

# SVENSK STANDARD

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### **Ergonomi vid människa-systeminteraktion – Del 154: Talsvarsapplikationer (ISO 9241-154:2013)**

### **Ergonomics of human-system interaction – Part 154: Interactive voice response (IVR) applications (ISO 9241-154:2013)**



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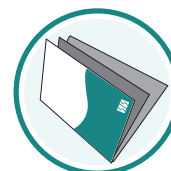
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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN ISO 9241-154**

February 2013

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English Version

## Ergonomics of human-system interaction - Part 154: Interactive voice response (IVR) applications (ISO 9241-154:2013)

Ergonomie de l'interaction homme-système - Partie 154:  
Applications de réponse vocale interactive (RVI) (ISO 9241-  
154:2013)

Ergonomie der Mensch-System-Interaktion - Teil 154:  
Dialogführung mittels Sprachdialogsystemen (ISO 9241-  
154:2013)

This European Standard was approved by CEN on 28 December 2012.

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## Foreword

This document (EN ISO 9241-154:2013) has been prepared by Technical Committee ISO/TC 159 "Ergonomics" in collaboration with Technical Committee CEN/TC 122 "Ergonomics" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2013, and conflicting national standards shall be withdrawn at the latest by August 2013.

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### Endorsement notice

The text of ISO 9241-154:2013 has been approved by CEN as EN ISO 9241-154:2013 without any modification.



## Introduction

This part of ISO 9241 contains provisions specific to interactive voice response (IVR) systems, which may involve a combination of voice technologies, but are distinguished by the use of the telephone as the information transfer mechanism. These provisions assume no visual displays of information to the user beyond the labels on the telephone's keypad, with the notable exception of text telephones (TTYs), which have a visual feedback display.

Although it is extremely important that IVR user interface designers take into account the cultural and linguistic aspects of the user interface that impact the intended user population, these aspects are beyond the scope of this part of ISO 9241 and are not addressed in this part of ISO 9241. Similarly, because automatic speech recognition (ASR) performs differently for different languages and the technology continues to improve, it is beyond the scope of this document to provide detailed provisions on ASR user interface design generally. Rather, this part of ISO 9241 focuses on the design of IVR dialogues and discusses only those ASR user interface design issues that impact dialogue design.

Many current IVR systems pose significant accessibility challenges to callers with disabilities. Some of the provisions in this part of ISO 9241 were developed specifically to accommodate callers with special needs, particularly those who are deaf or who have hearing impairments.

The provisions in this document are intended to be compatible with ISO/IEC 13714.

Interactive voice response (IVR) systems became a common means of delivering customer service in the late 1980s. These systems are designed to reduce or eliminate the need for human-in-the-loop customer support by automating many of the functions that human customer service representatives typically provide over the telephone with respect to processing of customer transactions. Thus, users (i.e. callers) can now engage in such activities as checking train schedules, ordering a book or reporting problems with their television cable service by interacting with an IVR system. In addition, IVRs often automate call-routing functions so that the caller can be connected with the right assistance to handle their specific request.

This part of ISO 9241 is concerned with the design of the human-IVR system dialogue and related topics. As shown in [Figure 1](#), callers typically interact with the IVR system through one of two methods: speech or touchtone (DTMF) input via the telephone keypad. If an IVR system is speech-enabled, it employs an ASR engine that recognizes the speech input from the caller. If it is not speech-enabled, it typically recognizes only touchtone input from the telephone keypad or, sometimes, TTY input. Speech-enabled IVR systems are a relatively recent development and many systems are now designed to accept both touchtone and speech within a given dialogue with a caller. The IVR system responds via hardware and/or software that presents synthesized, digitized or recorded speech to the caller and that may also present non-speech audio. The fact that there is no assumed visual display of information to the caller in these applications poses a challenge to dialogue designers because of the burden placed on the caller to navigate the application and process and remember the relevant information without the aid of any visual display.