Case Study: Smart Street Lighting

Telensa Ltd of Chelmsford, UK have developed a remote system for the automatic monitoring and control of street lighting. This system incorporates a Skye high sensitivity Lux sensor and can cut energy consumption by as much as 40%. This is a considerable saving as street lights account for 2% of the UK's total electricity consumption.

Currently, most street lights are controlled by a photocell or a timer which switch them on and off at preset light levels or times. Telensa's Telecells are installed as replacements to the photocells (with additional dimming modules as required). These Telecells establish wireless connection to a base station, which is a central radio that can also be installed on a street lighting column. The base station, which includes the Skye sensor, can accommodate up to 10,000 telecells over a range of 2-3km (urban) and 5-8km (rural). Many base stations can be deployed in a cellular architecture providing wide area coverage of a region supporting up to 150,000 lights in total. Base stations connect over regular IP network links to a central system, which runs the overall lighting system.

The Telensa system, as well controlling the lighting, can automatically pinpoint faulty lights. It gathers power consumption and other electrical information allowing energy consumption to be accurately measured.

Energy savings are made by the accurate control of switching or dimming times, and fine tuning burning hours to closely meet lighting requirements. Lamps can be grouped and given different burning hours or brightness according to their position. Individual events such as concerts or football matches are easily catered for as is switching off certain lights during the middle of the night.

Automatic monitoring means that maintenance routines are far more efficient and reduces the need for manual inspections.

Equipment Used

Skye's HOPL amplified Lux sensor fitted with a large area photodiode for increased sensitivity at very low light levels.

Acknowledgements and Contacts

We would like to thank Telensa forallowing us to publish this case study.
For more information please visit their website: www.telensa.com

Skye Instruments Ltd
21, Ddole Enterprise Park, Llandrindod Wells, Powys LD1 6DF, United Kingdom
TEL: +44 (0)1597 824811 EMAIL: skyemail@skyeinstruments.com WEB: www.skyeinstruments.com