



ERS POSITIONS AND INDIVIDUAL RESEARCH PROJECTS (IRP)

Fellow <i>ESR3</i>	Host institution UC3M	PhD enrolment Y	Duration <i>36 months</i>
<p>Project Title: Interference management for visible light communications in radio-frequency hostile environments.</p>			
<p>Objectives: Objectives: The solutions based on visible light communications (VLC) are especially attractive for hostile environments where the use of radio-frequency (RF) systems is avoided, e.g., industry 4.0, tunnel construction or oil&gas sector. However, these environments require non-common lighting, i.e., high-power LED, light propagation in industrial areas or high density of light sources. Moreover, in contrast to the typical scenarios, the VLC systems are not under the umbrella of other RF systems such as WiFi or pico/femto cells when applied in the considered scenarios. The goal of this project is the development of resilient interference management schemes for RF hostile environments where the deployment of LED lights is employed for providing connectivity, which cannot be provided through RF systems. Specifically, the considered schemes must provide satisfactory data rates and latency for industrial environments while ensuring constant illumination.</p>			
<p>Expected Results: Development of a VLC architecture comprising LED lights, receivers and signal processing algorithms for RF hostile environments. Solutions proved through a prototype working in an operational environment in order to facilitate the introduction of the developed schemes and algorithms in the industry 4.0 market segment during the following years.</p>			
<p>Enrolment in Doctoral degree(s): Universidad Carlos III de Madrid (UC3M)</p>			
<p>Main (host) supervisor/Contact: Dr. Maximo Morales Cespedes (UC3M)</p>			