**NATIONAL COLLEGE OF IRELAND**

Higher Diploma in Science in Computing Information

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**DISTRIBUTED SYSTEMS**

CA1

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**ALPHA SMART BUILDING SOLUTIONS**

**Target Group**

The project was developed for the Smart Building industry. Smart buildings are a new technology trend, constructions using this technology considered to be more independent, sustainable as well as promote more comfort e practicality to its users. These building makes better use of its resources, thanks to their centralized data management, there are innumerable possible implementations, it is also possible to monitor performance, detect inefficiencies, make several adjustments automatically.

The solutions provided by this industry is diverse, some of them are: ventilation and air conditioning systems (HVAC) and Climate control such as including humidity, monitoring of CO indoors, electricity usage, fire and hazardous detection, lighting control, occupancy, predictive and corrective maintenance, security and access control and water usage monitoring.

**Functionality**

There will be three services provided in this project: Energy efficiency, Climate control and Personnel occupancy.

* Energy efficiency

This service controls lighting and energy consumption. The lights will be activated with motion, also its intensity will be adjusted according to the quantity of natural light present the data will be collected with sensors in the rooms.

Energy consumption will also be controlled by sensors. After office hours, in the rooms with no staff in it will have all devices considered non-essential turned off.

* Climate control

HVAC will be managed automatically with a pre-determinate temperature, level of CO will also be controlled. Current temperature check and configuration can be done manually via application by the area manager or building control department. After office hours, HVAC will be turned off in empty rooms.

* Personnel occupancy

The buildings occupancy will be monitored when people pass the security gate with their badges, surveillance cameras in meeting rooms will work with motion detection. The list of visitors and people inside the building can be accessed via application.

**Timelines**

