

## E- Balloon Statistics in Flood Detection Indian Perspective

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### ABSTRACT

In the modern era of Increasing Population there are lot more recurring Disasters taking place in our nearby Cities and Neighboring Countries i.e., we are panic everyday glancing through that news. In that queue of occurrence the major role takes place in our current period of time is the increasing factors of Ice Melt that results in the raise of Water level over every common path of Water resources. In the horizon view on Indian perspective it occur lot more serious in the factor of FLOOD Detection & Management as a common Disaster. India is not only a vast country, but also a land mass with divergent Physiographic due heterogeneous geo systems & the geo dynamic process. The cause of this occurrence through viz; Ice Melt & Rainfall (Brahmaputra, Ganges, Yamuna & Indus river Basins) Bay mouth, bar dynamics, Shallow ground water regimes, Anthropogenic. The new Innovation in this field by updating the recursive features of Geo-Spatial technology by altering simply i.e., emerged strongly with diverse applications. The paper presents out the New Technique “E-BALLOONING Statistics” along with Geo-Spatial Technology in the field of Flood Detection alarming. The rate of Alarming sense can be made fast and accurate by direct satellite transformation by the E-Balloon. So, this method of being alarmed is quite diverse to the platform of Pre-Disaster mode.

**Keywords:** Water resources, Geographical Systems, Geographical-Spatial technology, Electronic-Ballooning Statistics.

### INTRODUCTION

The Scientific collections of Geographical views across the Plains, Plateau, River Basins can be processed out by the technique of Remote Sensing(R.S), Geospatial Technology(GST) enhance with Geographical Information System (GIS), Global positioning System (GPS). This provides the detailed flowchart of collection, analysis & interpretation of Spatial data as we known before by many means with the reference [2, 3]. These collections of Data can be compacted & notified by Sensing the Periodical disturbance over Geographical interphase of River basins in Flood Management. The field of Compressibility & Prolongivity in making things so smaller is the new technique of Advance scientific research field so, the NANO-Optimization takes the role of processing this GST in a manner that occupies the lesser space in our technological advancement aspect. Here we given the intro of E-Ballooning method i.e. , the technological development has leads to considering Stratospheric balloons as low-cost solution to provide Sensing & Alarming, and also in the field of Tele Communication services with Accuracy rate of Output. Logically & By Financially the Ballooning method will sure cognizant the flood alarming & Detection similar to the reference [01]. The Present Paper aims to highlight the following set of Objectives,

\*To Provide an Instant Alarm For Flood Detection/Tracking.

\*To assess the status of GST in Flood management seasonally.

### METHODOLOGY

This paper ideally presents out the Wireless Data Transmission using E-Ballooning Method similar to reference [1] that inbuilt by sensing technology & by a pack of GST arrangements to trace the level of water to a particular extent considered as a Flood Alarm then the Message forwarded to the Database System. ie, is to be Warned \ Alarmed in that particular area coverage. This method is absolutely a Crash free signal transferred due to its Open source audit functioning in Air space & Sensing element present inside. The application of GST has been reviewed in various Educational & Research Spots over India considering ISRO (Indian Space Research Organization), NRSA (National Remote Sensing Agency) & too GST has been published by many Authors prejudging the uses & act of tracing the areas over various fields. E-Ballooning Statistics sure is a perfect Alarming Technique taking a role in Pre-Disaster Management of Flood Detection under Monitoring & Alarming/Warning.

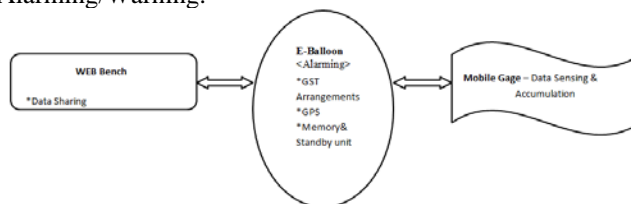


Figure 1. A flow of E-Ballooning Alarming for Flood Detection

Figure 1 depicts the E-Ballooning Working procedure as per the flow. The Data get transferred from a step-by-step process by a systematic cyclic rotation for Alarming on beforehand.

**Nano- Sensing to Alarm the Risk:**

Nano sensors are becoming smaller, cheaper, and more reliable & more power efficient. So, the sensors are increasingly used in early Warning Systems & Disaster management. The sensor utilized in these applications are Nanoised Microwave Remote Sensors i.e., could gather data in an In-Situ (or) Remote location. The idea of remote sensor web transmission such as providing infrastructure for sharing, finding & accessing their data across different application by noting the reference [3]. The introduction of Sensor Web Enablement (SWE) i.e., develops the web service interphase. The ultimate goal of the Sensor web to sense, to prolong the web based sharing, discovery, exchange & processing of sensor observations accurately. A Mobile water Gage is made to be fixed on the depth of River basins, i.e., the gage consists of pertaining sensors that is activated through the inbuilt system of E-Balloon prototype arrangements. The gage is produced with a Satellite navigational receiver, battery, memory as well as a Communicational unit. The Positioning status is updated using the memory. The Accuracy level is vast enough in communicating the details by the up-lifted E-Balloon [1, 01].

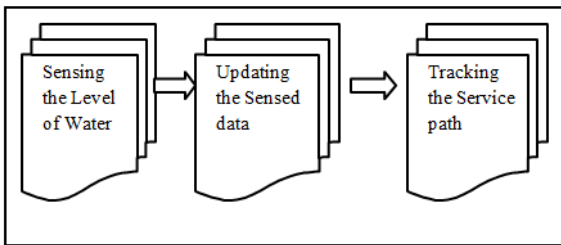


Figure 2. A Systematic Conversion of Tracked Ratio Level to the Service path

The Following are the step-by-step process, see figure 2.

- \*Connecting the Mobile Water Gage by a Wireless Nano-Sensor & Passing the Sensing Details to E-Balloon.
- \*Publishing Data's is updated by E-Balloon by Sensor Concurrence Transferring.
- \*Providing Service path from E-Balloon to service head station in Alarming / Providing Sensed Data's.

**Data Transmission Balloon's**

The E-Ballooning method is fully based on Air Filling Optimization with a inbuilt structured devices placed on the Air gap at a Constant Temperate, Pressurized Balloons Swing up on the Sky at a distance over meters above the Geographical River bed. The rate of Distance per Pressure of a High Altitude Platforms [HAP]. By the Web Reference quoted Google showed interest in ballooning to support New Wireless Communication Networks. The platform they have chosen for that is the Low Altitude Platform[LAP] which provides Data Transmission & Signal Processing over 900 MHz band to the large areas and in our area of transmission the High Altitude platform are used that double time higher compared to [LAP]. So, it will be processed at the rate for Data transmission in Seconds//Signal processing in a Minute. Balloons along with their Electronic equipments ascend to an altitude between 20-40 Kms. Each of them covering 600 Kms

in diameter. Then the Balloon is provided with a High efficiency Solar Batteries to enhance a High Standby mode. At a particular extent it expels its Helium gas & land safely if it has a manual commanding or any discrepancy i.e., when it gets landed it will be traced by its GPS system for Recovery.

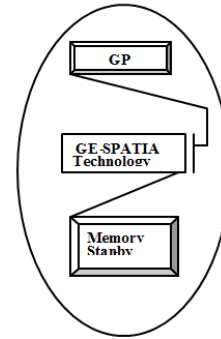


Figure 3. A Balloon Transmission Unit with the Memory unit. Data transmission system is arranged in the system of an air packed Balloons. where it consist basically of a GPS, GST & Memory- Stand-by Units to provide a Data transmission and to update the Sensed details by the reference [5,6] For immigrant Flood warning for Prior cause of Flood Management. see figure 3. That to distinguish the Alarm for a Particular Land Coverage for predicting the Flood Sign for Sustained Alarming.

The Graph depicts the Ozone partial pressure & The Temperature Pressure for the Balloon to withstand the Consequences of the Swing rate. See figure 4.

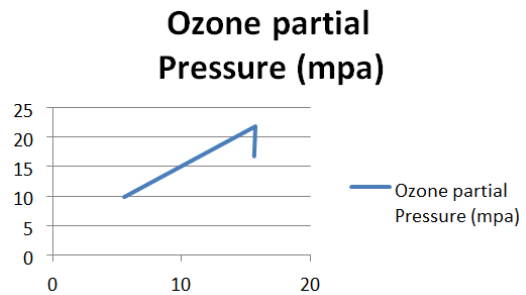


Figure 4. Graph showing the Attitude & ozone partial pressure to maintain the swing rate

The graph shows the rate of change of Ozone partial pressure with the series of Raising Altitude in Kms. That the change of altitude depends purely upon the Atmospheric pressure so, the ratio level of depending factor will increase the stability maintenance rate to withstand the ballooning data transmission in the Air gap medium to promote the Sensed details for Alarming.

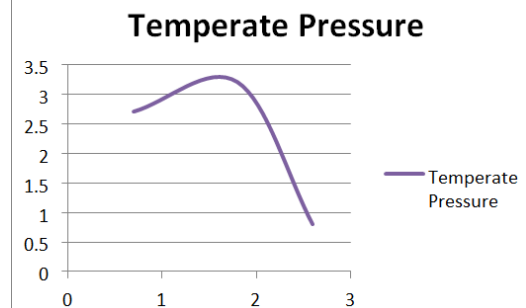


Figure 5. Graph showing the Temperate Pressure constant to maintain the swing rate.

**Web-Based Data Sharing:**

The Collection of Sensed data should be shared for Manual exbitance from its internal storage system compacted along with Web Processing. So, the entire process depends purely & finally on the Web based Data Sharing by Spatial Data Infrastructure[SDI] to overcome some of these Challenges. SDI'S can be used to facilitate the development of risk assessment & relocation planning of Distance management plans to minize the damage from a Potential Natural Disaster[Flood] by the reference [2].

The use of SDI's in Flood Management aid in creating the technology for Web-Based access to spatial information. When the SDI's are allocated to Web Protocol the information get sensed duly in the E-balloon get updated periodically in the fraction of Second's to the Network database bench. So, Each & Every Information is Characterized Virtually by Spatial details encrypting it in the form of raising Graphs & by Mathematical

Data's value pertain the amount of raising factor & Alarming Periodicals to the System. The Standby E-Balloon charted out the data accumulation & transmission to the SDI & SDI transfers it to the Network Bench for Manual Review as mentioned in [3, 4]. The below network describes the overflow of the periodic rotation for the data transmission from a Primary section to the Secondary section of data transmission to Alarm the Flood Alert to the Area Coverage path.

The Alarming Network attached further to this Sensing cyclic systems are used in the form of pertaining the upcoming flood over the area where it is diverged along the River basins. This Network enhance the Data Transmission to the web bench for further image processing and Manual interpretation to store the data 's for Future reference cause when the same value of ratio level inhibit the data occurrences on the system to enable that the inhbitance arousal of Water level to the particular stage of Monitoring. So, the prior alarm can be made to limit the Flood Damage in the Pre-Disaster Mode. The art of sensing by nature is proven to a valuable technique for alarming the Damage going to cause around in our Locality. This System of packed E-Ballooning [1] Statistics sure is a valuable part in deterring the level of upcoming flood to prevent on before handed job.

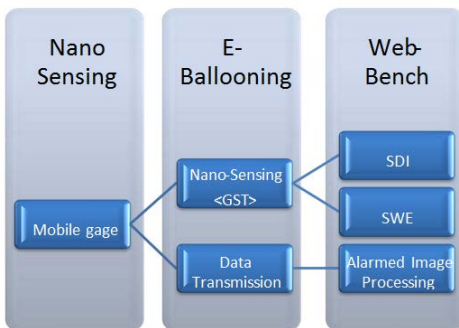
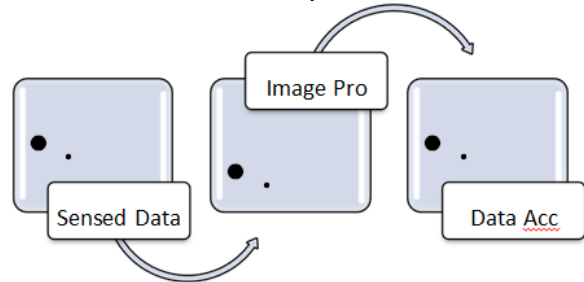


Figure 6. A Cycle of Web Data Sharing

**Image Processing & Data Storage:**

GPS, GST, and GIS these three are the Global locators of the Geographical changes over the plains, plateaus & river basins. These data are signalized / transformed as an Image for a Manual Representation of a particular data's leading to the

damage of particular disaster taking place in a particular area. The Processed images [4] are verified by the crew of team experts & it is rationalized out in the form of Data Structures for Future Records of reference. The Storage located in each and every three stages of this E-Ballooning system. One placed in the Mobile Gage i.e., is used to record the flow rate of water & raising level to the fixed values and then Main Storage in the Ballooning system mem chip operates for Processing, Transmission & Characterizing as by the Stand-by mode for Temperate Pressure maintenance. At last the system memory is allocated for the Data's backup from the sense.



I. Figure 7. Processing of Image & Data

The sensed data's from the Mobile gage turns to be the Digital sign of Data transmission to the Image Processing [2] Web Bench system. The Ballooning system grabs the signal and get recorded in the storage and Checks for the periodical raise of water level when it doesn't happen to get any of the disturbance over the sensed Data it transmit to the Web Bench where the Data are processed as Image (Image Pro) for Manual representation of slopes and steeps in a plains of river basin to locate the disturbed geographical aerial view of the land over the river path. The final Systematic design of Topographical survey [6] will determine the rate of decreasing land mass when the Flood pertained in the Area coverage of meters circumventing the zone for Predisaster management.



1.7-Storage Manipulation for Image-Pro & Ratio Traced value

**RESULT AND DISCUSSION**

The main objective of this research work is to develop a real time Alarming and Nano-Sensing Remote device by E-BALLOONING Statistics to provide a Flood alarm as a Pre-Disaster Management. In this paper, NanoSensing, Data-Transmission Balloons, Web protocol & Image Processing for Alarming and to be cautious for Flood Detection were discussed. In this Modern world everything around get modernized in any aspects particularly by its Size and its Working part efficiency. The world is going on get Renovated by a mean kind of Natural and Man-made Disaster i.e., the Flood Managing Technique in the Pre-Disaster factors have been mitigated by alarming and sensing virtually by

Nano-Sensors by E-Ballooning application tech, in favoring to the GST. The weather forecast disaster management all in one hand it deliberately exposing it for our cause to pretend the Virtual representation of a Rate of flow of increasing water levels. By this we conclude that this technique sure enough to Alarm a Temperate \ Permanent Flood exposed zones when the Flood encroaches the spot.

The Main initiative of this paper is being discussed around the Nano-Optimization of the Data traced on the path by the E-Balloon Transmission directly to the Satellite processing for Fractuated Alarming to the Area covered within the Limits under Surveillance.

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