



Flexible and cost-effective Mesh Wi-Fi development to transform underdeveloped telecommunications infrastructure in West Africa

Project

With the aim of developing business in the West African market, we developed a mesh Wi-Fi program and equipment that combines low cost with high weather resistance, and conducted a demonstration experiment in the Republic of Benin. We also conducted a needs-based survey in the Republic of Senegal based on these developments. The demonstration experiment included: (1) communication quality and performance testing; (2) weather resistance testing; (3) installation by local staff; and (4) discussions on practical application. For internet access, a single satellite communication base station was connected to the main unit, and thereafter, communication resources were distributed among multiple child units, and the effectiveness of viewing streaming content in every corner of the village, installing multiple IP cameras in the village, uploading video data to the cloud, and viewing the same video remotely was confirmed, as well as the effectiveness of developing low-power consumption devices that take into account the local solar power system.



Result

Using Wi-Fi access points that are low-priced and have high weather resistance to suit the local market, and which also have a radio wave visualization indicator function that can be easily installed by anyone, the installation of equipment and network internet connection and other engineering work was carried out by Dots for local staff and local community members, and in just one hour, we succeeded in making almost the entire 18-hectare village an area with communications coverage. In addition, the results of the analysis of the test data showed that the speed between the access points and the Internet speed from each access point were equivalent to our theoretical model. No deterioration in quality was observed immediately after installation or after a period of time had elapsed since installation, and good results were obtained.

Way Forward

In order to promote business development in the CFA franc economic zone, which includes the Republic of Benin and the Republic of Senegal, we will strengthen our collaboration with Dots for. We will also carry out ongoing demonstration experiments and develop partner companies in parallel.