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

Date	03 October 2022
Team ID	PNT2022TMID40634
Project Name	Project - Natural Disaster Intensity Analysis and Classification using Artificial Intelligence
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Sub Requirement (Story / Sub-Task)
FR-1	**Earthquakes:**The intensity is a number describing the severity of an earthquake in terms of its effects on the earth's surface and on humans and their structures. Several scales exist, but the ones most commonly used in the United States are the Modified Mercalli scale and the Rossi-Forel scale.
FR-2	**Volcanoes:** Volcanoes are composite hazards. There are both primary and secondary hazards which can be caused by volcanic eruptions. The primary hazards include pyroclastic flows, air-fall tephra, lava flows and volcanic gases.
FR-3	**Extreme precipitation and flooding:**Climate change can affect the intensity and frequency of precipitation. Warmer oceans increase the amount of water that evaporates into the air. When more moisture-laden air moves over land or converges into a storm system, it can produce more intense precipitation—for example, heavier rain and snow storms.
FR-4	**Landslides:**A landslide is the movement of rock, earth, or debris down a sloped section of land. Landslides are caused by rain, earthquakes, volcanoes, or other factors that make the slope unstable. The most landslide-prone regions are typically mountainous, have coarse soil, or lack vegetation to anchor the soil in place.A deforested mountainside, for example, would pose a high risk for landslides.
FR-5	**Wildfires**:Naturally occurring wildfires are most frequently caused by lightning. There are also volcanic, meteor, and coal-seam fires, depending on the circumstances. Human caused wildfires can be accidental, intentional (arson), or from an act of negligence.
FR-6	**Hurricanes:**Hurricanes form when warm moist air over water begins to rise. The rising air is replaced by cooler air. This process continues to grow large clouds and thunderstorms. These thunderstorms continue to grow and begin to rotate thanks to earth's Coriolis Effect.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The wide spectrum of technologies used in Geographical Information System, Global Positioning System (GPS), Satellite navigation system, Satellite communication.
NFR-2	**Security**	Identification and measuring disaster risk. Incorporating DRM into national planning and investment.
NFR-3	**Reliability**	Disaster-related damages are typically measured by separately examining the numbers of fatalities, injuries.
NFR-4	**Performance**	The identification of hazards; a review of the technical characteristics of hazards such as their location, intensity, frequency and probability.
NFR-5	**Availability**	The number and cost of weather and climate disasters is rising due to a combination of population growth and development along with the influence of human-caused climate change.
NFR-6	**Scalability**	The Richter scale was calculated for only one type of earthquake wave. It was replaced with the Moment Magnitude Scale, which records all the different seismic waves from an earthquake to seismographs across the world.