

PROJECT / DSP Functions for Simplified Coherent Transceivers in Optical Metropolitan Networks



DSPMetroNet

Main Objective:

DSPMetroNet's main objective is to investigate, develop and validate new technological paradigms in terms of optical coherent detection schemes and advanced digital signal processing (DSP) techniques to support optical coherent transceivers for future optical metro networks.

In particular, DSPMetroNet aims at:

- investigate and develop hybrid solutions comprising both full coherent transceivers and simplified coherent transceivers;
- explore the Kramers-Kronig and Stokes Vector detection concepts to develop new simplified coherent transceivers;
- explore alternative approaches, e.g. the 3-dimensional Stokes space analysis, and advanced Kalman filtering based equalization techniques.
- investigate and propose tailored DSP techniques to support simplified optical coherent detection schemes;
- implement the developed DSP algorithms in FPGA-based development platforms for real-time assessment

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