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LIVING LABORATORIES: EXTENDING THE BIOSPHERE TO SPACE?

Abstract

A new innovation and product development paradigm has emerged linking academic research, entrepreneurial and corporate RD and the wider society by creating so called “Living Laboratories”. These are geographically bounded regions particularly suitable for intensive systemic research on the relationship between the technology advancement, the natural environment and the wider society.

At the same time, the Space Industry is in a time of transition, from the “classical” to the so called “New Space” era. From cheapening of base technologies to miniaturisation and creation of satellite constellations, to a more open and accessible satellite data, new geo-information services, enabled through Space assets, are being developed at an accelerated rate.

Where these two paradigm shifts meet is often in research and applications of natural environment monitoring and advanced data analytics, which has led to a series of applications in the agricultural (agri-food and forestry) sector. Specifically, this “bird-eye” view is enabling a completely unprecedented amount of resources management and planning as well as scrutiny of environmental conditions, agricultural practices and their impact on food systems, though quality of data might be contested.

This paper explores this new agenda, its structural significance and the nuanced changes it is bringing to the way in which we develop understanding of the natural environment, and the exciting opportunities it affords to users and regulators. Additionally, it reviews the emergence of new innovation networks and the reconfiguration of new product development processes (NPD) in the next generation Space Industry in Scotland and Slovenia, two countries which are at the forefront of the Living Labs and New Space “revolutions”.