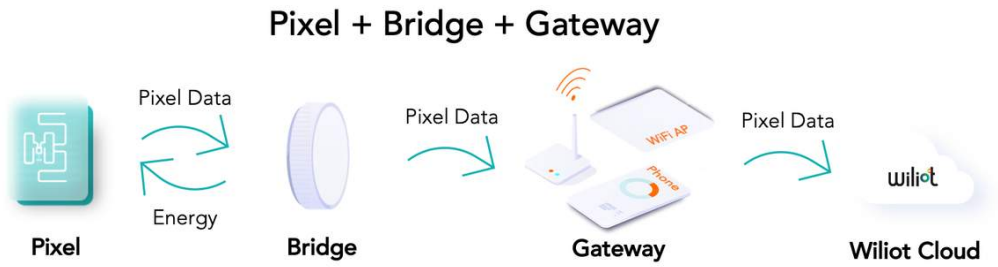
Recommended Architecture for Deployments

The key to deploy Wiliot technology with IoT Pixels is **energizing** the Pixels and **routing** of their messages. There are variety of possible solution architectures, but this article discusses a typical architecture design.

Three Tier Architecture

A three Tier Architecture is the recommend approach to cover wide area using Wiliot technology. It is mainly constructed from 3 type of devices in the physical world, as shown in the following diagram



- A gateway is a device connected to internet and which is responsible for:
  - Opening secured communication channel to the Wiliot Cloud.
  - Receiving packets from IoT Pixels or Wiliot Bridges and forward them to the Wiliot Cloud.
  - (Optionally) Manage Bridges.
- A bridge is a device which implements high power radio and responsible for:
  - Energizing IoT Pixels.
  - Receive packets directly from IoT Pixels.
  - Filter duplicated packets.
  - Echos those packets to Gateway following its configuration
- IoT Pixel is a Bluetooth Low Energy device, which harvests energy and transmits information about Bluetooth.

The main advantage of a three tier architecture is the ability to extend the range of IoT Pixels using low cost bridges, and leverage existing Bluetooth infrastructure to relay the data through an existing backhaul via a gateway.

Further Reading

For detail about each items, please refer to the related articles below.

- Gateway Overview
- Bridge Overview
- IoT Pixel Overview