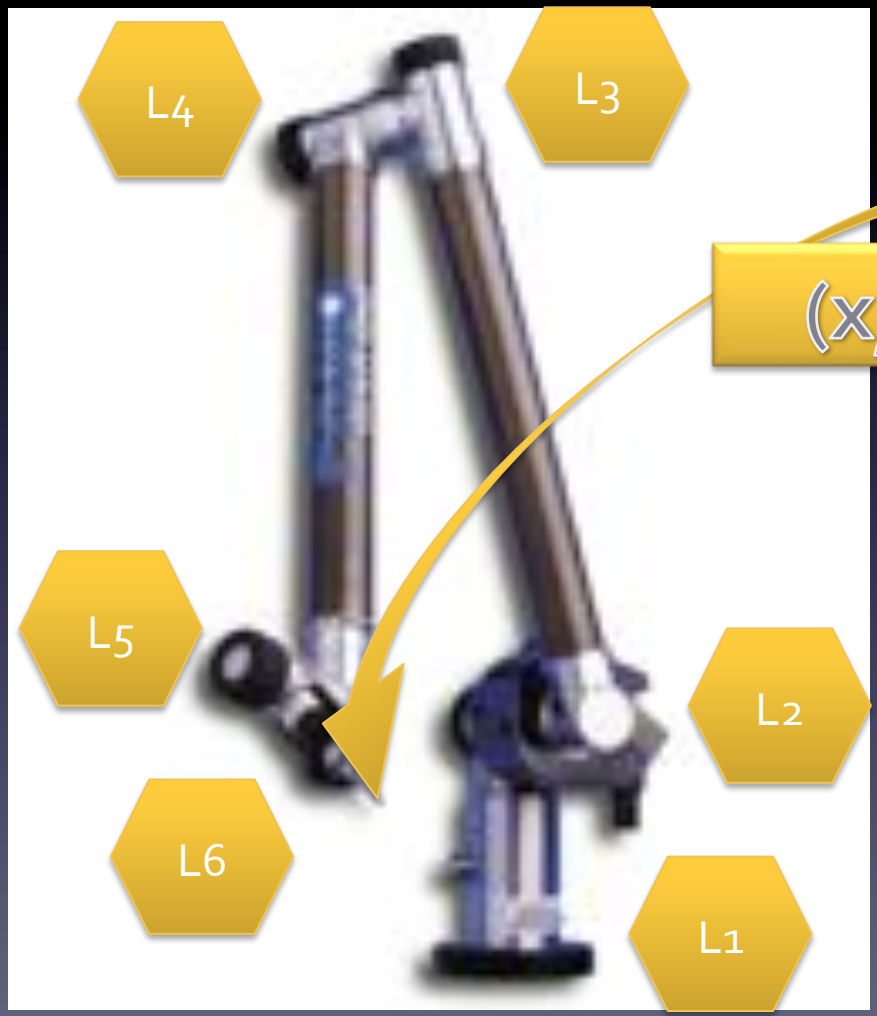
Operating Room Localizers

Mechanical Localizers

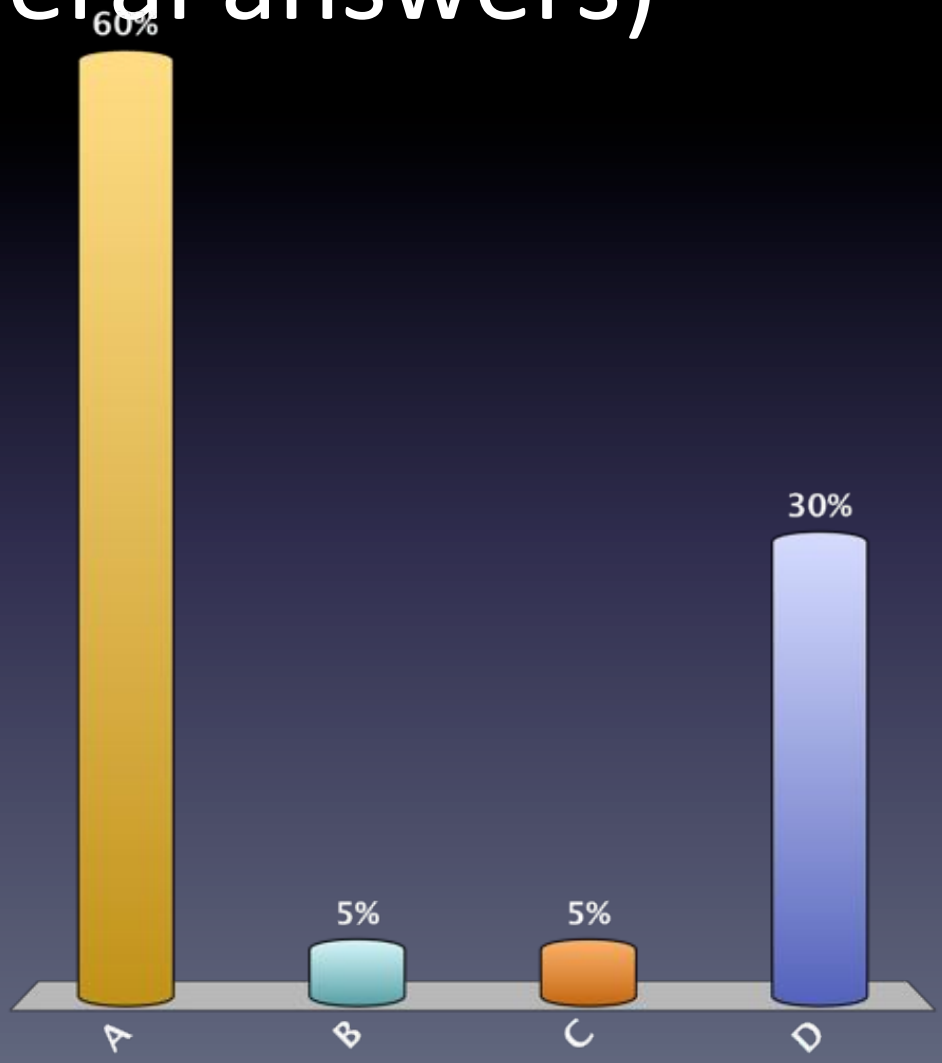


Robot kinematic

$(x,y,z)=F(L1, L2, \ldots, L6)$

What are the advantages of such a system? (several answers)

A. Precision/accuracy
B. Only one object can be followed
C. Cumbersom
D. Can prevent some moves

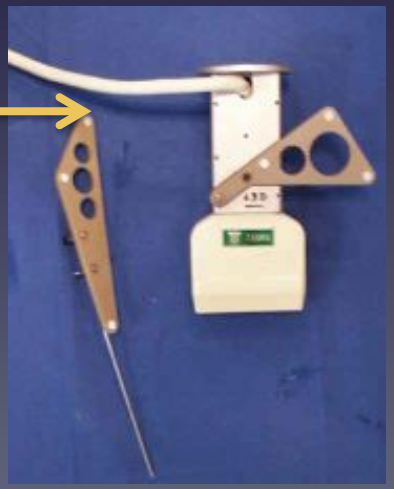


Passive Optical Localizers

Infra-red lights

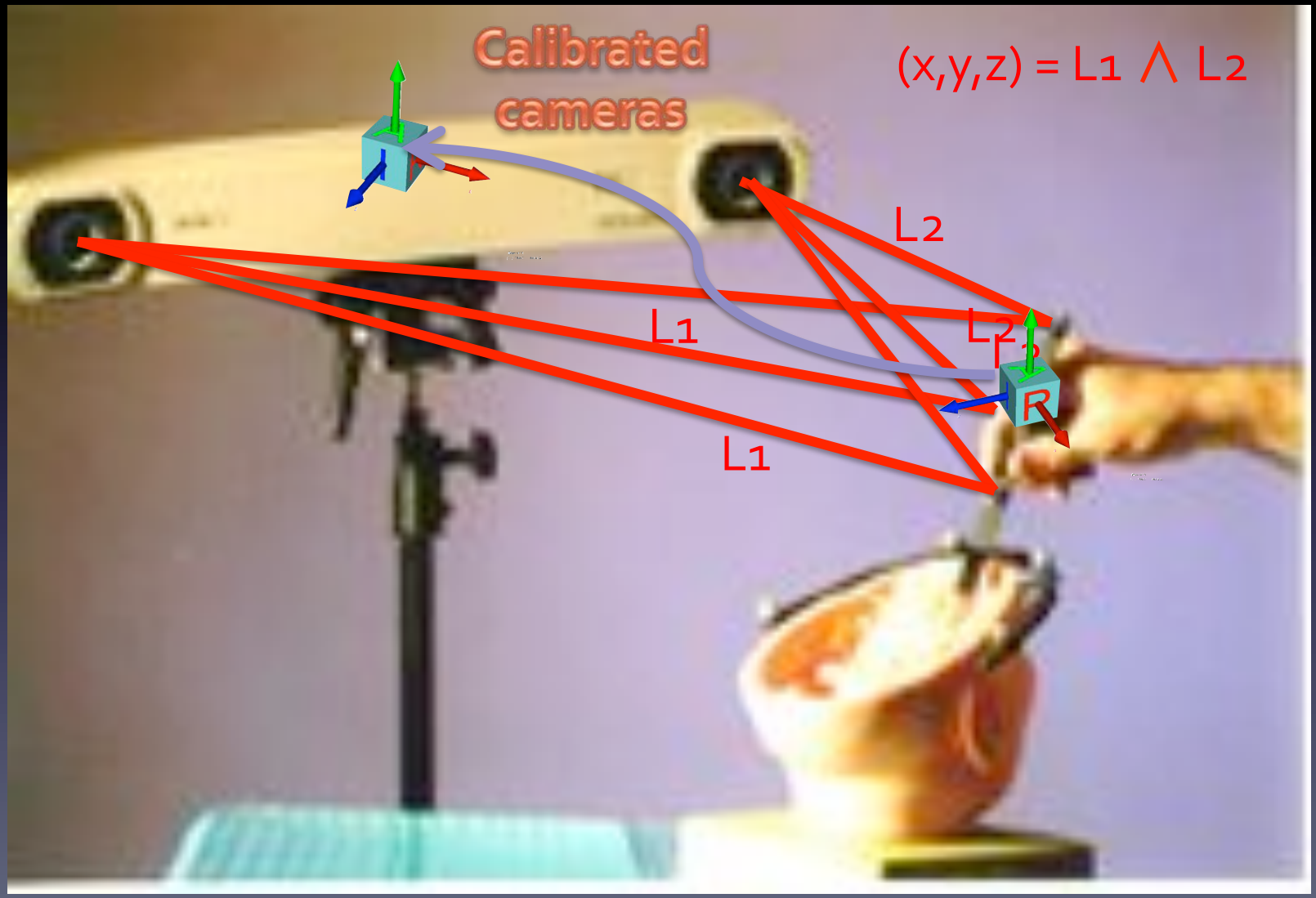
Infra-red cameras

Reflecting fiducials

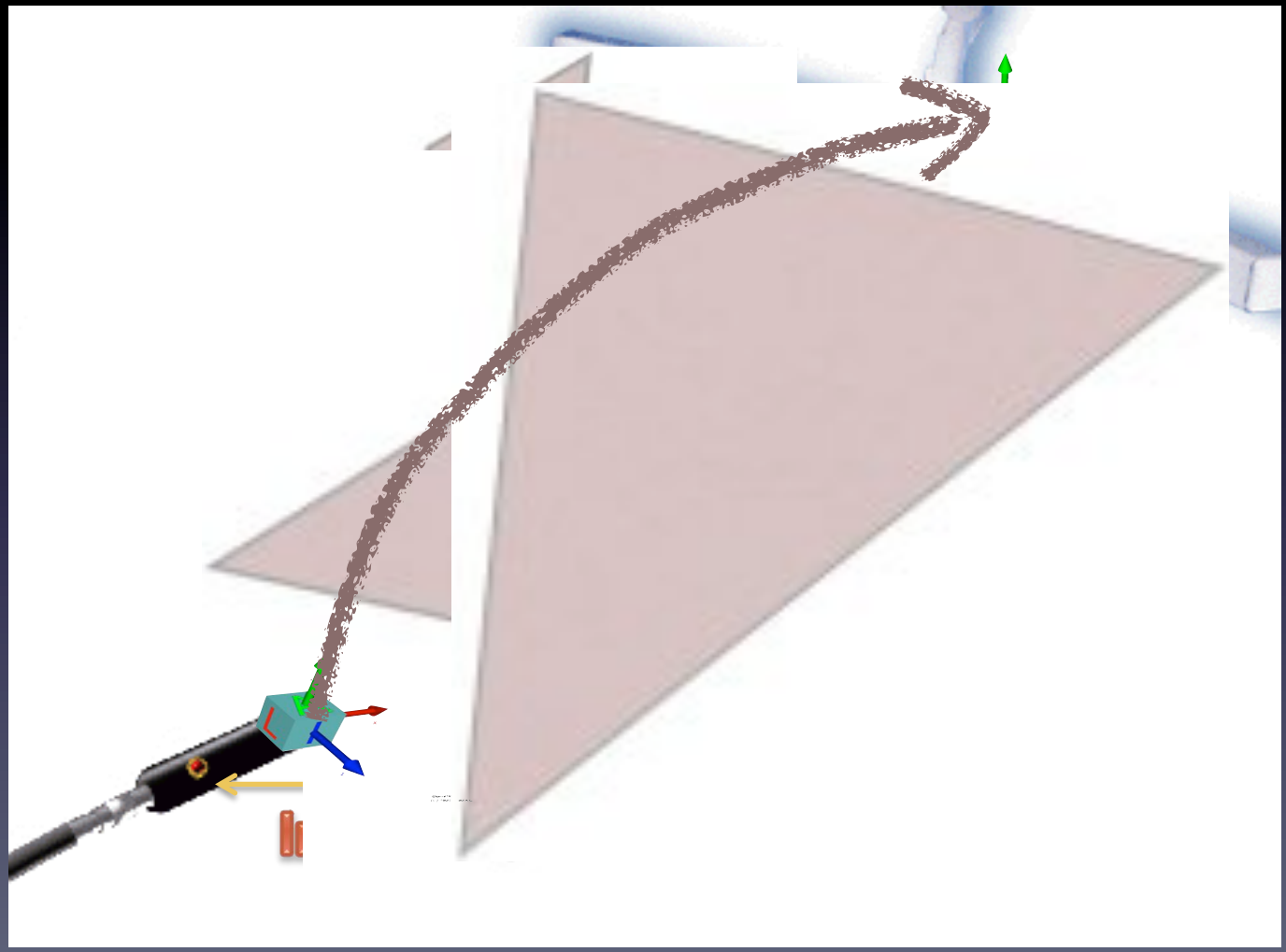


Rigid Bodies

Passive Optical Localizers



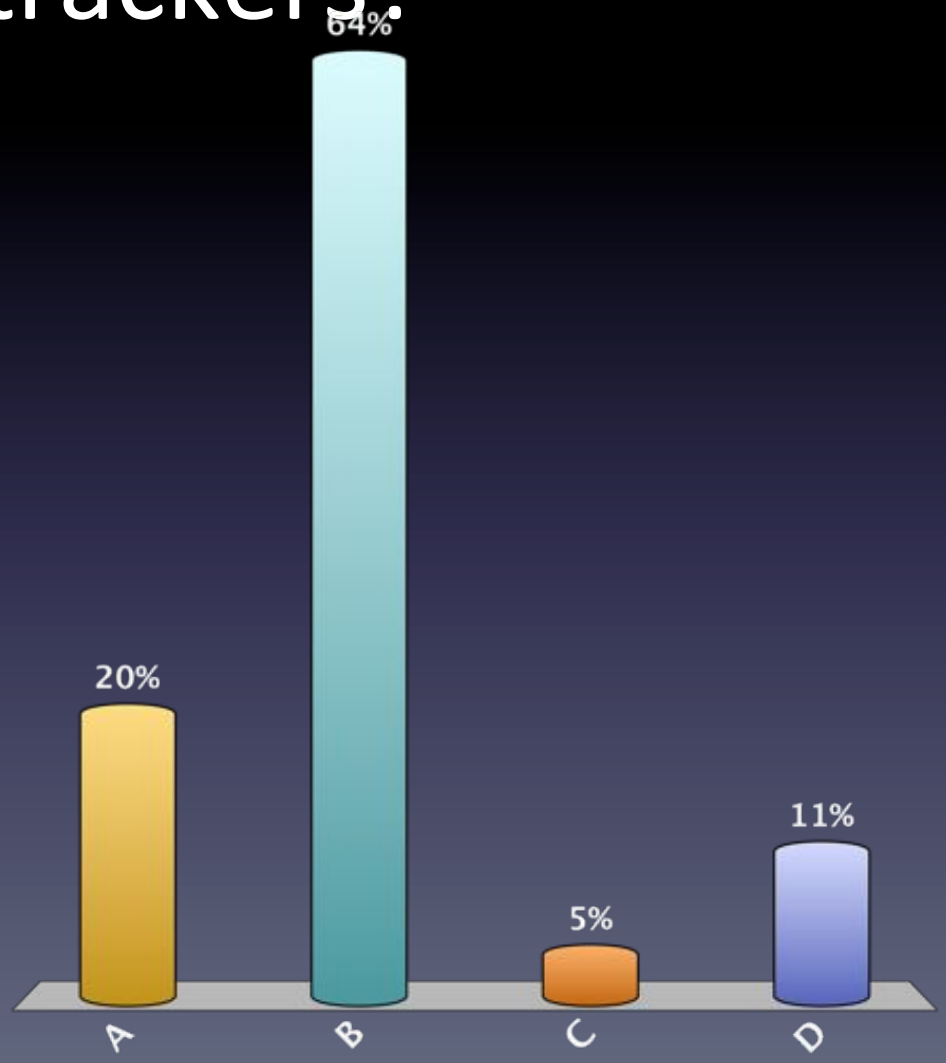
Active Optical Localizers



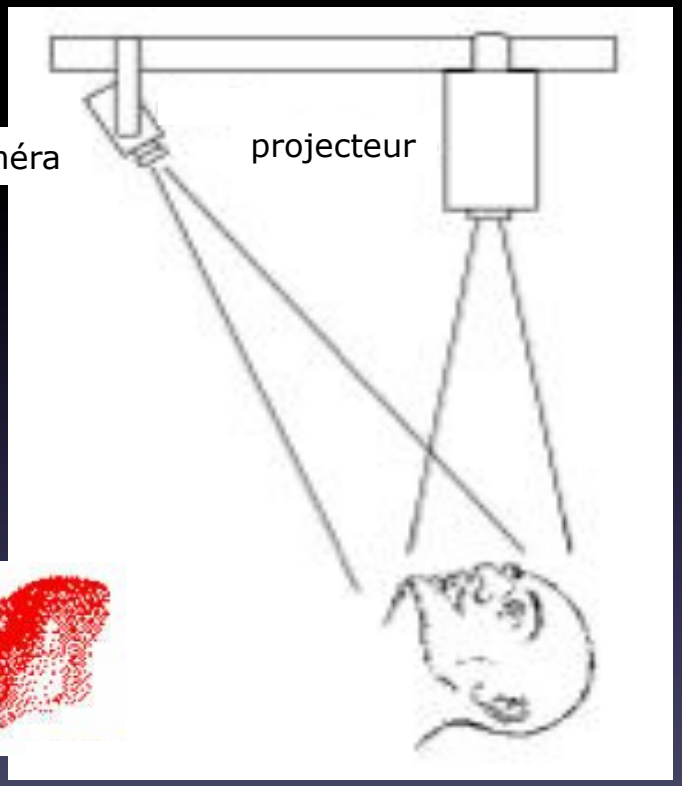
$(x,y,z) = P_1 \cap P_2 \cap P_3$

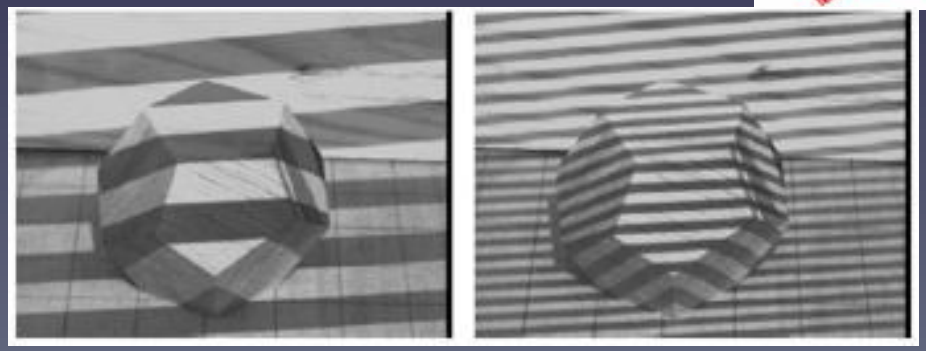
What are the major drawbacks of optical trackers?

A. Impossibility to follow several tools
B. Possible problems due to occlusions
C. Dynamical tracking
D. Non-standard instruments



Laser Patterns

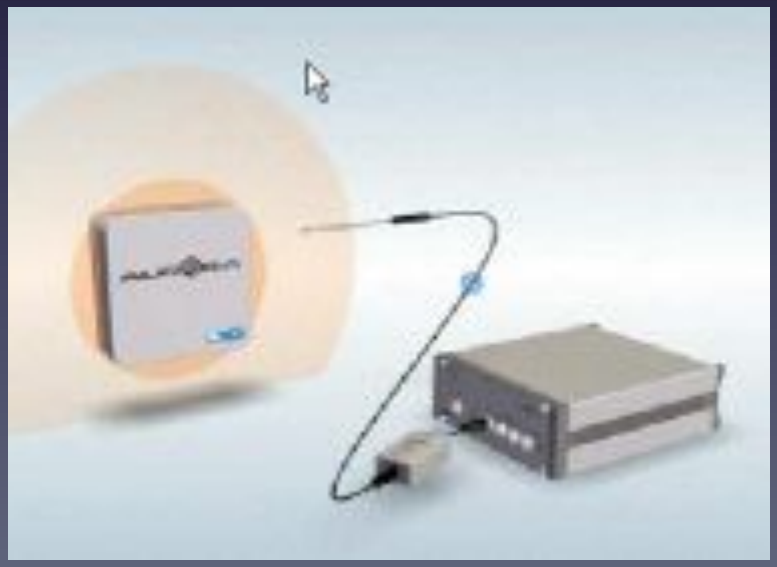




Laser Patterns

Magnetic localization

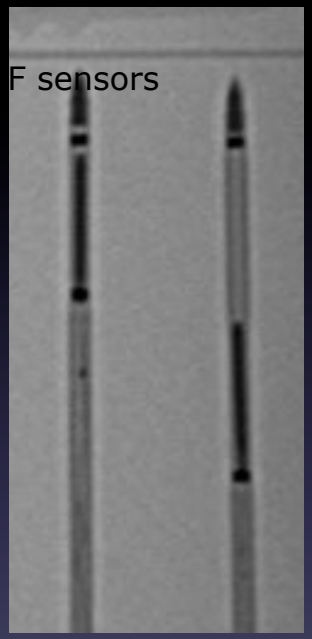
- Produce a varying magnetic field
- Use sensor coils to measure the position of the object to be tracked



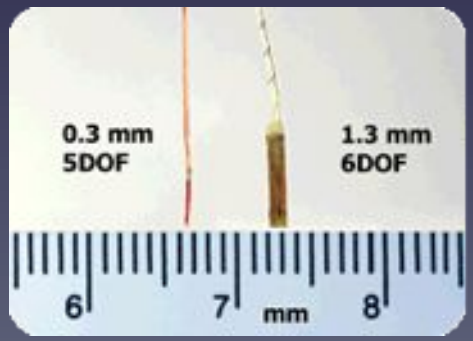
Existing proc

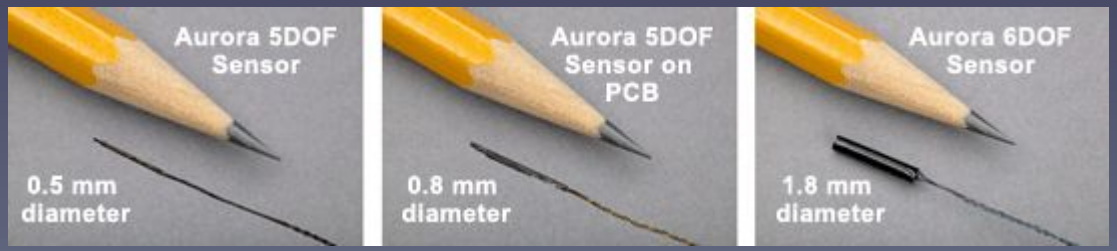
Flock of birds and miniBird
(Ascension Technology)

5 F sensors



Aurora (NDI)





Now also

- « Kinect » sensors (video + 3D)

- Time of flight cameras