



ERS POSITIONS AND INDIVIDUAL RESEARCH PROJECTS (IRP)

Fellow <i>ESR5</i>	Host institution ISW	PhD enrolment Y	Duration 36 months
Project Title: Cell-less RAN and cooperative schemes for interference management.			
Objectives: The objective of this ESR work plan is to study the concept of cell-less radio access network (RAN), which is defined as a combination of centralized, virtualized RAN and cooperative radio resource management. The goal is not to create interference at all rather than create it and later avoid or manage it. We approach this goal by changing the radio resource allocation paradigm from competitive to cooperative. An example cooperative behaviour is to admit a user equipment (UE) to the system only when it does not change the QoS for the other users. When combined with the centralization of RAN, this concept makes independent “cells” (or independently managed cells) obsolete, hence the name “cell-less” RAN. Algorithms to manage the radio resources under this perspective will be designed and evaluated.			
Expected Results: The ESR will identify principles of cell-less operation together with applicability scenarios, classes of cooperative schemes together with the operating boundary conditions and KPIs used to compare performance of cooperative and competitive schemes. He/She will propose novel schemes falling within the class of cooperative schemes and will verify their performance comparing with representative competitive ones.			
Enrolment in Doctoral degree(s): Universidad Carlos III de Madrid (UC3M)			
Main (host) supervisor/Contact: Dr. Slawomir Pietrzyk (ISW)			