
Poland	d)		X		Because telex message is officially recognized as a document.	a), b)
Portugal		X		X		a), b)
Qatar		X	X		To be a legal document	b)
Russia		c) in next 10 years	X		a) real time work b) reliability of message delivery to recipient c) direct dialogue d) delivery of message initiated by the sender, irrespective of the fact the recipient is active or inactive e) legal force of telex message f) relatively difficult to forge or to use a telex message	b) (X400 protocol based E-mail)
Senegal	d)			X		a), b)
Singapore	No plans		No plans			Currently these services are available
Slovakia	b)			X		b)
Slovenia		X Telekom Slovenije is obliged by law to provide telex service		X		It will be a customer's choice what will be the substitute

Country / geographical area (Administration/ ROA or other entity)	4.1		4.2		4.3	4.4
	Do you have plans to fully cease the telex service in your country (other than consolidation of resources)[1]: a) in next 2 years b) in next 2-5 years c) in next 5-10 years d) as soon as possible		In your particular situation, would you prefer to continue in the short term with the telex service but provide an interworking capability with other services such as electronic mail?		If the answer to 4.2 is Yes, why is this (what are the benefits to you or your customers, for example, are there any unique features of the telex service that you/they wish to retain)?	If you were to replace the telex service within the near future, what would be your service of choice to replace it : a) Facsimile only (including Facsimile store-and-forward) b) Electronic mail (on IP-based network) c) Other (please specify)
	Yes	No	Yes	No		
Spain		X	X		Al tener una red propia, es factible mantener el servicio y además ampliar otros para mejor amortización de la misma.	a), b)
Suriname	d)		X		Legal aspect	b), c) Data communication
Switzerland		a), b)	X		security of identification of the partner	b)
Syria	b)		X Separately		To serve our customers on the time they ask to stop operation of telex	b)
Tajikistan	c)		X			No
Thailand		X		X		b)
Tonga[2)]						
Turkey	c)		X		For international trade, for military and booking services, firms retain telex service	a), b)
Ukraine	c)		X		Lack of funds for the reconstruction of the terminal equipment of customers (Conversation capabilities are the features to retain)	Electronic mail (on IP-based network)
United Arab Emirates	b)			X		b)
United Kingdom[7)]		X	X		legal status and current ubiquity of telex	b), c)
Uruguay	X sin fecha prevista			X		ambos
Vanuatu	a)			X		b)

Country / geographical area (Administration/ ROA or other entity)	4.1		4.2		4.3	4.4
	Do you have plans to fully cease the telex service in your country (other than consolidation of resources)[1]: a) in next 2 years b) in next 2-5 years c) in next 5-10 years d) as soon as possible		In your particular situation, would you prefer to continue in the short term with the telex service but provide an interworking capability with other services such as electronic mail?		If the answer to 4.2 is Yes, why is this (what are the benefits to you or your customers, for example, are there any unique features of the telex service that you/they wish to retain)?	If you were to replace the telex service within the near future, what would be your service of choice to replace it : a) Facsimile only (including Facsimile store-and-forward) b) Electronic mail (on IP-based network) c) Other (please specify)
	Yes	No	Yes	No		
Venezuela		b)		X		La propuesta actual contempla usar la red X.25 como transporte, usando los nodos DPN-100 como interfaz con los equipos de telex suministrados por Nortel, el proceso hacia las salidas de los clientes será transparente por lo que los mismos podrán seguir usando, sus mismos equipos de telex, aunque también podrán recibir o enviar telex a través de PCs.
Yemen	b)		X		X	b)
Zambia	b)		X		News media would like to retain privex network	b)
Zimbabwe		X	X		Using the same telex machine you can get extra services	a), b) This would require good quality lines and our problem is a poor distribution network

1 Consolidation of resources may take a number of (transitional) forms, for example :
a) Closure of operator assistance positions for the telex service or telex information services;
b) Closure of telex switching centres and gateways, with subscribers 'long-lined' into other switching centres;
c) Reduction in the hours of operation of the telex service;
d) Provision of new switching centres;
e) Sharing of resources over a large geographical area to establish "virtual public telex network".

5 Market Environment

Country / geographical area (Administration/ ROA or other entity)	5.1		5.2	
	Are Service Providers utilizing IP-based networks active in your marketplace?		Can new service providers (for example, utilizing IP-based networks) readily establish a presence in your marketplace?	
	Yes	No	Yes	No
Angola	X		X	
Austria (Datakom)				
Austria (Ministry)	X		X	
Azerbaijan	X		X	
Barbados	X		X	
Bahrain	X			X
Belarus		X		X
Begium		X		X
Bhutan		X		X
Botswana	X		X	
Brazil	X		X	
Bulgaria	X		X	
Cambodia				
Canada[4)]	X		X	
Central African Rep.	X		X	
Colombia	X		X	
Côte d'Ivoire	X		X	
Croatia	X		X	
Czech Rep.				
Denmark	X		X	
EBU (European Broadcasting Union)	X		X	
Ecuador[5)]	X		X	
Egypt		X		X
El Salvador	X		X	
Ethiopia		X		X
Fiji[3)]				
France (France Telecom)	X		X	
Gabon	X		X	
Georgia	X		X	
Germany	?	?	X	
Ghana	X		X	
Guyana	X		X	
Hongkong	X		X	
Hungary[6)]	X		X	
Inmarsat[9)]		X		X
Iran (Islamic Republic of)		X		X
Italy (Ministero delle Comunicazioni)	X		X	
Italy (Telecom Italia)	X		X	
Japan		X		X
Jordan	X		X	
Kazakstan		X		X
Korea (Rep. of)	X		X	
Kyrgyzstan		X	X	
Latvia	X			X
Luxembourg	X		X	
Macau		X		X
Madagascar	X		X	
Malaysia (Celcom)	X			X
Maldives		X	X	

Country / geographical area (Administration/ ROA or other entity)	5.1		5.2	
	Are Service Providers utilizing IP-based networks active in your marketplace?		Can new service providers (for example, utilizing IP-based networks) readily establish a presence in your marketplace?	
	Yes	No	Yes	No
Mauritius				
Mauritania		X		X
Moldova		X		X
Namibia	X		X	
Netherlands	X		X	
Nigeria[8)]	NITEL operates internet now		X	
Norway[1)]	X		X	
Paraguay	X		X	
Philippines		X (But slowly migrating to it)	X	
Poland	X		X	
Portugal	X		X	
Qatar	X			X
Russia	X		X	
Senegal	X		X	
Singapore		X	X	
Slovakia	X		X	
Slovenia	X		X	
Spain	X		X	
Suriname	X		X	
Switzerland	X		X	
Syria	X		X	
Tajikistan		X		X
Thailand	X		X	
Tonga[2)]				
Turkey	X		X	
Ukraine	X		X	
United Arab Emirates		Not yet		X
United Kingdom[7)]	X		X	
Uruguay	X		X	
Vanuatu		X (TVL is the only ISP)		X (monopoly until 2012)
Venezuela	X		X	
Yemen	X		X	
Zambia	X			X
Zimbabwe	X		X	

Additional information

1) Telenor plans to select a network operator in another country for outsourcing our telex service, i.e. for switching and connecting national and international traffic for:

- any remaining Norwegian telex subscribers (within one year);
- Inmarsat traffic;
- the Telenor service which replaces telex (Telenor Nextel Telex).

2) The telex service has been terminated in Tonga since 30 June 1999. Termination was mainly due to decline of customer usage during the past years.

3) The telex service is no longer available, having closed on 30 June 1999.

4) It is worth noting that the features still of interest to customers – namely, legal recognition of receipt and two-way conversational mode – are or soon will be available with IP protocols and services; IP SEC and ICQ.

5) These data were supplied by a fixed telephone service operator, ANDINATEL S.A.

6) For the time being we are seeking technical and other solutions for our subscribers who insist on the telex service in the near future. Main lines of our present activities: outsourcing or replacement by a messaging service.

Later on, we will inform you about our decision concerning our telex service.

7) C&W communications in the UK has already implemented a Virtual Public Telex Network (VPTN) service for other C&W companies. This is a service that enables a carrier to remove their telex exchange but continue to offer a real time telex service. The VPTN service replicates local date and time stamps and retains local numbering patterns.

Currently live VPTN's are being operated for:

- Barbados (incl. Dominica, Grenada, St Lucia, St Vincent and the Grenadines);
- Bermuda (incl. Anguilla Antigua and Barbuda, British Virgin Is, Montserrat, St Kitts & Nevis, Turks and Caicos);
- Cayman Islands;
- Seychelles.

For more information, please contact:

Nikki Campbell-Gumb
Product Manager- International and Wholesale Messaging
Cable & Wireless Communications
nikki.campbellgumb@cwcom.co.uk
+44 171 674 5509

8) The introduction and massive use of Fax and e-mail have not totally wiped out the use of telex from the communication scene of this country. Telex used to be the only legally binding form of electronic transaction until lately.

This Administration does not intend to do away with her extensive international telex network soon. Telex services are in good demand by banking and transportation industries of this country and we hope to keep the services alive.

9) *Note 1:* The COMSAT telex network provides service to mobile terminals in the Atlantic (East and West), Pacific and Indian Ocean regions using the Inmarsat satellites. The Inmarsat A, B and C technologies are supported. On the terrestrial side the network is connected to the U. S. telex carriers.

Note 2: Over the last five years the customer base has actually increased. However, it peaked in 1997, and since then has been declining by about 10% a year. The traffic level is declining by about 9.5% per year.

Note 3: Because most Inmarsat-A and -B mobile terminals come equipped with both a telex and a voice capability, the demand for telex remains strong. Also, most of the traffic from Inmarsat-C terminals is still to telex addresses. Because of the pricing of the services, it can be cost-effective to use telex rather than fax over the satellite for some messages.

Note 4: Over the INMARSAT satellites the only other services supported are PSTN and ISDN.

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* See also ITU Operational Bulletin No. 695 of 1.VII.1999, pages 4-7.

Telegram Service

Telex Service

New Zealand

Communication of 17.V.2000:

The *Ministry of Commerce*, Wellington, announces that the international telecommunications telex service in New Zealand is no longer offered by Telecom New Zealand International Ltd (TNZI)*, their functions and operations having been subsumed into Telecom New Zealand Ltd.

A limited service is available through Telstra New Zealand Ltd (recognized operating agency), but as this service is rarely used this is in effect an extension of the service provided by Telstra in Australia. Any queries about this service should be directed to:

Telstra NZ Ltd
PO Box 963
AUCKLAND
New Zealand
Tf: +64 9 980 8800
Fax: +64 9 980 8801

* See also Operational Bulletin No. 713 of 1.IV.2000, page 40.

Norway

Switzerland

Joint communiqué of 24.V.2000:

– *Norwegian Telex Service*

Telenor, Oslo (Norway) and *Swisscom,* Berne (Switzerland) announce in this joint communiqué that, as from 1 July 2000, Telenor will no longer be handling telex traffic to and from Norway, such traffic being handled instead by Swisscom. The Telex Switching Centre in Oslo will be closed and all direct circuits to and from Oslo will cease operation. All traffic destined for the Oslo centre will have to be routed via the Telex Switching Centre of Swisscom in Lugano (Switzerland).

Norwegian subscribers' national telex numbers, together with the telex destination code (TDC) "56" allocated to Norway under ITU-T Recommendation F.69 and the telex network identification code (TNIC) "N" allocated to Norway under ITU-T Recommendation F.68, will remain unchanged.

As from 1 July 2000, the responsibility for international rates and settlements will reside with Swisscom, which will handle direct all negotiations related to telex accounting rates. Telex traffic sent to or by Norwegian subscribers shall be considered as Swiss traffic. The total accounting rates and rates division as applied in relations with Swisscom shall be applied also for telex traffic originating or terminating in Norway. All administrations/ROAs are kindly requested to update their records accordingly.

Swisscom will handle the settlement of telex accounts, which will have to be done separately for telex traffic from/to Switzerland (telex destination code 45) and telex traffic from/to Norway (telex destination code 56). Separate telex accounts should be sent to the following address:

Swisscom Ltd
International Network Services
International Accounting (IVAB)
Speichergasse 6
CH - 3050 BERNE

For any technical problems regarding routing, please contact the Telex Switching Centre in Lugano (Switzerland):

Swisscom Ltd
Telex Switching Centre Lugano
Switzerland
Tel: +41 91 807 93 51
Fax: +41 91 807 98 34
Tlx: 45 840148 txlu ch
E-mail: telex.switch@swisscom.com

For any questions regarding accounting or operational matters, please contact Swisscom or Telenor at the following addresses:

Swisscom Ltd
Telex Management
Switzerland
Tel: +41 91 807 92 35
Fax: +41 91 807 98 34
Tlx: 45 804000 cct ch
E-Mail: telex.mngt@swisscom.com

Kjell Peder Karlsen (accounting matters)
Telenor AS
Norway
Tel: +47 22 78 01 90
Fax: +47 22 78 02 33
Tlx:
E-Mail: Kjell-peder.karlsen@telenor.com

Tom Solberg (operational matters)
Telenor AS
Norway
Tel: +47 22 77 60 05
Fax: +47 22 77 60 10
Tlx: 56 77901 tom n
E-Mail: tom.solberg@telenor.com

– *Norwegian telegraph service**

The Norwegian telegraph service will remain within the competence of Telenor (Norway). The Norwegian Gentex system will be reached, as at present, by means of the telex number 56 42250. However, as for telex traffic, Gentex traffic will have to be routed via the Swisscom Telex Switching Centre in Lugano.

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* See also Operational Bulletin No. 716 of 15.V.2000, pages 6 and 26.

Sweden

Communication of 25.V.2000:

Telia AB, Stockholm, Sweden, announces that due to a change in the working hours of the international telegram service, the international telegraph control centre of Sweden will be unmanned from 2100 hours to 0800 hours, local time – 2000 to 0700 hours UTC (summer time 1900 to 0600 UTC), throughout the year. This change in working hours will be effective from 29 May 2000. During the unmanned periods, incoming telegrams destined to Sweden will be stored in the system and processed the next morning. Transit telegrams are automatically forwarded day and night by the system, if the ITU-T Recommendation F.31* format is used.

Telia AB regrets any inconvenience this may cause and thanks administrations and recognized operating agencies (ROAs) for their cooperation.

Contact point:

Telia Nara, Telegram
SE-172 84 SUNDBYBERG
Sweden
Tf: +46 8 4782432
Fax: +46 8 4110020
E-mail: telia-telegram@telia.se

* See CCITT Recommendation F.31 (Blue Book, Volume II, Fascicle II.4).

Telephone Service

Germany

Communication of 17.V.2000:

Regulierungsbehörde für Telekommunikation und Post (RegTP) (Regulatory Authority for Telecommunications and Posts), Bonn, announces that the following additional national destination code "160" will be introduced for the GSM mobile service in Germany (country code +49), as from 1 June 2000:

National destination code	*Name of operator*
160	DeTeMobil Deutsche Telekom MobilNet GmbH

Contact:

Regulierungsbehörde für Telekommunikation und Post (RegTP)
Section 115
Postfach 80 01
D - 53105 BONN
Tf.: +49 228 14 1150
Fax: +49 228 14 6115

Qatar

Communication of 11.V.2000*:

Qatar Telecom QSC (Q-TEL), Doha, recalls that as part of their development programme the telephone numbers will change from a six- to a seven-digit numbering scheme for PSTN service with effect from 5 June 2000 at 2300 hours UTC. The digit "4" will be inserted at the beginning of subscriber numbers.

Country Code: +974

Area Code: There are no area codes in Qatar

Existing six-digit numbering ranges	*New seven-digit numbering ranges*
3X XXXX	43X XXXX
4X XXXX	44X XXXX
6X XXXX	46X XXXX
7X XXXX	47X XXXX
8X XXXX	48X XXXX

Contact:

Abdulwahed Fakhroo, Assistant General Manager
Radio Regulatory & International Affairs
Qatar Telecom Q.S.C. (Q-TEL)
P.O. Box 217
DOHA
Tel: +974 400 678 (after 5 June 2000 +974 4400 678)
Fax: +974 447 555 (after 5 June 2000 +974 4447 555)

* See also ITU Operational Bulletin No. 710 of 15.II.2000, pages 14-15.

Switzerland

Communication of 8.V.2000:

Federal Office for Communications (OFCOM), Biel, announces that the following number ranges were allocated or are in use:

Number range	*Operator*	*Service*
+41 1 560 XXXX	Colt Telecom Switzerland	PSTN / ISDN (Zürich area)
+41 1 561	Swisscom	See Note*
+41 1 562 XXXX	Colt Telecom Switzerland	PSTN / ISDN (Zürich area)
+41 1 563 XXXX	Colt Telecom Switzerland	PSTN / ISDN (Zürich area)
+41 1 564 XXXX	Colt Telecom Switzerland	PSTN / ISDN (Zürich area)
+41 1 565 XXXX	Interoute	PSTN / ISDN (Zürich area)
+41 1 566 XXXX	Not allocated	
+41 1 567 XXXX	Not allocated	
+41 1 568 XXXX	Not allocated	
+41 1 569 XXXX	Not allocated	
+41 1 570	Swisscom	See Note*
+41 1 571	Swisscom	See Note*
+41 1 572	Swisscom	See Note*
+41 1 573	Swisscom	See Note*
+41 1 574 XXXX	Not allocated	
+41 1 575 XXXX	Multilink	PSTN / ISDN (Zürich area)
+41 1 576 XXXX	Multilink	PSTN / ISDN (Zürich area)
+41 1 577 XXXX	Multilink	PSTN / ISDN (Zürich area)
+41 1 578 XXXX	Multilink	PSTN / ISDN (Zürich area)
+41 1 579 XXXX	Not allocated	

Note:

* In order to enable access from abroad to a few national Premium Rates Service (PRS) numbers, Swisscom is using these access codes until 31.12.2000 at the latest.
All Administrations/recognized operating agencies (ROAs) are requested to ensure that access is given to all the above codes used for PSTN / ISDN services.
A list of allocated number blocks in Switzerland can be found on the Internet Website:
(http://www.admin.ch/bakom/adb).

Changes in Administrations/ROAs and other entities or Organizations

Denmark

Communication of 23.V.2000:

Granting of recognized operating agency (ROA) status

The *National Telecom Agency, Copenhagen,* announces that the following operator of international telecommunications has been granted the status of recognized operating agency (ROA) in Denmark

Sense Communications International AS
Munkedamsveien 45, Inng. A
Vika Atrium
N-0250 OSLO
Norway
Tf: +47 23 60 23 00
Fax: +47 23 60 23 70

Deletion of a recognized operating agency (ROA)

Furthermore, the following operator no longer exists and therefore should be deleted as recognized operating agency (ROA) in Denmark:

NETsystem International AS
Strandveien 50
1324 LYSAKER
Norway

Rwanda

Communication of 25.IV.2000:

The *Ministère des Travaux Publics, Transports et Communications de la République Rwandaise,* Kigali, announces that Mr Désiré KARYABWITE, coordinator of the Information Technology Authority attached to the *Ministère des Travaux Publics, Transports et Communications*, has been appointed to take up the post of Rwandan Representative to the ITU.

Address for telecommunications-related correspondence directed to the Administration of Rwanda and names of the persons responsible:

Ministère des Travaux Publics, Transports
et Communications
Office des Technologies de l'Information
(Information Technology Authority)
B.P. 24
KIGALI
Rwanda
Tf: +250 85503 / 86573
Tg: Minitraco Kigali
Tlx: 909 22524 minitraco rw
Fax: +250 85755
S.E. M. Jean de Dieu NTIRUHUNGWA, Ministre des Travaux Publics, Transports et Communications
M. Désiré KARYABWITE, Coordinateur de l'Office des Technologies de l'Information, Représentant du Rwanda auprès de l'UIT

Syria

Communication of 16.V.2000:

Syrian Telecommunications Establishment (S.T.E.), Damascus, announces that Mr Mohammed MAROUF has been appointed as Chairman, Director General of S.T.E., with effect from 10 May 2000.

Other communications

Monaco

Communication of 17.V.2000:

On the occasion of the "Contest IARU Radiosport Championship", the Administration of Monaco authorizes the amateur station of the Radioamateurs of Monaco to use the special call sign 3A2K from 9 to 10 July 2000.

Note by the Radiocommunication Bureau (BR):

By its communication of 17 May 2000, the *Federal Ministry of Telecommunications of the FR of Yugoslavia,* Novi Beograd, announces the following:

"On the occasion of the 30th Anniversary of the Yugoslav Telegraph Club (YUCWK), the *Federal Ministry of Telecommunications of the FR of Yugoslavia* authorizes certain amateur stations to use the special call sign series YT30, YU30 and YZ30 from 15 June to 10 December 2000."

Czech Rep.

Communication of 10.V.2000:

The Executive Director ***of the Association of the Public Telecommunications Network Operators (APVTS)"***, Prague, informs ITU that APVTS was established on 6 May 1999 by six major public telecommunication network operators in the Czech Republic.

APVTS is a union of interested legal entities in the field of telecommunications, the main objective of which is to support and protect the common interests of its members in order to help them develop their business activities in a free and open market in the Czech Republic. It was founded by the following six operators, which are its ordinary members:

Aliatel
Českéradiokomunikace
Dattel
GTS Czech Net
Kabel Plus
Český Telecom

The Association members, taking into account the fact that on 1 January 2001 *("date of liberalization")* the telecommunication market in the Czech Republic will be opened for free competition in all areas of telecommunications, shall take any and all steps, and shall strive, to create basic fair and equal conditions for economic competition in telecommunications.

The duties of APVTS are:

- to support and, if so authorized, protect the interests of its members in the development and operation of public telecommunication networks in the Czech Republic;

- to carry out research on and analyse problems relating to the business aspects of public telecommunication networks in a competitive environment, regulatory rules for public telecommunication networks and telecommunication legislation in the Czech Republic and other countries, with emphasis on European Union countries;

- to establish expert committees for identifying and resolving problems relating to the operation of public telecommunication networks and for cooperation with research and scientific institutions in the Czech Republic;

- to prepare proposals for the solution of legislative and regulatory issues relating to the operation of public telecommunication services and provision of public telecommunication services for State authorities, as well as proposals for national telecommunication policy and the preparation of technical standards;

- to take part in the activities of advisory bodies appointed by State and local administrations, especially in the field of telecommunications;

- to organize the exchange of experience and information among its members;

- to prepare seminars and provide members with advisory services, and to organize the international exchange of experience;

- to protect the common interests of its members when negotiating with representatives of the Government, political parties and movements, interest groups, State and local administrations and national and international institutions.

APVTS cooperates with other organizations and entities, such as:

- similar international organizations in other countries, bodies of the International Telecommunication Union and bodies of the European Union for Telecommunications;

- other telecommunication associations and entities, such as the Association of Cable TV Operators, the Association of Providers of Telecommunication Services, etc.;

- entities that do not operate telecommunication networks but whose activities closely relate to this area, such as providers of telecommunication services, technology vendors, construction unions for network construction, etc.

The address of the Association's headquarters is:

Association of the Public Telecommunications
Network Operators (APVTS)
Jeseniova 52
130 00 PRAGUE 3
Czech Republic
Tf: +420 2 697 2880
Tf / Fax: +420 2 697 5278
E-mail: apvts@apvts.cz
URL: www.apvts.cz
Président de l'Association: Ing. Svatoslav Novák
Membres du Conseil de direction de l'APVTS:

Ing. Jiří Hubka	General Manager, Aliatel
Ing. Miroslav Čuřin	General Manager, České radiokomunikace
Ing. Milan Rusnák	General Manager, Dattel
David Schoch	General Manager, GTS Czech Net
Richard Singer	General Manager, Kabel Plus
RNDr. Přemysl Klíma, CSc	General Manager, Český Telecom
Ing. Pavel Vesely	General Manager, TMP

Ordinary members and Associate members

Any operator of a telecommunication network holding a permit to operate a unified telecommunication network or a designated part thereof in the Czech Republic, which expresses in writing its agreement with the Articles and its desire to take part in the activities of the Association may become an *ordinary member*. Before liberalization an operator shall be any operator of a telecommunication network or provider of telecommunication services which is a legal entity and wants to get a permit to operate a unified telecommunication network or a designated part thereof in the Czech Republic.

Any legal entity doing business in the field of telecommunications may become an *associate member* of the Association.

– Ordinary members *(at 5 May 2000)*

Aliatel
České radiokomunikace
Dattel
GTS Czech net
Kabel Plus
Český Telekom
Contactel
TransgasNet

– Associate members *(at 5 May 2000)*

Alcatel Czech
Ernst & Young
Lucent Technologies
Microsoft
Siemens
Telekomunikační montáže Praha
TTC Marconi
TTC Tesla Telekomunikace
Deloitte & Touche
Wirelesscom

Turkmenistan

Communication of 17.V.2000:

Public holidays in 2000 (day, month):

1.01	New Year's Day
12.01	Memory Day
19.02	Day of Turkmen Flag
8.03	International Women' Day
21.03	Novruz Bairam
8.05	Remembrance Day
9.05	Victory Day
18.05	Constitution Day
6.10	Remembrance Day
27.10 and 28.10	Independence Day

Service Restrictions

Note from the TSB

See the recapitulatory List of service restrictions still in force published as an annex to Operational Bulletin (OB) No. 691 of 1.V.1999 and the following subsequent communications concerning new, modified or deleted service restrictions:

OB No.	
692	Canada (p. 4), Morocco (p. 8), Tonga (p. 5).
694	Fiji (p. 5), Morocco (p. 9/10).
697	Finland (p. 5/6).
698	Angola (p. 18).
699	United Arab Emirates (p. 6), Malawi (p. 6), Netherlands (p. 7), Sweden (p. 9).
700	Slovenia (p. 9).
701	Australia (p. 7), United Arab Emirates (p. 12), Netherlands (p. 13), Singapore (p. 5), Trinidad and Tobago (p. 13).
702	Western Samoa (p. 6).
704	Finland (p. 13).
705	Netherlands (p. 10/11).
707	Germany (p. 3), Morocco (p. 5).
708	Germany (p. 9), Netherlands (p. 4).
709	Uruguay (p. 8).
710	Germany (p. 19), New Caledonia (p. 19).
711	Netherlands (p. 7), Slovenia (p. 8).
712	Maldives (p. 6), New Caledonia (p. 6).
713	Trinidad and Tobago (p. 38).
714	Germany (p. 6), Malawi (p. 12).
716	Norway (p. 17).

Call-Back
and certain alternative calling procedures (Res. 21 Rev. PP-98)

Note from the TSB

Countries/geographical areas for which an information regarding "Call-Back and certain alternative calling procedures not in accordance with the relevant regulations" has been published in the ITU Operational Bulletin (No.):

Algeria (621), Netherlands Antilles (627), Saudi Arabia (629), Azerbaijan (663), Bahrain (611), Belarus (616), Bulgaria (665), Burkina Faso (631), Burundi (607), Cameroon (671), China (599), Cyprus (626), Colombia (602), Cook Islands (681), Cuba (632), Djibouti (614), Egypt (599, 690), United Arab Emirates (627), Ecuador (619), Ethiopia (657), Gabon (631), Guinea (681), Honduras (613), India (627), Jamaica (648), Japan (649), Jordan (652), Kazakstan (619), Kenya (605), Kyrgyzstan (616), Kuwait (610), Latvia (617), Lebanon (642), Madagascar (639), Malaysia (603), Malta (688), Morocco (619), Mexico (697), Niger (618), Nigeria (647), Uganda (603), Portugal (620), Qatar (593), Dem. Rep. of the Congo (672), Seychelles (631), Sudan (686), South Africa (655), Tanzania (624), Thailand (611), Turkey (612), Viet Nam (619), Wallis and Futuna (649), Yemen (622).

In addition, in Operational Bulletins No. 658, No. 685 and No. 710, an information on the position of some countries concerning call-back was published under the heading "Call-Back". This information is the result of a survey made by ITU-T Study Group 3 in accordance with Resolution 21 of the Plenipotentiary Conference (Kyoto, 1994) and Resolution 29 of the WTSC-96 (Geneva, 1996).

AMENDMENTS TO SERVICE DOCUMENTS

Abbreviations used

ADD	insert	**PAR**	paragraph
COL	column	**REP**	replace
LIR	read	**SUP**	delete
P	page(s)		

List of International Signalling Point Codes (ISPC)
(According to ITU-T Recommendation Q.708 (03/99))
(Position on 1 January 2000)

(Annex to ITU Operational Bulletin No. 707 – 1.I.2000)

(Amendment No. 10)

	Country/ geographical area	ISPC	Unique name of the signalling point	Name of the signalling point operator	
P 4	***Austria***				**ADD**
		2-025-6	Wien	Callino Gesellschaft für Telekommunikationsdienste	
P 5	***Austria***		2-066-7 Salzburg and 2-067-5 Linz	CityKom Austria	**LIR**
		2-066-7	Salzburg	tele.ring Telekom Service	
		2-067-5	Linz	tele.ring Telekom Service	
P 18	***Italy***		Pied.com S.p.A.		**LIR**
		2-003-0	Genova/V. de Marini, 1-Torre WTC	NOICOM S.p.A.	
P 18	***Italy***		Esprit		**LIR**
		2-043-0	Milano/Via Visconti di Modrone 12	GST Italia S.r.l.	
P 18	***Italy***		SIT		**LIR**
		2-043-1	Lucca/Viale Puccini Trav. 11, 134	S.I.T. Telecomunicazioni S.p.A.	
P 19	***Italy***		FCI		**LIR**
		2-048-2	Milano/Via Archimede 10	FaciliCom International S.r.l.	
P 19	***Italy***		Tele2 Europe		**LIR**
		2-048-4	Milano/Segrate	Tele2 Italia S.p.A.	
		2-050-3	Roma/Vicolo C. della Strega, 41	Tele2 Italia S.p.A.	

P 19 ***Italy*** Flashnet **LIR**

2-049-0	Milano/Via Caldera 21	CyberNet Italia S.p.A.
2-049-7	Roma/Via Veneziani 58	CyberNet Italia S.p.A.

P 19 ***Italy*** **ADD**

2-003-1	Milano/Via Caracciolo, 51	Metroweb S.p.A.
2-003-2	Legnano (MI)/Corso Sempione, 255	Telecom3 Voce, Internet etc
2-003-3	Venezia (VE) Via Breo, 2 Fossò	Attika Telcomunication
2-003-4	Milano Via Fava, 20 20125	Blixer
2-003-5	Roma-Via Settebagni, 390	Elsacom S.p.A.
2-003-6	Trezzano sul Naviglio Via C. Colombo 49	Elsacom S.p.A.
2-003-7	Bologna Via Silvani 2	peppER.com
2-042-3	Milano/Via Alcide de Gasperi, 2	Primus Telecommunications
2-093-0	Parma Via Goito 14	peppER.com
2-093-1	Nola (NA) Via Polveriera, 130	Mediterranea.Com
2-093-2	Bari Via Traversa, 310 di Via Napoli, 49g	Mediterranea.Com
2-093-3	Milano Via Torino, 21	PICUS S.p.A.
2-093-4	Cesano Maderno (MI) Via Magenta, 64	EDISON Servizi S.p.A.
2-093-5	Milano (Turro) Via Giocosa, 19	CENTAX Telecom S.r.l.
2-093-6	Milano/Via Caldera, 21/F	World Online S.r.l.
2-093-7	Milano/Via C. Gluk, 35	Kast Telecom S.r.l.
2-094-0	Roma/Via S. Martini, 127/129	Colt Telecom S.p.A.

P 24 ***Netherlands*** **ADD**

2-008-0	Amsterdam MITAG	VLT Nederland B.V.

P 33 ***United Kingdom*** **ADD**

2-153-0	Amsterdam M	Concert
2-153-1	Nokia Dx220	ABS Telecom
2-153-2	Lon 2	iBasis
2-153-3	Aldgate T32	T3 Telecommunications Ltd
2-153-4	HAW1/London	Phone Home & Away
2-153-5	London	ITXC Ltd
2-153-6	PCXSS71	Wilco Telephony Ltd
2-153-7	Softamed	Global Network Communications Ltd
2-179-1	HOBO-1	Hobollion Technology Ltd.
2-188-3	London STP	Pacific Gateway

P 28 ***Singapore*** **ADD**

5-052-2	SESS Model 2000 Software Service Centre	Singapore Telecom
5-052-3	GNC (Global Network Comcentre)	Singapore Telecom
5-053-0	KPJI switch	StarHub Pte Ltd.
5-053-1	TSGI switch	StarHub Pte Ltd.

P 29 ***Sweden*** Intertel AB **LIR**

2-080-1	Stockholm (ISC1)	Utfors Stockholm AB

Country/ geographical area	Approving organization for ISPCs
P 56 ***Singapore*** **LIR**	
Singapore	Infocomm Development Authority of Singapore 8 Temasek Boulevard #13-00 Suntec Tower Three Singapore 038988 Tel: +65 211 1847 Fax: +65 211 2218 E-mail: Lim_Hsueh_Wei@ida.gov.sg

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ISPC: International Signalling Point Codes.
Codes de points sémaphores internationaux (CPSI).
Códigos de puntos de señalización internacional (CPSI).

List of ITU Carrier Codes
(according to ITU-T Recommendation M.1400)
(Position on 15 April 2000)

(Annex to ITU Operational Bulletin No. 714 – 15.IV.2000)

(Amendment No. 3)

Country or area/ISO code Company Name/Address	Company Code (carrier code)	Contact
P 44 ***United Arab Emirates / ARE*** The Emirates Telecommunications Corporation Ltd. **LIR**		
Emirates Telecommunications Corporation (ETISALAT) P.O. Box 3838 ABU DHABI	ETSLAT	Ali M.R. Amiri Executive Vice President, Operations Tel: +971 2 618 4535 Fax: +971 267 72930 E-mail: mopsho@emirates.net.ae
P 22 ***India (Republic of) / IND*** **ADD**		
Department of Telecommunications Department of Telecom Services Sanchar Bhawan 20-Ashok Road NEW DELHI 110 001	DTS	Advisor (Operations) Executive Vice President, Operations Tel: +91 11 3032317 Fax: +91 11 371 7016 E-mail: nrmokhariwale@vsnl.com
P 24 ***Italy / ITA*** Noicom S.p.A. **LIR**		
Noicom S.p.A. Corso Svizzera, 185 I-10149 TORINO	NOICOM	Maurizio Bechis Technical Director Tel: +39 011 740990 Fax: +39 011 740885 E-mail: m.bechis@noicom.it

List of Signalling Area/Network Codes (SANC)
(Complement to ITU-T Recommendation Q.708 (03/99))
(Position on 1 March 2000)

(Annex to ITU Operational Bulletin No. 711 – 1.III.2000)

(Amendment No. 5)

Numerical order ADD

P	4	2-095	Italy
P	5	2-154	United Kingdom of Great Britain and Northern Ireland

Alphabetical order ADD

P	15	2-095	Italy
P	19	2-154	United Kingdom of Great Britain and Northern Ireland

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SANC: Signalling Area/Network Codes.
Codes de zone/réseau sémaphore (CZRS).
Códigos de zona/red de señalización (CZRS).

List of ITU-T Recommendation E.164 assigned country codes
(Complement to ITU-T Recommendation E.165 (05/1997))
(Position on 1 June 2000)

Note by the TSB

The List of ITU-T Recommendation E.164 assigned country codes has been updated and published in Annex to this Operational Bulletin. It replaces the previous one published as Annex to the ITU Operational Bulletin No. 687 of 1 March 1999. Since then, various new assignments have been made, and they have been published in the ITU Operational Bulletin up to No. 715 of 1 May 2000 (last amendment).

This List includes:

– a list of ITU-T Recommendation E.164 assigned country codes in order of country codes;

– a list of ITU-T Recommendation E.164 assigned country codes in alphabetical order of countries/geographical areas.

An official designation has been modified in this List (as from 17 May 2000) :

Old designation	*New designation*
Venezuela (Republic of)	Venezuela (Bolivarian Republic of)

List of Issuer Identifier Numbers for the international telecommunication charge card (in accordance with ITU-T Recommendation E.118) (Position on 1 October 1998)

(Annex to ITU Operational Bulletin No. 677 – 1.X.1998)

(Amendment No. 24)

P 27 Italy **ADD**

Country/ geographical area	Company Name/Address	Issuer Identifier Number	Contact	Effective date of usage
Italy	**Blu S.p.A.** Via Cintia Svincolo Fuorigrotta 80126 NAPOLI	89 39 98	Dr. A. Tagliaferro Blu S.p.A. Via A. Nibby 10 00161 ROMA Tel: +39 06 8521 6207 Fax: +39 06 8521 6290	1.V.2000

P 27 **ADD** Jordan

Country/ geographical area	Company Name/Address	Issuer Identifier Number	Contact	Effective date of usage
Jordan	**MobileCom** P.O. Box 851 114 Al Swefiyah 11 185 AMMAN	89 962 77	Mr Khamis Wadi MobileCom P.O. Box 851 114 Al Swefiyah 11 185 AMMAN Tel: +962 6 585 7777 (ext 1010) Fax: +962 6 5863641 E-mail: joseph.jabour@mobile.com.jo	17.IV.2000

Approving organization for IINs of listed countries (ITU-T Rec. E.118)

P 44 **ADD** Jordan

Country/geographical area	Approving Organisation
Jordan	Telecommunications Regulatory Commission (TRC) Directorate General P.O. Box 850967 AMMAN 11185 Jordan Tel: +962 6 586 2027 Fax: +962 6 586 3643 Email: webmaster@trc.gov.jo Email: trc@trc.gov.jo

Annex to ITU Operational Bulletin
No. 717 – 1.VI.2000

INTERNATIONAL TELECOMMUNICATION UNION

ITU-T
TELECOMMUNICATION STANDARDIZATION SECTOR OF ITU

COMPLEMENT TO ITU-T RECOMMENDATION E.164 (05/1997)

LIST OF ITU-T RECOMMENDATION E.164 ASSIGNED COUNTRY CODES

(POSITION ON 1 JUNE 2000)

Geneva, 2000

List of ITU-T Recommendation E.164 assigned country codes

Note by the TSB

1. This List of ITU-T Recommendation E.164 assigned country codes replaces the previous one published as Annex to the ITU Operational Bulletin No. 687 of 1 March 1999. Since then, various new assignments have been made, and they have been published in the ITU Operational Bulletin up to No. 715 of 1 May 2000.

2. This List includes:
   - a list of ITU-T Recommendation E.164 assigned country codes - numerical order;
   - a list of ITU-T Recommendation E.164 assigned country codes - alphabetical order.

3. This List will be updated by numbered series of amendments published in the ITU Operational Bulletin. Furthermore, the information contained in this Annex is also available on the ITU home page http://www.itu.int/itu-t/bulletin/index.html, and can be consulted by subscribers by remote access.

4. Please address any comments, suggestions or modifications concerning this publication to the Director of the TSB:

Tel: +41 22 730 5887
Fax: +41 22 730 5853
E-mail: john.tar@itu.int

5. The designations employed and the presentation of material in this List do not imply the expression of any opinion whatsoever on the part of the ITU concerning the legal status of any country or geographical area, or of its authorities.

List of ITU-T Recommendation E.164 assigned country codes - numerical order

Country code	Country, Geographical area or Global service	Note
0	Reserved	a
1	Anguilla	b
1	Antigua and Barbuda	b
1	Bahamas (Commonwealth of the)	b
1	Barbados	b
1	Bermuda	b
1	British Virgin Islands	b
1	Canada	b
1	Cayman Islands	b
1	Dominica (Commonwealth of)	b
1	Dominican Republic	b
1	Grenada	b
1	Guam	b
1	Jamaica	b
1	Montserrat	b
1	Northern Mariana Islands (Commonwealth of the)	b
1	Puerto Rico	b
1	Saint Kitts and Nevis	b
1	Saint Lucia	b
1	Saint Vincent and the Grenadines	b
1	Trinidad and Tobago	b
1	Turks and Caicos Islands	b
1	United States of America	b
1	United States Virgin Islands	b
20	Egypt (Arab Republic of)	
210	Spare code	
211	Spare code	
212	Morocco (Kingdom of)	
213	Algeria (People's Democratic Republic of)	
214	Spare code	
215	Spare code	
216	Tunisia	
217	Spare code	
218	Libya (Socialist People's Libyan Arab Jamahiriya)	
219	Spare code	
220	Gambia (Republic of the)	
221	Senegal (Republic of)	
222	Mauritania (Islamic Republic of)	
223	Mali (Republic of)	
224	Guinea (Republic of)	
225	Côte d'Ivoire (Republic of)	
226	Burkina Faso	
227	Niger (Republic of the)	
228	Togolese Republic	
229	Benin (Republic of)	
230	Mauritius (Republic of)	
231	Liberia (Republic of)	

List of ITU-T Recommendation E.164 assigned country codes - numerical order

Country code	Country, Geographical area or Global service	Note
232	Sierra Leone	
233	Ghana	
234	Nigeria (Federal Republic of)	
235	Chad (Republic of)	
236	Central African Republic	
237	Cameroon (Republic of)	
238	Cape Verde (Republic of)	
239	Sao Tome and Principe (Democratic Republic of)	
240	Equatorial Guinea (Republic of)	
241	Gabonese Republic	
242	Congo (Republic of the)	
243	Democratic Republic of the Congo	
244	Angola (Republic of)	
245	Guinea-Bissau (Republic of)	
246	Diego Garcia	
247	Ascension	
248	Seychelles (Republic of)	
249	Sudan (Republic of the)	
250	Rwandese Republic	
251	Ethiopia (Federal Democratic Republic of)	
252	Somali Democratic Republic	
253	Djibouti (Republic of)	
254	Kenya (Republic of)	
255	Tanzania (United Republic of)	
256	Uganda (Republic of)	
257	Burundi (Republic of)	
258	Mozambique (Republic of)	
259	Spare code	
260	Zambia (Republic of)	
261	Madagascar (Republic of)	
262	Reunion (French Department of)	
263	Zimbabwe (Republic of)	
264	Namibia (Republic of)	
265	Malawi	
266	Lesotho (Kingdom of)	
267	Botswana (Republic of)	
268	Swaziland (Kingdom of)	
269	Comoros (Islamic Federal Republic of the)	c
269	Mayotte (Collectivité territoriale de la République française)	c
27	South Africa (Republic of)	
280	Spare code	m
281	Spare code	m
282	Spare code	m
283	Spare code	m
284	Spare code	m
285	Spare code	m
286	Spare code	m
287	Spare code	m

List of ITU-T Recommendation E.164 assigned country codes - numerical order

Country code	Country, Geographical area or Global service	Note
288	Spare code	m
289	Spare code	m
290	Saint Helena	
291	Eritrea	
292	Spare code	
293	Spare code	
294	Spare code	
295	Spare code	
296	Spare code	
297	Aruba	
298	Faroe Islands	
299	Greenland (Denmark)	
30	Greece	
31	Netherlands (Kingdom of the)	
32	Belgium	
33	France	
34	Spain	
350	Gibraltar	
351	Portugal	
352	Luxembourg	
353	Ireland	
354	Iceland	
355	Albania (Republic of)	
356	Malta	
357	Cyprus (Republic of)	
358	Finland	
359	Bulgaria (Republic of)	
36	Hungary (Republic of)	
370	Lithuania (Republic of)	
371	Latvia (Republic of)	
372	Estonia (Republic of)	
373	Moldova (Republic of)	
374	Armenia (Republic of)	
375	Belarus (Republic of)	
376	Andorra (Principality of)	
377	Monaco (Principality of)	
378	San Marino (Republic of)	
379	Vatican City State	f
380	Ukraine	
381	Yugoslavia (Federal Republic of)	
382	Spare code	
383	Spare code	
384	Spare code	
385	Croatia (Republic of)	
386	Slovenia (Republic of)	
387	Bosnia and Herzegovina	
388	Group of countries, shared code	n
389	The Former Yugoslav Republic of Macedonia	

List of ITU-T Recommendation E.164 assigned country codes - numerical order

Country code	Country, Geographical area or Global service	Note
39	Italy	
39	Vatican City State	
40	Romania	
41	Switzerland (Confederation of)	
420	Czech Republic	
421	Slovak Republic	
422	Spare code	
423	Liechtenstein (Principality of)	
424	Spare code	
425	Spare code	
426	Spare code	
427	Spare code	
428	Spare code	
429	Spare code	
43	Austria	
44	United Kingdom of Great Britain and Northern Ireland	
45	Denmark	
46	Sweden	
47	Norway	
48	Poland (Republic of)	
49	Germany (Federal Republic of)	
500	Falkland Islands (Malvinas)	
501	Belize	
502	Guatemala (Republic of)	
503	El Salvador (Republic of)	
504	Honduras (Republic of)	
505	Nicaragua	
506	Costa Rica	
507	Panama (Republic of)	
508	Saint Pierre and Miquelon (Collectivité territoriale de la République française)	
509	Haiti (Republic of)	
51	Peru	
52	Mexico	
53	Cuba	
54	Argentine Republic	
55	Brazil (Federative Republic of)	
56	Chile	
57	Colombia (Republic of)	
58	Venezuela (Bolivarian Republic of)	
590	Guadeloupe (French Department of)	
591	Bolivia (Republic of)	
592	Guyana	
593	Ecuador	
594	French Guiana (French Department of)	
595	Paraguay (Republic of)	
596	Martinique (French Department of)	
597	Suriname (Republic of)	

List of ITU-T Recommendation E.164 assigned country codes - numerical order

Country code	Country, Geographical area or Global service	Note
598	Uruguay (Eastern Republic of)	
599	Netherlands Antilles	
60	Malaysia	
61	Australia	i
62	Indonesia (Republic of)	
63	Philippines (Republic of the)	
64	New Zealand	
65	Singapore (Republic of)	
66	Thailand	
670	East Timor	
671	Spare code	
672	Australian External Territories	g
673	Brunei Darussalam	
674	Nauru (Republic of)	
675	Papua New Guinea	
676	Tonga (Kingdom of)	
677	Solomon Islands	
678	Vanuatu (Republic of)	
679	Fiji (Republic of)	
680	Palau (Republic of)	
681	Wallis and Futuna (Territoire français d'outre-mer)	
682	Cook Islands	
683	Niue	
684	American Samoa	
685	Samoa (Independent State of)	
686	Kiribati (Republic of)	
687	New Caledonia (Territoire français d'outre-mer)	
688	Tuvalu	
689	French Polynesia (Territoire français d'outre-mer)	
690	Tokelau	
691	Micronesia (Federated States of)	
692	Marshall Islands (Republic of the)	
693	Spare code	
694	Spare code	
695	Spare code	
696	Spare code	
697	Spare code	
698	Spare code	
699	Spare code	
7	Kazakstan (Republic of)	b
7	Russian Federation	b
800	International Freephone Service	
801	Spare code	d
802	Spare code	d
803	Spare code	d
804	Spare code	d
805	Spare code	d
806	Spare code	d

List of ITU-T Recommendation E.164 assigned country codes - numerical order

Country code	Country, Geographical area or Global service	Note
807	Spare code	d
808	Reserved for International Shared Cost Service (ISCS)	
809	Spare code	d
81	Japan	
82	Korea (Republic of)	
830	Spare code	m
831	Spare code	m
832	Spare code	m
833	Spare code	m
834	Spare code	m
835	Spare code	m
836	Spare code	m
837	Spare code	m
838	Spare code	m
839	Spare code	m
84	Viet Nam (Socialist Republic of)	
850	Democratic People's Republic of Korea	
851	Spare code	
852	Hongkong	
853	Macau	
854	Spare code	
855	Cambodia (Kingdom of)	
856	Lao People's Democratic Republic	
857	Spare code	
858	Spare code	
859	Spare code	
86	China (People's Republic of)	
870	Inmarsat SNAC	
871	Inmarsat (Atlantic Ocean-East)	
872	Inmarsat (Pacific Ocean)	
873	Inmarsat (Indian Ocean)	
874	Inmarsat (Atlantic Ocean-West)	
875	Reserved - Maritime Mobile Service Applications	
876	Reserved - Maritime Mobile Service Applications	
877	Reserved - Maritime Mobile Service Applications	
878	Reserved - Universal Personal Telecommunication Service (UPT)	e
879	Reserved for national non-commercial purposes	
880	Bangladesh (People's Republic of)	
881	Global Mobile Satellite System (GMSS), shared code	k
882	International Networks, shared code	j
883	Spare code	
884	Spare code	
885	Spare code	
886	Reserved	
887	Spare code	
888	Reserved for future global service	
889	Spare code	
890	Spare code	m

List of ITU-T Recommendation E.164 assigned country codes - numerical order

Country code	Country, Geographical area or Global service	Note
891	Spare code	m
892	Spare code	m
893	Spare code	m
894	Spare code	m
895	Spare code	m
896	Spare code	m
897	Spare code	m
898	Spare code	m
899	Spare code	m
90	Turkey	
91	India (Republic of)	
92	Pakistan (Islamic Republic of)	
93	Afghanistan (Islamic State of)	
94	Sri Lanka (Democratic Socialist Republic of)	
95	Myanmar (Union of)	
960	Maldives (Republic of)	
961	Lebanon	
962	Jordan (Hashemite Kingdom of)	
963	Syrian Arab Republic	
964	Iraq (Republic of)	
965	Kuwait (State of)	
966	Saudi Arabia (Kingdom of)	
967	Yemen (Republic of)	
968	Oman (Sultanate of)	
969	Reserved - reservation currently under investigation	
970	Reserved	l
971	United Arab Emirates	h
972	Israel (State of)	
973	Bahrain (State of)	
974	Qatar (State of)	
975	Bhutan (Kingdom of)	
976	Mongolia	
977	Nepal	
978	Spare code	
979	Reserved for the International Premium Rate Service (IPRS)	
98	Iran (Islamic Republic of)	
990	Spare code	
991	Trial of a proposed new international telecommunication public correspondence service, shared code	
992	Tajikistan (Republic of)	
993	Turkmenistan	
994	Azerbaijani Republic	
995	Georgia	
996	Kyrgyz Republic	
997	Spare code	
998	Uzbekistan (Republic of)	
999	Spare code	

List of ITU-T Recommendation E.164 assigned country codes - alphabetical order

Country code	Country, Geographical area or Global service	Note
93	Afghanistan (Islamic State of)	
355	Albania (Republic of)	
213	Algeria (People's Democratic Republic of)	
684	American Samoa	
376	Andorra (Principality of)	
244	Angola (Republic of)	
1	Anguilla	b
1	Antigua and Barbuda	b
54	Argentine Republic	
374	Armenia (Republic of)	
297	Aruba	
247	Ascension	
61	Australia	i
672	Australian External Territories	g
43	Austria	
994	Azerbaijani Republic	
1	Bahamas (Commonwealth of the)	b
973	Bahrain (State of)	
880	Bangladesh (People's Republic of)	
1	Barbados	b
375	Belarus (Republic of)	
32	Belgium	
501	Belize	
229	Benin (Republic of)	
1	Bermuda	b
975	Bhutan (Kingdom of)	
591	Bolivia (Republic of)	
387	Bosnia and Herzegovina	
267	Botswana (Republic of)	
55	Brazil (Federative Republic of)	
1	British Virgin Islands	b
673	Brunei Darussalam	
359	Bulgaria (Republic of)	
226	Burkina Faso	
257	Burundi (Republic of)	
855	Cambodia (Kingdom of)	
237	Cameroon (Republic of)	
1	Canada	b
238	Cape Verde (Republic of)	
1	Cayman Islands	b
236	Central African Republic	
235	Chad (Republic of)	
56	Chile	
86	China (People's Republic of)	
57	Colombia (Republic of)	
269	Comoros (Islamic Federal Republic of the)	c
242	Congo (Republic of the)	

List of ITU-T Recommendation E.164 assigned country codes - alphabetical order

Country code	Country, Geographical area or Global service	Note
682	Cook Islands	
506	Costa Rica	
225	Côte d'Ivoire (Republic of)	
385	Croatia (Republic of)	
53	Cuba	
357	Cyprus (Republic of)	
420	Czech Republic	
850	Democratic People's Republic of Korea	
243	Democratic Republic of the Congo	
45	Denmark	
246	Diego Garcia	
253	Djibouti (Republic of)	
1	Dominica (Commonwealth of)	b
1	Dominican Republic	b
670	East Timor	
593	Ecuador	
20	Egypt (Arab Republic of)	
503	El Salvador (Republic of)	
240	Equatorial Guinea (Republic of)	
291	Eritrea	
372	Estonia (Republic of)	
251	Ethiopia (Federal Democratic Republic of)	
500	Falkland Islands (Malvinas)	
298	Faroe Islands	
679	Fiji (Republic of)	
358	Finland	
33	France	
594	French Guiana (French Department of)	
689	French Polynesia (Territoire français d'outre-mer)	
241	Gabonese Republic	
220	Gambia (Republic of the)	
995	Georgia	
49	Germany (Federal Republic of)	
233	Ghana	
350	Gibraltar	
881	Global Mobile Satellite System (GMSS), shared code	k
30	Greece	
299	Greenland (Denmark)	
1	Grenada	b
388	Group of countries, shared code	n
590	Guadeloupe (French Department of)	
1	Guam	b
502	Guatemala (Republic of)	
224	Guinea (Republic of)	
245	Guinea-Bissau (Republic of)	
592	Guyana	
509	Haiti (Republic of)	
504	Honduras (Republic of)	

List of ITU-T Recommendation E.164 assigned country codes - alphabetical order

Country code	Country, Geographical area or Global service	Note
852	Hongkong	
36	Hungary (Republic of)	
354	Iceland	
91	India (Republic of)	
62	Indonesia (Republic of)	
871	Inmarsat (Atlantic Ocean-East)	
874	Inmarsat (Atlantic Ocean-West)	
873	Inmarsat (Indian Ocean)	
872	Inmarsat (Pacific Ocean)	
870	Inmarsat SNAC	
800	International Freephone Service	
882	International Networks, shared code	j
98	Iran (Islamic Republic of)	
964	Iraq (Republic of)	
353	Ireland	
972	Israel (State of)	
39	Italy	
1	Jamaica	b
81	Japan	
962	Jordan (Hashemite Kingdom of)	
7	Kazakstan (Republic of)	b
254	Kenya (Republic of)	
686	Kiribati (Republic of)	
82	Korea (Republic of)	
965	Kuwait (State of)	
996	Kyrgyz Republic	
856	Lao People's Democratic Republic	
371	Latvia (Republic of)	
961	Lebanon	
266	Lesotho (Kingdom of)	
231	Liberia (Republic of)	
218	Libya (Socialist People's Libyan Arab Jamahiriya)	
423	Liechtenstein (Principality of)	
370	Lithuania (Republic of)	
352	Luxembourg	
853	Macau	
261	Madagascar (Republic of)	
265	Malawi	
60	Malaysia	
960	Maldives (Republic of)	
223	Mali (Republic of)	
356	Malta	
692	Marshall Islands (Republic of the)	
596	Martinique (French Department of)	
222	Mauritania (Islamic Republic of)	
230	Mauritius (Republic of)	
269	Mayotte (Collectivité territoriale de la République française)	c
52	Mexico	

List of ITU-T Recommendation E.164 assigned country codes - alphabetical order

Country code	Country, Geographical area or Global service	Note
691	Micronesia (Federated States of)	
373	Moldova (Republic of)	
377	Monaco (Principality of)	
976	Mongolia	
1	Montserrat	b
212	Morocco (Kingdom of)	
258	Mozambique (Republic of)	
95	Myanmar (Union of)	
264	Namibia (Republic of)	
674	Nauru (Republic of)	
977	Nepal	
31	Netherlands (Kingdom of the)	
599	Netherlands Antilles	
687	New Caledonia (Territoire français d'outre-mer)	
64	New Zealand	
505	Nicaragua	
227	Niger (Republic of the)	
234	Nigeria (Federal Republic of)	
683	Niue	
1	Northern Mariana Islands (Commonwealth of the)	b
47	Norway	
968	Oman (Sultanate of)	
92	Pakistan (Islamic Republic of)	
680	Palau (Republic of)	
507	Panama (Republic of)	
675	Papua New Guinea	
595	Paraguay (Republic of)	
51	Peru	
63	Philippines (Republic of the)	
48	Poland (Republic of)	
351	Portugal	
1	Puerto Rico	b
974	Qatar (State of)	
262	Reunion (French Department of)	
40	Romania	
7	Russian Federation	b
250	Rwandese Republic	
290	Saint Helena	
1	Saint Kitts and Nevis	b
1	Saint Lucia	b
508	Saint Pierre and Miquelon (Collectivité territoriale de la République française)	
1	Saint Vincent and the Grenadines	b
685	Samoa (Independent State of)	
378	San Marino (Republic of)	
239	Sao Tome and Principe (Democratic Republic of)	
966	Saudi Arabia (Kingdom of)	
221	Senegal (Republic of)	
248	Seychelles (Republic of)	

List of ITU-T Recommendation E.164 assigned country codes - alphabetical order

Country code	Country, Geographical area or Global service	Note
232	Sierra Leone	
65	Singapore (Republic of)	
421	Slovak Republic	
386	Slovenia (Republic of)	
677	Solomon Islands	
252	Somali Democratic Republic	
27	South Africa (Republic of)	
34	Spain	
94	Sri Lanka (Democratic Socialist Republic of)	
249	Sudan (Republic of the)	
597	Suriname (Republic of)	
268	Swaziland (Kingdom of)	
46	Sweden	
41	Switzerland (Confederation of)	
963	Syrian Arab Republic	
992	Tajikistan (Republic of)	
255	Tanzania (United Republic of)	
66	Thailand	
389	The Former Yugoslav Republic of Macedonia	
228	Togolese Republic	
690	Tokelau	
676	Tonga (Kingdom of)	
991	Trial of a proposed new international telecommunication public correspondence service, shared code	
1	Trinidad and Tobago	b
216	Tunisia	
90	Turkey	
993	Turkmenistan	
1	Turks and Caicos Islands	b
688	Tuvalu	
256	Uganda (Republic of)	
380	Ukraine	
971	United Arab Emirates	h
44	United Kingdom of Great Britain and Northern Ireland	
1	United States of America	b
1	United States Virgin Islands	b
598	Uruguay (Eastern Republic of)	
998	Uzbekistan (Republic of)	
678	Vanuatu (Republic of)	
379	Vatican City State	f
39	Vatican City State	
58	Venezuela (Bolivarian Republic of)	
84	Viet Nam (Socialist Republic of)	
681	Wallis and Futuna (Territoire français d'outre-mer)	
967	Yemen (Republic of)	
381	Yugoslavia (Federal Republic of)	
260	Zambia (Republic of)	
263	Zimbabwe (Republic of)	
0	Reserved	a

List of ITU-T Recommendation E.164 assigned country codes - alphabetical order

Country code	Country, Geographical area or Global service	Note
886	Reserved	
970	Reserved	l
875	Reserved - Maritime Mobile Service Applications	
876	Reserved - Maritime Mobile Service Applications	
877	Reserved - Maritime Mobile Service Applications	
969	Reserved - reservation currently under investigation	
878	Reserved - Universal Personal Telecommunication Service (UPT)	e
888	Reserved for future global service	
808	Reserved for International Shared Cost Service (ISCS)	
879	Reserved for national non-commercial purposes	
979	Reserved for the International Premium Rate Service (IPRS)	
210	Spare code	
211	Spare code	
214	Spare code	
215	Spare code	
217	Spare code	
219	Spare code	
259	Spare code	
280	Spare code	m
281	Spare code	m
282	Spare code	m
283	Spare code	m
284	Spare code	m
285	Spare code	m
286	Spare code	m
287	Spare code	m
288	Spare code	m
289	Spare code	m
292	Spare code	
293	Spare code	
294	Spare code	
295	Spare code	
296	Spare code	
382	Spare code	
383	Spare code	
384	Spare code	
422	Spare code	
424	Spare code	
425	Spare code	
426	Spare code	
427	Spare code	
428	Spare code	
429	Spare code	
671	Spare code	
693	Spare code	
694	Spare code	
695	Spare code	
696	Spare code	

List of ITU-T Recommendation E.164 assigned country codes - alphabetical order

Country code	Country, Geographical area or Global service	Note
697	Spare code	
698	Spare code	
699	Spare code	
801	Spare code	d
802	Spare code	d
803	Spare code	d
804	Spare code	d
805	Spare code	d
806	Spare code	d
807	Spare code	d
809	Spare code	d
830	Spare code	m
831	Spare code	m
832	Spare code	m
833	Spare code	m
834	Spare code	m
835	Spare code	m
836	Spare code	m
837	Spare code	m
838	Spare code	m
839	Spare code	m
851	Spare code	
854	Spare code	
857	Spare code	
858	Spare code	
859	Spare code	
883	Spare code	
884	Spare code	
885	Spare code	
887	Spare code	
889	Spare code	
890	Spare code	m
891	Spare code	m
892	Spare code	m
893	Spare code	m
894	Spare code	m
895	Spare code	m
896	Spare code	m
897	Spare code	m
898	Spare code	m
899	Spare code	m
978	Spare code	
990	Spare code	
997	Spare code	
999	Spare code	

Notes common to Numerical and Alphabetical lists of ITU-T Recommendation E.164 assigned country codes

Note:

a Assignment of all 0XX codes will be feasible after 31 December 2000. Assignment of some of these codes may be possible as soon as 1 January 1997; this question is currently under study.

b Integrated numbering plan.

c Code shared between Mayotte Island and Comoros (Islamic Federal Republic of the).

d Will be allocated, only after all three digit codes from groups of ten are exhausted.

e The resource +878 878 has been reserved for Universal Personal Telecommunications UPT field trials via IP-based technology. The format of the numbering resource is +878 878 00000 XXXX. The block of numbers XXXX will be administered by TSB.

f Reserved for future use.

g Including Australian Antarctic Territory, and Norfolk Island.

h U.A.E.: Abu Dhabi, Ajman, Dubai, Fujeirah, Ras Al Khaimah, Sharjah, Umm Al Qaiwain.

i Including Christmas Island and Cocos-Keeling Islands.

j Associated with shared country code 882, the following two-digit identification code reservations or assignments have been made for the international networks of:

Applicant	*Network*	*Country Code and Identification Code*	*Status*
British Telecommunications plc	Global Office Application	+882 10	Assigned
Singapore Telecommunications Pte Ltd (ST)	Asia Pacific Mobile Telecommunications (APMT)	+882 11	Reserved
MCIWorldCom	HyperStream International (HSI) Data Network	+882 12	Assigned
Telespazio S.p.A.	EMS Regional Mobile Satellite System	+882 13	Assigned
GTE	GTE International Networks	+882 14	Reserved
Telstra	ITERRA Digital Network	+882 15	Reserved
United Arab Emirates Administration	Thuraya RMSS Network	+882 16	Assigned
AT&T	AT&T International ATM Network	+882 17	Reserved
Teledesic	Teledesic Global Network	+882 18	Reserved
Telecom Italia	Telecom Italia Global Network	+882 19	Reserved
Asia Cellular Satellite (ACeS)	Garuda Mobile Telecommunication Satellite System	+882 20	Reserved
Ameritech	Ameritech's Gateway Global Service, Inc. (AGGSI) network	+882 21	Reserved
Cable & Wireless plc	Cable & Wireless Global Network	+882 22	Assigned
Sita-Equant Joint Venture	Sita-Equant Network	+882 23	Reserved
Telia AB	Telia multinational ATM Network	+882 24	Reserved
Constellation Communications, Inc.	Constellation System	+882 25	Reserved
SBC Communications Inc.	Global Data Network	+882 26	Reserved

k Associated with shared country code 881, the following one-digit identification code have been made for the GMSS networks:

Network	*Country Code and Identification Code*	*Status*
ICO Global Communications	+881 0 and +881 1	Assigned
Ellipso	+881 2 and +881 3	Reserved
Iridium	+881 6 and +881 7	Assigned
Globalstar	+881 8 and +881 9	Assigned

l Reserved for the Palestinian Authority.

m Reserved for E.164 country code expansion.

n Associated with shared country code 388 for Group of countries, the following one-digit identification code has been assigned to the network ETNS (European Telephony Numbering Space) +388 3.

Spare country codes of the list of ITU-T Recommendation E.164

Spare codes that may be allocated as country codes or global service codes

Spare codes with a note

280, 281, 282, 283, 284, 285, 286, 287, 288, 289

801, 802, 803, 804, 805, 806, 807, 809

830, 831, 832, 833, 834, 835, 836, 837, 838, 839

890, 891, 892, 893, 894, 895, 896, 897, 898, 899

Spare codes without a note

210, 211, 214, 215, 217, 219

259

292, 293, 294, 295, 296

382, 383, 384

422, 424, 425, 426, 427, 428, 429

671, 693, 694, 695, 696, 697, 698, 699

851, 854, 857, 858, 859

883, 884, 885, 887, 889

978

990, 997, 999

AMENDMENTS

Amendment No.	Operational Bulletin No.	Country
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