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NATIONAL EMERGENCY INFORMATION MANAGEMENT SYSTEMS: PERSPECTIVES ON DESIGN AND IMPLEMENTATION

Abstract

Different types of disasters are becoming more frequent in many parts of the globe. In the absence of pre-planning to mitigate or manage them, an urgent need for rapid decisions, shortage of time and lack of resources and trained personnel can lead to chaos during an emergency. Emergencies like Pandemic emergencies - involving a sudden onset of contagious disease that affects health, disrupts services and businesses are adding by the day. The economic and social costs brought by them are cumulating the difficulties of the governments in general and Disaster managers in particular.

Spatial Data Infrastructure and Disaster Management Systems provide the most powerful technology for all the phases of disaster management. They need to be planned as Emergency Management Information Systems (EMIS) at national level for a seamless integration and coordinated planning.

Geospatial information is being enriched by increasing availability of earth observation data from large number of Remote Sensing Satellites, advanced Geographic Information Systems (GIS) and Global Positioning Systems (GPS). These technological tools, coupled with advanced communication modes are being used in the life cycle of the disasters for effective tacking. More than the advances in these individual spheres of technology per se, their convergence is promising a helping a hand to the disaster tacking communities/ managers in the recent past. They are enabling generation of realistic maps, assimilating different sources of information, providing near real-time scenarios to the authorities.

However, the chain of database generation, integration, processing, interoperability, updating, presentation etc. poses some challenges in the development of such Database Infrastructure and making timely available.

In addition to the spatial information like real-time satellite imagery, robust database in place will help the disaster managers in delivering effective and efficient services/solutions. Keeping the external factors like diversity of (a) databases required (b) generators/owners (c) sharing policies/mechanisms in place (d) Willingness and preparedness of the concerned custodians etc., in addition to the internal dynamics like large size, scale, format, heterogeneity, redundancy, errors etc., posing technical challenges to the teams.

This paper will discuss the need for resilient National Disaster Management Systems and aspects in their design and implementation at national level.

Also, experiences in exploiting the benefits of converging technologies and the tools in support of integrated applications will be presented.

Also addressed are the key experiences in practices and Procedures in such an exercise so that, they will be useful as a reference in such endeavours by others.