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FUTURE DOWNSTREAMING SERVICES FOR INFRASTRUCTURE MONITORING

Abstract

We as humanity are facing more and more challenges on our planet: Environmental pollution, regional overpopulation, food production, changing and increasingly challenging climate conditions leading to increased risk of natural disasters such as flood, earthquakes, subsidence, tornados etc. All of the aforementioned aspects have a direct influence on various infrastructure elements which are fundamental to our societal living conditions.

There are more and more satellite constellations (public as well as commercial), delivering an increasing amount of data with higher and higher resolution and increasingly faster revisit times. Especially resolution seems to play an important role when it comes to infrastructure such as railway tracks, roads, bridges, pipelines or buildings. Along with the data at hand, AI/processing technologies are another key driver as they are capable of transforming large quantities of pixel data into meaningful (and value-adding) products. Data and AI/processing technologies will allow more and more accurate and fine grained analyses and estimates which will lead to a turn-over point where more possibilities and cheaper data products are emerging.

From a business perspective, the clear path of monetization from supply to demand in order to generate continuous revenues is yet to be established in many business areas. As satellite EO data will become increasingly cheaper in price, new space-based solutions for many different applications become more and more profitable. This is especially true in areas where continuous monitoring plays an important role. In consequence, existing approaches which are based on airborne/drone-based solution will then be replace with space-borne solutions.

Although many use cases may be addressed with readily available EO data, many others still remain to be tackled with tailored solutions. Exactly for those cases, interdisciplinary know-how needs to be brought together to create optimal end-to-end solutions. For years and decades OHB is working on end-to-end Earth Observation solutions which include satellites, airborne platforms, on-board processing, data links, data processing and AI methods. This presentation will describe the development and implementation of commercial infrastructure monitoring from space – including concepts, use-cases, target users as well as technical and commercial realization.