World Perception
- To create a digital representation of the environment the UGV is within.
- Allows for sensible decisions to be made about choosing waypoints.
- Figure shows a Vantage Map which shows areas of varying vantage.
  - “Vantage” essentially means ‘field of view’ - how much the UGV can see.
  - Lighter areas have high vantage i.e. in these areas, the UGV can see more and is away from obstacles.
  - Darker areas have low vantage.

Waypoint Generation
- Waypoints are “destinations” that the UGV must reach.
- A waypoint generator creates waypoints that the UGV must reach, and hence is used to “guide” the UGV to desired areas.
- The waypoint generator uses world perception to make sensible decisions.

Path Tracking
- Path tracking involves making sure that the UGV follows the path generated.
- It uses a fuzzy controller to compare current and desired poses, and correct for any differences.

Path Generation
- Path generation involves creating a path between two waypoints for the UGV to follow.

The Path generated must satisfy the following conditions:
- Continuity
- Smoothness
- Accounting for orientation