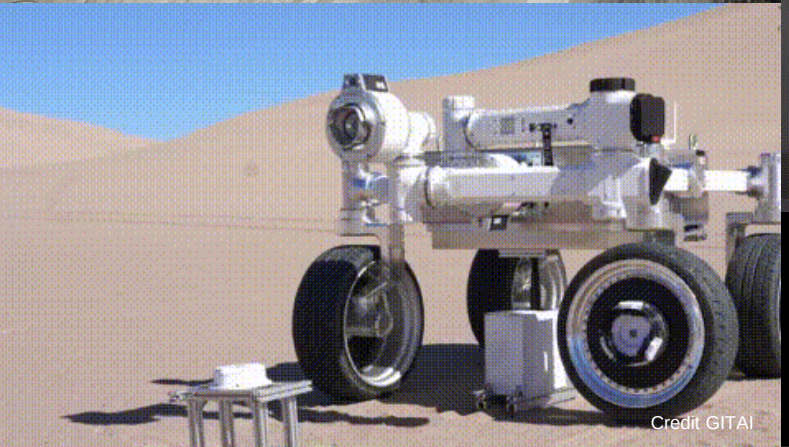
# GITAI's Robotics as a Service for Lunar Infrastructures

## Providing Safe and Affordable means of labor in Space!

GITAI


Credit GITAI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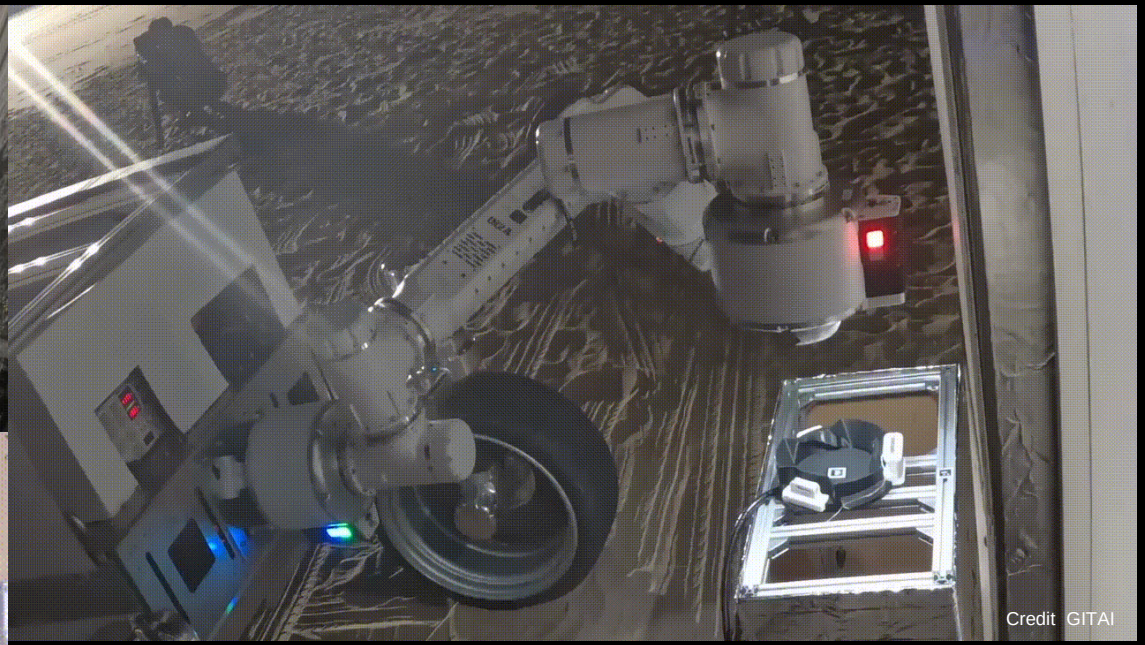
Credit GITAI


LSIC2024 Spring Meeting
DARPA 10-Year Lunar Architecture Capability Study (LunA-10)
Toyotaka Kozuki
GITAI, Chief Technology Officer



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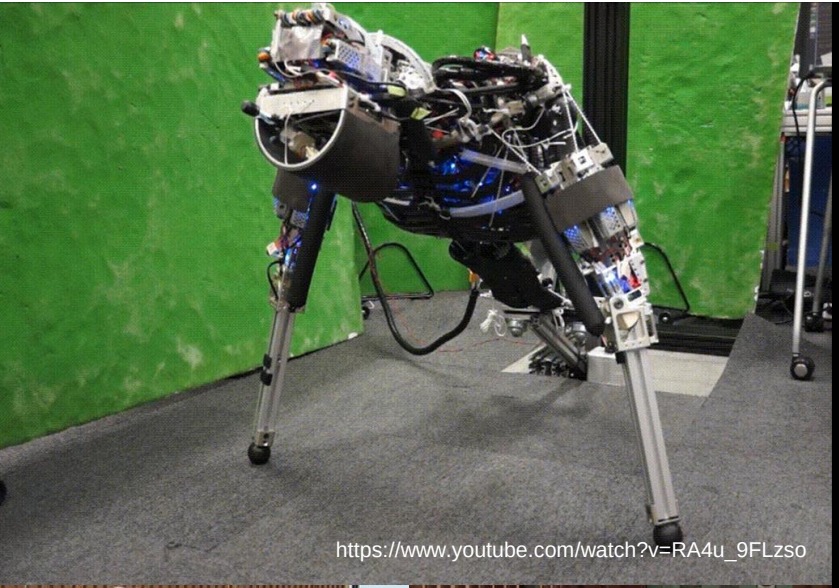
# Why Robots in Space?!

Musculoskeletal humanoid robots as academic career



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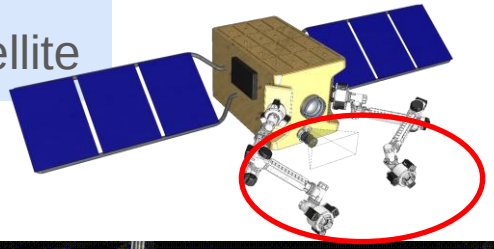
# Product intro<INCHWORM ROBOT>

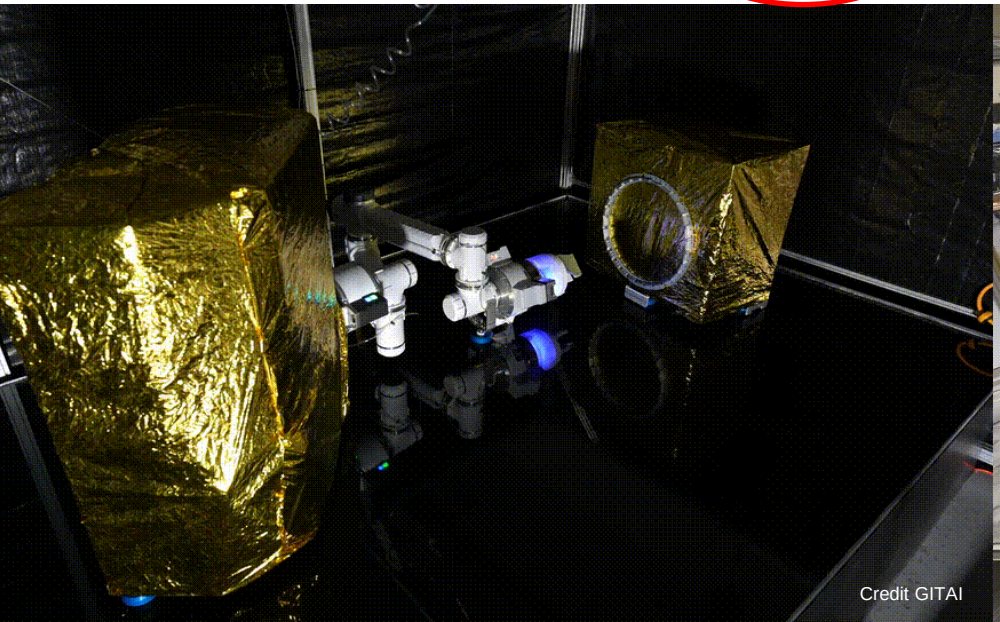
**OSAM domain**
Inchworm on Satellite

Credit GITAI



**Lunar domain**
Inchworm on Rover

Credit GITAI



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# RaaS on lunar economy

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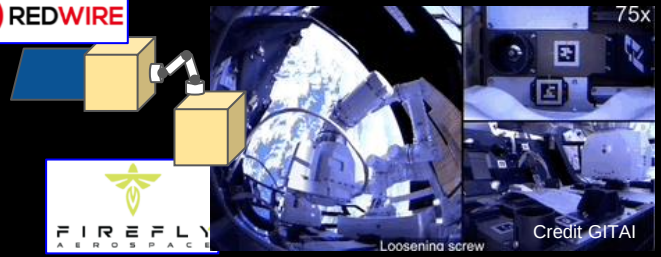
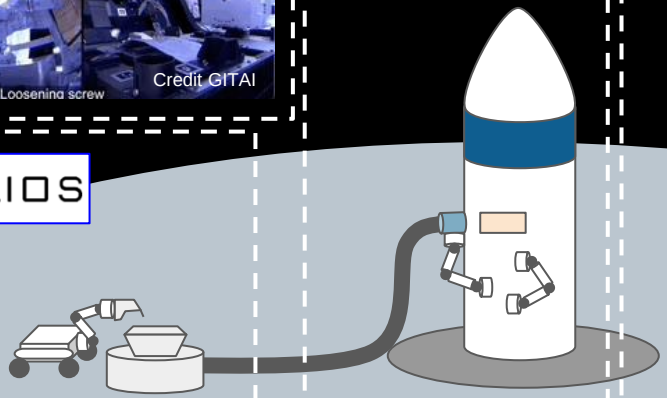
REDWIRE

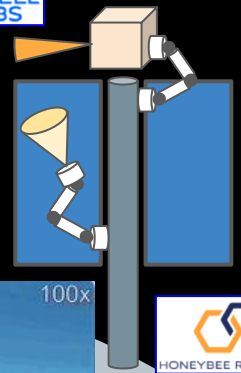



FIREFLY AEROSPACE

SPACEX



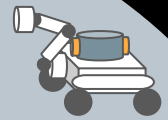
crescent FIBERTEK, INC. NOKIA BELL LABS

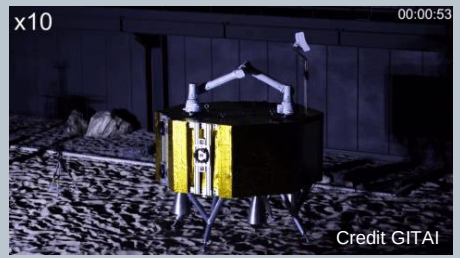


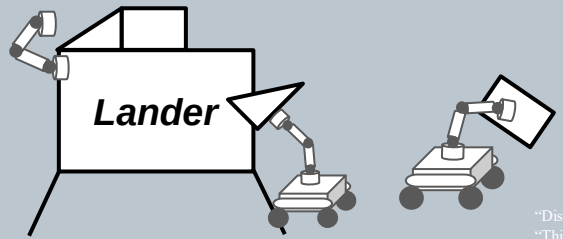
SIERRA SPACE HELIOS

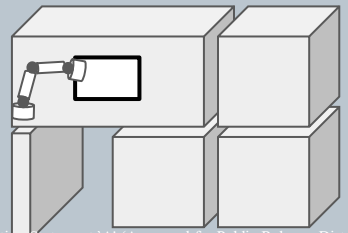


HONEYBEE ROBOTICS





CISLUNAR INDUSTRIES

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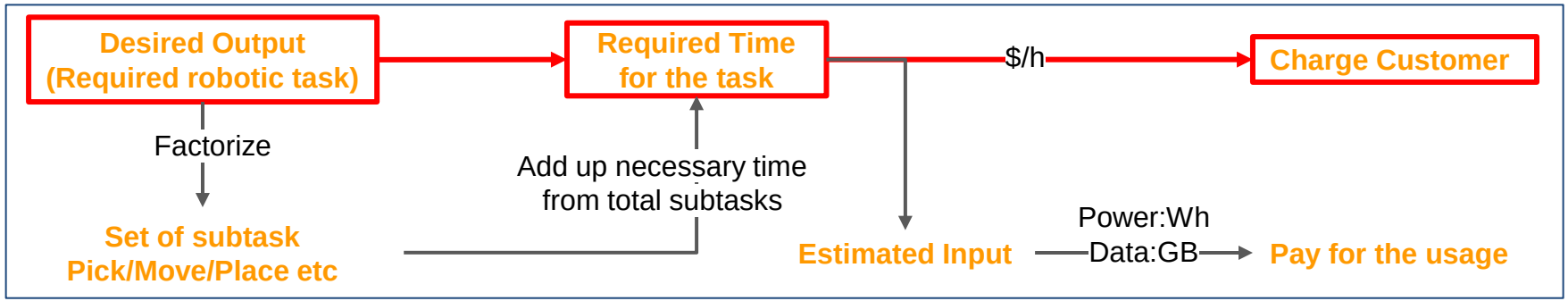
# Executive Summary

We propose the concept of **Robotics as a service(RaaS)**.

**The metrics** we'd like to propose for our service is **$/hour**

| 1 Pick | 2 Move | 3 Place |
|---|---|---|
| **Perception(Computer Vision)**<br>Robust Fiducial Marker Detection | **Motion Planning**<br>Joint Angle Limit Avoidance<br>Self Collision Avoidance<br>Trajectory Caching | **Verification**<br>Joint Angle Sensor<br>Contact sensor<br>Camera View |



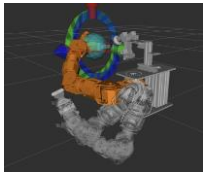
# Issues in Space Industry

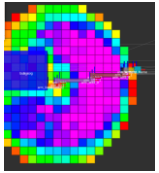
- Cost of transportation has been improving.
- What next? → Issue of high cost for labor

[All pictures on this page belong to GITAI]

## Vertically Integrated Design

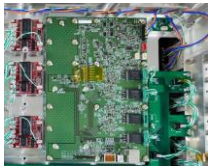
Software





Avionics





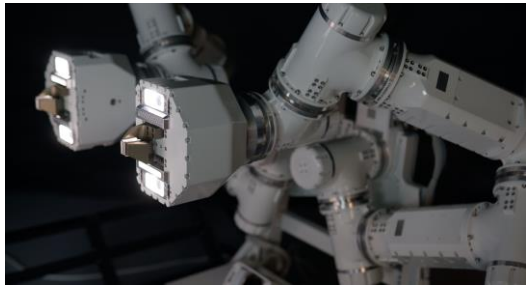
Mechatronics


## Design/Production/Testing in LA


AS9100D CERTIFIED ISO 9001

## Mature Key components

Technology verified at ISS



Lunar measures(TRL4)

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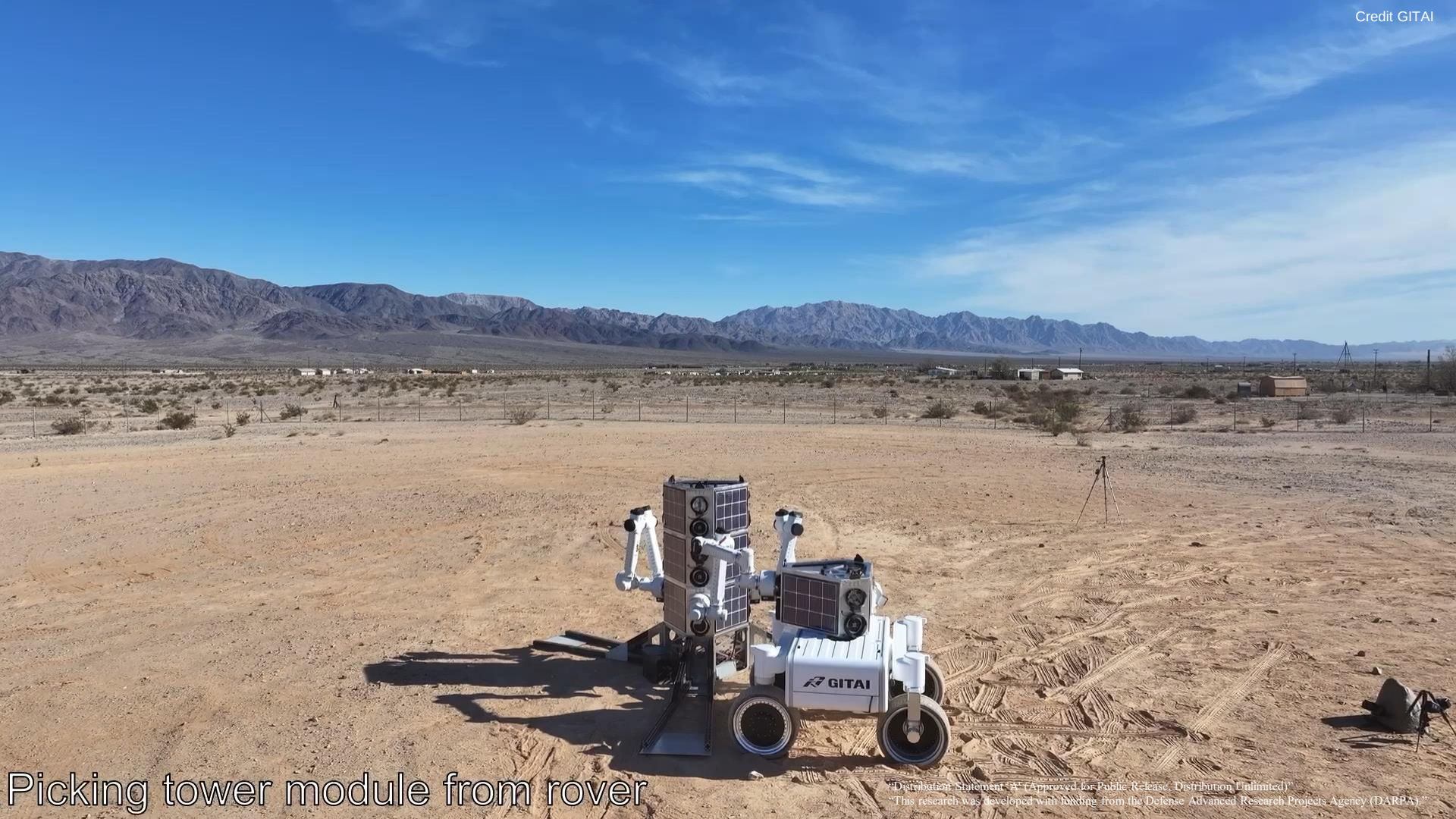


Credit GITAI

Picking tower module from rover


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