Project Design Phase-I Proposed Solution Template

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| Date | 28 SEPTEMBER 2022 |
| Team ID | PNT2022TMID41426 |
| Project Name | Project – AI based localization and classification  Of skin disease with Erythema |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

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

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| **S.No.** | **Parameter** | **Description** |
| 1. | Problem Statement (Problem to be solved) | This article presents a new method for analyzing the spreading of skin erythemas. These occur as a result ofthe cutaneous vascular axon reflex which can be evoked by a noxious stimulation of the skin. Series of true-color images of the observed skin patch were  recorded using a video camera. |
| 2. | Idea / Solution description | The images were digitized and stored on computer disk. The delineation of the reddening was segmented for every image of thesequence  by a newly developed image processing method. |
| 3. | Novelty / Uniqueness | Each image taken after the noxious stimulation was compared with the baseline before the stimulation and each image point was classified as: “unchanged” or “changed skin color.” To improve the classification the CIE Lab color  space was used. |
| 4. | Social Impact / Customer Satisfaction | In this work an objective method for determining the time course of the flare response was developed. For this, video images of the observed skin were recorded, digitized, and analyzed by a computer-based image processing system. The advantage of this method is the high spatial and  Temporal resolution. |
| 5. | Business Model (Revenue Model) | To determine the size of a skin erythema, the reddening was usually traced on a translucent paper lying on the skin [4]. It is difficult, for practical reasons, to use this procedure for the determination of the development of an erythema, because it takes time to mark the  reddening precisely. |
| 6. | Scalability of the Solution | The method developed in this work can be used to analyze the extension of a skin erythema based on the changes in skin color. The automatically detected borders of erythema are reproducible and independent of the operator. For recording, a conventional video system is used which allows a high spatial and temporal resolution limited only by the  performance of the computer system. |