Automated driving by standardizing and scaling the production strategy

Abstract:
Driving, an incremental forming method, can be carried out on driving machines. In a past project, this traditionally manual manufacturing method was automated through performing manual manipulations and manufacturing identical parts by robot handling. An advancement of this automation scheme is to define a set of standard sheet metal parts and derive a manufacturing strategy by combining tracked strategies for these standard parts. In this paper, we present a method to derive manufacturing strategies for geometric variations of standard sheet metal parts. In addition, a model describing the relation between geometric and process parameters is built to improve transformed manufacturing strategies.