INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

X.115

Amendment 1
(10/96)

SERIES X: DATA NETWORKS AND OPEN SYSTEM COMMUNICATION

Public data networks – Network aspects

Definition of address translation capability in public data networks

Amendment 1: Refinements

ITU-T Recommendation X.115 – Amendment 1

(Previously CCITT Recommendation)

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For further details, please refer to ITU-T List of Recommendations.

FOREWORD

The ITU-T (Telecommunication Standardization Sector) is a permanent organ of the International Telecommunication Union (ITU). The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, March 1-12, 1993).

Amendment 1 to ITU-T Recommendation X.115 was prepared by ITU-T Study Group 7 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 5th of October 1996.

NOTE

In this Recommendation, the expression “Administration” is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

SUMMARY

Recommendation X.115 provides definition of address translation service, the service provided to its customers, the functions at the network interface and functions within the network when providing this service. The address translation service provides customers with the ability to use addresses in formats other than X.121 or E.164 (e.g. user-friendly addresses like mnemonic addresses, etc.). The addresses can be any of the alternative addresses (e.g. IP addresses, MAC addresses, etc.). The network will translate the address used during call establishment to the desired address to complete the call.

DEFINITION OF ADDRESS TRANSLATION CAPABILITY IN PUBLIC DATA NETWORKS

AMENDMENT 1
Refinements

(Geneva, 1996)

1) *Change the last two sentences in the executive summary to read as follows:*

The addresses can be any of the alternative addresses defined in Recommendation X.25. The network will translate the address during call establishment to the desired address to complete the call.

2) *Introduction, add the following paragraph at the end of the "Introduction"*:

References to Recommendation X.25 are for illustrative purposes only. This Recommendation is also applicable in other data networking environments (e.g. Frame Relay, ATM).

3) *Clause 4, change Figure 1 as follows:*

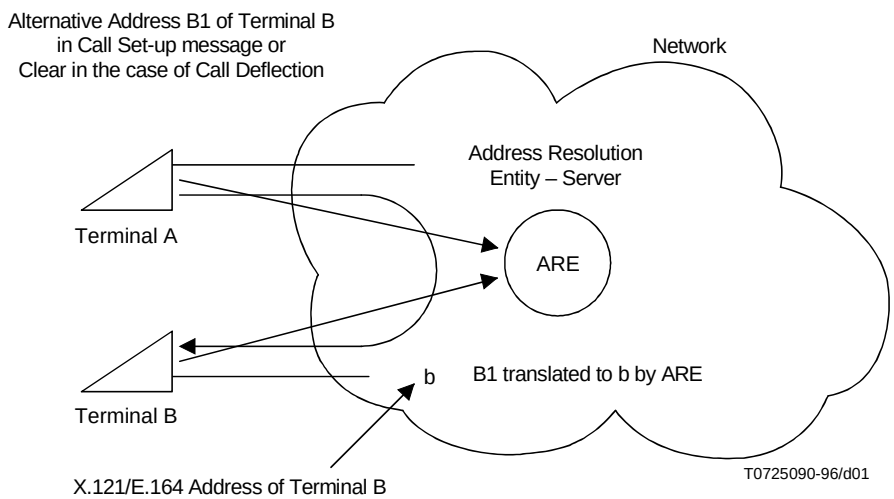


FIGURE 1/X.115

Address translation service

4) *Clause 5, 2nd paragraph, rewrite as follows:*

The DCE, on receipt of a call set-up message or clear message in the case of call deflection containing an alternative address, is required to translate the alternative address to the format defined in Recommendations X.121 or E.164 as the basis on which to route the call.

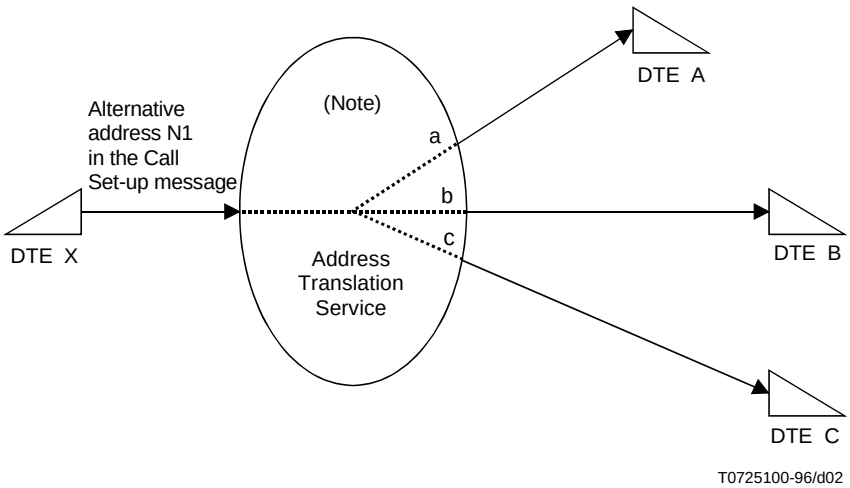
5) *Clause 5, 3rd paragraph, first sentence, rewrite as follows:*

As shown in Figure 5, DTE A wishes to communicate with DTE B and uses the alternative address of DTE B in the call set-up message.

6) *Clause 5, 4th paragraph, fourth bullet item, rewrite as follows:*

- Invocation Procedures: DTE A uses the alternative address of DTE B in appropriate messages. This may result in the DCE making a query of the ARE for the translation of the alternative address.

7) Subclause 7.2, redraw Figure 7 as follows:



NOTE – An alternative address "N1" is translated to one of a number of X.121 or E.164 address (e.g. a, b and c) to reach DTE A, B or C, respectively.

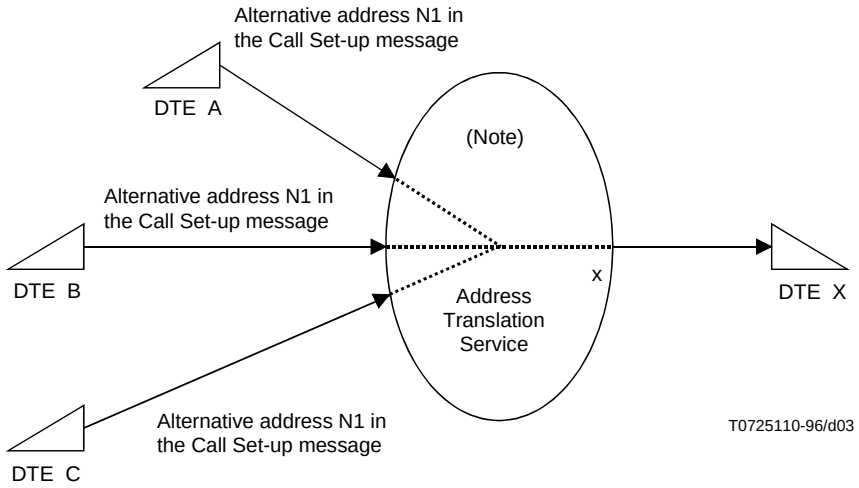
FIGURE 7/X.115

1-to-N address translation

8) *Subclause 7.3, first paragraph, rewrite the first sentence as follows:*

As the name suggests, the alternative address has a global significance and is translated to a specific X.121 or E.164 address no matter where that alternative address is used at a given point in time (i.e. any DTE may use this alternative address) in a call set-up message or clear message in the case of call deflection.

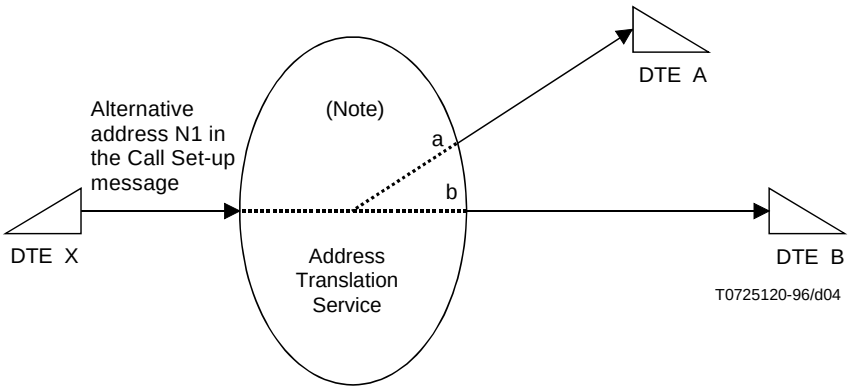
9) *Clause 7, redraw Figures 8 and, 9 as follows:*



NOTE – The alternative address "N1" is translated to a specific X.121 or E.164 address (i.e. x) to reach DTE X regardless of the interface used.

FIGURE 8/X.115

Alternative address with global significance



NOTE – Alternative address N1 translated to X.121 or E.164 address a between 9:00 and 17:00 hours. Alternative address N1 translated to X.121 or E.164 address b at other times during the day.

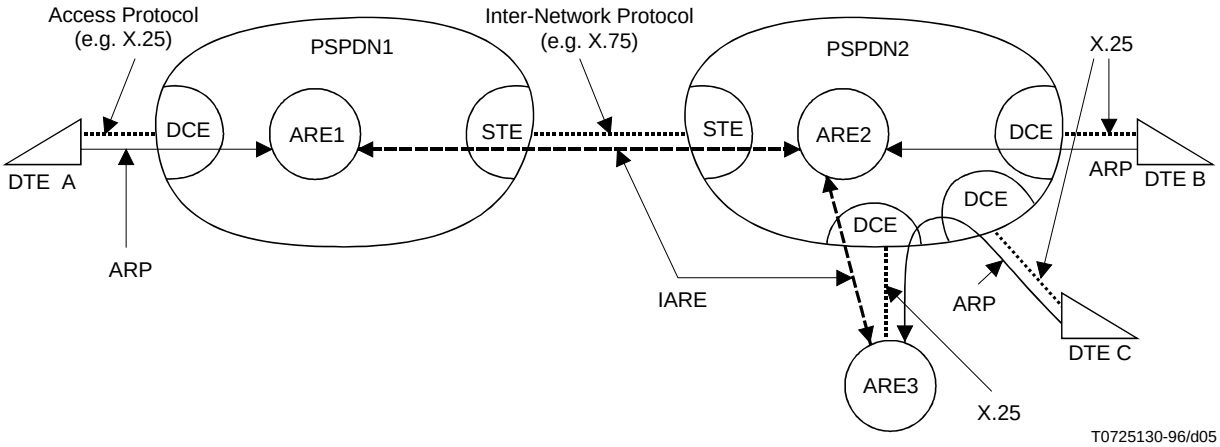
FIGURE 9/X.115

An example of time-of-day translation which is of the form 1-to-N translation

10) *Subclause 7.3, change the existing "Note" to "NOTE 1" and add a new NOTE 2 as follows:*

NOTE 2 – Some networks may also provide an interface-specific address translation capability. This capability, which provides for translation of an alternative address based on information local to an interface, is not discussed in this Recommendation since it does not make use of the procedures discussed in clauses 5 and 6.

11) *Appendix I, redraw Figure I.1 as follows:*



ARP Address Resolution and Registration Protocol
IARE Inter-Address Resolution Entity Protocol

FIGURE I.1/X.115

Functional view of address translation service

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