



LUNAR VIRTUAL TWIN

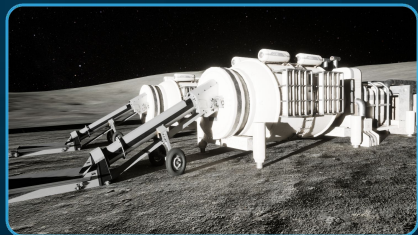
July 22, 2026

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Lunar Virtual Twin (LVT) Overview V 6.0 — July 2026

What is the Lunar Virtual Twin (LVT)?

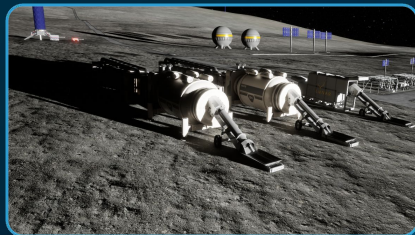
The LVT is an AI-powered industrial metaverse that enables stakeholders to simulate, design, deploy, and refine lunar “missions” in a highly collaborative environment.

Engineering & Requirements



Define specifications and validate designs for lunar infrastructure and vehicles.

Physics-Based Simulations



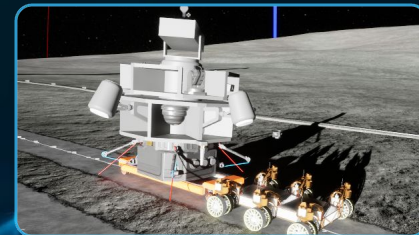
Model the physical behavior of systems and materials in realistic lunar environments.

Space Policy & Governance



Address space policy, governance, and collaborative frameworks for operations.

Economic Modeling



Simulate activity between assets to analyze development costs and viability.

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Why do we need LVT?

LUNaverse will provide the first Cislunar digital twin platform where academia, industry, and defense can collaborate, develop, plan, rehearse, deploy, and recover Cislunar assets in a Common Operational Environment (COE) by providing:

01

Secure access to curated data combined with digital engineering tool sets

02

A common market place to accelerate Cislunar planning, execution, and governance of future space exploration in one digital platform.

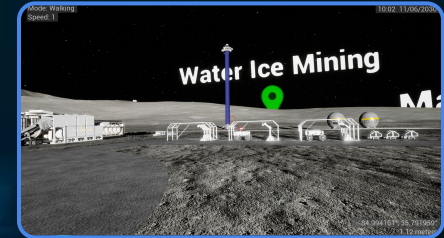
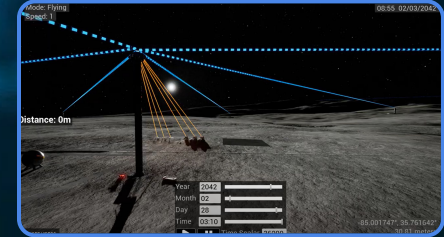
03

An ecosystem that will allow users to plan on current and future requirements using a digital timeline and asset generation toolset.

04

Access to open source technologies, digital standers, and common developer tool sets to upload

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What technologies power LVT?

AWS GovCloud

Secure, scalable AI cloud computing infrastructure.

Robot OS (ROS)

Developer platform for AI/ML and Autonomy integration.

Multiplayer Mode

Common Operational Picture for multiple simultaneous users.

ANSYS Platform

For digital twin modeling, analysis, and lifecycle management.

Environmental Data

Confirm digital environment and data layers prior to simulation.

Restful API

Enables rapid integration and translation of third party software.

NVIDIA Omniverse

USD for collaborative design, visualization, and integrated physics simulation.

Omniverse uses Open Universal Scene Description (USD), enabling seamless standardization and interoperability between digital twins and engineering software.



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How does LVT simulate lunar development?

The LUNAverse provides a robust set of capabilities:

01. Physics-Based Simulations

Models the behavior of systems and materials in lunar environments.

02. Engineering Requirements

Defines specifications and validates designs for lunar infrastructure, habitats, and vehicles through digital twins and SysMLv2 Requirements.

03. Mission Scenarios

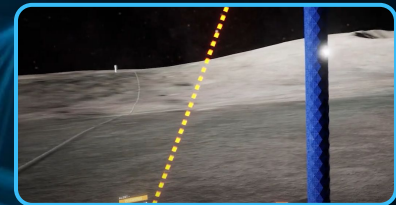
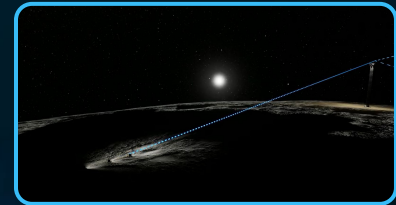
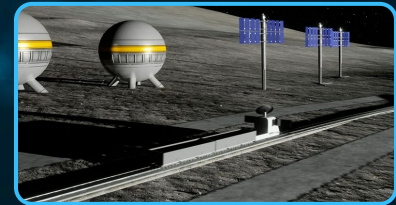
A common operational picture that simulates resource utilization, infrastructure deployment, interoperability and in-situ operations.

04. Economic Modeling

Simulates the activity between assets to establish the costs and viability of various approaches to building infrastructure and in-situ resource utilization development.

05. Cost Analysis Profiles

Rapidly iterates through mission scenarios to develop accurate cost estimates and investment needs.



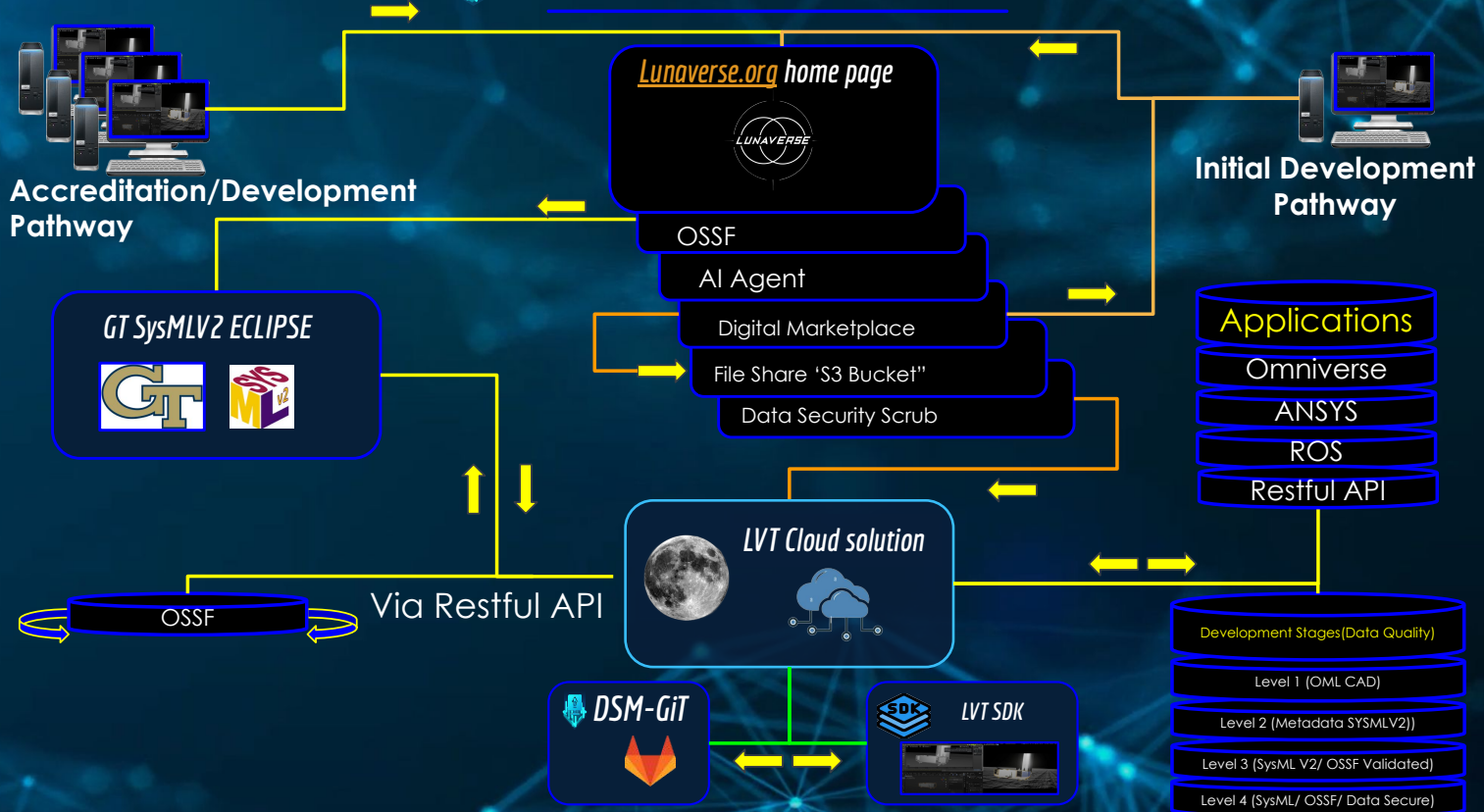
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Unclassified



LUNAverse Overview



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Unclassified

LOG IN PROCESS FOR LVT

Phase 1: Entry

Step 1. Go to Lunaverse.org



Step 2. <https://generic.fit/lunar-virtual-twin>



Public Announcements

History

Artemis Accords

Partnerships

Mission Sequence

Open Source OSSF

Phase 2: LVT Internal Environment

Step 3A. Access Apps



OSSF

AI Agent

GT ECLIPSE

Restful API

Step 3B. Click on LVT Link

LVT Cloud solution



Lunar Virtual Twin (LVT)

Step 3C. Upload Files into AWS S3 Bucket



Applications

ROS2

ANSYS

Omniverse

Multi Player

Restful API

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How does LVT accelerate lunar development?

The LVT combines rapid iteration with physics-based and economic simulations to:

01. Design & Validation

Define engineering requirements and validate designs.

02. Autonomous Training

Train autonomous systems using realistic scenarios.

03. Cost Analysis

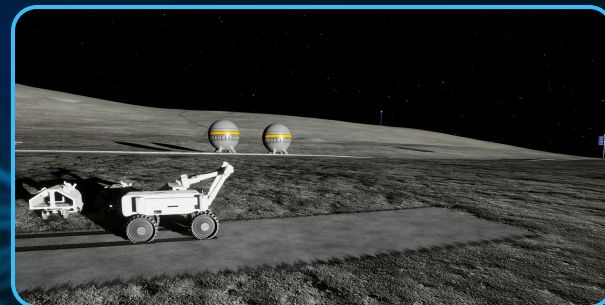
Create cost analysis profiles to identify investment needs.

04. Resource Optimization

Optimize in-situ resource utilization and infrastructure planning.

05. Collaborative Innovation

Enable cross-sector collaboration to streamline innovation.



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