

(12) **United States Patent**  
**Yaron et al.**

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- (54) **REMOTE LANDSCAPE DISPLAY AND PILOT TRAINING**
- (75) Inventors: **Ronnie Yaron**, Kadima; **Ofer Shor**, Tel Aviv, both of (IL)
- (73) Assignee: **Skyline Software Systems Ltd.**, Givat Shmuel (IL)
- (\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
- (21) Appl. No.: **09/258,663**
- (22) Filed: **Feb. 26, 1999**

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*Primary Examiner*—Mark Zimmerman  
*Assistant Examiner*—Lance W. Sealey  
 (74) *Attorney, Agent, or Firm*—Duane Morris LLP

**Related U.S. Application Data**

- (63) Continuation-in-part of application No. 08/939,948, filed on Sep. 29, 1997, now Pat. No. 6,111,583.
- (51) **Int. Cl.**<sup>7</sup> ..... **G06T 17/00**
- (52) **U.S. Cl.** ..... **345/428; 345/582; 345/419**
- (58) **Field of Search** ..... 345/419, 582, 345/428; 342/36, 44, 357.01, 456; 701/207

(57) **ABSTRACT**

A method of providing data blocks describing three-dimensional terrain to a renderer. The data blocks belong to a hierarchical structure which includes blocks at a plurality of different resolution levels. The method includes receiving from the renderer one or more coordinates in the terrain along with indication of a respective resolution level, providing the renderer with a first data block which includes data corresponding to the one or more coordinates, from a local memory, and downloading from a remote server one or more additional data blocks which include data corresponding to the one or more coordinates if the provided block from the local memory is not at the indicated resolution level.

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**24 Claims, 9 Drawing Sheets**

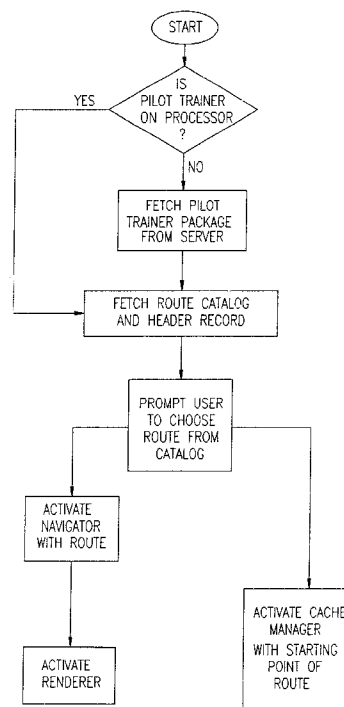
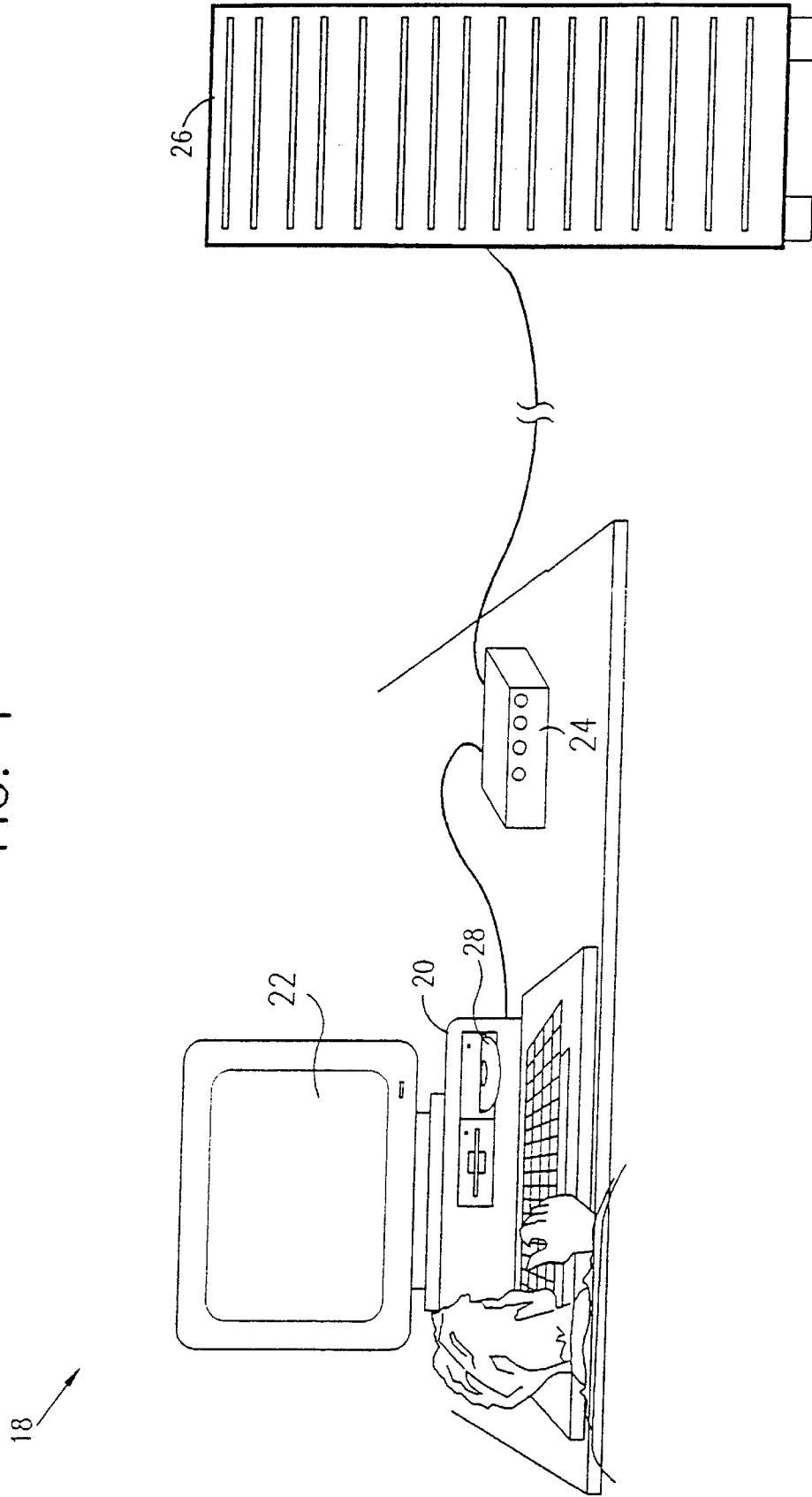


FIG. 1



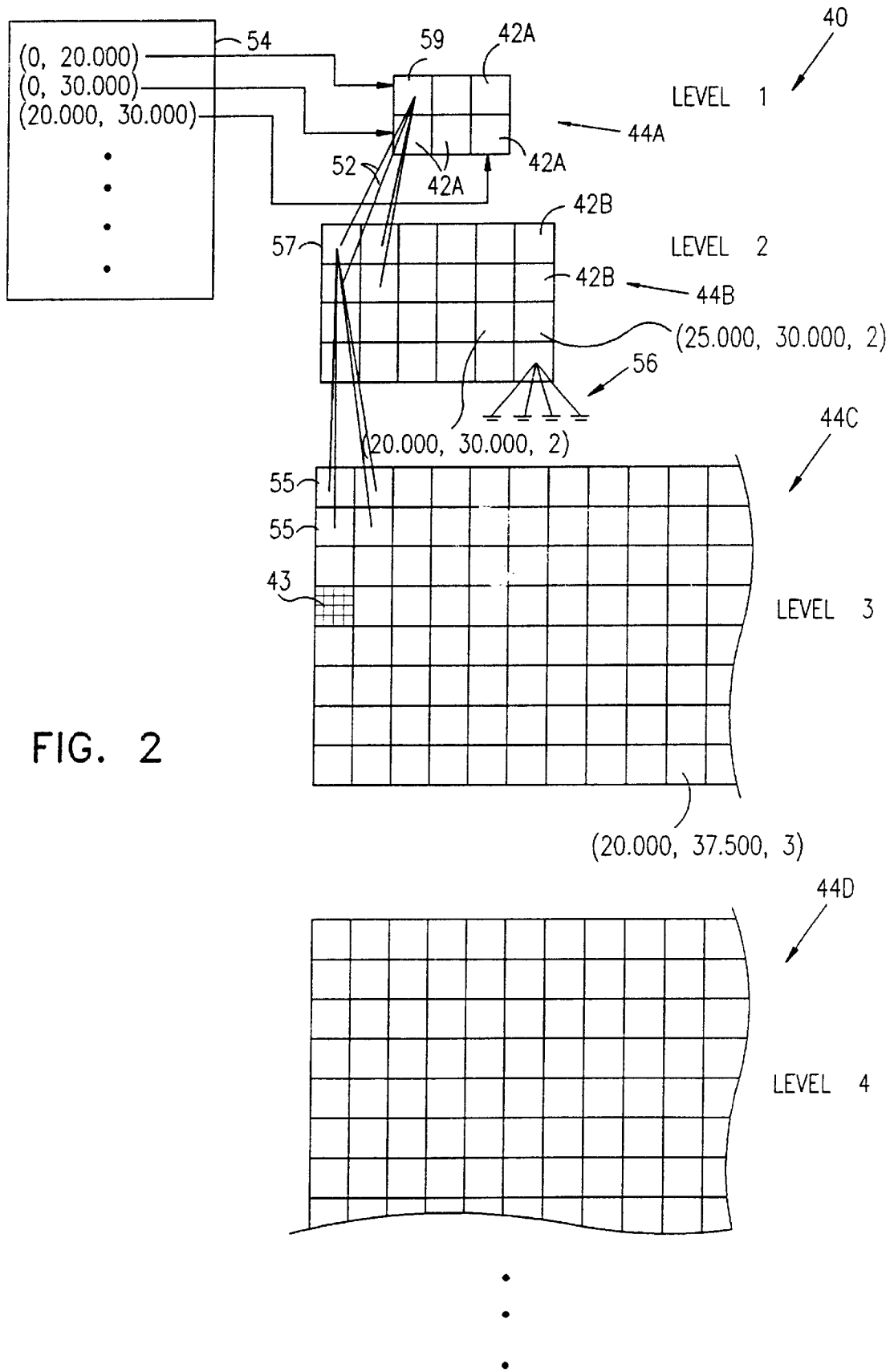


FIG. 2

# FIG. 3

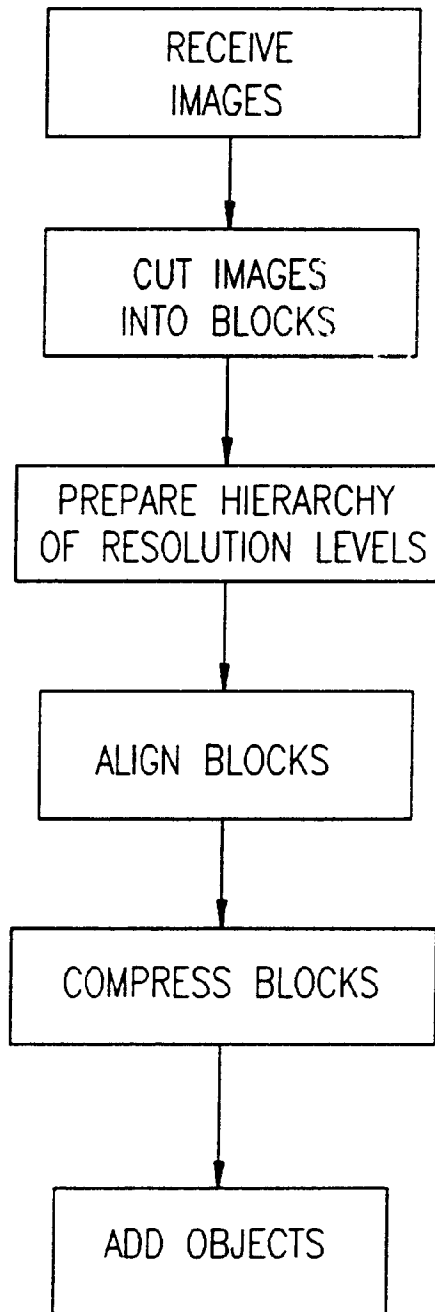
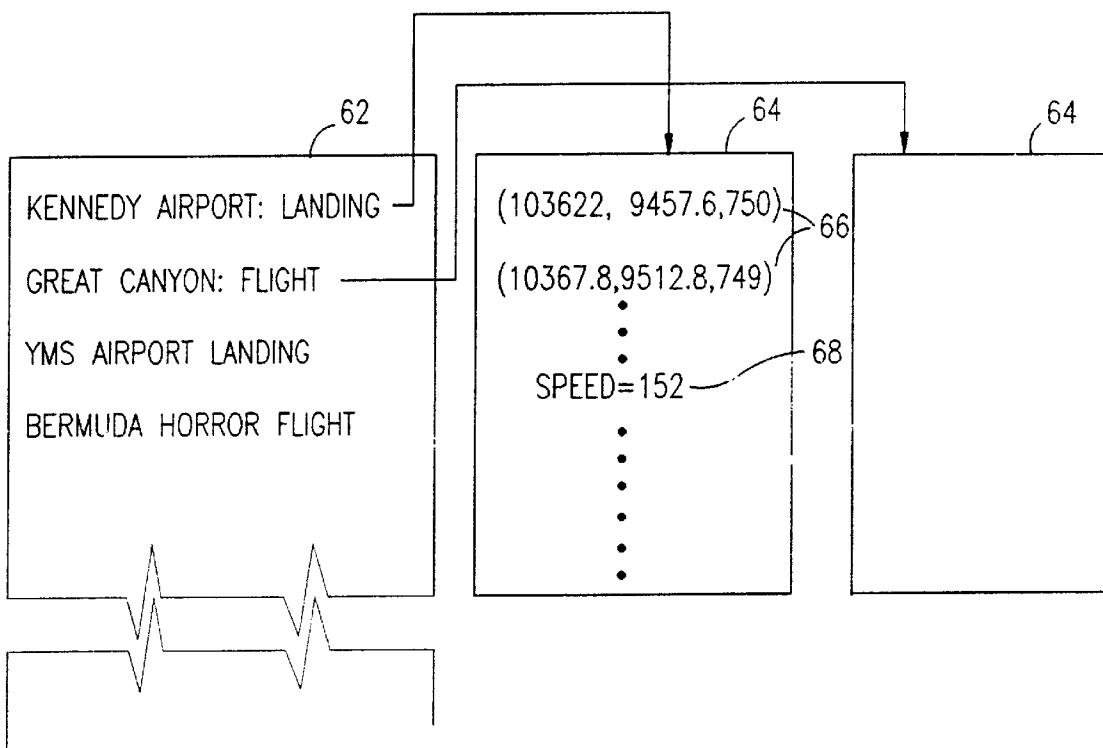


FIG. 4

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