# PROJECT DESIGN PHASE-II

# FUNCTIONAL REQUIREMENT

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| Date | 19 October 2022 |
| Team ID | PNT2022TMID00379 |
| Project Name | Real-Time Communication System Powered by AI for Specially Abled |
| Maximum Marks | 4 marks |

**FUNCTIONAL REQUIREMENTS**

| REQUIREMENTS | FUNCTIONAL REQUIREMENTS |
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| Objective | Most people communicate efficiently without any issues, but many cannot due to disability. Hence we make use of CNN and AI to bridge the gap between the abled and disabled. |
| focus | The hand gesture recognition system consists of three major parts: palm detection, hand tracking, and trajectory recognition.It also focuses on conversion of hand gestures into speech and viceversa. |
| Documentation | This phase involves representing the problem statement in the form of data flow graph ,empathy map thereby giving an overview of the proposed solution |
| End case | This aims at evaluating and comparing the methods used in the sign recognition systems, classification methods used and identifies the most promising approach for this project. |
| Essentially | Web camera is essential for capturing image.We make use of CNN to train images |
| Origin type | Artificial intelligence that is being developed can identify errors in hand gesture matches and will stop as a default. It will generate corresponding gestures that allow every user to read and understand what the gesture means. |

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| Testing | Feature extraction depends on the application. Initially the finger status, skin color, alignments of the finger, and the palm position are taken into consideration. After features are extracted, they are sent to training and testing classification algorithms such as k means clustering ,naïve bayes to reach the output.Similarly,the speech signal is extracted and sent into google voice translator and converted into the required hand gesture. |