CLAIMS

1. A screening device for screening a person, the screening device comprising:
- a cabin comprising a wall at least partly enclosing an inner space,
- a sensor on at least part of the surface of the wall facing the inner space, the sensor being configured to sense the person present in the inner space,
- a projector projecting an image into the inner space to be viewed by the person, and
- a control device connected to the sensor and the projector and configured to:
  operate the sensor to sense the person residing in the inner space;
  drive the projector to project instructions to the person, associated with the operating of the sensor.

2. The screening device according to claim 1, wherein the control device is further configured to
- derive a location of an object on the person from sensor data generated by the sensor, and
- control the projector to display the location of the object on the person.

3. The screening device according to claim 2, wherein the sensor further comprises a camera directed to a desired position of the person in the inner space, the camera being connected to the control device to transit image data to the control device, and wherein the control device is configured to generate a mirror image of the person from the image data, to create a fused image of the person by fusing the object at the derived location into the mirror image of the person and to control the projector to display the fused image of the person.

4. The screening device according to any one of the preceding claims, wherein the screening device further comprises the camera configured to generate image data, a gesture sensor sensing a gesture of the person and configured to generate gesture data and a motion sensor recording a movement of the person and configured to generate motion data, wherein the control device is configured to perform a risk assessment from a combination of the sensor data, the camera image data, the gesture data and the motion data and to generate a warning message based on the risk assessment.

5. The screening device according to claim 4, wherein the control device is configured to perform the risk assessment using a self-learning system, the self learning system preferably

having been trained using a training dataset additionally comprising operator assessment responsive to the sensor data, camera image data, gesture data and motion data.

6. The screening device according to any one of the preceding claims, further comprising a footwear sensor on at least part of the surface of a floor of the cabin, the footwear sensor being configured to sense the person’s footwear present in the inner space.

7. The screening device according to claim 6, wherein the control device is further configured to operate the footwear sensor to sense the footwear of the person, and to drive the projector to project instructions to the person, associated with the operating of the footwear sensor.

8. The screening device according to any one of the preceding claims, wherein the control device is configured to
- establish a connection to an operator console,
- output an instruction to an operator at the operator console to communicate to the person, and
- control the projector to display an image of the operator at the operator console.

9. The screening device according to claim 8, wherein the control device is configured to
- derive from the sensor data a location of an object on the person,
- transmit the location of the object on the person to the operator console, and
- transmit instructions to the operator console requesting the operator to explain to the person the location of the object.

10. The screening device according to claim 8 or 9, wherein the control device is configured to output the instruction to the operator in case a criterion is fulfilled, the criterion comprising at least one of:
- the person initiating an operator contact request,
- the control device establishing that a pre-set screening time has elapsed,
- the control device establishing that a presence of an object has been established.

11. The screening device according to any one of the preceding claims, wherein the sensor comprises a radio wave scanner comprising a radio wave antenna array, the radio wave antenna array covering at least part of the surface of the wall behind the projected image.

12. The screening device according to any one of the preceding claims, wherein the projector is configured to project a two dimensional image on the wall of the cabin or a three dimensional image in the inner space.

13. The screening device according to any one of the preceding claims, further comprising an object depositing tray and wherein the instructions comprise instructions to deposit an object in the object depositing tray.

14. The screening device according to claim 13, further comprising a hand luggage screening apparatus, and a conveyor to convey a hand luggage from the cabin to the hand luggage screening apparatus, the control device being configured to drive the conveyor to convey the hand luggage deposited in the object depositing tray to the hand luggage screening apparatus, to drive the hand luggage screening apparatus to screen the hand luggage, and drive the conveyor to convey the hand luggage back into the cabin.

15. The screening device according to claim 13 or 14, wherein the screening device further comprises an identification device, the control device being configured to identify the person using identification data from the identification device, and associate the depositing tray to the identified person.

16. The screening device according to any one of the preceding claims, wherein the control device is configured to drive a display device to provide instructions to the person to adhere to a predetermined screening sequence.

17. The screening device according to claim 16, wherein the sensor further comprises the camera, the control device is configured to process an image form the camera to derive a progress of the screening of the person therefrom, to compare the derived progress of the screening to the predetermined screening sequence, and to derive the instructions provided to the person from the comparison of the derived progress to the predetermined screening sequence.

18. The screening device according to any one of the preceding claims, further comprising
- a hand luggage screening apparatus configured to scan the hand luggage deposited by the

person, wherein the hand luggage screening apparatus comprises a primary scanner and an X-ray diffraction scanner, and
wherein the control device is configured to operate the hand luggage screening apparatus to
- scan the hand luggage by the primary scanner to generate primary scanner output data associated with the scan of the hand luggage,
- determine an area of interest of the hand luggage from the primary scanner output data,
- operate the X-ray diffraction scanner to scan the area of interest of the hand luggage to generate X-ray diffraction output data associated with the scan of the hand luggage by the X-ray diffraction scanner,
- process the primary scanner output data and the X-ray diffraction output data to determine if an alarm signal is to be generated, and
- output the alarm signal if generated.

19. The screening device according to any one of the preceding claims, further comprising:
a first identification station configured to request a person to present a token,
a hand luggage depositing station configured to collect hand luggage deposited by the person, the first identification station being associated with the hand luggage depositing station,
a hand luggage screening apparatus configured to screen the hand luggage,
a screening device according to any one of the preceding claims,
a hand luggage reclaiming station, downstream of the hand luggage screening apparatus, configured to reclaim the hand luggage deposited by the person,
a second identification station being associated with the hand luggage reclaiming station,
the screening device forming a passage for the person from the hand luggage depositing station to the hand luggage reclaiming station, and
a hand luggage conveying system configured to convey the hand luggage from the hand luggage depositing station via the hand luggage screening apparatus to the hand luggage reclaiming station,
the control device further being configured to:
read the token presented by the person at the first identification station;
associate the presented token to the hand luggage deposited by the person at the hand luggage depositing station;
upon the person having been screened by the screening device, read the token presented by the person at the second identification station at the reclaiming station,

control the hand luggage conveying system to convey the hand luggage associated with the token to the hand luggage reclaiming station.

20. The screening device according to claim 19, comprising
plural hand luggage reclaiming stations, and
wherein the control device is configured to designate one of the plural hand luggage reclaiming stations to the token, to control the hand luggage conveying system to convey the hand luggage associated with the token to the designated one of the plural hand luggage reclaiming stations and to output instructions to the person having passed the screening device and presenting the token to collect the hand luggage associated with the token at the designated one of the plural hand luggage reclaiming stations.

21. The screening device according to claim 19 or 20, wherein the screening device further comprises the object depositing tray and wherein the control device is configured to control the hand luggage conveying system to convey the object deposited in the object depositing tray to the designated one of the plural hand luggage reclaiming stations.

~~22. The screening device preferably according to any one of claims 19 – 21 comprising a hand luggage depositing station, a hand luggage reclaiming station, a first hand luggage screening apparatus, a second hand luggage screening apparatus and the hand luggage conveying system to convey the hand luggage from the hand luggage depositing station to either one of the first and the second hand luggage screening apparatuses and from to either one of the first and the second hand luggage screening apparatuses to the hand luggage reclaiming station, wherein the conveying system comprises a shielded hand luggage conveying path extending between the first and second hand luggage screening apparatuses, wherein the hand luggage depositing station loads into the shielded hand luggage conveying path via a loading port having a conveying direction perpendicular to a loading conveying direction between the first and second hand luggage screening apparatuses, wherein the shielded hand luggage conveying path discharges to the hand luggage reclaiming station via a discharging port having a discharging conveying direction perpendicular to a conveying direction between the first and second hand luggage screening apparatuses and wherein radiation shields configured to shield radiation generated by the first and second hand luggage screening apparatuses are arranged at the loading port and at the discharging port.~~

~~23. The screening device according to claim 22, wherein the radiation shields are lead curtains.~~

~~24. The screening device according to claim 22 or 23, wherein shielding flaps at the first and second hand luggage screening apparatuses are omitted.~~

~~25. The screening device according to any one of claims 22 - 24, wherein the loading port comprises a loading port shield extending along the loading direction and wherein the discharging port comprise a discharging port shield extending along the discharging direction.~~

~~26. The screening device according to any one of claims 22 - 25, wherein the first and second hand luggage screening apparatuses are bi-directional and wherein the shielded hand luggage conveying path is bi-directional.~~

~~27~~22. A method of operating a screening system comprising the screening device according to any one of the preceding claims,
wherein the screening device is further configured to operate at at least two different detection rates,
the method comprising:
- defining a screening system detection rate, the screening system detection rate defining a required detection rate of the screening system;
- selecting one of the detection rates of the screening device to comply with the screening system detection rate; and
- sending instructions to the control device of the screening device to operate at the selected detection rate so as to comply with the screening system detection rate.

~~28~~23. The method according to claim ~~27~~22, wherein the detection rates of the screening device define a detection rate of a security hazard to be detected at the person, the hand luggage and/or the footwear of the person.