

# Request for Information – Inventory Management solution based on Microsoft Dynamics AX 2012 R3

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THIS REQUEST FOR INFORMATION (RFI) IS NOT A PROCUREMENT SOLICITATION AND NO CONTRACT WILL RESULT FROM IT.

## Scope:

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The National Capital Commission (NCC) is requesting information from stakeholders and potential suppliers for the purpose of exploring a solution based on Microsoft Dynamics AX 2012 R3 to support the inventory management activities.

## Objectives:

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- Identify potential solutions, based on Microsoft Dynamics AX system, meeting NCC inventory management needs (see '[Appendix A](#)'); either by configuring native AX capabilities or by using an Independent Software Vendor (ISV) solution.
- Proposed solution must be very user friendly. NCC is looking for a solution, available in both official language (English and French), easy to use and intuitive for the users who will not require using multiple screens to execute basic inventory movement activities for consumable and non-consumable items.

## Format of Responses Requested:

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Respondents are requested to provide their documentation in response to the Industry Question and '[Appendix A](#)' proposed at the end of this document as well as any additional comments, raise any concerns and, where applicable, propose alternative recommendations regarding how the requirements or objectives described in this RFI could be satisfied. Respondents should explain any assumptions they make in their responses.

The NCC may, in its sole and absolute discretion, schedule meetings with respondents to allow the opportunity for a demonstration of how their management inventory solution performs, which may display functional capability and validate the information submitted in response to this RFI.

## Confidentiality:

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Respondents should mark any portions of their response that they consider proprietary or confidential. The NCC will treat those portions of the responses as confidential to the extent permitted by the Access to Information Act.

## Industry Questions:

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1. Is the Inventory Management Solution that your company provides a commercially available product(s)? If yes, how many years has it been commercially available?
2. Approximately how many clients are currently using the Inventory Management Solution that your company provides? Is your Inventory Management Solution currently used by any government or public-sector clients?

3. Is your Inventory Management Solution available in both English and French?
4. Please provide a description of the proposed solution based on Microsoft Dynamics AX. To demonstrate, provide documentation to address the following information:
  - Main features (more specifically related to requirements identified in [Appendix A](#));
  - Architecture of the proposed solution;
  - Compatibility with Dynamics 2012 R3 solution;
  - Compatibility with Dynamics 365 cloud solution.
5. The usability of the proposed solution is key criteria to the NCC. Describe what makes your solution particularly easy to use to accomplish day-to-day tasks like entering or updating inventory item data and item movement transactions.
6. Is it possible to customize or implement any add-on tools?

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# Appendix A

## Inventory Management Requested Features

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### Overview

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This appendix is intended to highlight the minimum feature set to guide NCC in the future purchase of an inventory management system to replace their existing custom-built system.

### Inventory Management Features

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Each of the following features has been rated in the following way:

- *Critical* – the feature is a mandatory requirement
- *Important* – the feature is key in the implementation of standard operating processes(SOP) but does not need to be rated as mandatory
- *Nice to have* – the feature is not necessary but if included will help in the efficiency or effectiveness of inventory management operations

An overview is shown in the table below:

Feature	Critical	Important	Nice to have
Support for or ability to interface with a barcode system, including QR and other standards	X		
Inventory Counts	X		
Lot Tracking including the tracking of lot numbers		X	
Serialized Inventory	X		
Backorder Management			X
Multiple Inventory Locations (including location hierarchy (parent-child) definition such as building, floor, office)	X		
Inter-Company Transfers	X		
Automated replenishment Routines			X
Multiple units of Measure	X		
Kitting & Bill of Materials (BOM) support	X		
Reporting tools	X		
Inventory forecasting tools			X
Integrations with ERP or other software			X
Quarantine	X		

Note that not ALL typical inventory management features have been listed. Most are considered core and therefore do not require the comparative (to SOP) analysis that has been performed in this document.

## Barcode system support including QR and other standards

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This feature is recommended as *critical*

There is a requirement to tag items. There is an opportunity to include barcode as part of this tagging process and in a lot of instances to replace the existing item tags. **NOTE that the physical barcode hardware (scanners and tags) would need to be independently sourced in parallel with the new inventory management software.** Some items to consider when looking at barcode systems include:

- Barcode:
  - Type - 1D, 2D, QR. Inventory at NCC is relatively straightforward, so it is likely that 1D would be fine
  - Material – there may be a challenge with barcodes adhering to the surface of some of the inventory materials. Also for returnable items adhesion of barcodes is critical. It will be important to have the ability to create barcodes from a number of materials (including metallic), sized (large to aid long range scanning) and tack (high adhesion). Or returnable items metallic barcodes riveted or screwed to inventory may be required.
- Barcode scanner:
  - Range – a lot of the inventory is stacked on high shelving or can be hard to access. Greater than 5m range is recommended
  - Extreme temperature operations (-40 to +40 Celsius recommended)
  - Ruggedized to protect in external environment
  - Withstand fall from 10 feet
  - IP certified rating for repeated drops to concrete and moisture resistant
  - Manual data entry as not all inventory will be able to be barcoded
  - Replaceable battery or quick recharge capability
- The inventory management system needs to be able to generate the various types of barcodes and have the ability to print many formats. Note that specialized printers such as thermal barcode printer may be required.

## Inventory Counts

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This feature is recommended as *critical*

There are two SOPs that require inventory counts (3<sup>rd</sup> party and internal inventory audit). Typical requirements of this feature would include:

- Identification of inventory items to be included in count
- Creation, printing and export (e.g. as csv) of count list
- Ability to push / synch count list to barcode scanner hardware
- Identify inventory items that require remediation
- Create report detailing inventory count and results
- Ability to modify asset status, location, last inventory date and condition

## Lot Tracking including the tracking of lot numbers

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This feature is recommended as *important*

The creation of lots is simply the grouping of a number of the same inventory item (as opposed to kitting which is the grouping of different inventory items). The system would need to be able to create lots and track them to inventory locations. Lots made up of returnable inventory items would need to be able to adjust the quantity of the lot - e.g. 10 signs are created in a lot, 2 are damaged and so when they are returned the lot size is adjusted to 8.

### Serialized Inventory

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This feature is recommended as *critical*

Serialized inventory is when each individual item is (or can be at the discretion of the Inventory Manager) given a serial number so that it can be individually tracked. This is particularly important for high value non-consumable items.

Note that not all inventory items (e.g. low cost signs) need to be individually serialized.

### Backorder Management

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This feature is recommended as *nice to have*

A backorder is a customer (project manager) inventory request that cannot be fulfilled when initially presented (e.g. inventory not received from supplier or not returned from another project). Currently the order is not processed, and the project manager or warehouse officer needs to remember to process the request when the inventory item arrives back in the system.

Backorder functionality allows for the order to be placed even though the inventory is not available. The system will notify the relevant parties when the inventory becomes available and will automatically re-service / allocate the received inventory to the backorder.

### Multiple Inventory Locations

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This feature is recommended as *critical*

Multiple locations functionality is the ability to define multiple inventory locations. This is critical and is currently standard practice at NCC. Must also be able to define multi-level location hierarchies such as building, floor, room, ...)

This would have a significant impact on the tracking of inventory for returnable items.

### Inter-Company Transfers

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This feature is recommended as *critical*

This feature allows the tracking and movement of inventory from other organizations (e.g. OGDs) without losing ownership of the items. Special rules can be set for these items if required. It is important to be able to track ownership of the item (ex: NCC, PCH, RCMP, Heritage Canada etc.)

## Automated replenishment Routines

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This feature is recommended as *nice to have*

This feature gives the ability to set minimum levels for certain types of inventory (e.g. consumables like wood, screws etc.). Once a minimum level is set the system can generate a request to purchase more items, or if the system is integrated into a purchasing system the automatic ordering of new items.

## Multiple units of Measure

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This feature is recommended as *critical*

This gives the administrator to define multiple units of measure for each inventory type, e.g. number of items, number of pallets, square meters etc.

## Kitting & Bill of Materials (BOM) support

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This feature is recommended as *critical*

This gives the ability to track kits made up of multiple inventory items and to manage raw materials and product components that are assembled into finished products. The two key uses for this would be:

- Creating kits for projects, e.g. boxes of items to go to festivals
- Tracking of components in a finished assemble. E.g. bulbs, covers and other components of lighting assemblies.

## Reporting tools

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This feature is recommended as *critical*

The purchased system should have an in-built reporting tool to help in the publishing of inventory data. Reporting includes the ability to export data in multiple formats (e.g. pdf, csv, xlsx etc) for use in other reporting and business intelligence tools. Reports such as PDF should have the option to include photo(s).

## Inventory forecasting tools

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This feature is recommended as *nice to have*

Inventory forecasting features allow system users to make an informed prediction about placing an order. Using forecasting models such as determining reorder points and economic order quantities can help ensure optimal inventory control. From an NCC perspective this would only be useful for consumable items.

## Integration with ERP modules or other software

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This feature is recommended as *nice to have*

Currently there is no requirement by NCC to integrate the inventory system into other NCC systems (such as finance and purchasing). This may change so procuring a system that has the functionality would future proof operations.

## Quarantine

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This feature is recommended as *critical*

Any system needs to have (or to be able to set up) a quarantine transaction where an item is removed from useable inventory but is kept in terms of inventory count until a decision is made for disposal or to be put back into inventory

## Standard functionalities

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The following items are standard functionality in most inventory management systems but are explicitly detailed as required features of any new system:

- Ability to maintain and manage inventory item Information for RETURNABLE items (items on loan)
- Auto-generated unique item ID
- Ability to track shelf life or expiration date
- Ability to attach documents to a transaction (ex: photographs, emails from the item owner authorizing the issuance or other types of documents)
- Ability to track the custodian of the item (who currently has it in its possession)
- Ability to maintain and keep count of item quantities in real-time (autocalculated based on transactions)
- Ability to query/search item based on attributes (ex: by waybill. Location, item name)
- Ability to track cumulative history of all transactional activities related to an item (transaction type, dates, quantities, adjustments, comments, who item is issued to, inventory location history, etc.)
- Ability to view the identity of the user who made any changes to an item (activity audit trail)
- Ability to identify different attributes per inventory type
- Workflow capability
- Ability to visualize photo of the asset on screen
- Ability to complete bulk changes on an custodian

## Other functionality

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The following items are other functionality that could be interesting to get in a new system:

- Ability to control access at the data level. For example, provide access to specific type of items to a limited group of users.