Open neighborhood locating-dominating sets

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For a graph $G$ that models a facility, various detection devices can be placed at the vertices so as to identify the location of an intruder such as a thief or saboteur. Here we introduce the open neighborhood locating-dominating set problem. We seek a minimum cardinality vertex set $S$ with the property that for each vertex $v$ its open neighborhood $N(v)$ has a unique non-empty intersection with $S$. Such a set is an $OLD(G)$-set. Among other things, we describe minimum density $OLD$-sets for various (infinite) grid graphs.

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