

**HIGHER TECHNICAL INSTITUTE**  
ELECTRICAL ENGINEERING DEPARTMENT

**DIPLOMA PROJECT**

**CONSTRUCTION OF A GREEK SPEECH SYNTHESIS  
SYSTEM FOR HANDICAPPED CHILDREN**

(E/960)

by

**LOIZIDES GEORGE**

JUNE 1995

**HIGHER TECHNICAL  
INSTITUTE**

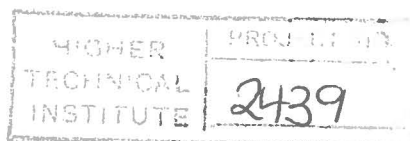
**ELECTRICAL ENGINEERING COURSE  
DIPLOMA PROJECT**

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SPEECH SYNTHESIS SYSTEM  
FOR HANDICAPPED CHILDREN**

**E-960**

***LOIZIDES GEORGE***

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**CONSTRUCTION OF A GREEK SPEECH  
SYNTHESIS SYSTEM**

**Project report submitted by**

***LOIZIDES A. GEORGE***

**to**

**the Department of Electrical Engineering  
of the**

**Higher Technical Institute**

**Nicosia, Cyprus**

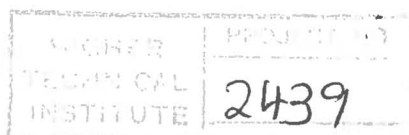
**In partial fulfillment of the requirements  
for the Diploma of**

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**IN**

**ELECTRICAL ENGINEERING**

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*Στη μνήμη του αγαπητού μου φίλου  
Νικόλα Κυριακίδη τον οποίο ο Θεός  
τόσο νωρίς πήρε κοντά Του.*

*In the memory of my friend Nikolas  
Kyriakides who in his early twenties gave  
his life while trying to help others*

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# **ABSTRACT**

## **Greek Speech Synthesis System for handicapped children by George Loizides.**

The aim of this project is the development of a low cost technique for storing and playing back voice signals from a ROM. These signals which are small phrases or words which combined together can produce a whole message can be chosen by a keyboard.

The ability to give a complete message with the use of hands only was the first thought for this system in order to be used by handicapped children who can use their hands only for communicating easily with their environment.

This system is designed for a maximum capability of 16 independent messages either words or small phrases each of maximum duration of 1.5 seconds.

The voice is stored in memory and recalled each time a phrase is needed accordingly.

The cost of the system is not high and the main contribution to this belongs to the number of words required.

## INTRODUCTION

The system already described since it can play back 16 voice signals has the need to store them somewhere. In conjunction with the principle of operation which is Pulse Code Modulation the storing media are EPROMs. The Codes of Pulse Code Modulation signals are stored in EPROMs. Each EPROM stores the codes for one word only of duration not greater than 1.5 seconds.

By depressing a key the EPROM which corresponds to it is enabled via a circuit which makes everything about the control of the system.

The digital form of the signal is converted with the aid of a Digital to Analog Converter back to analog. Then is low pass filtered, amplified and driven to a speaker.