Cell formation is a critical step in the design of cellular manufacturing systems. Recently, it was tackled using a cut-based-graph-partitioning model. This model meets real-life production systems
requirements as it uses the actual amount of product flows, it looks for the suitable number of cells, and
it takes into account the natural constraints such as operation sequences, maximum cell size, cohabitation and non-cohabitation constraints. Based on this model, we propose an original encoding
representation to solve the problem by using a genetic algorithm. We discuss the performance of this
new GA in comparison to some approaches taken from the literature on a set of medium sized instances. Given the results we obtained, it is reasonable to assume that the new GA will provide similar results for large real-life problems