



## Development of a Room Controller for a Building Product Manufacturer

### About Our Client

Customer produces products in the field of building services for lighting application, industrial components, and heating technology at European locations. The company is best known for its voltage testers, outdoor lanterns with motion detectors, hot glue guns and hot air blowers.

Company has registered more than 300 patents, designs, and models for our inventions. These have resulted in over 2500 products belonging to the best of their kind. Some have even revolutionized entire segments.

### Scope /Challenge

The project scope is to design and develop a Room Controller product for customer to incorporate lighting control requirements of various areas of a building. Each area would have specific lighting needs based on,

- Availability of natural light
- Occupancy of the space
- Govt. norms/ Code requirements
- Preference of the end user

Device should be made flexible by making it configurable to adapt all the specific requirements of various areas. It shall have to three zones, with each separately configurable to adapt to various areas of the building. Each relay can take 20A load. There shall also be 0-10V outputs for dimming control per each zone. More zones can be added based on the requirement by adding addressable relays/fixtures on DALI bus.





## Solution

Proposed an embedded product powered by dual micro controller. Microcontroller 1 is a host and runs most of the application layer and interfaces such as DALI interface which is 2 wire bus for data exchange between DALI devices connected over the bus. Nordic controller is used for bluetooth wireless communication for mobile app to communicate with DCS to pull/update the DCS configuration. with other devices used in a building. A Building Management client can control and configure the device.

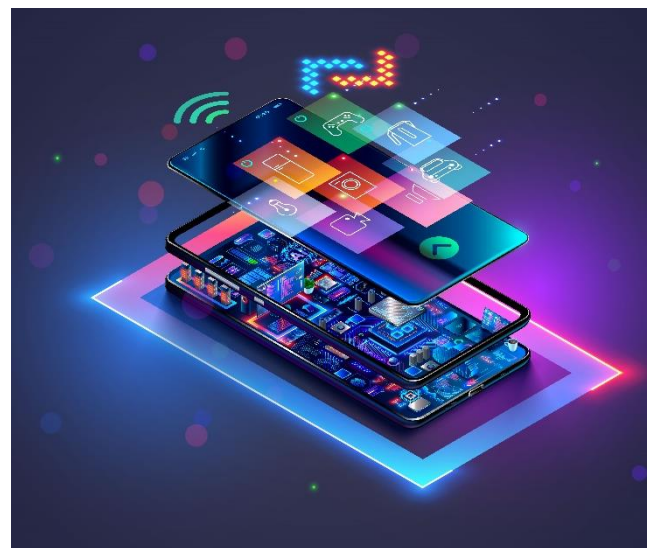
10/100Mbps ethernet interface for BACNet feature is included in the product. With this feature the product would be visible and connected to Building Management System (BMS) through which some of the interfaces and devices would be accessed by BMS. The standard RJ45 connector would be available with LED indications

Bluetooth stack is integrated which enables installer/commissioner to connect the mobile phone whether Android or iOS to configure the product based on the installation type.

The bluetooth mesh is integrated to allows one product to perform data exchange with other product and vice versa.

## Results Delivered

The project underwent a requirement phase, firmware design and coding, hardware design, PCB layout design, pre compliance testing- CE,FCC,UL, mechanical design, mobile app development to ensure that all components were integrated and working optimally. This integration of all components was critical to the overall success of the project as it ensured that the final product was reliable and met all customer requirements.



## About TAAL Tech

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