Experior Requirements

# Introduction

The instance of Experior is to be supplied by ‘xcelgo’ with the cooperation of Dematic Banbury and Digital Applications International (DAI) Manchester. The intent of providing the Experior Simulation / Emulation is to facilitate the offline validation of the Dematic / DAI project deliverables with associated project risk mitigations.

This document identifies the requirements for the Experior Simulation / Emulation of the Toll Enterprise electromechanical system as outlined in the Autocad drawings prefixed with “P06418L”. These drawings are supplied separately to this document.

# Scope of Supply

The Experior Emulation includes:

* The PLC side of the interface with Warehouse Control System (WCS) as defined in the document ‘P06418\_WCS-PLC’.
* The Carton Erectors with the associated Label Printer Applicators (LPA), on the Mezzanine, in order to uniquely identify each carton as it is constructed. It is expected that the size of the carton (i.e. medium / large) and the unique identifier assigned to the carton will be associated with each carton object in the Experior Simulation.  
   **NOTE:**  The carton unique identifier is an 8 digit number which can be extracted from the ZPL sent to the LPAs. The ZPL command “^FD>;**81234567**^FS” identifies the unique identifier.
* Under manual intervention –
  + return of a carton at a Packing station to the take-away conveyor,
  + extraction of a tote from the Empty Tote Buffer to a Decant Station, and
  + release of a tote from a Decant station for the purpose of storage.

The Experior Emulation excludes:

* The Pick-To-Light devices at the Goods To Person (GTP) stations
* The Local Operator Interfaces (LOI) at the GTP / QA / Packing / Decant stations, etc.
* The Document Inserters on the Mezzanine level and in the Finishing Area
* The Carton Height Reducing Lidders and LPAs within the Finishing Area

The Experior Simulation includes:

* As directed by WCS –
  + movement of a carton to an Order buffers, a GTP station, the Garment on Hanger Pick station, the Packing Area, the Finishing Area, the Despatch Buffer and/or sorter,
  + storage of a tote from a Decant station into MultiShuttle storage,
  + inter-aisle transfer (i.e. iAT) of a tote from one MutliShuttle level to an adjacent MultiShuttle level,
  + inter-aisle transfer of a tote from one MutliShuttle aisle to another via the conveyor,
  + movement of a tote between a GTP station and the MultiShuttle storage, and
  + retrieval of totes from MultiShuttle storage to the Empty Tote Buffer.
* The tagged information of a carton or tote can be dynamically displayed and tracked

The Experior Simulation excludes:

* The movement of Satchels from the Packing stations to Manual Satchel Sorting

## Scenarios

The logical storage of cartons and totes in the MultiShuttle storage, Order Buffer, Despatch Buffer needs to be loadable in order to initiate specific scenarios. Scenario initiation is restricted to the storage locations of cartons and totes, and does not include the position of cartons or totes on any conveyor.

Each carton and tote is to be ‘tagged’ with two (2) identifiers. The unique identifiers are the value to be reported when the carton or tote is ‘presented’ at a barcode scanner. If only one scanner is applicable, then the first ‘tagged’ value is to be used.  
 **NOTE:**  The carton unique identifier is an 8 digit number, where the first digit is ‘9’ and the last digit is either ‘1’ or ‘2’. The last digit is the side indicator such that each of the two tote identifiers are unique.

## Exceptions

Under manual intervention, the Experior Emulation / Simulation will be required to replicate the following exceptions:

* Remove a carton or tote from an active conveying position
* Introduce a carton or tote into an empty conveying position
* Replicate NOREAD and/or profile conditions at scan positions
* The speed of individual conveyors are to be adjustable
* The timescale of the overall simulation can be adjusted (e.g. a timescale 1:1 is real-time)
* Wireframe mode, so that we can run it efficiently without the need for powerful GPU
* Counters/Watches of rates for cartons and totes at each scan point throughout the system