Title: INTEGRATION OF EXTERNAL LOCATION ENGINE USING SWITCH

Abstract: An RF switch is provided. The RF switch includes a processor adapted for communication with an external location engine. The processor is configured to receive notification regarding a status of a wireless asset, receive a plurality of input variables associated with the wireless asset, determine whether the wireless asset is associated with the external location engine, and if the wireless asset is associated with the external location engine, query the external location engine for location data associated with the wireless asset.
as to the applicant’s entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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1. An RF switch, comprising:
   a processor adapted for communication with an external location engine and configured to:
   receive notification regarding a status of a wireless asset,
   receive a plurality of input variables associated with the wireless asset,
   determine whether the wireless asset is associated with the external location engine, and
   if the wireless asset is associated with the external location engine, query the external location engine for location data associated with the wireless asset, and if the wireless asset is not associated with the external location engine, an onboard location engine of the switch analyzes the plurality of input variables associated with the wireless asset to determine a location of the wireless asset.

2. The RF switch of claim 1, further including an adapter adapted to couple between the external location engine and the processor for providing a network interface between the external location engine and the processor.

3. The RF switch of claim 1, wherein the processor is further configured to, if the wireless asset is not associated with the external location engine, calculate a location of the wireless asset using the plurality of input variables.

4. The RF switch of claim 1, wherein the processor is further configured to report location information of the wireless asset to a user.

5. The RF switch of claim 4, further including an interface operational on the processor for facilitating reporting of the location information to the user.

6. The RF switch of claim 1, wherein the onboard location engine is compatible with the wireless asset, integrated into the processor.
7. The RF switch of claim 1, wherein the wireless asset includes a passive, semi-passive or active radio frequency (RF) tag, a radio frequency identification (RFID) tag, a wireless station, or an access point.

8. The RF switch of claim 1, wherein the processor is further configured to determine the location of a passive radio frequency identification (RFID) tag by combining data representative of a location of an RFID reader with data representative of antenna power and direction of the tag.

9. A system for facilitating communication between an RF switch and an external location engine, comprising:
   means for receiving notification from a network resource regarding a status of a wireless asset;
   means for receiving a plurality of input variables associated with the wireless asset from the network resource;
   means for determining whether the wireless asset is associated with the external location engine;
   means for querying the external location engine for location data associated with the wireless asset if the wireless asset is associated with the external location engine; and
   means for determining at the switch a location of the wireless asset if the wireless asset is not associated with the external location engine.

10. The system of claim 9, further including means for operating a network interface between the external location engine and the processor.

11. The system of claim 9, further including means to, if the wireless asset is not associated with the external location engine, calculate a location of the wireless asset using the plurality of input variables.
12. The system of claim 9, further including means to report location information of the wireless asset to a user.

13. The system of claim 12, further including means to facilitate reporting of the location information to the user using an interface.

14. The system of claim 9, wherein the plurality of input variables includes training data, a user configuration, a RF barrier specified by a user, a signal propagation characteristic, a time difference of arrival (TDoA) parameter, a time of arrival (TOA) parameter, an angle of arrival (AoA) parameter, or a previous position of the wireless asset.

15. The system of claim 9, wherein the wireless asset includes a passive, semi-passive or active radio frequency (RF) tag, a radio frequency identification (RFID) tag, a wireless station, or an access point.

16. A computer program product, comprising: a computer usable medium having computer-readable code embodied therein for facilitating communication between an RF switch and an external location engine, the computer program product comprising:

   a first executable computer-readable code configured to cause a computer processor to receive notification from a network resource regarding a status of a wireless asset;

   a second executable computer-readable code configured to cause the computer processor to receive a plurality of input variables associated with the wireless asset from the network resource;

   a third executable computer-readable code configured to cause the computer processor to determine whether the wireless asset is associated with the external location engine;

   a fourth executable computer-readable code configured to cause the computer processor to query the external location engine for location data associated with the wireless asset if the wireless asset is associated with the external location engine, and
a fifth executable computer-readable code configured to cause the computer processor to analyze the plurality of input variables associated with the wireless asset to determine a location of the wireless asset if the wireless asset is not associated with the external location engine.

17. The computer program product of claim 16, further including a fifth executable computer-readable code configured to cause the computer processor to operate a network interface between the external location engine and the processor.

18. The computer program product of claim 16, further including a fifth executable computer-readable code configured to cause the computer processor to calculate a location of the wireless asset using the plurality of input variables.

19. The computer program product of claim 16, further including a fifth executable computer-readable code configured to cause the computer processor to report location information of the wireless asset to a user.

20. The computer program product of claim 19, further including a sixth executable computer-readable code configured to cause the computer processor to facilitate reporting of the location information to the user using an interface.

21. The computer program product of claim 16, wherein the plurality of input variables includes training data, a user configuration, a RF barrier specified by a user, a signal propagation characteristic, a time difference of arrival (TDoA) parameter, a time of arrival (TOA) parameter, an angle of arrival (AoA) parameter, or a previous position of the wireless asset.