

List of Symbols

Symbol	Description
k	Number of sensor nodes for tracking in k -coverage WSNs.
m	Number of routing paths in m -connectivity WSNs.
\mathbb{S}	A set of sensor nodes in WSNs
s	A sensor node in WSNs
p	A regular placement pattern
R_s	Tracking range of s in \mathbb{S}
R_c	Communication range of s in \mathbb{S}
l	Optimal side length in a regular polygon
$A(s, R_c)$	Communication region of a node $s \in \mathbb{S}$
$ ab $	Euclidean distance between points a and b
$\text{mod}(x, y)$	x modulo y
$\max\{a, b\}$	a if $(a > b)$ otherwise b
Ψ	Field of Interest (FoI).
η	Coverage ratio of the FoI.
η_{th}	Desired level of η of the FoI.
$d(a, b)$	Euclidean distance between the locations a and b .
$\ R\ $	Area of the region R .
h	Hop-count
θ	Orientation of the sensor node.

ω	Sensing range of sensor node.
ϕ	Tracking angle of sensor node.
N_p	Number of sensor for target tracking.
φ	Route selection metric.
$\sigma(t)$	Logistic function
O_p	Optimal side length of pattern.
P_t	Pause time.
$p(x)$	Probability of dependent variable x .
L	Bit size for tracking information.
$(k, m) \geq 1$	The value of k and m are ≥ 1 .