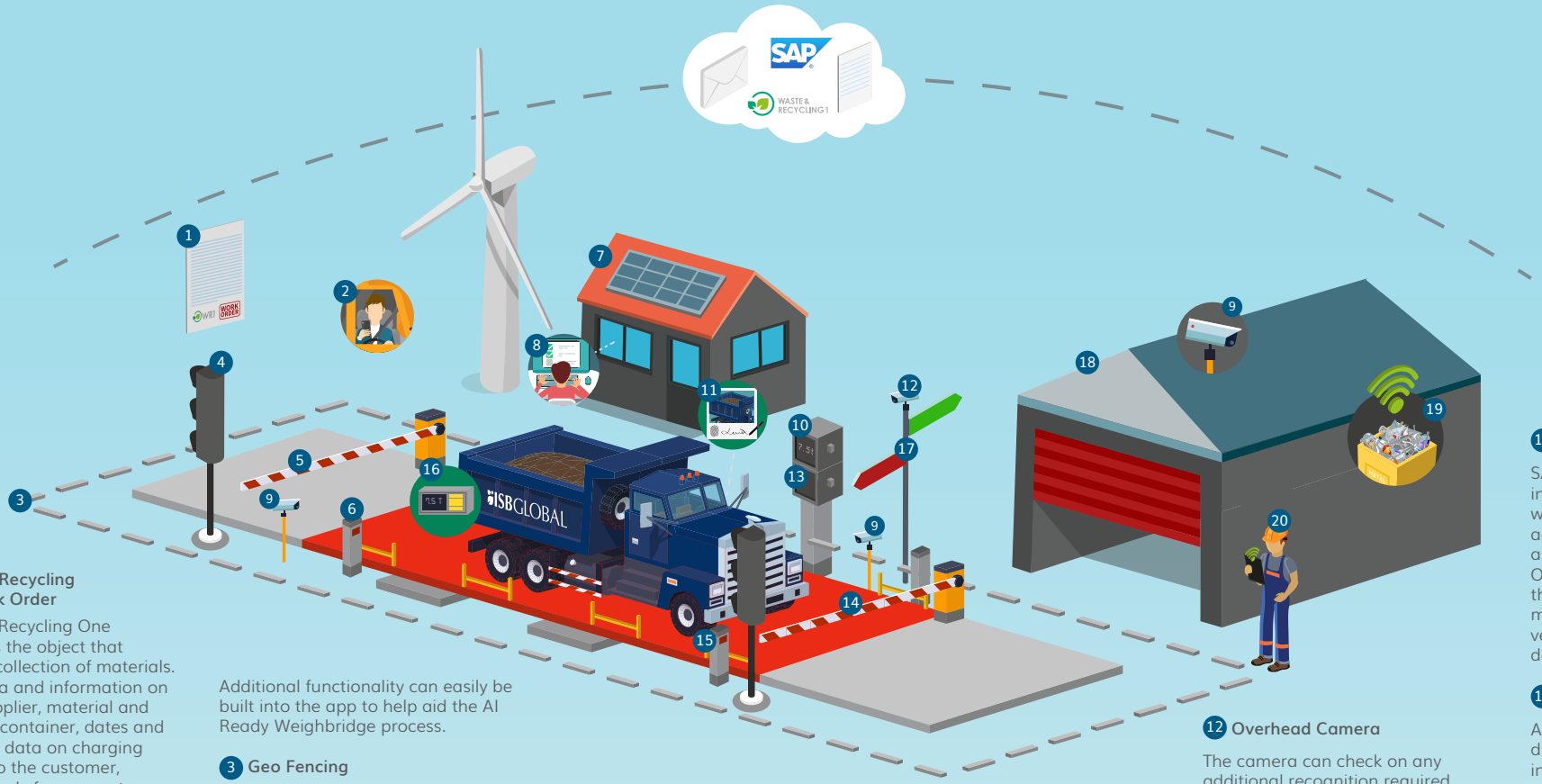

ISB GLOBAL

1 Waste & Recycling One Work Order

The Waste & Recycling One Work Order is the object that instructs the collection of materials. It collects data and information on customer, supplier, material and specification, container, dates and times. Master data on charging information to the customer, integrated, ready for accounts receivable processes. And payment information to the supplier, ready for accounts payable processes.

Customer service activities are generated from the work order to facilitate easy service audit trail. The second part of the process, the Disposal Order, where weight confirms price of materials and updates contracts and forecasting processes. The two orders can be linked to complete the transactions and confirmation of materials receipt and onward processes.

2 DriviLogix Driver App

The Waste & Recycling One DriviLogix app is a SmartWorld app that allows the driver of the vehicle to complete a health check, confirm their route and complete each job with proof of delivery sign off.

It is preintegrated with RoutiLogix so that real time tracking of vehicle and work order can completed from the device.

Additional functionality can easily be built into the app to help aid the AI Ready Weighbridge process.

3 Geo Fencing

Is a location based service and can be a configurable activity to trigger an alert sent to the Weighbridge to inform of an inbound material load. Bi-directional information can be supplied with the triggered alert such as estimated time of arrival or prompts in automation sequence to speed weighbridge transactions due to queuing backlog.

4 Traffic Lights 5 Traffic Barrier

Traffic Lights and Traffic Barrier stop or authorise the vehicle to proceed based on checks against vehicle data and recognition built into the vehicle master data and order details.

6 Entry Sensor

The Entry sensor can be configured to automate barriers, lights or trigger checks when a vehicle arrives at the weighbridge ready to proceed. Sensors can be calibrated to check on preconfigured rules, simple recognition learning and checks such as material types.

7 Operators Hut

The weighbridge operator can now start to perform information and intelligence related tasks from the data that is gathered from the weighbridge weighing, confirmation and subsequent activities, helping to make the process more efficient.

8 Operators Computer

The operator uses a PC to oversee a large amount of automated processes and ensure that the transactions are correct by engaging if there is a scenario that is not recognised and requires the unique ability of human intervention and specific judgment call.

Offline functionality captures transactions and merges data for complete synchronised transactions in the live database.

9 Automatic Number Plate Recognition (ANPR)

Automatic Number Plate Recognition (ANPR) and vehicle attributes match so that entry into site can be authorised and order can be marked with a variety of confirmation data that the vehicle arrived according to planned schedule.

10 Remote Display

Screen readouts can be configured to display any information to the driver. Either captured at the weighbridge or displayed from the Work Order instruction.

11 Fingerprint, Photo, ID Scan, Signature

Additional identification can be captured at the weighbridge, automatically verified and kept against the weighbridge confirmation transaction.

12 Overhead Camera

The camera can check on any additional recognition required. Additionally, the camera can be configured to record the transaction at the weighbridge and save against the order instruction to confirm the movement.

13 Driver Terminal (Automated)

The Driver Terminal can be configured to display or capture any information to or from the driver.

14 Traffic Barrier 15 Exit Sensor

The barrier acts as entry security, when everything configured has been confirmed the barrier raises and authorised vehicle proceeds. The sensor can be configured to recognise attributes of the order, vehicle or transaction. Registering that the vehicle has left the bridge and can raise the barrier. If the order is an instruction for multiple weighs, the sensor, with additional elements of the AI ready weighbridge can help direct vehicle and driver back for secondary weighing or exit from the site.

16 Vehicle Weighing

SAP Waste & Recycling One integrates directly to the weighbridge without the requirement for additional software. Vehicle weights are held in SAP, Waste & Recycling One and on confirming the order instructions can be matched and automatically checked, verifying weight, calibration and downstream process.

17 Traffic System

A display traffic system can help to direct vehicles according to the order instruction and the drop off location according to the type of materials that require processing.

18 Tipping Zones 19 Bin Location & Volume Sensors

Zones can be displayed to the driver to instruct where to unload containers and materials. Locations can be configured for certain rules. Helping with the unloading of containers and materials into an appropriate workflow ready for recycling. Sensors can clarify a range of configurable details on the materials and location to verify against certain data held in the order.

20 Material Inspection, QA, Regrading

The containers and batches of materials or tracked serial numbered products can be receipted into inspection, quality assurance and regrading processes and adjusted accordingly before being monitored into recycling production processes.

ISB GLOBAL SAP, WASTE & RECYCLING ONE

Artificial Intelligence (AI) Ready Weighbridge

The SAP, Waste & Recycling One Artificial Intelligence Ready Weighbridge App and process is a key function of the integrated cloud software platforms. SAP, Waste & Recycling One automatically plans order instructions for the movement of materials from collection to recycling and beyond. The confirmation of weight triggers the completed order ready for operational quality, inventory and production processes. Once weight has been confirmed, accounts receivable and payable process can be driven directly from the accepted materials. A range of 'AI' functions can be readily implemented for repeated tasks and learning. Activities that can be learnt and performed with further automation, depending where the business case is most prevalent.

A Quick Overview of Artificial Intelligence (AI)

Artificial Intelligence (AI) is defined as the ability for a machine to perform cognitive functions associated with humans. Perceiving, reasoning, learning, interacting with the environment, solving problems, and exercising creativity. Technologies that enable AI to solve business problems are robotics, autonomous vehicles, computer vision, language, virtual agents, and machine learning.

Recent advances in AI have been achieved by application of machine learning to large data sets. Algorithms detect patterns and learn how to make predictions and recommendations by processing data and by experience, rather than receiving programming instruction. The algorithms also adapt to improve learning over time.

There are many different types of AI, however, it can be categorised into machine learning or deep learning. Machine learning can be grouped into supervised, unsupervised and reinforcement learning. Using an algorithm to interpret data with or without human intervention to aid learning in order to predict an output. Rewards such as point scoring can be maximised to increase accuracy and optimisation over time.

Deep learning processes a wide range of data sources, requiring less human intervention. Calculators known as 'neurons' form a network to process large amounts of input data. The network can then determine what the data is, if it is correct and learn to apply to new data such as image classification, facial and voice recognition. A convolutional network can determine an input of complex image features of the data to determine output. A recurrent network learns data sequences by storing information in context, then to output numbers or additional sequences.

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