

What is claimed is:

1. A method for aligning a removably attachable skin analysis device, the skin analysis device comprising a housing that defines a housing aperture, the housing aperture comprising a housing aperture center and wherein the housing aperture is centered on a camera of the mobile device when the skin analysis device is in an aligned position, the housing further comprising skin analysis components that perform skin analysis, the method comprising:
 - observing the skin analysis device in a current position on the mobile device;
 - capturing, with the camera, a current position image, wherein the current position image comprises at least a portion of the housing aperture;
 - processing the current position image to determine if the current position is the aligned position; and
 - communicating a message from the processing.
2. The method of claim 1 wherein the processing further comprises:
 - performing halo processing; and
 - if the halo processing is successful:
 - using bottom surface micro processing to confirm the halo processing.
3. The method of claim 1 wherein the camera has a field of view further comprising a field of view center and wherein the processing further comprises:
 - locating the housing aperture center in the current position image;
 - checking if the housing aperture center is centered on the field of view center in the current position image; and

returning a success message if the housing aperture center is centered on the field of view center and a failure message if the housing aperture center is not centered on the field of view center.

4. The method of claim 3 wherein the housing aperture has a circular bottom surface, and a portion of the housing aperture in the current position images comprises a set of arc portions of the circular bottom surface and the locating comprises using the set of arc portions to determine the housing aperture center.
5. The method of claim 3 wherein the locating comprises performing halo processing.
6. The method of claim 4 wherein, if the housing aperture center is not centered on the field of view center in the current position image, the checking further comprises:

computing an adjustment, using the located housing aperture center, to apply to the skin analysis device to move the skin analysis device from the current position to the aligned position; and

wherein the failure message further comprises the adjustment.

7. The method of claim 6 wherein the calculating further comprises cropping the current position image to normalize for the camera's field of view.
8. The method of claim 6 where the processing further comprises:

macro processing the current position image for a misalignment visual indicator; and

if a misalignment visual indicator is found then returning a failure message that further comprises an adjustment to remove the misalignment visual indicators from the current position image.
9. The method of claim 3 further comprising displaying, on the screen of the mobile device, the message.

10. The method of claim 3 further comprising performing joint functionality, if the message is a success message.
11. A method for preparing an alignment dependent mobile device accessory (mobile device accessory) in an aligned position on a mobile device, the method comprising:
- observing the mobile device accessory in a current position, removably attached to the mobile device, the current position being an unknown alignment position;
 - obtaining a current position image from a camera of the mobile device, the current position image comprising an image of at least a portion of the mobile device accessory in the current position;
 - processing the current position image to determine if the current position is the aligned position; and
 - communicating a message from the processing.
12. The method of claim 11 wherein if the current position is not the aligned position then the processing further comprises:
- calculating an adjustment to apply to the mobile device accessory to move the mobile device accessory from the current position to the aligned position and the message further comprises the adjustment.
13. The method of claim 12 wherein the processing further comprises:
- macro processing the current position image for a misalignment visual indicator; and
 - if a misalignment visual indicator is found then the message further comprises an adjustment to remove the misalignment visual indicators from the current position image.
14. The method of claim 11 further comprising:

showing, on a screen of the mobile device and before the observing, an alignment guide to assist in placing the mobile accessory in the current position.

15. The method of claim 7 wherein the alignment guide has a shape of a base connector of a mobile device accessory, wherein the base connector is to touch the screen in the location and orientation of the alignment guide and wherein the alignment guide's shape and location vary for each mobile device.

16. A system for skin care analysis comprising:

a skin analysis device, removably attachable to a mobile device, the skin analysis device comprising a housing that defines a housing aperture, the housing aperture comprising a housing aperture center and wherein the housing aperture is centered on a camera of the mobile device when the skin analysis device is in an aligned position, the housing further comprising skin analysis components that perform skin analysis; and

the mobile device, further comprising a screen, an app, and a camera, the mobile device configured to:

capture, with the camera, a current position image, wherein the current position image comprises at least a portion of the housing aperture;

process the current position image to determine if the current position is the aligned position; and

communicate a message from the processing.

17. The system of claim 18 wherein the camera has a field of view further comprising a field of view center and wherein the processing further comprises:

locating the housing aperture center in the current position image;

checking if the housing aperture center is centered on the field of view center in the current position image; and

returning a success message if the housing aperture center is centered on the field of view center and a failure message if the housing aperture center is not centered on the field of view center.

18. The system of claim 19 wherein the housing aperture has a circular bottom surface, and a portion of the housing aperture in the current position images comprises a set of arc portions of the circular bottom surface and the locating comprises using the set of arc portions to determine the housing aperture center.

19. The system of claim 20 wherein, if the housing aperture center is not centered on the field of view center in the current position image, the checking further comprises:

computing an adjustment, using the located housing aperture center, to apply to the skin analysis device to move the skin analysis device from the current position to the aligned position; and

wherein the failure message further comprises the adjustment.

20. The system of claim 21 wherein the mobile device is further configured to crop the current position image to normalize for the camera's field of view.