CLAIMS

1. An airport stand arrangement (100) comprising:

a remote sensing system (110) configured to detect an aircraft (10) within a sensing area (112), wherein said sensing area (112) includes a stand area (140) of a stand (20), and

a controller (120) configured to:

determine, based on sensor data (111) received from said remote sensing system (110), one or more estimated exterior surface positions (150a') on the aircraft (10), wherein each estimated exterior surface position is an estimated position of an associated real exterior surface position (150a) on the aircraft (10), wherein said real exterior surface position (150a) defines a limit of an extension of said aircraft in the sensing area (112), and wherein the controller being configured to determine said one or more estimated exterior surface positions of the aircraft, comprises that the controller being configured to:

- identify one or more characteristic features (170a-c) of the aircraft (10), wherein a specific characteristic feature of said one or more characteristic features of the aircraft is a nose portion (170a) of the aircraft,

- determine, for each characteristic feature of said one or more characteristic features (170a-c), a respective characteristic feature position, so as to define, on the aircraft (10), one or more characteristic feature positions (172a-c), wherein a respective characteristic feature position of said specific characteristic feature is a position (172a) of said nose portion (170a) of the aircraft,

- receive aircraft dimension data (190;190') pertaining to the aircraft (10), and

- calculate said one or more estimated exterior surface positions (150a') on the aircraft (10) based on said one or more characteristic feature positions (172a-c) and said aircraft dimension data (190;190'), wherein said one or more estimated exterior surface positions on the

aircraft comprises an estimated exterior surface position (150'a) of a tail portion (10a) of the aircraft,

wherein the controller is further configured to:

compare said one or more estimated exterior surface positions (150a') with one or more coordinates of the stand area (140) to determine if at least one from said one or more estimated exterior surface positions (150a') is outside of said stand area (140), and

in response to at least one from said one or more estimated exterior surface positions (150a') being determined to be outside of said stand area (140):

output an aircraft parking alert signal (195).

2. The airport stand arrangement (100) according to claim 1, wherein said remote sensing system (110) includes one or more from: a radar-based system, a laser-based system, and an imaging system.

3. The airport stand arrangement (100) according to claim 1 or 2, wherein the airport stand arrangement further comprises a display (130), and

wherein the airport stand arrangement (100) is further configured, based on data from said remote sensing system (110), to detect and track the aircraft (10) for parking at a parking position (160) within said stand area (140), and configured, based on said detection and tracking of the aircraft (10), to provide pilot maneuvering guidance information on said display (130) for aiding a pilot of the aircraft (10) in maneuvering the aircraft towards said parking position (160).

4. The airport stand arrangement (100) according to any one of claim 1 to 3, wherein said received aircraft dimension data (190;190') includes a length (L) of the aircraft (10), and

wherein the controller (120) is being configured to calculate said estimated exterior surface position (150a') on the tail portion (10a) of the aircraft (10) by adding said length (L) of the aircraft to said position (172a) of the nose portion (170a) of the aircraft in a direction out from said position

(172a) of the nose portion (170a) being parallel to an estimated direction (12') of a longitudinal extension of the aircraft.

5. The airport stand arrangement (200) according to any one of claim 1 to 4, wherein said one or more characteristic features of the aircraft comprises two or more characteristic features of the aircraft (270a-c), and

wherein said one or more characteristic feature positions comprises two or more characteristic feature positions (272a-c).

6. The airport stand arrangement (200) according to claim 5, wherein said estimated direction (22') of the longitudinal extension of the aircraft is calculated based on at least two from said two or more characteristic feature positions (272a-c).

7. The airport stand arrangement (200) according to claim 5, wherein the controller (220) being configured to determine one or more estimated exterior surface positions on the aircraft, comprises:

the controller being configured to:

compare said two or more characteristic feature positions (272a-c) with an aircraft dimension database (122) which includes aircraft dimension data for a plurality of aircraft types and/or models, and

in response to a match being found between said two or more characteristic feature positions (272a-c) and specific aircraft dimension data (190;190') from the aircraft dimension data in the database (222):

determine said one or more estimated exterior surface positions (250a') on the aircraft (10) based on said two or more characteristic feature positions (172a-c) and said specific aircraft dimension data (190;190').

8. The airport stand arrangement (100) according to any one of claim 1 to 7, wherein the controller (120) is further configured to:

in response to said one or more estimated exterior surface positions (150a') being determined to be inside of said stand area:

output a stand area clearance signal (S).

9. The airport stand arrangement (100) according to any one of claim 1 to 8, wherein the controller (120) being configured to output the aircraft parking alert signal (195), comprises:

the controller (120) being configured to transmit said aircraft parking alert signal to one or more from:

neighboring aircrafts in a vicinity of the sensing area,

an airport operational database,

ground control, and

receiving units carried by stand personnel.

10. A method implemented in an airport stand arrangement (100), wherein said stand arrangement (100) comprises a remote sensing system (110) configured to detect the aircraft (10) within a sensing area (112), wherein said sensing area (112) includes said stand area (140) of a stand (20), said method comprising:

receiving, from the remote sensing system (110), sensor data (111) pertaining to an aircraft (10) detected within the sensing area (112),

determining, based on said received sensor data (111), one or more estimated exterior surface positions (150a') on the aircraft (10), wherein each estimated exterior surface position is an estimated position of an associated real exterior surface position (150a) on the aircraft (10), wherein said real exterior surface position (150a) defines a limit of an extension of said aircraft in the sensing area (112), wherein determining one or more estimated exterior surface positions on the aircraft comprises:

identifying one or more characteristic features (170a-c) of the aircraft, wherein a specific characteristic feature of said one or more characteristic features of the aircraft is a nose portion (170a) of the aircraft,

determining, for each characteristic feature of said one or more characteristic features (170a-c), a respective characteristic feature position, so as to define, on the aircraft, one or more characteristic feature positions (172a-c), wherein a respective characteristic feature position of said specific

characteristic feature is a position (172a) of said nose portion (170a) of the aircraft,

receiving aircraft dimension data (190;190') pertaining to the aircraft (10), and

calculating said one or more estimated exterior surface positions (150a') on the aircraft (10) based on said one or more characteristic feature positions (172a-c) and said aircraft dimension data (190;190'), wherein said one or more estimated exterior surface positions (150a'-c') on the aircraft comprises an estimated exterior surface position (150a') of a tail portion (10a) of the aircraft

comparing said one or more estimated exterior surface positions (150a') with one or more coordinates of the stand area (140) to determine if at least one from said one or more estimated exterior surface positions (150a') is outside of said stand area (140), and

in response to at least one from said one or more estimated exterior surface positions (150a') being determined to be outside of said stand area (140):

outputting an aircraft parking alert signal (A).

11. The method according to claim 10,

wherein said received aircraft dimension data (190;190') includes a length (L) of the aircraft, and

wherein the step of calculating said one or more estimated exterior surface positions on the aircraft comprises:

calculating said estimated exterior surface position (150a') on the tail portion (10a) of the aircraft (10) by adding said length (L) of the aircraft to said position (172a) of the nose portion (170a) of the aircraft in a direction out from said position (172a) of the nose portion (170a) being parallel to an estimated direction (12') of a longitudinal extension of the aircraft.

12. A non-transitory computer-readable medium comprising computer code instructions which when executed by a device having processing capability are adapted to perform the method according to claim 10 ~~or 11~~.