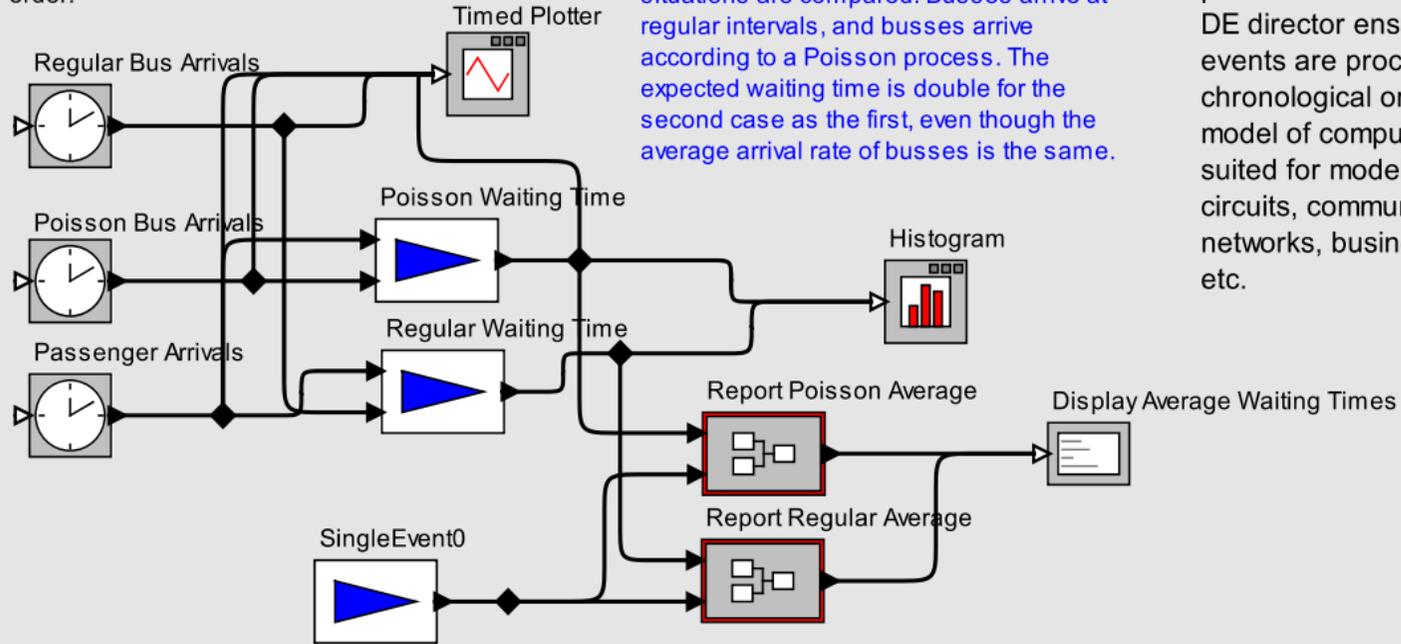## Discrete Event (DE) Director

The discrete-event director uses a sophisticated priority queue to sort events by time, and executes a model by processing events in chronological order.

This model illustrates a famous paradox in probability called the inspection paradox. Passengers arrive randomly at a bus stop, according to a Poisson process. Busses also arrive, and waiting time of the passengers is recorded. Two situations are compared: Busses arrive at regular intervals, and busses arrive according to a Poisson process. The expected waiting time is double for the second case as the first, even though the average arrival rate of busses is the same.

DE Modeling

In discrete-event modeling, components communicate via signals consisting of events placed on a time line. The DE director ensures that events are processed in chronological order. This model of computation is well-suited for modeling digital circuits, communication networks, business processes, etc.

Timed Plotter

Regular Bus Arrivals

Poisson Bus Arrivals

Poisson Waiting Time

Passenger Arrivals

Regular Waiting Time

Histogram

Report Poisson Average

Display Average Waiting Times

Report Regular Average

SingleEvent0

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