

Characteristics of cell splitting:

- i) The process of subdividing a congested cell into smaller cells.
- ii) Each with its own base station and a corresponding reduction in antenna height.
- iii) leads to increase in capacity.

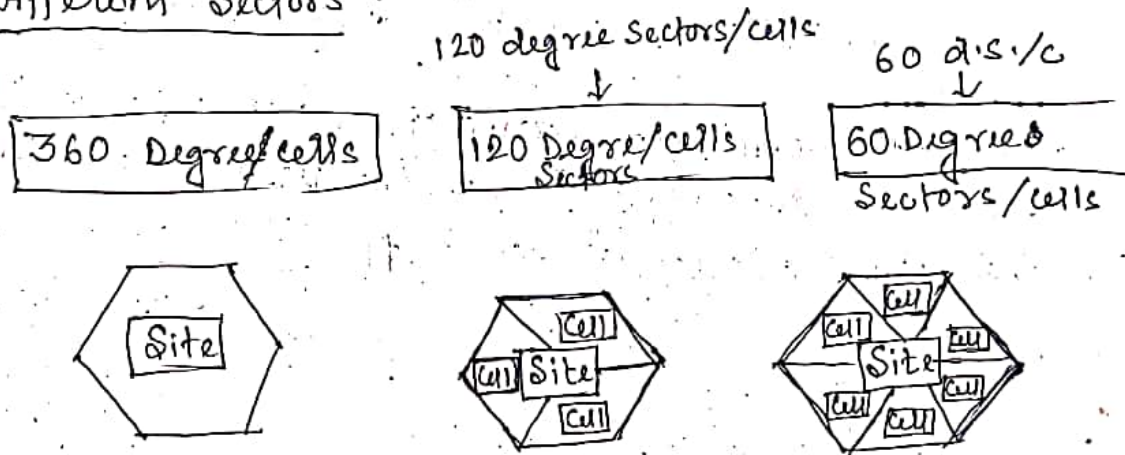
Sectoring:

Limitations of cell splitting:

- i) Handoffs are more frequent.
- ii) channel assignments become difficult.
- iii) All cells are not split simultaneously so special care have to be taken for proper allocation of problem.

## Cell Sectoring:

- To overcome some limitations like co-channel interference, cell sectoring is done.
- Involves replacing an omni-directional antenna at the base station by several directional antennas.
- Different Sectors:



## Advantages:

- It improves S/I ratio.
- It reduces interference which increases capacity.
- It enables to reduce the cluster size and provides an additional freedom in assigning channels.

## Limitations:

- Increased number of antennas at each base station.
- Decrease in trunk efficiency.
- Loss of traffic.
- Since sectoring reduces the coverage area of a particular group of channels, the number of handoffs increases as well.

IMEI: (International Mobile Equipment Identity)

... it is a 15 to 17 digit code that uniquely identify the mobile phones sets. The IMEI code can ensure that a GSM (Global System for Mobile Communications) or UMTS (Universal Mobile Telecommunications Service) network will prevent a misplaced or stolen phone from initiating calls.

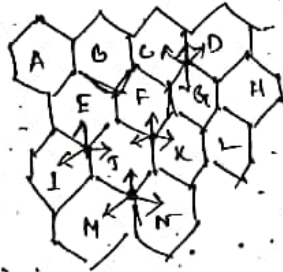
• In most mobile communications devices, the IMEI appears on the display when the user enters the character sequence `*#06#`

SIM: Subscriber Identity Module, a 'smart card' installed or inserted into a mobile device containing all subscriber related data. This facilitates a phone call from any valid mobile device since the subscriber data is used to complete the call rather than the telephone internal serial number.

[SIM no. is generally 15 digits, in few cases the no. is 14 digit]

## • Concept of cell sectoring & cell splitting :

- A cellular telephone system is designed on the concept of cells. The geographical area covered by each base station is known as cell. Each cellular base station is allocated a group of radio channels. Each adjacent cells are served by different frequency bands.
- High capacity is achieved by using the frequency of a cell in different cell which are geographically far apart. The design process of selecting and allocating channel groups for all cellular base stations within a system is known as Frequency Reuse or frequency planning.



## • Cell splitting :

- Cell splitting is the process of subdividing a congested cell into smaller cells, each with its own base stations, and a corresponding reduction in antenna height and transmitter power.
- Cell splitting allows a system to grow by replacing the large cells with smaller cells, while not upsetting the channel allocation scheme required to maintain the minimum 6-channel reuse ratio & between co-channel cells.

