

The MOTIVATION

Lunar Avatar

Enabling telerobotic operation in a communications latent environment

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The DEMONSTRATION

Model-mediated immersive VR operation of robotic arms to remove operator's sense of latency

Lunar Avatar is a command and control approach for eliminating latency as perceived by the operator while performing telerobotic operations, plus enabling/ensuring accurate robotic movements

The Need for effective robotic control is real

NASA's Plan for Sustained Lunar Exploration and Development

Lunar Avatar

Today's robotic control is based upon yesterday's technology

- The Problem:** the 'white-collar' approach to robotic control developed for conducting science is inadequate for the 'blue collar' tasks now needed on the Moon.
- The solution:** rapid, verifiable and intuitive robotic control via immersive XR 3D model interface.
- The value:** higher cadence and improved operations with superior operator situational awareness.

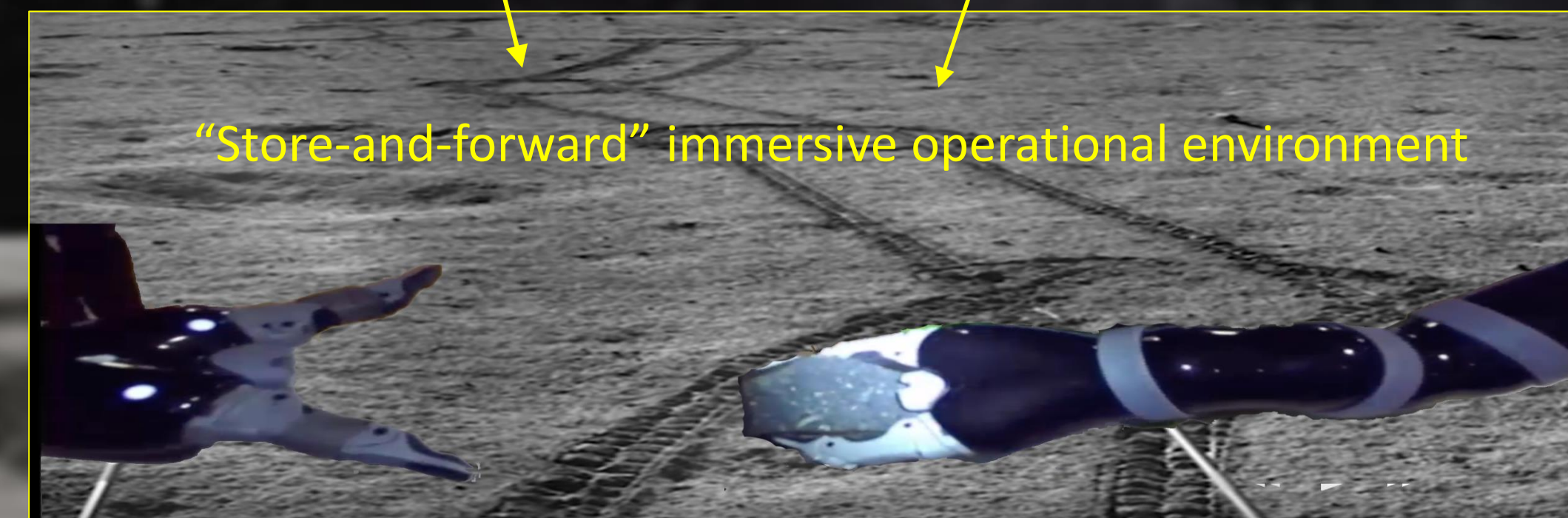


Lunar Avatar: Based upon today's technology

- Operate as if on the Moon (XR immersion transports the operator into the robot)
- Scalable with varied applications (exploration, science, construction...)
- Integrates with existing command and control process
- Leverages low level autonomy for short periods of autonomous operations

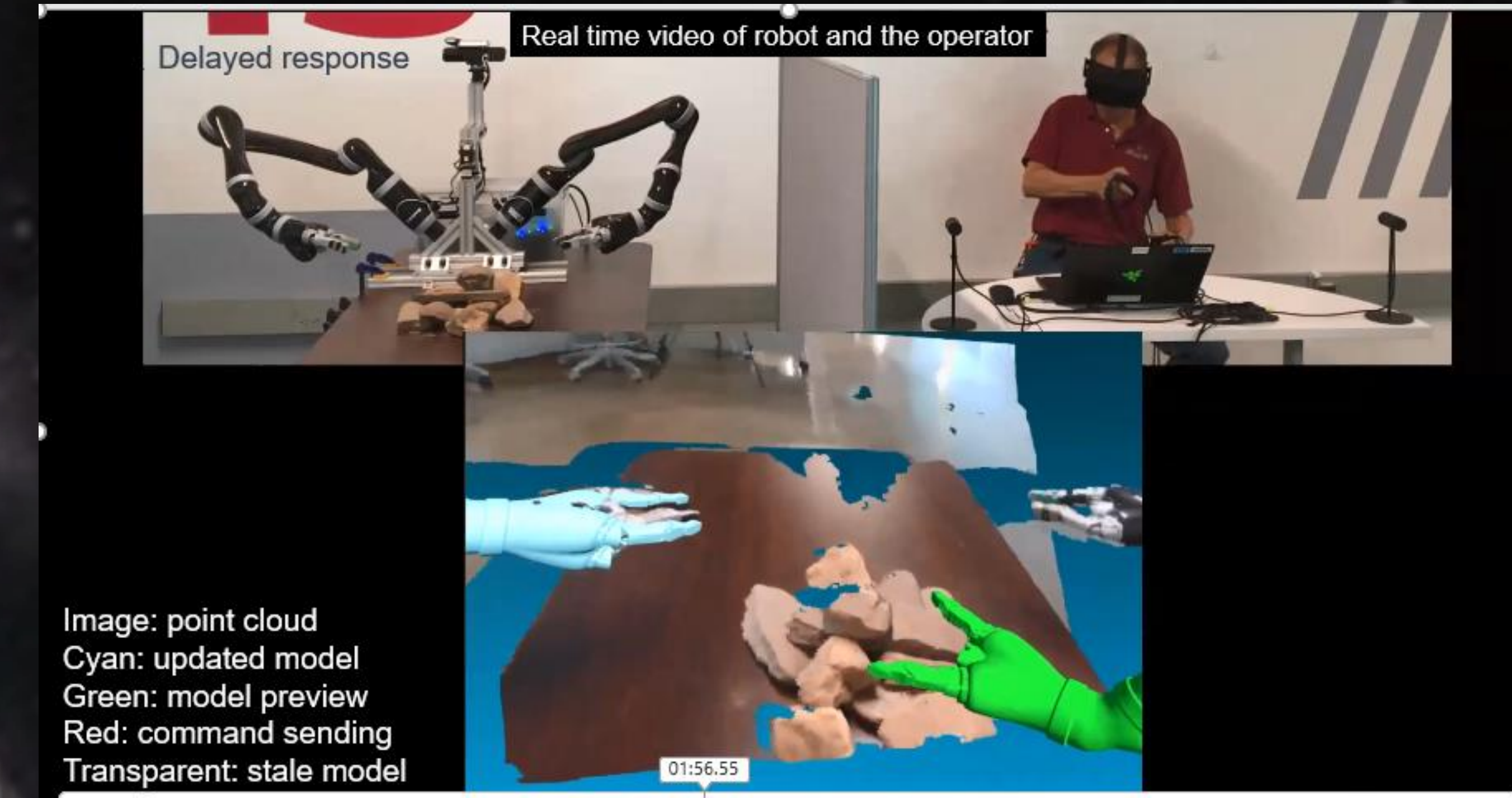


from CONCEPT



- Mitigates effects of latency
- Versatile Applications
- Intuitive & rapid operations
- Intrinsic Validation & Verification

to DEMONSTRATION



Immersive VR operation of modeled quadruped on simulated Moon (King's Bowl, NV 3D data)



Latency operation of Boston Dynamic Spot quadruped robot in simulated lunar environment

