Research Regarding Filter Composition and Motor control for Yagi-Antenna Remote Tracking System

야기 안테나가 적용된 원격추적시스템을 위한 필터구성 및 모터 제어에 관한 연구

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Abstract

To study a habit and life patten of a wild animal, this paper do a research on the location tracing system of wild animal by yagi-antenna low pass filter, angle tracking technology. Commonly, VHF Radio Telemetry is used for the location tracing system of wild animal. Considering movement, Previous yagi-antenna has 4-element and has advantage of portability but the other advantages are small and preference is weak. To make the advantage of yagi-antenna higher than previous one, Supposed technology adapt to 6-element and make out Narrow space yagi-antenna technology. Also, It supposes that AOA (:Angle of arrival) technology is applied to detecting technology for a close direction from received signal. Based on this study suggest that position tracing technology is so as to figure out a life patten and habit of a wild animal which live in a certain area.

Keywords

Wildlife; Yagi-Antenna; Low Pass Filter; Angle of Arrival; LoRa

야생 동물; 야기 안테나; 저역 통과 필터; 각도 측위; 로라 무선 통신;
Yagi-Uda antennas, which have an active element with accompanying parasitic and reflective elements to create a highly-directed transmission. Log-peric dic antennas, which are multi-element, unidirectional, narrow-beam antennas that have impedance and radiation characteristics that are regularly repet ive as a logarithmic function of the excitation frequency. Panel antennas (and sector antennas) usually have a flat panel shape and are enclosed within a plastic radome to protect the elements and electronics. These use a microstrip-patch or planar array antenna or multiple dipoles. The cell site can use sev eral panel antennas or bays of panels as required, and adaptive antennas can select the optimal antenna for the application. They are most often used in broadcasting. Yagi Antenna Frequency Range 1710~1880 MHz Polarization Vertical Half Power Beamwidth H-Plane 54°, E-Plane 48° Gain 10 dBi Height 43 0 mm Yagi Antenna Freq. AYI-G10. Yagi Antenna. Frequency Range. 806~960 MHz. Polarization. Vertical. Half Power Beamwidth. H-Plane 50°, E-Plane 4 2°. The core of the system is active antenna tracking with directional antennas. The proposed system is decentralized and consists mainly of a mobile rob t system and a command center system. Each system is equipped with off-the-shelf network devices such as antennas, access points (AP), and network s itches. There has been active research in DOA estimation and source localization methods using directional or omnidirec-tional antennas. Sayraan-Pour nd Kaspar (2006) showed that a receiver equipped with a circular array antenna with beam-forming capability could generate the spatial spec-trum of the received power by electronically rotating the main lobe around the 360° eld of view.