Case Study

New WasteSurvey SmartPhone App facilitates essential data gathering for waste collection services

Integrated Skills (UK) Ltd has developed an Android App for a client in Bahrain to be able to quickly and efficiently gather accurate data required for strategic modelling and operational planning of waste collection services

Due to an urgent requirement for detailed information relating to waste collection services, Integrated Skills (UK) Limited (ISL, www.ukisl.com) was requested to develop, implement and support a new WasteSurvey App.

The WasteSurvey App facilitates the collection of data relating to locations and types of waste containers, and to vehicle access constraints for refuse collection vehicles (RCVs) operating on the road network.

In Bahrain, over 10,000 container locations and related vehicle access constraints were recorded in 2 weeks by 2 surveyors each using the WasteSurvey App on a Google Nexus 7 device.

The WasteSurvey App has been specifically developed so that a minimal number of clicks can record a large quantity of information within a very short period of time. If required, users can also take and attach photos and record notes, which could be important for anomalies that may need to be considered and analysed at a later date.
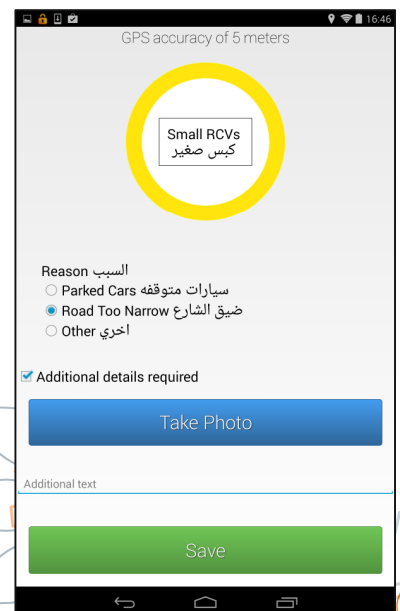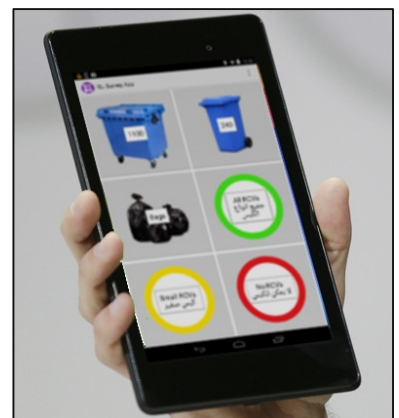

A secure Survey Repository and Viewer is provided as part of the WasteSurvey App solution. After completing surveys in the field, data is uploaded to the Survey Repository. The web based Survey Viewer is then used to share and verify data, and to plan any further survey work.

Once completed, the data can be taken from the Survey Repository to be used for route optimisation and calculation of the resources required to deliver the collection services. The data gathered could also be used to gauge productivity rates for existing collection services.

Key in the overall concept and design of the WasteSurvey App is its extreme simplicity and ease of use. Minimal training is required, whilst also ensuring quick, efficient and accurate data. After the initial software installation, the basic user steps can be summarised as follows:

1. Open the WasteSurvey App
2. Stand at the location of a container type (or accessibility constraint) to be recorded, and select the appropriate image from the first screen. This will log the GPS position and open the second screen.
3. Add optional additional details if required and then save data entry.
4. Repeat steps 2 and 3 for area to be surveyed.
5. When the device can connect to the internet, the data is uploaded to the Survey Repository and checked on the Survey Viewer.

The WasteSurvey App can be easily customised to meet local requirements for data collection in other jurisdictions.

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About the Kingdom of Bahrain

Bahrain is an island country situated near the western shores of the Persian Gulf. It is an archipelago with Bahrain Island the largest land mass at 55 km (34 mi) long by 18 km (11 mi) wide. The population in 2010 stood at 1,234,571, including 666,172 non-nationals. As of 2012, Bahrain had a high Human Development Index (ranked 48th in the world) and was recognised by the World Bank as a high income economy. Its largest city and capital is Manama.

About Integrated Skills Limited

Integrated Skills is an environmental management consultancy and software development provider. It is now widely recognised as one of Europe's leading consultancy firms specialising in wastes management and related information technology solutions. Integrated Skills has completed over 500 projects for a variety of public and private sector organisations in more than 70 countries worldwide.

About our software solutions

Integrated Skills has extensive in-house IT capabilities relating to solid waste management, including:

- Performance Manager™ (waste services contract management system)
- RouteSmart™ route optimisation software (waste collection, street cleansing, etc.)
- Fusion™ (online platform to support the day-to-day management of round based services such as waste & recycling collection)
- Navigator™ (in-cab GPS navigation for waste collection, street cleansing, etc. and reporting of property/street issues)
- TrackSmart™ (in-cab GPS tracking and data analysis service for benchmarking existing routes and productivities for waste collection, street cleansing, etc.)
- WasteSurvey App and Survey Repository and Viewer
- Bespoke database systems and applications: design, development, implementation and support for bespoke web-based management information systems and database applications integrating business process management, reporting, GIS and mobile device functionality.

ISL is a partner of RouteSmart Technologies Inc.™ (www.routesmart.com) for high density, door-by-door and street-by-street route optimisation software.

ISL's routing and optimisation software solutions improve productivity and maximises efficiency through reductions in fleet size, mileage, planning time/resource and can also be used for scenario planning when introducing new customers, vehicles, routes and services.

Further information

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