

Microsoft Dynamics NAV 2016

ClinicMaster

Interface

Requirements Specification



Prepared for

Uganda Martyrs Hospital Lubaga

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TABLE OF CONTENTS

1. Change Log	3
Background.....	3
Scope of the integration	3
Business logic.....	4
Underlying principles.....	4
Data sets	4
1. Patient Registration Interface.	4
2. Staff Patient Registration Interface.	6
3. Patient Billing.....	6
4.1 NAV Inventory Details.	6
4.1.1 Units of Measure	7
4.1.2 Item Category	7
4.1.3 Product Groups	7
4.2 NAV Resources Details.	7
4.2.1 Work Types	8
4.2.2 General Product posting Group	8
4. Patient Invoicing	8
5. Inventory Billing.....	9
6. Resources Billing.....	9
7. Patient Payments.....	10
8. Stock Replenishments	11
1. Stock Sharing Location	11
2. Expired/ Non-billable stock reductions	11

1. CHANGE LOG

Document Ref. & Version No: Uganda Martyrs Hospital Lubaga Interface Requirements Specification V 1.3	
Uganda Martyrs Hospital Lubaga Interface Requirements	Customer: UMHL
Author: Matia Mugerwa	Date: March 1, 2017
Revisions:	
1/3/2017	Initial Draft. Matia – HRP Solutions, Ismail – ClinicMaster international
2/3/2017	1.1 Added background and scope of the integration based on the information shared from ClinicMaster. William and Wilson (ClinicMaster international) and Julius – HRP Solutions

Background

Uganda Martyrs' Hospital (Lubaga Hospital) is implementing a Patient Management Information System (PMIS) that will immediately address the core functionality of patient and stock management entailing key hospital processes in the areas of clinical support and patient care. Accordingly, ClinicMaster, a Health Information and Medical Billing System has been identified as the appropriate PMIS.

Currently, Lubaga Hospital is using Microsoft Dynamics NAV 2016 to process and report on financial transaction. It is envisaged that the two systems should be integrated to seamlessly process both clinical and financial transactions as one unit.

Statement of requirements that details required functional and non-function capabilities of the PMIS was submitted to the Vendor of ClinicMaster. As one of the key requirements, the PMIS should be able to integrate with the currently used system, Microsoft Dynamics NAV 2016. Specifically, the system integration must be able to cater for;

- i. **Sales:** The system should offer a link to the financial management module in Dynamics NAV by posting sales data into the respective ledger accounts in NAV at the end of each transaction in real time.
- ii. **Stock:** The system integration should be able to update and handle stock transfer receipts posted from the accounting system, Dynamics NAV. The system should be able to update the respective stock ledger entries in both systems accordingly at the end of each transaction and in real time.
- iii. **Patient data:** The system should be able to share patient data in the accounting system.

To this end, the 2 Vendors of Microsoft Dynamics NAV 2016 and ClinicMaster (HRP and ClinicMaster INTERNATIONAL) have had a series of meetings for purposes of harmonizing the integration process and agreeing on the methodology.

This document therefore provides both a conceptual and technical description of the integration between the 2 systems (Microsoft Dynamics NAV 2016 and ClinicMaster). The Document is made up of the scope of integration, the business logic, and underlying principles, data sets to be integrated and stakeholder mapping.

Scope of the integration

In line with the Terms of reference contained in the Statement of requirements, the scope of the integration as highlighted in 1 above shall entail; sales, Stock and patients' data.

Business logic

In accordance with the statement of requirements and scope of integration, the business logic will entail the following:

- a) **Sales:** A sale is said to have been concluded when a service is consumed or paid for. (Billable services as provided for in the chart of accounts). An invoice will be generated for each patient having consumed a service. Payments shall be matched against invoices to generate receipts.
- b) **Inventory:** Inventory shall include drugs and consumables held for sale. The inventory management entails generation of purchase of orders which will be raised from Microsoft Dynamics NAV. Inventory in ClinicMaster will be picked from NAV. Each time stock is consumed across different service points both the main stock ledger and the respective ledgers at services points are updated.
- c) **Patient's data:** Each time anew patient comes to the hospital, his/her information will register and a unique Identifier created. Through the unique identifier current and subsequent visits will be tracked. On each visit a unique visit number will be issued. All transactions between the hospital and the patient will be linked to a patient and visit number.

Underlying principles

- i. Integration will be based on billable items offered to patient at each cost centre (service point).
- ii. Data shall be categorised into two classes of that to be shared in Real time and that on schedules intervals.
- iii. Avoidance of redundancies: Much care shall be taken to avoid redundancies as much as possible.
- iv. ClinicMaster System will be the system interfacing with patients at every service point.
- v. All financial related reporting shall be handled by NAV 2016.

Data sets

The Following data shall be shared in real time across the systems;

1. Patient Registration Interface.

The interface between Microsoft Dynamics NAV and Clinic Masters during patient registration will have the following fields. Data will flow from Clinic Master to Dynamics NAV

- 1) The Patient Identification Number (PIN).

- 2) Patient Name
- 3) Gender
- 4) Date of Birth
- 5) Next of Kin Name
- 6) Next of Kin Relationship
- 7) Patient Phone No.
- 8) Village
- 9) Customer Price Group
- 10) Customer Posting Group
- 11) Country of Origin
- 12) Customer Type
- 13) Bill-To For insurance patients.
- 14) Bill-To-Staff for Staff Dependants

Field	Description	Data type/Format
No.	This is an alpha numeric field that is used as the primary key in the customers (Patient) table. Special characters such as the asterisk (*), hyphen (-) are supported and are part of this field.	Code 20
Name	This field is the Patient Name. It is a single field that contains all the patient names.	Text 50
Gender	Male or Female	Option (Male, Female)
Date of Birth	Patient's Date of Birth. Please note that the age is not a value of importance hence not saved but rather the DOB.	Date
Next of Kin	Next of Kin's Name	Text 100
Relationship of NOK	Patient's Relationship to the specified next of Kin	Text 100
Phone No.	Patient's Phone number	Text 30
Address	This is the field that populates the village	Text 50
Customer Price Group	There are two price groups, General and Private and this determines the billing price of a patient	Code 10
Country of Origin	These are coded values that will be shared with CM	Code 10
Customer Posting Group	This determines the final accounts affiliated to a certain grouping of patients CASH, COMPANY,DEPENDANT,STAFF,STUDENTS	Code 10
Customer Type	This is a selection field with the following values ,Self Paying Patient - Cash, Dependent Patient, Insured Patient, Company Patient, Insurance Company,Company,Staff,Self Paying Patient - Invoicing	Option
Bill-to Customer No.	This is the field is used for insured patients and the Insurance company is entered in this field.	

Field	Description	Data type/Format
	This is also used for patients that belong to companies or families that are treated as insurance companies.	

2. Staff Patient Registration Interface.

All staff will be created from Microsoft Dynamics NAV and the following details shared with Clinic Master;

- 1) Employee Number
- 2) Employee Name

Field	Description	Data type/Format
No.	This is an alpha numeric field that is used as the primary key in the employee table. Special characters such as the asterisk (*), hyphen (-) are supported and are part of this field.	Code 20
First Name	This field is the Employee's First Name.	Text 30
Last Name	This field is the Employee's Last Name.	Text 30
Middle Name	This field is the Employee's Middle Name.	Text 30

3. Patient Billing

Patient billing will be done in CM and the details of the transacted bills will be sent to NAV.

NAV will share a list of the resources and the inventory items that are to be used during the billing process.

The inventory items and the resources in both systems will have the same codes.

4.1 NAV Inventory Details.

The following are the fields that will be sent to CM from NAV regarding inventorial items.

Field	Description	Data type/Format
No.	This is an alpha numeric field that is used as the primary key in the employee table. Special characters such as the asterisk (*), hyphen (-) are supported and are part of this field.	Code 20
Description	The item name	Text 50
Base Unit of Measure	The item Base unit of Measure	Code 10
Item Category Code	Either Drugs or Sundries	Code 10
Product Group Code	This is a high-level categorization of an item category, e.g. if you select Item Category such as Drugs then the product Group categories can be Capsules, Tablets, Syrups, Drops etc.	Code 10
Inventory Posting group	This determines the way in which the inventory item will be mapped in the financials. These are either DRUGS or SUNDRIES	Code 10

4.1.1 Units of Measure

Field	Description	Data type/Format
Code	A unique Code for a unit of measure	Code 10
Description	Unit of measure Detailed description	Text 10

4.1.2 Item Category

Field	Description	Data type/Format
Code	A unique Code for an item Category	Code 10
Description	Item Category Detailed description	Text 50

4.1.3 Product Groups

Field	Description	Data type/Format
Item Category Code	The Link to the item category Code for a given product group. Acts as a secondary key.	Code 10
Code	A unique Code for a Product Group	Code 10
Description	Product Group Detailed description	Text 50

4.2 NAV Resources Details.

The following resource details that will be sent from NAV to CM

Field	Description	Data type/Format
No.	This is an alpha numeric field that is used as the primary key in the employee table. Special characters such as the asterisk (*), hyphen (-) are supported and are part of this field.	Code 20
Name	The Resource Name e.g. Lab, Radiology etc.	Text 50
Gen. Prod. Posting Group	A Code that determines where a given resource is posted in the financials.	Code 10
Class	A selection that determines a given category and these include:, Consultant, Lab, Accomodation, Radiology, Nursing Care, In-Patient Charges, Pysiotherapy, Procedure, Medical Ofiicer, Eye, Dental, Surgical, Endoscopy, Gyneacology, Theatre, Anathesia, Fees, Oxygen	Option

NOTE: The resources represent the Category of a resource to be picked while the work types represent the actual item code e.g. If you select a Resource like Lab, the lab test will be a work type e.g. CBC

4.2.1 Work Types

The initial list of Work types will be sent to CM but moving forward, if a work type is created in CM, it will be sent to NAV.

Field	Description	Data type/Format
Code	A unique Code for a work type	Code 10
Description	Detailed description of the work type	Text 50
Revenue Stream Code	This is a dimension that differentiates a given test that is used in the budget monitoring and revenue analysis.	Code 20

4.2.2 General Product posting Group

Field	Description	Data type/Format
Code	A unique Code for a product posting group	Code 10
Description	Detailed description of the product posting group	Text 50

4. *Patient Invoicing*

Invoices will be created in CM and then sent to NAV. The following are the fields that will be required to enable this process.

Field	Description	Data type/Format
Patient ID	This will be the Patient's Identification Number (PIN)	Code 10
Invoice No.	This is the CM Invoice Number	Code 35
Registration No.	Patient Visit Number	Code 10
Transaction Date	Date when the transaction is Posted	Date
USER ID	User who has posted	Code 50
Patient Type	Either Out-Patient or In-Patient	Option
Customer Price Group	Price Group being used at that time i.e General or Private	Code 10
MTO/ Insurance Card No.	This is applicable for insurance Patients	Code 10
Chart No.	The In-Patient's Chart Number	Code 30
Cost Centre Code	These will be Codes shared from NAV to CM that are used in affiliation of Invoices.	Code 10

The above-mentioned fields are to be sent for each invoice generated from CM to NAV, these form the "Sales Header" in NAV System.

The below mentioned Fields are the Billable items that form the amounts in the invoice.

5. *Inventory Billing*

Field	Description	Data type/Format
Item Category	This is either Drugs or Sundries	Option
Product Group	A sub category of the item Category E.g. Tablets, Capsule etc.	
Item No.	The billed item number	Code 20
Location Code	This will be a default location in NAV irrespective of where you will have billed from in CM. i.e. Only one location will be used in transaction of items to and from CM	Code 10
Quantity Invoiced	The invoiced Quantity will be populated in this field	Decimal
Unit of Measure	The billed item's unit of measure	Code 10
Unit Price	The Price of a 1 unit of the billed item	Decimal
Discount %	The Discount percentage that has been extended to the billed item	Decimal

6. *Resources Billing*

Field	Description	Data type/Format
Resource ID	The Resource Number that has been billed e.g. Lab	Code 20
Work Type	This is the billed resource Item E.g. Malaria Test	Code 10

Field	Description	Data type/Format
Quantity Invoiced	Invoiced Quantity	Decimal
Unit Price	The price of One unit of the item billed	Decimal
Discount %	The Discount percentage that has been extended to the billed item	Decimal

NOTE:

Only Items that have been paid for in OPD will qualify as invoices that should be sent to NAV for billing. This is so, because not all billed/prescribed items are paid for by the patient hence to minimize reversals, only paid quantities should be submitted to NAV as items ready to be invoices.

NOTE 2:

In-Patient bills are accrued and then payments are made later. As per CM, the invoice is only posted at discharge of the patient and hence this causes some challenges in stock reconciliations in NAV.

As per the meeting held on 28th Feb 2017 we agreed that inventorial items for in-patients will be sent for invoicing in NAV to reduce the stocks in NAV and CM will have a means of flagging it as invoiced.

In the final invoice at discharge in CM, already invoiced inventorial items will be eliminated in the invoice sent to NAV.

7. Patient Payments

Payments will be made in CM and the payment details will be sent to NAV.

The following fields will be required to reflect that payment in NAV:

Field	Description	Data type/Format
Patient ID	Patient's Identification Number (PIN)	Code 20
Payment Date	Date of Payment	Date
Amount	Amount Paid by Patient	Decimal
Payment For	Either a Deposit or a Payment For a posted Invoice	Text 50
USERID	The Cashier's Login	Code 50

8. Stock Replenishments

The Procurement of Inventorial items will be done in NAV. Hence Purchase orders for drugs and Sundries will be made in the NAV system and these stocks will then be sent to CM upon receipt in the NAV system.

The details that will be sent to CM will be as per the format below:

Field	Description	Data type/Format
Item No.	Procured item number	Code 20
Location Code	This will be a default location in NAV where CM will pick procured Items	Code 10
Quantity	This will have the Quantities received	Decimal
Unit Of Measure	The unit of measure of the item that is used for billing in CM	Code 10

1. Stock Sharing Location

There will be a default location in NAV where all stock replenishments will be entered and it is from this that CM will pick the replenished quantities.

The same location will be used for stock reductions that are due to billing.

This location will be used for reconciliation of the total available stocks in both systems.

Inventorial quantities shared will not have expiration details like the lot number and the expiry dates.

2. Expired/ Non-billable stock reductions

Expired drugs quantities will be reduced from the CM system and the reduced quantities will be transferred to the NAV system via the default location but not as invoiced quantities.

The following fields will be required to enable reduction of those stock quantities in the NAV system:

Field	Description	Data type/Format
Item No.	item number	Code 20
Location Code	This will be a default location in NAV where CM will send the reduced stocks.	Code 10
Quantity	This will have the Quantities reduced	Decimal

Field	Description	Data type/Format
Unit Of Measure	The unit of measure of the item that has been reduced in the CM system.	Code 10
USERID	The User who will have triggered the posting of the expired drugs.	Code 50