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## SynerGEE Electric 5.1.4

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**Field of the Invention** The invention relates to an adaptive transmission interference cancellation device for canceling interference at each terminal of a communication network from its previous transmission and/or its subsequent transmission in a Time Division Multiplex (TDM) communication network. **2. Description of the Related Art** As the number of subscribers of communication networks increases, the demand for the amount of bandwidth for transmitting data is also increasing. Moreover, there are subscribers with a lot of traffic which dominate the system even though they use little bandwidth. In order to resolve this problem, there has been developed a technique of the so-called load balancing, which involves the allocation of reserved bandwidth to the dominant and/or low traffic communicating subscribers. When the data is transmitted over a TDM communication network, for example, such as a public communication network, if interference is generated in the communication network, the signal is considerably attenuated. As a result, the transmitted data may not arrive at its destination unless a certain degree of priority is given to the communication network over the other data. Therefore, it is required for a terminal of the communication network to be able to not only cancel interference, but also be able to modify and/or improve the cancellation accuracy in accordance with the propagation conditions of the communication network. FIG. 1 shows the conventional adaptive transmission interference cancellation device. The device comprises a subtracter 5 for subtracting a received signal from its interference from a cancellation target signal which is expected as the received signal. The subtracted signal from the subtracter 5 is then inputted to a frequency domain equalizer 6 to eliminate interference which is generated due to the preceding and/or subsequent transmissions. FIG. 2 shows the configuration of the conventional adaptive transmission interference cancellation device, particularly the subtraction circuit in the subtracter 5. The subtracter 5 comprises a delay circuit 1 and an adder 2. The adder 2 receives the signal from the delay circuit 1, subtracts the interference from the cancellation target signal, and outputs the subtracted





