CLAIMS

1. An image processing system for identifying a user, the system comprising means for:
    a. obtaining a set of predetermined characteristic vectors, wherein each predetermined characteristic vector is defined by a plurality of characteristic feature values associated with a user, each user being associated with a unique identifier;
    b. determining a region within a received image (600) of the user (612) wherein the region encloses the user;
    c. segmenting the region into a plurality of different sub regions (622, 722, 822);
    d. determining a characteristic vector for each of the sub regions, wherein each characteristic vector is defined by a plurality of characteristic feature values associated with each sub region;
    e. comparing each characteristic vector with a set of predetermined characteristic vectors to determine a score; and
    f. based on the comparison, determining the most similar predetermined characteristic vector based on the score and identifying the user based on the unique identifier associated with the most similar predetermined characteristic vector unless the score exceeds a threshold value.

2. The system of claim 1, further comprising means for authorising the user for entry or exit via a gate based on the comparison, and preferably further comprising means for associating the identifier with passenger related information or a bag tag number.

3. The system of any preceding claim, wherein a first plurality of characteristic vectors are determined based on a first image of the user and a second plurality of characteristic vectors are determined based on a second image of the user.

4. The system of claim 3, further comprising means for selecting a subset of optimum characteristic vectors from the first plurality of characteristic vectors and the second plurality of characteristic vectors by identifying the characteristic vectors that have the largest value of a predetermined characteristic feature value.

5. The system of any preceding claim, wherein characteristic feature values are associated with one or more of: biometric data, face features, height, style, clothing, pose, gender, age, emotion, destination gate, or gesture recognition.

6. The system of any preceding claim, wherein the system further comprises means for associating the first image with a first predetermined location and associating the second image with a second predetermined location different from the first location, preferably wherein the first predetermined location and the second predetermined location are each associated with one or more of customer car parks, airport terminal entrances and exits, airline check-in areas, check-in kiosks, terminal concourses, customer shopping and/or dining areas, passenger lounges, security and passport control areas, customs and excise areas, arrival lounges, departure lounges, and baggage processing areas.

7. An image processing method for identifying a user, the method comprising the steps of:
    a. obtaining a set of predetermined characteristic vectors, wherein each predetermined characteristic vector is defined by a plurality of characteristic feature values associated with a user, each user being associated with a unique identifier;
    b. receiving an image of a user and determining a region within the image that encloses the user;
    c. segmenting the region into a plurality of different sub regions;
    d. determining a characteristic vector for each of the sub regions, wherein each characteristic vector is defined by a plurality of characteristic feature values associated with each sub region;
    e. comparing each characteristic feature value with a set of predetermined characteristic vectors;
    f. based on the comparison, determining the most similar predetermined characteristic vector based on the score and identifying the user based on the unique identifier associated with the most similar predetermined characteristic vector unless the score exceeds a threshold value.

8. The method of claim 7, further comprising authorising the user for entry or exit via a gate based on the comparison, and preferably further comprising sending a message to actuate one or more infrastructure systems if any of the characteristic feature values exceeds the threshold value.

9. The method of claim 8, wherein the one or more infrastructure systems comprise one or more of: security barriers, public address systems, or emergency lighting systems.

10. The method of claims 7 to 9, further comprising associating the identifier with passenger related information or a bag tag number.

11. The method of claims 7 to 10, wherein each selected predetermined characteristic vector is chosen based on a degree of similarity between a particular characteristic vector and each of the plurality of predetermined characteristic vectors.

12. The method of claims 7 to 11, further comprising pre-processing each received image, preferably wherein pre-processing comprises one or more of: sampling raw data, reducing background noise in the plurality of images, defining a region of interest within each image, removing the background of an image, and synchronising cameras.

13. The method of claims 7 to 12, further comprising determining a confidence score based on the degree of similarity between the particular characteristic vector and the selected predetermined characteristic vector, and/or flight related information associated with the selected predetermined characteristic vector.

14. The system or method of any preceding claim, further comprising, or further comprising means for, associating latitude, longitude and timestamp data with the location of the user in each received image.

15. The system or method of any preceding claim, wherein the plurality of sub regions includes a first sub region associated with the head of a user, a second sub region associated with the body of a user, and a third sub region associated with the belongings accompanying a user, and preferably wherein characteristic feature values are associated with one or more of: biometric data, face features, height, style, clothing, pose, gender, age, emotion, destination gate, or gesture recognition.