Project Design Phase-I
Proposed Solution Template

Date	24 September 2022
Team ID	PNT2022TMID33174
Project Name	Project - A Gesture Based Tool for Sterile Browsing of Radiology Images
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	• Human hand is very smaller with very complex articulations comparing with the entire human body and therefore errors can be easily affected. • To overcome this problem we detect a Hand gesture recognition is of great importance for human computer interaction (HCI) because of its extensive applications in virtual reality and sign language recognition etc.
2.	Idea / Solution description	• Imagine being able to check your home security camera as you drive home by simply making a hand gesture. • A gesture recognition system starts with a camera pointed at a specific three-dimensional zone within the vehicle, capturing frame-by-frame images of hand positions and motions. This camera is typically mounted in the roof module or other vantage point that is unlikely to be obstructed. The system illuminates the area with infrared LEDs or lasers for a clear image even when there is not much natural light. • Those images are analyzed in real time by computer vision and machine learning technologies, which translate the hand motions into commands, based on a predetermined library of signs.
3.	Novelty / Uniqueness	• Battery-free technology brings gesture recognition to all devices. • In contrast to such qualitative reasoning, AI excels at recognizing complex patterns in imaging data and

		can provide a quantitative assessment in an automated fashion. More accurate and reproducible radiology assessments can then be made when AI is integrated into the clinical workflow as a tool to assist physicians. • It is highly likely that in the future, the creative work of radiologists will be necessary to solve challenging problems and to oversee diagnostic procedures. AI will absolutely become part of their routine in diagnosing basic cases and helping to assist with repetitive jobs.
4.	Social Impact / Customer Satisfaction	• Gesture technology comes as a boon to society, providing contact-less, safe, and inclusive experiences. Still, the social and emotional impact of interacting through technology does need to be further explored. • Handwashing:The need of the hour may be found in “Handwash movement recognition Technology” to promote handwashing etiquette. Due to the pandemic, the general significance of handwashing as a measure to protect health has become more evident. • There is an urgent need to implement measures to ensure hygiene in food safety standards and ensure it is non-invasive. You can extend this technology to medical facilities, hospitals, schools, hotels, the foodservice industry, and event venues. Automated on-site handwashing recognition eliminates the need for intrusive, time-consuming visual confirmation and manual recording at worksites.
5.	Business Model (Revenue Model)	• Hand gesture software is used in commercial in-store displays which can be found in shopping malls to attract more visitor traffic. • The retail business is being increasingly digitized. This includes an introduction of multiple smart devices working together on a single IoT platform to deliver hyper-personalized, adaptive, and context-specific experiences. • Much of the technology is to be invisible to the consumer, shoppers will have the opportunity to interact digitally within the physical store

		environment to find out the information they are interested in and sometimes for entertainment purposes.
6.	Scalability of the Solution	• The consumer market is open for new experiences in HMI, and hand gesture recognition technology is a natural evolution from touchscreens. • Demand for smoother and more hygienic means of interaction with devices as well as a concern for driver safety are pushing the adoption of HGR in industries from healthcare to automotive and robotics. And while software development for gesture recognition systems is quite challenging, expertise in AI, deep learning, computer vision, and innovative hardware from top tech providers make HGR solutions more affordable than they were even a few years ago.