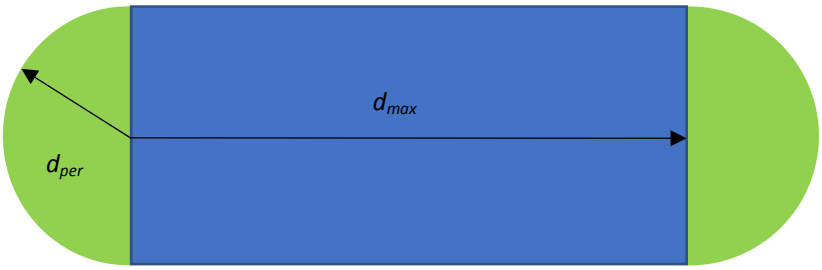
Supplementary material part 5

While covering a distance d_{max} (in m), an individual with a perceptual range of d_{per} (in m) will be able to search a total surface of $2 \times d_{per} \times d_{max} + d_{per}^2 \times \pi$ (in m^2).



As each cell at a particular distance from the cell of origin is equally intensively searched, the searching area is circular. The radius of a circle with a surface of $2 \times d_{per} \times d_{max} + d_{per}^2 \times \pi$ (in m^2) is defined as $\sqrt{\frac{2 \times d_{per} \times d_{max} + d_{per}^2 \times \pi}{\pi}}$ (in m^2).