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DIGITAL HEARTS HOLDINGS Co., Ltd.

## DIGITAL HEARTS Takes on System Testing for the "NESCAFÉ GOLDBLEND Barista Duo+" ~ Automating Various Key Functional Tests in this IoT Device ~

DIGITAL HEARTS Co., Ltd. (hereinafter referred to as "DIGITAL HEARTS"), a subsidiary of DIGITAL HEARTS HOLDINGS Co., Ltd. (headquarters: Shinjuku-ku, Tokyo; President and CEO: Genichi Tamatsuka, and TSE First Section: Securities Code 3676), has signed an agreement with Nestlé Japan Ltd. (headquarters: Kobe City, Hyogo, Representative Director, President and CEO: Kozoh Takaoka). DIGITAL HEARTS will now take on the system testing of the coffee machine, NESCAFÉ GOLDBLEND Barista Duo+ (hereinafter referred to as "Barista Duo+"), launched in November 2019.

### ■ Key highlights around the testing of "Barista Duo+"

#### No.1 Bringing test automation to IoT devices

"Barista Duo+" is a coffee machine that connects to wi-fi and it means it is an IoT device that supports cashless payments and lets you know how much coffee and creamer is left by connecting to the internet. Given that this IoT device, not only does it require software testing, but it also requires you to take on physical tasks like adding coffee, creamer and water. This makes it especially difficult to test such a device. However, we were able to overcome the hurdles of testing this product by preparing a unique test environment and by utilizing "TestArchitect" which is a test automation tool provided by LOGIGEAR CORPORATION, one of the DIGITAL HEARTS' group companies.

#### No.2 Delivering high-quality and low-cost tests via experienced test automation engineers in the Vietnam office

For this particular project, we enlisted test engineers in our Vietnam office that have many years of experience serving our group's clients in the US, where test automation is very advanced. As a result, we were able to deliver high-quality tests efficiently and at low cost. In addition, to bridge the language barrier that often becomes an issue when using overseas resources, Japanese engineers at DIGITAL HEARTS stepped in to support the project in Japanese; providing an environment that would be equal to doing everything locally.

#### No.3 Not just functional testing, but also testing to ensure safety

We conducted safety tests to make sure that "Barista Duo+" did not compromise the safety of its users due to malfunction. To prevent the user from potentially being burned by hot water, we tested that function that coffee would not be dispersed unless an user was notified to place a cup.



## ■ Highlights of what we tested

1. Testing the various coffee extraction features on the menu	: All eight items on the menu (such as black coffee, café latte, and cappuccino) were tested to make sure the coffee was extracted properly based on the corresponding menu selected
2. Testing of the function to notify the remaining coffee and creamer	: We tested to make sure that the various sensors were accurately measuring how much coffee, creamer, or water was left in the product, and whether that information was correctly being notified to the dedicated mobile application.
3. Testing to make sure the device communicates with dedicated mobile application	: Testing was done to ensure users' preferences registered in the dedicated mobile application around coffee strength and foam amount were accurately reflected by the device.
4. Safety related testing	: We tested to ensure that the device doesn't cause injuries due to malfunction of the machine.

Since IoT devices, such as the "Barista Duo+", are linked to various other products and systems, it takes a lot of time and effort around system testing. In addition, very efficient and high-quality testing is required due to the fact that they devices are periodically updated with new features that need further testing.

We now have own automation tool as well as experienced automation engineers in Vietnam on top of our approximately 8000 testers in Japan that provide the human side of testing. We provide solutions around complex IoT testing by combining our capabilities of system testing. We look forward to improving the quality of various IoT devices by providing high-quality test solutions with accumulating experiences of our expertise in this field.

### **(For reference) NESCAFÉ GOLDBLEND Barista Duo+**

The NESCAFÉ GOLDBLEND Barista Duo+ is a coffee machine that is rented out to business, and provides high-quality coffee and lattes without the need for a human barista.

#### **[Main Features]**

- It has tanks for both coffee and ceamer (\*1) and serves eight different kinds of coffee and café latte drinks.
- A large two liter water tank means you do not need to refill the water that often.
- The sensor communicates the remaining coffee and creamer.
- Easy-to-use ten inch touch-screen display.
- The dedicated mobile application (\*2) provides cashless payments by bringing your phone close to the screen.

(\*1) Requires a specific creamer made for this product. (\*2) Requires the "Payment Service Usage Plan"

It all starts with a  
**NESCAFÉ**



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