obtained from the local cache (RAM **226**). If not, the device issues a new request to the one or more map servers **400**, **410** in the same manner as described above.

[0075] Operation of the present technology introduced above will now be described with reference to the method steps depicted in the flowchart of FIG. **5**. As depicted in FIG. **5**, this novel method of selectively magnifying onscreen information (such as map information) displayed on a touch-screen (or other type of display) of a handheld electronic device (such as a wireless communications device) includes an initial step **600** of launching an information-presenting application, e.g. a mapping application. This can be done directly by the user of the device, indirectly by means of another application, e.g. an LBS application that causes the map application to open, or "automatically" by putting the device into "navigation mode".

[0076] At step **602**, the device can then obtain a current position of the device. This can be done using the onboard GPS chip. Map data is then downloaded for the area of interest around the current position (step **604**). A map is then rendered for display onscreen (step **606**), optionally with a graphical current position indicator (icon, symbol, crosshairs, etc.) representing the current position on the map. At step **608**, the shape-changing zone or zones above the current position are actuated to form a magnifying lens over the current position, thus visually magnifying the current position and the immediately surrounding area. This can be useful when navigating because details in the immediate vicinity of the current position are more easily readable while nevertheless retaining the peripheral information onscreen that is helpful in maintaining a sense of overall context. At step **610**, a decision is made as to whether to update the map. If the device is operating in navigation mode, then the map will be continually updated as the device moves into new territory. Of course, if the device backtracks then recently downloaded map data can be retrieved from a local cache. At step **612**, operations cease if no further map data is required.

[0077] FIG. **6** shows another flowchart depicting steps of magnifying a route on a map. In this case, as will be elaborated below, the route from a starting location to a destination location is magnified to facilitate viewing of map features or details along the route. As will be described and illustrated further on, this can be done is two ways: first, by magnifying the entire route at once or, second, by using a movable lens that is displaced along the route from the starting point to the destination point. As is apparent from a comparison of FIGS. **5** and **6**, the steps are in general the same. However, in FIG. **6**, the step **602** requires specification of a route. Step **604** entails obtaining not only map data but the route as well. Step **606** entails not only displaying the map but also the particular route. Often this is done by highlighting the sequential path segments defining the route. Step **608** then involves actuating shape-changing zones to form a magnifying lens over the route, either, as noted above, as a single elongated lens covering the entire route (to the extent visible onscreen) or by employing a moving or sliding lens that displaces at an visually ergonomic pace over the route. The lens can be made to repeat its sweep over the route.

[0078] FIG. **7** is a cross-sectional view of an exemplary shape-changing touch-sensitive display screen generally designated by reference numeral **700** used for creating an "adaptive lens" in accordance with implementations of the present technology. Although this technology is preferably implemented using a touch-sensitive display, other types of display screens (such as a regular LCD screen, a plasma-type screen or even a CRT-type screen) can be used provided there is a shape-changing layer incorporated or otherwise attached thereto. For screens that are not touch-sensitive, the adaptive lens can be made to follow a cursor, arrow, current position graphical indicator, or any other element or item onscreen. The expressions "adaptive lens" or "magnifying lens" mean a convex bulge formed by activation or actuation of an expandable gel, fluid or gas contained within one or more shape-changing zones or cells in an array of shape-changing zones in a shape-changing layer. By causing one or more zones or cells to bulge into a convex shape, the resulting magnifying lens visually magnifies any information displayed beneath by the LCD layer. The lens is said to be "adaptive" because it can adapt or dynamically react to particular information being displayed onscreen, as will be elaborated below, such as, for example, following an icon or cursor around the screen, tracking the current position of the device, etc.

[0079] FIG. **7** illustrates one possible layering of surfaces that form the exemplary display screen **700** of the handheld electronic device. The bottom layer **702** is a layer in which the liquid crystal display (LCD) would be found. The LCD visually presents information in a manner well understood in the art. A capacitive or other touch screen layer **704** is positioned immediately above the LCD layer **702**. A number of different touchscreen technologies (e.g. resistive, capacitive, surface acoustic wave, infrared, strain gauge, optical imaging, dispersive signal, acoustic pulse recognition) can be used to produce a touch-sensitive graphical user interface that is capable of simultaneously displaying content to the user while receiving user input from the user's finger(s) or stylus.

[0080] The touch-sensitive (e.g. capacitive) layer **704** is used to detect the tactile touchscreen input by the depression of a finger or stylus on the touchscreen. In other words, this capacitive layer **704** is used to detect digital press-engagement or other actuation (e.g. stylus) by the user on the screen. An activation layer **706** is positioned immediately above the capacitive layer **704**. The activation layer **706** is used to activate the cells (or "zones") located above in the shape-changing upper surface **708**. This shape-changing upper surface **708** can be constructed such that it incorporates a protective cover layer **710**. Alternatively, the cover layer **710** may be incorporated within the shape-changing upper surface **708**. This cover layer **710** provides an extra layer of protection to the display screen. The shape-changing upper surface **708** alternatively can be described as a shape-adaptive, exposed upper surface whose zones can be actuated to expand into one or more magnifying lenses for visually magnifying information presented by the LCD layer. In a preferred embodiment, the layers above the display layer are composed of a substantially transparent material. When these layers are composed of substantially transparent material, they allow for visualization of images presented on the lower display of the adaptive display screen. Other layouts may also be implemented.

[0081] As shown in FIG. **7**, the activation layer **706** can be adapted such that only a single size-alterable zone is activated while the remaining size-alterable zones are not. In other words, the activation layer **706** can control a single size-alterable zone without activating the adjacent or neighbouring size-alterable zones. However, in response to the changes of a size-alterable zone, the adjacent size-alterable zones may or may not experience minor changes in shape. These size alterable zones can change shape in response to a control program that adjusts the shape and size of the zones.