Abstract:
Automated production systems are run for a long time with continuous and incremental changes, however, the models for aPS have not been maintained along with these system changes or, even, have not been properly generated. Even though the regression verification technique reduces the effort of applying formal verification on the automation system evolution, there still remains what should be provided in a formal form for the verification: delta, which is the difference of the two versions of the software. In this paper, we propose a method for generating a formal model from preexisting software in IEC 61131-3 Sequential Function Chart language. Based on this, the developer is able to achieve delta description by revising it to reflect the change request and this formal description of delta could facilitate verifying delta formally.