

Surgery is an interface problem

Surgeon is on the outside  
target anatomy is on the inside.

Current instruments invert surgeon's movements and amplify inaccuracy.

Solution: Virtually shrink the doctor and place him or her at this end of the instrument, inside of the patient.

# Conceptual Immersive Robotic Surgery Interface

(the shrinker)

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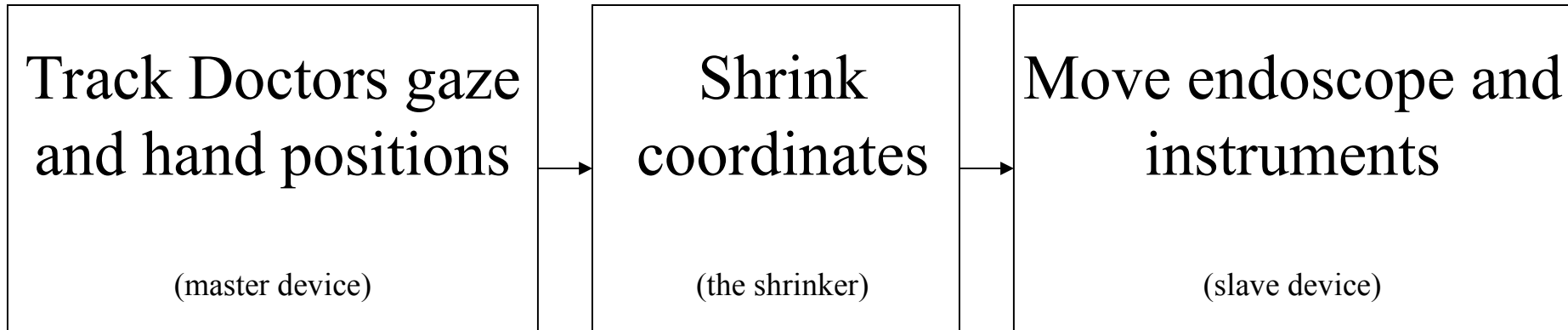
(the shrinker)

Surgeon's tracked gaze and hand positions control surgical endoscope and instruments with fully articulated 6 degrees of freedom.

# Conceptual Immersive Robotic Surgery Interface

(the shrinker)

Surgeon's tracked gaze and hand positions  
are scaled down to control surgical  
endoscope and instruments  
with fully articulated 6 degrees of freedom.



## Conceptual Immersive Robotic Surgery Interface

(the shrinker)

Surgeon's tracked gaze and hand positions control surgical endoscope and instruments with fully articulated 6 degrees of freedom

Possible implementation with  
force feedback system

Removing a gall stone  
in HITL's Immersive  
Surgery Simulator