(54) Title of the invention : A Device for Slope Vulnerability and Land-Slide Assessment (S-VALSA)

(51) International classification	:G01N0033240000, G08B0021100000, G01W0001100000, E02D0001020000, E02D0029020000	(71)**Name of Applicant :** 1)**National Institute of Technology Karnataka** Address of Applicant :Srinivasnagar PO, Surathkal, Mangalore - 575025, Karnataka, India. Mangalore ---------- ---------- **Name of Applicant : NA** **Address of Applicant : NA** (72)**Name of Inventor :** 1)**Varun Menon O** Address of Applicant :Bhasuram (h), Pullur-Thuravankad Rd, Pullur PO, Thrissur-680683, Kerala, India. Thrissur ---------- ---------- 2)**Sreevalsa Kolathayar** Address of Applicant :Department of Civil Engineering, National Institute of Technology Karnataka, Srinivasnagar Post, Surathkal, Mangaluru-575025, Karnataka, India. Mangaluru ---------- ----------
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(57) Abstract :

A slope vulnerability and land-slide assessment (S-VALSA) device 100 comprising: a precipitation unit (Stage-1) 101 to collects water and an indigenously developed intensity sensor, which measures rainfall intensity using a unique mechanism that keeps changing the warning level instantaneously based on the duration remaining and the total quantity of precipitation collected; a geotechnical sensor unit (Stage-2) 102 provide an actual volumetric moisture content of the soil to determine the variations in the shear strength of the soil as a factor of safety considered for a warning level; and a camera unit (Stage-3) 103 involves visual confirmation based on images captured by the camera is transmitted every 1 minute to the authorities via HAM based cloud communication which are documented and used to create technical reports on the impending disaster, wherein the slope vulnerability and land-slide assessment (S-VALSA) device 100 predicts slope vulnerabilities and assess landslide risks of slope stability using unsaturated soil mechanics principles by simultaneously considering multiple parameters causing landslide.

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