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(54) Title: SHORT TERM CLOUD COVERAGE PREDICTION USING GROUND-BASED ALL SKY IMAGING

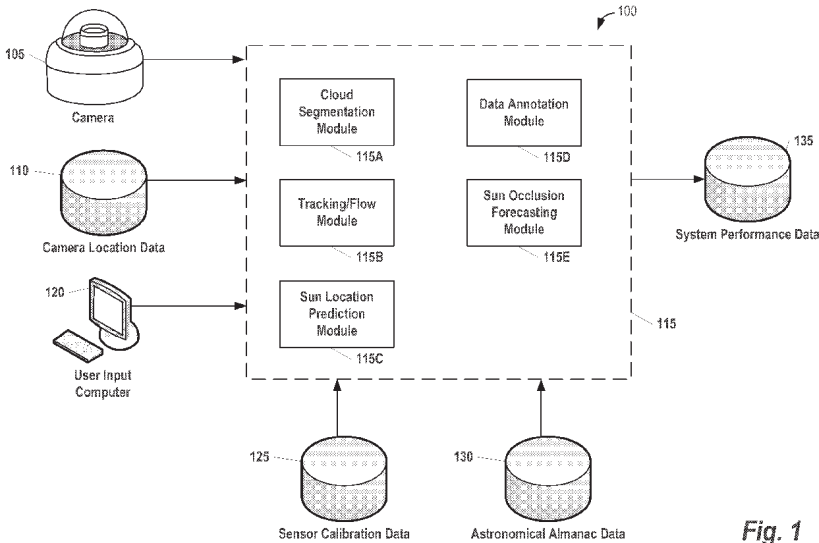


Fig. 1

(57) Abstract: A method for predicting short-term cloud coverage includes a computer calculating an estimated cloud velocity field at a current time value based on sky images. The computer determines a segmented cloud model based on the sky images, a future sun location corresponding to a future time value, and sun pixel locations at the future time value based on the future sun location. Next, the computer applies a back-propagation algorithm to the sun pixel locations using the estimated cloud velocity field to yield propagated sun pixel locations corresponding to a previous time value. Then, the computer predicts cloud coverage for the future sun location based on the propagated sun pixel locations and the segmented cloud model.