|  |  |
| --- | --- |
| ***ASSIGNED BY :*** | ***Sir Fahad Maqbool*** |
| ***ASSIGNED To:*** | ***Memoona Ashraf***  ***Kishwar Fatima***  ***Wahab Bandial*** |
| ***Subject:*** | ***Web Engineering*** |
| ***TOPIC:*** | ***ORSD of Vehicle and signal Ontology(VSSO)*** |
| ***Date:*** | ***10 April ,2022*** |

***Purpose***:

The purpose of building the Reference Ontology is to provide a consensual knowledge model of the vehicle domain to be used by public for transportation.

***Scope***:

The ontology has to focus just on the parts + fuel types of vehicle (car) domain and sensor which generate values according to the time and signals which represent car data. The level of granularity is directly related to the competency questions and terms identified.

***Implementation language:***

The ontology has to be implemented in java language in Protégé software which is based on Java, is extensible, and provides a plug-and-play environment that makes it a flexible base for rapid prototyping and application.

***Intended End-Users***:

User 1: A vehicle owner

User 2: An authorized representative/employee of a fleet manager

User 3: Employee of the vehicles manufacturer

***Intended Uses:***

Use1: Used for transportation

Use 2: To Race

Use 3: for signal indication

***Ontology Requirements***

1. Non-Functional Requirements

NFR1. The ontology must support a multiple types of vehicles in the following: Buses, Cars and motorbikes

NFR2. The ontology must be based on the international, European or de-facto standards in existence or under development

1. Functional Requirements

***Competency questions:***

**Car Attributes**

1. What are the attributes of this car and what do they express?
2. How many attributes does this car have?
3. What is the model of this car?
4. What is the brand of this car?
5. What is the Registration Number of this car?
6. How old is this car?
7. What are the dimensions of this car?
8. What are the characteristics of this car's chassis?
9. What type of fuel does this car need?
10. What type of transmission does this car have?
11. What are the characteristics of this engine?
12. How many doors does this car contain?
13. How many seats do I have this my car?
14. On which side is located the steering wheel?

**Static signals:**

1. Is there a signal measuring the steering wheel angle?
2. Which signals are controllable?
3. Which signals are both observable and actuatable?
4. How many sensors does this car contain?
5. How many different speedometers does this car contain?
6. Which signals measure a temperature, and in which part of this car?
7. What are the characteristics of the sensor producing the signal “Travelled Distance”?
8. What are the maximum values allowed for all signals from car part “Vehicle”?

**Dynamic signals**

1. What is the current gear?
2. What are the values of all signals representing the speed of this car now?
3. Which windows are currently open?
4. What is the local current temperature on the driver side?