

Driver Training System Using Train Driving Simulator

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Project background

- **BTS has provided the mass transit train service since 1999.**
- **BTS need to train their drivers.**
- **Nowadays, BTS train their drivers by actual sky trains and they have just bought the driving simulator from Spain.**
- **Kasetsart university and AMR ASIA have potential to create the driving simulator.**
- **NSTDA funds for the project.**



Objective and scope of work

- To create the driving simulator focus on BTS EMU-B model

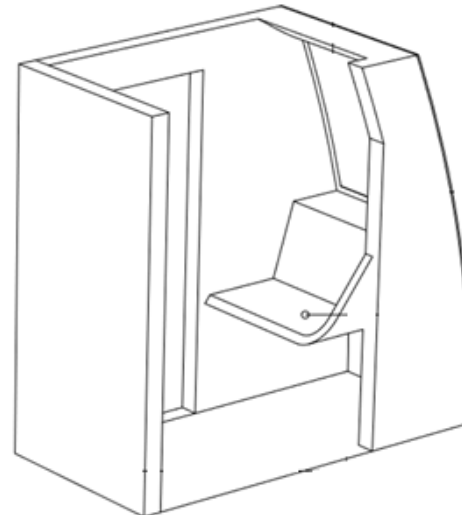


BTS EMU-A model (Siemens)



BTS EMU-B model (CNR Changchun)

- Create only left side of cockpit of TC-Car



Train simulator system



The simulator

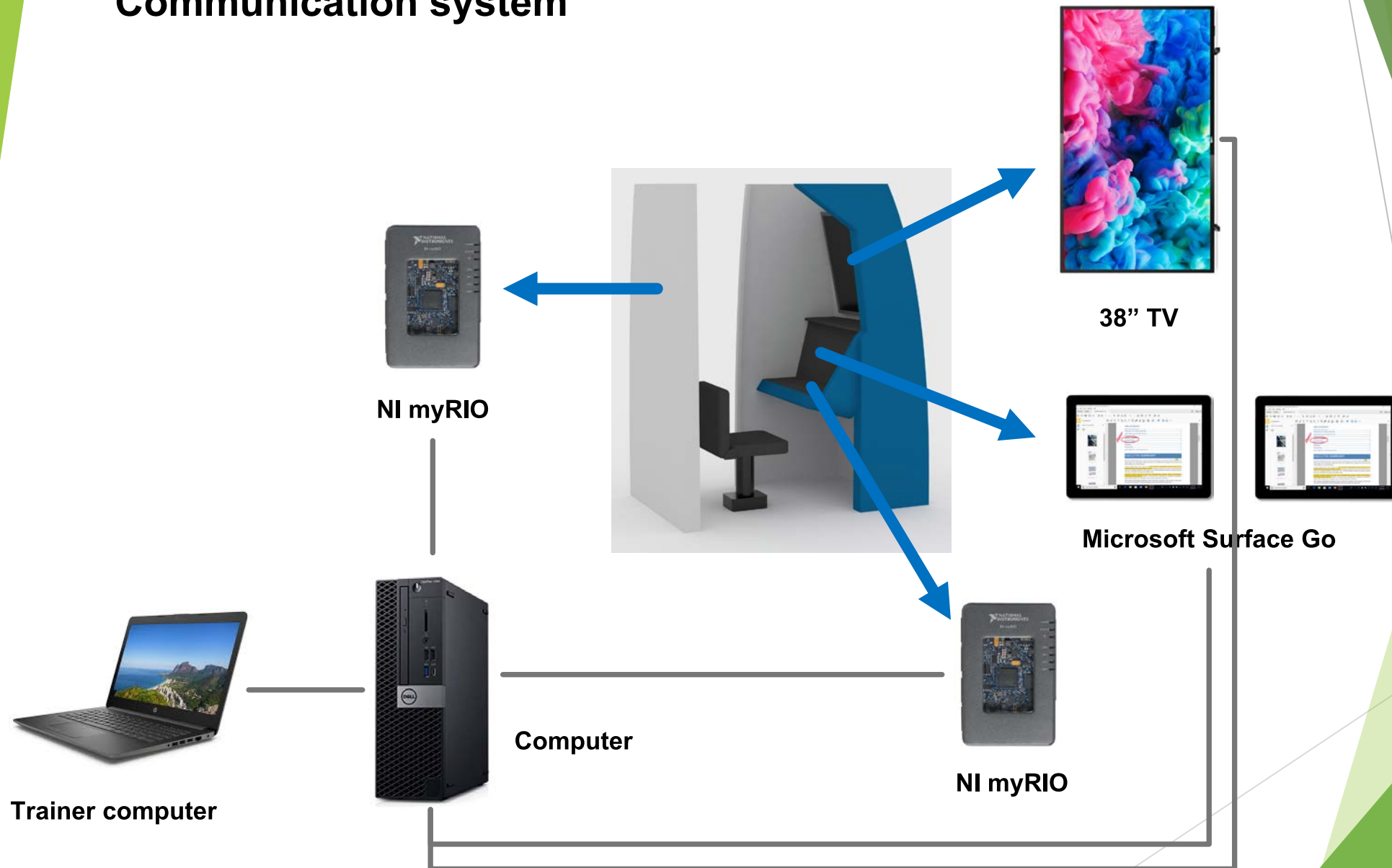


Front panel and monitor



Rear panel

Communication system



Communication system



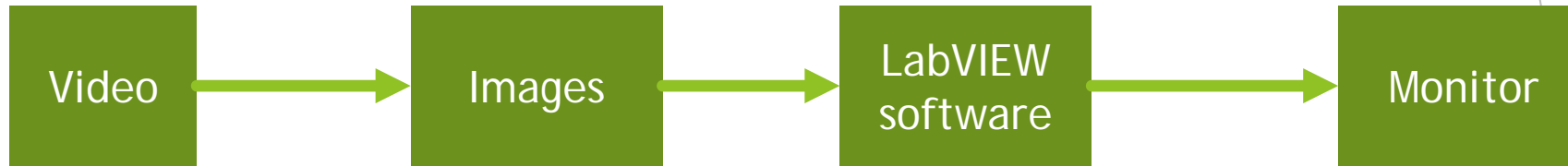
Train simulator system - Software

- **Image display**
- **Normal operation**
 - **Mode of operation**
 - **Route**
- **Degrade operation**

Train simulator system - Software

Image display

- Use image resampling technique



1



Read image file from folder
Resampling image
relate to train dynamic

2



Train simulator system - Software

Train dynamic

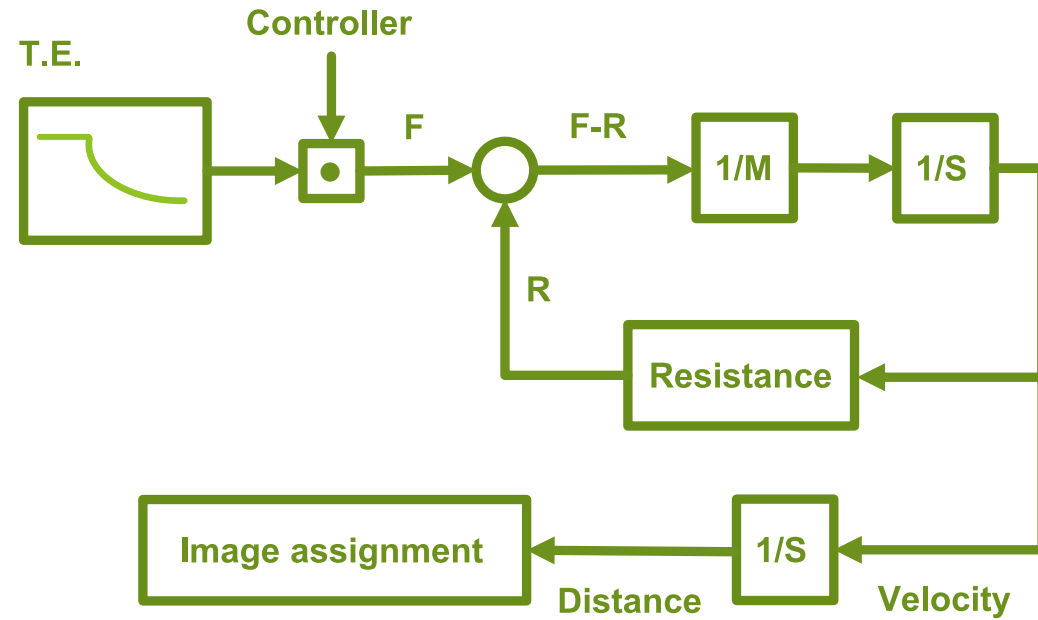
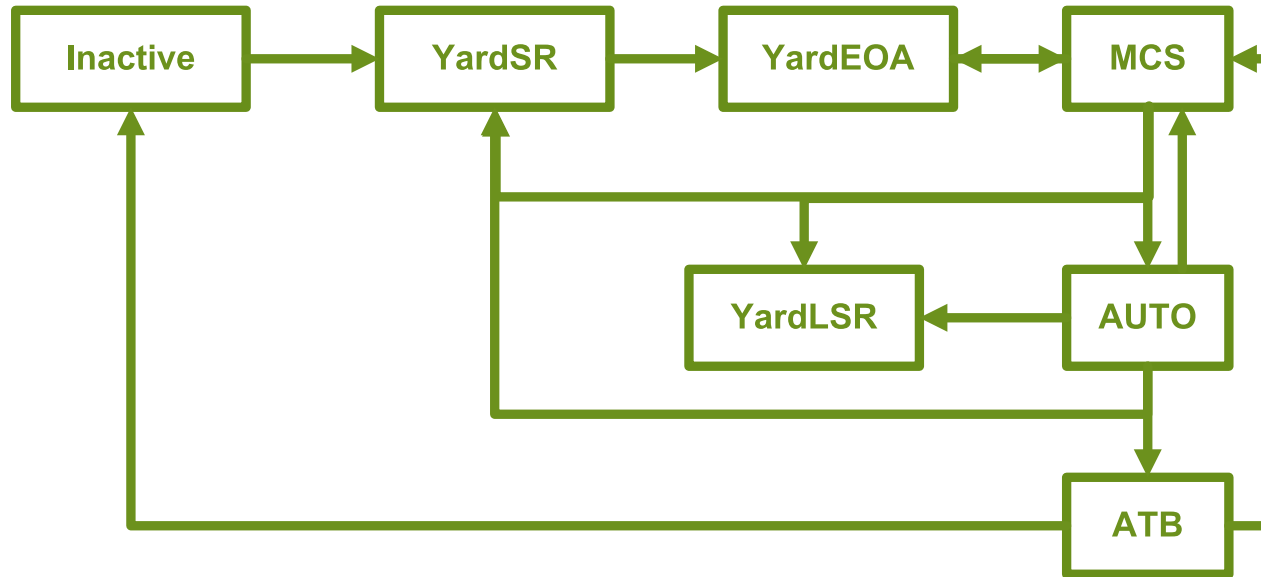


Image assignment

- Assign image for any distance

Train simulator system - Software

Normal operation



Route

- Depot to Mo Chit (N8) and Mo Chit (N8) to depot
- Mo Chit (N8) to Samrong (E15) and Samrong (E15) to Mo Chit (N8)
- National Stadium (W1) to Bang Wa (S12) and Bang Wa (S12) to National Stadium (W1)
- Interchange between Silom line and Sukhumvit line

Train simulator system - Software

Degrade operation

Signaling problem

- Emergency brake
- Telegram loss

Rolling stock problem

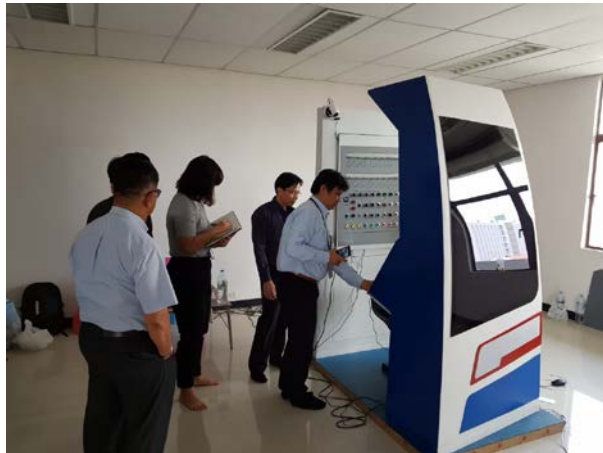
- Door fault
- PER pulled
- MCM fault

Emergency situation

- Railway obstructed
- Passenger fall
- Station emergency

Conclusion

- **Train Driving Simulator complete about 80-90%**
 - Complete the whole route
 - Correct the software mode machine
 - Correct some degrade situation



Thank you

