

Development of Field Servers for a Field Monitoring System

Tokihiro Fukatsu, Masayuki Hirafuji

National Agricultural Research Organization
National Agricultural Research Center
3-1-1 Kannondai, Tsukuba, Ibaraki, 305-8666, Japan

Summary

In agriculture, it is important for reaching at high productivity to monitor field information regarding environment conditions, growth stages of crops and farm operations. We have developed a "Field Server" (compact monitoring robot which is equipped with sensors, a Web server, a wireless LAN access-point, a data acquisition system and high-resolution digital cameras) for easy installation and remote operation in any field; and we have constructed a field monitoring system which can monitor field information in real-time by installing a massive number of Field Servers within a field.

In the field monitoring system, we can monitor field information and control equipments via a Web browser (*e.g.* Internet Explorer, Netscape). We attempted to monitor field information by actually installing Field Servers at various sites within a field, and showed that the field monitoring system could be constructed easily and economically with Field Servers. In this system, Field Servers are not only monitoring robots but also infrastructure, that will be needed for future kinds of agriculture, so further utilization of the field monitoring system is expected.

Keywords

Field Server, field monitoring system, Internet, Wireless LAN, automatic measurement, remote control