angle, arrows, crosshairs, etc.) can be used in lieu of the car icon. This car icon is a "graphical current position indicator". The graphical current position indicator is often automatically centered on the map, although, as shown in FIG. **10**, this need not be the case. In any event, the car icon is shown approaching a diamond-shaped highway interchange where further map detail might be useful to the driver/navigator. For example, there might be specific signs, points of interest, or unusual exit ramps that are not apparent at the zoom level of the map of FIG. **10**. By applying the novel lens technology, the device can be configured to automatically track the current position and to position a magnifying lens over the current position and its immediately surrounding area (with or without a slight forward bias).

[0089] FIG. **11** schematically depicts the magnifying lens formed at the onscreen location representing the current position of the device (the car icon) in accordance with another implementation of the technology. In this particular example, the lens magnifies the current position of the device (as represented by the car icon) with a substantial forward bias, to show the target area immediately forward of the device. Additional map features would then be more easily seen by the user. The device can be configured to automatically magnify the current position when operating in navigation mode. The device could furthermore be responsive to the user touching the screen at another location to provide a lens at that selected location (either by temporarily replacing the lens over the current position with a new lens over the arbitrarily selected position or by adding the new lens without removing the existing lens).

[0090] FIG. **12** is an example of a map showing a route from a starting location to a destination location. As alluded to previously, this novel local-magnification technology can be used to zoom in on the route, either by magnifying the entire route at once (to be discussed and illustrated below) or by sequentially magnifying the route by displacing the lens over the route at a pace that enables the user to view details and characteristics of the route. The latter scenario is presented in FIG. **13**. In other words, FIG. **13** schematically depicts a moving magnifying lens that propagates along the route. The lens is formed or synthesized at the starting location and then slid, moved or displaced along the route to the destination as represented schematically by the multiple circular lenses in FIG. **13**. This can be accomplished by dynamically redefining the target area as the target area is displaced over the route from the starting point to the destination point whereby shape-changing zones along the route change shape to visually magnify the route. In that sense, the lens is adaptive because it adapts to the particular route.

[0091] FIG. **14** is another example of a map showing a route from a starting location to a destination location at a zoom level where map details are not easily readable. As shown at the diamond interchange, the map is displaying a number of small icons that are difficult to read. In this case, as shown in FIG. **15**, the entire route can be magnified all at once. This is accomplished by statically defining the target area as encompassing the entire onscreen length of the route.

[0092] FIG. **15** schematically depicts an oblong magnifying lens formed over the entire route, thus magnifying map details that would ordinarily not be easily readable at that zoom level. In particular, the magnifying lens enlarges a number of icons surrounding the diamond interchange such as the speed limit, an exit sign, a construction warning and a train station icon. By virtue of the local magnification of these icons, the user can readily discern what they are with a quick glance. By only magnifying the portion around the interchange, the map retains peripheral onscreen information such as highways 206 and 306 and Interstate 95. This is helps the user navigate by preserving the user's overall sense of context.

[0093] In each of the foregoing examples, the device first detects what sort of information is being presented. For example, if the device detects that it is operating in navigation mode, the lens is formed over the current position indicator. If the device detects that a route has been obtained, then the route is magnified in one of the two manners described above. If the device detects touchscreen input, then the lens can be formed at that touched location onscreen. Of course, as mentioned earlier, the information presented onscreen need not be confined to maps. This lens can be used to magnify a portion of text, graphics, a digital photo, or any other onscreen information.

[0094] Although touchscreen devices represent a preferred implementation of this adaptive lens technology, the shape-changing zones (and shape-changing layer) can also be implemented on other types of screens that are not touch-sensitive.

[0095] This new technology has been described in terms of specific implementations and configurations (and variants thereof) which are intended to be exemplary only. The scope of the exclusive right sought by the applicant is therefore intended to be limited solely by the appended claims.

1. A method of displaying information on a display of a handheld electronic device, the method comprising steps of:
- determining a target area to be visually magnified; and
- causing a shape-changing zone of the display to change shape in the target area to visually magnify information displayed in the target area.

2. The method as claimed in claim **1** wherein the step of determining the target area comprises steps of:
- detecting that the device is operating in navigation mode in which a map of a current position of the device is displayed on the display of the device;
- identifying the current position of the device onscreen; and
- defining the target area to encompass the current position of the device onscreen.

3. The method as claimed in claim **1** wherein the step of determining the target area comprises steps of:
- detecting a route on a map that is displayed on a display of the device;
- identifying a starting point of the route and a destination point of the route;
- defining the target area to encompass the starting point; and
- dynamically redefining the target area as the target area is displaced over the route from the starting point to the destination point whereby shape-changing zones along the route change shape to visually magnify the route.

4. The method as claimed in claim **1** wherein the step of determining the target area comprises steps of:
- detecting a route on a map that is displayed on a display of the device; and
- statically defining the target area as encompassing an entire onscreen length of the route.

5. The method as claimed in claim **1** wherein the step of determining the target area comprises steps of:
- receiving touchscreen input at an onscreen location of the display; and