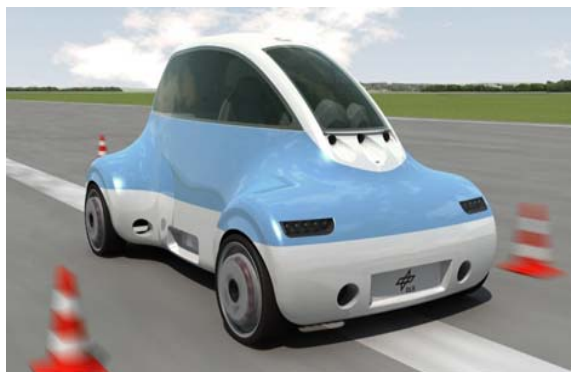
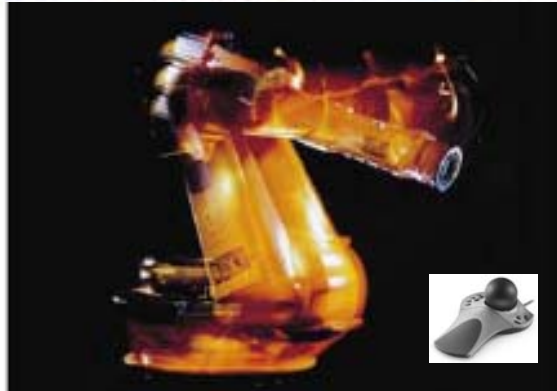
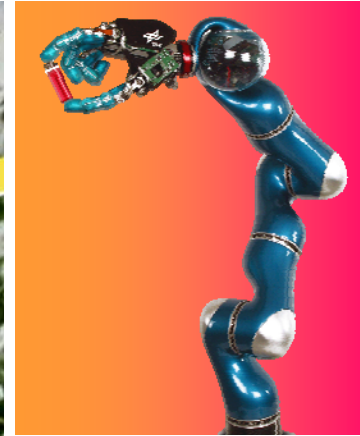
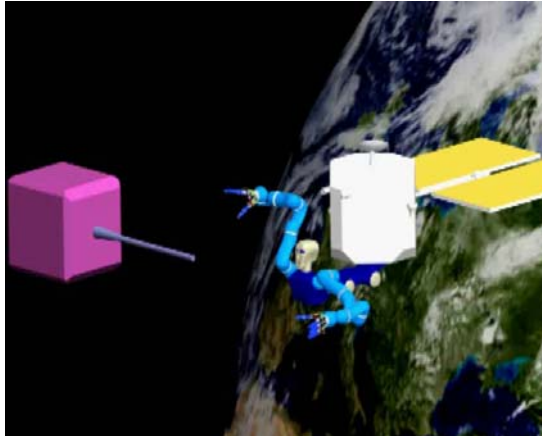
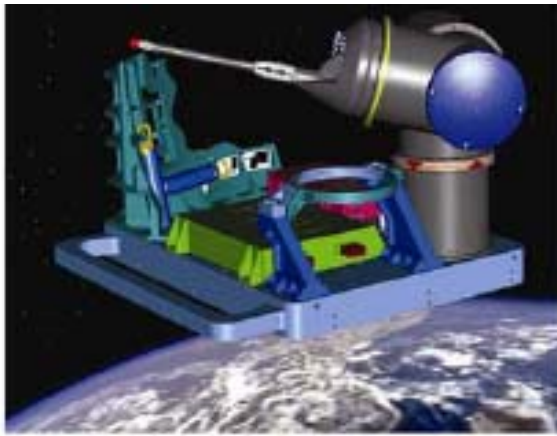


# Tony Bejczy

Many thanks for your great  
inspiration and motivation  
to push forward space robotics

## Gerd Hirzinger (DLR)

# DLR's Robotics and Mechatronics Centre



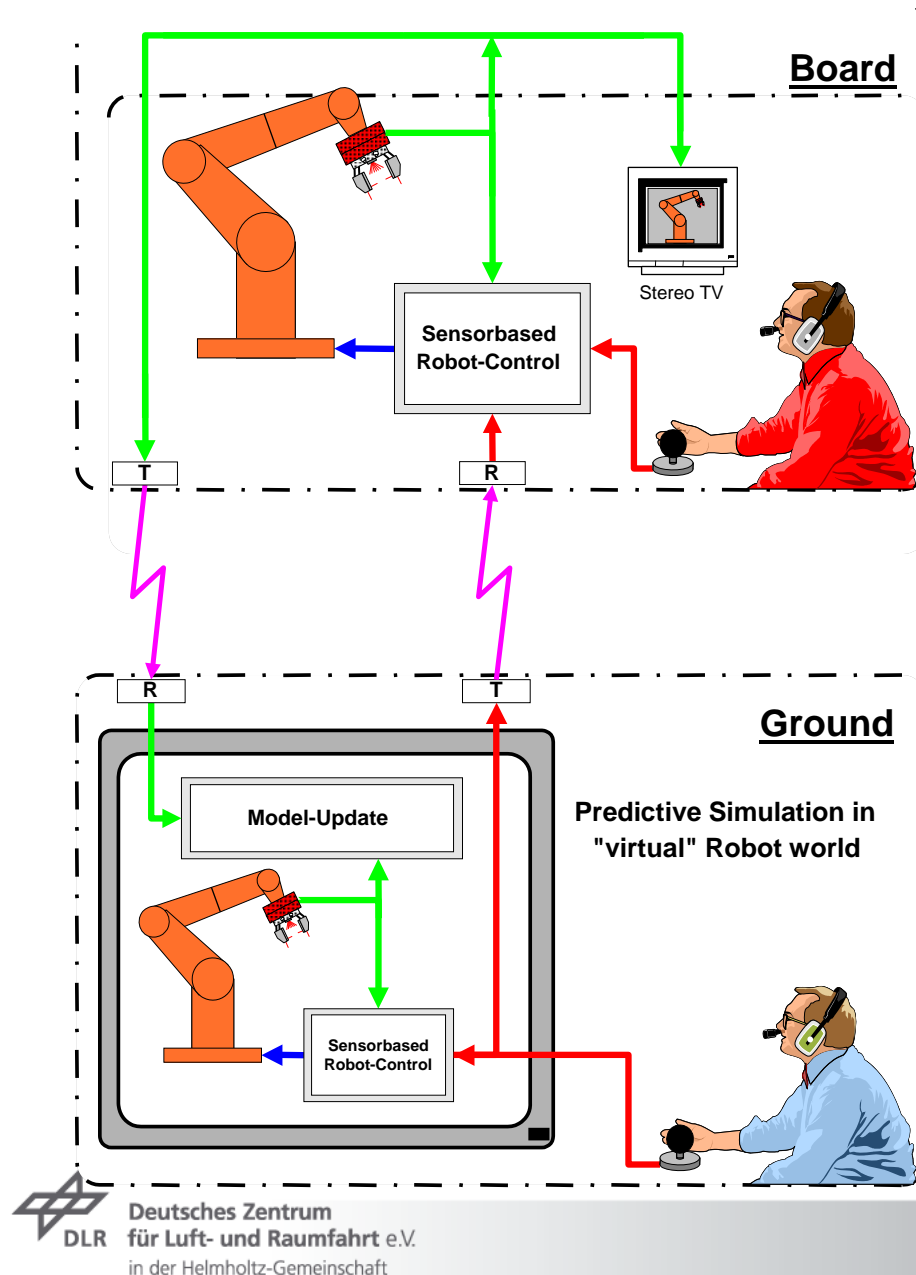


**Early work at JPL**



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# ROTEX Telerobotic Concept



The on board control loop was closed with real sensor data in „shared control mode“

The predictive control loop on ground was closed with simulated sensor data





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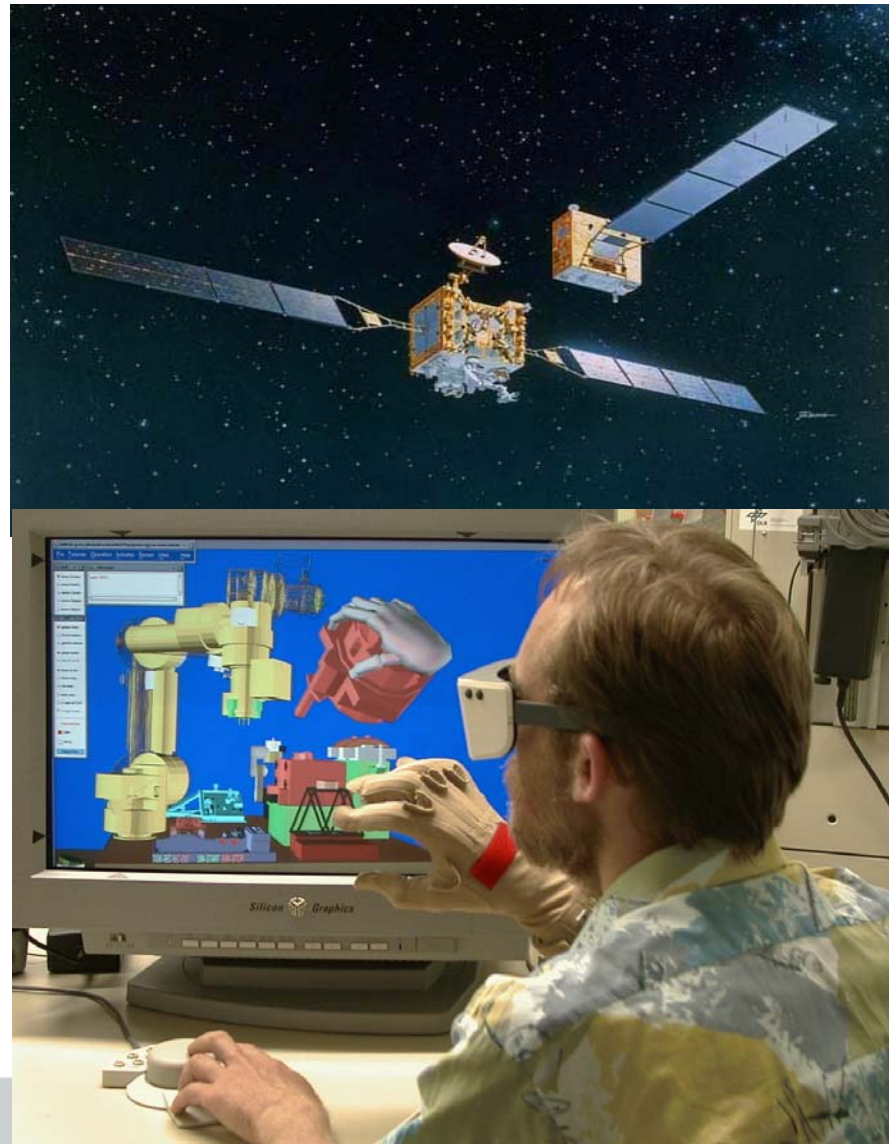
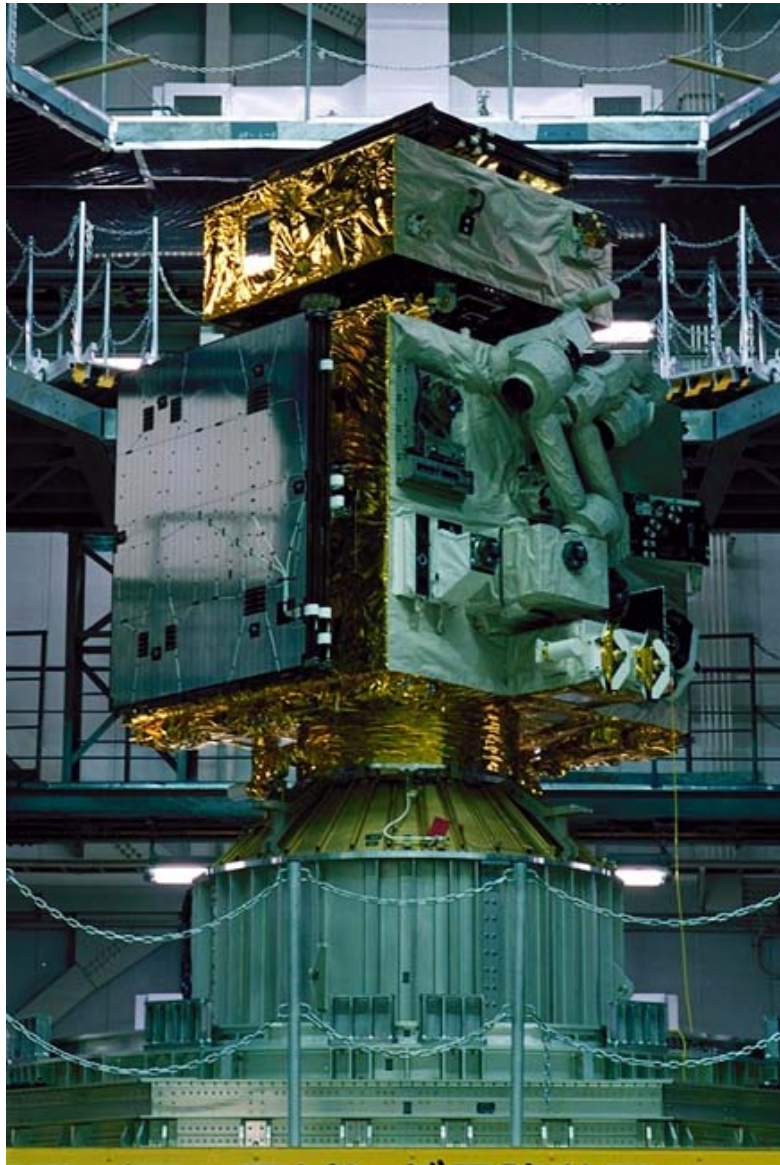


ROTEX- Catching a free-floating object from ground

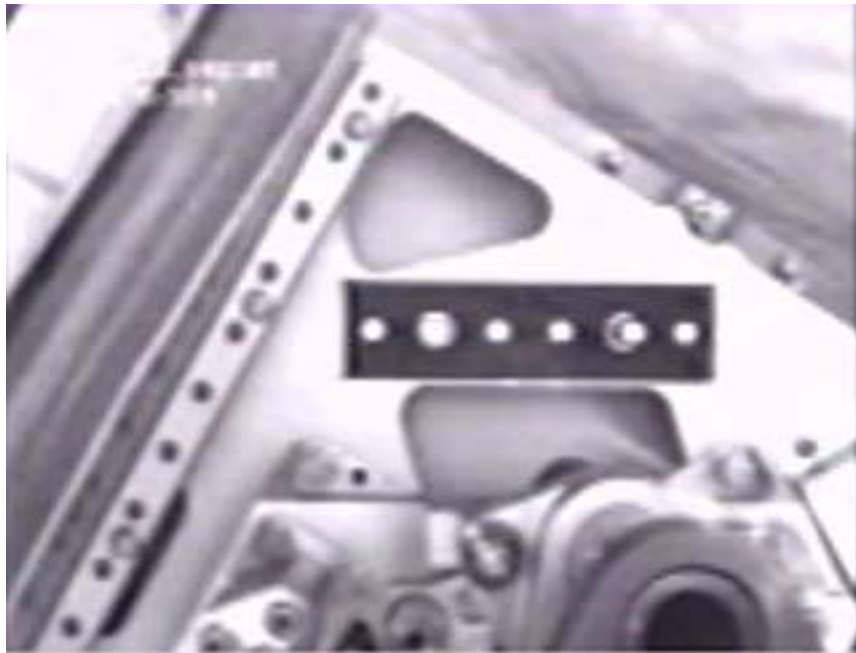


# ETS-VII: the first free-flying robot in space

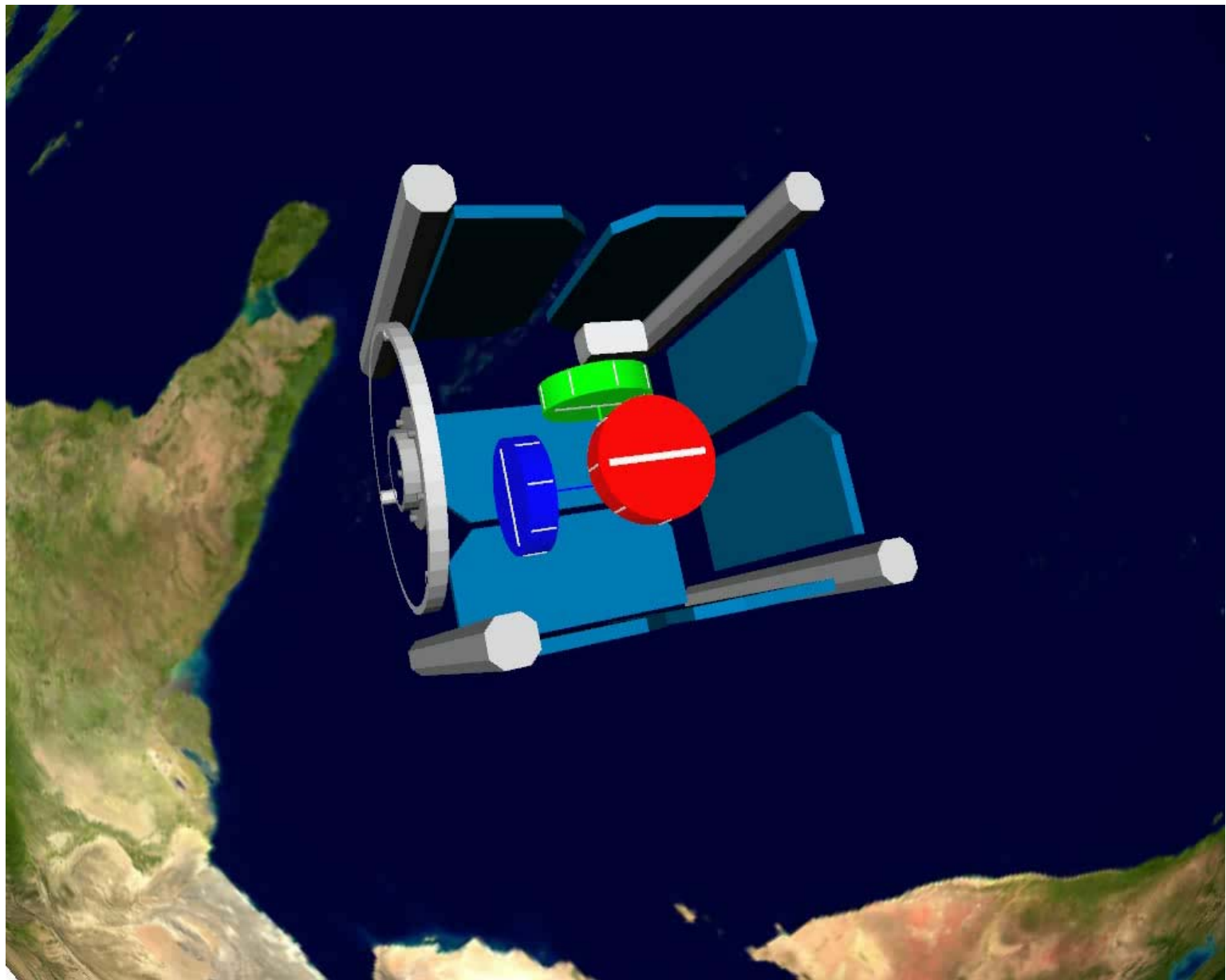
German project GETEX 1999











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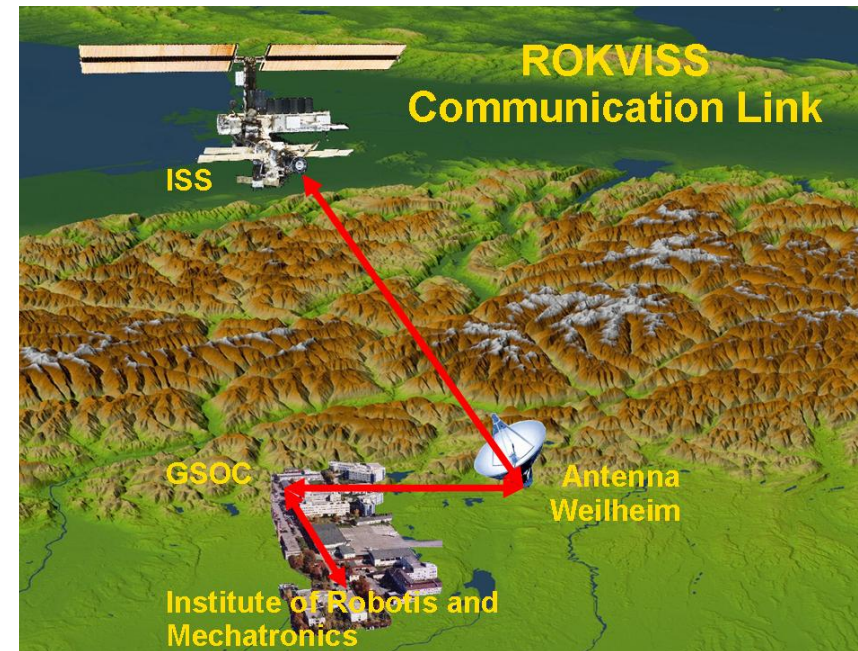
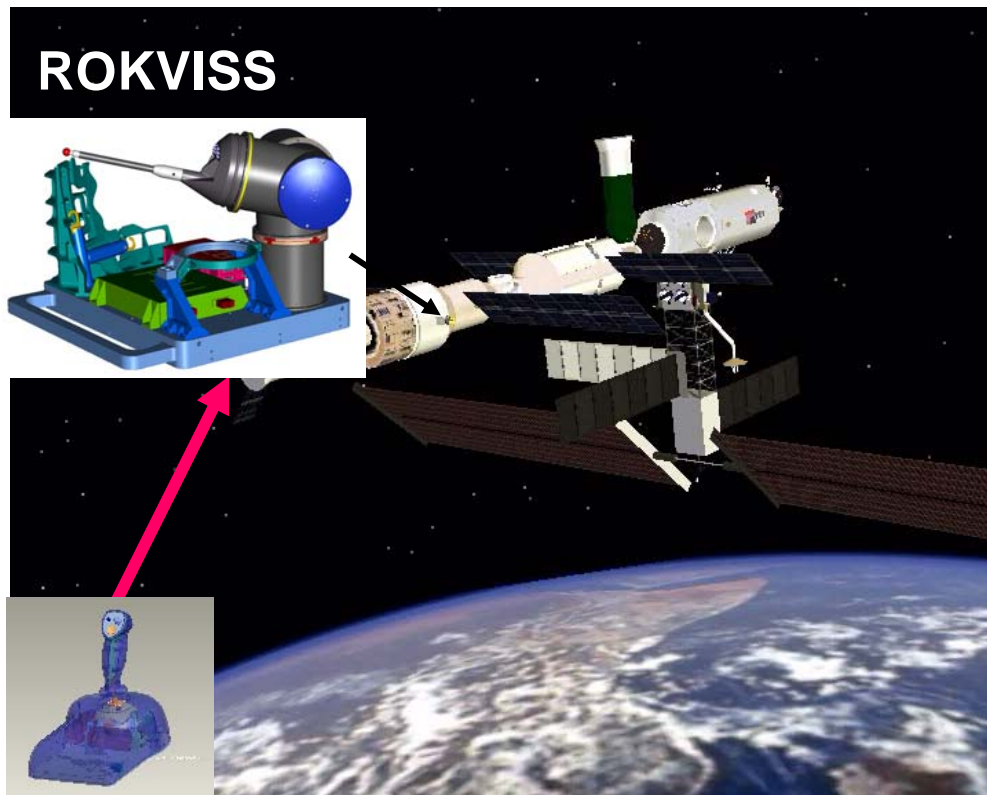


ROKVISS- a 2dof torque-controlled arm on the ISS

**ROKVISS** - our third remotely controlled robot system in space - aims at :

- space qualification / verification of joints
- Telepresence (forcereflecting teleop.)

6 years performance - now back to earth

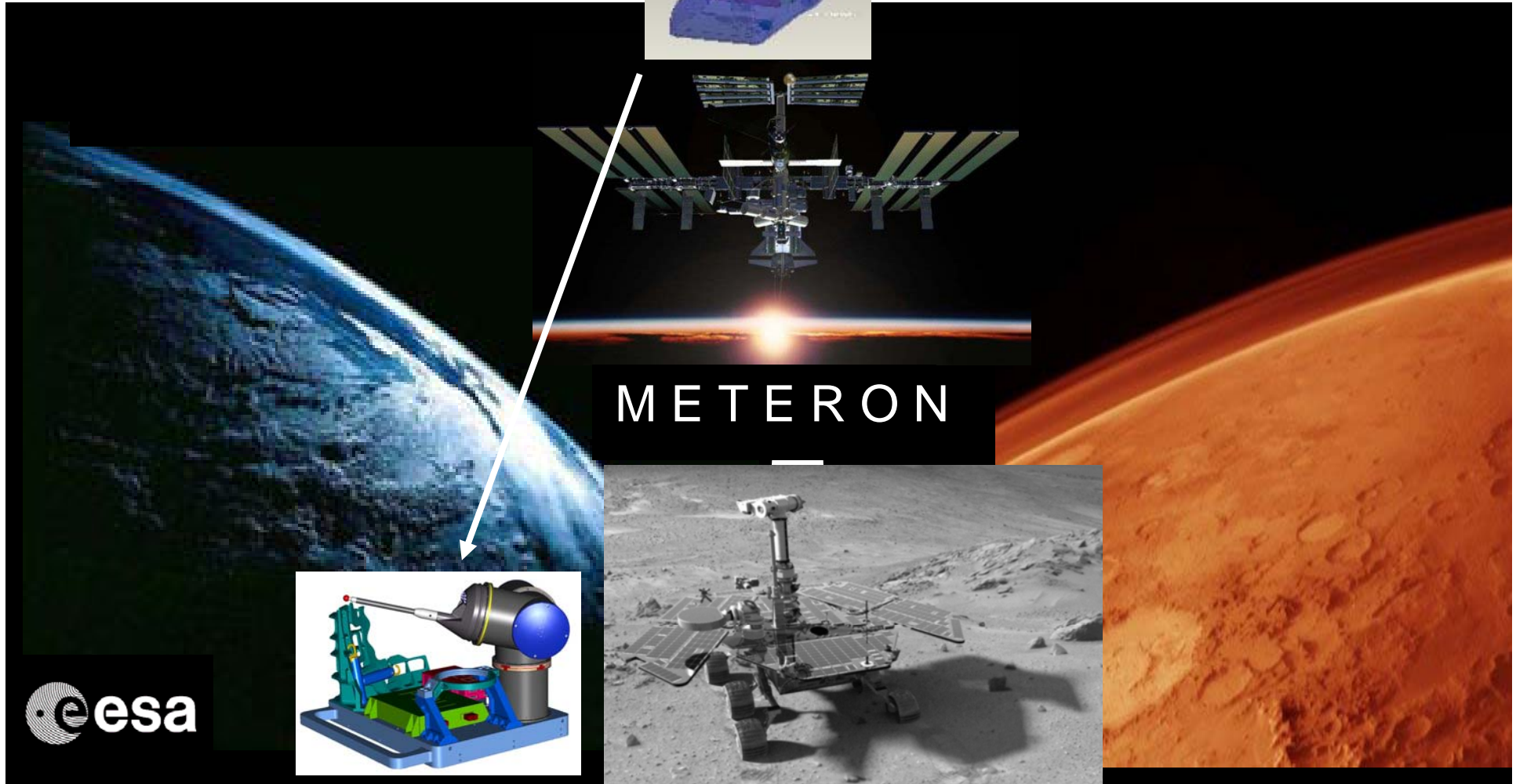






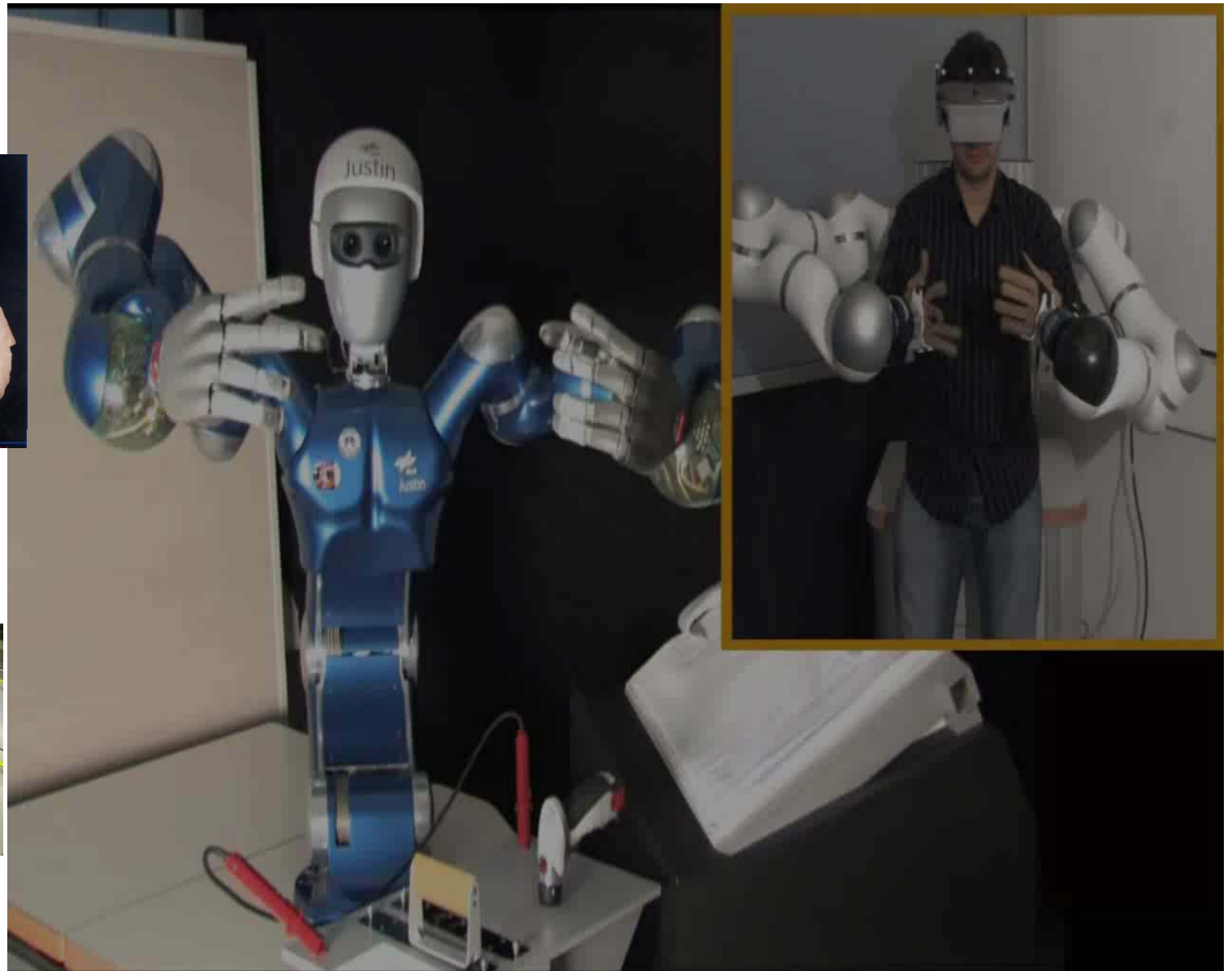
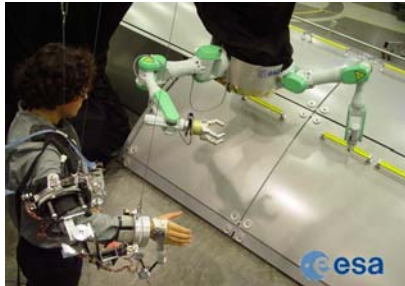
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# METERON

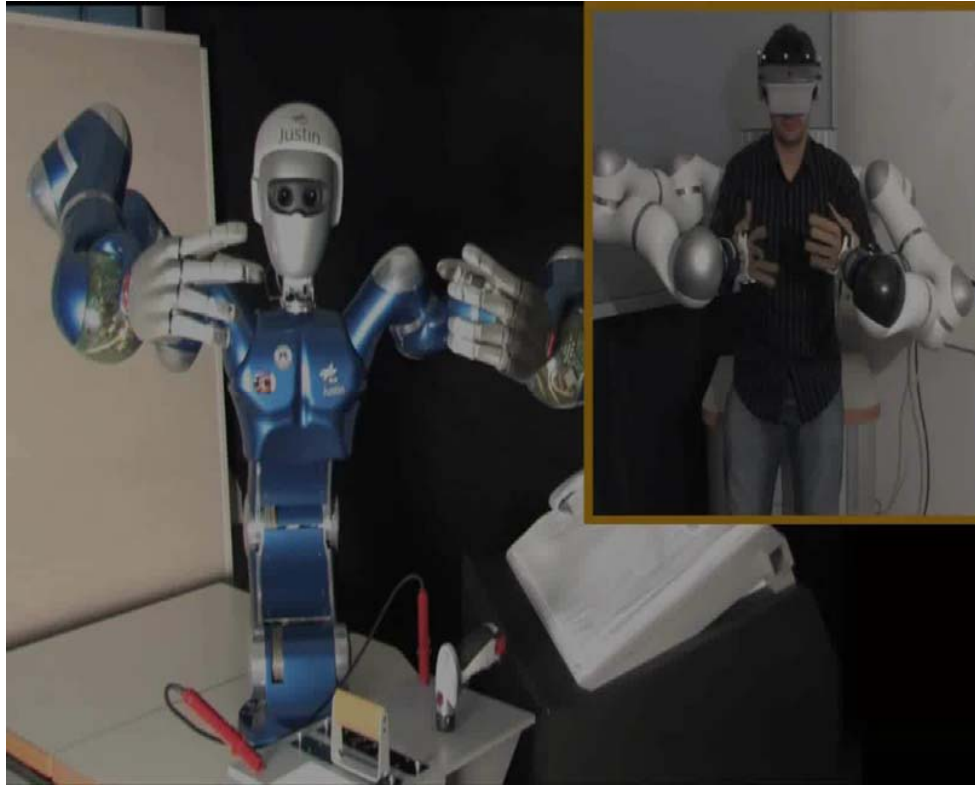


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## Mars-End-To-End-RObotic Networking METERON

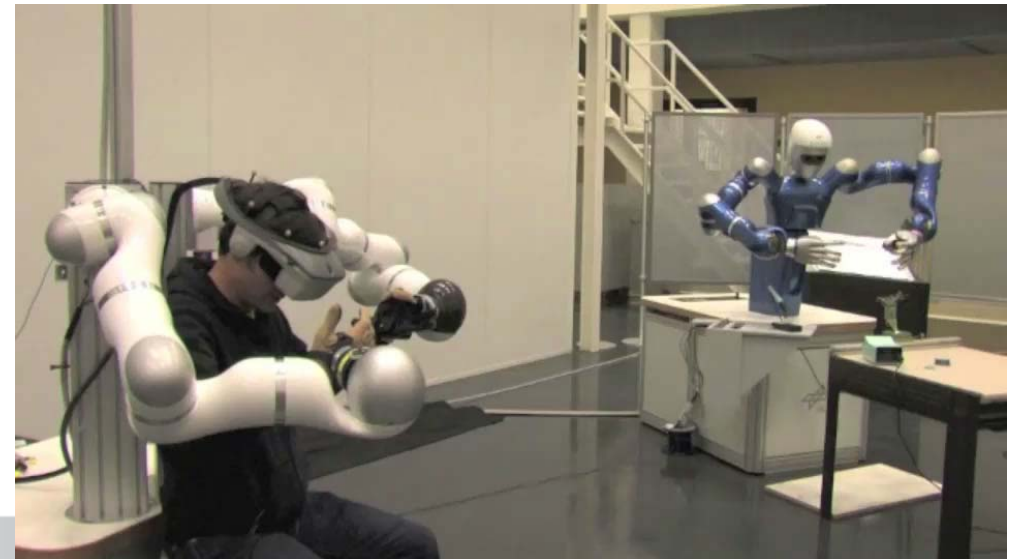




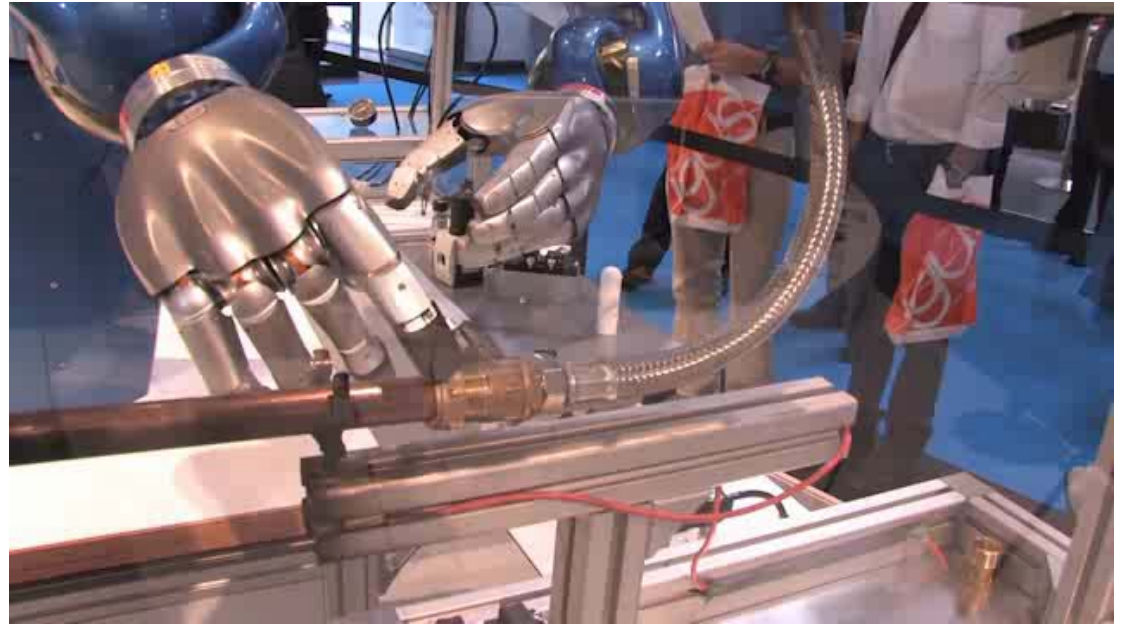


## Time Domain Passivity Control

Telepresence up to 650 msec delay



# Fernwartung von Ölbohrplattformen?



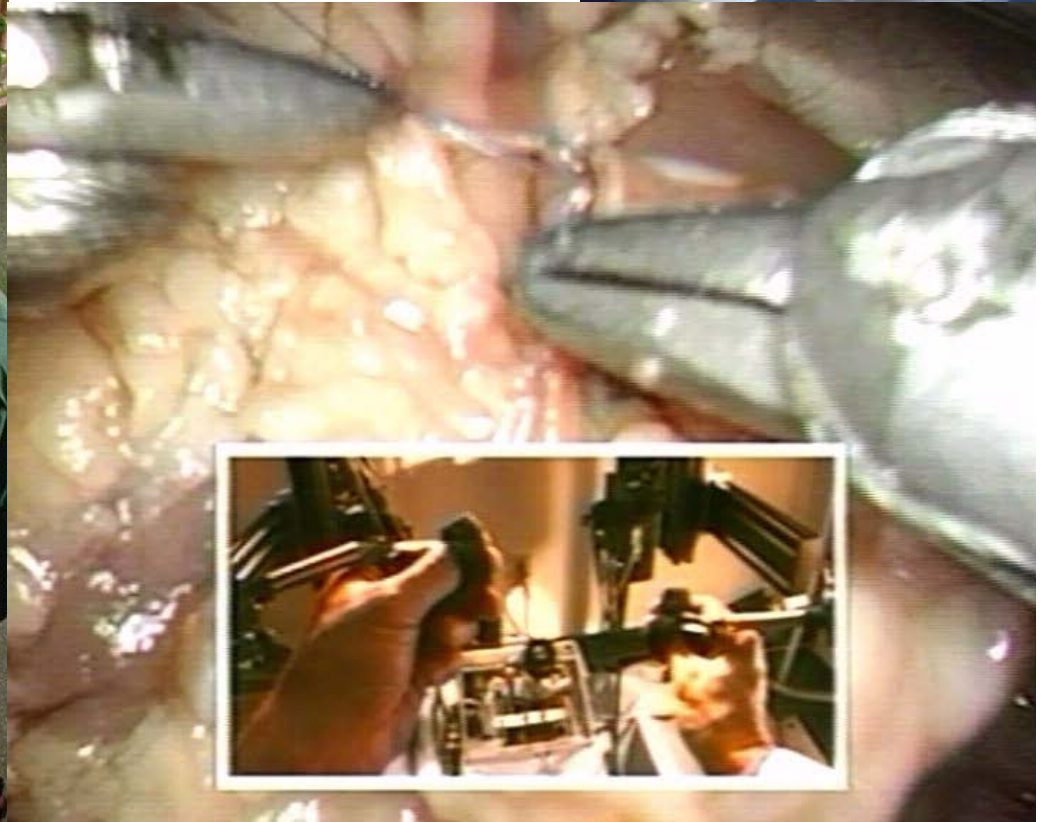
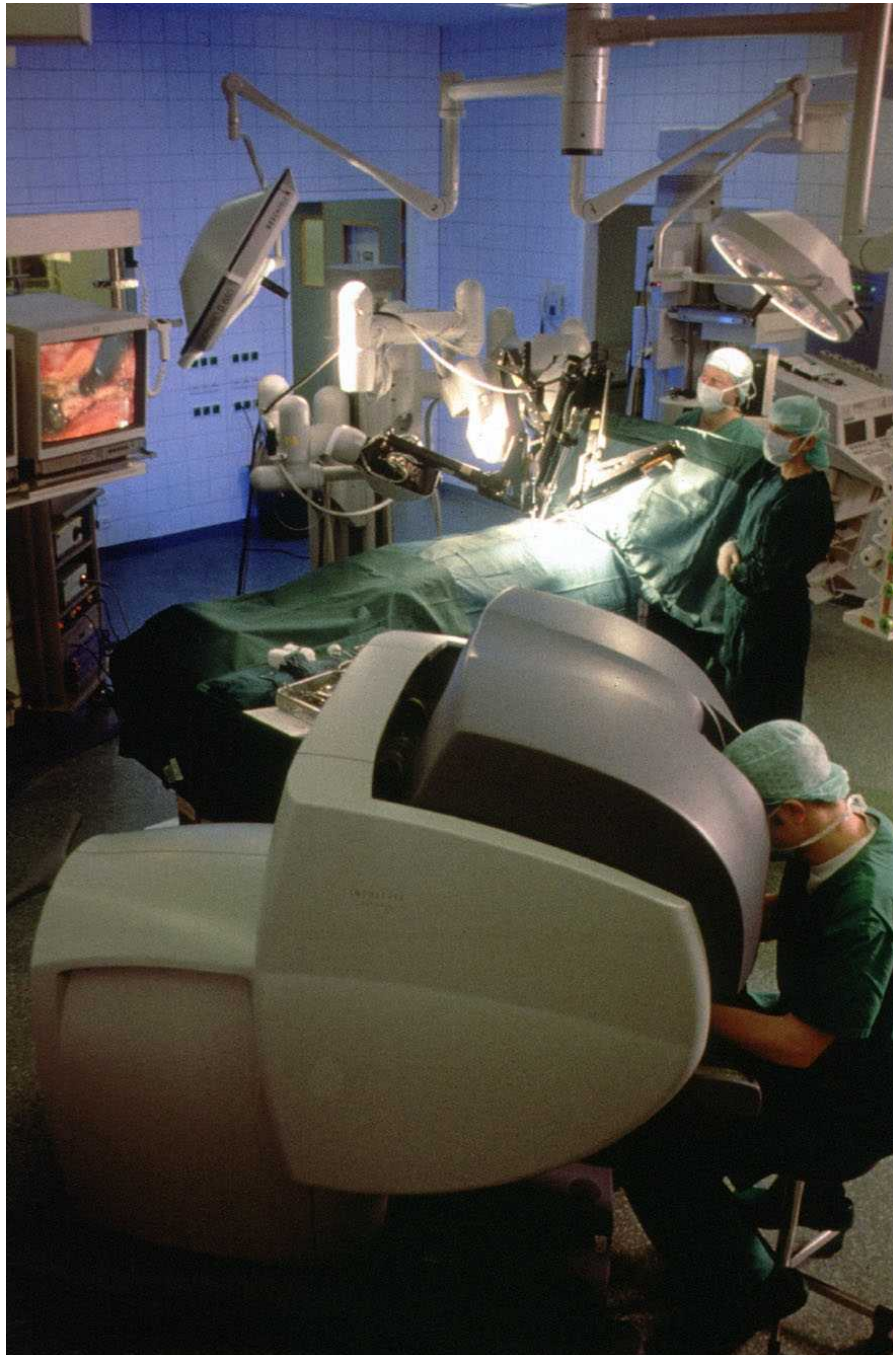
Anwendung:  
Wartung von industriellen Anlagen



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# Da Vinci Telepresence for surgery



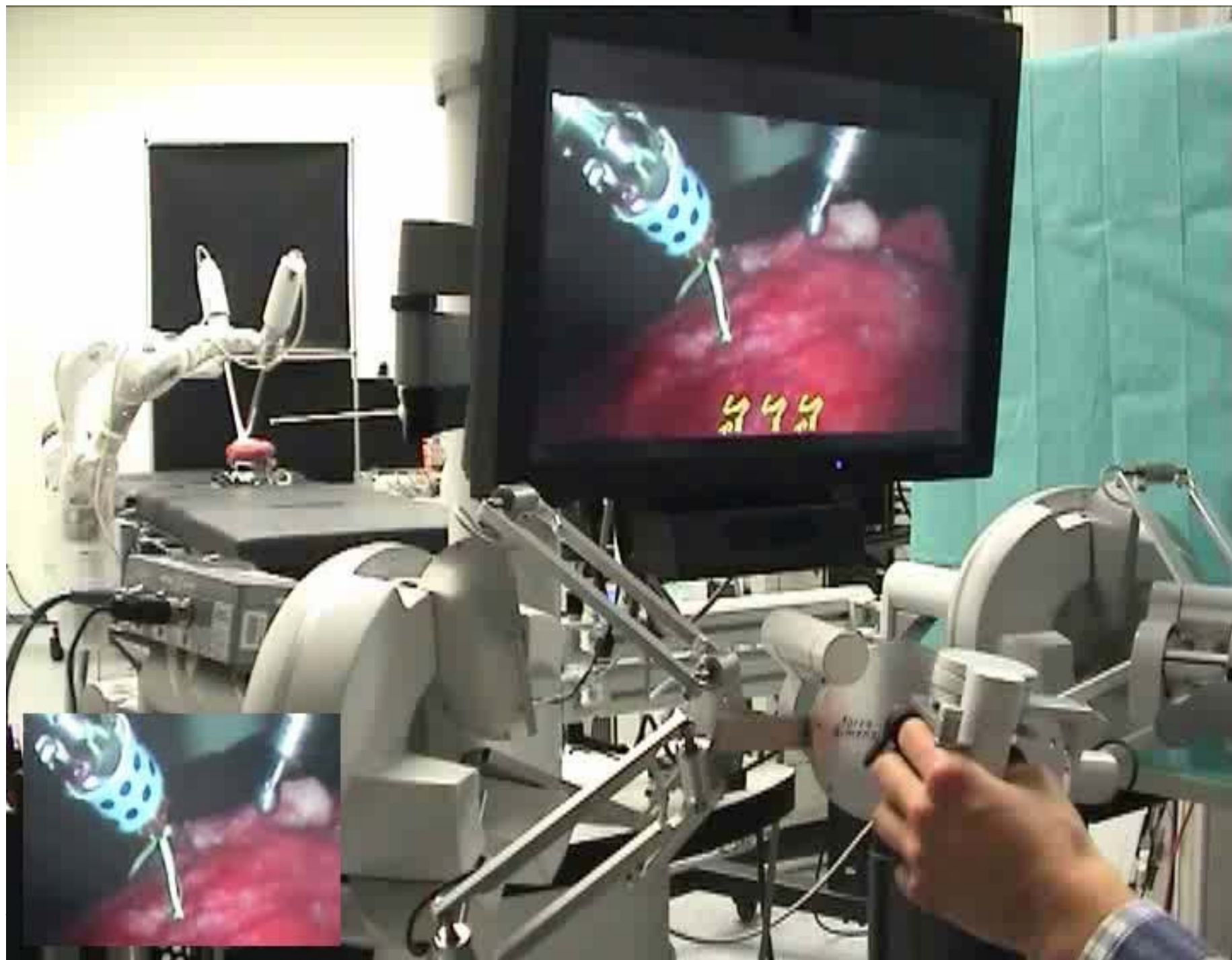




## Surgical robot MIRO



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Tony, I am so sad that  
you cannot be here, but  
Obuda University is  
continuing your great  
pioneering robotics work !