CLAIMS:

1. A method of operating a wireless device (300) providing communication with a wireless network, the method comprising:

registering (1501) with a first Public Land Mobile Network, PLMN, having a first PLMN identity;

performing (1505) a first plurality of Random Access, RA, procedures while registered with the first PLMN;

storing (1509), in memory (305), first information related to the first plurality of RA procedures associated with the first PLMN having the first PLMN Identity;

registering (1511) with a second PLMN having a second PLMN identity different than the first PLMN identity after registering with the first PLMN and after performing the first plurality of RA procedures;

discarding (1513) the first information from the memory responsive to registering with the second PLMN;

performing (1515) a second plurality of RA procedures while registered with the second PLMN;

storing (1519), in the memory (305), second information related to the second plurality of RA procedures associated with the second PLMN having the second PLMN Identity; and

transmitting (1525) an information message to the second PLMN, wherein the information message includes a plurality of Random Access Channel, RACH reports corresponding to the second plurality of RA procedures associated with the second PLMN identity based on the second information.

2. The method of Claim 1, wherein transmitting the information message comprises transmitting the information message to the second PLMN after performing the second plurality of RA procedures, wherein the information message includes a plurality of RACH reports corresponding to the second plurality of RA procedures associated with the second PLMN identity based on the second information.

3. The method of any of Claims 1-2, wherein for each one of the first plurality of RA procedures the first information includes the first PLMN identity, and wherein for each one of the second plurality of RA procedures the second information includes the second PLMN identity.

4. The method of Claim 3, wherein each one of the plurality of RACH reports corresponding to the second plurality of RA procedures includes the second PLMN identity.

5. The method of any of Claims 1-4, wherein for each one of the first plurality of RA procedures the first information includes an indication of a number of random access channel, RACH, preambles sent for the respective RA procedure, wherein for each one of the second plurality of RA procedures the second information includes an indication of a number of RACH preambles sent for the respective RA procedure, and wherein each RACH report of the plurality of RACH reports includes the indication of the number of RACH preambles sent for the second plurality of RA procedures.

6. The method of any of Claims 1-5, wherein for each one of the first plurality of RA procedures the first information includes a contention detected flag indicating whether contention resolution was unsuccessful for at least one of the RACH preambles sent for the respective RA procedure, wherein for each one of the second plurality of RA procedures the second information includes a contention detected flag indicating whether contention resolution was unsuccessful for at least one of the RACH preambles sent for the respective RA procedure, and wherein each RACH report of the plurality of RACH reports includes the contention detected flag for the respective one of the RA procedures for the second plurality of RA procedures.

7. A wireless device (300), the wireless device comprising:

processing circuitry (303); and

memory (305) coupled with the processing circuitry, wherein the memory includes instructions that when executed by the processing circuitry causes the wireless device to,

register with a first Public Land Mobile Network, PLMN, having a first PLMN identity,

perform a first plurality of Random Access, RA, procedures while registered with the first PLMN,

store, in memory (305), first information related to the first plurality of RA procedures associated with the first PLMN having the first PLMN Identity,

register with a second PLMN having a second PLMN identity different than the first PLMN identity after registering with the first PLMN and after performing the first plurality of RA procedures,

discard the first information from the memory responsive to registering with the second PLMN,

perform a second plurality of RA procedures while registered with the second PLMN,

store, in the memory (305), second information related to the second plurality of RA procedures associated with the second PLMN having the second PLMN Identity, and

transmit an information message to the second PLMN, wherein the information message includes a plurality of Random Access Channel, RACH reports corresponding to the second plurality of RA procedures associated with the second PLMN identity based on the second information.

8. The wireless device (300) of Claim 7, wherein transmitting the information message comprises transmitting the information message to the second PLMN after performing the second plurality of RA procedures, wherein the information message includes a plurality of RACH reports corresponding to the second plurality of RA procedures associated with the second PLMN identity based on the second information.

9. The wireless device (300) of any of Claims 7-8, wherein for each one of the first plurality of RA procedures the first information includes the first PLMN identity, and wherein for each one of the second plurality of RA procedures the second information includes the second PLMN identity.

10. The wireless device (300) of Claim 9, wherein each one of the plurality of RACH reports corresponding to the second plurality of RA procedures includes the second PLMN identity.

11. The wireless device (300) of any of Claims 7-10, wherein for each one of the first plurality of RA procedures the first information includes an indication of a number of random access channel, RACH, preambles sent for the respective RA procedure, wherein for each one of the second plurality of RA procedures the second information includes an indication of a number of RACH preambles sent for the respective RA procedure, and wherein each RACH report of the plurality of RACH reports includes the indication of the number of RACH preambles sent for the second plurality of RA procedures.

12. The wireless device (300) of any of Claims 7-11, wherein for each one of the first plurality of RA procedures the first information includes a contention detected flag indicating whether contention resolution was unsuccessful for at least one of the RACH preambles sent for the respective RA procedure, wherein for each one of the second plurality of RA procedures the second information includes a contention detected flag indicating whether contention resolution was unsuccessful for at least one of the RACH preambles sent for the respective RA procedure, and wherein each RACH report of the plurality of RACH reports includes the contention detected flag for the respective one of the RA procedures for the second plurality of RA procedures.

13. A wireless device (300), wherein the wireless device is adapted to:

register with a first Public Land Mobile Network, PLMN, having a first PLMN identity;

perform a first plurality of Random Access, RA, procedures while registered with the first PLMN;

store, in memory (305), first information related to the first plurality of RA procedures associated with the first PLMN having the first PLMN Identity;

register with a second PLMN having a second PLMN identity different than the first PLMN identity after registering with the first PLMN and after performing the first plurality of RA procedures;

discard the first information from the memory responsive to registering with the second PLMN;

perform a second plurality of RA procedures while registered with the second PLMN;

store, in the memory (305), second information related to the second plurality of RA procedures associated with the second PLMN having the second PLMN Identity; and

transmit an information message to the second PLMN, wherein the information message includes a plurality of Random Access Channel, RACH reports corresponding to the second plurality of RA procedures associated with the second PLMN identity based on the second information.

14. The wireless device (300) of Claim 13, wherein the wireless device is further adapted to perform operations according to any of Claims 2-6.

15. A computer program comprising program code to be executed by processing circuitry (303) of a wireless device (300), whereby execution of the program code causes the wireless device (300) to:

register with a first Public Land Mobile Network, PLMN, having a first PLMN identity,

perform a first plurality of Random Access, RA, procedures while registered with the first PLMN;

store, in memory (305), first information related to the first plurality of RA procedures associated with the first PLMN having the first PLMN Identity;

register with a second PLMN having a second PLMN identity different than the first PLMN identity after registering with the first PLMN and after performing the first plurality of RA procedures;

discard the first information from the memory responsive to registering with the second PLMN;

perform a second plurality of RA procedures while registered with the second PLMN;

store, in the memory (305), second information related to the second plurality of RA procedures associated with the second PLMN having the second PLMN Identity; and

transmit an information message to the second PLMN, wherein the information message includes a plurality of Random Access Channel, RACH reports corresponding to the second

plurality of RA procedures associated with the second PLMN identity based on the second information.

16. The computer program of Claim 15, whereby execution of the program code further causes the wireless device to perform operations according to any of Claims 2-6.

17. A computer program product comprising a non-transitory storage medium including program code to be executed by processing circuitry (303) of a wireless device (300), whereby execution of the program code causes the wireless device (300) to:

register with a first Public Land Mobile Network, PLMN, having a first PLMN identity,

perform a first plurality of Random Access, RA, procedures while registered with the first PLMN;

store, in memory (305), first information related to the first plurality of RA procedures associated with the first PLMN having the first PLMN Identity;

register with a second PLMN having a second PLMN identity different than the first PLMN identity after registering with the first PLMN and after performing the first plurality of RA procedures;

discard the first information from the memory responsive to registering with the second PLMN;

perform a second plurality of RA procedures while registered with the second PLMN;

store, in the memory (305), second information related to the second plurality of RA procedures associated with the second PLMN having the second PLMN Identity; and

transmit an information message to the second PLMN, wherein the information message includes a plurality of Random Access Channel, RACH reports corresponding to the second plurality of RA procedures associated with the second PLMN identity based on the second information.

18. The computer program product of Claim 17, whereby execution of the program code further causes the wireless device to perform operations according to any of Claims 2-6.