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Postal

ANNEX I

SECTION 2.3.3.16

CCITT DRAFT RECOMMENDATION ON THE NUMBERING PLAN FOR PUBLIC DATA NETWORKS

Draft recommendation X

International numbering plan for public data networks

The purpose of this International Numbering Plan is to facilitate the introduction of public data networks and provide for their interworking on a worldwide basis.

1. Design considerations

The design considerations that form the basis of this Plan are as follows :

- 1.1 that there could be a number of public data networks in a country*;
- 1.2 that where a number of public data networks are to be established in a country*, it should not be mandatory to integrate the numbering plans of the various networks;
- 1.3 that the International Numbering Plan should permit the identification of a called country* as well as a specific public data network in that country*;
- 1.4 that the number of digits comprising the code used to identify a country* and a specific public data network in that country* should be the same for all countries*;
- 1.5 that a national data number assigned to a data terminal should be unique within a particular national network. This national data number should form part of the international data number which should also be unique on a worldwide basis;
- 1.6 that the number of digits to be used in an international data number should be governed by national and international requirements but a reasonable limit on the overall number of digits should be imposed;
- 1.7 that the Numbering Plan should make provision for the interworking of public data networks with data terminals on public telephone and telex** networks;
- 1.8 that the international Numbering Plan should provide for substantial spare capacity to accommodate future requirements;
- 1.9 that the Numbering Plan should not preclude the possibility of a single national network providing an integrated telecommunications system for services of all kinds;
- 1.10 that where multiple RPOA facilities exist providing service to the same country*, provision for the selection of a specific RPOA facility should be allowed for in the Facility Request part of the Selection Signals.

2. Characteristics and application of the Numbering Plan

2.1 Number system

2.1.1 The 10 digit numeric character set 0 - 9 should be used for numbers (or addresses) assigned to data terminals on public data networks. This principle should apply to both national and international data numbers.

2.1.2 Use of the above number system will make it possible for data terminals on public data networks to interwork with data terminals on public telephone and telex networks.

* Country or geographical area

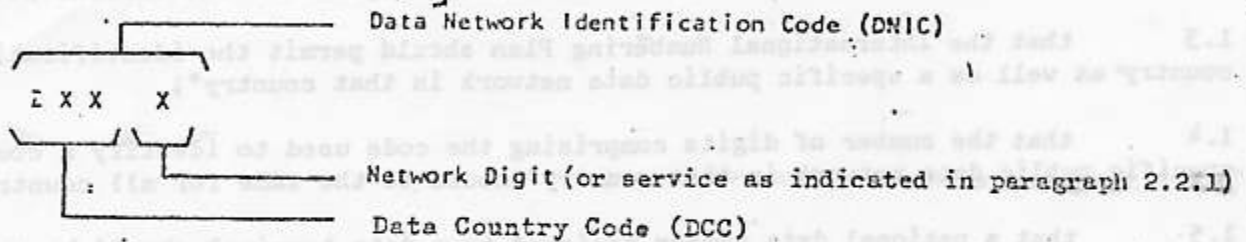
** The term "telex" employed in this Recommendation, includes TWX networks.

2 Data network identification codes

2.2.1 A data network identification code (DNIC) should be assigned to each public data network or, possibly where all networks are contained within an integrated numbering scheme, to each specific service.

2.2.2 All data network identification codes (DNIC) should consist of 4 digits. The first 3 digits should always identify a country* and could be regarded as a data country* code (DCC). The fourth, or network digit, should identify a specific data network or service in the country* as indicated in 2.2.1.

2.2.3 Each country* should be assigned at least one 3 digit data country* code (DCC). The data country* code (DCC) in conjunction with the fourth digit can identify up to 10 public data networks. The format for data network identification codes (DNIC) should be as indicated below:



X - denotes any digit from 0 through 9

Z - denotes any digit from 2 through 7
as indicated in 2.2.4

2.2.4 In the system of data network identification codes, the first digit of such codes should be in accordance with the following list.

- 0 - } Reserved
- 1 - }
- 2 - }
- 3 - }
- 4 - }
- 5 - } For data network identification codes (DNIC)
- 6 - }
- 7 - }
- 8 - For interworking with telex networks
- 9 - For interworking with telephone networks

Note 1 : The allocation of codes for non-zoned services, such as : Marine Satellite Services, is for further study. (Refer to Joint Working Party SMM). The following points could be considered :

- select a data country* code (DCC) in each zone to indicate the location, or
- use an escape DNIC such as : 11XX.

Note 2 : Details on the numbering plan aspects of interworking between public data networks and public telephone and telex networks will be given in another Recommendation.

2.2.5 The system of data network identification codes (DNIC) indicated in 2.2.3 and 2.2.4 will provide for 600 data country* code (DCC) and a theoretical maximum of 6 000 DNIC.

2.2.6 Should a country* have more than 10 public data networks, an additional data country* code(s)(DCC) would be assigned to it.

2.2.7 A list of data country* codes (DCC) to be used in the development of data network identification codes (DNIC) is given in Appendix B to this Recommendation. This list was prepared in accordance with the requirement that the first digit of a DNIC, which is also the first digit of the embedded data country* code (DCC) should be restricted to the digits 2-7 inclusive (ref:2.2.4). As first digits of data country* codes (DCC) the digits 2-7 are arranged to represent world zones.

2.2.8 The assignment of data country* codes (DCC) is to be administered by the CCITT. The assignment of network digits will be made nationally and the CCITT Secretariat notified.

The Member countries of the Union not mentioned in this list who wish to take part in the international data service or those members who require an additional data country* code(s) (DCC) should ask the Director of the CCITT for the assignment of an available three-digit data country* code(s) (DCC). In their request, they may indicate the available three-digit code(s) preferred.

Assignments by the Director of the CCITT of data country* codes (DCC) as well as assignments by countries* of network digits will be published in the Operational Bulletin of the ITU.

2.2.9 Examples indicating how data network identification codes (DNIC) could be developed, are given in Appendix A to this Recommendation.

2.3 International data number

2.3.1 A data terminal on a public data network when called from another country* should be addressed by its international data number. The international data number should consist of the data network identification code (DNIC) of the called public data network, followed by the network terminal number (NTN) of the called data terminal, or, for example, where an integrated numbering scheme exists within a country*, the data country* code (DCC) followed by the national number (NN) of the called terminal, i.e:

INTERNATIONAL DATA NUMBER = DNIC + NTN, or, DCC + NN

2.3.2 The network terminal number (NTN) should consist of the full address that is used when calling the data terminal from within its serving public data network. Alternatively, the national number (NN) should consist of the full address used when calling the data terminal from another terminal within the national integrated numbering scheme. These numbers should consist of all the digits necessary to uniquely identify the data terminal within the serving network and should not include any prefix (or access code) that might be employed for such calling.

2.4 Maximum number of digits

2.4.1 International data numbers could be of different lengths but should not consist of more than 14 digits. With the data network identification code (DNIC) fixed at 4 digits and the data country* code (DCC) fixed at 3 digits, it would, therefore, be possible to have a network terminal number (NTN) of 10 digits maximum, or, a national number (NN) of 11 digits maximum.

NOTE: The limit of 14 digits specified above applies exclusively to the address information. Adequate register capacity should be made available at data switching exchanges to accommodate the above address digits as well as any additional digits that might be introduced for signalling, or other purposes.

* Country or geographical area

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International prefix

2.5.1 For outgoing international calls from a public data network, an international prefix (or access code) would generally be required to access appropriate facilities for international interworking. The composition of this prefix is a national matter as the prefix does not form part of the international data number. However, the possible need to accommodate such a prefix with regard to digit register capacity in the calling network should be noted.

2.6 Number analysis - international calls between public data networks

2.6.1 In the case of international calls between public data networks, provision should be made at originating countries* to interpret the first three digits of the international data number. These digits constitute the data country* code (DCC) component of the data network identification code (DNIC) and identify the terminal country*. This information is required at the originating country* for routing purposes.

2.6.2 At originating countries,* it might also be necessary to interpret the fourth, or network digit, of a DNIC. Such interpretation would provide the identity of a specific network in a country* where several public data networks are in service. This information might be required for billing purposes or for the selection of specific routes to called networks.

Note: With regard to RPOA selection, see paragraph 1.10.

2.6.3 Countries* receiving international calls for public data networks should receive the complete international data number including the data network identification code (DNIC). However, where a country* of destination indicates that it does not wish to receive the data country* code (DCC) component of the DNIC, arrangements should be made to suppress the DCC.

2.6.4 For destination countries* with more than ten public data networks, interpretation of the first three digits of the DNIC (i.e., the data country* code (DCC)) would identify the group of networks within which the called network is included. Interpretation of the fourth or network digit of the DNIC would identify the called network in that group. Interpretation of the first three digits would also make it possible to verify that an incoming call has in fact reached the correct country*.

2.6.5 In the case of destination countries* where there are fewer than ten public data networks, the first three digits of the DNIC could provide the verification indicated in 2.6.4 above. Interpretation of the fourth, or network digit, of the DNIC would identify the specific network being called.

2.6.6 At transit countries,* the complete international data number including the data network identification code (DNIC) must always be received. Interpretation of the first three digits would identify the called country.* Interpretation of the fourth or network digit would identify a specific data network or a service in the called country.* Interpretation of the fourth digit might be required for billing purposes or for route selection beyond the transit country.*

2.6.7 Where a data call is to be routed beyond a transit country* through a second transit country,* the complete international data number, including the data network identification code (DNIC) should always be sent to the second transit country.* Where the data call is to be routed by a transit country* to the country* of destination, the arrangements indicated in section 2.6.3 should apply.

2.7 Directories and letterheads

2.7.1 Directories for public data networks should include information on the procedures to be followed for making international data calls. A diagram, such as that of Figure 1, could assist the customer in these procedures.

2.7.2 With regard to the prefix (or access code) shown in Figure 1, it should be noted that the same prefix (designated P) could be used for all three types of calls. The choice of prefix is, however, a national matter.

2.7.3 With regard to RPOA Selection (see Section 1.10) it should be noted that a RPOA facility request designator would be used only in international data calls. Provision of this facility as well as the designation of the RPOA facility selection designator is a national matter in the originating country.*

2.7.4 With regard to the publication of international data numbers on letterheads or other written material, it is recommended that the network terminal number (NTN) or national number (NN) should be easily distinguished within the international number, i.e. that there be a space between the 4 digit DNIC and the network terminal number (NTN) or, between the 3 digit data country* code (DCC) and the national number (NN) where the fourth digit of the DNIC is included in the national number (NN).



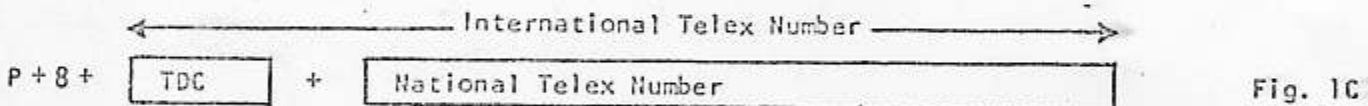
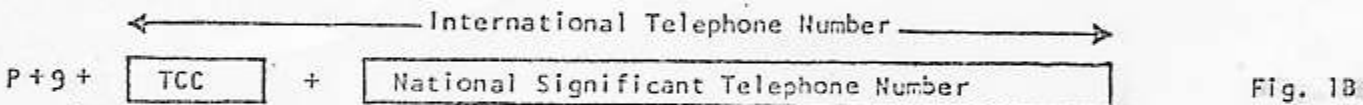
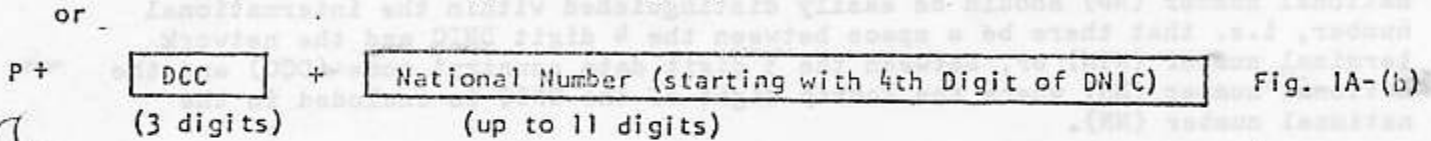
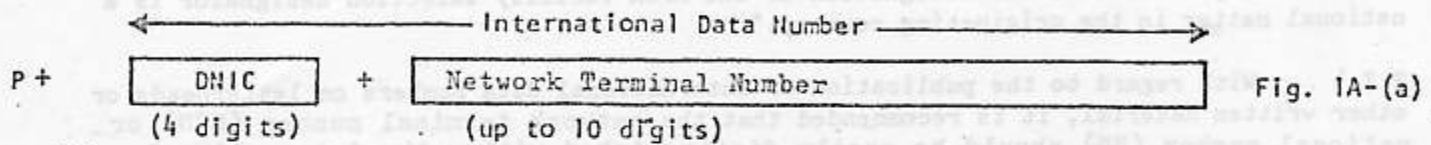
* Country or geographical area

International Calling Format

- Fig. 1A - International call between data terminals on public data networks.
 (a) - Called number is not part of a national integrated numbering scheme.
 (b) - Called number is part of a national integrated numbering scheme.

Fig. 1B - International call from a data terminal on a public data network to a data terminal on a public telephone network.

Fig. 1C - International call from a data terminal on a public data network to a data terminal on a telex network.



Legend

- P - International Prefix
- DNIC - Data Network Identification Code
- DCC - Data Country Code
- TCC - Telephone Country Code
- TDC - Telex Destination Code

Fig. 1

APPENDIX A

Development of Data Network Identification Codes (DNIC)ExamplesExample 1

In this example, it is assumed for illustrative purposes only, that the Netherlands has established its first public data network. To develop the data network identification code (DNIC) for this network, it would be necessary for the Netherlands to assign to it a network digit to follow the listed data country* code (DCC) 204 (see Annex 2). Assuming that the Netherlands selected the digit 0 as the network digit, the data network identification code (DNIC) for this initial network would be 2040.

Example 2

In this example, it is assumed for illustrative purposes only, that five public data networks have been established in Canada. To develop the data network identification codes for these networks, it would be necessary for Canada to assign to each of these networks a network digit to follow the listed data country* code (DCC) 302 (See Annex 2). Assuming that Canada assigned the network digits 0-4 to the five networks, the resulting data network identification codes (DNIC) would be 3020, 3021, 3022, 3023 and 3024.

Example 3

In this example, it is assumed for illustrative purposes only, that eight public data networks have been established in the United States of America. It is also assumed that network digits 0-7 would be assigned by the United States of America to follow the listed data country* code (DCC) 310 (see Annex 2). The data network identification codes (DNIC) thus formed for these eight networks would be 3100, 3101, 3102, 3103, 3104, 3105, 3106, and 3107.

If some time later, four additional public data networks were to be introduced in the United States of America, two of the four new networks could be assigned network digits 8 and 9 in association with data country* code (DCC) 310, to produce the data network identification codes (DNIC) 3108 and 3109.

For the remaining two public data networks, the United States of America would have to ask the CCITT for an additional data country* code (DCC). A request for a code next in sequence, i.e. 311, could be made if this code appeared to be spare. If code 311 could be made available it would be assigned to the United States of America. If it was not available, a spare code in the "300" series of data country* codes (DCC) would be assigned. Assuming data country* code (DCC) 311 was available and issued to the United States of America, the two remaining public data networks could be assigned network digits 0 and 1 in association with data country* code (DCC) 311, to produce the data network identification codes (DNIC) 3110 and 3111.

The data network identification codes (DNIC) for the 12 public data networks would then be 3100, 3101, 3102, 3103, 3104, 3105, 3106, 3107, 3108, 3109, 3110 and 3111.

Example 4

In this example it is assumed, for illustrative purposes only, that a public data network is to be established in each of two Caribbean islands that are part of the group of islands known as the French Antilles. The islands concerned are Guadeloupe and Martinique.

* Country or geographical area

To develop the data network identification codes (DNIC) for these public data networks, it is assumed that the French Administration would assign network digit 0 to the network in Guadeloupe and network digit 1 to the network in Martinique and associate these network digits with the listed data country* code (DCC) 340 for the French Antilles (see Annex 2). The data network identification codes (DNIC) thus formed would be 3400 for Guadeloupe and 3401 for Martinique.

This example indicates that the system of data network identification codes (DNIC) is appropriate for application to groups of islands or regions of a country* since one data country* code (DCC) could provide for up to ten public data networks dispersed over several islands or regions. At the same time such island or regional networks would be distinguishable from each other.

Example 2

In this example, it is assumed for illustrative purposes only, that five public data networks have been established in Canada. To develop the data network identification codes for these networks, it would be necessary for Canada to assign to each of these networks a network digit to follow the listed data country* code (DCC) 305 (see Annex 2). Assuming that Canada assigned the network digits 0-4 to the five networks, the resulting data network identification codes (DNIC) would be 3050, 3051, 3052, 3053, and 3054.

Example 3

In this example, it is assumed for illustrative purposes only, that eight public data networks have been established in the United States of America. It is also assumed that network digits 0-7 would be assigned by the United States of America to follow the listed data country* code (DCC) 310 (see Annex 2). The data network identification codes (DNIC) thus formed for these eight networks would be 3100, 3101, 3102, 3103, 3104, 3105, 3106, and 3107.

If one day, four additional public data networks were to be introduced in the United States of America, two of the four new networks could be assigned network digits 8 and 9 in association with data country* code (DCC) 310, to produce the data network identification codes (DNIC) 3108 and 3109.

For the remaining two public data networks, the United States of America would have to ask the DITF for an additional data country* code (DCC). A request for a code used in response, i.e., 311, could be made if this code appeared to be unused. If code 311 could be made available it would be assigned to the United States of America. If it was not available, a spare code in the "300" series of data country* codes (DCC) would be assigned. Assuming data country* code (DCC) 311 was available and issued to the United States of America, the two remaining public data networks could be assigned network digits 0 and 1 in association with data country* code (DCC) 311, to produce the data network identification codes (DNIC) 3110 and 3111.

Example 4

In this example it is assumed, for illustrative purposes only, that a public data network is to be established in each of the Caribbean Islands that are part of the group of islands known as the French Antilles. The islands concerned are Guadeloupe and Martinique.

APPENDIX

LIST OF DATA COUNTRY OR GEOGRAPHICAL AREA CODES

NOTE: The countries or geographical areas shown in this Annex include those that already have code assignments in the case of other public telecommunications networks.

ZONE 2

Code	Country or Geographical Area
202	Greece
204	Netherlands (Kingdom of the)
206	Belgium
208	France
212	Monaco
214	Spain
216	Hungarian People's Republic
218	German Democratic Republic
220	Yugoslavia (Socialist Federal Republic of)
222	Italy
226	Romania (Socialist Republic of)
228	Switzerland (Confederation of)
230	Czechoslovak Socialist Republic
232	Austria
234	United Kingdom of Great Britain and Northern Ireland
238	Denmark
240	Sweden
242	Norway
250	Union of Soviet Socialist Republics
260	Poland (People's Republic of)
262	Germany (Federal Republic of)
266	Gibraltar
268	Portugal
270	Luxembourg
272	Ireland
274	Iceland
276	Albania (People's Republic of)
278	Malta (Republic of)
280	Cyprus (Republic of)
282	Finland
284	Bulgaria (People's Republic of)
286	Turkey

Zone 2, Spare Codes: 63

ZONE 3

Code	Country or Geographical Area
302	Canada
308	St Pierre and Miquelon
310	United States of America
330	Puerto Rico
332	Virgin Islands (USA)
334	Mexico
338	Jamaica
340	French Antilles
342	Barbados
344	Antigua
346	Cayman Islands
348	British Virgin Islands
350	Bermuda
352	Grenada
354	Montserrat
356	St Kitts
358	St Lucia
360	St Vincent
362	Netherlands Antilles
364	Bahamas (Commonwealth of the)
366	Dominica
368	Cuba
370	Dominican Republic
372	Haiti (Republic of)
374	Trinidad and Tobago
376	Turks and Caicos Islands

Zone 3, Spare Codes: 74

ZONE 4

Code	Country or Geographical Area
404	India (Republic of)
410	Pakistan (Islamic Republic of)
412	Afghanistan (Republic of)
413	Sri Lanka (Ceylon) (Republic of)
414	Burma (Socialist Republic of the Union of)
415	Lebanon
416	Jordan (Hashemite Kingdom of)
417	Syrian Arab Republic
418	Iraq (Republic of)
419	Kuwaite (State of)
420	Saudi Arabia (Kingdom of)
421	Hemen (Arab Republic)
422	Oman (Sultanate of)
423	Yemen (People's Democratic Republic of)

ZONE 4 (Cont)

Code	Country or Geographical Area
424	United Arab Emirates*
425	Israel (State of)
426	Bahrain (State of)
427	Qatar (State of)
428	Mongolian People's Republic
429	Nepal
430	United Arab Emirates (Abu Dhabi)
431	United Arab Emirates (Dubai)
432	Iran
440	Japan
450	Korea (Republic of)
452	Viet Nam (Socialist Republic of)
454	Hong Kong
455	Macao
456	Democratic Kampuchea
457	Lao People's Democratic Republic
460	China (People's Republic of)
470	Bangladesh (People's Republic of)
472	Maldives (Republic of)

*UAE: (Ajman, Fujairah, Ras Al Khaimah, Sharjah,
Umm Al Qiwain)

Zone 4, Spare Codes: 67

ZONE 5

Code	Country or Geographical Area
502	Malaysia
505	Australia
510	Indonesia (Republic of)
515	Phillipines (Republic of)
520	Thailand
525	Singapore (Republic of)
528	Brunei
530	New Zealand
535	Guam
536	Nauru (Republic of)
537	Papua New Guinea
539	Tonga (Kingdom of)
540	Solomon Islands
541	New Hebrides
542	Fiji
543	Wallis and Futuna Islands

ZONE 5 (Cont)

Code	Country or Geographical Area
544	American Samoa
545	Gilbert & Ellice Islands
546	New Caledonia and Dependencies
547	French Polynesia
548	Cook Islands
549	Western Samoa

Zone 5, Spare Codes: 78

ZONE 6

Code	Country or Geographical Area
602	Egypt (Arab Republic of)
603	Algeria (Algerian Democratic and Popular Republic)
604	Morocco (Kingdom of)
605	Tunisia
606	Socialist People's Libyan Arab Jamahiriya
607	Gambia (Republic of)
608	Senegal (Republic of)
609	Mauritania (Islamic Republic of)
610	Mali (Republic of)
611	Guinea (Republic of)
612	Ivory Coast (Republic of the)
613	Upper Volta (Republic of)
614	Niger (Republic of the)
615	Togolese Republic
616	Benin (People's Republic of)
617	Mauritius
618	Liberia (Republic of)
619	Sierra Leone
620	Ghana
621	Nigeria (Federal Republic of)
622	Chad (Republic of the)
623	Central African Empire
624	Cameroon (United Republic of)
625	Cape Verde (Republic of)
626	Sao Thome and Principe (Democratic Republic of)
627	Equatorial Guinea (Republic of)
628	Gabon Republic
629	Congo (People's Republic of the)
630	Zaire (Republic of)
631	Angola (People's Republic of)
632	Guinea-Bissau (Republic of)
633	Seychelles
634	Sudan (Democratic Republic of the)
635	Rwanda (Republic of)

ZONE 6 (Cont)

Code	Country or Geographical Area
636	Ethiopia
637	Somali Democratic Republic
638	Republic of Djibouti
639	Kenya (Republic of)
640	Tanzania (United Republic of) (Mainland)
641	Uganda (Republic of)
642	Burundi (Republic of)
643	Mozambique (People's Republic of)
645	Zambia (Republic of)
646	Madagascar (Democratic Republic of)
647	Reunion (French Department of)
648	Southern Rhodesia
649	Namibia
650	Malawi
651	Lesotho (Kingdom of)
652	Botswana (Republic of)
653	Swaziland (Kingdom of)
654	Comoros (State of the)
655	South Africa (Republic of)

Zone 6, Spare Codes: 47

ZONE 7

Code	Country or Geographical Area
702	Belize
704	Guatemala (Republic of)
706	El Salvador (Republic of)
708	Honduras (Republic of)
710	Nicaragua
712	Costa Rica
714	Panama (Republic of)
716	Peru
722	Argentine Republic
724	Brazil (Federative Republic of)
730	Chile
732	Columbia (Republic of)
734	Venezuela (Republic of)
736	Bolivia (Republic of)
738	Guyana
740	Ecuador
742	Guiana (French Department of)
744	Paraguay (Republic of)
746	Surinam (Republic of)
748	Uruguay (Oriental Republic of)

Zone 7, Spare Codes: 80