

Outline

1. Prioritizing Handoffs
2. Umbrella Cell Approach
3. Cell Dragging
4. A Microcell Zone Concept

Prioritizing Handoffs

1. Guard channel concept
2. Queuing of handoff

Guard channel concept

In Guard channel concept a fraction of the total available channels in a cell is reserved exclusively for handoff requests from ongoing calls which may be handed off into the cell.

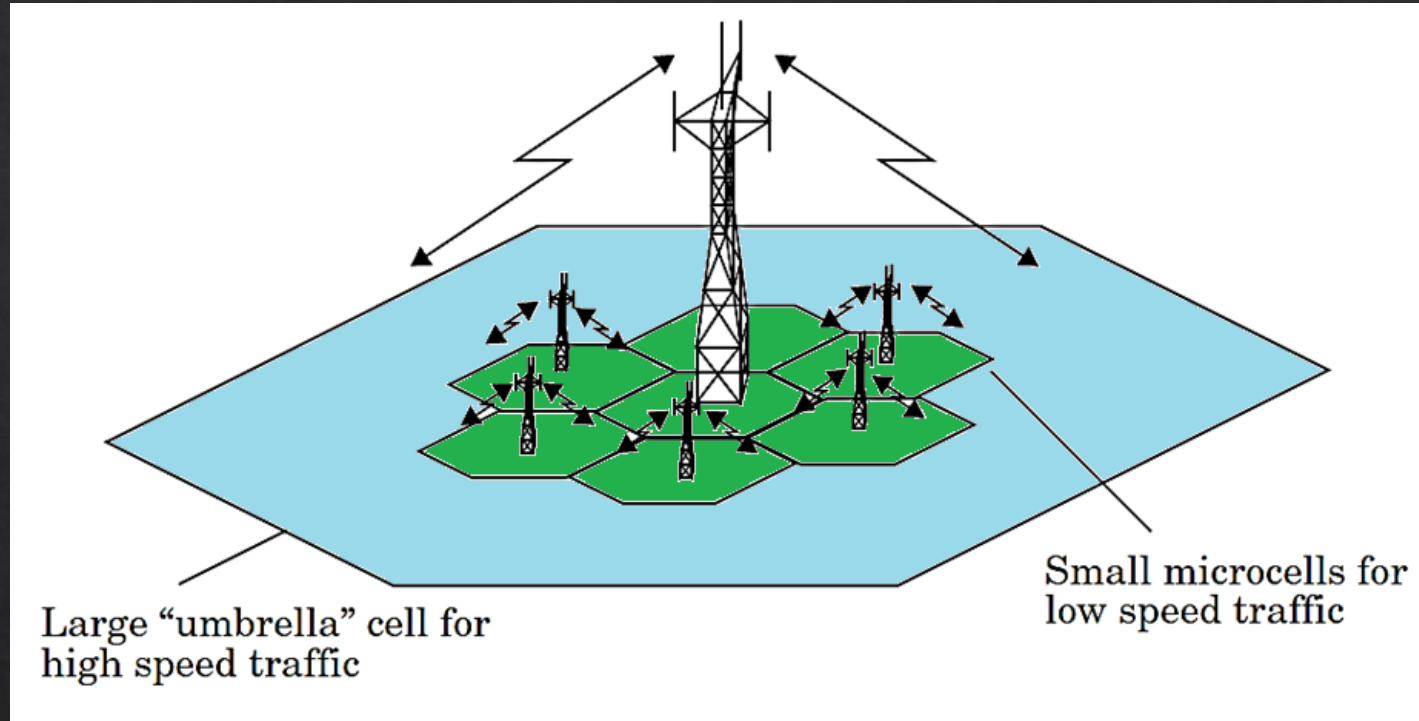
Advantages	Disadvantages
Efficient spectrum utilization when dynamic channel assignment strategies	Reducing the total carried traffic,

Queuing of handoff requests

- Queuing of handoffs is possible due to the fact that there is a finite time interval between the time the received signal level drops below the handoff threshold and the time the call is terminated due to insufficient signal level.
- There is a tradeoff between the decrease in probability of forced termination and total carried traffic.

Advantages	Disadvantages
Efficient spectrum utilization	Increased new call blocking probability.

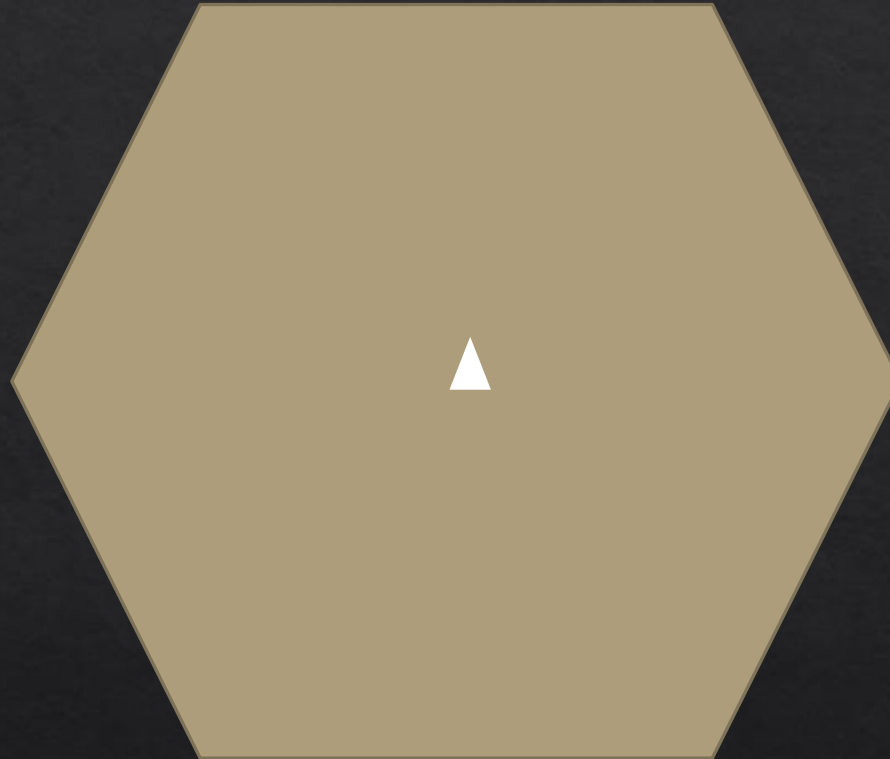
Umbrella Cell Approach



By using different antenna heights and different power levels, it is possible to provide “large” and “small” cells which are co-located at a single location. This technique is called the umbrella cell approach and is used to provide large area coverage to high speed users while providing small area coverage to users traveling at low speeds.

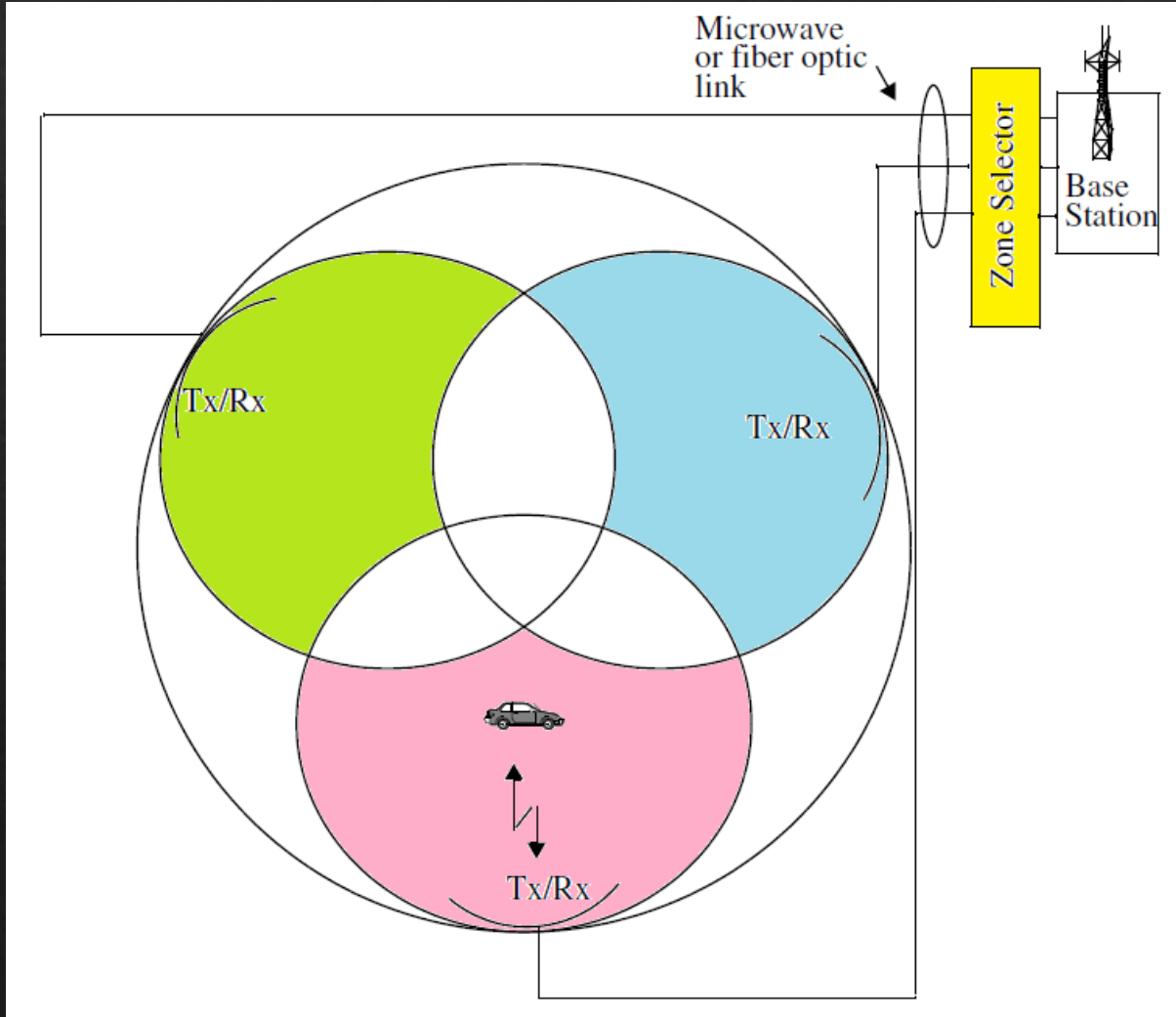
Cell Dragging

- Cell dragging results from pedestrian users that provide a very strong signal to the base station.



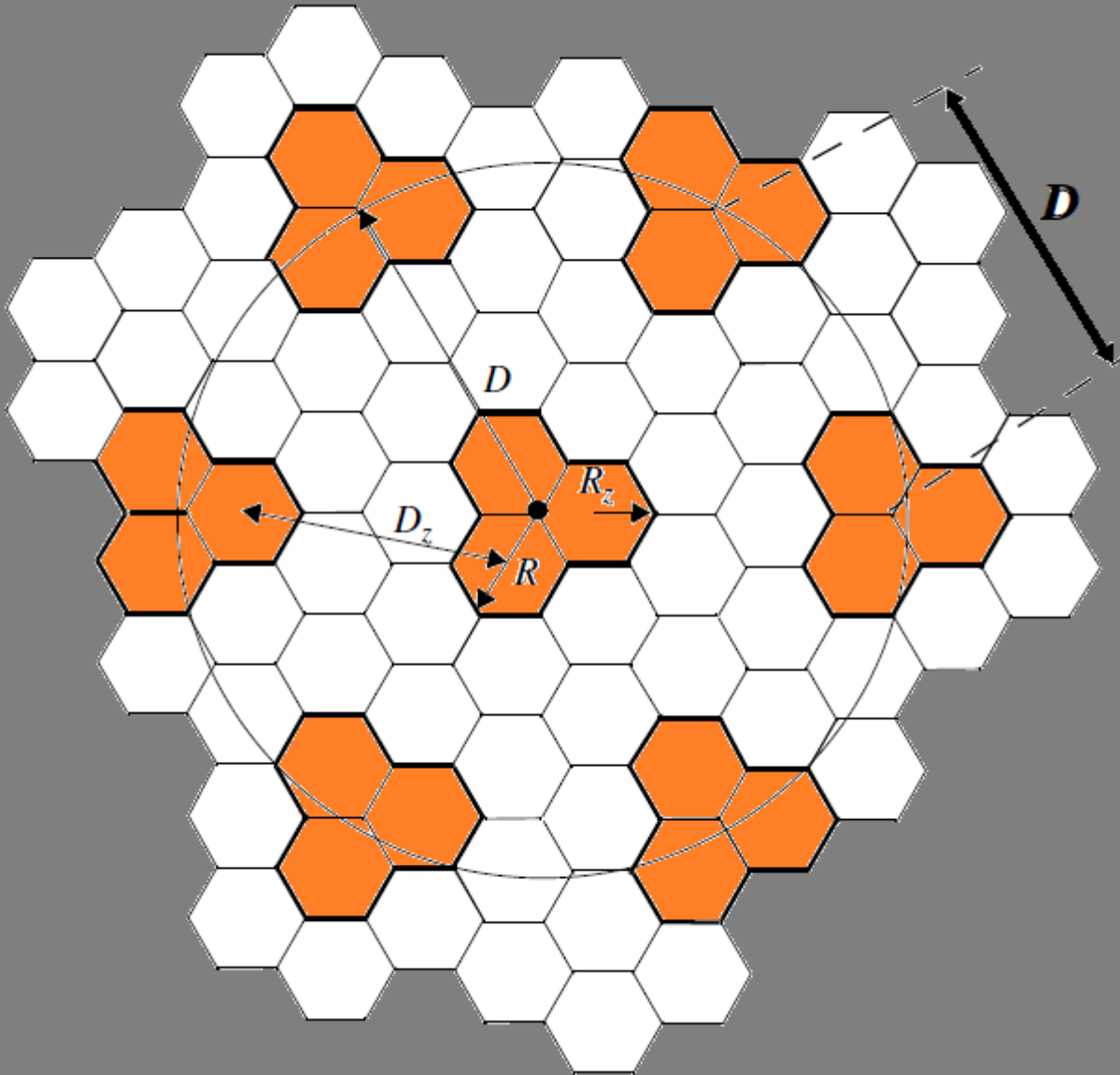
- To solve the cell dragging problem, handoff thresholds and radio coverage parameters must be adjusted carefully.

A Microcell Zone Concept



- Due to sectoring increased number of handoffs are required, increased load on the switching and control link elements of the mobile system.
- 3 zones are connected to single base station.
- Multiple zones and a single base station make up a cell.
- As a mobile travels from one zone to another within the cell, it retains the same channel.

A Microcell Zone Concept



- The advantage of the zone cell technique is that while the cell maintains a particular coverage radius, the co-channel interference in the cellular system is reduced since a large central base station is replaced by several lower powered transmitters on the edges of the cell.