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Integrated photonics for enabling coherent radar constellations

Integrated photonics emerges as a promising solution for enabling coherent radar networks. In this talk we will present the architecture and simulative analysis of the main introduced benefits using coherent radar constellations in drone and space applications and we will report recent implementation on chip of optical payload prototypes for a 3x3 distributed MIMO radar.

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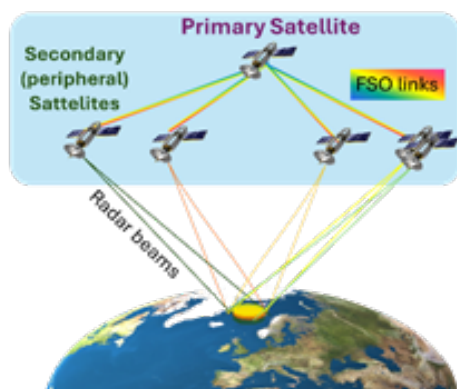


Figure 1: Photonic-based distributed coherent radar system in an Earth monitoring application.

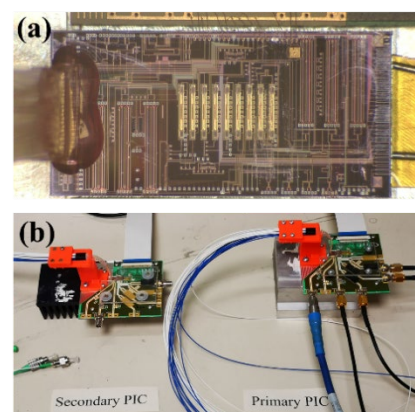


Figure 2: (a) Fabricated PIC. (b) Two fully packaged PICs (primary and secondary) employed for the system characterization.