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**1. INTRODUCTION**

This document is a software requirement specification of India Sign Language Translator using GTTS and Python. Through this document, we are going to provide all specifications and functionalities of the project. This document will mention the functionality, that is what the resulting application is supposed to do, external interfaces which interacts the users, performance, attributes, that is if the application is portable, or maintainable, and design constraints imposed on the implementation such as implementation language, input specifications and output expectations.

* 1. **Problem Definition**

The main problem that our project aims to solve is the communication problem between speech-impaired people and the others. As those people cannot express themselves with the words, they have many difficulties during their daily life. Since almost all of the normal people do not know sign language and cannot understand what speechless people mean by their special language, tasks such as shopping, settling affairs at a government office are so difficult that speech-impaired people cannot handle by their own. This problem is very broad and many solutions and implementation can be raised. A solution could be teaching sign language to everyone, yet it is very obvious to be an inefficient and even non-applicable one. Since speechless people can understand other people by lip-reading (or even hearing since being speechless does not mean being deaf also) the main problem is that normal people do not understand them. Thus a more suitable solution should be in the manner that makes speechless people’s language understandable by the other people. For the language of speechless people to be understood by other.

**1.2. Purpose**

The aim of this document is to specify the features, requirements of the final product and the interface of ISL Translator. It will explain the scenario of the desired project and necessary steps in order to succeed in the task. To do this throughout the document, overall description of the project, the definition of the problem that this project presents a solution and definitions and abbreviations that are relevant to the project will be provided. The preparation of this SRS will help consider all of the requirements before design begins, and reduce later redesign, recoding, and retesting. If there will be any change in the functional requirements or design constraints part, these changes will be stated by giving reference to this SRS in the following documents.

**1.3. Scope**

Sign language is a visual language that is used by deaf people as their mother tongue. Unlike acoustically conveyed sound patterns, sign language uses body language and manual communication to fluidly convey the thoughts of a person. It is achieved by simultaneously combining hand shapes, orientation and movement of the hands, arms or body, and facial expressions.

It can be used by a person who has difficulties in speaking or by a person who can hear but could not speak and by normal people to communicate with hearing disabled people. As far as a deaf person is concerned, having access to a sign language is very important for their social, emotional and linguistic growth. Sign language should be recognized as the first language of deaf people and their education can be proceeded bilingually in the national sign language as well as national written or spoken language.

But it is very difficult to establish communication between a deaf/mute person and a normal person who don’t know the sign language and this is nothing that we can just learn a day. As a result these disabled persons faced a lot of problems all around in establishing communication.

As a human we should always help but because of this communication gap we are not able to do that the available solution are using ASL (American Sign Language) which mostly used there and every country as their own like in India we have ISL(India Sign Language) but very few percentage of persons knows it as a result we are facing these communication gap.

**1.4. User and Literature Survey** According to WHO (2018) data, the prevalence of hearing impairment (HI) in India is around 6.3% (63 million people suffering from significant auditory loss). The estimated prevalence of adult-onset deafness in India is 7.6% and childhood-onset deafness is 2%.   
Resulting in communication problem with everyone, as everyone don’t know the sign language. numbers, the need for a ISL recognizer is obvious.

**1.5. Definitions and Abbreviations**

SRS: Software Requirements Specification

ISL : Indian Sign Language

ASL : American Sign Language

**1.6. References**

**1.7. Overview**

In the following section of this document, we will focus on overall description of the system. This part explains the product perspective, product functions and constraints, assumptions and dependencies of the desired application. Third part of the document explains the specific requirements of the system. Specific requirements is divided into three parts namely interface requirements, functional requirements and non-functional requirements of the system. The fourth section of this document is data model and description part. This chapter will include information and data domain of the system and its organization. The behavioral model and its descriptions are provided in the fifth part including the state diagrams. After the behavioral model the team structure and introduction of the team members who are responsible from the project will be stated in the next section. Final part is the conclusion part which gives a brief summary of the whole document.