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OPERATIONS AND QUALITY OF SERVICE TELEGRAPH SERVICES

GLOBAL VIRTUAL NETWORK SERVICE

ITU-T Recommendation F.16

(Previously "CCITT Recommendation")

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).

ITU-T Recommendation F.16 was prepared by ITU-T Study Group 1 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 21st of February 1995.

NOTE

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

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CONTENTS

	<i>Page</i>
1 Definition	1
1.1 Scope	1
1.2 References.....	1
1.3 Definitions	1
1.4 Abbreviations.....	4
2 Description	4
2.1 General description	4
2.2 GVNS access	4
2.3 GVNS calling.....	6
2.4 GVNS features description	6
2.5 GVNS operation, administration, maintenance and provisioning	7
2.6 Applicability	8
3 Procedures	8
3.1 Provision/withdrawal	8
3.2 Normal procedures.....	8
3.3 Exceptional procedures.....	8
3.4 Alternate procedures	8
4 Network capabilities for charging	9
5 Interworking requirements	9
5.1 Interworking with non-ISDN networks	9
5.2 Interworking with the private networks (non-ISDN and ISDN)	9
6 Interactions with supplementary services.....	9
6.1 Number related supplementary services	9
6.2 Community of interest supplementary services	10
6.3 Charging supplementary services	10
6.4 Other supplementary services.....	10
7 SDL diagrams.....	10

SUMMARY

The Global Virtual Network Service (GVNS) is a multi-network international service which provides private network functions to users at geographically dispersed international locations while minimizing the need for dedicated network resources. It may be offered to customers over the PSTN and/or ISDN.

INTRODUCTION

This Recommendation focuses on how interworking service providers can provide the seamless Global Virtual Network Service (GVNS). It presents the service description of GVNS that supports global virtual networking. The GVNS is described here from the user's point of view and is characterized by a prose service definition description in accordance with Recommendation I.130.

Recommendation F.16

GLOBAL VIRTUAL NETWORK SERVICE

(Geneva, 1994)

1 Definition

The **Global Virtual Network Service (GVNS)** is a multi-network international service which provides private network functions to users at geographically dispersed international locations while minimizing the need for dedicated network resources. It may be offered to customers over the PSTN and/or ISDN.

The Global Virtual Network Service is a feature-rich communications service. It provides the functions typically associated with the private networks (see 1.3.10), but utilizing the public switched network(s). The GVNS Customer's network configuration is defined per the customer's direction using customer-specific service information resident in multiple networks. The network configurations may be administered by the GVNS Customer directly, the GVNS Participating Service Provider(s) and/or the GVNS Coordinator(s) (see 1.3.11 and 1.3.12).

The GVNS provides the customers with global services as a result of internetworking among the GVNS Participating Service Providers in various countries. GVNS may accommodate this interconnection both via ISDN and non-ISDN facilities.

1.1 Scope

This Recommendation contains the service description of GVNS for the PSTN and ISDN. This Recommendation defines the service from a user's perspective. This Recommendation does not specify the requirements where the service is provided to the user by the private networks; however, it addresses the interworking requirements with private networks.

This Recommendation is the Stage 1 service description for the ISDN and is applicable to the ISDN Stages 2 and 3 Recommendations for GVNS. The terms Stages 1, 2 and 3 are defined in CCITT Recommendation I.130.

1.2 References

The following Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision: all users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

- CCITT Recommendation I.130 (1988), *Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN*.
- ITU-T Recommendation I.112 (1993), *Vocabulary of terms for ISDNs*.
- ITU-T Recommendation I.210 (1993), *Principles of telecommunication services supported by an ISDN and the means to describe them*.
- ITU-T Recommendation Z.100 (1993), *CCITT specification and description language (SDL)*.

1.3 Definitions

1.3.1 GVNS customer: A GVNS Customer (e.g. a person or an organization) is the entity that purchases the service (e.g. the telecommunication manager of a corporation). The GVNS Customer functions as an interface between the GVNS Service Provider(s) and the GVNS Users. The GVNS Customer can define aspects of the service; for example, the on-net locations, numbering plan, and/or the calling privileges of the GVNS Users.

1.3.2 GVNS user: A GVNS User is the end-user of the service. Typically, GVNS Users are not allowed to change their calling privileges.



Documents

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Recommendation F.16

(02/95)

1

1.3.3 on-net locations: These are stations, user-network interfaces and authorized remote access locations that are logically defined by the GVNS Customer to be part of its virtual network during service provisioning or remote access (see 2.2.2.3).

GVNS Customers may define a physical entity (station or user network interface) as multiple on-net locations during service provisioning. As a result, one physical entity may be registered to one or more GVNS User Groups.

The relationship between the logical virtual networks and the physical networks is depicted in Figure 1.

1.3.4 off-net locations: These are stations and user-network interfaces that are not defined by the GVNS Customer to be part of the GVNS. In some cases, a customer may define off-net locations as part of its customer-defined numbering plan. Such locations are termed as virtual on-net locations.

1.3.5 virtual on-net locations: These are off-net locations included in the customer-defined numbering plan. The numbers that are defined in the numbering plan to reach to these off-net locations may be subject to GVNS-specific treatments (e.g. Call Screening).

1.3.6 GVNS calls: GVNS Calls are calls from an on-net location. It may terminate to an on-net, off-net, or virtual on-net location. GVNS Calls include the following two types of calls:

- *On-net Calls:*

An On-net Call is a call from an on-net location to another on-net location of the same GVNS User Group.

- *Off-net Calls:*

An Off-net Call is a call from an on-net location to an off-net location. These calls can be specified with a customer-defined number (to a virtual on-net location) or as a public number.

1.3.7 GVNS user group and subgroup: A GVNS user group is made up of a group of on-net locations defined by the GVNS Customer (including authorized remote access locations, see 2.2.2.3).

A GVNS Customer may optionally define GVNS subgroups when they are offered by the GVNS Participating Service Provider. A GVNS subgroup is made up of a subset of the locations defined by the GVNS Customer as on-net locations (including authorized remote access locations). An on-net location belongs to one and only one GVNS subgroup. Subgroup identification is required to support subnetworking (see 2.4.8). The relationship between the user group and subgroups is depicted in Figure 1.

1.3.8 GVNS user group and subgroup identifier: A GVNS user group is assigned a unique GVNS user group identifier to identify a group among supporting networks. The subgroup identifier uniquely identifies a group of users within a customer's GVNS user group, and has meaning only within that user group.

1.3.9 numbering plan: A GVNS Customer has a numbering plan which associates addresses with locations in the GVNS (on-net addresses). These numbers may be public numbers or customer-defined (private). The GVNS Customers may also define private numbers to identify off-net addresses. When a GVNS Customer uses customer-defined numbers, the capabilities may include, but are not limited to those of the Support of Private Numbering Plans supplementary service. These capabilities are defined by each GVNS Participating Service Provider.

1.3.10 private network functions: Private network functions include those provided by dedicated private networks and dedicated business groups. The private network functionality can be customer based (e.g. PBX), network based (e.g. business group) or a combination of both.

1.3.11 GVNS participating service provider: The GVNS Participating Service Provider is a ROA that provides customer access and egress to and from the GVNS. The GVNS Participating Service Provider optionally offers the features defined in 2.4 on a national and/or international basis. The interworking of such services between ROAs in multiple countries creates the GVNS offering.

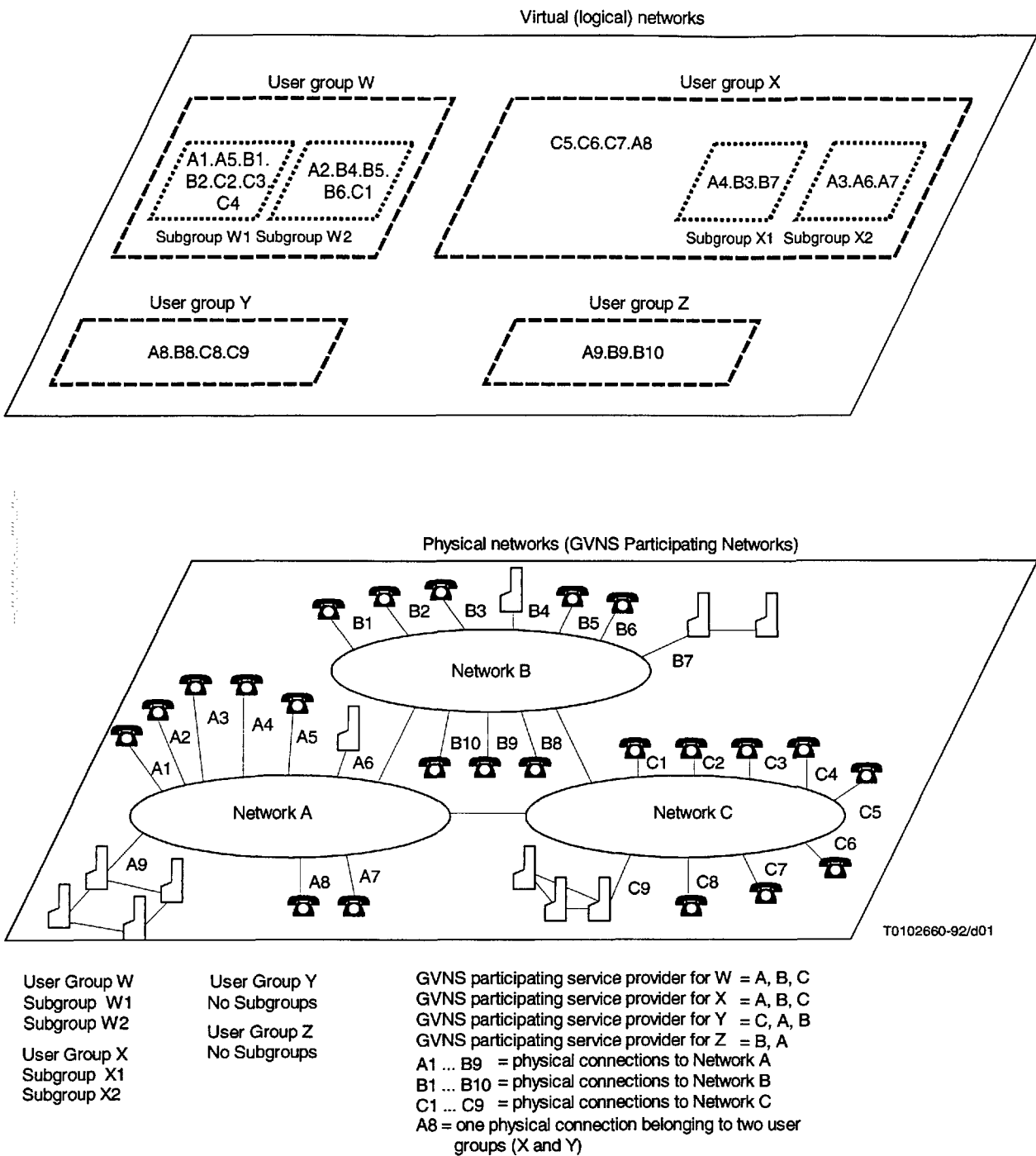


FIGURE 1/F.16
GVNS user groups and subgroups