

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

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| Date | 03October 2022 |
| Team ID | PNT2022TMID16374 |
| Project Name | A Gesture-based Tool for Sterile Browsing of Radiology Image |
| 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 | Hand detection | Filtering of hand from video capturing device |
| FR-2 | Filtered object detection | Reads and filters by recognizing clusters of skin coloured objects |
| FR-3 | Gesture control | Hand gestures recognition for commands |
| FR-4 | Hand calibration | Perform according to the adjustment of user's dominant hand |
| FR-5 | Model rendering | When the user uploads/gives the gestures, the algorithm should start processing its task. |
| FR-6 | Launching the model | Launch the application either from cloud where it is deployed or by installation but with a stable internet connectivity |

Non-functional Requirements:

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

| FR No. | Non-Functional Requirement | Description |
|--------|----------------------------|--|
| NFR-1 | Usability | Usability is easy for all users. It is understandable for non technical users with minimal instructions |
| NFR-2 | Security | Accessible only in secure networks with administrative permissions, so there is less chance of security breach |
| NFR-3 | Reliability | It is operable under all conditions, regardless of user's operating environment |
| NFR-4 | Performance | Minimize the number of calculation to perform hand gesture and to improve image resolution quality |
| NFR-5 | Availability | When the gesture is available then only the application works. This application is only available in surgery rooms |
| NFR-6 | Scalability | Model is scaled by CNN with help of data augmentation and gesture recognition using OpenCV, Tensorflow, Keras |