

POWL- Smart Communication and Help Station

The main task of the system is to enable people to communicate with public institutions and receive support in case of disasters and emergencies. It fulfills its duty with the technological hardware and software on the system and in the command center. These:

1. Video and Audio Conversation System
2. Free Internet Provision System
3. Wireless Communication System
4. Siren System
5. Announcement and Announcement System
6. Corporate Visibility Materials
7. Renewable Energy Solar Panel System
8. Battery and Power System
9. Artificial Intelligence Supported AI Camera System (Fixed and/or 360 ° camera)
10. Reinforced Aluminum Mast Main Body
11. USB Smart Charging Station System
12. Communication System with Braille Alphabet for the Visually Impaired
13. Neon LED Light System
14. LED Lighting System

The design is multifunctional and fulfills all the specified tasks on a single structure.

Importance of the System:

Since the current technological infrastructure conditions and sufficient field application studies are not available in disaster situations, citizens need communication and assistance in disaster situations. Especially in disaster situations, it is of vital importance to direct people to the safest points in emergency situations through the relevant coordination centers.

Thanks to the project's renewable energy technology, fiber and closed-circuit wireless communication infrastructure, it can operate without mains electricity for 48 hours and is integrated with command centers, thus it will be possible to inform citizens correctly and to identify and dispatch teams that will respond to incidents in a timely and effective manner.

In particular, the stations will be positioned at safe points such as schoolyards and parks determined by the disaster coordination units, so that people can be directed to the most reliable points in case of natural disasters. Thanks to the application, people will be able to obtain information about the latest status of their relatives after the disaster and will be able to share their own health and location information with the application.

Ease of Use:

There are many different techniques and methods of energy production in living spaces, but the development of the concept of green energy and meeting the energy needs of systems used in streets, pedestrian paths with high socio-cultural importance, parks, gardens and open areas in sites are at the top among these systems. The most common of these systems are

solar energy systems. It is widely known that when solar energy systems are used, continuous energy production is made possible and annual production increases.

Road side unit (RSU), weather station, wireless AP, camera, LED display, general help terminal, online speaker, charging stations, etc. It has been designed to provide multi-purpose use by integrating systems used in many industries.

Our project, which is planned to be implemented, aims to design and manufacture a smart lighting pole equipped with renewable energy sources, which is designed to be easily mounted on the pole and integrates the solar panel, charge control system, battery and inverter systems with a minimum power of 250 watts at the installation point.

In disaster situations such as earthquakes, if everyone is loaded on the network at the same time, there is congestion, and in case the base station collapses or the line coming to the house is cut off during the earthquake, citizens will be able to communicate thanks to the station solution that provides alternative communication such as Bluetooth and Wi-Fi.

Efficiency (Why does it work well?)

Smart poles produced with the smart communication and aid station project will be developed to be used in many areas and will be one of the important IOT infrastructures in smart cities by using the opportunities of renewable energy. The smart pole project is a weather-resistant structure to which the smart city's data collection sensors can be installed, and the collected data is shared with each responsible department (Municipalities, Police Departments, Organized Industrial Zones, etc.), resulting in a more efficient and integrated city management.

User benefit (How does it serve the user?)

With this project, the operation will be more manageable and efficient by being done on a central platform. The places where intense data is obtained in the field will be located with the functional architecture planned to be developed within the scope of the project, primarily through GPS technology for location determination, big data infrastructure where all information will be collected, and artificial intelligence-supported geographic information systems (GIS) where this data will be intelligently interpreted, from a single center. An application that can be managed will also be developed within the scope of this project.

Social Benefit (How does it serve or benefit society?)

In areas where the Smart Communication and Assistance Station, which is the project output in question, is implemented;

- The quality of social areas will increase,
- Lighting will draw less power from the grid with solar panels,
- Energy will be produced from environmentally friendly sources, so if 1000 project output products are used, approximately 119.85 tons/year CO2 carbon emissions will be prevented, which corresponds to 360 trees, considering only lighting energy,
- Charging opportunity will be provided for mobile devices within the direct capacity,

- Longer outdoor journeys will be possible by providing charging opportunities for the disabled vehicles of disabled individuals.
- Internet facility will be provided
- Security cameras will be made independent from power outages
- The poles will be positioned at safe points such as schoolyards and parks determined by the disaster coordination units and will ensure that people are directed to the safest points in case of natural disasters.
- Thanks to the application, people will be able to obtain information about the latest status of their relatives after the disaster and share their own health and location information with the application.
- Children and parents will be able to contact the nearest security point whenever they want, thanks to the 'Smart Aid Station' that they can easily use.

Sustainability (Why sustainable?)

- The works designed within the scope of smart pole and communication solutions have been created according to existing systems and technologies.
- Technical/technological uncertainty may arise if existing systems change.
- With the design we have developed, the infrastructure is designed to adapt to the new updated technological infrastructure in case of any changes.
- Software architecture has been created and developed in accordance with smart city architecture.
- It will be able to work integratedly if there are additional features desired on the hardware.
- The poles are designed with a plug&play architecture in terms of hardware, and are designed to be easily assembled in the current situation and reused with minor changes in case the components on them change brand and model.
- It is aimed to increase people's access to information and technology and their capacity to use information. Within the framework of the vision of being a country that has become a focal point in science and technology production, uses information and technology as an effective tool, produces more value with information-based decision-making processes, is successful in global competition and has a high level of prosperity, municipal services are more efficient, reliable, timely, The sustainability of our project comes to the fore in order to meet it in an economical and forward-looking manner.

Current status of the project:

The application is actively working at 15 locations in Istanbul, Turkey.

Offer and Potential Customer Target Group:

- Municipalities
- Police Departments
- Organized Industrial Zones
- Military Application Areas
- Big Companies
- Other public institutions

We have a high capacity production line in our factory area in Istanbul. The electronic system development and software development of the product is carried out by the MRC team in the Biruni University Technology Development area.

We are open to cooperation offers to disseminate and commercialize this product/system.

MRC Group of Companies

Contact Person: Muti Rumelli

Gsm: +90 532 6463005

Address: Biruni Technology Development Zone, Kazlıçeşme Mah. 245th St. No:5 Zeytinburnu/Istanbul

E-mail: mrc@mrcbusiness.com

Web: www.mrcbusiness.com



All rights belong to MRC Bilişim Proje Sanayi ve Ticaret Anonim Şirketi. Cannot be copied or reproduced without permission