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$$\{lE_e + 2l\epsilon_l d^2\} + \left\{\left(\frac{n}{k} - m\right) l(E_e + 2E_{BF})\right\} \quad (10)$$

From the foregoing analysis, energy development equations, which relate to average precision distance estimation of sensor nodes, in relation to base station, with cluster head formation, is given in Eqn. 10, which shows the energy consumed for transmitting message to distant base station. Based upon this energy requirement of our model can be satisfied. In the second part of the Eqn. 10, is energy consumed in order to receive message from the remaining sensor node is ($\frac{n}{k} - m$). Note that this does not form part of the head-set.
Simplifying Eqn. 10 is as follows:

$$E_{CH/frame} = 2l\epsilon_l d^4 + \left(\frac{n}{k} - m + 1\right) lE_e \left(\frac{n}{k} - m\right) lE_{BF} \quad (11)$$

In order to transmit sensor data to the cluster head, energy consumed by non-cluster head is determined as follows :

$$E_{nonCH/frame} = lE_e + 2l\epsilon_s d^2 \quad (12)$$

Determination of energy consumed is based on uniform distribution of circular clusters for sensor node, which uses network diameter M. Recalling, the average value distance measurement for $2d^2$, least cost energy requirement which is needed in our proposed model is given as:

$$E[2d^2] = 2\left(\frac{M^2}{2\pi k}\right) = \frac{M^2}{\pi k}$$

i.e. $E[2d^2] = \frac{M^2}{\pi k}$ (13)

Simplifying Eqn. 12 is given as below:

$$E_{nonCH/frame} = lE_c + l\epsilon_s \frac{M^2}{\pi k} \quad (14)$$

5 Circular Data Iteration

In circular data events for data distribution, N_f data frame transmission occurs in one iteration. Therefore, the transmitted frame by each cluster should be N_f/k. In all we estimate that uniform partition of N_f/k frame occur amongst n/k cluster nodes. In order for each cluster head frame transmission to occur, $\left(\frac{n}{k} - m\right)$ non-cluster head frame fraction determination is required.
We determine equations for frames transmissions fractions $f_1, and\ f_2$ as given below:

Now,

$$f_1 = \left(\frac{1}{\frac{n}{k} - m + 1}\right)\frac{1}{k} \quad (15)$$

$$f_2 = \left(\frac{\frac{n}{k} - m}{\frac{n}{k} - m + 1}\right)\frac{1}{k} \quad (16)$$

Therefore, we estimate that asynchronous data transfer (ADT) frame of each cluster energy consumption will be determined as:

$$E_{CHdata} = f_1 N_f E_{CH/frame} \quad (17)$$

$$E_{nonCHdata} = f_2 N_f E_{nonCH/frame} \quad (18)$$

6 Start Energy for Data Transfer Rounds

Start energy for data transfer round is denoted by E_{satart}. This is the initial energy of the sensor node, with initial start time. In order to successfully transfer data in rounds, E_{satart} should be sufficient for at least one round in transmitting data. During data transfer, it is required for a node to become head-set member for one time, in a data transfer round, and a non-cluster head for $\left(\frac{n}{km} - 1\right)$times.
E_{satart} is estimated finally to be:

$$E_{satart} = \frac{E_{CHelec} + E_{nonCHelec}}{m} + \frac{N_f}{m}\left(f_1 E_{CH} + f_2 E_{nonCH/frame}\right) \quad (19)$$

Hence, $N_f = \frac{mE_{start} - E_{CHelec} - E_{nonCHelec}}{f_1 E_{CH/frame} + f_2 E_{nonCH/frame}}$

7 Optimum Cluster Number Determination

Optimum cluster number k, used in minimum energy consumption can be determined based on[13] as:

$$\epsilon_l d^4 - (2m-1)E_e - 2mE_{BF} = m\epsilon_s \frac{M}{\pi k^2}^2 \quad (20)$$

The optimum value of k is determined based on Eqns. used in [13] for minimum frame energy dissipation, evaluated and summarized as :

$$k = \sqrt{\frac{n}{\pi}} \sqrt{\frac{m\epsilon_s}{\epsilon_l d^4 - (2m-1)E_e - 2mE_{BF}}} M \quad (21)$$

8 Description of Time Completion during One Round Data Transfer

In data transfer phase, message transmission has been specified in [13], which is based only on TDMA schedule. Asynchronous Data Transfer(ADT) phase message transmission is based on combination of message transfer in the network layer (NWL), transport layer (TPL), and MAC layer, shown in Fig.1. Furthermore, ADT FIFO buffer queue is specified with design requirement, that uses connections in sensor ad hoc behavior to maintain constant formation in queue. These queue are formed such that, implicitly, they move and unite along with each other, and also enforce blocking between blocks, which prevent occurrence in any irregular contention of access in the sensor buffer queue development medium. The design requirement also includes TDMA technique for data transfer in one round. In addition, this design need fulfill the requirement that address the need for finding a suitable protocol resolution for Wireless sensor network protocol layer transmissions.

Based upon this, frame time t_{frame}, which include different message transmission times for all sensor cluster nodes, should be determined. Consequently, sensor nodes should be giving equal time processing capability to synchronize their clock times