Project 01 description

The main goal of this project is to create a simulated gateway ECU with the purpose to transmits traffic from the CAN network to the LIN network. The materials for a start are available on Canvas platform. Create a restbus simulation that contains at least two networks. The first network should be defined as the CAN, and the second network should be defined as the LIN. Each node should use a proper communication database. The proposed databases are available in materials.

The simulated CAN/LIN Gateway transmits the frames of the **LockingSystem** node (**CAN**) to the **LIN** network. The seat settings are given as an example. The gateway is stimulated by certain bus activities.

Requirements to be implemented:

Start the measurement. Integrate offered panels. Click on the **Open Car** button on the key to start the initial communication. Click on **Power** to start the ignition. Click on buttons **1** or **2** on the key to activate a previously stored seat position. You control the individual seat functions via the LIN Information panel. The Seat Display panel displays the current seat positions.

A successfully implemented project would have all traffic available on the CAN network redirected to the LIN network.

Regular points

1. Create a restbus simulation with the requested content. (3)

Req: The rest bus simulation contains at least two networks, the LIN, and the CAN. Each network contains an appropriate database loaded in the simulation setup.

2. Tidiness is on a high engineering level (2 pts.)

Req: All windows are nicely sorted, all desktop contains only important content, the configuration, and the artifacts are stored in a modular and intuitive way to be ready for reuse.

3. Create an analysis desktop with appropriate analyzing tools (4 pts.)

Req: Located on this desktop are various analysis windows for displaying the current bus traffic: Two Statistics Windows for CAN and LIN, the Data Window as well as two Trace Windows for CAN and LIN.

4. All needed panels are created or loaded from the materials (4 pts.)

Req: Using the CAN Information panel, you can unlock the vehicle and start the ignition. Furthermore, you can select two previously stored seat positions.

Req: With the LIN Information panel, you can control the individual functions of the seat by clicking on the gray controls

Req: The Seat Display panel is used to display the current seat position and the active seat functions

5. All network nodes are ready for use (4 pts.)

Req: All nodes are compilable and measurement can be started with no errors

6. Gateway functionality available (4 pts.)

Req: Desired traffic from the CAN network is properly transferred to the LIN network

7. The built-in functions were used (4 pts.)

Req: The concept of the gateway is fulfilled by built-in functions or selectors

Negative points

1. The same segment of the code was used between the two groups. (10 pts.)
2. The same configuration was used between the two groups. (10 pts.)

Extra points

1. The restbus simulation was tested (5 pts.)

Req: The test environment is available, and the report was created

2. Both direction gateways were implemented (5 pts.)

Req: All traffic from the CAN network is available in the LIN network and vice versus