



REAL-TIME AUTOMATIC AUDIO INFORMATION IN AIRPORTS

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ABSTRACT

Real-time Information systems usually deal with display devices such as boards and monitors, while audio information are handled by operative personnel. Announcers must have access to the Flight Information Display System (FIDS) in order to know the time and contents of the information to be handled. The passengers on the other hand, need to ask the information desk (even by phone, in case they are not yet in the airport premises) if they want to have the latest details on their flight. All the information regarding flights are obviously already contained in the FIDS data base. In this way an automatic audio access to this data base is a good way to increase the performance of the existing FIDS. SOLARI & C./UDINE SPA has developed an integrated system which supplies both display and audio information either to passengers or to operative personnel. Audio information regards Automatic Announcements and Automatic Telephone Inquiry.

INTRODUCTION

Automatic audio information enables the central handling of information. Another aspect is the standardization of the audio messages which regards the lexicon, the pronunciation and the structure of the information. The acoustic quality remains unchanged. The routine work of the announcers is greatly reduced, thus permitting a more functional employment of the human resources and a service improvement as well.

AUTOMATIC ANNOUNCEMENTS

The Automatic Announcement System stores the voice in digital format and permits the automatic reproduction of a message composed of single words and elementary segments of a phrase. Automatic announcements are caused by the occurrence of predefined events: it is the computer itself that handles this task, implying that human presence is no longer required. The Automatic Announcement System handles different languages (up to 5 languages in the existing applications, although this is not a limitation) and permits the automatic repetition of the messages which are handled according to a pre-defined priority. Different automatic announcements are concurrently available in different areas. The synchronization between automatic announcements and live messages (from a microphone) is generated by a digital I/O interface.

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AUTOMATIC TELEPHONE INQUIRY

The Automatic Telephone Inquiry System stores the voice in digital format and permits the automatic response to a telephone call with a message composed of single words and elementary segments of a phrase. Telephone inquiry allows public and operative personnel to have an audio access to the FIDS data base: the event that causes the emission of the information is the phone call. The computer in this case performs as an automatic information desk and human presence is no longer required. Since not all the information regarding flights is available to the public, passengers and operative personnel have access to different types of information. The information is selected by touch-tone telephone sets (when available) or by multi-frequency keyboards that can be adapted on the dialing telephone sets. Using a dialing telephone set the user selects the type of information by composing a dedicated telephone number. Different telephone numbers correspond to different types of information (e.g. domestic/international, arrivals/departures, general information). The requested information selection within the type of information is not possible when using dialing telephone sets: in this case the user can only listen to the whole information while waiting for the desired one. The flight information provided regards all the flights (ordered according to time schedule) of the selected type included in a specific time period, let us say 30 minutes before and 30 minutes after the call. The general information regards the current airport status and the airport rules and facilities. Using a touch-tone telephone set the user does not need to select the information type by composing a dedicated number. All the information selection is driven by an audio menu which permits to isolate the requested information simply by touch-tones. The Automatic Telephone Inquiry System handles different languages and permits different handling of information for public and staff.

TECHNICAL FEATURES

These audio systems provide a complete real-time, automatic facility. They have both been developed on the IBM Series 1 mini-computer (The Automatic Announcements are also available on the IBM/PC). The waveform coding technique used in the A/D and D/A conversions is the "Delta modulation with variable slope." There are no limits in the number of messages supported in each language and in the length of a single message. The maximum audio storage time is 7 hours. The maximum number of available lines is 16 for the Automatic Announcements (6 simultaneous) and 32 (simultaneous) for the Automatic Telephone Inquiry.

APPLICATIONS

SOLARI & C./UDINE SPA installed its Automatic Announcement System in the following airports - Milan Linate, Milan Malpensa, Palermo, Genova -. There are also applications in railways - Florence , Port Bou -. The Telephone Inquiry System has recently been installed in Milan Linate Airport.