**Executive Summary**

The NDRRMC Monitoring System is a system where Local Government Units or LGUs can view summary reports of all disasters that their area encountered. The system also allows National Risk Reduction Management Commission (NDRRMC) to give real time advisory to the LGUs. LGUs can request supplies from logistics on what they need to be prepared. Using the summary reports, this can be used as a reference of LGUs on what and how many items to request and where to deliver it. With this, it can help the LGU be aware and prepared for a calamity.

**Project Context**

The team identified the following problems of NDRRMC and LGUs when it comes to preparing for a disaster:

1. Lack of capacity and technical expertise
2. Lack of public awareness or the threats and impacts of all types of hazards
3. Lack of necessary skills to cope with the impacts of disaster
4. Lack of communication and coordination.

NDRRMC Monitoring System easily monitor and identify the needs of the area that is going to be affected before a calamity happens. This will allow ease of access to information for NDRRMC and other Government Agencies. The use of NDRRMC Monitoring System it will give awareness and public safety to the community to be well prepared in incoming disaster. By using this system, it may reduce the number of families that might be affected.

**Project Description**

The proposed system has the capability to track relevant data from different NDRRMC independent systems (e.g. Logistics, Inventory, Procurement, etc.) that are connected to Data Warehouse. The collection of data gathered is limited only on the area where the LGU admin has the responsibility to monitor. LGU Admin must register or provide the information of the specific area where he/she is assigned to properly analyze their needs. The system also includes disaster advisory alert to make the information rapidly available for better preparedness and action. The responsible LGU admin will then receive a notification about the upcoming disaster details.

Since the data from different system will be put on use and the information of preparations for previous disaster are already in the system, it will help the NDRRMC and/or the LGU admin for recommendation and decision making in analyzing the needs for the upcoming disaster. From the collected data and the details of advisory received, the Admin can easily evaluate and identify what preparation he/she should do. It will also be useful in improving the planning process, correcting problems and obviating similar problems in the future.

**Objectives**

*General Objectives*

* The NDRRMC Monitoring System is a system that can help NDRRMC to quickly give advisory to LGUs while LGUs can easily identify and request for supplies

*Specific Objectives*

* To enable LGUs view reports of previous disasters
* To help NDRRMC and LGUs in decision making for disaster preparation
* To enable LGUs to request needed supplies for preparing to upcoming disaster
* Give NDRRMC the ability to inform LGUs about the upcoming disaster
* To let LGUs to experience simple and efficient requesting of supplies

**Scope and Limitations**

These are the coverage of NDRRMC Monitoring System are:

* NDRRMC Monitoring System Admin can register account for Local Government Units(LGU) Admin
* NDRRMC Monitoring System Admin sends predicted disaster details and predicted areas to be affected
* LGUs admin request needed supplies to Logistic
* NDRMMC Monitoring System provides summary reports in form of dashboards using analytic tool

The NDRRMC Monitoring System is limited only to create account for LGUs admin. The collection of data gathered is limited only on the area where the LGU admin has the responsibility to monitor. Also, the disaster details that is being send to LGUs is base from the report of DOST-PAGASA and PHIVOLCS.

**Review of Related Literature/System**

Sahana Eden (Emergency Development ENvironment)

This software provides solution to manage the organizations, people, projects, inventory and assets as well as collecting information through maps. This is designed to help Disaster Management practitioners to better mitigate, prepare for, respond to and recover form disaster more effectively and efficiently. Sahana Eden contains a number of different modules which can be configured to provide a wide range of functionality.  Its main capabilities are organization registry, project tracking, human resources, inventory, assets, assessments, shelter management, scenarios and events, mapping and messaging.

(<https://sahanafoundation.org/products/eden> )

Pentaho Analysis Tool

Pentaho Business Analytics is an open source visual integration tool with comprehensive data discovery and visualization, interactive reporting, dashboards and predictive analytics. Pentaho is embeddable architecture supports any type or source of data with native support for Hadoop, NoSQL and analytic databases. It also supports and augments “human decision-making” with automated algorithms and machine learning.

(<http://www.pentaho.com/solutions/government>)

Karnataka State Natural Disaster Monitoring Centre (KSNDMC) GIS System

KSNDMC provides regular weather and natural hazards-related updates to the farming community, agriculture and horticulture sector, fishermen, transport sector, power and electricity sector and state and district level disaster management authorities in Karnataka. The center provides ’Early Warning and Preparedness’ activities related to management of natural hazards in Karnataka. ‘Early Warning and Preparedness’ heavily depends on Department of Science and Technology(S&T) inputs like reliable, accurate real/near real data on the hazard causing parameter, forecasting, data analyses, alert recognition and dissemination of alerts. Its objective is to develop a geospatial database for the decision making and management in an event of natural hazards, envisaged a system to capture the data in a near real-time and automate the generation of reports, alerts and early warnings to government bodies and communities. (<http://www.nasscom.in/sites/default/files/NIIT_Natural%20Disaster%20Monitoring%20Centre.pdf> )

**Technical Background**

To develop the system, the project team will use Cassandra database, a NoSQL or Not Only Structured Query Language that supports storing images and maps and to enable the system generate a report, the team will use a Business Intelligence tool that is free to use.

**Methodology**

The process starts when NDRRMC Admin sends advisory to LGUs monitoring admins for their preparation for incoming disaster. When LGUs Monitoring admin receives the report from NDRRMC Monitoring, LGUs monitoring admin sends a request of needed supplies to the logistic, by there the process of logistic, inventory and procurement system will apply.

**Requirements Analysis**

After analyzing the problems that the NDRRMC encounter in disaster preparation, the team came up with proposal of possible solutions that the system could provide. Most problems that the NDRRMC encounter are lack of communication and coordination which might lead to absence of public awareness. With the NDRRMC Monitoring System, the problem that the facility encounters will be resolved and minimized.

**Requirements Documentation**

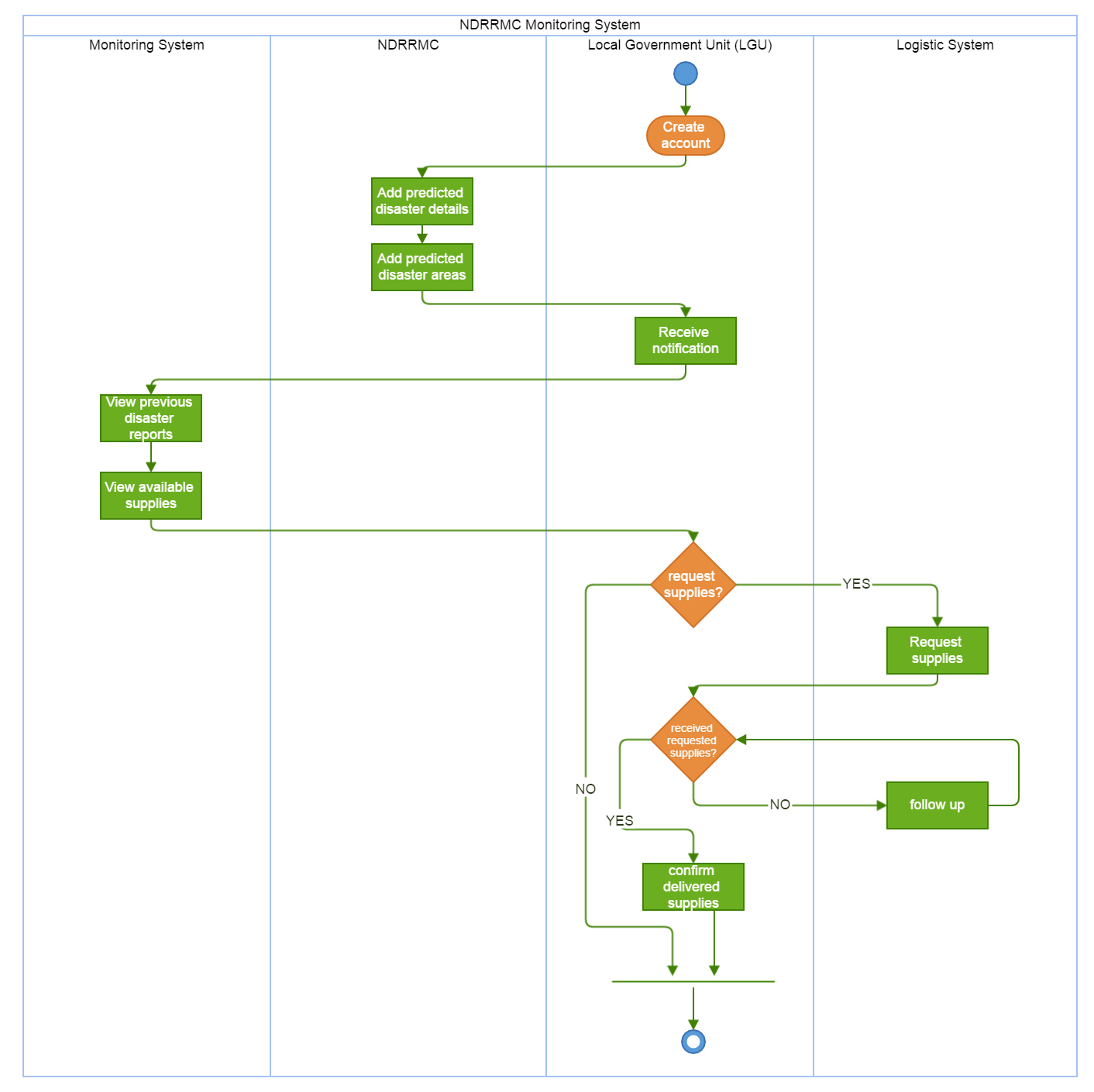
*Input*

* NDRRMC admin shall register LGU admins in the system
* LGU users shall input the basic information of their Region, Province or City
* NDRRMC admin shall input the information of predicted disaster
* LGUs shall request for supplies needed before a calamity happens

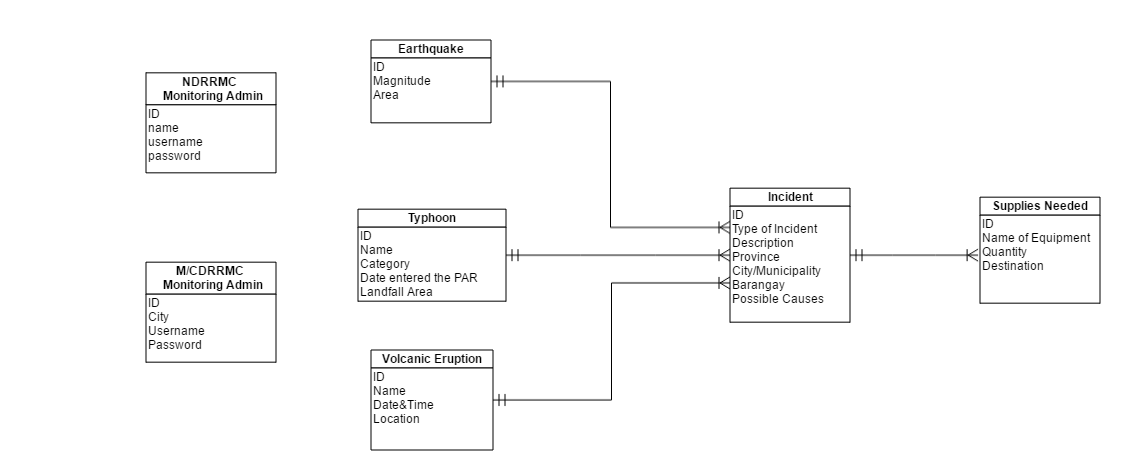
*Output*

* The Business Intelligence tool shall use data from database used by all other operations
* The Business Intelligence tool shall generate reports
* LGUs shall only view their own data
* LGUs shall track the supplies they requested

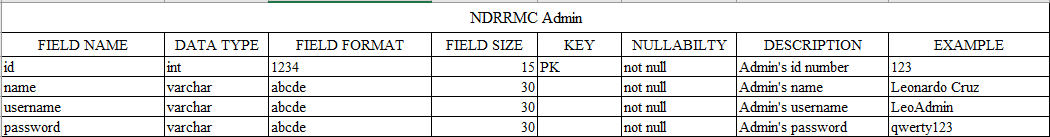
**Activity Diagram**



**ERD**

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**Data Dictionary**

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