
**Information technology —
Telecommunications and information
exchange between systems — Next
Generation Corporate Networks
(NGCN) — Emergency calls**

*Technologies de l'information — Téléinformatique — Réseaux
d'entreprise de prochaine génération (NGCN) — Appels d'urgence*



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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

In exceptional circumstances, when the joint technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide to publish a Technical Report. A Technical Report is entirely informative in nature and shall be subject to review every five years in the same manner as an International Standard.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC TR 16167 was prepared by Ecma International (as ECMA TR/101) and was adopted, under a special "fast-track procedure", by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

This second edition cancels and replaces the first edition (ISO/IEC TR 16167:2010), which has been technically revised. This second edition makes a distinction between an answering point and an emergency control centre and clarifies a few other points, in particular to do with interaction with (public) Next Generation Networks.

Introduction

This Technical Report is one of a series of publications that provides an overview of IP-based enterprise communication involving Corporate telecommunication Networks (CNs) (also known as enterprise networks) and in particular Next Generation Corporate Networks (NGCN). The series particularly focuses on session level communication based on the Session Initiation Protocol (SIP) [5], with an emphasis on inter-domain communication. This includes communication between parts of the same enterprise (on dedicated infrastructures and/or hosted), between enterprises and between enterprises and public networks. Particular consideration is given to Next Generation Networks (NGN) as public networks and as providers of hosted enterprise capabilities. Key technical issues are investigated, current standardisation work and gaps in this area are identified, and a number of requirements are stated. Among other uses, this series of publications can act as a reference for other standardisation bodies working in this field.

Various regional and national bodies address emergency communications, mainly with an emphasis on public telecommunications. In particular, in the United States work is carried out by the National Emergency Number Association (NENA). In Europe, ETSI EMTEL (Special Committee on Emergency Communications) plays a coordinating role, liaising with external bodies (e.g., in the European Commission, CEPT, CEN and CENELEC) as well as overseeing work done by other ETSI Technical Bodies (e.g., TISPAN). This Technical Report focuses on emergency calls as they impact enterprise networks, and therefore is intended to complement the work of those other bodies.

This Technical Report is based upon the practical experience of Ecma member companies and the results of their active and continuous participation in the work of ISO/IEC JTC 1, ITU-T, ETSI, IETF and other international and national standardisation bodies. It represents a pragmatic and widely based consensus. In particular, Ecma acknowledges valuable input from experts in ETSI TISPAN, ETSI EMTEL, 3GPP CT1 and IETF ECRIT.

Information technology — Telecommunications and information exchange between systems — Next Generation Corporate Networks (NGCN) — Emergency calls

1 Scope

This Technical Report discusses issues related to emergency calls from an enterprise user to a safety answering point (SAP) using the Session Initiation Protocol (SIP) within a Next Generation Corporate Network (NGCN). A SAP can be either a public safety answering point (PSAP) or a private emergency answering point (PEAP). This Technical Report uses terminology and concepts developed in ISO/IEC TR 12860. It identifies a number of requirements impacting Next Generation Network (NGN) standardisation and concerning deployment of enterprise networks.

The scope of this Technical Report is limited to calls from a user of an enterprise network to an authority, where the authority is represented by a SAP (PSAP or PEAP). This includes the special case where a PEAP acts as an enterprise user in making an emergency call to a PSAP. Authority to authority calls, authority to enterprise user calls and enterprise user to enterprise user calls within the context of an emergency are out of scope, with the exception of return calls and verification calls as follow-up to an emergency call from the user to an authority.

This Technical Report focuses on emergency calls within a SIP-based NGCN using geographic location information to indicate the whereabouts of the caller. Emergency calls can originate from devices connected to the NGCN via various access technologies, e.g., SIP over fixed or wireless LAN (Local Area Network), TDM (Time Division Multiplex) networks, DECT (Digital Enhanced Cordless Telephone) networks, PMR (Private Mobile Radio) networks, PLMN (Public Land Mobile Network), etc. SAPs are assumed to be reachable either directly using SIP or via a gateway to some legacy technology (e.g., TDM). Furthermore, SAPs are assumed to be reachable either directly from the NGCN or via a public network accessed from the NGCN using SIP. In the latter case, the NGCN might identify the SAP and instruct the public network to route to the SAP, or alternatively the NGCN might leave the public network to identify the SAP, based on the location of the caller. In all cases the NGCN is assumed to deliver the location of the caller to the SAP, gateway or public network in order to provide appropriate information to the call taker at the SAP.

The handling of incoming emergency calls at a SAP, even when the SAP is provided within an NGCN, is outside the scope of this Technical Report. This includes the case where a PSAP is provided within an NGCN and hence the NGCN can receive emergency calls from public networks. This also includes the case where a PEAP is provided within an NGCN and can receive emergency calls from other enterprise networks or other parts of the same NGCN.

Different territories have different regulations impacting emergency calls, together with national or regional standards in support of these regulations. This Technical Report takes a general approach, which should be largely applicable to any territory. However, detailed differences might apply in some territories, e.g., country- or region-specific dial strings used to identify emergency calls.

The scope of this Technical Report is limited to emergency communications with a real-time element, including but not limited to voice, video, real-time text and instant messaging. The focus, however, is on voice, which in the majority of situations is likely to be the most effective medium for emergency calls. However, it is recognised that some users with special needs will require other modes of communication (e.g., real-time text, fax), as discussed in Annex B of [29], and also different modes can be used for the emergency call and the verification call. The focus is also on calls in which the caller is a human user. There may also be applications

where automatic sensors can make similar emergency calls (subject to regulation), but the special needs of such applications are not considered.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC TR 12860, *Information technology — Telecommunications and information exchange between systems — Next Generation Corporate Networks (NGCN) — General*