Project Design Phase-II

Solution Requirements (Functional & Non-functional)

Date	13 October 2022
Team ID	PNT2022TMID38277
Project Name	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	**Tsunami :** A series of large waves of extremely long wavelength and period usually generated by a violent, impulsive undersea disturbance or activity near the coast or in the ocean. When a sudden displacement of a large volume of water occurs, or if the seafloor is suddenly raised or dropped by an earthquake, big tsunami waves can be formed.
FR-2	**Earthquake :** Any sudden shaking of the ground caused by the passage of seismic waves through Earth's rocks. Seismic waves are produced when some form of energy stored in Earth's crust is suddenly released, usually when masses of rock straining against one another suddenly fracture and "slip."
FR-3	**Droughts:** The primary cause of any drought is efficiency of rainfall and in particular , the timing, distribution and intensity of this deficiency in relation to existing reserves.
FR-4	**Tropical cyclones:** The major natural disaster that affects the coastal regions of India is cyclone and has a coastline of about 7516 kilometres , it is exposed to nearly 10% of worlds tropical cyclones.
FR-5	**Landslides:** It mainly affects the Himalayan region and the western ghats of India. Landslides are also common in the nilgiri range. It is estimated that 30 percent of the world's landslides occur in the Himalayas. The Himalayan mountains which constitute the youngest and most dominating mountain system in the world.

FR-6	**Volcanoes:** A volcano is an opening in the earth's crust through which lava, volcanic ash, and gases escape. Volcanic eruptions are partly driven by pressure from dissolved gas, much as escaping gases force the cork out of a bottle of champagne.

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.