

19. The apparatus of claim 17, wherein the tactile attributes comprise at least two of a tactile pin height attribute, a tactile pin pattern attribute, and a tactile pin hardness attribute.

20. The apparatus of claim 17, wherein the tactile attributes comprise at least a tactile pin height attribute, a tactile pin pattern attribute, and a tactile pin hardness attribute.

21. The apparatus of claim 1, wherein the apparatus further comprises a third device driver to detect a user selection of a tactile enhanced visual image.

22. The apparatus of claim 21, wherein the second and third device drivers are one of the same device driver.

23. The apparatus of claim 1, wherein the apparatus is a selected one of a multi-device remote control, a personal digital assistant, and a wireless mobile phone.

24. The apparatus of claim 1, wherein the apparatus is a selected one of a palm sized computer, a tablet computer, a laptop computer, a desktop computer, a set-top box, and a media player.

25. A machine implemented computing method comprising:

receiving a request for a graphics operation to render a tactilely enhanced visual image; and

generating in response, a plurality of pixel and piston data for said tactilely enhanced visual image to be rendered.

26. The method of claim 25, wherein said generating comprises generating a plurality of pixel and piston data for said tactilely enhanced visual image to be rendered, based at least in part on an image specification specifying said tactilely enhanced visual image to be rendered.

27. The method of claim 26, wherein the image specification comprises

an identification of the visual image to be rendered; and

one or more tactile attribute specifications specifying one or more tactile attributes for tactile enhancements of the rendered visual image.

28. The method of claim 27, wherein the tactile attributes comprise at least a selected one of a tactile pin height attribute, a tactile pin pattern attribute, and a tactile pin hardness attribute.

29. The method of claim 27, wherein the tactile attributes comprise at least two of a tactile pin height attribute, a tactile pin pattern attribute, and a tactile pin hardness attribute.

30. The method of claim 27, wherein the tactile attributes comprise a tactile pin height attribute, a tactile pin pattern attribute, and a tactile pin hardness attribute.

31. The method of claim 25, wherein the method further comprises:

rendering the visual image using the generated pixel data; and

tactilely enhancing the rendered visual image using the generated piston data.

32. A machine readable image specification comprising: an identification of a visual image to be rendered; and

one or more tactile attribute specifications specifying one or more tactile attributes for tactile enhancements of the rendered visual image.

33. The image specification of claim 32, wherein the tactile attributes comprise at least a selected one of a tactile pin height attribute, a tactile pin pattern attribute, and a tactile pin hardness attribute.

34. The image specification of claim 32, wherein the tactile attributes comprise at least two of a tactile pin height attribute, a tactile pin pattern attribute, and a tactile pin hardness attribute.

35. The image specification of claim 32, wherein the tactile attributes comprise a tactile pin height attribute, a tactile pin pattern attribute, and a tactile pin hardness attribute.

36. A data structure comprising:

a plurality of pixel data of a visual image to be rendered; and

a plurality of piston data to tactilely enhance the rendered visual image.

37. The data structure of claim 36, wherein the piston data are generated in accordance with one or more tactile attributes of the tactile enhancements of the rendered visual image.

38. The data structure of claim 37, wherein the tactile attributes comprise at least a selected one of a tactile pin height attribute, a tactile pin pattern attribute, and a tactile pin hardness attribute.

39. The data structure of claim 37, wherein the tactile attributes comprise at least two of a tactile pin height attribute, a tactile pin pattern attribute, and a tactile pin hardness attribute.

40. The data structure of claim 37, wherein the tactile attributes comprise a tactile pin height attribute, a tactile pin pattern attribute, and a tactile pin hardness attribute.

41. An apparatus comprising:

display means for displaying tactilely enhanced visual images;

first control means for controlling selective activation/deactivation of pixels to facilitate rendering of visual images; and

second control means for controlling complementary selective tactile enhancements of selected ones of the rendered visual images.

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