**Abstract:**

Mixed-Criticality Systems (MCS) reconcile safety-critical requirements with multi-core architectures, by offering spatial and temporal isolation while preserving other extra-functional properties such as optimised energy consumption or minimised latencies. MCS designers struggle to manually balance the offered functionalities with pertinent implementation choices in order to ensure that the system eventually meets all constraints. Existing attempts to further automate this process focus on specific concerns, and fail to account for variation in system functionalities. Our contribution is to integrate product-lines that capture functional variations with evolutionary optimisation to explore possible implementations and their impact on extra-functional properties. Our solution is a model-driven process (and a tool prototype) to automatically select functionally different products that balance well the various concerns of interest. We illustrate how this process applies to the construction of wind turbines.

**Article:**