

The use of low cost small satellite systems is an essential element for the success of innovative inclusive development projects in Africa and elsewhere

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Abstract

This work updates a set of similar ones presented in 2019-20 at the P.I. Symposia about the crucial role of low cost satellite systems in large development projects in Africa and elsewhere in the World. Our team is back now after five years monitoring this phenomenon through documental indexes: the amazing growth of internet connections in Africa but within a low “Context readiness”; the increase in band quality and appeal of user prices worldwide, now lower to corresponding prices of fiber - like cabled connections in Western countries; the high relative increase of “satellite content” projects financed yearly in Africa and elsewhere by the AfDB and WB, demonstrating that digital connections and applications have become the “backbone” among the infrastructures necessary where physical ones do not exist or would be, obviously, hard to build.

Satellites at large, not only ensure fast media connections where only a few years ago they could not be imagined, but also, apart from band accessibility for e-learning (and especially that type of hands-on, short-term-efficiency training required in these development projects), offer other services and terrestrial applications which largely replace physical infrastructure by Earth Imaging and Monitoring, Positioning and Navigation performed from Space. Our study finally proposes a satellite multipurpose system model (both managerial – financial and technical), the SHST, as described on the International Astronautical Federation’s Educational platform, whereas all these implementation aspects can be verified (with lots of sectoral examples taken from real situations in Africa) in many fields: campus e-learning, industrial clusters services, radio/TV channels, agricultural and irrigation schemes, Land monitoring and Security,

Maritime, Smart tourism, etc. This information – see here the applicability for Italy's Piano Mattei – also covers other hi-tech elements such as biotechnologies, AI, renewable energy.

Keywords: Small satellites, Satcom, Africa e-Learning, Satellite Earth Observation, Satellite Navigation