

Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	03 October 2022
Team ID	PNT2022TMID12764
Project Name	Real Time Communication System Powered by AI for Specially Abled
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through trusted third party authentication like google, microsoft, etc.
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP (If third party authentication was not used)
FR-3	Account Setup	This includes attaching required documents like valid ID proof, PwD certificate, etc.
FR-3	Device Permission	Permission request for camera access - to get real time gestures and to show sign-language output Permission request for speaker access - to get real time speech input and to give translated speech output Permission for storage access - to facilitate the user to store important messages
FR-4	User input through app UI whether to start gesture recognition or to start speech recognition	Start listening to the speech or start capturing video based on user input.
FR-5	User input through app UI whether to stop the process	Stop listening/capturing and producing suitable output as video or gestures after recognition
FR-6	User input through app UI whether to start producing output	After processing the input, output should be produced as voice or gestures based on the input taken
FR-7	Displaying options for recording the output for future reference*	Start storing the result in the device if the user preferred to record it
FR-8	Displaying another option for sharing it to others	Starting to share the result to other apps based on user input
FR-9	Displaying option for start new recording or video capturing	Start listening to the speech or start capturing video based on user input.
FR-10	Providing option for editing user details and uploading PwD certificate in Account Settings page	Changing user details and storing the PwD certificate in the database based on user input.
FR-11	Providing option to change language (from the options	The UI will be changed to the user selected language

	available) of the app in Settings page	
FR-12	Providing option for setting up child safety monitoring system in Settings Page*	Linking the apps in parent and child's devices. Providing option for the parent to view all the gestures and speeches from the child's device

* - Decided as top 3 ideas to be implemented, in brainstorming chart during Ideation Phase

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	IBM Watson services must be used to convert the output speech to users' desired language. The UI will contain only commonly used commands. It will be changed to users' desired language selected at the Settings page. These features make the app user friendly for various users, with even the illiterate users to easily adapt to the app.
NFR-2	Security	Registration of the users includes email/phone number confirmation. Trusted third party authentication will also be available. These features enhance the security. Also the child safety monitoring system protects the children from abusers.
NFR-3	Reliability	Most of the features in the app work without the internet. Some features which require the internet like updating of details in the database, will be temporarily stored in the device when internet connectivity is not detected. It will start updating the database soon after the network is available. The quality of the AI model used will be periodically improved and app updates will be released. The performance of the implemented model will be collected based on users' preference.
NFR-4	Performance	Since the app works in real time, it should have instantaneous response. The latency in data processing after getting the input must be nearly zero.
NFR-5	Availability	The registration details of the user and other structural data must be stored in the database so that if the user changes the device or reinstall the app, he/she can continue without any difficulty. The AI model must be periodically developed and updates must be released. This new update availability must be notified to the users through the app. The user must be able to update during his/her desired time
NFR-6	Scalability	The app must be compatible to all the web browsers and to the Android version of at least 4.0. Most of the functionalities in the app must require no internet connection so that it can be used in remote

		areas. UI and the speech input/output must be changeable to users' desired language. These measures covers large users population.
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