Claims

1. System (1) for operating a refuse container (2), comprising a refuse container (2) which has an electronic control device (3) and a first communication interface (4) for sending and receiving data,
characterised in that
a first data transfer (10) to at least one further communication interface (8, 12, 15) is configured to be initiated by way of the first communication interface (4), said further communication interface being provided in at least one further communication device (9, 11, 14) which is not associated with the refuse container (2), wherein a further data transfer (38) between at least one internal device (27, 32, 33) can be initiated via the first communication interface (4), wherein the further communication device (9, 11, 14) is a first communication device (9, 11) which comprises the further communication interface in the form of a third communication interface (8, 12), wherein an emptying or service vehicle is equipped with the first communication device (9, 11), wherein the first data transfer (10) between the first communication interface (4) and the third communication interface (8, 12) represents a triggering event, wherein the electronic control device (3) generates control data based on the triggering event which are transferred to the at least one internal device (32), in the form of a locking device, by the further data transfer (38), whereupon the locking device unlocks, wherein the further data transfer (38) is a seventh data transfer (30) and wherein the first (10) and the further data transfer (38) are based on a wireless technology.

2. System according to claim 1,
characterised in that
the refuse container (2) comprises at least one sensor device (27) being an internal device (32), wherein the further data transfer is a sixth data transfer (28) which can take place between the at least one sensor device (27) and the first communication interface (4) via a fifth communication channel (29), wherein the sixth data transfer (28) may be unidirectional or bidirectional.

3. System according to either claim 1 or claim 2,
characterised in that
control data can be transferred to the at least one internal device (32) of the refuse container (2) or to at least one external device (33) by means of the seventh data transfer (30), wherein the seventh data transfer (30) takes place via a sixth communication channel (31)

and may be unidirectional or bidirectional, wherein the at least one internal device (32) or the at least one external device (33) can be an actuator, a locking device, a display device, an output device or a fire extinguisher.

4. System according to claim 3,
characterised in that
the control data are configured to be generated at least in part by the electronic control device (3) and/or at least in part by a sensor device (27).

5. System according to any of the preceding claims,
characterised in that
the system (1) comprises a server (6) which is at a distance from the refuse container and comprises a second communication interface (7), the first communication interface (4) having no device for direct data transfer to the second communication interface (7), wherein an indirect first data transfer is configured to be initiated between the first communication interface (4) and the second communication interface (7) and/or between the second communication interface (7) and the first communication interface (4) via the at least one further communication interface (8, 12, 15), wherein usage data can be stored by the electronic control device (3) in a memory device (5) associated with the refuse container after a use of the refuse container (2), the stored usage data being configured to be transferred to the server (6) via the first data transfer (10).

6. System according to claim 5,
characterised in that
a first communication device (9, 11) comprises a third communication interface (8, 12), the first data transfer (10) between the first communication interface (4) and the second communication interface (7) can take place via the third communication interface (8, 12) and can be unidirectional or bidirectional, wherein an emptying or service vehicle is equipped with the first communication device (9, 11), wherein the data transfer between the first (4) and the third communication interface (8, 12) takes place via a first communication channel (13).

7. System according to either claim 5 or claim 6,
characterised in that

a second communication device (9, 14) comprises a fourth communication interface (8, 15), wherein the first data transfer between the first communication interface (4) and the second communication interface (7) can take place via the fourth communication interface (8, 15) and can be unidirectional or bidirectional, wherein the second communication device (9, 14) is assigned to a user, wherein the second communication device (9, 14) is a portable data processing device, preferably having a display device (16), for example a mobile phone, a smartphone, a tablet or a laptop, wherein the transfer of data between the first (4) and the fourth communication interface (8, 15) takes place via a second communication channel (17).

8. System according to claim 7,
characterised in that
to identify a user before the use of the refuse container (2), a second data transfer (18) is configured to be initiated between the first communication interface (4) and the fourth communication interface (8, 15) and a subsequent third data transfer (19) is configured to be initiated between the fourth communication interface (8, 15) and the second communication interface (7) of the server (6), wherein the second data transfer (18) of identification data between the first (4) and the fourth communication interface (8, 15) takes place via the second communication channel (17), wherein the third data transfer (19) between the fourth communication interface (8, 15) and the second communication interface (7) takes place via an eighth communication channel (20).

9. System according to any of the preceding claims,
characterised in that
the refuse container (2) comprises a receiving device (21), wherein a fourth data transfer (22) can take place via a third communication channel (23) between the receiving device (21) and the first communication interface (4), wherein the fourth data transfer (22) can be unidirectional or bidirectional, wherein to identify a user before the use of the refuse container (2), a fifth data transfer (26) of identification data is configured to be initiated between the receiving device (21) and an identification device (24) by means of a fourth communication channel (25).

10. System according to any of the preceding claims,
characterised in that

all the data transfers via communication channels one to six (13, 17, 23, 25, 29, 31) are based on a wireless technology, wherein the wireless technology has a range of less than 300 m, preferably less than 100 m, preferably less than 50 m, preferably less than 30 m, preferably less than 10 m, preferably less than 5 m, preferably less than 3 m, preferably less than 1 m, particularly preferably less than 50 cm, wherein the wireless technology is selected from a group comprising NFC technology, RFID technology, WLAN technology, Bluetooth® technology and optical transmission technology.

11. System according to any of the claims 5 to 10,
characterised in that
the data transfer between the third (8, 12) and the second communication interface (7) takes place via a seventh communication channel (34), wherein the data transfer between the fourth (9, 14) and the second communication interface (7) takes place via an eighth communication channel (20), wherein the seventh (34) and the eighth communication channel (20) are based at least in portions on a wireless technology having a maximum range of over 30 m, preferably over 100 m, preferably over 500 m, preferably over 1 km, more preferably several km and on a transmission technology selected from a group comprising a WLAN connection, radio connection, mobile connection, 2G connection, 3G connection, GPRS connection, 4G connection and 5G connection.

12. Method for operating a refuse container (2) comprising an electronic control device (3) and a first communication interface (4) for sending and receiving data, the method comprising the following steps:
- registering a triggering event via the first communication interface (4) by means of a data transfer;
- generating at least a part of control data by the electronic control device (3) or receiving at least a part of control data by the first communication interface (4);
- transferring the control data to an internal or external device by means of a data transfer;

wherein the data transfer for registering the triggering event takes place via a communication channel which is based on a wireless technology and wherein a first data transfer (10) between the first communication interface (4), and a third communication interface (8, 12) which is comprised by a first communication device (9, 11) represents the triggering event,

wherein an emptying or service vehicle is equipped with the first communication device (9, 11).

13. Method according to claim 12,
characterised in that
the wireless technology has a range of less than 300 m, preferably less than 100 m, preferably less than 50 m, preferably less than 30 m, preferably less than 10 m, preferably less than 5 m, preferably less than 3 m, preferably less than 1 m, particularly preferably less than 50 cm, wherein the wireless technology is selected from a group comprising NFC technology, RFID technology, WLAN technology, Bluetooth® technology and optical transmission technology.

14. Method according to either claim 12 or claim 13,
characterised in that
the method comprises a data transfer between the refuse container (2) and a server which is at a distance from the refuse container and has a second communication interface, the method comprising the following steps:
- establishing a data connection by means of a communication channel (13, 17) between the first communication interface (4) and a further communication interface (8, 12, 15) of a further communication device (9, 11, 14) which is not part of the refuse container (2);
- authorising the data connection;
- initiating an indirect first data transfer (10) between the first communication interface (4) and the second communication interface (7) and/or between the second communication interface (7) and the first communication interface (4) via at least one further communication interface (8, 12, 15).