CLAIMS

1. A system for automatic task management and allocation in an airport, comprising:

a receiving module configured to receive event data, wherein the event data comprises staff data, and wherein the staff data further comprises staff location data of a plurality of staff members;

a storage module configured to store airport mapping data;

a processor configured to update a current state of the airport based on the received event data, wherein the current state of the airport comprises a service level, and wherein the processor is configured to compare the service level to a threshold range; and

a resource allocation module configured to send a task alert to one or more of the plurality of staff members if the service level is determined to be outside of the threshold range;

wherein the resource allocation module is configured to clear the task alert if the service level is subsequently determined to be within the threshold range;

wherein the event data further comprises flight data and wherein the processor is configured to update the current state of the airport based on the received flight data.;

wherein the service level is a cleanliness level of a given area of the airport and the one or more of the plurality of staff members are cleaning staff members;

wherein the given area of the airport is a gate area having a boundary defined by a polygon in the airport mapping data, wherein the processor is configured to determine a cleaning event when the staff location data of a cleaning staff member is determined to be within a gate area polygon, wherein the cleanliness level is based on the time since the last cleaning event for that gate area, and wherein the threshold range is a time range from zero to a maximum time limit; and

wherein the processor is configured to determine a cleaning event only when the staff location data of a cleaning staff member is determined to be within a gate area polygon for longer than a minimum time duration.

2. The system of claim 1, wherein the flight data further comprises flight departure events, and wherein the cleanliness level is configured to be determined and compared to the threshold range in response to the receipt of a flight departure event at the receiving module.

3. The system of claim 1 or 2, wherein the resource allocation module is configured to send an escalated task alert to a further staff member if a cleaning event is not determined for the gate area within a given time duration of the task alert being sent.

4. The system of any of claims 1 to 3, wherein the processor is configured to determine a walking distance to the gate area polygon from the most recently received staff location data for each of the cleaning staff members, and the resource allocation module is configured to send the task alert to the cleaning staff member determined to have the shortest walking distance to the gate area polygon.

5. The system of any of claims 1 to 4, wherein the event data further comprises a number of passengers determined to be in a given area of the airport, wherein the service level and/or threshold range is dependent upon the number of passengers determined to be in the given area, and wherein the task alert requests the staff member to attend the given area of the airport.

6. The system of claim 5, wherein the given area of the airport is one of: a departing passenger security screening area, an arriving passenger immigration area, a health screening area, a terminal area or a concourse area.

7. The system of claim 5 or 6, wherein the event data further comprises a number of trolleys and/or wheelchairs determined to be in the given area of the airport, wherein the service level is based upon the number of trolleys and/or wheelchairs respectively in the given area of the airport, and wherein the task alert requests the member of staff to relocate the respective trolleys and/or wheelchairs.

8. A method for automatic task management and allocation in an airport, the method comprising:

receiving, at a receiving module, event data, wherein the event data comprises staff data, and wherein the staff data further comprises staff location data of a plurality of staff members;

storing, at a storage module, airport mapping data;

updating, at a processor, a current state of the airport based on the received event data, wherein the current state of the airport comprises a service level;

comparing, at the processor, the service level to a threshold range;

sending, from a resource allocation module, a task alert to one or more of the plurality of staff members if the service level is determined to be outside of the threshold range; and

clearing, at the resource allocation module, the task alert if the service level is subsequently determined to be within the threshold range;

wherein the event data further comprises flight data and wherein the processor is configured to update the current state of the airport based on the received flight data;

wherein the service level is a cleanliness level of a given area of the airport and the one or more of the plurality of staff members are cleaning staff members;

wherein the given area of the airport is a gate area having a boundary defined by a polygon in the airport mapping data, wherein the method further comprises determining, at the processor, a cleaning event when the staff location data of a cleaning staff member is determined to be within a gate area polygon, wherein the cleanliness level is based on the time since the last cleaning event for that gate area, and wherein the threshold range is a time range from zero to a maximum time limit; and

wherein the method further comprises determining, at the processor, a cleaning event only when the staff location data of a cleaning staff member is determined to be within a gate area polygon for longer than a minimum time duration.

9. The method of claim 8, wherein the flight data further comprises flight departure events, and wherein the cleanliness level is determined and compared to the threshold range in response to the receipt of a flight departure event at the receiving module.

10. The method of claim 8 or 9, further comprising sending, from the resource allocation module, an escalated task alert to a further staff member if a cleaning event is not determined for the gate area within a given time duration of the task alert being sent.

11. The method of any of claims 8 to 10, further comprising determining, at the processor, a walking distance to the gate area polygon from the most recently received staff location data for each of the cleaning staff members, and sending, from the resource allocation module, the task alert to the cleaning staff member determined to have the shortest walking distance to the gate area polygon.

12. The method of any of claims 8 to 11, wherein the event data further comprises a number of passengers determined to be in a given area of the airport, wherein the service level and/or threshold range is dependent upon the number of passengers determined to

be in the given area, and wherein the task alert requests the staff member to attend the given area of the airport.

13. The method of claim 12, wherein the given area of the airport is one of: a departing passenger security screening area, an arriving passenger immigration area, a health screening area, a terminal area or a concourse area.

14. The method of claim 12 or 13, wherein the event data further comprises a number of trolleys and/or wheelchairs determined to be in the given area of the airport, wherein the service level is based upon the number of trolleys and/or wheelchairs respectively in the given area of the airport, and wherein the task alert requests the member of staff to relocate the respective trolleys and/or wheelchairs.

15. A non-transitory computer readable medium comprising instructions that, when executed by a processor, cause a computer to undertake the method of any of claims 8 to 14.