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METHOD TO DETECT AND ENABLE SECURE LOCK FOR UNEXPECTED INPUT

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Method to detect and enabled secure lock for unexpected input

Abstract:

The pandemic has forced a large segment of the global workforce to go through a remote-work experiment on a scale never seen before -- and a lot has changed in the last 12 months.

The boundary between work, study and our personal lives has become blurred. Working at the kitchen table has become common and, for parents, juggling virtual school while trying to hit work deadlines has become a daily challenge.

Employers have also been forced to become nimbler. They've had to loosen restrictions on where employees can work, equip them with the tools do so and support them both professionally and personally. The same to teacher and students, classrooms become cloud based.

This invention is developing a secure zone to address if you've got a pet or toddler kids, those are extremely unlikely for a paw or tiny hand to hit input interface by accident. You know that an unguarded keyboard can spell disaster—or more likely, spell “dhjkhskauhkwuahjsdkja,mnsd” even worse send out the messages unexpectedly.

Problem Solved:

This invention is an independently secure docker for who had the problem with kids and/ or pets always opening cd-rom tray and pushing random buttons on the input devices. With this zone enabled automatically by sensing technology, the computer will no longer respond normally to random button pressing. Instead, the computer will now play different sounds and will show pictures on the screen...etc

Prior Solutions:

There is no prior solution that utilizes the sensor and EC to develop this advanced secure lock. Pets or kids always hit the keys and ruin anything we had started working on when you left your computer to answer the door, go to the bathroom or even worse during your work. Basically, Windows always have the manual combine key “Ctrl+Alt+ Del” to lock your computer. Some modern devices also include the ToF camera with advanced away lock feature.

However, those are not good enough. As the touch panel become more popular, its reserve toddlers the capabilities to Unlock the screen by slide the screen with wrong password or anything else.

Product Drawing and Algorithm:

- camara recognize non-auth user break in and ToF(IR) sensor to detect how long the object close machine to take action
- Automatically enable secure zone to lock input method by turn off touch, internal/external keyboard, mouse, click pad etc.
- User can use special combine key to force unlock or wait once the object leave machine out a distance.

Below are HW and FW block diagram.

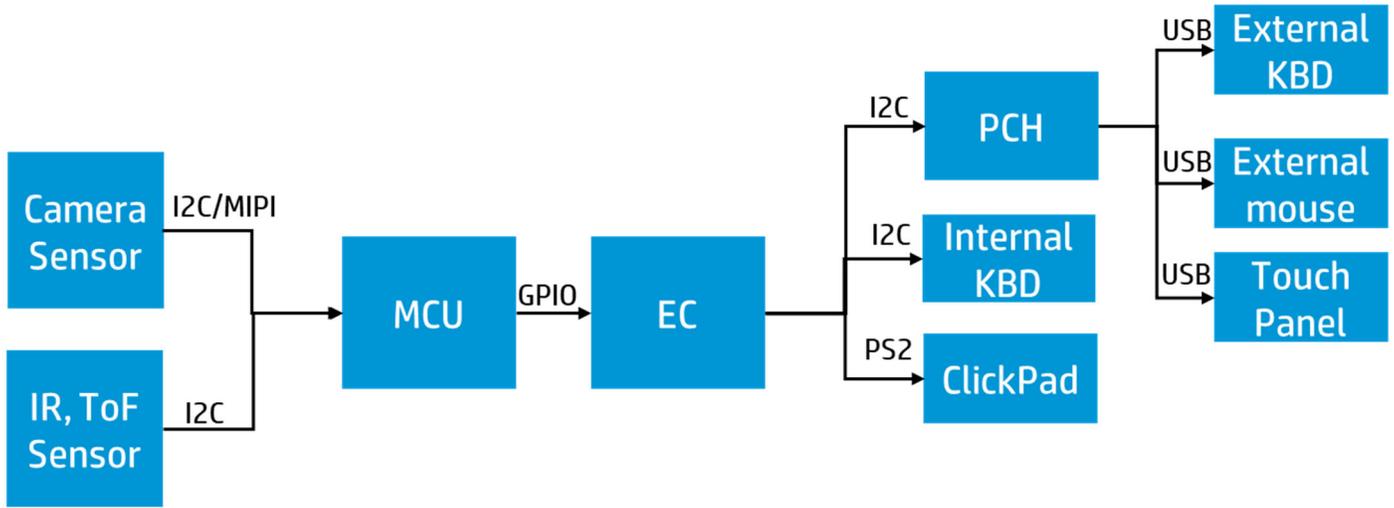


Figure 1 HW Block diagram

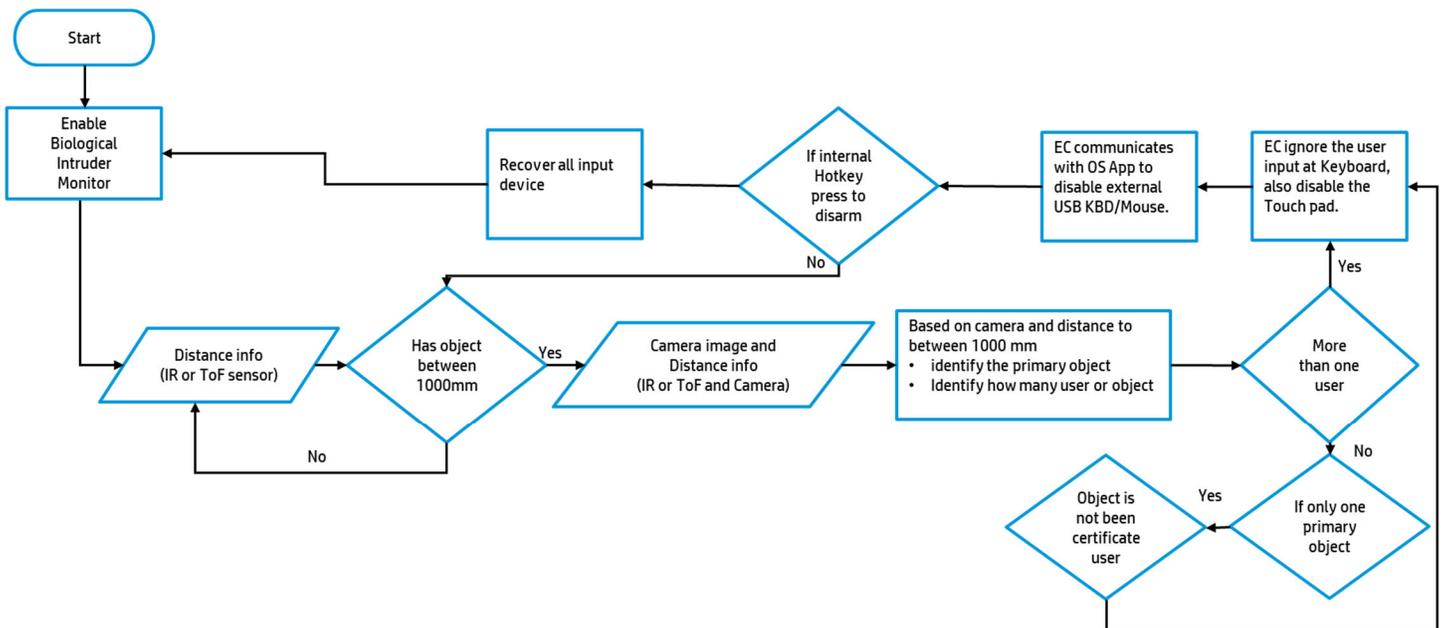


Figure 2 SW block diagram

Advantages:

This invention is an independently secure docker for who had the problem with kids and/ or pets always opening cd-rom tray and pushing random buttons on the input devices. With this method enabled the computer will no longer respond normally to random button pressing. Instead, the computer will now play different sounds and disable input interface by design. It's useful really, as the kids can mess around without actually doing anything, and it keeps them entertained so they don't go after the other stuff in your working area.

If you want to really protect your computer, the best way is to just keep it behind a door that kids or pets can't open. But if that isn't an option or preference, HP input secure lock is a groovy way to keep your kids from messing up your computer by pressing buttons. In the meantime, to prevent your colleagues receive the weird message accidentally. Which is the best, we provide both auto detect/enable mechanism by utilize distance calculation by IR sensor or you can manually control it to help yourself a secure zone.

Disclosed by Jerry Chen, Ashley Lu and Daniel Chang, HP Inc.