

IAF EARTH OBSERVATION SYMPOSIUM (B1)
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NEXT GENERATION RADAR SERVICES: ACTIONABLE INFORMATION FOR DECISION
MAKING

Abstract

The Earth Observation environment is changing rapidly and a lot of constellations (optical, radar or mixed) are announced and launched, driven by privately funded initiatives and new entrants, challenging the established market. Increasing information requirements – reflected by a trend towards cloud-based data analytics – implicitly require synergies between optical and radar imagery (such as maritime domain awareness, oil and gas, or GeoInt), and new services and quality level. Therefore, high resolution, large area coverage, and increasing revisit performance are expected to become the future market drivers.

1. Next Generation Radar Services

In that context, Airbus is developing a unique and high performant SAR Constellation, to propose high quality and reliable services to the market. Following the successful launch of the first Spanish SAR satellite “PAZ” on February 22, 2018, this Constellation will officially start in 2018. The concept is made to be enlarged, with the next National German civilian X-Band SAR mission “HRWS”. Partners can participate through co-investment (financial or strategic), PPP (Public-private-partnership), subscription (anchor customers), and ownership of additional satellites operated in constellation. This flexibility will lead to a continuous performance update of the Constellation, by adding best technology regularly to the benefit of the partners.

1. Overview of the HRWS Mission

The HRWS (High Resolution Wide Swath) concept aims to provide a follow-on X-Band SAR mission to ensure X-Band data supply for institutional, science and commercial users well beyond the year 2030. The Space Segment capabilities will have improved performances in terms of resolution (Very high resolution 25cm) and area coverage. Since August 2017, the project moved to Phase A. During the Phase 0, the user requirements has been done and several options of missions have been proposed. The Phase A will now focus on the Mission definition and System definition of the final system.

1. Conclusion

The paper will present the new applications that the Constellation will make possible, with an increase of the resolution in X-Band radar. The paper will also present the objectives and the characteristics of the HRWS mission, unique from a technological and commercial point of view.