Autonomous Public Transportation Project
Multi-Agent Systems

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February 19, 2017

Week Two Milestone

For the first version of our transportation system, we deploy 30 agents of the 3 different typologies that travel along 3 different fixed routes within the city of Amsterdam. We model the map of bus stops in Amsterdam as a graph where each station is a node. These routes were selected as a loops over a selection of highly-connected nodes within the center of Amsterdam. Every different route is associated with a bus typology: total coverage route for small buses, vast coverage for medium-sized while reduced coverage for bigger ones.

In our NetLogo code, this is represented as a circular array, and the agent maintains a pointer to its destination. The agent will pick up as many passengers as it can to constantly maintain full capacity according to his route (passenger whose final destination is not included in the bus route will not be taken into account). Upon arriving at a station, the agent will drop off all passengers whose destination is the current station.
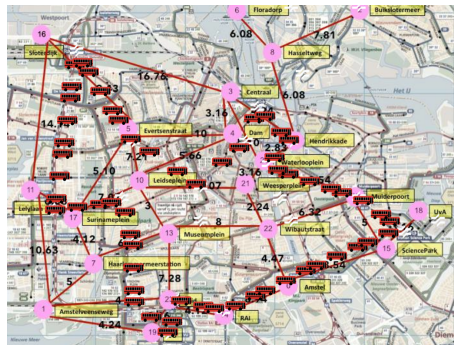

Figure 1: Graphical representation of the route followed by the biggest buses. As shown in the picture, some stops have been omitted.