

ROM, time to download, and otherwise inconvenient steps that interrupt operation of the electronic device.

[0004] Thus, there is a need in the art for firmware virtualization for faster deployment of new firmware and expanding firmware capability.

SUMMARY OF THE INVENTION

[0005] Embodiments of the present invention generally relate to a method, apparatus for firmware virtualization of a user device using calls to remotely stored firmware to execute remote processes and returning the results of the process to the user device firmware that is substantially shown in and/or described in connection with at least one of the figures, as set forth more completely in the claims.

[0005a] According to a first aspect of the present invention, there is provided a method operative to virtualize firmware of a user device comprising: storing virtualized firmware for the user device on a remote server; receiving firmware data from the user device via a network; assigning a portion of the firmware data to a corresponding virtualized firmware stored on the remote server; inserting the portion of the firmware data into the corresponding virtualized firmware; and deploying at least one remote process to access remote services offered by the remote server based on the corresponding virtualized firmware containing the portion of the firmware data.

[0005b] According to a second aspect of the present invention, there is provided a method to access from a user device, a firmware virtualization system on a remote server comprising: connecting over a network to a remote virtualized firmware platform on the remote server using a connection manager on the user device; sending a firmware data from embedded firmware stored on the user device to the virtualized firmware platform for deployment of a remote process based on the firmware data; receiving a processed data from the executed remote process by the virtualized firmware platform, wherein the processed data is in a native language of the embedded firmware; and operating the user device and embedded firmware based on the processed data.

[0005c] According to a third aspect of the present invention, there is provided a system operative to virtualize firmware of a user device comprising: at least one processor; at least one input device coupled to at least one network; and at least one storage device storing processor executable instructions which, when executed by the at least one processor, performs a method including: storing virtualized firmware for a user device on a remote server; receiving firmware data from the user device via a network; assigning a portion of the firmware data to a corresponding virtualized firmware stored on the remote server; inserting the portion of the firmware data into the corresponding virtualized firmware; and deploying at least one remote process to access remote services offered by the remote server based on the corresponding virtualized firmware containing the portion of the firmware data.

[0006] These and other features and advantages of the present disclosure may be appreciated from a review of the following detailed description of the present disclosure, along with the accompanying figures in which like reference numerals refer to like parts throughout.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] So that the manner in which the above recited features of the present invention can be understood in detail, a more particular description of the invention, briefly summarized above, may be had by reference to embodiments, some of which are illustrated in the appended drawings. It is to be noted, however, that the appended drawings illustrate only typical embodiments of this invention and are therefore not to be considered limiting of its scope, for the invention may admit to other equally effective embodiments.

[0008] Figure 1 is an illustration of a firmware virtualization system in accordance with one or more embodiments of the present invention;

[0009] Figure 2 is an illustration of a firmware virtualization system in accordance with one or more embodiments of the present invention;