**Table 2: Notations and their description**

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| **Notation**  |  **Description**  |
|   |  Set of static nodes  |
|   |  Set of sink stop locations  |
|   |  Nodes nearest to the sink trajectory  |
|   |  Nodes farthest from the sink trajectory  |
|   |  Data rate generated by node i  |
|   |  Sink sojourn time where     |
|   |  Energy of node   |
|   |  Data transmission rate from node  to   |
|   |  Data reception rate while receiving from node  to node   |
|   |  Minimum distance from node  to sink at location   |
|   |  Nodes transmitting data to sink at location   |
|   |  Time required for one epoch is  s  |
|   |  Duration required to transmit data from node i to the mobile sink  |
|   |  Upper bound on the transmission rate between link     |