Model Based Design using Statechart and Code Generation for Robotics Platform

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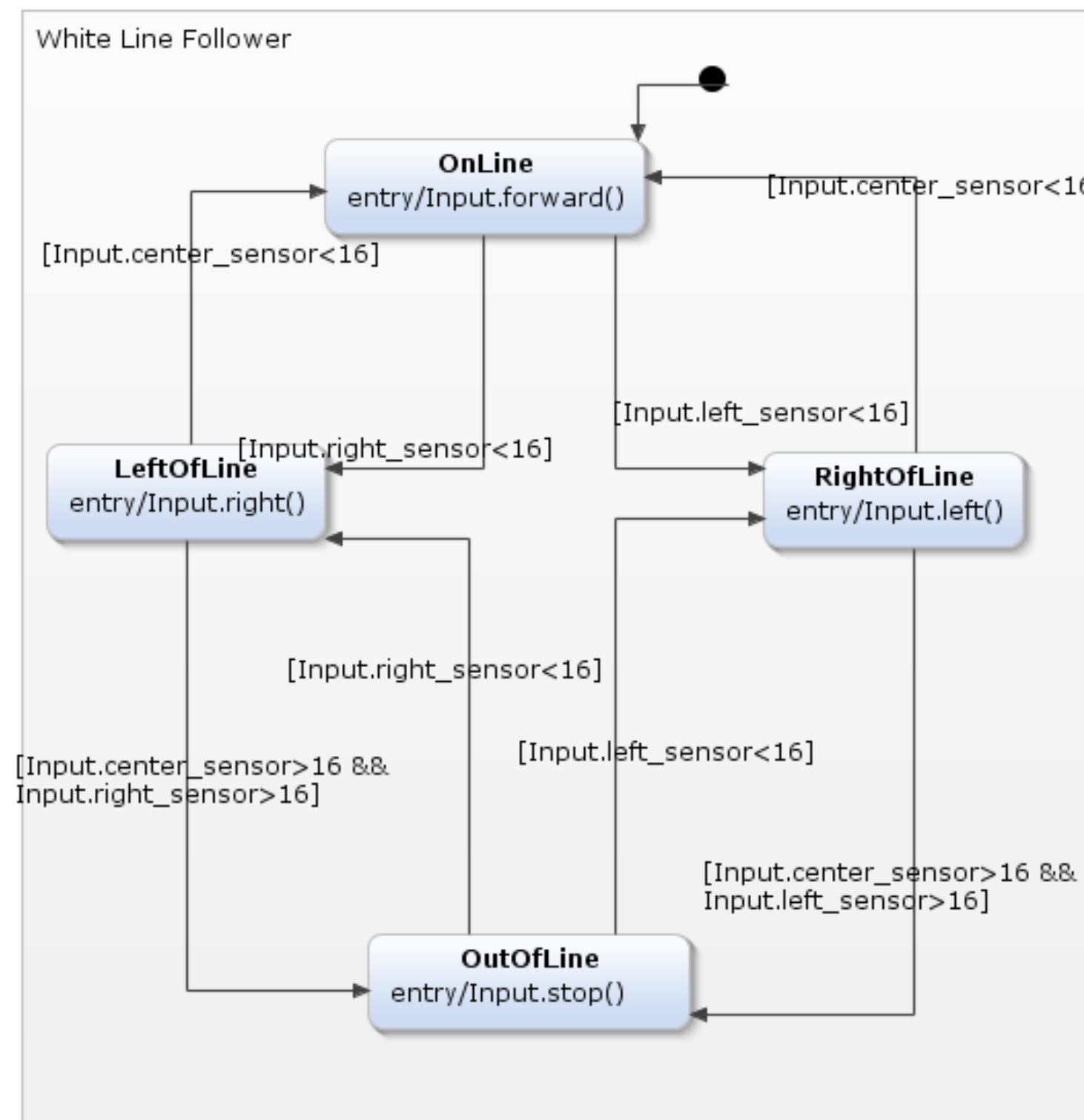
Introduction

• Statecharts are one of the five UML diagrams. Statecharts have three additional features as compared to general finite state machines.

• Statecharts = State diagrams + Clustering(Abstraction) + Orthogonality(concurrency) + Broadcast Communication

Motivation

• A high level language.
• Reusable modules can be generated.
• Easy to simulate and debug.
• Adaptable to change.
• Building of complex projects would become easy by using reusable components.
• A good picture is worth thousands of words.

Model of White Line Follower in statecharts

Yakindu Statechart Tool

• Yakindu Statechart Tools (SCT) provides an integrated modeling environment for the specification and development of reactive, event-driven systems based on the concept of statecharts.

• It can generate c code from the Statechart model of system.

• It can simulate the statechart model.

• Available for both windows and linux

Statechart Model → **corresponding c code** ↔ **Middleware** (module that connects Yakindu generated C code with the firebird V libraries) ↔ **FireBird V Libraries**

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