

WHAT IS CLAIMED IS:

- 1 1. A method comprising:
2 determining, by a test computer, a test plan to test a kernel on a mobile
3 device;
4 determining, by the test computer, an interaction input message
5 according to the test plan, the interaction input message comprising first data;
6 transmitting, by the test computer, the interaction input message
7 comprising the first data to the mobile device over a network-based communication
8 channel, wherein the kernel in the mobile device generates an interaction output
9 message in response to receiving the interaction input message;
10 receiving, by the test computer from the mobile device, the interaction
11 output message comprising second data from the mobile device over the network-
12 based communication channel; and
13 determining, by the test computer, if the interaction output message is
14 consistent with the test plan.
- 1 2. The method of claim 1, wherein the network-based
2 communication channel is a TCP/IP communication channel.
- 1 3. The method of claim 1, determining if the interaction output
2 message is consistent with the test plan comprises determining if the second data is
3 expected by the test.
- 1 4. The method of claim 1, wherein the mobile device is a
2 smartphone.
- 1 5. The method of claim 1, wherein the test computer comprises a
2 test engine.
- 1 6. The method of claim 1, wherein the mobile device comprises an
2 interaction application comprising the kernel.
- 1 7. The method of claim 1, wherein the test computer comprises a
2 test engine, a virtual reader, and a socket server, the test engine providing the

3 interaction input message in a first format to the virtual reader, and the virtual reader
4 providing the interaction input message in a second format to the socket server.

1 8. The method of claim 7, wherein the mobile device comprises a
2 virtual device, wherein virtual device receives the interaction input message in the
3 second format and provides the interaction input message in the first format to the
4 kernel.

1 9. A test computer comprising:
2 a processor; and
3 a computer readable medium coupled to the processor, the computer
4 readable medium comprising instructions executable by the processor, to cause the
5 test computer to:
6 determine a test plan to test a kernel on a mobile device;
7 determine an interaction input message according to the test plan, the
8 interaction input message comprising first data;
9 transmit the interaction input message comprising the first data to the
10 mobile device over a network-based communication channel, wherein the kernel in
11 the mobile device generates an interaction output message in response to receiving
12 the interaction input message;
13 receive, from the mobile device, the interaction output message
14 comprising second data from the mobile device over the network-based
15 communication channel; and
16 determine, if the interaction output message is consistent with the test
17 plan.

1 10. The test computer of claim 9, wherein the test computer further
2 comprises a memory comprising a plurality of test plans for testing the kernel.

1 11. The test computer of claim 9 wherein the computer readable
2 medium comprises a virtual reader and a socket server.

1 12. The test computer of claim 9, wherein the network-based
2 communication channel comprises a TCP/IP channel.

1 13. The test computer of claim 9, wherein the test computer further
2 comprises a memory comprising a plurality of test reports.

1 14. A method comprising:
2 receiving, by a mobile device comprising a kernel from a test computer,
3 an interaction input message comprising first data over a network-based
4 communication channel;
5 generating, by the kernel in the mobile device, an interaction output
6 message comprising second data in response to receiving the interaction input
7 message; and
8 transmitting, by the mobile device, the interaction output message to
9 the test computer over the network-based communication channel.

1 15. The method of claim 14, wherein the mobile device further
2 comprises a virtual device, which interacts with the kernel.

1 16. The method of claim 14, wherein the mobile device comprises
2 an interaction application comprising the kernel.

1 17. The method of claim 14, wherein the mobile device is a
2 smartphone.

1 18. The method of claim 14, wherein the mobile device comprises
2 NFC hardware.

1 19. The method of claim 14, wherein the mobile device comprises
2 an NFC API between the kernel and NFC hardware.

1 20. The method of claim 14, wherein the network-based
2 communication channel is a TCP/IP based communication channel.