CLAIMS

1. A device with a positioning function comprising:

a satellite receiver that receives signals from artificial satellites used in a satellite positioning system;

a positioning section that measures a position of a host device based on the signals received by the satellite receiver from the artificial satellites;

an authentication information acquisition section that acquires authentication information from an authentication center disposed outside of the host device, wherein the authentication information is used to authenticate whether the signals from the artificial satellites are legitimate signals;

an authentication section that authenticates, based on the authentication information, whether the signals received by the satellite receiver are the legitimate signals from the artificial satellites;

an authentication level calculation section that calculates an authentication level based on at least one of a quantity of artificial satellites authenticated by the authentication section or a ratio of the artificial satellites authenticated by the authentication section to the artificial satellites used for positioning the host device by the positioning section; and

a positioning result transmission processing section that successively transmits a positioning result measured by the positioning section to a different device, which is different from the host device and the authentication center, wherein the positioning result transmission processing section attaches the authentication level calculated by the authentication level calculation section to the positioning result before transmitting the positioning result.

2. The device with a positioning function according to claim 1, wherein

the device with a positioning function is used for a movable body, and

the positioning result transmission processing section transmits the positioning result and the authentication level to the different device which is

authenticated to artificial satellites used in measuring of the position result by the device with a positioning function;

an execution section that executes a positioning result utilization process, wherein the positioning result utilization process is a process which utilizes the positioning result received by the positioning result reception processing section; and

a utilization determination section that determines, based on the authentication level attached to positioning result received by the positioning result reception processing section, whether to utilize the positioning result in the positioning result utilization process,

wherein the positioning result receiving device is different from the device with the positioning function and an authentication center.

10. The positioning result receiving device according to claim 9, wherein,

when a reliability of the positioning result required for the positioning result utilization process increases, the utilization determination section increases a reference level with which the authentication level is compared for permitting a utilization of the positioning result in the positioning result utilization process, and

the positioning result utilization process is executed by the execution section and the positioning result is received by the positioning result reception processing section.

11. The positioning result receiving device according to claim 9 or 10, wherein the device with a positioning function is used for a movable body and the positioning result reception processing section receives, from the device with a positioning function, the positioning result to which the authentication level is attached, the positioning result receiving device further comprising:

a storage processing section that successively stores, under a condition that an activation condition of the positioning result utilization process is satisfied and the authentication level received by the positioning result reception processing section is lower than the authentication level required for the positioning result utilization process, the positioning results received after the activation condition of the positioning

a positioning section that measures a position of a host device based on the signals received by the satellite receiver from the artificial satellites;

an authentication information acquisition section that acquires authentication information from an authentication center disposed outside of the host device, the authentication information being used to authenticate whether the signals from the artificial satellites are legitimate signals;

an authentication section that authenticates, based on the authentication information, whether the signals received by the satellite receiver are the legitimate signals from the artificial satellites;

an authentication level calculation section that calculates an authentication level based on at least one of a quantity of artificial satellites authenticated by the authentication section or a ratio of the artificial satellites authenticated by the authentication section to the artificial satellites used for positioning the host device by the positioning section; and

a positioning result transmission processing section that successively transmits a positioning result measured by the positioning section to a different device, which is different from the host device and the authentication center, the positioning result transmission processing section attaching the authentication level calculated by the authentication level calculation section to the positioning result before transmitting the positioning result, and

the positioning result receiving device includes:

a positioning result reception processing section that receives positioning result successively transmitted from the device with a positioning function, the authentication level being attached to the positioning result;

an execution section that executes a positioning result utilization process which utilizes the positioning result received by the positioning result reception processing section; and

a utilization determination section that determines, based on the authentication level attached to positioning result received by the positioning result reception processing