

CHALLENGES

- Biotech company U-Earth made significant progress in air particle research, testing, and purification technology but required a manufacturing partner to

Air pollution negatively impacts human health, causing respiratory diseases, heart attacks, and strokes. The toxins that create this pollution also poison our soil and water, unbalance fragile ecosystems, and endanger plant and animal life.

U-Earth, a biotech company at the forefront of air purification technology, emerges with a promising solution to this complex and pressing issue. Concentrating their efforts on spaces where air quality is vital for human health and safety — such as hospitals, offices, and industrial facilities — U-Earth strives to improve air quality by increasing access to and refining the functionality of their air purification products. Through dedication and innovation, the company aims to create a cleaner, healthier future for everyone, making clean air a human right.

U-Earth's products offer a multitude of advantages in areas with high foot traffic, such as:

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Breathing Easier: A Look at the Redesigned and Refined Air Purification Device

Jabil has revolutionized the industrial scalability of U-Earth's air purification device — the bioreactor — by minimizing its size, enhancing its capabilities, and incorporating recyclable materials. All of this paves the way for a more sustainable and efficient air purification solution. These improvements fulfilled U-Earth's technical needs and imparted more refined functionality to the bioreactor, making it versatile, safe, and appealing for any environment.

U-Earth's objective for their next-generation air purification technologies was twofold: to enhance air quality in any environment and to monitor the air in real time. Jabil has helped to industrialize enhanced air quality monitoring by employing a sensor that links to an air purifier, allowing the transmission of air quality data to end users via the U-Earth app or a computer. U-Lamp, a safe on the skin germicidal light (UVC at 222 nm), is a complementary accessory that enhances the Pure Air Zone performance against viruses and bacteria in crowded space. This integrated approach provides users with accurate and dependable information on the cleanliness and safety of the air they are breathing.

U-Earth's engaging app enables users to effortlessly access an extensive list of verified Pure Air Zones in their vicinity, while also providing a valuable educational platform for exploring an array of sustainability and climate change-related resources, including insightful news articles and in-depth reports. This interactive approach empowers individuals to become advocates for better air quality, ultimately leading to a cleaner and healthier environment.



Enhancing Air Quality Through Connected Sensors

To ensure that U-Earth's sensor was intuitive, a user-friendly human machine interface (HMI) was developed. The sensor tracks five critical parameters and displays the air quality status using a traffic light system on the monitor: green for good, yellow for average, and red for bad.

"Our monitoring systems constantly track air quality, ensuring your air remains clean. When the light is green, you know the air is clean. We designed this approach for user-friendly simplicity, even though the development process is quite complex," explained Maggio.

The HMI represents a crucial element in communicating air quality information to end users. However, seamless transmission of data from anywhere to the end user requires an additional layer of complexity. In order to implement these essential connectivity features in U-Earth's air quality sensor, Jabil used a cutting-edge System-on-Module (SoM). By leveraging the advanced capabilities of the SoM, Jabil was able to seamlessly provide the sensor with a range of connectivity options, including Wi-Fi, Bluetooth, and Ethernet. These options allow for the transmission of real-time air quality data to a cloud service for further analysis or to the app.

The final sensor, later named Sensor-X, was co-developed for U-Earth's air purification device and has demonstrated impressive capabilities in effectively monitoring air quality and providing comprehensive data to end users. It also showcases the importance of using innovative design and technology to tackle air quality issues.

Collaborating for Cleaner Air

For U-Earth to make a significant impact on air quality, it also needed to scale operations efficiently, all while staying true to the core principle of their business: to create cleaner air for all. Achieving this balance can present challenges, but with Jabil as its strategic partner, U-Earth has the support and resources to continue its commitment to environmental stewardship.

“Our sustainability partnership holds significant value in two ways,” stated Ferri. “First, it aligns with our core beliefs and values surrounding sustainability. Second, it enables us to leverage a powerful partnership to make sustainability more cost-effective to implement. Through this collaborative effort, we can effectively achieve our shared goals and drive a positive impact on the environment.”

The Jabil-U-Earth sustainability partnership has been a success thanks to effective