# Architecture

Simulation definition

(Choice of a network)

Initialization

SIMULSETINGS, RESDEF, DEMDEF

Assignment Coeff, Routes, Assignment Period

Solve traffic dynamics

Save output files

SymuMaster

Manuel

1. Simulation definition
2. Initialization
   1. SIMULSETTINGS
      1. Simulation
      2. RESDEF
         1. Reservoir
         2. MacroNode
         3. ODmacro
      3. Assignment
      4. DEMDEF (Scenario definition)
         1. Assignment
         2. Route
         3. MacroNode
3. Solve traffic dynamics
4. Save output files

# Fonctions

## Acc-based solver

Set variables

Simulation:

*Temporal loop*

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*Loop on all reservoirs*

*{*

Mean speed and outflow demand calculation:

* + Queue factor
  + Update reservoir characteristics
  + Outflow demand

*}*

*Loop on all reservoirs*

*{*

Production supply update

*}*

*Loop on all reservoirs*

*{*

Inflow supply calculation:

* + Inflow demand
  + Effective inflow for internal origins
  + Entry merge coefficients for entering routes
  + Inflow limitation due to node supply at entry (border supply)
  + Effective inflow for entering routes (merge models)

*}*

*Loop on all reservoirs*

*{*

Effective outflow calculation:

* + Exit merge coefficients
  + Exit supply for internal destinations
  + Exit supply for external destinations & transfer to another reservoir
  + Effective outflow for all the routes

*}*

*Loop on all reservoirs*

*{*

Effective inflow update

*}*

*Loop on all reservoirs*

*{*

Accumulation & trip length update

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Deriving N-curves and travel time per route:

*Loop on all reservoir*

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Flow for last time step

*}*

*Loop on all routes*

*{*

Travel time evolution per route

*}*

## Trip-based solver

1. Vehicle creation
2. Initialization variables
3. Simulation loop
   1. Update traveled distances & times
   2. Current vehicle, route, reservoir
   3. Update entering/exiting reservoir information
   4. Reservoir exit demand times
   5. Reservoir entry demand times & estimated inflow demand
   6. Reservoir entry supply times (merge models)
   7. Reservoir exit supply times
   8. Next possible entry time & exit time
   9. Next event time
4. Post-processing
   1. Travel time resampling
   2. Mean speed resampling