Figure 1 presents the meaning of communication in VANET. Analyse the figure and answer the following. Table 1 represents the execution time required to calculate the cryptographic functions and table 2 represents the priority, size of different types of messages. The channel capacity is 2Mbps.

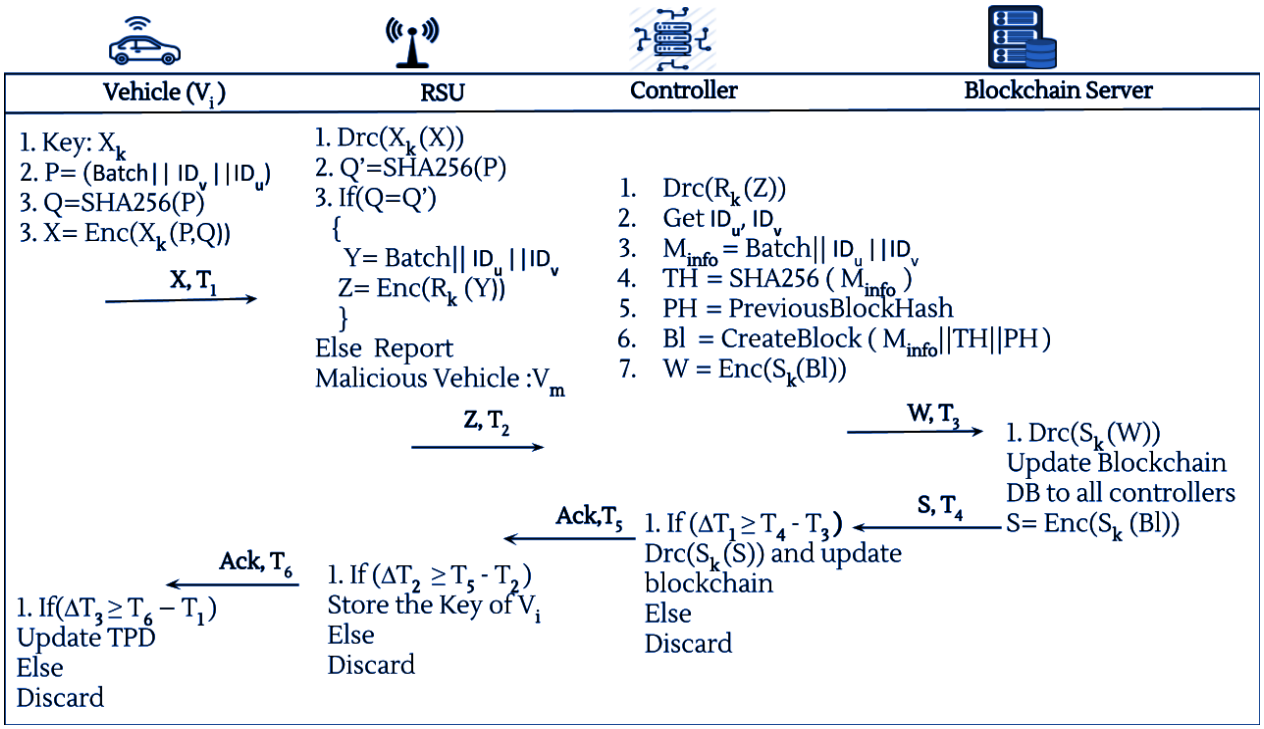

Figure1: Communication between different entities of VANET

Table1	
Cryptographic function	Execution Time (in milliseconds)
AES encryption (Enc(S_k(x))	1.534
AES encryption (Drc(S_k(x))	1.834
SHA256	0.0083
XOR	0.00012
Concatenation	0.00015

Table2		
Types of messages	Size (in bytes)	Priority
Accident M1	2 Byte	1
Traffic Jam M2	5 Byte	2
Bad Road M3	10 Byte	3
Construction site M4	18 Byte	4

Note: Except for all these messages, the size required to store a variable is 1 byte. The priority is high to low from top to bottom in the table.

Q.1 How much time it will take to propagate all these messages (i.e., from M1 to M4) including all the computation and communication cost?

Q.2 What will be the storage requirement to store complete one transaction (including everything required to propagate the information in the network for each type of message?

Q.3 If an accident happened at the bad conditioned construction road.

(a) How many messages are required to be communicated and what time it will take to transmit from vehicle to controller?

(b) Also, explain which type of message will be transmitted first and why?