動的無線 BAN チャネル特性解析のための MIMO チャネル応答と人体姿勢の同時測定装置の開発

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Development of Simultaneous Measurement System of MIMO Channel Response and Body Posture for Study of Dynamic WBAN Channel

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Wireless body area network (WBAN) is a wireless sensor network inside, on or around the human body, and is expected to be utilized in medical and health-care applications. Dynamic behavior of radio propagation channel is important information for design and characterization of WBAN system. Various factors simultaneously influence the channel responses, such as position and orientation of antennas, electromagnetic interaction antenna and human body, and obstruction by human body itself. Therefore, it is rather difficult to analyze the propagation mechanism of dynamic WBAN channel. This paper reports the development of simultaneous measurement system of MIMO channel response and body posture of dynamic WBAN channel. Body posture information is utilized to synthesize numerical phantom for electromagnetic simulation via computer animation software. Comparison between measurement and predicted channel responses is possible by using the system, and some examples will be presented.