



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

E.751

(02/96)

TELEPHONE NETWORK AND ISDN QUALITY OF SERVICE, NETWORK MANAGEMENT AND TRAFFIC ENGINEERING

REFERENCE CONNECTIONS FOR TRAFFIC ENGINEERING OF LAND MOBILE NETWORKS

ITU-T Recommendation E.751

(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 E.751 was revised by ITU-T Study Group 2 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 19th of February 1996.

NOTE

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

© ITU 1996

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the ITU.

CONTENTS

	<i>Page</i>
1 Objective and scope	1
2 References	1
3 Abbreviations	2
4 Functional and physical architectures	2
5 Reference architectures	3
5.1 Reference architecture for interconnection of fixed and stand-alone mobile networks.....	3
5.2 Reference architecture for interconnection of mobile networks integrated with fixed networks	3
6 Existing and planned systems and reference architecture	6
7 Reference connections.....	6
7.1 Reference connections for FPLMTS	6
8 History	6
Annex A – Reference architecture for mobile-fixed interconnection with mobile switches integrated within the fixed network	8
Annex B – Hierarchical arrangement of mobile switching centre functions for the reference architecture of Figure 1	9
Annex C – Two-hop radio interface arrangement for the reference architecture of Figure 2	10

SUMMARY

This Recommendation provides some reference architectures for existing and future public land mobile telecommunication networks (PLMN) and also provides a high level reference connection for Future Public Land Mobile Telecommunication Systems (FPLMTS) call/connection setup. The primary purpose of the reference connection is to provide a basis for developing traffic Grade of Service (GOS) Recommendations for networks supporting mobile services. The underlying FPLMTS call flow model in the reference connection should be used as a basis for more implementation-specific configurations for detailed performance analysis and GOS target setting.

Recommendation E.751

REFERENCE CONNECTIONS FOR TRAFFIC ENGINEERING OF LAND MOBILE NETWORKS

(revised in 1996)

1 Objective and scope

This Recommendation provides some reference architectures for existing and future PLMN and also provides a high level reference connection for FPLMTS call/connection setup. The primary purpose of the reference connection is to provide a basis for developing traffic Grade of Service (GOS) Recommendations for networks supporting mobile services. The underlying FPLMTS call flow model in the reference connection should be used as a basis for more implementation-specific configurations for detailed performance analysis and GOS target setting.

A mobile service is provided by means of a network which supports:

- radio transmission;
- switching;
- mobility management functions.

The elements which constitute the network may be owned and operated by one or more system operators. Likewise, mobile services may be provided by one or more service providers. The type of network elements owned by each type of operator and the type of services provided by each service provider, may vary in different (national and/or commercial) frameworks.

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 E.201 (1991), *Reference Recommendation for mobile services*.
- CCITT Recommendation E.723 (1992), *Grade-of-service parameters for Signalling System No. 7 networks*.
- ITU-T Recommendation F.115 (1995), *Service objectives and principles for future public land mobile telecommunication systems*.
- CCITT Recommendation Q.1001(1988), *General aspects of public land mobile networks*.
- CCITT Recommendation Q.1002 (1988), *Network functions*.
- CCITT Recommendation Q.1003 (1988), *Location registration procedures*.
- CCITT Recommendation Q.1201 (1992), *Principles of intelligent network architecture*.
- ITU-R Recommendation M.687-1, *Future Public Land Mobile Telecommunication Systems (FPLMTS)*.
- ITU-R Recommendation M.817, *Future Public Land Mobile Telecommunication Systems (FPLMTS) – Network architectures*.