CLAIMS

1. A system for determining real-world geographic locations of multiple interconnected members, the system comprising:

a first subgroup of the multiple members comprising first sensors, wherein the members of the first subgroup to determine, based on readings of the first sensors, distances between at least some members of the first subgroup;

a second subgroup of the multiple members comprising second sensors, wherein the members of the second subgroup to determine, based on readings of the second sensors, movement vectors of the second subgroup members, wherein each of the movement vectors comprises a movement direction and a movement distance made by the respective member during a predetermined time duration;

a third subgroup of the multiple members which real-world geographic locations are known;

wherein the first sub-group includes at least some of the members of the second sub-group and wherein at least one of the first sub-group and the second sub-group includes at least some of the members of the third sub-group;

wherein the first sensors are electromagnetic sensors, wherein each of the second sensors comprises at least one of an accelerometer, a compass, a pedometer, an electromagnetic sensor or any combination thereof; and

an analysis unit to:

receive, from the members of the first subgroup, the distances between at least some members of the first subgroup,

receive, from the members of the second subgroup, the movement vectors of the members of the second subgroup,

determine updated distances between at least two members of the second subgroup based on the movement vectors and the received distances of the respective at least two members,

receive, from the members of the third subgroup, the real-world geographic locations of the members of the third subgroup, and

determine, based on the distances between the at least some members of the first subgroup, the movement vectors of the members of the second subgroup, the updated distances between the at least two members of the second subgroup and the real-

world geographic locations of the members of the third group, the real-world geographic locations of the members of the first sub-group and the second sub-group.

2. The system of claim 1, wherein the third subgroup includes a single member.

3. The system of claim 1, wherein the first subgroup includes all members of the multiple members.

4. The system of claim 1, wherein each of the third subgroup members comprises geolocation sensors and wherein each of the third subgroup members to determine, based on readings of the respective geolocation sensor, a real-world geographic location of the respective member, to yield corresponding real-world geographic locations of the third subgroup members.

5. The system of claim 1, wherein the predetermined time duration ranges between 1-5 seconds.

6. The system of claim 1, wherein the analysis unit further to determine, based on the distances between the first subgroup members, an orientation of the first subgroup members with respect to each other, wherein the orientation includes information concerning the relative position of the first subgroup members with respect to each other.

7. The system of claim 1, wherein the analysis unit is further to:

   determine, based on at least one of: the orientation of the first subgroup members with respect to each other or based on the distances between the first subgroup members, and based on predetermined parameters of the first sensors, error values of the distances between the first subgroup members;

   determine, based on the movement vectors of the second subgroup members and based on predetermined parameters of the second sensors, error values of the movement vectors of the second subgroup members;

   determine, based on the real-world geographic locations of the third subgroup members and based on predetermined parameters of the third sensors, error value(s) of the real-world geographic location of the third subgroup members; and

determine, based on the error values of the distances between the first subgroup members, error values of the movement vectors of the second subgroup members and based on the error values of the real-world geographic location of the third subgroup members, global error values of the real-world geographic locations of the multiple members.

8. The system of claim 7, arranged to perform a predetermined number of communication cycles between each of the multiple members and the analysis unit during a specified time period, and wherein the analysis unit is arranged to determine, at each of the predetermined communication cycles and for each of the multiple members, the respective member's real-world geographic location and further verify that the respective member's global error value is below a predetermined error threshold.

9. The system of claim 1, wherein at least some members of the multiple members are directly connected with at least some other members of the multiple members.

10. The system of claim 1, wherein at least some members of the multiple members are indirectly connected with at least some other members of the multiple members.

11. The system of claim 1, wherein at least some members of the multiple members are directly connected with the analysis unit.

12. The system of claim 1, wherein at least some members of the multiple members are indirectly connected with the analysis unit.

13. A method of determining real-world geographic locations of multiple interconnected members, the method comprising:

providing:

a first subgroup of the multiple members, the members of the first subgroup comprising first sensors,

a second sub-group of the multiple member, the members of the second subgroup comprising second sensors, and

a third subgroup of the multiple members, the real-world geographical locations of the members of the third subgroup are known,

wherein the first sub-group includes at least some of the members of the second sub-group and wherein at least one of the first sub-group and the second sub-group includes at least some of the members of the third sub-group,

wherein the first sensors are electromagnetic sensors, wherein each of the second sensors comprises at least one of an accelerometer, a compass, a pedometer, an electromagnetic sensor or any combination thereof;

determining distances between at least some members of the first subgroup based on readings of the first sensors;

determining movement vectors of members of the second subgroup based on readings of the second sensors, wherein each of the movement vectors comprises a movement direction and a movement distance made by the respective member during a predetermined time duration;

determining updated distances between at least two members of the second subgroup based on the movement vectors and the received distances of the respective at least two members;

determining, based on the distances between the at least some members of the first subgroup, the movement vectors of the members of the second subgroup, the updated distances between the at least two members of the second subgroup and the real-world geographic locations of the members of the third group, the real-world geographic locations of the members of the first sub-group and the second sub-group.

14. The method of claim 13, further comprising configuring the third subgroup to include a single member.

15. The method of claim 13, further comprising configuring the first subgroup to include all members of the multiple members.

16. The method of claim 13, further comprising configuring the predetermined time duration to range between 1-5 seconds.

17. The method of claim 13, further comprising determining based on the distances between the first subgroup members, an orientation of the first subgroup members with respect to each other, wherein the orientation includes information concerning the relative position of the first subgroup members with respect to each other.

18. The method of claim 17, further comprising:

determining, based on at least one of: the orientation of the first subgroup members with respect to each other or based on the distances between the first subgroup members, and based on predetermined parameters of the first sensors, error values of the distances between the first subgroup members;

determining, based on the movement vectors of the second subgroup members and based on predetermined parameters of the second sensors, error values of the movement vectors of the second subgroup members;

determining, based on the real-world geographic locations of the third subgroup members and based on predetermined parameters of the third sensors, error value(s) of the real-world geographic location of the third subgroup members; and

determining, based on the error values of the distances between the first subgroup members, error values of the movement vectors of the second subgroup members and based on the error values of the real-world geographic location of the third subgroup members, global error values of the real-world geographic locations of the multiple members.

19. The method of claim 18, further comprising performing, for each of the multiple members, a predetermined number of communication cycles during a specified time period and determining, at each of the predetermined communication cycles and for each of the multiple members, the respective member's real-world geographic location and further verifying that the respective member's global error value is below a predetermined error threshold.

20. The method of claim 13, further comprising configuring at least some members of the multiple members to directly connect with at least some other members of the multiple members.