

**CYBERDYNE announced start of selling a new next-gen Cleaning Robot CL02  
~ realizing safe and efficient cleaning through cutting-edge autonomous navigation  
and cleaning capability~**

CYBERDYNE, INC. [Tsukuba, Ibaraki, CEO: Yoshiyuki Sankai (the “Company”)] announced to commence selling of the next generation Cleaning Robot (“CL02”) in Japan from March 2018. CL02 utilizes cutting edge Cybernic Technology\* in order to realize extensive autonomous navigation and cleaning capability. While lack of manpower due to aging society is becoming a primary concern on cleaning sites, the Company aims to realize safe and efficient cleaning by enabling cleaners to interactively work side by side with robots. The Company proposes this as a new way of cleaning which could lead to improvement of cleaning quality as well.

**Main features of CL02**

- Reduces workers burden with autonomous cleaning and easy setups  
CL02 is capable of cleaning without the guidance of electric tapes or guide wires etc., as it is capable of recognizing and recording the building form and cleaning routes at high accuracy. An operator could either choose cleaning routes of CL02 or allow it to automatically generate cleaning paths. This enables CL02 to efficiently prepare for cleaning of large areas. As each setting could be controlled through a tablet device, CL02 can easily adapt to environments that require frequent route changes.
- Efficient and fast cleaning  
CL02 can clean faster compared to the previous model, covering a very wide area\*, in just one battery charge.  
\* May vary depending on the assigned cleaning areas or settings of speed.
- High level of safety with a 3D camera  
Through its 3D camera, CL02 is able to detect obstacles in its pathway in 3 dimensions so that it can safely stop temporarily.
- Feedback of assigned duty to improve cleaning quality  
Upon completion of its duty, CL02 can generate a map of dust distribution.



Visualization of cleaning results helps a client to make a more efficient and effective cleaning plan.

### Schedule

Because the Cleaning Robot can adapt to large facilities or buildings with complex structures, the Company anticipates implementing the device into commercial buildings, office buildings, airports and other large-scale facilities. Through CL02, the Company hopes to contribute to improvement of work environments on cleaning sites by making cleaning safer and more efficient. The Company proposes this new way of cleaning to places where human interactively works side by side with robots to realize a society where human and technology coexist by connecting to each other.

\*“Cybernetics” (adjective: Cybernetic) is a new academic field that is centered around cybernetics, mechatronics and informatics and fused/combined with various other fields including brain/neuroscience, robotics, biology, behavioral science, psychology, law, ethics, and business administration. Cybernetics connects humans, robots and information functionally and establishes physical, informative and biological interaction. Cybernetics is championed by Yoshiyuki Sankai, a professor at the University of Tsukuba in Japan. Cybernetic Technology means a practical application of Cybernetics to technology.

