Coordination of Freeway Ramp Meters and Arterial Traffic Signals (FOT) – Interface and Traffic Signal Activation

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Outlines

- **Interfacing for Dynamic Ramp Metering Rate**
- **Interfacing for Intersection Traffic Signal Timing**
- **Discussion**

Interfacing for Dynamic Ramp Metering Rate

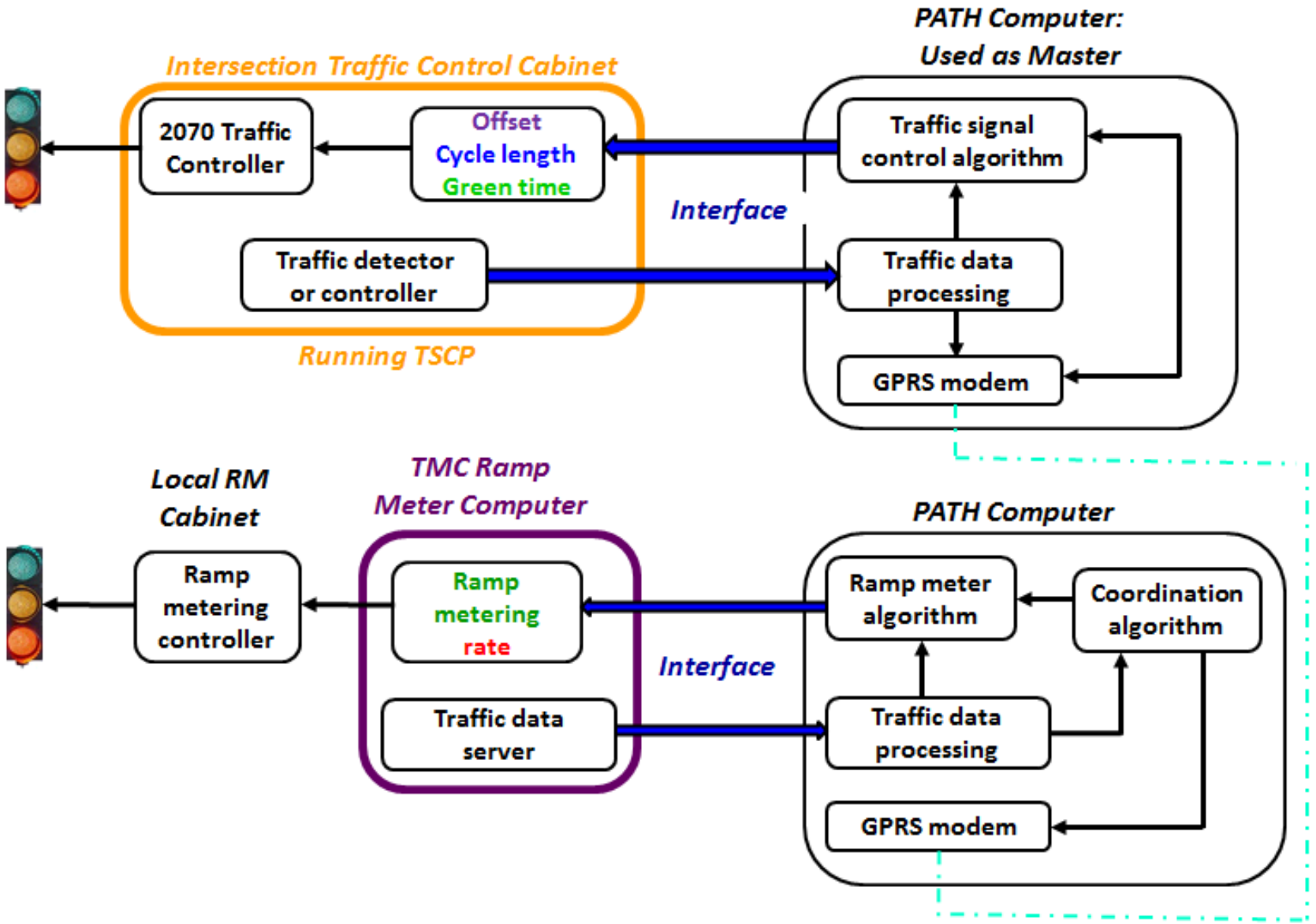
- **Direct Interface with D4 TMC Computer**
  - **To get real-time data**
    - **Mainline detector**
    - **Onramp detector**
  - **To send ramp metering rate for each onramp**

Interfacing for Intersection Traffic Signal Timing

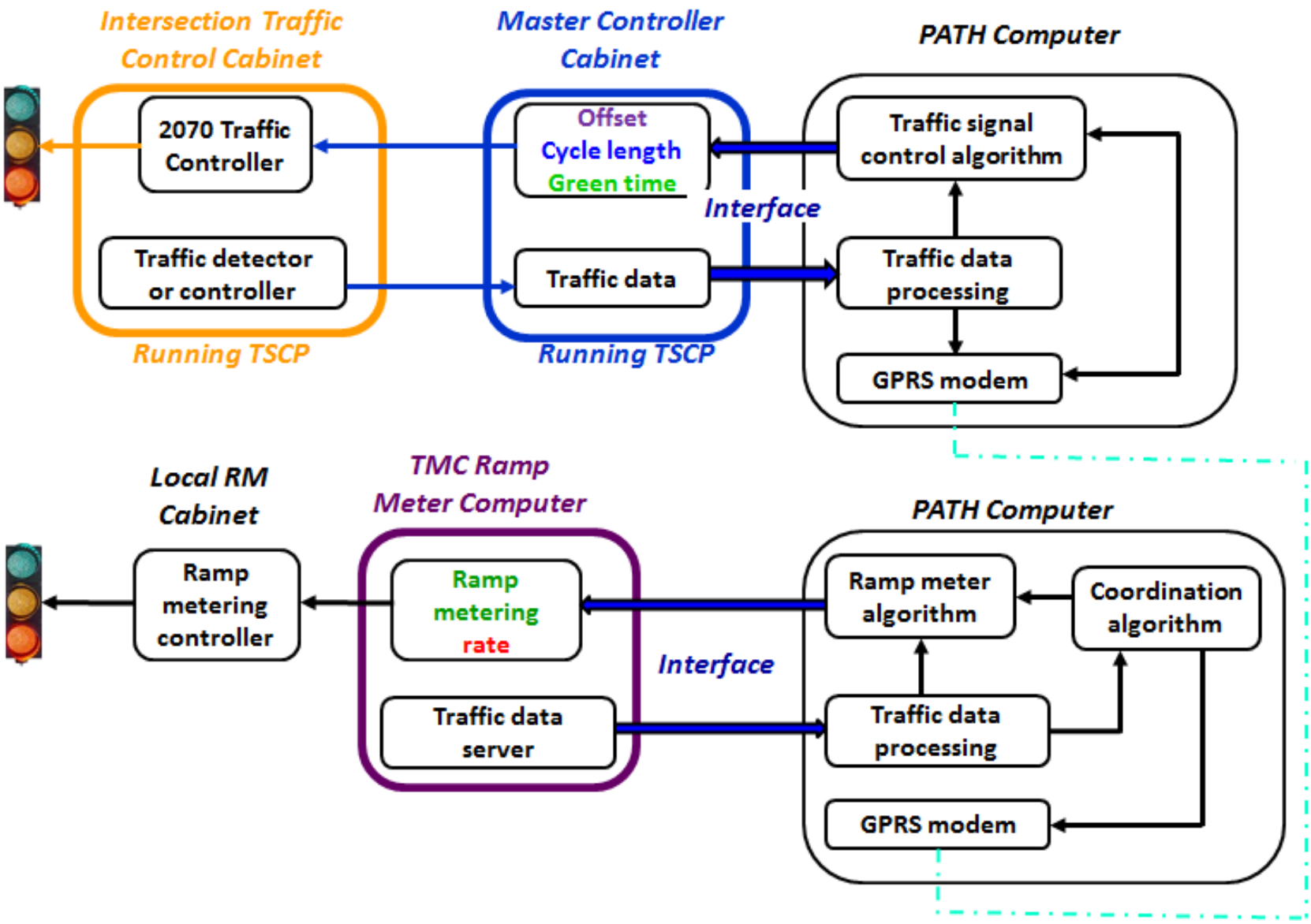
- SR87-Taylor Intersection of Caltrans D4 running TSCP
- Caltrans D4 Controller Running TSCP without a Master
- Caltrans D4 Controller Running TSCP with a Master
- San Jose Intersection 2070 Controller running Fourth Dimension Software
- San Jose Intersection 2070 Controller running SCATS

- **According Zhongren meeting with Caltrans HQ engineers:**
  - **To be able to coordinate using a field master with cycle length and offset fixed**
  - **If no field master, a PATH computer could be configured to run TSCP as a master**

Caltrans D4 Controller Running TSCP without Master



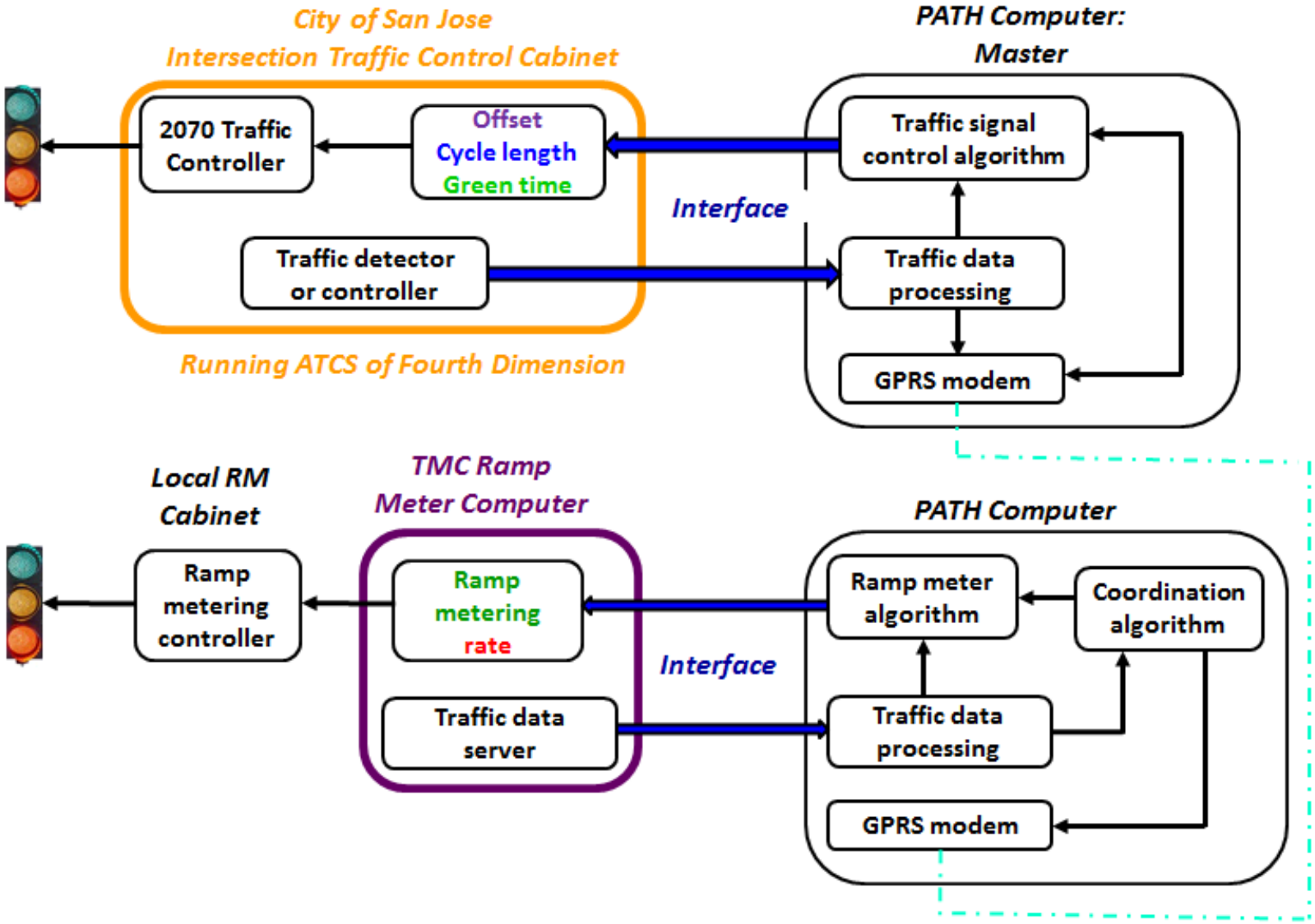
Caltrans D4 Controller Running TSCP with a Master



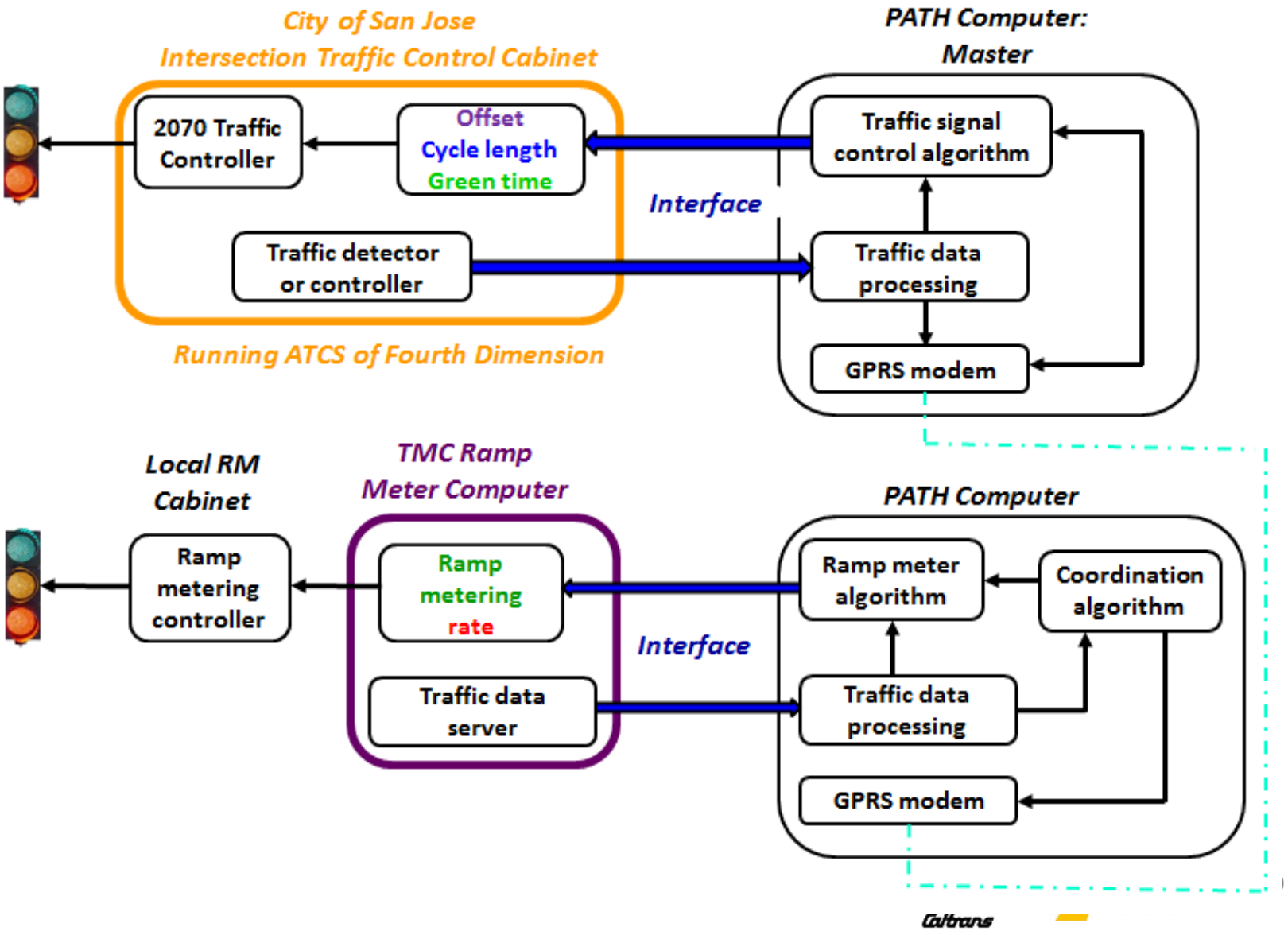
San Jose Intersection 2070 Controller running Fourth Dimension Software

- Controller at the following Locations will still run Fourth Dimension firmware
  - San Pedros St.
  - First Street
- Discussed with Tod on 11/17/2011
- To send Tod a full set of the parameters we want to set and read;
- Tod will modify the Fourth Dimension firmware to accept a specially formatted Ethernet packet formatted with those parameters and apply them using his software;
- He will send us the firmware and we should load it into a 2070 for testing provided that San Jose Transportation agree to do so.

San Jose Intersection 2070 Controller running Fourth Dimension Software



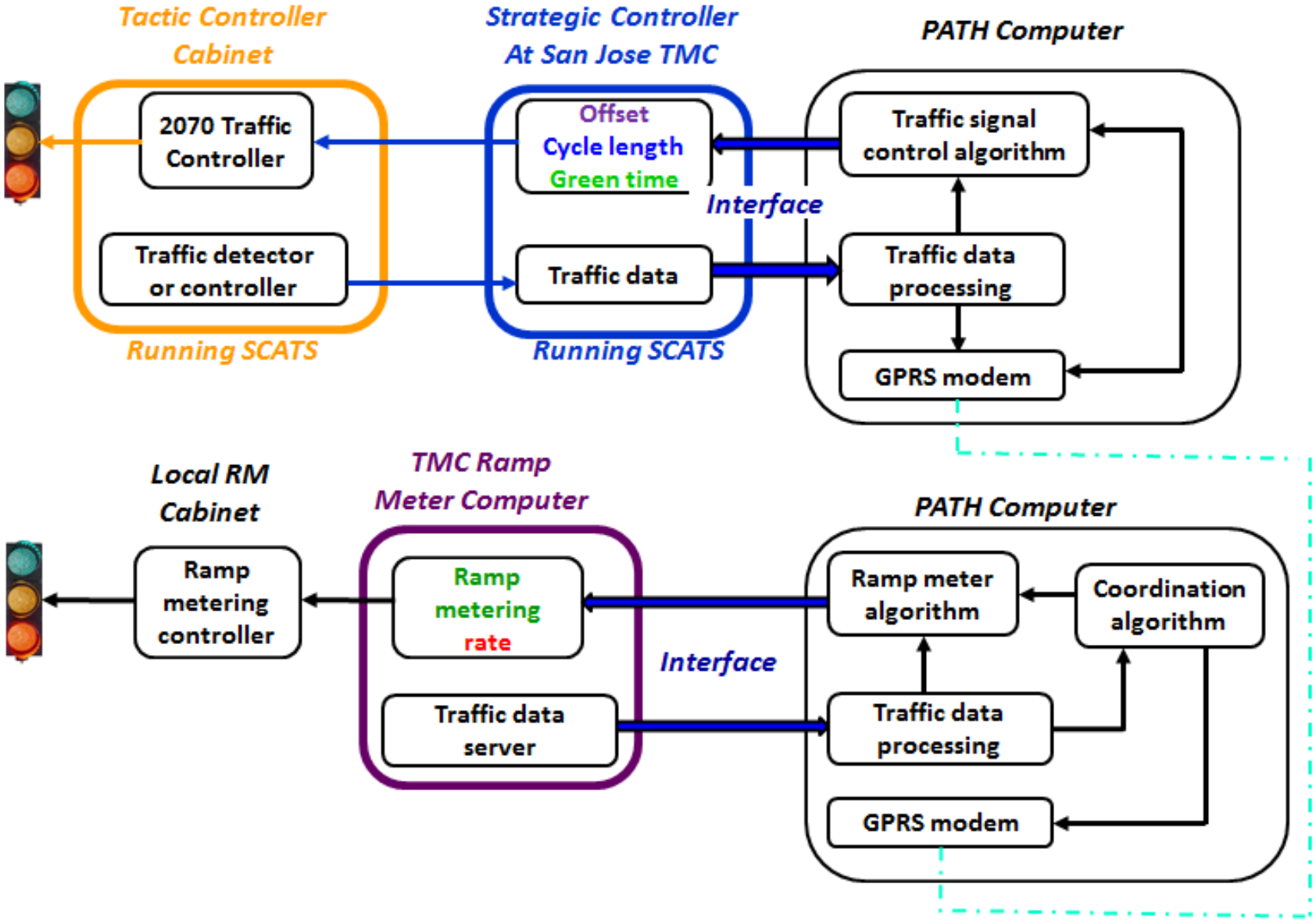
San Jose Intersection 2070 Controller running Fourth Dimension Software



San Jose Intersection 2070 Controller running SCATS

- **SCATS has 2 control levels: *Strategic Level* at TMC and *Tactic Level* at local control cabinet. It is feasible to dynamically assign the Green Distribution for an intersection from the Strategic Level at TMC;**
- **According to Lily (05/22/12):**
  - **Implementation of ATCS in San Jose is limited to 52 intersections in the City, not city-wide;**
  - **I280-Saratoga intersections will run SCATS in this summer;**
  - **Lily has arranged an engineer to find out how the traffic is controlled at San Pedros and Frist Street (upstream of Taylor)**

San Jose Intersection 2070 Controller running SCATS



Discussion