SMALL SATELLITE MISSIONS SYMPOSIUM (B4)
Small Satellites Potential for Future Integrated Applications and Services (4)

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INTEGRATED SMALL SATELLITE DISASTER MANAGEMENT SOLUTION FOR DEVELOPING COUNTRIES

Abstract

Achieving the Millenium Development Goals across sub-Sahara Africa requires addressing two of the major impacts, Malaria and Poverty. Considering the Malaria Ecology Index (Kiszewski 2004) or the Low income countries (World Bank 2004), it is clear that access to quality health services and higher value economic activities are required over a large area of Africa. Given the size of the geographic area and the low population density, the only feasible mechanism to achieve universal access to services, is to engage space technology as a catalyst for development.

Already GPS has democratised navigation by enabling the same quality of service in navigation anywhere on the globe, no matter your location.

The same universal access to ICT services can significantly contribute to planning and incident management to lessen the vulnerability of a community or to lower the impact of disasters. However it requires an integrated application approach that uses space technology to ubiquitously supply services to local actors and resources.

Affordable access to space via small satellites and lower cost launches, has made it possible for developing countries to undertake space programs. However, the return on investment for developing countries need to be clearly demonstrated to the voting public as state resources often compete with priorities in the areas of health, housing and education, amongst other things. Improving the resilience of the local population via development to the impact of disasters can unlock a significant amount of value from a space program.

This paper will examine a space for development logic based for using small satellite space infrastructure. The solution entails a multi-disciplinary or integrated approach to utilising space infrastructure.

The approach differs from traditional approaches to utilising space assets as it does not focus on a technology push, but rather starts with user needs and then uses what is possible from available and future space infrastructure.

The paper start with reviewing vulnerability of communities and highlight the impacts that a disaster can have on infrastructure, basic environmental services and development of a particular community. The paper then goes into analysing the major drivers for resilience for a community in relation to local resources and access to space assets. A solution is then presented that impacts on the human capital as much as on infrastructure and disaster mitigation that results from instantly deployable ICT infrastructure.