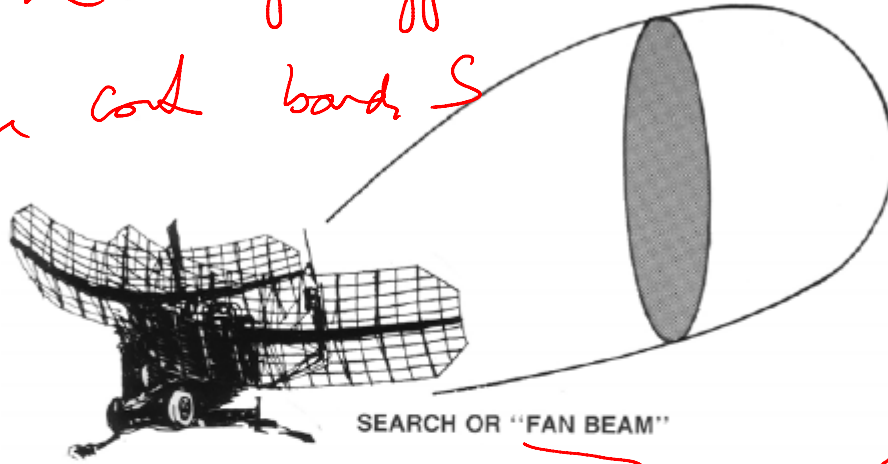

Radar di Tracking

Pierfrancesco Lombardo

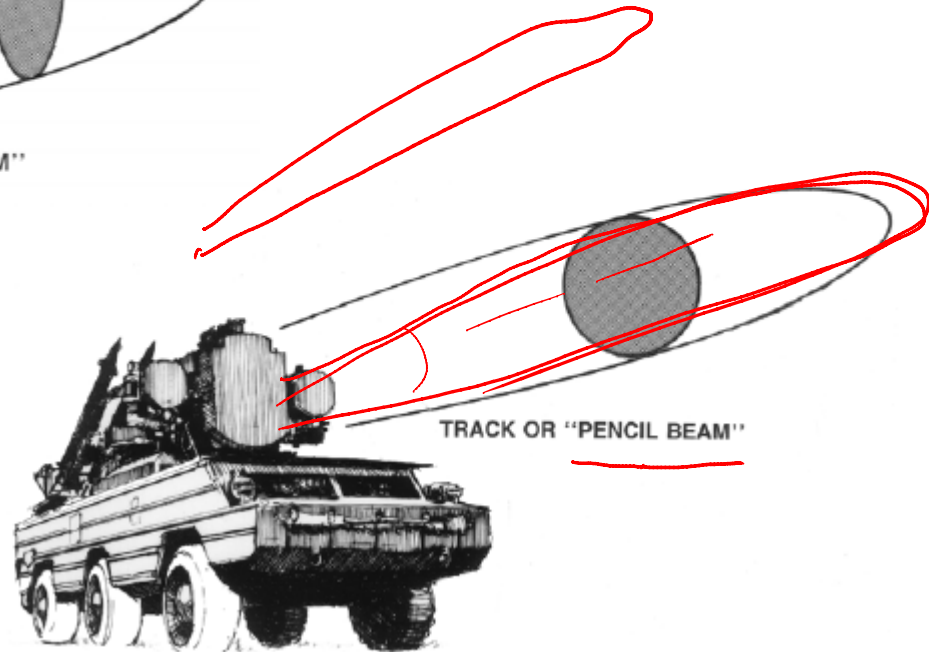
Antenna patterns

~~ricerca lunga zona banda < 1 GHz~~
~~ricerca corta banda S 2-3 GHz~~



• Fan beam for 2-d search

tracking → banda X
 • Pencil beam for tracking
 for 3-d search



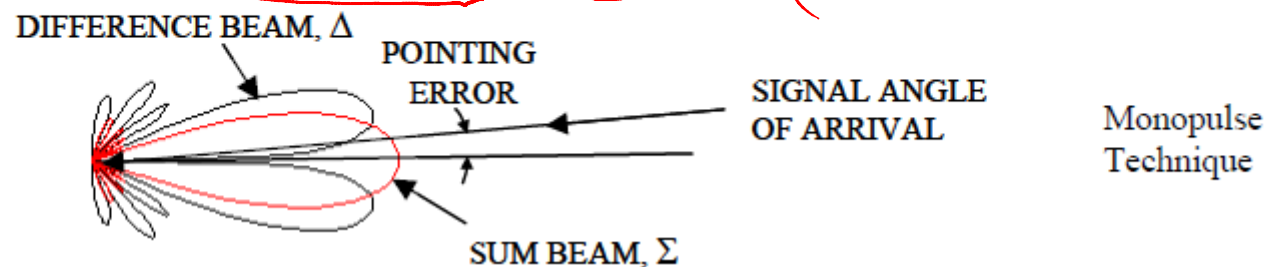
10 GHz →

tipico!

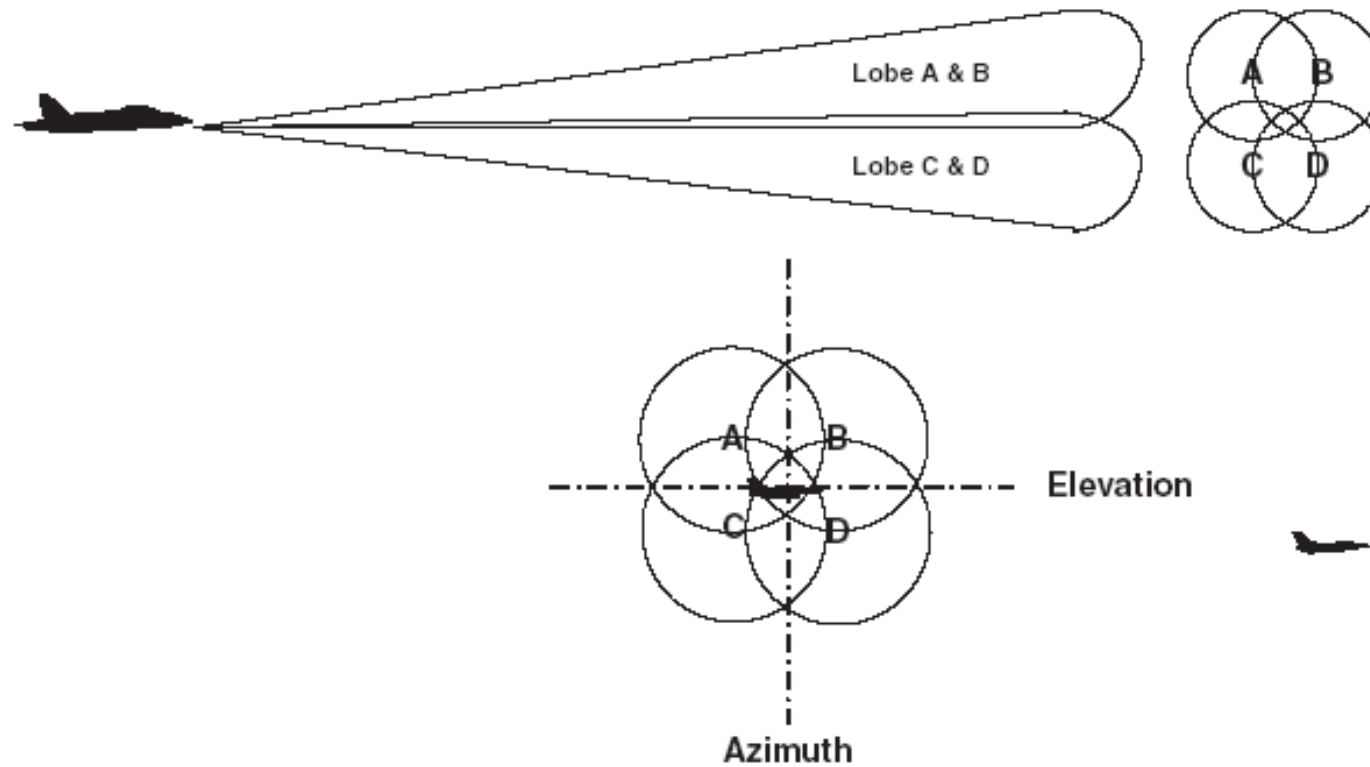
$$\theta = \frac{\lambda}{L}$$

Track versus Search

- Search radars
 - > Long, medium, short ranges (20 km to 2000 km)
 - > High power density on the target: high peak power, long pulses, long pulse trains, high antenna gain
 - > Low PRFs, large range bins
 - > Search options: rapid search rate with narrow beams or slower search rate with wide beams
- Tracking radar
 - > Accurate angle and range measurement required
 - > Minimize time on target for rapid processing
 - > Special tracking techniques: monopulse, conical scan, beam switching

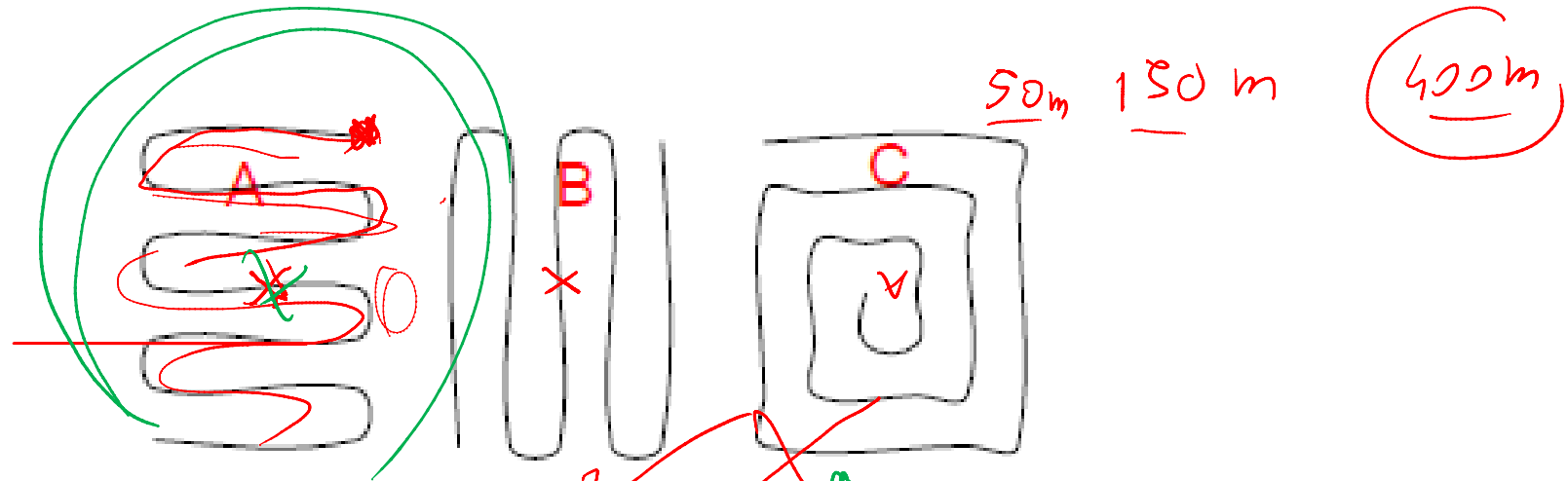


Angle tracking – monopulse

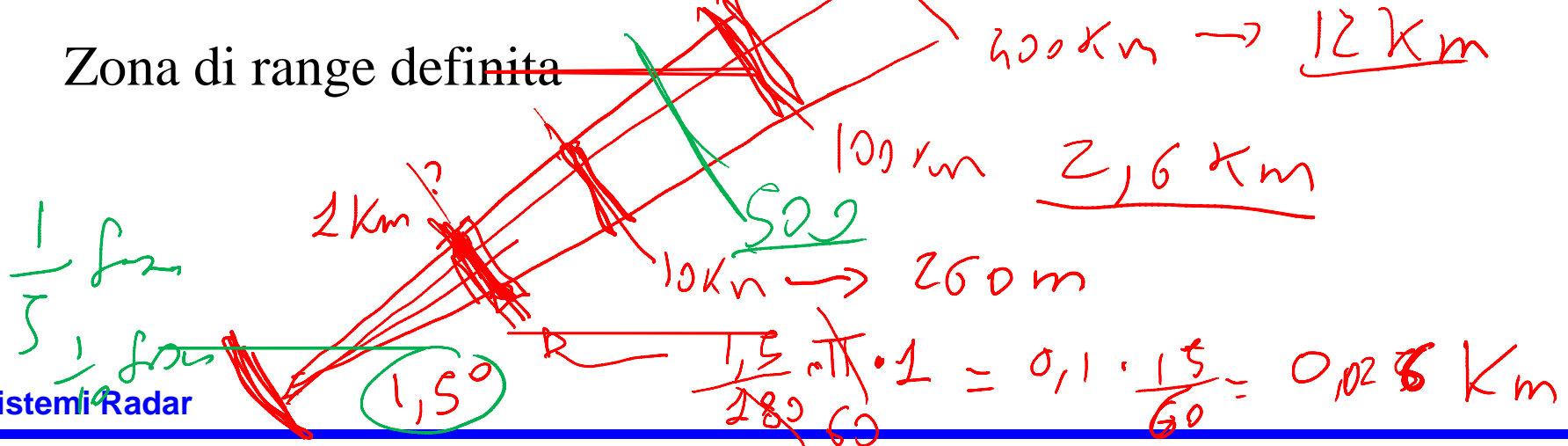


Fase di ricerca

Pattern di ricerca in angolo partendo da cueing:



Zona di range definita



Angle tracking loop – monopulse

