Title: A code generator for component oriented programming framework

Author/Authors: Mahmood Aghajani Siroos Talab, Dayang Norhayati Abang Jawawi

Abstract: A component-based Embedded Real Time (ERT) system can improve the system development through enhancing the ability of experts in developing sophisticated ERT software. In order to generate codes, ERT code generator system frameworks have generally two parts: a graphical semi-formal-model representation to define the components, and an optimal code generator that generates codes for a resource limited microcontroller. The Unified Modelling Language(UML) semi-formal-model system does not deal with minute details of the code generation (e.g. IF, THEN, ..). Currently, code generators use a state diagram semi-formal-model to provide optimal codes. However, manual coding has not been quit entirely since current state diagrams are not capable of providing details in code generation. The Component Oriented Programming framework (COP) is an ERT framework which targets on the code generation required in Autonomous Mobile Robot (AMR). Currently, the COP framework can not provide the AMR with code details. This paper presents an implementation of a code generator through exploiting a previously used algorithm to create a state diagram based on information taken from the component composition in the COP framework. Consequently, manual coding in the COP framework can be minimized.