受験番号：30IPE020

Claim1

An artificial satellite comprising a Doppler compensation circuit comprising:

a Doppler estimation unit configured to acquire a received power level of a received wave and a time variation of the received power level, and derive a Doppler frequency of the satellite based on the received power level of the received wave and the time variation of the received power level, and output the Doppler frequency as an estimated Doppler frequency;

a multiplication unit configured to offset a local frequency for demodulation by the estimated Doppler frequency, by multiplying the estimated Doppler frequency and the local frequency signal.

Claim2

The artificial satellite according to Claim1, wherein the Doppler estimation unit acquires the received power level of the received wave and the time variation of the received power level, and calculates the Doppler frequency of the satellite based on the received power level of the received wave and the time variation of the received power level, and outputs the Doppler frequency, as the estimated Doppler frequency, to the multiplication unit, where a speed of light, a position of a transmitting station, a carrier wavelength λ, a transmission equivalent isotropic radiated power, and a receiving antenna gain Gr are regarded as fixed parameters.

Claim3

The artificial satellite according to Claim1, wherein the Doppler estimation unit acquires the received power level of the received wave and the time variation of the received power level, calculates, referring to reference information that includes candidates for the estimated Doppler frequency provided in advance in association with the received power level, the estimated Doppler frequency candidates based on the acquired received power level of the received wave, selects an estimated Doppler frequency from among the candidates based on the time variation of the received power level, and outputs the estimated Doppler frequency to the multiplication unit.

In recent years, as a next-generation energy, a fuel cell device including a fuel battery

cell that can obtain electric power using fuel gas (hydrogen-containing gas) and oxygen-containing gas (air) has been proposed. A power conditioner is used in the power generation system in order for the fuel cell device, which is a distributed power source, to supply power to the load in cooperation with the system power supply. The power conditioner has various functions such as an inverter function for converting the direct current output from the fuel cell device into an alternating current, and a control function for performing cooperation control with the system power supply. The power conditioner supplies, in cooperation with the system power supply, the power generated by the fuel cell device to the external load. At this time, the power conditioner outputs power according to the power demand from the external load by increasing or decreasing the output power so as not to generate reverse power flow to the system. When the output power from the inverter to the external load increases, the output current from the fuel cell device to the power conditioner decreases. When the fuel cell device detects a decrease in output current, it attempts to increase the amount of oxygen gas and fuel gas supplied to the fuel cells by controlling the operation of the auxiliary device, in order to increase the power generation amount. However, it is difficult to increase the amount of oxygen gas and fuel gas instantaneously, and thus, oxygen gas and fuel gas for power generation may become insufficient in the fuel cell device. Hence, there are problems such as power generation with insufficient oxygen gas and fuel gas that causes damage to the fuel cells, leading to an increased risk of breakage of the fuel cell device, and shortened service life of the fuel cell device.

The business bird's-eye view BV, which will be described later in detail, is a bird's-eye view that abstracts and illustrates the overall picture of the business to be systemized using "events", "cores", and figures showing their relationships, thereby illustrating the entire business operations of a company from a macro-perspective, and in a way multiple people can understand. The pre-processing engine 100 functions, when building the core business application, to clearly identify the business and the target of the core business and express them in the form of a business bird's-eye view.

The SVO list E1 is a list displaying the operations the roles on the scenario chart perform on the operation target. The SVO list E1 is a list that is developed with the same granularity as the rolls on the scenario chart D4, in other words, with the "function" when the rolls on the scenario chart D4 are systematized serving as the granularity. Also, the activity definition E2 includes definitions regarding processes

(steps) for completing roles on the scenario chart D4.