

CLAIMS

1. A method for processing a secure financial transaction using a Commercial off-the-shelf (COTS) or Internet of Things (IoT) device, the method comprising:
 - 5 in the COTS/IoT device:
 - requesting a Trusted Application Manager (TAM) to verify device identity and deploy a Trusted Application (TA) in a Trusted Execution Environment (TEE) of the COTS/IoT Device, Wherein the TEE is isolated from the operating system of the COTS/IoT device and runs in
 - 10 parallel;
 - executing an application on a COTS/IoT device;
 - initiating a resonance response when a tag is within a predetermined distance from the COTS/ IoT device with TA installed, and receive the tag information from the tag;
 - 15 processing a secure financial transaction using the COTS/IoT device based on the received tag information by accessing the TEE.
2. The method according to claim 1, wherein the COTS/IoT device includes a distributed ledger, and wherein the distributed ledger comprises
 - 20 information corresponding to at least one of COTS/IoT device ownership, manufacture, and usage information.

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3. The method according to claim 2, wherein the information corresponding to the COTS/IoT device in the distributed ledger is modified through the TEE.
- 5 4. The method according to claim 1, wherein the application is executed in the operating system of the COTS/IoT device.
5. The method according to claim 1, wherein the TEM is a remote system which verifies the identity of the COTS/IoT device and installs the TA in
10 the TEE of the COTS/IoT device.
6. The method according to claim 1, wherein the resonance response is performed multiple times, and a distance of the tag from the COTS/IoT device is calculated for each of the multiple resonance responses; and
15 wherein the secure financial transaction is initiated in an event a decrease in distance is identified in subsequent resonance responses using the COTS/IoT device.
7. The method according to claim 6, wherein the resonance response
20 to calculate the distance is implemented using one or more of light proximity, sound proximity or accelerator to determine the relative distance for the payment process to begin; wherein the distance is adjustable for fraud detection and for payment scheme compliance.

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8. A Commercial off-the-shelf (COTS) or an Internet of Things (IoT) device for processing a secure financial transaction, the COTS/IoT device is configured to:

5 execute, using an operating system part of a processor, an application on a COTS/IoT device;

 request, using the operating system part of the processor, a Trusted Application Manager (TAM) to verify device identity and install a Trusted Application (TA) in a Trusted Execution Environment (TEE) of
10 the COTS/IoT Device, Wherein the TEE is isolated from the operating system of the COTS/IoT device and runs in parallel on a TEE part of the processor;

 execute an application on a COTS/IoT device;

 initiate, using the operating system part of the processor, a
15 resonance response when a tag is within a predetermined distance from the COTS/ IoT device with TA installed, and receive the tag information from the tag;

 process, using the operating system part of the processor, a secure financial transaction using the COTS/IoT device based on the
20 received tag information by accessing the TEE part of the processor.

9. The COTS/IOT device according to claim 8, wherein the COTS/IoT device further comprises a distributed ledger, and wherein the distributed

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ledger comprises information corresponding to at least one of COTS/IoT device ownership, manufacture, and usage information.

10. The COTS/IoT device according to claim 9, wherein the information
5 corresponding to the COTS/IoT device in the distributed ledger is modified through the TEE.