## POS-D33

*PD en Ingeniería de Control, Automatización y Robótica*

### FLEXIBILITY SUPPORT FOR CONTEXT-AWARE DISTRIBUTED APPLICATIONS BASED ON MODELS AND MULTI-AGENT TECHNOLOGY

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Current technological developments make it possible to build complex applications that demand, among others, flexibility mechanisms for being able to evolve as context does (adaptability), as well as avoiding service disruptions in the case of node failure (availability). This work deals with two different applications domains that have similar flexibility requirements: homecare and industrial automation. On the one hand, homecare based on ambient intelligence technology seems to be suitable to allow elderly people to continue to enjoy the comforts of home and help optimize medical resources (one of the biggest challenges in public health systems). These applications demand flexibility to evolve as patient status and its environment do as well as preventing from service disruption in order to avoid information losses, especially in emergency cases. On the other hand, current production systems are required to ensure high productivity and rapid response to market changes and customer needs. As a consequence, more flexible and fully available manufacturing systems are required. This work proposes a solution for the design and management of this type of applications. Applications design is based on a domain modeling approach, whereas their execution is managed by a generic multi-agent based middleware, making it possible to meet adaptation by means of event-based relationships among applications, assuring at the same time the availability of the system even for stateful applications.