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MODELLING AND PROTOTYPING A DISASTER TV CHANNEL AND A DISASTER DATA
SERVICE USING COMMERCIAL SATELLITE TV INFRASTRUCTURE**Abstract**

Each day thousands of people are affected by a certain disaster, be it an event, a natural phenomenon or man-made. As global warming progresses and the human population continues to grow, the number of disasters and their impact will increase. The global community is not adequately aware of most disasters that occur or are active at any one time, with a few shocking disasters taking the bulk of the information space. These factors make the development of a dedicated Disaster Television or media outlet and a complementary ubiquitous, affordable Disaster Data Service a priority. In this research, we are developing a Satellite-TV-based Disaster TV channel, as well as a Disaster Data Service, also delivered through the same platform. The Disaster TV channel will deliver news, current affairs and educational programs on global disasters. The Disaster Data Service will deliver processed Earth Observation (satellite) data to public end-users via DVB-S2 Satellite TV decoders. Factors that make this approach attractive include readily available, affordable infrastructure, the need for a dedicated, reliable, over-the-top media originator on global disasters, and a Disaster Data Service that is available where terrestrial networks may be unavailable or ineffective as distribution media for disaster data and information. Another factor is a factorial reduction of the TCO of the infrastructure required to receive the TV channel and Disaster Data Current Earth Observation platforms like GEONETCast networks remain good concepts, but are not easily available or accessible. While they cover the developed nations well, developing nations are often ill-equipped. In African developing nations, ground-based infrastructure is often inadequate and compromised when disaster strikes. Deployment of terrestrial infrastructure post-disasters is often inhibited by the landscape. In this research project a solar-powered satellite receiver will be assembled, a sample Disaster public newscast will be developed, and a Disaster Data file about a current disaster in South Africa will be compiled in collaboration with a local disaster management agency. It is envisioned that the satellite receiver system will be set up at a remote site, and the disaster package will be uploaded through a commercial Satellite TV broadcaster's channel. The newscast is planned to be broadcast on an experimental channel. It is intended to realize the efficiency of the newscast, the data relay, and the required scaling of the service, should it be aimed at a larger audience. Output from this research will alter how we model disaster communications in the future.