https://prono82.com/e

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■Founded in
4th/10/2007

■Capital
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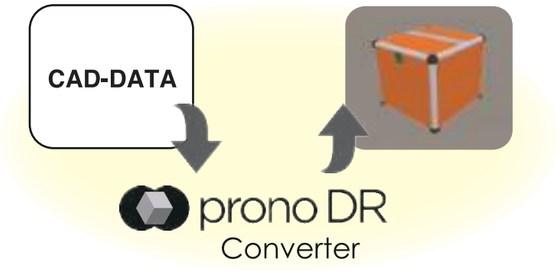
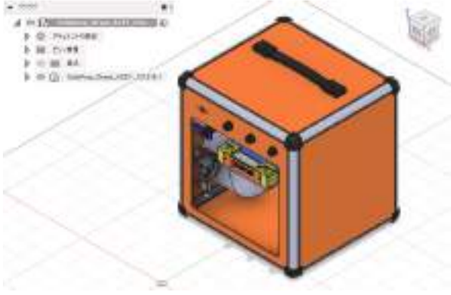
prono DR

prono
for the Professional

CAD data viewing in VR – Easier than ever!

Convert 3D CAD data into VR with just one step. PronoDR supports any CAD data with Parasolid format from various CAD applications including SolidWorks, Creo, NX and CATIA. It is adaptable to your existing workflow.



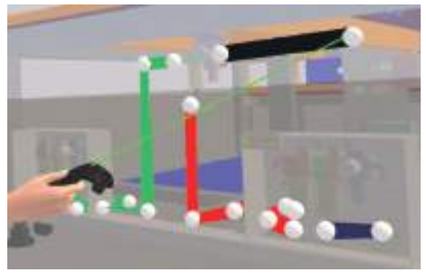


Smoother design review communication with marking function!

Feedback from other team members at design reviews can be accurately conveyed to the designers using the marking and wiring functions by saving it as data. Users can add annotations to the model using the marking function. It streamlines team communication and lowers review errors. The wiring function enables complex wiring to be drawn in virtual reality, which helps to optimize wiring and spot potential issues. The drawn line segments can be sent to a CAD system.

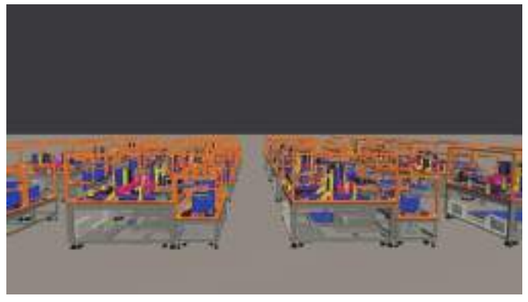
※Use a CAD system that can load CSV data in order to use these functions.

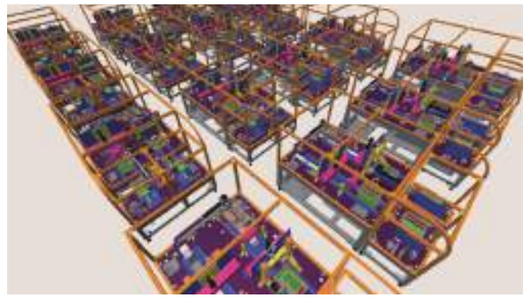
The Voice Memo function is an optional function that can be added to the Marking function.This makes on-site confirmation and team information sharing more efficient and enables users to save more information and specifics for each marking made during design reviews.



View an entire assembly or plant system at a glance!

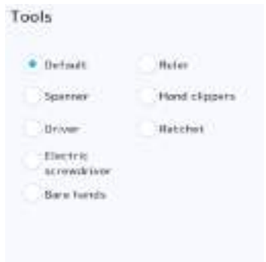
PronoDR can display a large scale CAD model that includes an entire factory.
More than 100,000 components can be displayed, allowing users to experience a full-scale factory as if they were in real life.

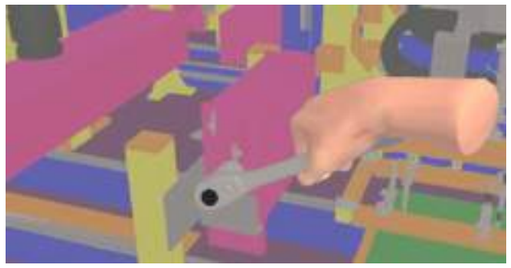


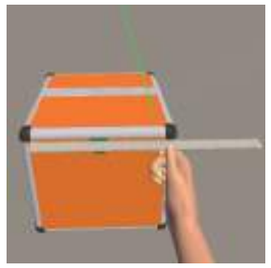


Various tools available in VR

PronoVR enables users to feel as if they are holding various tools including a spanner, ratchet, electric screwdriver, or hand calipers, allowing to assess the assembly and maintenance feasibility. Distances in VR space can be measured with hand calipers.







Vibration alerts the hazards!

PronoCollider, an optional function, is a vibration alert function that notifies when a user's head collides with an object, allowing users to verify hazards and evaluate the viability of maintenance inside the model.

No internet connection required!

You do not need an internet connection to load CAD data or experience VR. PronoVR is available for use at any time and from any location. It also eliminates the security risks associated with connecting to a network.

Greater design flexibility with the game engine, Unity

PronoVR is Prono Hearts, Inc.'s own brand product. It is simple to add new functions or customize the system to meet various customer requests. Using the Unity game engine, adjustments to new head-mounted displays and MR technology can be made with greater flexibility.

Unity®

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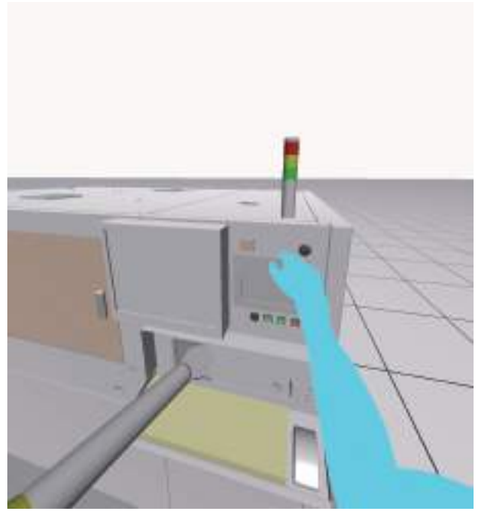
Verification can be performed during the design phase, not after.

Since the data was displayed in a 2D system, the company has felt frustration in achieving the desired effect using 3D design data. With PronoDR, however, they can validate a product design in a more immersive and realistic manner. The appearance of the operation screen can be evaluated in terms of how it appears to people of different heights, as well as its maintainability. Wiring can be also determined even before the equipment is built. In terms of assembly, the sensation of seeing the equipment from below is nearly impossible to accomplish with 3D CAD or ordinary displays. During the design phase, you can test whether the worker's body position is comfortable, whether the field of vision is adequate, and whether the work space is adequate.



HIOKI E.E. CORPORATION

A manufacturer in Nagano Japan specializing in electrical measuring instruments that has been in business for over 80 years. The company supplies approximately 200 models ranging from large automatic testing equipment to memory devices, electronic measuring instruments, and field measuring instruments for a wide range of industrial fields, including automobile, electronic, and environment and new energy-related fields.

PronoVR made design reviews to function in the true sense!Costs and time to fix problems during prototype phase are drastically reduced!

Denso Aircool develops and manufactures a wide range of models in small quantities in a short cycle. In the design stage, their design reviews were conducted using 3D CAD models and 2D drawings. Because the actual operability and sense of scale could not be tested during design reviews, they frequently encountered problems that required significant time and cost to fix after the product was manufactured. With the introduction of pronoDR, participants at design reviews can see a product that does not yet exist in full scale, and production engineering and manufacturing personnel who are unfamiliar with 3D CAD models can see the product as it is. This made it easier to exchange ideas, identify problems, and eliminate problems during the design stage. They are pleased with the cost and time savings associated with post-manufacturing modifications.

VR makes dangerous areas in equipment visible and obvious. Design reviews are now interactive than ever!

It is extremely dangerous if a finger can fit through a gap close to a moving part within the equipment. Even if 3D CAD shows you the width of the gap, it is difficult to determine if it's dangerous. However, with VR, they can see the gap in real size and 3D, allowing to make the instant decision on the spot. Another example of how VR aided was when strength concerns arose when inspecting the completed equipment. Areas deemed unsafe had to be reworked, which incurred additional costs and time. VR helps to identify areas that are not strong enough in early stage. On-site personnel who are unfamiliar with 3D CAD can provide feedback on how to simplify operation and maintenance. VR has proven to be an extremely effective tool for communicating with the field staff.

DENSO AIRCOOL CORPORATION

A manufacturer of air conditioning equipment for vehicles, residential and commercial use, specializing in “cooling and heating" technology. Under the concept of simplifying manufacturing, the company uses IoT and other method to manage their processes. They pursues higher processing technologies to produce large, varied, and low-volume products in order to satisfy all consumer needs

SANYO DENKI CO., LTD.

A manufacturer of servo motors, cooling fans, and uninterruptible power supplies.Their Plant, located in Nagano Japan, is an integrated manufacturing facility for servo motors, stepping motors, and other products, which is 1.4 times the size of Tokyo Dome baseball field. It is a state-of-the-art facility with a quarter of its land area covered in greenery, solar power generation, rainwater harvesting facilities, and other environmentally friendly features.

View large plant system in VR reduces the cost and risk at on-site modification.Effective design reviews as if being in the real plant!

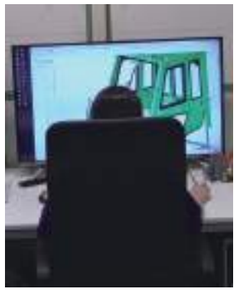
The company would like to use 3D data in the field more because it is visually effective in understanding the entire picture. When they first started using pronoDR, they were thrilled at how quickly they could find problems that would never have shown up on a 3D CAD system. When problems including hands getting stuck and heads bumping against objects on site arose onsite, they were assessed and fixed on site. This often resulted in extra cost and extended the construction process.
However, by utilizing VR, the cost and risk of on-site modifications that were previously incurred have been significantly reduced. We have no doubt that the accuracy of design reviews has improved.

NIPPON STEEL TEXENG CO., LTD

The finest steelmaking technology in the world is said to be found in Japan. The company has used its extensive know-how and experience in the construction of steelmaking plants to provide comprehensive services ranging from crisis design and manufacturing to installation. On the basis of the guiding principles of "ensuring safety and quality, low cost, and construction time reduction" the company is expanding its field of activity to all industrial fields, including steel, energy, science, and the environment.

In VR, you can experience a product with such accuracy that you mistake it for reality.

PronoVR's first impression was that it was so precise that it could be mistaken for reality, as it was almost identical feeling to see an actual product. When designing a vehicle's cabin, the placement of each component, as well as the design of the exterior, are important how it appears to the operator inside. Designers were concerned that the position of the mirror would be difficult to see due to its positional relationship with the pillar when designing the body, but they couldn't get a clear image by looking at the CAD model. With VR, the positional relationship between the pillars and mirrors could be determined clearly. It is beneficial to the customer if they can see the shape of the product before produced, and it eliminates the need to rework it. The best way to get a sense is not through numbers, but by entering the VR space and seeing it.



SANKI CO., LTD.

A manufacturer of cabins for industrial vehicles, agricultural machinery, and special vehicles in Ishikawa Japan. The company was one of the first small businesses to digitize various types of information used in manufacturing, and it now handles all information in 3D data from planning and design to production. Various types of information processing are systematized, including process management from order receipt to shipment, and a system is in place to facilitate retrieval and analysis of historical data.

Move

The Quest2 controller allows you to move around the VR environment.With the RIGHT JoyStick, you can move forward, backward, left, and right. With the LEFT JoyStick, you can rotate and move up and down.

Teleport

You can teleport wherever you want. If you want to move to a far away place, it takes time to move using the Quest2 controller, so it is recommended to use teleportation.

Footprint display

By displaying footprints, you can check the locus of movement.As a result, it is possible to check how workers move and perform maintenance during maintenance work.

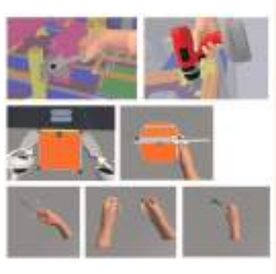
Location registration

You can register 3 locations in the VR space.
This allows the operator to jump to the desired position in an instant.

Marking

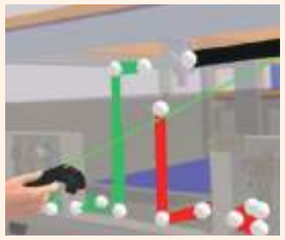
By marking the CAD model, you can keep the results of the design review.
In addition, since voice memos can be registered in markings, detailed situations can be left.
You can register a voice memo of up to 30 seconds.

Tool selection



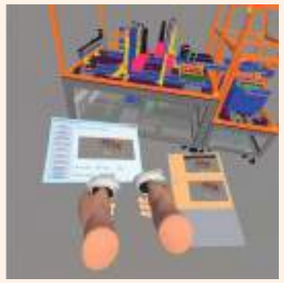
When you launch pronoDR, you will initially have a Quest2 controller in your hand.You can change this to any other tool.
You can hold various tools such as ratchets, spanners, and rulers. It is also possible to customize this so that it has its own tools.

Cable



We can design the cable for you.
The designed cable can be output in CSV format and can be read into CAD software as it is.
As a result, even people who are not familiar with CAD software can easily design cables and easily provide feedback to designers.

Screenshot



You can take a picture of the points of concern in the design review and keep it as a record.
It is also possible to shoot with the tool displayed.

Data import（in Japan）

A point cloud can be loaded and displayed simultaneously with the CAD model.
This function is currently implemented only in Japan.

Using CSV

Marking and cable positions are output in CSV format.
It can be reflected in Solidworks using the API.
Therefore, the position of cables and markings created in VR can be easily fed back to the designer.

Move/transparent/hide parts

Each part can be moved, and the display can be made translucent or hidden.
This allows you to remove obstructive parts such as covers and see what you can actually see through the windows.

Display of knees and feet

(Only HTC VIVE)

Knees and feet can be displayed using Vive Tracker.By displaying your feet in VR, you can experience the spaciousness of a cabin or other space.