

**PROJECT / Improving Security and  
Capacity Using Continuous Variables  
Quantum Communications**

# CV-Quantum

**Main Objective:**

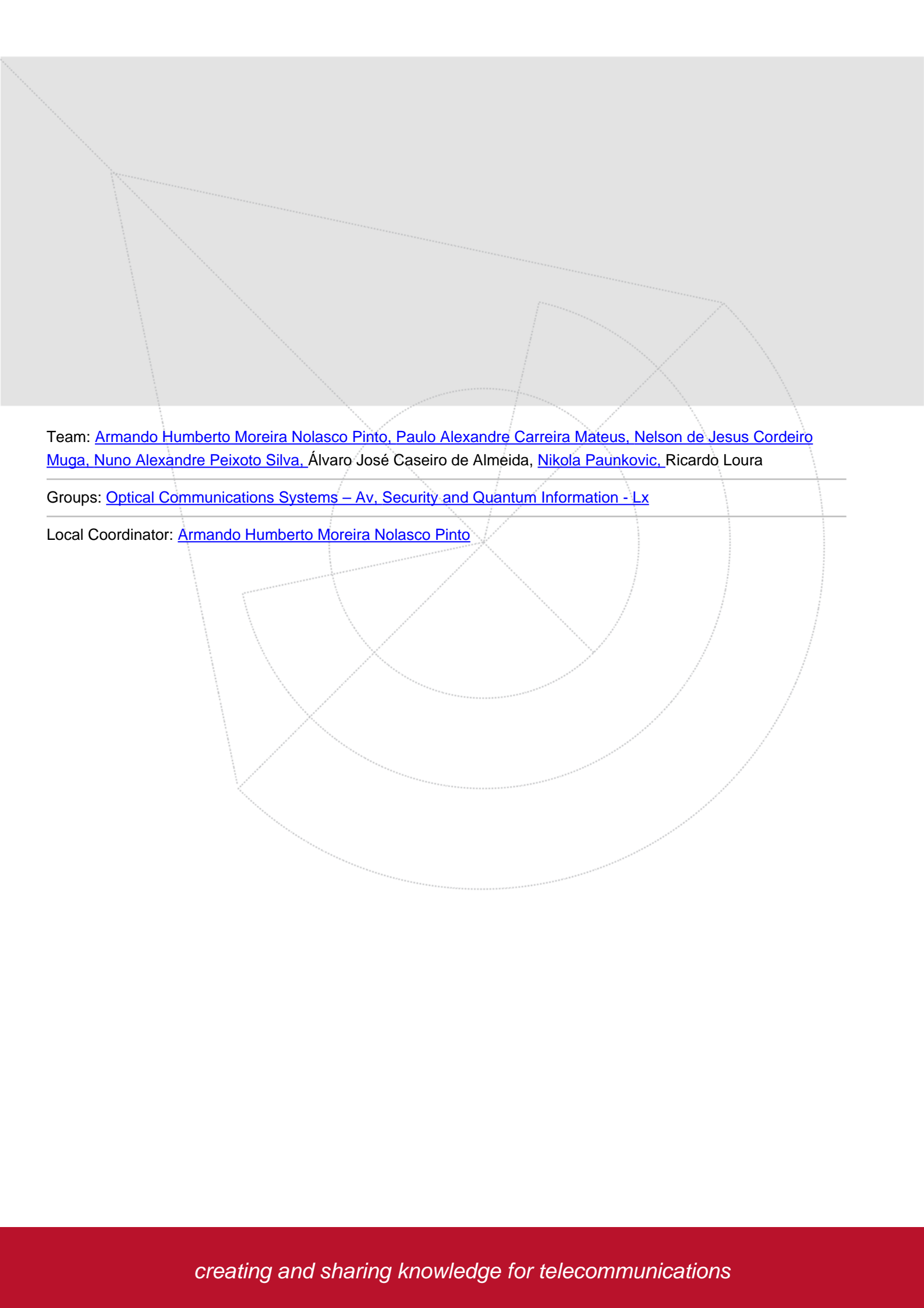
The main scientific objectives of this project are:

1. To propose secure bit commitment and oblivious transfer quantum protocols based on CV. To improve the security of the proposed protocols through their experimental validation in a real channel.
  2. To evaluate the capacity of an optical fiber for low-energy optical signals through the investigation of the channel capacity in a scenario where each symbol used to transmit information contains only few-photons. We intend to increase the number of bits sent per photon;
  3. To optimize the transmitter and the receiver for weak coherent fields.
- Moreover, we also intend to develop post processing techniques as a solution to improve the efficiency of phase and amplitude information recovery from low-power signals.

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