CLAIMS

1. A communication system (100) comprising:

a mobile device (MD);

a service terminal (ST);

a first transmitter function (TX1) in or at the service terminal (ST), the first transmitter function (TX1) being configured for sending a first short-range wireless communication signal (S1) to cause a first reaction (R1) when received by a mobile device (MD) being located within a first distance (D1) or distance range (DR1) from the service terminal (ST); and

a second transmitter function (TX2) in or at the service terminal (ST), the second transmitter function (TX2) being configured for sending a second short-range wireless communication signal (S2), to cause a second reaction (R2) when received by the mobile device (MD) being located within a second distance (D2) or distance range (DR2) from the service terminal (ST), the second distance (D2) or distance range (DR2) being closer to the service terminal (ST) than the first distance (D1) or distance range (DR1),

wherein the mobile device (MD) is configured for:

while approaching the service terminal (ST):

- receiving the first short-range wireless communication signal (S1) when being located within the first distance (D1) or distance range (DR1) from the service terminal (ST);

- reacting (R1) to the receiving of the first short-range wireless communication signal (S1) by performing a first activity (A1);

while approaching closer to the service terminal (ST) and conditionally upon having performed the first activity (A1):

- receiving the second short-range wireless communication signal (S2); and

- reacting (R2) to the receiving of the second short-range wireless communication signal (S2) by performing a second activity (A2) when being located within the second distance (D2) or distance range (DR2) from the service terminal (ST),

wherein the first activity (A1) involves preparations for the second activity (A2).

2. The communication system (100) as defined in claim 1, wherein the second activity (A2) involves participation in a service (2) associated with the service terminal (ST).

3. The communication system (100) as defined in any of claims 1-2, wherein the first activity (A1) comprises switching from a first mode in which the mobile device (MD) performs monitoring of short-range wireless communication signals to a second mode in which the mobile device (MD) performs ranging of short-range wireless communication signals.

4. The communication system (100) as defined in any of claims 1-3, wherein at least one of the first short-range wireless communication signal (S1) and second short-range wireless communication signal (S2) is a Bluetooth Low Energy signal.

5. The communication system (100) as defined in claim 4, wherein at least one of the first short-range wireless communication signal (S1) and second short-range wireless communication signal (S2) is a beacon advertisement signal.

6. The communication system (100) as defined in claim 3 or any of claims 4-5 when dependent on claim 3, wherein, in the second mode of performing ranging, the mobile device (MD) is configured to determine from the received second short-range wireless communication signal (S2) that the mobile device (MD) is located within the second distance (D2) or distance range (DR2) from the service terminal (ST) and accordingly react (R2) by performing the second activity (A2).

7. The communication system (100) as defined in claim 2 or any of claims 3-6 when dependent on claim 2, wherein the second activity (A2) comprises making a digital handshake with the service terminal (ST) as part of the service (2) associated with the service terminal (ST).

8. The communication system (100) as defined in claim 7 and further comprising a system server (SS), wherein the second activity (A2) comprises making a digital handshake with the service terminal (ST) by:

the mobile device (MD) detecting, from the received second short-range wireless communication signal (S2), identity information (TX2_ID) associated with the second transmitter function (TX2) or the service terminal (ST);

the mobile device (MD) reporting the detected identity information (TX2_ID) to the system server (SS) by long-range broadband data communication; and

the system server (SS) in response causing performance of the service (2).

9. The communication system (100) as defined in claim 2 or any of claims 3-8 when dependent on claim 2, wherein the service (2) involves digital payment for a purchase made by a user (U) of the mobile device (MD) at the service terminal (ST).

10. The communication system (100) as defined in claim 9, wherein the service terminal (ST) is a point-of-sales terminal.

11. The communication system (100) as defined in claim 2 or any of claims 3-10 when dependent on claim 2 and further comprising a system server (SS) and one or more additional service terminals (ST2, ST3, …, STn), wherein the first activity (A1) involves:

the mobile device (MD) detecting, from the received first short-range wireless communication signal (S1), identity information (TX1_ID) associated with the first transmitter function (TX1) or the service terminal (ST);

the mobile device (MD) reporting the detected identity information (TX1_ID) to the system server (SS) by long-range broadband data communication (120); and

the system server (SS) in response selectively notifying (122) the service terminal (ST), but not said additional service terminals (ST2, ST3, …, STn), by long-range broadband data communication.

12. The communication system as defined in claim 2 or any of claims 3-10 when dependent on claim 2 and further comprising a system server (SS), the service terminal (ST) comprising a presentation device (175), wherein the first activity (A1) involves:

the mobile device (MD) detecting, from the received first short-range wireless communication signal (S1), identity information (TX1_ID) associated with the first transmitter function (TX1) or the service terminal (ST);

the mobile device (MD) reporting (130) the detected identity information (TX1_ID) associated with the first transmitter function (TX1) as well as identity information (MD_ID) associated with the mobile device (MD) to the system server (SS) by long-range broadband data communication;

the system server (SS) in response:

determining an identity of a user (U) of the mobile device (MD) from the identity information (MD_ID) associated with the mobile device (MD);

determining promotional information customized for the user (U); and

communicating (132) the determined promotional information to the service terminal (ST) by long-range broadband data communication; and

the service terminal (ST) presenting the communicated promotional information by the presentation device (175) to the user (U) of the mobile device (MD).

13. The communication system as defined in claim 2 or any of claims 3-10 when dependent on claim 2 and further comprising a system server (SS), the service terminal (ST) comprising a presentation device (175), wherein the first activity (A1) involves:

the mobile device (MD) detecting, from the received first short-range wireless communication signal (S1), identity information (TX1_ID) associated with the first transmitter function (TX1) or the service terminal (ST);

the mobile device (MD) reporting (140) the detected identity information (TX1_ID) associated with the first transmitter function (TX1) as well as identity information (MD_ID) associated with the mobile device (MD) to the system server (SS) by long-range broadband data communication;

the system server (SS) in response:

determining an identity of a user (U) of the mobile device (MD) from the identity information (MD_ID) associated with the mobile device (MD),

determining user profile information associated with the user (U), and

communicating (142) the determined user profile information to the service terminal (ST) by long-range broadband data communication; and

the service terminal (ST) presenting the communicated user profile information by the presentation device (175) to an operator (O) of the service terminal (ST) and/or to the user (U) of the mobile device (MD).

14. The communication system as defined in any preceding claim, wherein the first and second transmitter functions (TX1, TX2) in or at the service terminal (ST) are configured for sending the first and second short-range wireless communication signals (S1, S2) at respective defined periodicities.

15. The communication system as defined in any preceding claim, wherein the first and second transmitter functions (TX1, TX2) in or at the service terminal (ST) are configured for sending the first and second short-range wireless communication signals (S1, S2) at respective transmission power levels, the transmission power level of the first short-range wireless communication signal (S1) being higher than the transmission power level of the second short-range wireless communication signal (S2).

16. The communication system as defined in any preceding claim, wherein the first and second transmitter functions (TX1, TX2) in or at the service terminal (ST) are configured for sending the first and second short-range wireless communication signals (S1, S2) with respective and different radio signals propagation profiles.

17. The communication system as defined in any preceding claim, wherein one or both of the first and second transmitter functions (TX1, TX2) is/are separate transmitter device(s) being positioned external to but physically near the service terminal (ST).

18. The communication system as defined in any of claims 1-16, one or both of the first and second transmitter functions (TX1, TX2) being implemented by short-range wireless communication circuitry comprised in the service terminal (ST).

19. The communication system as defined in any of claims 1-16, wherein both of the first and second transmitter functions (TX1, TX2) are implemented by a common separate transmitter device which is positioned external to but physically near the service terminal (ST).

20. The communication system as defined in any of claims 1-16, wherein both of the first and second transmitter functions (TX1, TX2) are implemented by common short-range wireless communication circuitry comprised in the service terminal (ST).

21. A method of activating a mobile device (MD) to enable use of a service (2) associated with a service terminal (ST), the method involving:

sending (300) a first short-range wireless communication signal (S1) to cause a first reaction (R1) when received by the mobile device (MD) being located within a first distance (D1) or distance range (DR1) from the service terminal (ST); and

sending (310)a second short-range wireless communication signal (S2) to cause a second reaction (R2) when received by the mobile device (MD) being located within a second distance (D2) or distance range (DR2) from the service terminal (ST), the second distance (D2) or distance range (DR2) being closer to the service terminal (ST) than the first distance (D1) or distance range (DR1),

wherein the method further comprises:

the mobile device (MD), while approaching the service terminal (ST):

- receiving (320) the first short-range wireless communication signal (S1) when being located within the first distance (D1) or distance range (DR1) from the service terminal (ST), and

- reacting (330, R1) to the receiving of the first short-range wireless communication signal (S1) by performing a first activity (A1); and

the mobile device (MD), while approaching closer to the service terminal (ST) and conditionally upon having performed the first activity (A1):

- receiving (340) the second short-range wireless communication signal (S2), and

- reacting (350, R2) to the receiving of the second short-range wireless communication signal (S2) by performing a second activity (A2) when being located within the second distance (D2) or distance range (DR2) from the service terminal (ST),

wherein the first activity (A1) involves preparations (335) for the second activity (A2).

22. The method as defined in claim 21, wherein the second activity (A2) involves participation (355, 357) in the service (2) associated with the service terminal (ST).

23. The method as defined in any of claims 21-22, wherein the first activity (A1) comprises switching from a first mode in which the mobile device (MD) performs monitoring of short-range wireless communication to a second mode in which the mobile device (MD) performs ranging of short-range wireless communication signals.

24. The method as defined in any of claims 21-23, wherein the second activity (A2) comprises making a digital handshake (355) with the service terminal (ST) as part of the service (2) associated with the service terminal (ST).

25. The method as defined in any of claims 21-24, wherein the service (2) involves payment (357) for a purchase made by a user (U) of the mobile device (MD) at the service terminal (ST).

26. A mobile computing device (150) comprising:
a controller (154);
a short-range wireless communication interface (156); and
a long-range broadband communication interface (158),
wherein the controller (154) is configured for performing the functionality defined for the mobile device (MD) in the method according to any of claims 21-25.

27. A computing device (170) comprising:
a controller (174);
a first transmitter function (176a) for short-range wireless communication;
a second transmitter function (176b) for short-range wireless communication and
a long-range broadband communication interface (178),
wherein the controller (174) is configured for performing the functionality defined for the service terminal (ST) in the method according to any of claims 21-25.