

EMERGENCY SUPPORT INSTRUMENT DISINFECTION ROBOTS TO HELP COMBAT THE COVID-19 CRISIS

To help combat the COVID-19 pandemic, disinfection robots are a solution that is immediately available for deployment and could make an important contribution. Such robots can indeed allow hospitals to meet disinfection requirements in a more efficient way: they help both **limit the spread of the virus** and **protect medical staff and patients**, while **relieving cleaning staff from the risky activity of disinfection**.

From the information collected from the media reports and disinfecting robot manufacturers, the demand for disinfection robots has spiked since the start of the COVID-19 pandemic. Our contacts with healthcare stakeholders (hospitals, hospital associations, etc.) have confirmed an interest from hospitals in this technology. **More than 500 hospitals across the EU (and UK) already replied positively** to an online survey launched by the Commission in June.

On 23 July, the Commission decided to launch an **action under the Emergency Support Instrument to support the distribution of disinfection robots**¹. With a budget of 15 million euros, the Commission plans to purchase about **200 disinfection robots** to be **donated to hospitals** across Europe. The selection of the beneficiaries of these donations should a priori be based on criteria prioritising the hospitals most in needs.

Characteristics of the disinfection robots that appear to be the most robust and the best-suited for deployment in hospitals are provided in annex.

To proceed with the implementation of this action, the input and the contribution of Member States would be needed to better assess the needs at national level, select target hospitals and help liaising with them.

More precisely, we would ask each member of the Health Security Committee to reply to the following questions:

1. **How many hospitals could make useful use of such robots in your country?**
2. **How would you suggest to select/prioritise hospitals in your country?**
3. **Would you be ready to help the Commission with the selection of hospitals and the information towards selected hospitals about the modalities of implementation of this action (including notably the signature of a donation agreement between the EC and each hospital receiving a disinfection robot)?**

¹ See Commission Decision C(2020) 5162

Annex – Main characteristics of disinfection robots

Disinfection robots that appear to be the most robust and the best-suited for deployment in hospitals have a number of characteristics:

- These disinfection robots can move run autonomously a pre-programmed cleaning routine in a designated space. The movement speed can exceed 5 km/h. Typically the robots are based on a platform of up to 100 x 100 cm, with the UV light sources positioned on the platform not exceeding the height of a door, making easy movement across hospitals possible. Typically, the disinfection robots carry a weight of 50 to 200 kg.
- The robots are powered by batteries rechargeable at docking stations, with sufficient battery capacity and action radius to perform the disinfection in an efficient manner. Based on interviews with hospitals, one robot is sufficient for the disinfection of a hospital with about 200 to 250 beds. The robots are based on mobile platforms, which, apart from autonomous movement, make it possible to transport the robot across a number of floors in elevators.
- The robots are able to perform at a certain speed, which corresponds to cleaning a standard-sized patient room of 20 to 25m² even as fast as in 15 minutes. On a single charge, the robots can disinfect about 10 rooms. For some of the more mature solutions, the operating time on a single charge is about 2-2.5 hours, with a charging time of about 3 hours.
- For disinfection, they use UV light sources of sufficient intensity – instead of chemical spray or vapour – which allows the room to be used again immediately after the completion of the disinfection process. The cleaning routine is under the remote control and monitoring of an operator, thus avoiding accidents and harm to people from the UV light. Neither the operator, nor anyone else, is in the room at the time of disinfection.
- The robots are safe to use in a hospital environment because of built-in safety measures such as object avoidance and collision prevention, as well as secure, in order not to be misused in security and cybersecurity breaches.
- They are easy to use by a trained operator from amongst the hospital's cleaning or hospital staff.
- The robots are technologically mature, fully tested, CE-marked and fully compliant with EU legal provisions.

As with other technologies, there are certain risks and potential issues. On one hand, it is necessary for the surfaces to be disinfected to be sufficiently exposed to the UV rays. On the other hand, the exposure of humans is to be avoided. Certain limitations of the technology may also make this type of robot too fragile for outdoor use, and thus suited for indoor use only.

A number of manufacturers can supply mature robotic disinfection solutions such as the ones described above. It is to be noted that, as the UV disinfection destroys all types of microbes (bacteria, fungi and viruses), the autonomous disinfection process has benefits reaching beyond the containment of the COVID-19 pandemic.