

DIN EN ISO 9241-154:2013-05 (E)

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

Contents	Page
Foreword	4
Introduction	5
1 Scope	7
2 Normative references	7
3 Terms and definitions	7
4 Conformance	13
5 Voice messaging systems	14
6 Information input	14
6.1 General	14
6.2 Informing text telephone users of acceptable input types	14
6.3 Non-duplication of information input	14
6.4 Using system information to improve efficiency	14
6.5 Changing information that has been entered	15
7 Speech input	15
7.1 Vocabulary choices for speech-enabled IVRs	15
7.2 Phonetically distinct vocabulary in speech-enabled IVR applications	15
7.3 State-specific grammar	15
7.4 Synonyms in grammars	15
7.5 Use of dynamic grammars	16
7.6 Enrolment	16
7.7 End-pointing and turn-taking	16
7.8 Handling time-outs for speech input	16
7.9 Speech IVRs with touchtone	17
8 Touchtone input	17
8.1 Indicating touchtone capability	17
8.2 Key assignment for delimiters	17
8.3 Pound ("#") key in fixed length data entry	17
8.4 Handling time-outs for variable length touchtone input	17
8.5 Key assignments for affirmative and negative responses	17
8.6 Key assignment for the human "help" function	18
8.7 Minimization of caller key presses	18
9 Information output	18
9.1 General provisions for prompts and announcements	18
9.2 Construction of prompts and announcements	21
10 Navigation	25
10.1 Skip-forward function	25
10.2 Dial-through and talk-through	25
10.3 Dial-ahead and talk-ahead	26
10.4 Global commands	26
10.5 Barge-in as a default	26

10.6	Restricting barge-in	26
11	Help	26
11.1	Context-sensitive help	26
11.2	Caller-selectable help	26
11.3	Referencing help in initial prompt	27
11.4	Help commands	27
11.5	System-initiated help	27
12	Access to human representatives	27
12.1	General	27
12.2	Equal access	27
12.3	Prompting access	27
12.4	Initiating transfer	28
12.5	Delays in access	28
12.6	Assistance from human representatives	28
12.7	Human help not available	29
13	Feedback	29
13.1	General	29
13.2	Feedback to caller input	29
13.3	Feedback following selection of unavailable options	29
13.4	System response time	29
13.5	Appropriate context for feedback messages	29
13.6	Landmarks	30
13.7	Confirmation dialogues	30
13.8	Intelligent use of confirmation rejections	31
13.9	Additional feedback in delay situations	32
13.10	Managing extended hold situations	32
13.11	Suggesting that the caller call back	32
14	Errors	32
14.1	General	32
14.2	Unavailability of service	32
14.3	Input prompt repetitions	33
14.4	Error message content	33
14.5	Two consecutive input entry errors in touchtone-based IVRs	33
14.6	Two or more consecutive input entry errors in speech-enabled IVRs	33
14.7	Handling of numerous errors	33
14.8	Avoiding pejorative wording in error messages	33
14.9	Critical messages	34
14.10	Error recovery	34
14.11	Disconnection messages	34
14.12	Exiting due to exceeding error limit	34
14.13	Referencing help	34
14.14	Error prompt wording	34
14.15	Cueing the caller about desired speech input	34
14.16	Conversational repair	34
14.17	Handling too much speech input	35
14.18	Mentioning touchtone options for speech IVRs	35
Annex A (informative)	Overview of the ISO 9241 series	36
Annex B (informative)	The role of speech recognition errors in IVR design	37
Bibliography		40