What is claimed is:

1. A wireless communication system, comprising:

a transmitter including a rotationally polarized wave generation unit that generates a plurality of rotationally polarized waves, an information signal generation unit that generates a plurality of information signals, an origination unit that multiplies the rotationally polarized waves and the information signals and originates results of the multiplication as origination signals, and a state changeover switch that performs changeover between a wireless channel acquisition state in which one of the plurality of information signals is multiplied by one of the plurality of rotationally polarized waves and a result of the multiplication is originated and a normal transmission state in which the plurality of information signals are multiplied by the plurality of rotationally polarized waves and results of the multiplication are originated; and

a receiver including a reception unit that receives the origination signals from the transmitter, a weighting circuit unit that performs weighting for the signals received by the reception unit, and a reception baseband unit that regenerates the signals weighted by the weighting circuit unit into the information signals transmitted from the transmitter.

2. The wireless communication system according

to claim 1, wherein

the transmitter multiplies, by the state changeover switch, one of the plurality of information signals by one of the plurality of rotationally polarized waves and originates resulting signals, and the receiver performs weighting for the received signals by the weighting circuit unit and regenerates the weighted signals into the information signals transmitted from the transmitter; and

the transmitter multiplies, when the wireless channel acquisition state is established by the state changeover switch, the plurality of information signals by the plurality of rotationally polarized waves to originate a plurality of information signals, and the receiver performs weighting of the plurality of received signals by the weighting circuit unit and reproduces the weighted signals using the information signals reproduced in the wireless channel acquisition state.

3. The wireless communication system according to claim 2, wherein

the weighting circuit unit of the receiver includes a plurality of weighting circuits that perform weighting for the received signals with a plurality of phase angles different from each other;

the transmitter multiplies, by the state changeover switch, one of the plurality of information signals by one of the plurality of rotationally

polarized waves and originates the information signal, and the receiver performs weighting of the received signal with a plurality of phase angles different from each other and reproduces the weighted signals into the plurality of information signals transmitted from the transmitter; and

the transmitter establishes the wireless channel acquisition state by the state changeover switch and multiplies the plurality of information signals by the plurality of rotational polarization waves such that a plurality of signals are originated, and the receiver reproduces the signals obtained by weighting the plurality of received signals by the plurality of weighting circuits using the plurality of information signals reproduced in the wireless channel acquisition state.

4. The wireless communication system according to claim 2, wherein

the transmitter includes a polarization angle identification code generator that generates a code for dividing a polarization rotation period and superimposes a polarization angle identification code generated by the polarization angle identification code generator on the plurality of information signals, and the receiver separates the reception signals for each rotationally polarized wave used by the transmitter using the polarization angle identification code.

5. The wireless communication system according

to claim 2, wherein the transmitter includes a polarization rotation period cyclic code generator that generates a cyclic code having a period equal to a polarization rotation period and superimposes a polarization rotation period cyclic code generated by the polarization rotation period cyclic code generator on the plurality of information signals, and the receiver separates the reception signals for each rotationally polarized wave used by the transmitter using the polarization rotation period cyclic code.

6. The wireless communication system according to claim 2, wherein the transmitter includes a polarization angle identification code generator that generates a code for dividing a polarization rotation period, a polarization rotation period cyclic code generator that generates a cyclic code of a period equal to the polarization rotation period, and a code changeover switch that performs changeover between the polarization angle identification code generator and the polarization rotation period cyclic code generator, and the polarization angle identification code generated by polarization angle identification code generator and the polarization rotation period cyclic code generated by the polarization rotation period cyclic code generator are changed over by the code changeover switch so as to be superimposed on the plurality of information signals, and the receiver separates the reception signals for each rotationally

polarized wave used by the transmitter using the polarization angle identification code or the polarization rotation period cyclic code.

7. The wireless communication system according to claim 1, wherein the plurality of rotationally polarized waves generated by the rotationally polarized wave generation unit have initial phases different from each other and have a same frequency and a same direction of rotation.

8. The wireless communication system according to claim 1, wherein

the plurality of rotationally polarized waves generated by the rotationally polarized wave generation unit have initial polarizations different from each other and have a same frequency and a same direction of rotation.

9. The wireless communication system according to claim 1, wherein the plurality of information signals generated by the information signal generation unit undergo delays different from each other.

10. The wireless communication system according to claim 1, wherein the plurality of information signals generated by the information signal generation unit are formed by time dividing an information signal.

11. The wireless communication system according to claim 1, wherein the state changeover switch performs changeover of the wireless channel acquisition state and the normal transmission state alternately in

a period of time equal to an integer multiple of the polarization rotation period.

12. The wireless communication system according to claim 1, wherein the state changeover switch performs changeover between the wireless channel acquisition state and the normal transmission state such that the wireless channel acquisition state is executed in a period of time equal to an integer multiple of the polarization rotation period whereas the normal transmission state is executed in a period of time equal to an integer multiple of the polarization rotation period longer than the execution time period of the wireless channel acquisition state.

13. An elevator controlling system, comprising the wireless communication system according to claim 1.

14. A substation controlling system, comprising the wireless communication system according to claim 1.