# Test Data

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| The attached data represents issues raised in testing of a system that was done by 4 different drivers, in different locations and with different characteristics. The data was not processed and is presented as reported by the drivers. However the drives were evenly distributed on a 24hrs,each country and each road type. |
| Please answer the following questions: |
| 1. Which driver needs to change the way he characterize issues? |
| 2. Which road type seems to be the most challenging |
| 3. In which country do we have the worst performance? |
| 4. Which illumination has the best results? |

# Sensor

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| Columns 1,2 and 3 represent 3 sensors outputs for a real world measure with a value of 2.47 (col 4) and a possible range of -2 to 6 |
| 1. Which is the best sensor in terms of signal quality and why? |
| 2. Which sensor is almost not useful at all and why? |
| 3. What is the standard deviation of each data series? |
| 4. What is the statistical distribution that best describes each sensor output? |
| 5. What is the RMS for each sensor?  Notes:   1. One can assume each measure of each sensor is independent of the other measures. 2. *If you are not familiar with any of the terms mentioned in the above questions try to search open sources on the internet.* |

# Parser

The file parser.log consists of a sensor with the following structure **extracted out of an actual car**:

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| 0x7E | 0x40 | 0x51 | Data (17 bytes) | FCS (CRC) | 0x7E |

* Inside the Data stream the speed is from the 9th **bit** to the 20th (including). The data is in little endian. Hint: in the first line in the excel the speed is 0x1CB
* Whenever 7E should have appeared in the data or FCS calculation it was replaced by “7D 5E” and 7D was replaced by “7D 5D”.
* FCS is calculated as follows 0xFF -Sum(header and data bytes)%0x100

header and data bytes =all the message w/o starting and ending 0x7E and FCS.

* The speed has a factor of 0.1 between the data and real value( meaning a value of 459 is actually 45.9)

Q:

1. The speed sensor has an undesired issue. Please define it
2. Find the wrong FCS