

Graphic Display Interface for the AIS based Intelligent Transportation System

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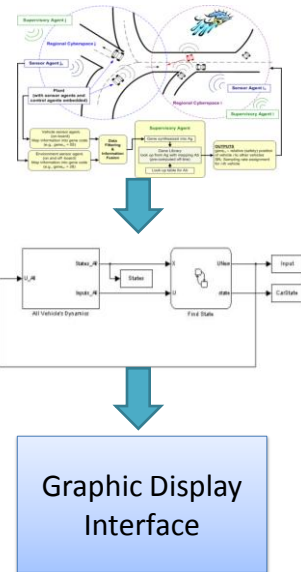
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Main Content

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Background

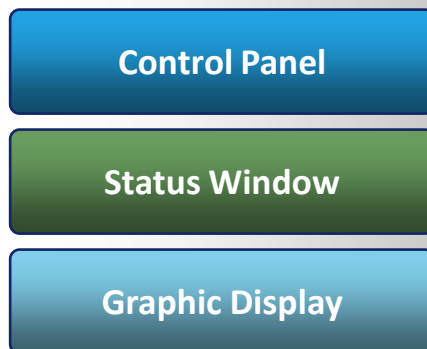


AIS Gene Library Based Real-Time Resource Allocation on Time-Sensitive Large-Scale Multi-Rate Systems

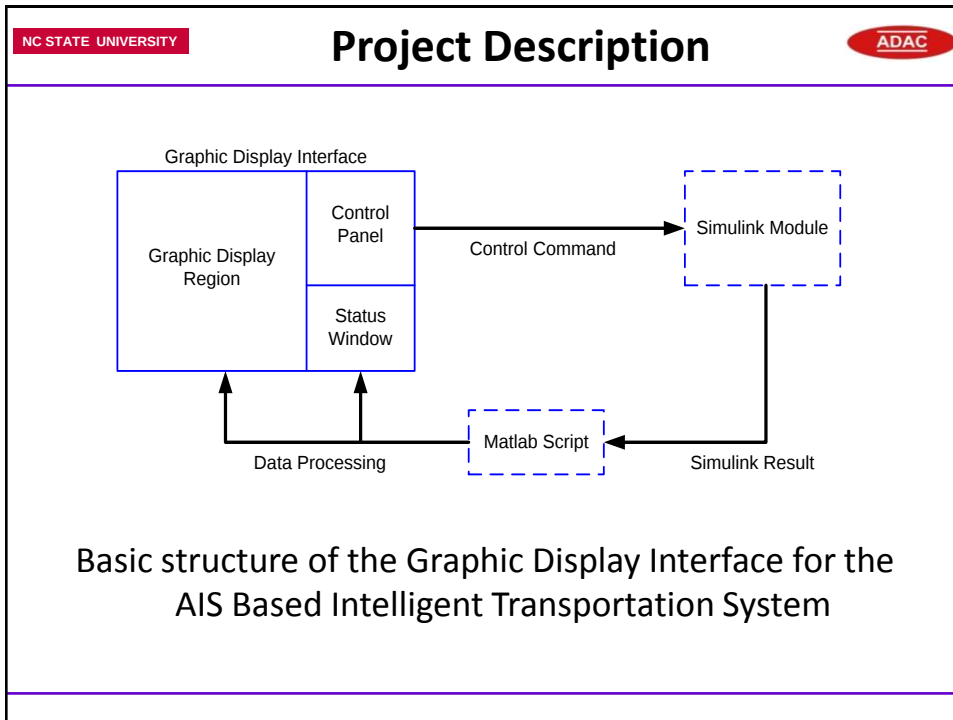
The simulink module that has been developed is a software simulation platform for the project.

Develop a GUI for the simulink module to analyze and display the result of the module graphically.

Project Description



The Graphic Display Interface



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Learning & Work

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First week

- Get familiar with the Matlab and Simulink
- Learn the method to build a simple GUI
- Finish the Control Panel of the Graphic Display Interface
- Save the initial parameters to workspace

Why Matlab GUI?

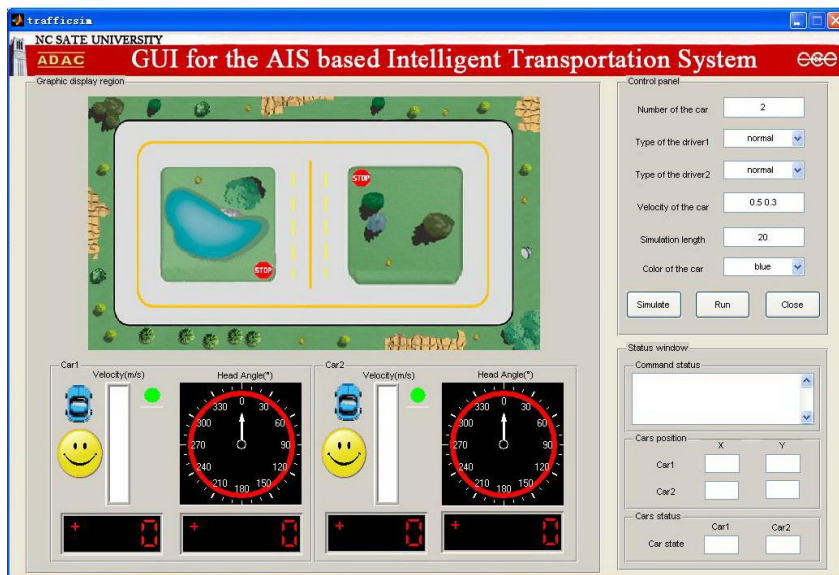
- The simulink module
- The large amount of computation and visualization tools
- The open programming environment

Second week

- Extract the simulation result to the workspace for GUI to display
- Develop the Status Window of the Graphic Display Interface
- Begin to work on the Graphic Display Region

Third week

- Improve the outlook of the GUI
- Display the cars with moving pictures
- Display the velocity of the car with a speed bar
- Display the head angle of the car with a dial
- Add a pop up box for simulation



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GUI Designing

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Control Panel :
 Parameter setting
 Simulink control

Status Window :
 Message history
 Position & Status

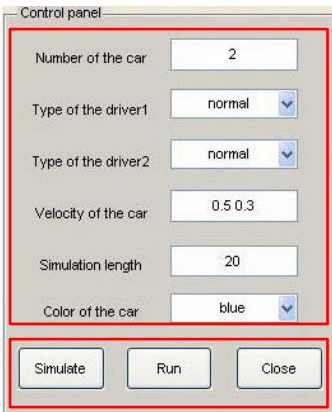
Graphic Display Region :
 Transportation system animation
 Velocity & Head Angle

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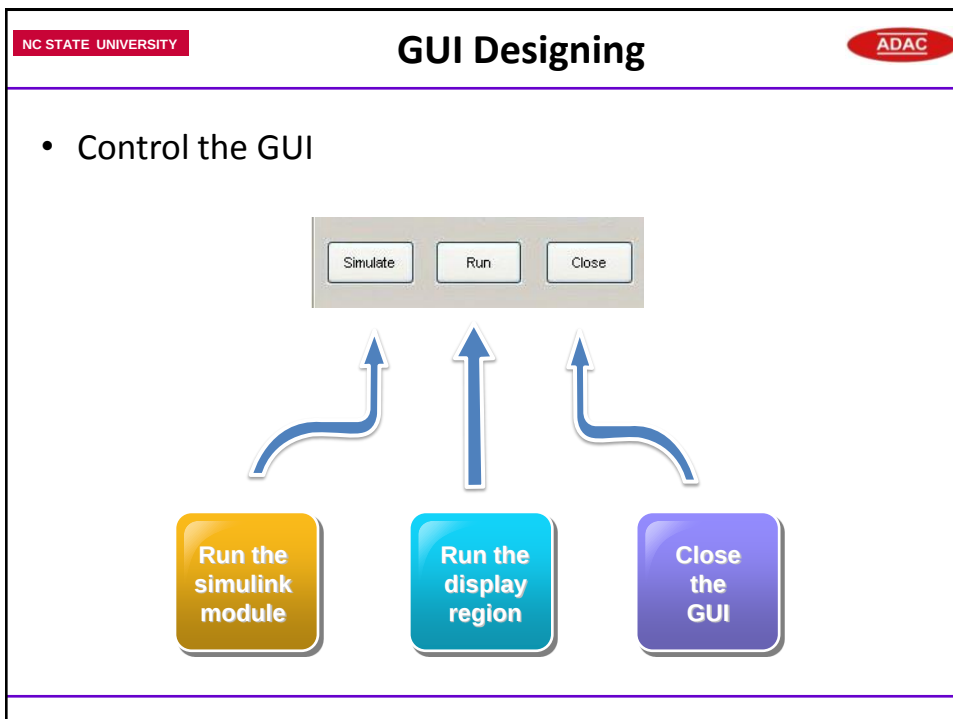
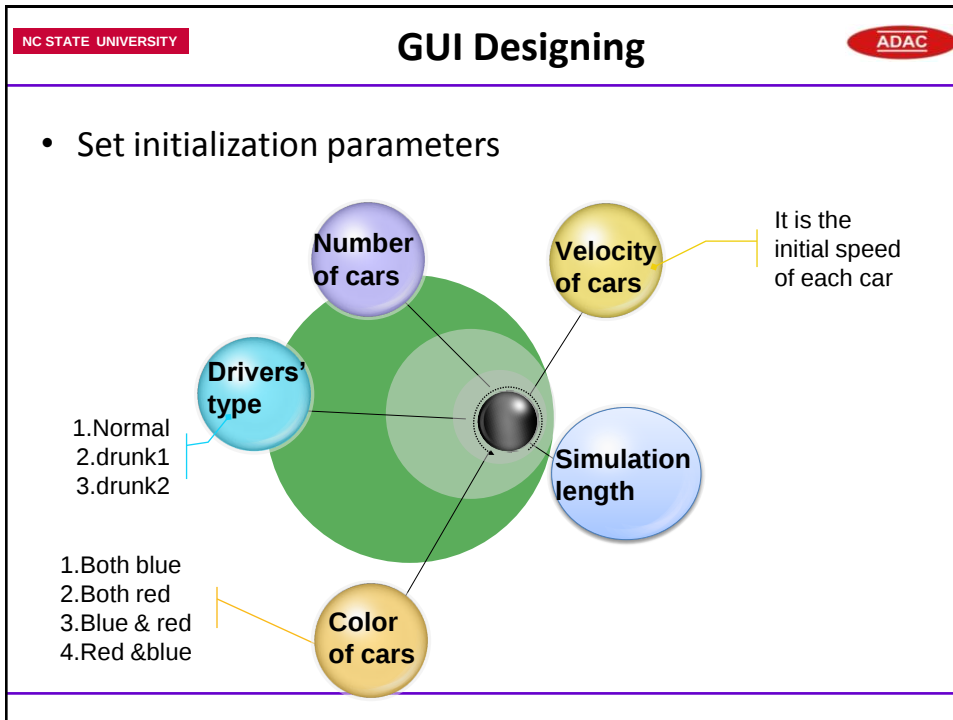
GUI Designing

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Control Panel



- Set initialization parameters
- Control the GUI



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GUI Designing

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- Pop up box

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GUI Designing

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Status Window

Status window:

Command status:

Type of driver1 :normal

Type of driver2 :drunk1

Velocity of the cars:0.5 0.3

Simulation length :10

Cars position:

	X	Y
Car1	0.13	-0.38
Car2	2.54	-0.00

Cars status:

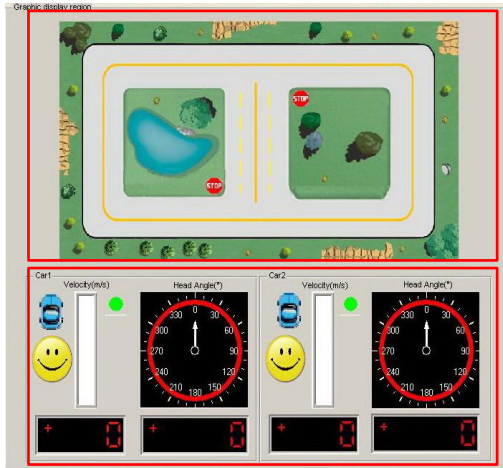
	Car1	Car2
Car state	drive	drive

→ • Command Status

→ • Cars Position(X,Y)

→ • Cars Status (stop, drive, wait, follow)

Graphic Display Region



- Virtual Scene
- Parameter Display Board

- Virtual Scene

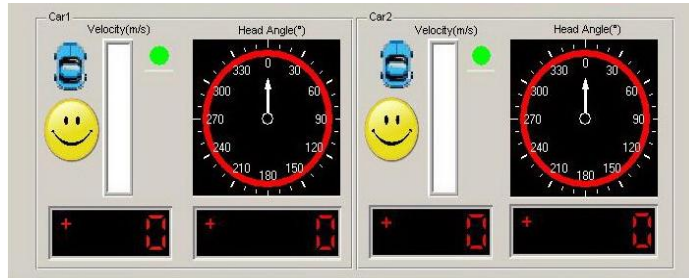


**Make lanes
occupy a larger
place in the
background**

**Dim the color
of the
environment**

**Add a stop
sign at the
corner**

- Parameter Display Board



- The velocity of the car in real time
- The head angle of each car
- Symbols to help analyze

- Head angle of Cars



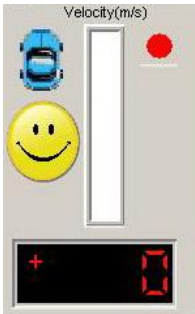
Needle = direction of the car

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GUI Designing

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- Velocity of Cars



Stop



Drive

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- Meanings of Symbols



Normal



Car1



Stop



Drunk



Car2



Drive

