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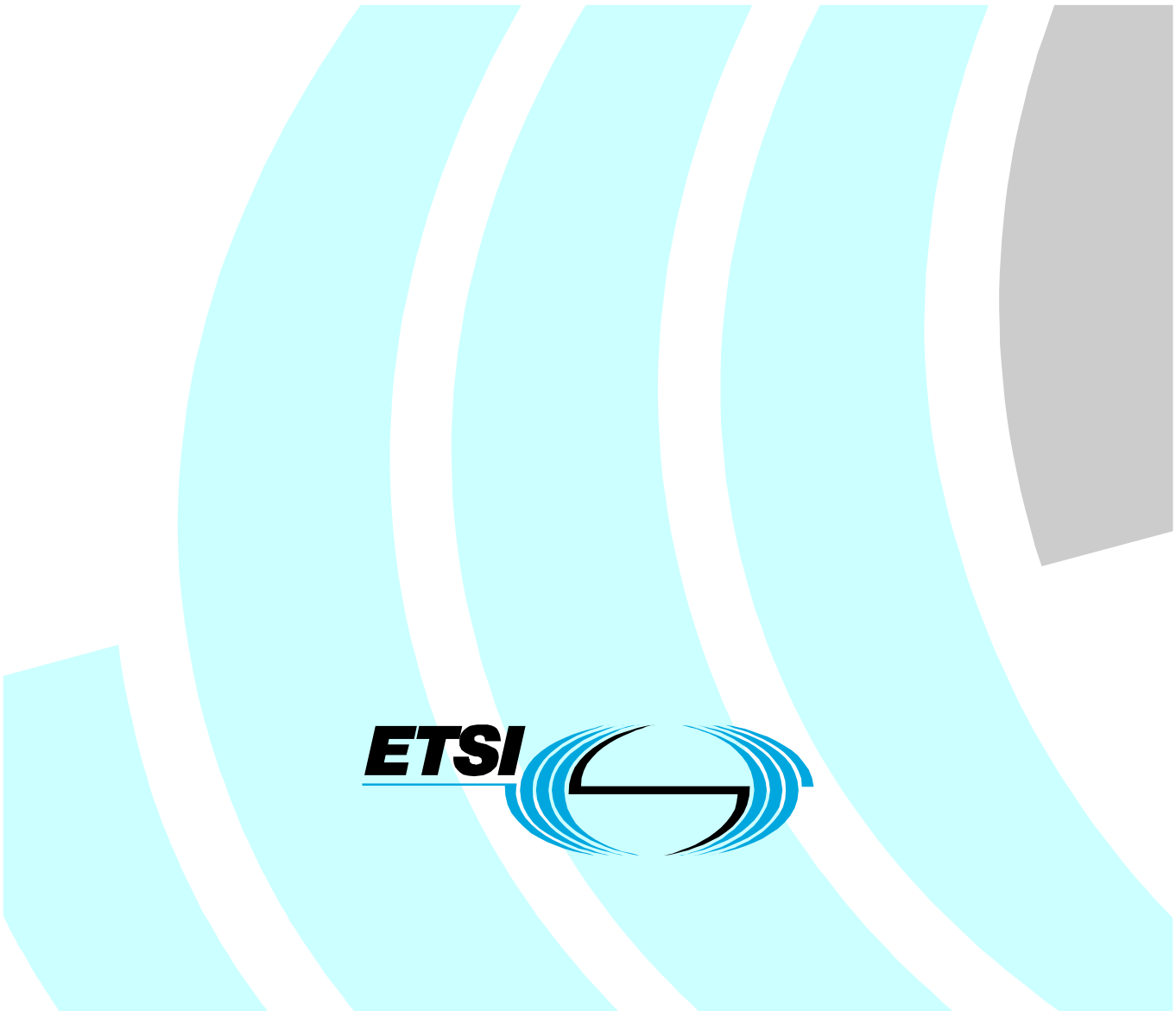
ETSI Guide

Services and Protocols for Advanced Networks (SPAN);
Interworking;
IP Federating Network (IPFN) architecture



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Contents

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Foreword

This ETSI Guide (EG) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN).

Introduction

The present document deals with the IP Federating Network (IPFN), an intelligent open interworking platform utilizing IP technology, allowing interconnection of existing and future networks. The networks interconnected may be fixed or mobile, 2G or 3G, IP or non-IP, public or private. The IPFN is composed of a set of functional subsystems, enabling users and applications of these networks to interoperate in fixed and mobile environments, and allowing for provision of value added services. From the users requirements and scenarios, a functional model is established, an architecture is defined based on the harmonization and evolution of existing architectures, reference points are identified, so as to list the existing protocols, identify the need for any protocol extensions and interworking specifications.

Levels of internetworking are defined depending on the Services offered like Security, Quality of Service, Supplementary Services and Data facilities.

Data may be exchanged, collected or shared between users.

New Services like global addressing, internetwork broadcast, multileg communications, etc, which are not yet available on the actual network to which the user is connected, may be offered.

Security will be an intrinsic capability of the architecture.

From this a set of recommendations is made in annex B, in order to help identifying the work in the different areas.

1 Scope

The present document identifies the services requirements from the users perspective. It then defines the functions necessary for interoperability required to establish an "IP Federating Network (IPFN)". It identifies the architecture and the reference points that are sufficient to meet the user's requirements in order to:

- allow Voice, Video and Data or combination of this (Multimedia) interworking between users on heterogeneous interconnected Networks;
- allow users to roam between networks, i.e. to allow the users to change network point of attachment;
- ensure secured communication when required by the users;
- maintain all or some Services (Supplementary Services, Data facilities, etc.) to the users;
- offer new Services like global name/addressing, internetwork broadcast, multileg communications, etc. which are not yet available on the actual network to which the user is connected;
- ensure lossless Data exchange between users of different Networks and between Databases, if required;
- provide extended addressing and naming capabilities;
- allow desirable feature interaction between applications that interwork across different networks;
- offer scalability of network interconnection;
- ensure some corresponding levels of Priority, Quality of Service;
- provide necessary network and service management capabilities for all of the above.

The present document aims to provide an analysis of the status of the subject, make recommendations for future work.

The objective is not to redefine existing standards when they can be reused (see note), but in a global analysis to review standards applicable, their limitations and the rules for implementing interoperability. For example a list of candidate protocols are SIP for interworking between gateways, Mobile IP, LDAP, IPSec, HTTP, XML.

NOTE: The standards referred to here are developed by ETSI, WWRF, IETF, IPv6 Forum and W3C, details of which are available in the Bibliography (annex C).

Levels of interworking will be investigated when appropriate in the context of the IPFN.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] IST 2000-28345 EGERIS: "European Generic Emergency Response Information System".

[2] ETSI TS 101 314: "Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON); Network architecture and reference configurations; TIPHON Release 2".

[3] ITU-T Recommendation F.16: "Global virtual network service".