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(54) **AUGMENTATION OF A DYNAMIC TERRAIN SURFACE**

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CPC **G06T 17/05** (2013.01); **E02F 9/245** (2013.01); **G06T 17/10** (2013.01); **G06T 19/006** (2013.01)

(58) **Field of Classification Search**
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See application file for complete search history.

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(57) **ABSTRACT**

In one embodiment, an augmented view is generated that accounts for dynamically changing terrain surface at a site. A sensor captures live georeferenced terrain surface topography for the site. A camera captures an image of the site. Further, a tracking system determines a georeferenced camera pose of the camera. An augmented reality application aligns a georeferenced three-dimensional (3-D) model for the site with the live georeferenced terrain surface topography. Then, using at least the captured image, the georeferenced camera pose, the georeferenced 3-D model and live georeferenced terrain surface topography, the augmented reality application creates an augmented view of the site that shows graphical representations of subsurface features. At least a portion of the graphical representations are dynamically conformed to the contours of the terrain surface in the image based on the live georeferenced terrain surface topography. The graphical representations may include virtual excavation and/or virtual paint markings.

20 Claims, 9 Drawing Sheets

