Routing Information Protocol (RIP)

Modeled in UML using I-Logix's Rhapsody

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Presented by:

Masood Khosroshahy

BEGINNING

Introduction

- The Routing Information Protocol (RIP) is one of the family of IP Routing protocols, and is an Interior Gateway Protocol (IGP) designed to distribute routing information within an Autonomous System (AS).
- RIP is a vector routing protocol, according to which the routers exchange network reachability information with their nearest neighbors.
- In other words, the routers communicate to each other the sets of destinations that they can reach, and the next hop address to which data should be sent in order to reach those destinations.

Introduction …continued

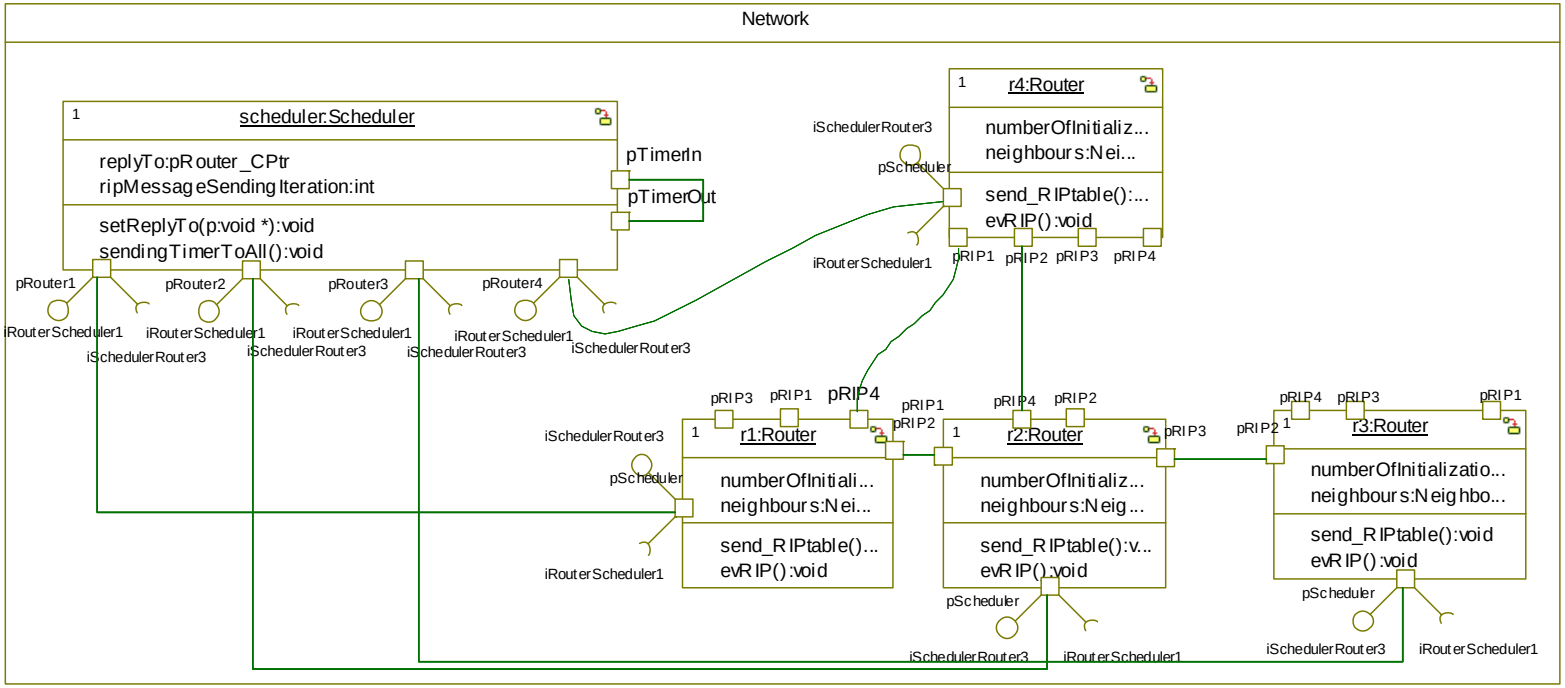
- Periodically, each router advertises the entire contents of its routing table over all of its interfaces.
- Whenever a RIP router receives such an advertisement, it puts all of the appropriate routes into its routing table and begins using it to forward packets. This process ensures that every network connected to every router eventually becomes known to all routers.
- Every route has a property called *Cost*, which indicates the "distance" to the route's destination.
- The maximum Cost, or metric, permitted by RIP is 16, which means that a route is unreachable.

Some of the optimizations of its basic algorithm

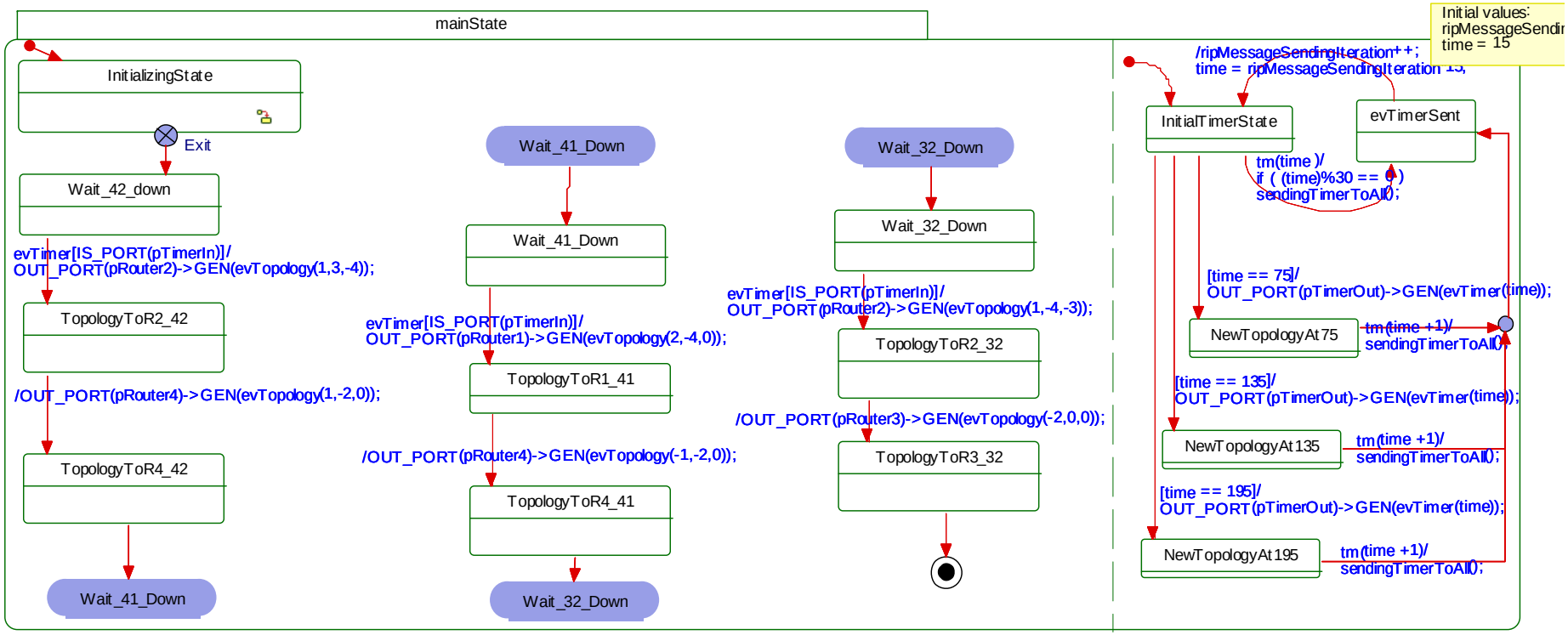
- When a router detects a change to its routing table, it sends an immediate "triggered" update. This speeds up stabilization of the routing table and elimination of routing loops.

- When router A has learnt a route from router B, it does NOT advertise the route back to B. This ensures that B is never under the impression that A has a different way of getting to the same destination. This technique is known as “*split horizon*”.

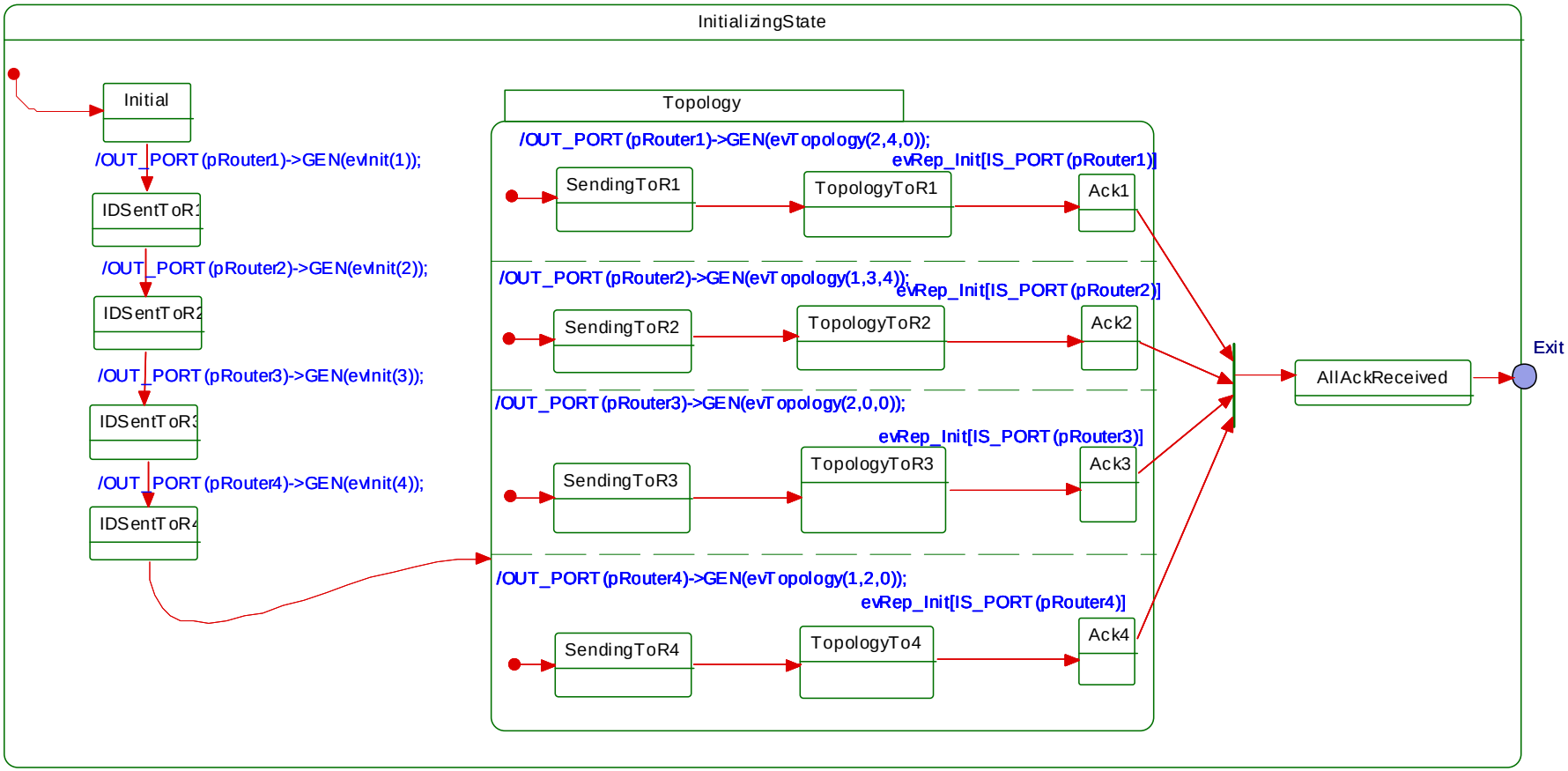
Structure Diagram



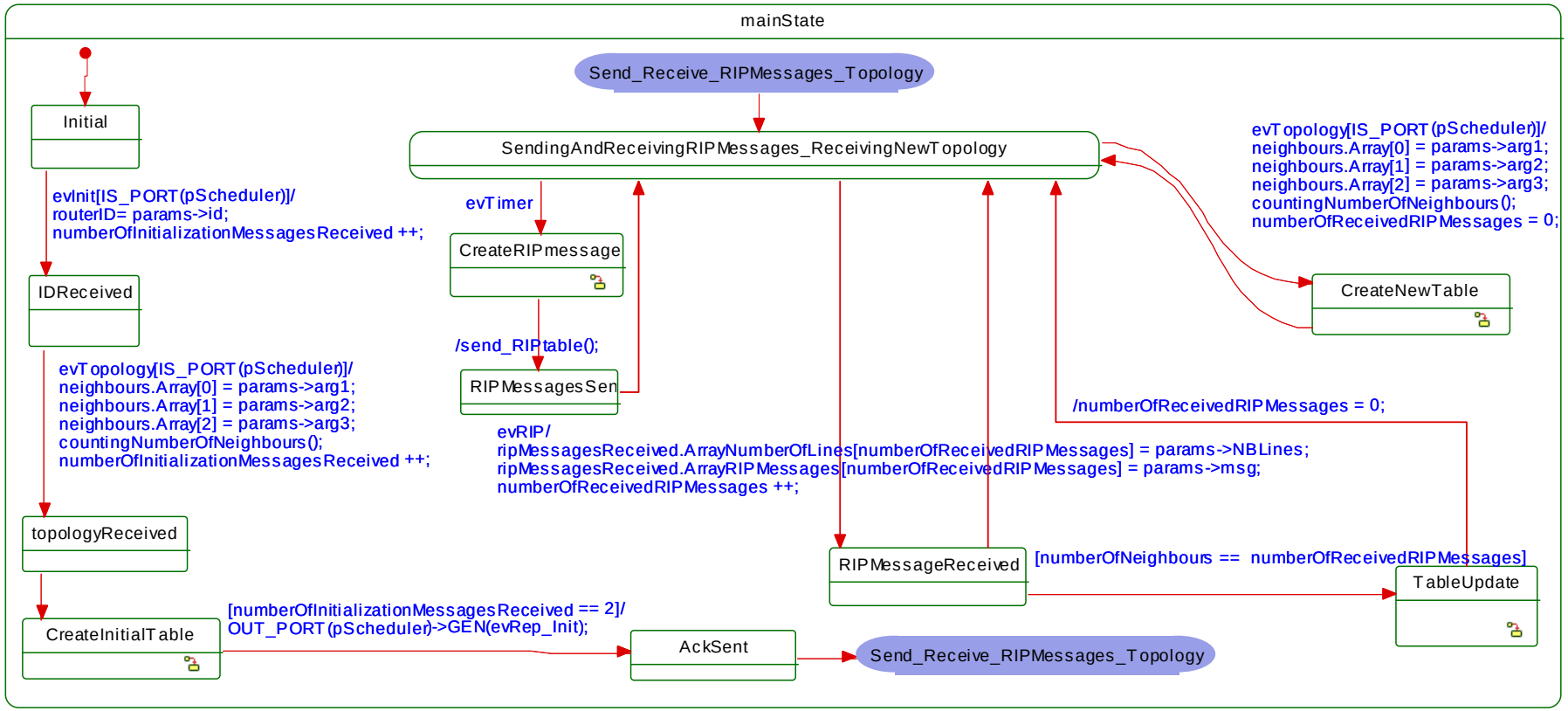
Statechart of Scheduler



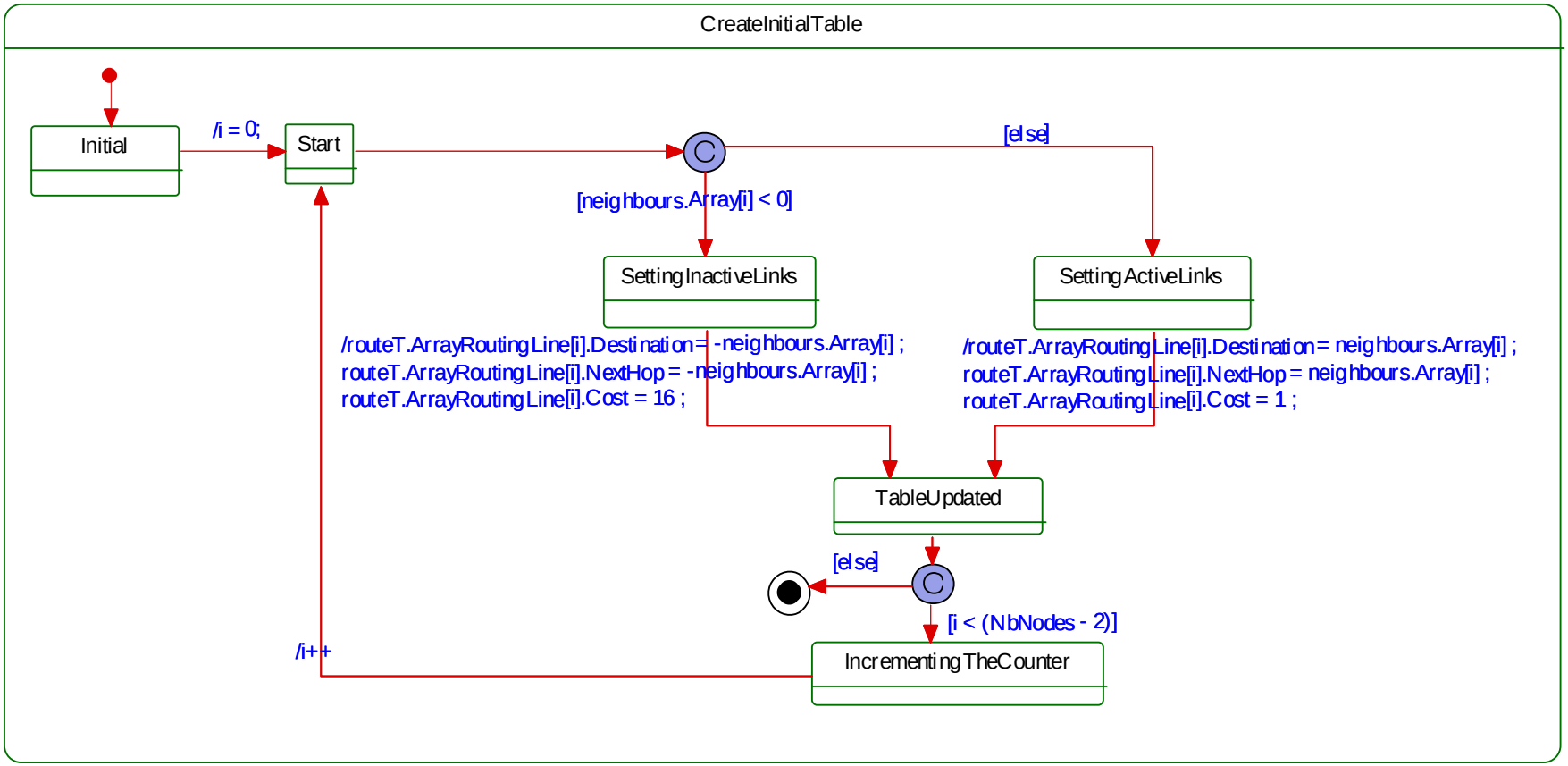
Sub-Statechart of State InitializingState in Scheduler



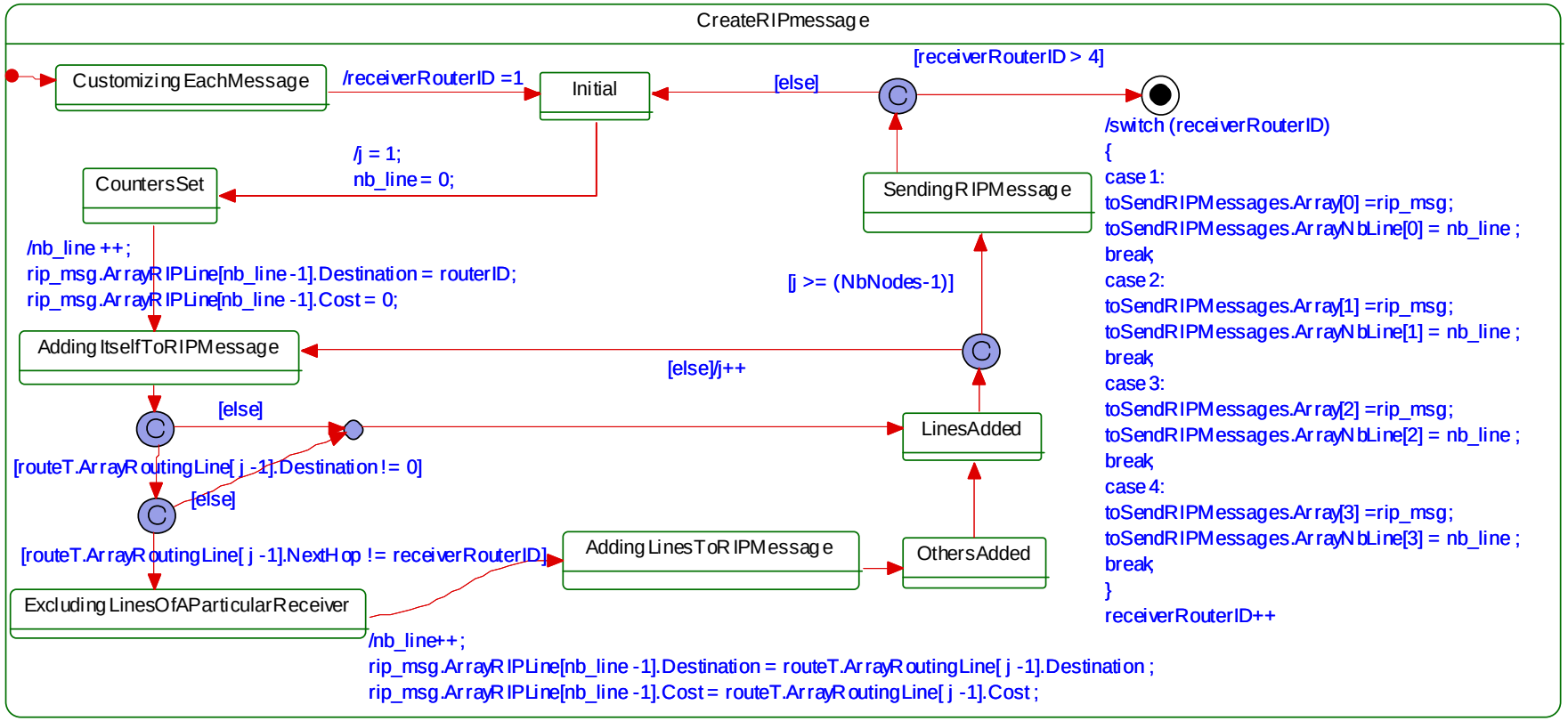
Statechart of Router



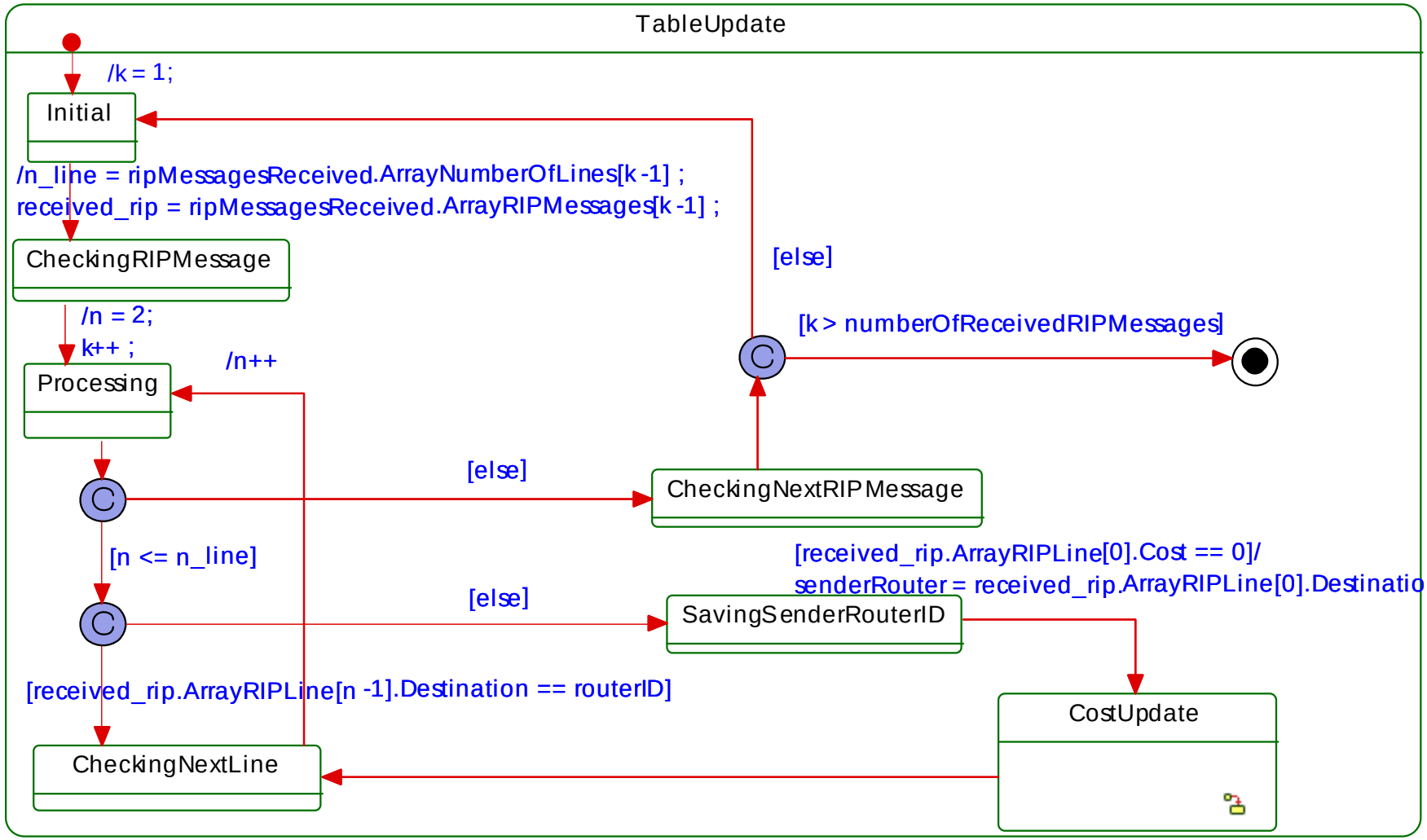
Sub-Statechart of State CreateNewTable & CreateInitialTable in Router



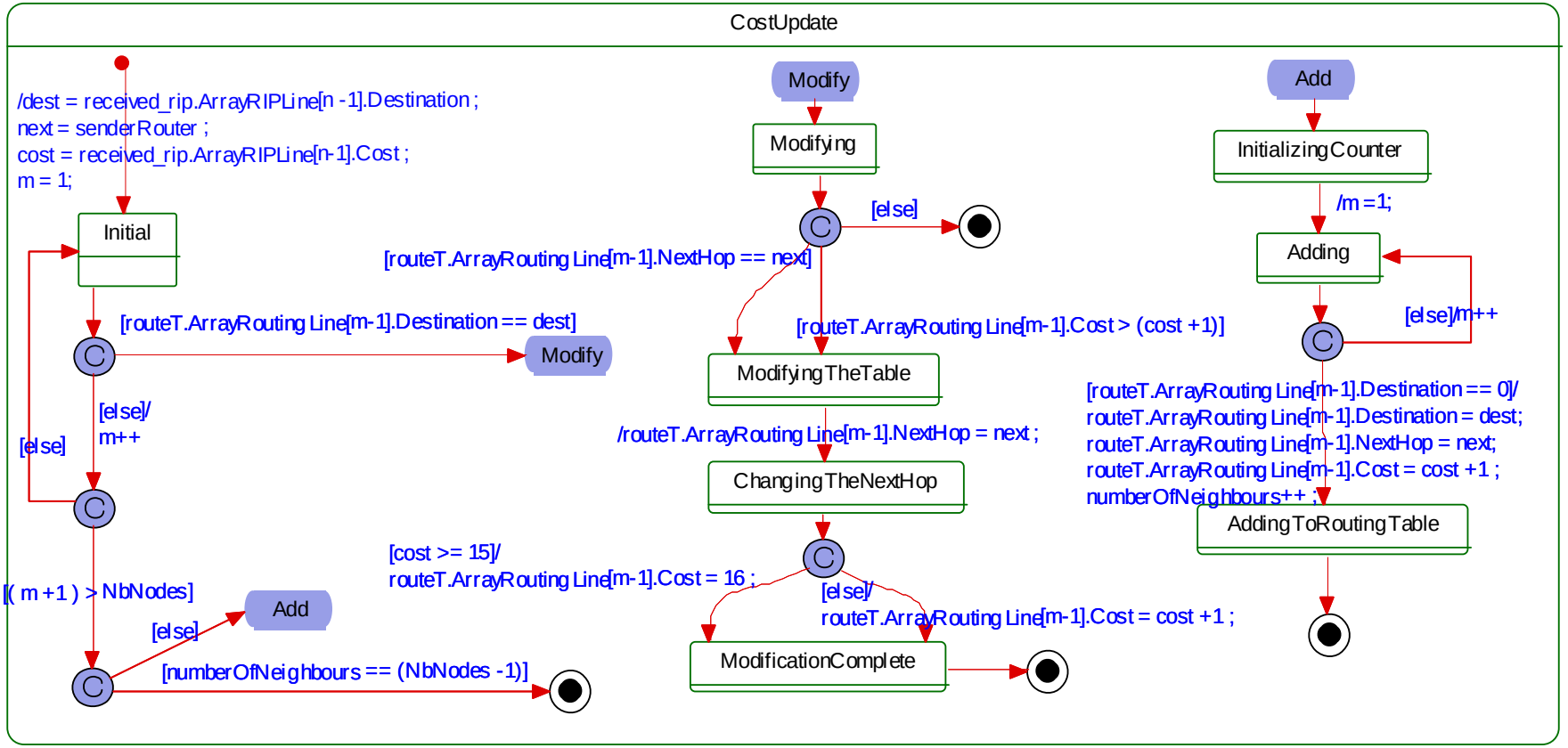
Sub-Statechart of State CreateRIPmessage in Router



Sub-Statechart of State TableUpdate in Router



Sub-Statechart of State CostUpdate in Router/TableUpdate



Now the demonstration…

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