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(54) Title: COMPLEX SITUATION ANALYSIS SYSTEM

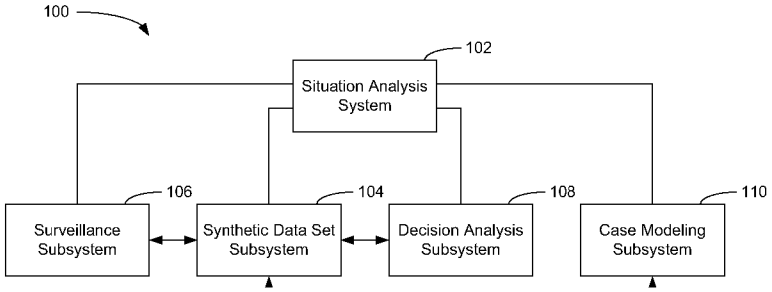


FIG. 1

(57) Abstract: A system for generating a representation of a situation is disclosed. The system comprises one or more computer-readable media including computer-executable instructions that are executable by one or more processors to implement a method of generating a representation of a situation. The method comprises receiving input data regarding a target population. The method further comprises constructing a synthetic data set including a synthetic population based on the input data. The synthetic population includes a plurality of synthetic entities. Each synthetic entity has a one-to-one correspondence with an entity in the target population. Each synthetic entity is assigned one or more attributes based on information included in the input data. The method further comprises receiving activity data for a plurality of entities in the target population. The method further comprises generating activity schedules for each synthetic entity in the synthetic population. Each synthetic entity is assigned at least one activity schedule based on the attributes assigned to the synthetic entity and information included in the activity data. An activity schedule describes the activities of the synthetic entity and includes a location associated with each activity. The method further comprises receiving additional data relevant to the situation being represented. The additional data is received from at least two distinct information sources. The method further comprises modifying the synthetic data set based on the additional data. Modifying the synthetic data set includes integrating at least a portion of the additional data received from each of the at least two distinct information sources into the synthetic data set based on one or more behavioral theories related to the synthetic population. The method further comprises generating a social contact network based on the synthetic data set. The social contact network is used to generate the representation of the situation.

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