Questions for opposition related to the thesis titled –

Sensor based system for train detection

* Why restrict yourself to only two Technologies that you selected (Induction and Optical)?

Was it a requirement from MTR ? If yes, Would you have liked to investigate any alternative method of position detection?

* Optical sensors are usually avoided the world over for critical application due to the issue of dust and dirt, necessitating regular and costly maintenance, why then did you still go in for an optical solution?
* Are you aware of similar problems based by other metro operators apart from Stockholm? (PAGE NUMBER : )
* You state that MTR faces this problem in all their lines and not just the blue line (but Red line and green line have Communications-Based Train Control (CBTC) from Ansaldo and Siemens respectively that enable Automatic train control (ATC) and can theoretically operate at “GoA 3”which is - driverless train operation (DTO) where starting and stopping are automated but a train attendant operates the doors and drives the train in case of emergencies) Why does MTR still have problems in spite of this new signaling equipment ? (PAGE NUMBER : )
* You state in the *Process section* that you will investigate EMI levels and Noise levels in the station and also test them for 3 days for changes in behavior and performance, Did you investigate the EMI levels and how? You tested the continuous use of the sensors in laboratory conditions? Do you think you will be able to reproduce the same Noise and EMI levels in a sterile environment? (PAGE NUMBER : )
* Why Use LabVIEW to save and plot data when you could have easily used a Arduino data logger shield do the same and then analyzed the data in LabVIEW? Did you gain any special insight / advantage using LabVIEW that you wouldn’t have had otherwise?
* In the induction method why did you not raise the sensor position so that it would couple more w..ith the wheel and less with the track? Why did you choose to have it on the inner track edge? (PAGE NUMBER : )
* In your first setup you noticed that first sensor did not detect the wheel at high speed. Wouldn’t this cause problem while the system is trying to check if all the axels have entered the station? Also how and why is the sensor trying to count axels while the train is leaving the station ?(page 42)
* Why do you say that Accuracy of train detection for the Inductive sensor is Medium?

Notes :

2:21

Union Switch and signal

Page 24 flow chart changed .

Page 25

Optical sensor graph

Only one test ?