

Autotrén: A GRT System for Cities in Emerging Economies



November 2015

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- Who we are, where we stand
- The economic model
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ModuTram: Who we are

High-tech company in Mexico's "Silicon Valley"

Founded 2009

Mission: Improve urban mobility

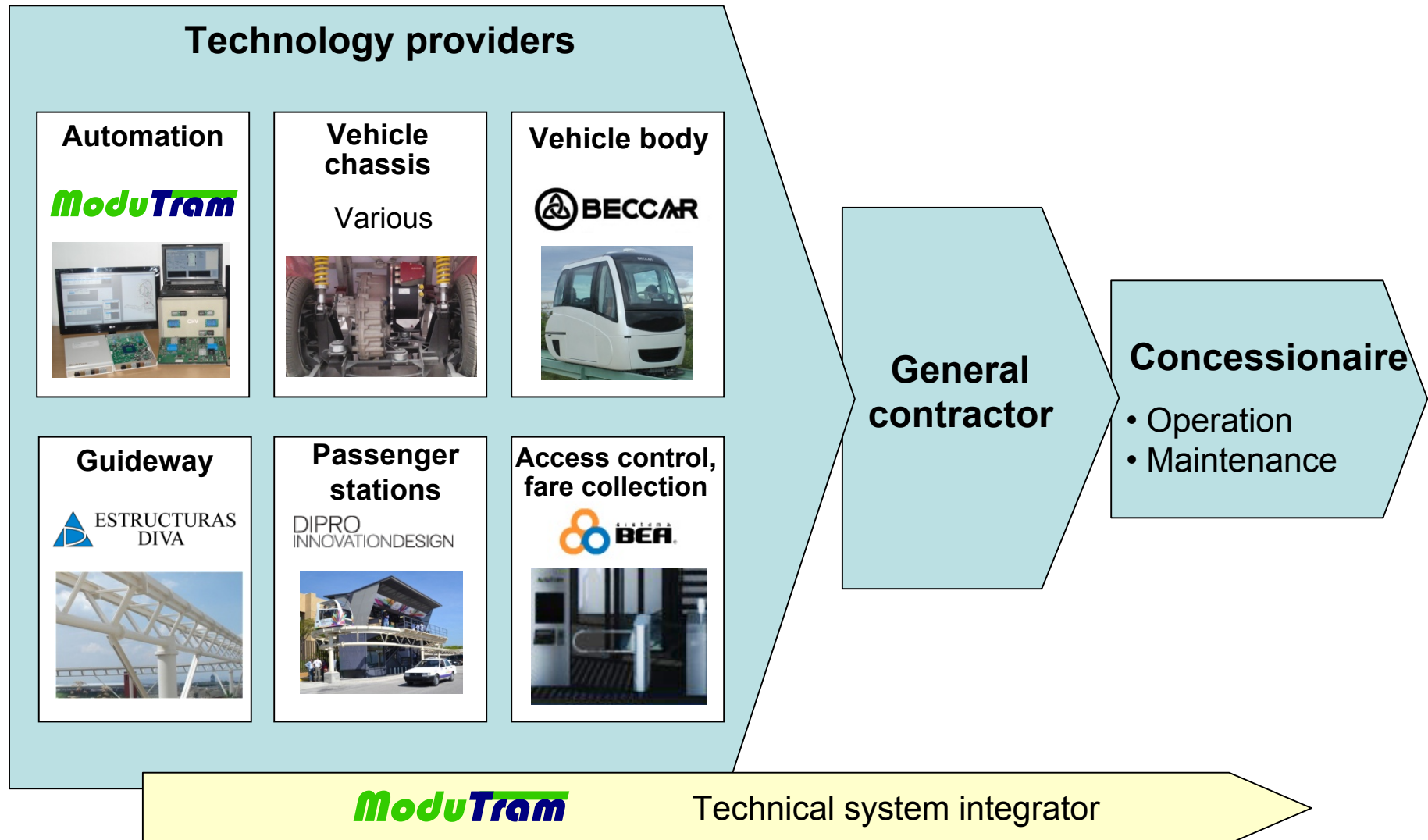
What we do:

- GRT system integrator
- ATN control system developer
- ATN vehicle chassis integrator

Our product: Autotrén



Autotrén supply chain



Where we stand



Test facility in Guadalajara



Demo facility in Cuernavaca



Test facility expansion (under construction)

PRT or GRT?

PRT

Ride alone or with
passengers of your
choice

Non-stop service

GRT

Ride with others

Intermediate stop(s)
possible

The economic model



- Public-private partnership
- General model copied from Bus Rapid Transit
- Adapted for GRT

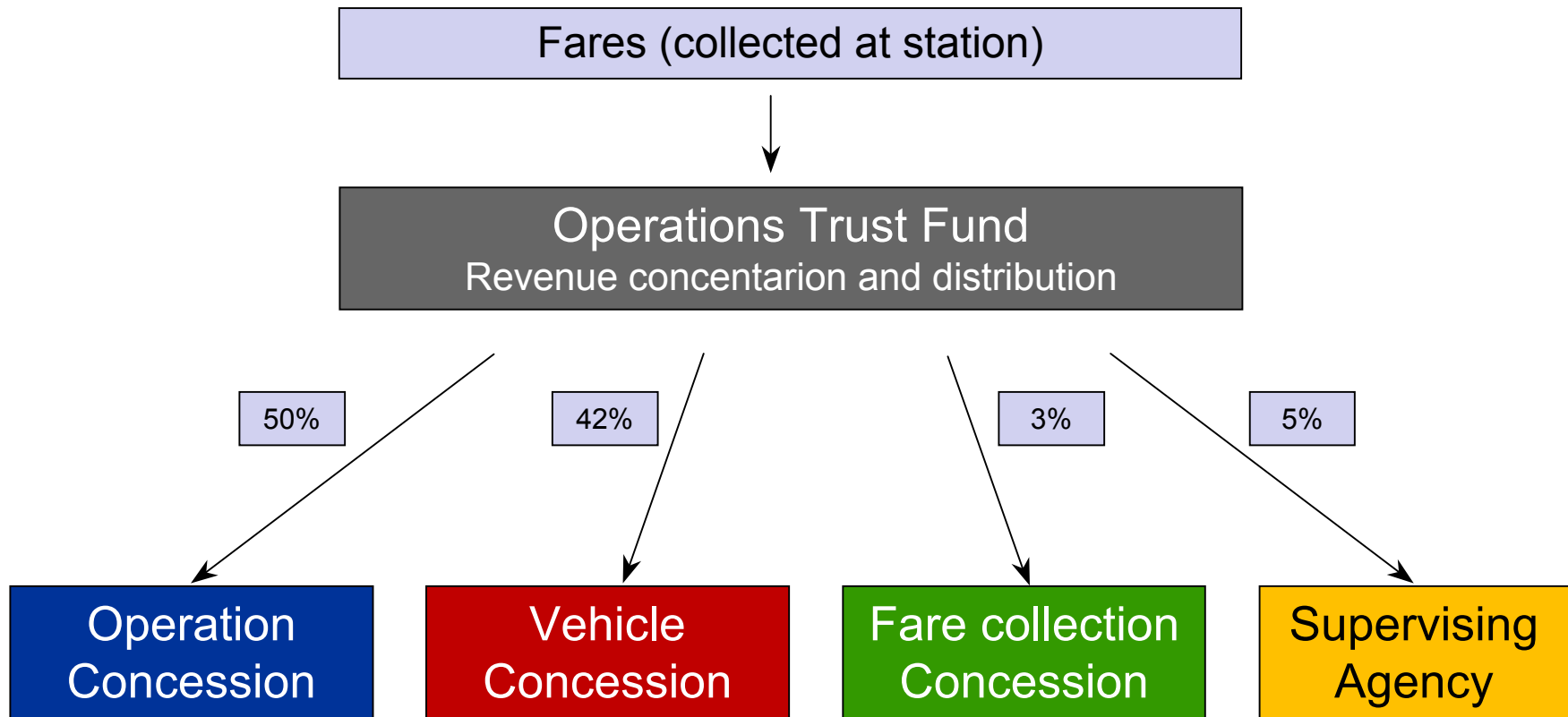
Public-private investment model

Example:

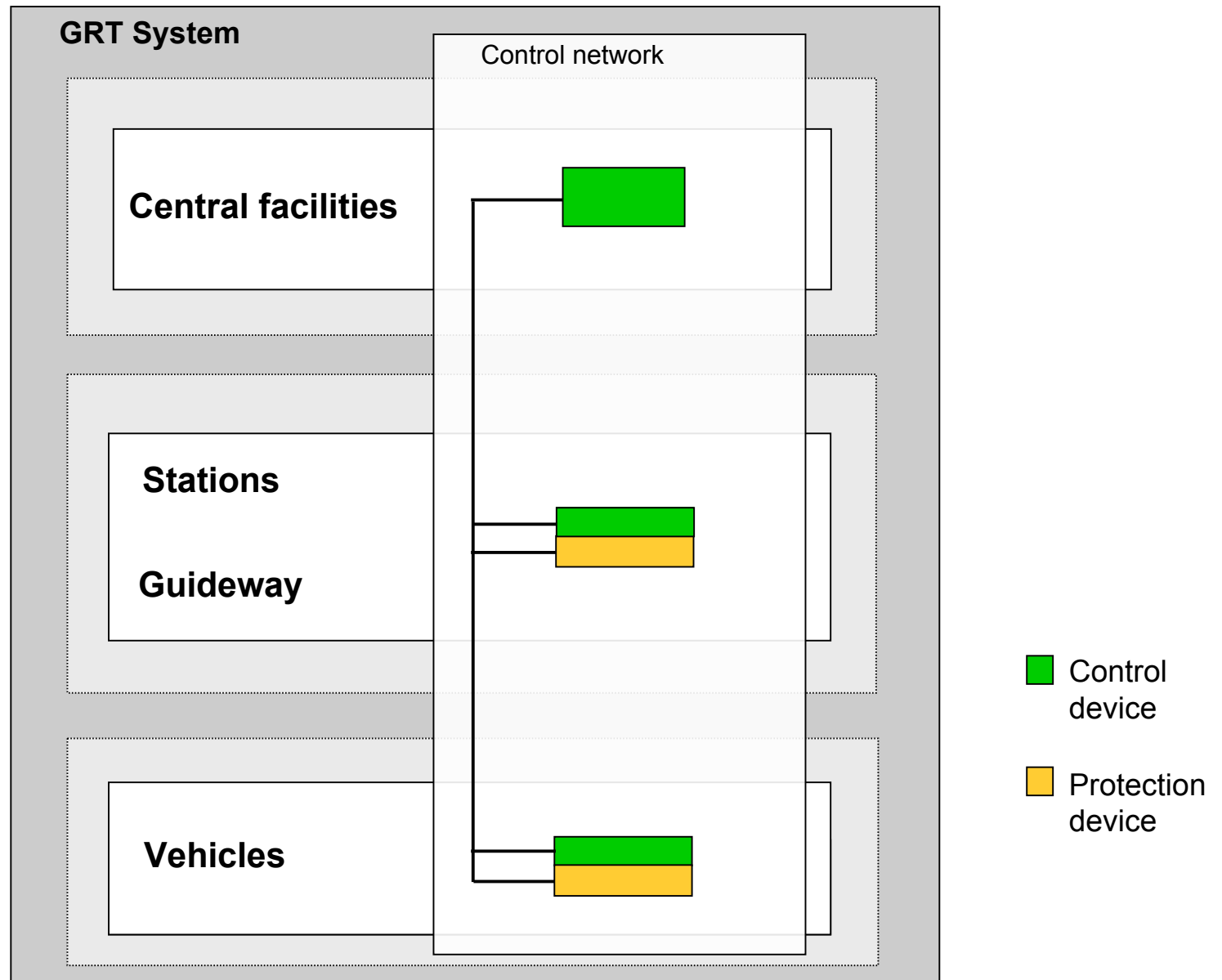
Investor	System Element	%
Government	Guideway, Buildings	40%
Builder-Operator with rights to GRT technology	Automation, central facility equipment	30%
Existing transportation (bus) concessionaires	Vehicles	27%
Company with fare collection infrastructure	Ticketing and access control equipment	3%

Concessioned operation model

Example:

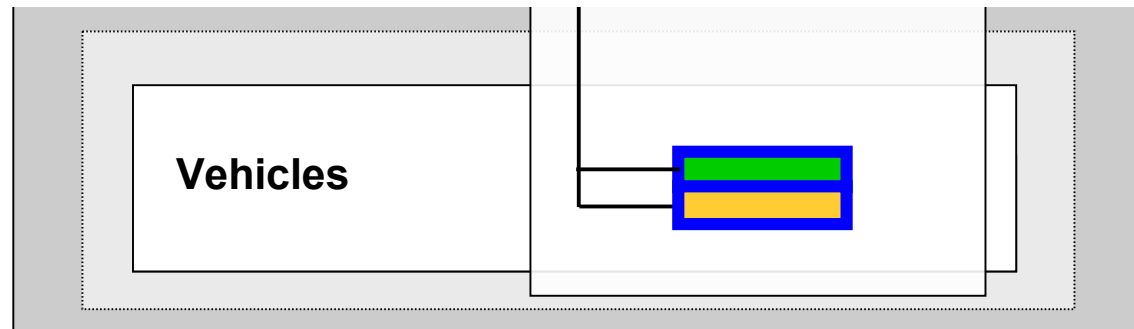


Control System - Architecture



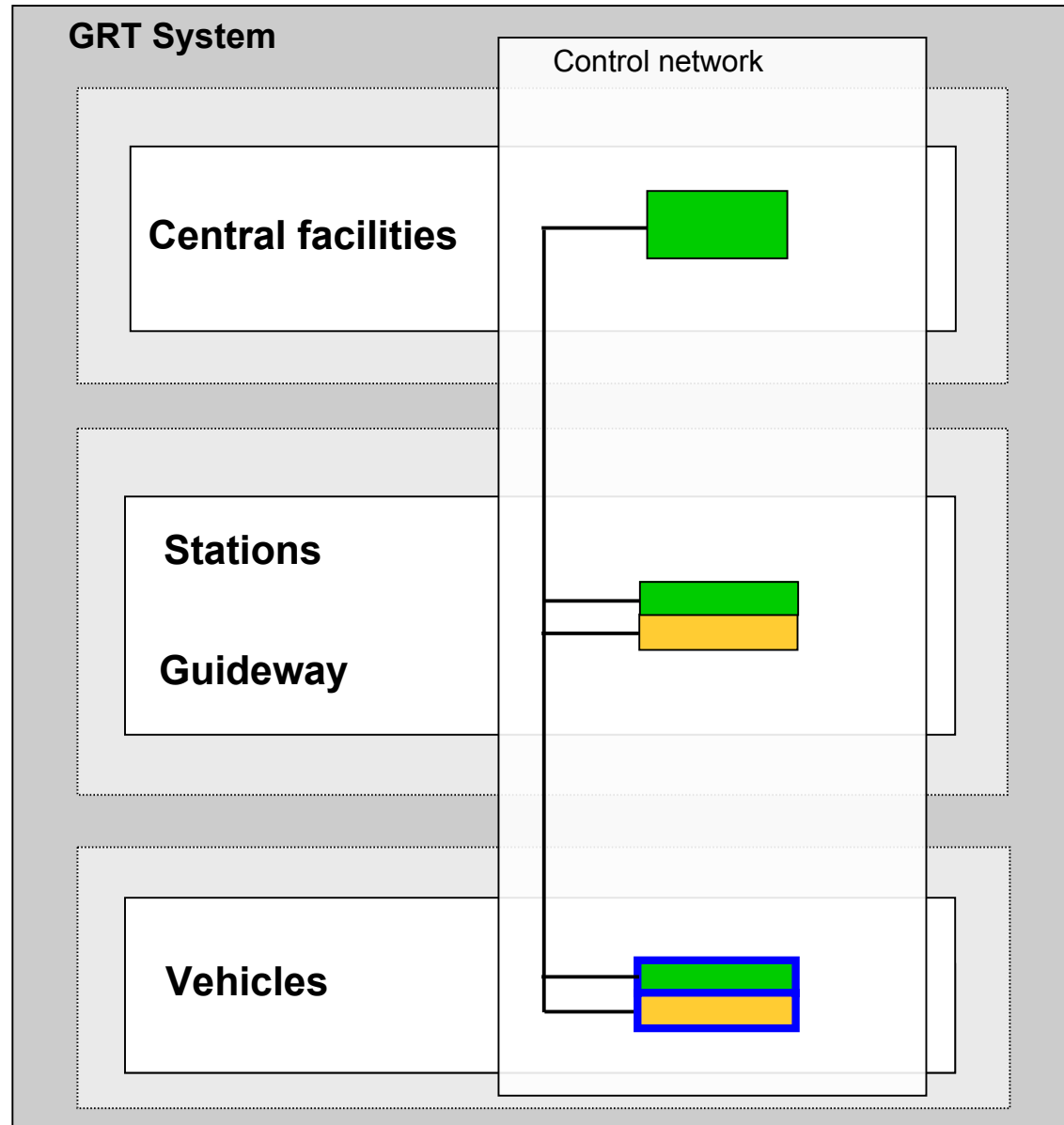
Control System - Architecture

What happens when a change is made to a vehicle, that affects its control or protection device(s)?

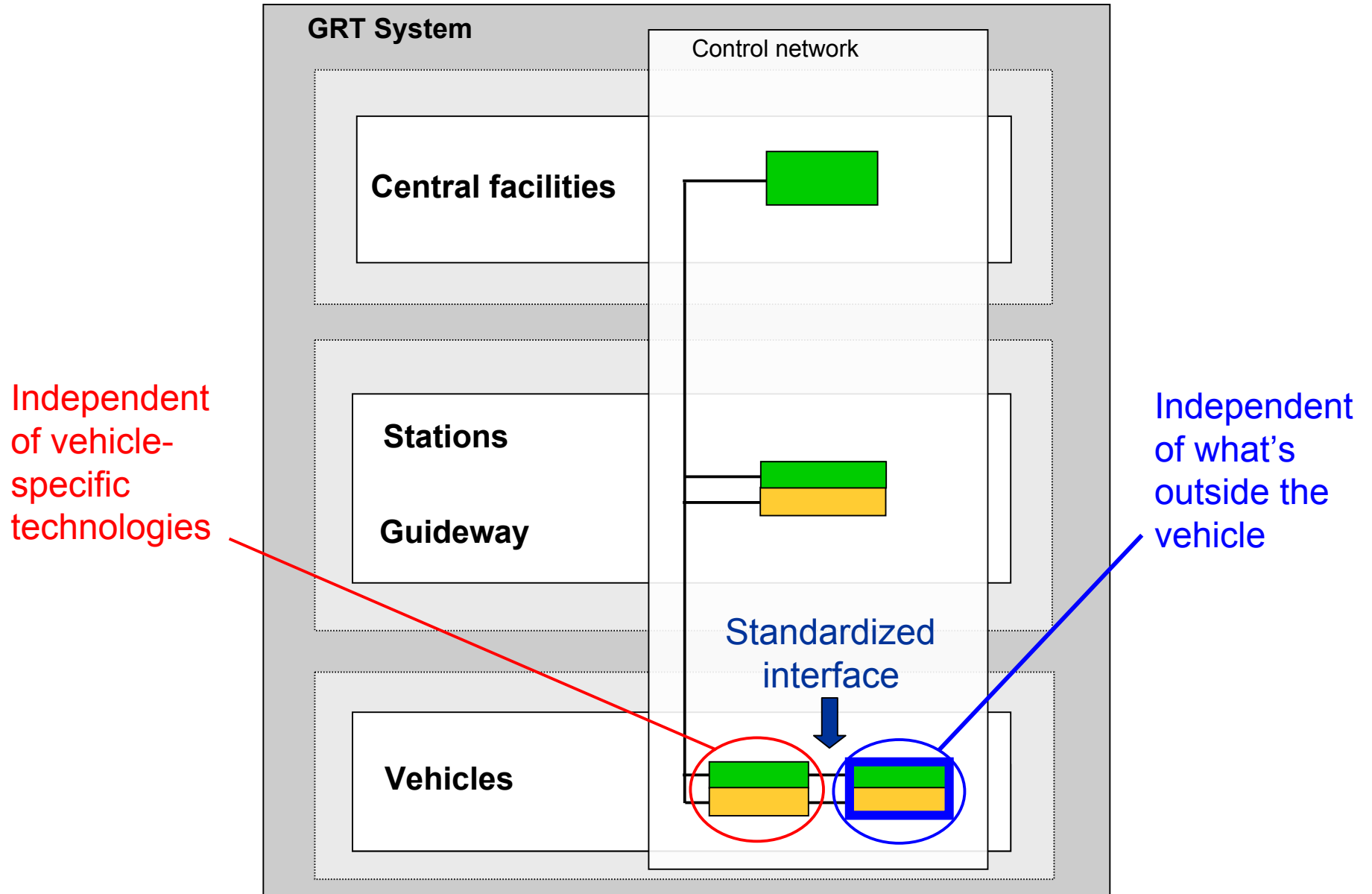


Control System - Architecture

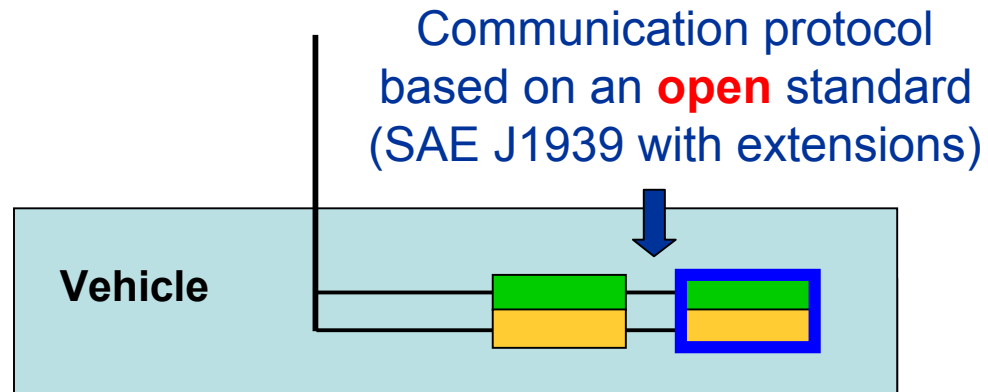
The entire control system may need to be revalidated!



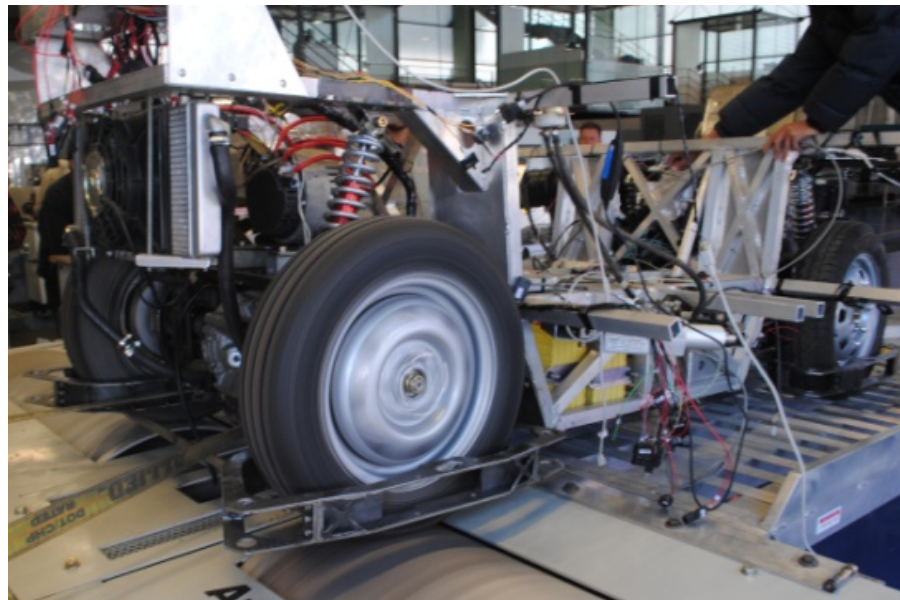
Open Control



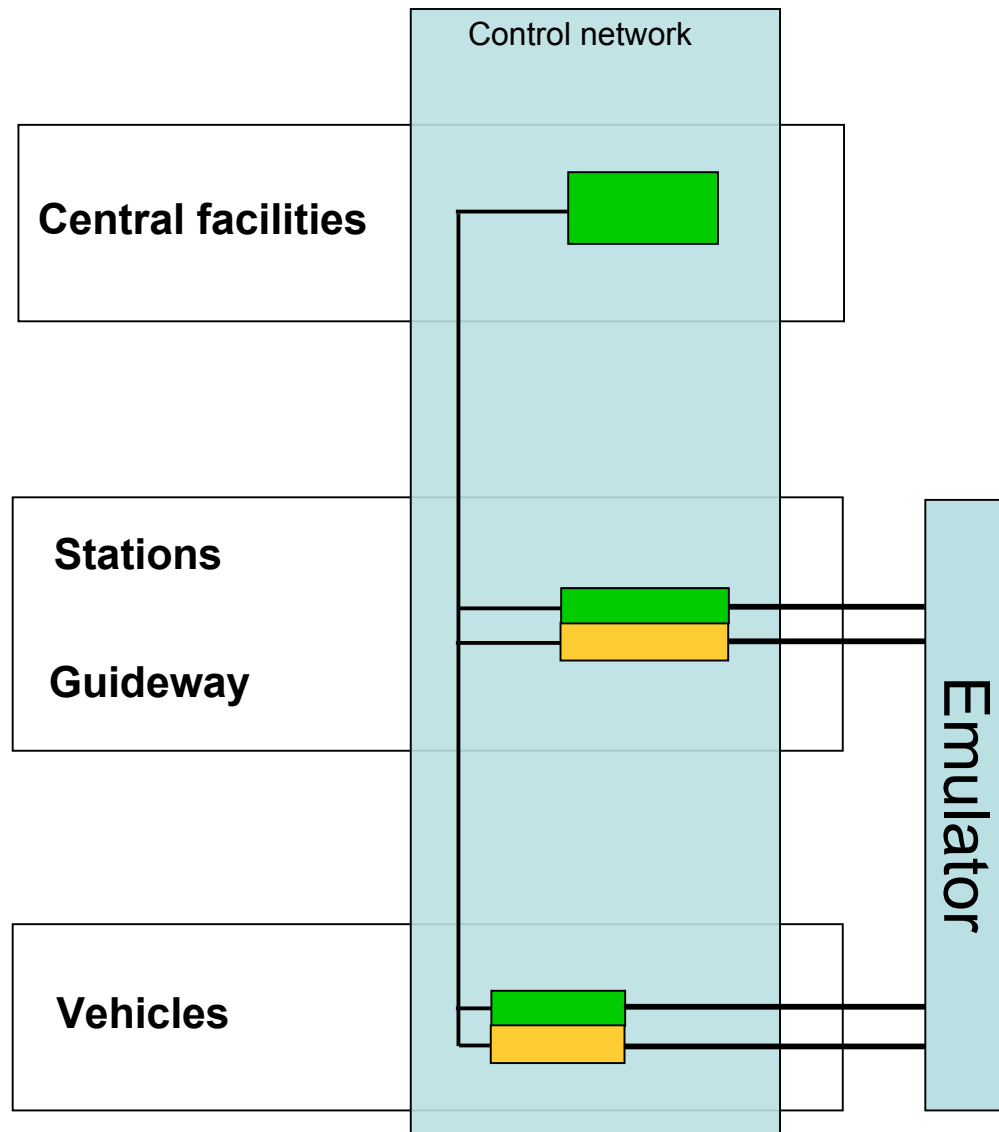
Open Control



Benefit:
Validation can be
performed on a
dynamometer



Open Control



Outlook

