

The emerging global navigation satellite systems: An application paradigm for disaster management scenarios

Naqvi Najam Abbas and Li YanJun

Space Academy, College of Astronautics, Northwestern Polytechnical University, Xi'an, China

This research contribution is drafted in the background of emerging Global Navigation Satellite System (GNSS) like the fully functional GPS by US and GLONASS by Russia. The European Union has the vision to fully deploy its constellation of Galileo by 2015 and at the same time China is planning to complete its Beidou system for global coverage by 2020. The market trends and the application areas of GNSS technology are growing at a fast speed and the recent past has witnessed the wide spread of GNSS technology in the military and civilian paradigms too. The year 2020 promises the availability of more than 100 satellites for the global coverage and will provide many frequency signals for the civil users. GNSS provides the positioning, timing and navigation information to all the users, all the time and at all points on the globe by using at least four satellites in view and applying the principle of Trilateration. The applications of GNSS technology are dependent on human imagination and last two decades have witnessed its mushrooming effect from hand held navigators to aerospace, marine, aviation, agriculture, environment, energy, transportation, help and rescue, disaster management, telecommunications, robotics, vehicle management and many more.

This research article gives the broad spectrum about the applications of GNSS technology in the field of Disaster Management, emergency and rescue. Authors have discussed different experimented disaster management GNSS-based applications around the world and suggest a similar frame for Pakistan.