VALISPACE



From Earth to the Moon: How iSpace engineers streamlined their engineering design to send a lander to the Lunar surface

In thinking about how to develop space infrastructure to make it sustainable and efficient, the iSpace team have turned their attention to the Moon. By taking advantage of lunar water resources, the Japanese company intend to expand humanity's living sphere into space.

Their engineers needed a modern and flexible engineering tool. They chose Valispace.

Background

iSpace is a pioneering company set on becoming the world's first commercial lunar landing and transportation program. With 200 dedicated employees, two thirds of which are engineers, iSpace has successfully launched its Series 1 Lander in December 2022. As the spacecraft continues its journey to the lunar surface, it will deploy three rovers to carry out scientific experiments.

To manage a global project with 25 nationalities, iSpace engineers required a robust process to address their unique needs. A decentralized approach to engineering design and manual verification would not have been possible to scale throughout the project life cycle. Due to the lack of data consistency and traceability, engineers would not have had the opportunity to flow down and collaborate on issues between different subsystems. This would have resulted in a higher workload for engineers and increased the risk of errors Valispace is quick to define and set up and we are able to do the entire engineering lifecycle within one environment

Federico Giusto

Deputy Project Manager

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Mission update

- On 11th December 2022, iSpace succesfully launched its HAKUTO-R lander, taking a ride on board a SpaceX Falcon 9 rocket
- HAKUTO-R carried out a successful second orbital control maneuver from a distance of 1.24 million km from Earth
- iSpace's lander will perform a soft landing on the Moon in June 2023

Seamless Engineering Design Process

iSpace engineers had to ensure technical data, internal or external, was up to date and easy to deliver across functions.

They chose Valispace as it allows engineers to design products with ease by ensuring that technical data and engineering documentation are always up to date and easy to access. The Valispace engine automatically recalculates all affected design parameters and requirements' fulfillment, ensuring that engineers save time and minimize the risk of errors.

By streamlining the engineering design process, Valispace helps iSpace engineers focus on the more important aspects of their work.

Reliable Data Management

Valispace simplifies the process of accessing and exporting data, providing users with a quick and easy way to format and deliver internal and external data to the intended audience.

This feature saves time on manual data collection and export, increasing overall efficiency and allows iSpace engineers to focus on the more important aspects of the engineering process.

Integrated Tool Chain

Via the scripting module, users can further customise their workflow to automatically run Python or Matlab scripts. This allows for technical sizing activities to be performed quickly and accurately, enabling users to map requirements and identify gaps in the design.

By utilizing these automated connections, iSpace users save time and reduce the risk of human error.





Book Valispace Demo

Iterative design for the most complex product development in $\sqrt{ALISPACE}$

- Automatic data propagation for consistent design: Prevent manual document updating and ensure traceability throughout your project. Understand who did made what change, when and why.
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Continuous verification from design-to-spec: Trace how product specifications and the system design relate. Ensure the system designed is aligned with requirements by setting up automatic verifications. Reduce the risk of rework and verify faster.

Engineering data insights for better and faster decisions: Visualise the connections between data and gain better insights. Easily understand the impact between different parts of the design and make informed decisions based on data.

Valispace empowers engineers and all involved parties to collaborate on all non-CAD engineering data. Valispace brings together disconnected data across platforms and documents into one place and enables the automation of data engineering flows related to requirements management, design calculations and iterations, test management, all the way to automatic verification.