# REFERENCE MANUAL

# INTERFACE TO ATHENA

**Document n°:   AT0001S-EN**
**Revision:   4.3.**
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| **Num:** | AT0001S-EN | First Release | |
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| E. MARCON | 28/04/05 | | |
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| **Num:** | AT0001S-EN | | Add tag <grouping gather="ab"/> on message 5.1Medication Order |
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| D. ALLERA | | | |
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| E. MARCON | 20/06/08 | | |
| **Author** | **Date** | | |
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| **Num:** | AT0001S-EN | Correzione Messaggi 5.16 e 5.17 | |
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| E. MARCON | 01/09/09 | | |
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| E. MARCON | 01/09/09 | | |
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| **Num:** | AT0001S-EN | | Deleting Picking-Station Messages Restock code correction Medication delivery Upgrade: Added attribute drawer="ab" module="ab" drugscarriage="ab" Ward message modified: Added attribute <location location_id="ab" location_descr="ab" location_addres/> Restock Order and Restock in Transit :Added attribute Priority="ab" (U = urgent N = Normal) |
| **Rev:** | 3.2 | | |
| **Date:** | 15/02/2010 | | |
| E.MARCON | 15/02/10 | | |
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| **Num:** | AT0001S-EN | | Added Ward_code on the message 5.8 |
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| E.MARCON | 20/05/10 | | |
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| **Num:** | AT0001S-EN | | Translation in HL7 Message |
| **Rev:** | 4.0 | | |
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| E.MARCON | 12/03/12 | | |
| **Author** | **Date** | | |
| E.MARCON | 12/03/12 | | |
| **Reviewer** | **Date** | | |
| E.MARCON | 12/03/12 | | |
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| DOC. REVISION. | | DESCRIPTION | MODIFICATIONS |
|---|---|---|---|
| **Num:** | AT0001S-EN | | Added medication_admin_time to delivery message |
| **Rev:** | 4.1 | | |
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| A.BELLI | 10/10/12 | | |
| Author | Date | | |
| A.BELLI | 10/10/12 | | |
| Reviewer | Date | | |
| A.BELLI | 10/10/12 | | |
| Approval | Date | | |
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| **Num:** | AT0001S-EN | | Added the field "if_necessary" to the message A_501 MedicationOrder |
| **Rev:** | 4.2 | | |
| **Date:** | 07/11/2012 | | |
| A.MAGGIONI | 07/11/12 | | |
| Author | Date | | |
| A.MAGGIONI | 07/11/12 | | |
| Reviewer | Date | | |
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| **Num:** | AT0001S-EN | | Added field "no_admin_time" and "order_for_restock" in the message A_501 Medication Order. Added field "no_admin_time" and "order_for_restock", "IfNecessary","medication_admin_time" in the message A_502 Medication Delivery |
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| A.BELLI | 24/4/13 | | |
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| A. BELLI | 24/4/13 | | |
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| Approval | Date | | |
| | | | |

# APPLICABILITY

▲

- Sinteco's reference numbers are the following:

| NAME | SINTECO REFERENCE NUMBER |
|---|---|
| ATHENA SQL DATA BASE | -- |
| ATHENA PHARMACY | -- |
| ATHENA PICKING STATION | -- |

# 1    Introduction

▲

The following is a standard interface proposed to connect the Homerus system to pharmacy and hospital management software. The interface is standard and, then, debugged so Sinteco recommend to use/implement it on all installation; any changing should be discussed with Sinteco technical department.


# 2    Message structure

▲

Athena uses XML as the standard for the structure of messages.


# 3    Communication

▲

Athena accepts the XML messages through Microsoft Message Queue (MSMQ).


# 4    The messages

▲

All messages have the root element **Sinteco_message**. The types of the attributes of messages are indicated with: **ab** for text, **dd** for integer, **f** for floating point, **dt** for datetime and **d** for date.


# 5    Field type formats

▲

The formats of various field types are described here:
- Date:                 yyyy-mm-dd                          Example: 2003-03-01
- Datetime:           yyyy-mm-ddThh:nn:ss          Example: 2003-03-01T08:38:10
- Floating point:    xxxxx.yy                                Example: 1023.25

# 6    Messages details

## 6.1    Medication orders
▲

Medication orders are sent from the Therapy system of the hospital to Athena. These contain the prescriptions to be prepared by Athena and sent back to the wards.

```
Originator: External system
Destination:       Athena
Other info: One message per patient, admin time and drug.
XML message:

    <sinteco_message message_id="ab" xmlns="http://www.sintecorobotics.com/namelocation">
        <medication_order medication_order_code="ab" medication_time_code="ab"
              administration_time="dt" delivery_time="dt" validation_time="dt"
              number_of_unit_doses="dd" num_fractional_doses="f" priority="ab" if_necessary="dd">
            <patient code="ab" birthdate="d" sex="ab" barcode="ab">
                <person_name last_name="ab" first_name="ab"/>
            </patient>
            <location ward_code="ab" sequence_code="ab">
                <room room_code="ab">
                    <bed bed_code="ab"/>
                </room>
            </location>
            <components>
                <medication medication_code="ab" medication_pharmacy_code="ab"/>
            </components>
            <grouping gather="ab"/>
        </medication_order>
    </sinteco_message>
```

Attributes:
   **MESSAGE HL7 – OMS^O05**

| Attribute | Use | HL7 CONVERSION | Remark |
|---|---|---|---|
| message_id | required | MSH.10 | Identifies the message. Usually a GUID. |
| medication_order_code | required | ORC.4.0 | Unique identifier for the medication order. |
| medication_time_code | optional | ORC.2.0 | Optional identifier to group medication orders together. |
| administration_time | required | ORC.7.3 | Specifies when to administrate the medication. |
| delivery_time | required | RQD.10 | When to deliver the medication to the ward. |
| validation_time | Optional | Fixed: "19000101000000" | Time validation of the prescritpion |
| number_of_unit_doses | required | ORC.7.0.0 | Number of units to send the patient. |
| num_fractional_doses | optional | ORC.7.0.0 | Value for the fractional doses. |
| priority | optional | Fixed: "L" | The priority. Can take the values LOW, L, HIGH and H. |
| if_necessary | optional | ORC.7.5 "PRN"->1 | 0: request 1:if necessary |
| no_admin_time | Optional | ORC7.3 EMPTY | 0:normal dose 1: no_admin time dose |
| order_for_restock | Optional | IF OMS4=1 IF OMS3=0 | 0:normal order 1: order for restock ward |
| destination | Oprional | TO BE DECIDED | '','1','2','3'…number of |

| Attribute | Use | HL7 CONVERSION | Remark |
|---|---|---|---|
|  |  |  | *pegauss* |
| patient code | required | PV1.19.0 | Code of the patient in the Therapy system. |
| birthdate | required | PID.7 | Birth date of the patient. |
| sex | optional | *Empty* | Sex of the patient. |
| barcode | optional | PV1.19.0 | Barcode for the patient, set to *patient* code if missing. |
| last_name | required | PID.5.0 | Patient's last name. |
| first_name | optional | PID.5.1 | Patient's first name. (recommended) |
| ward_code | required | RQD.9.0 | Code of the ward to receive the medication. |
| sequence_code | optional | RQD.1 | An extra code on which the output is ordered by. This is so that the ward can have control over the ordering of the drugs for delivery in the ward. |
| room_code | required | PV1.3.1 | The room code where the patient is located. |
| bed_code | required | PV1.3.2 | The bed code where the patient is located. |
| medication_code | required | RQD.2.0 | Code for the drug in Athena. |
| medication_pharmacy_code | optional | RQD.2.0 | Code for the drug in the pharmacy. |
| gather | optional | ORC.4.0 | Code for grouping the order in the same job. |

Note! Groups *room* and *bed* are optional.

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## 6.2    Medication delivery
▲

This is a result of a medication order. It specifies what drugs were sent to which patient.

```
Originator   :      Athena
Destination  :      External system
Other info   :      One message per patient, drug and lot+exp date.
XML message  :
```

```xml
<sinteco_message message_id="ab" xmlns="http://www.sintecorobotics.com/namelocation">
    <medication_delivery medication_delivery_code="ab" medication_order_code="ab" "
    medication_time_code="ab"
            medication_admin_time="dt"
                ifnecessary="dd"
                no_admin_time="dd"
                order_for_restock="dd"
                number_of_units_ordered="dd" number_of_units_delivered="dd">
        <patient code="ab" birthdate="d" barcode="ab">
            <person_name last_name="ab" first_name="ab"/>
        </patient>
        <location ward_code="ab" sequence_code="ab">
            <room room_code="ab">
                <bed bed_code="ab"/>
            </room>
        </location>
        <components>
            <medication medication_code="ab" medication_pharmacy_code="ab"
                        medication_lot_number="ab" medication_exp_date="d"/>
        </components>
        <homerusbags count="dd">
            <homerusbag bagnumber="ab" container="ab" drawer="ab" module="ab"
            drugscarriage="ab"/>
            …
        </homerusbags>
    </medication_delivery>
</sinteco_message>
```

```
Attributes:
```
**MESSAGE HL7 – RDS^O13**

| Attribute | Use | HL7 CONVERSION | Remark |
|---|---|---|---|
| message_id | required | MSH.10 | Identifies the message. Usually a GUID. |
| medication_delivery_code | required | ORC.3.0 | Unique identifier for the medication delivery. Usually a GUID. |
| medication_order_code | required | ORC.4.0 | Medication order the delivery is made for. |
| medication_time_code | optional | ORC.2.0 | Optional identifier to group medication orders together. |
| medication_admin_time | required | ORC.7.3 | Medication administration time of the medication. |
| *ifnecessary* | *Optional* | *NOT MAPPED IN HL7* | *0:request dose 1: if necessary dose* |
| *no_admin_time* | *Optional* | ORC.7.3 EMPTY IF TRUE | *0:normal dose 1: no_admin time dose* |
| *order_for_restock* | *Optional* | *NOT MAPPED IN HL7* | *0:normal order 1: order for restock ward* |
| number_of_units_ordered | required | *Not Used* | Number of units requested. |
| number_of_units_delivered | required | ORC.7.1.0 (total in RXD.4) | Number of units delivered. |
| patient code | required | PV1.19 | Code of the patient in the Therapy system. |
| birthdate | required | PID.7 | Birth date of the patient. |

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| Attribute | Use | HL7 CONVERSION | Remark |
|---|---|---|---|
| barcode | optional | PV1.19 | Barcode for the patient, set to *patient* code if missing. |
| last_name | required | PID.5.0 | Patient's last name. |
| first_name | optional | PID.5.1 | Patient's first name. |
| ward_code | required | RXD.13.0 | The ward to where the medication was sent. |
| sequence_code | optional | *Not Used* | The sequence code the delivery is ordered on. |
| room_code | required | RXD.13.1 | The room code where the patient is located. |
| bed_code | required | RXD.13.2 | The bed code where the patient is located. |
| medication_code | required | RXD.2.0 | Code for the drug in Athena. |
| medication_pharmacy_code | optional | RXD.2.0 | Code for the drug in the pharmacy. |
| medication_lot_number | required | RXD.18 | Lot number of the drug delivered. |
| medication_exp_date | required | RXD.19 | Expiration date of the drug delivered. |
| bagnumber | required | ORC.7.7(.0) | The bag number for the delivered drug. |
| container | required | ORC.7.7(.1) | The ETA bag/PERSOBIN containing the homerus bag returned. |
| drawer | optional | ORC.7.7(.2) | Identifier of the drawer if container the Etabag |
| module | optional | ORC.7.7(.3) | Identifier of the drawer module |
| drugscarriage | optional | ORC.7.7(.4) | Identifier of the carriage of the drawer |

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## 6.3    Medication order cancel
▲
This is sent by Therapy to cancel an already sent medication order.

```
Originator: External system
Destination:      Athena
Other info:
XML message:
```

```xml
<sinteco_message message_id="ab" xmlns="http://www.sintecorobotics.com/namelocation">
    <medication_order_cancel medication_order_code="ab"
                             cancelled_by_user_code="ab" cancelled_time="dt">
    </medication_order_cancel>
</sinteco_message>
```

```
Attributes:
```
**MESSAGE HL7 – Not implemented**

| Attribute | Use | HL7 CONVERSION | Remark |
|---|---|---|---|
| message_id | required | | Identifies the message. Usually a GUID. |
| medication_order_code | required | | Medication order to be cancelled. |
| cancelled_by_user_code | required | | Code of the user cancelling the order. |
| cancelled_time | required | | When the order was cancelled. |

## 6.4    Restock order
▲

Athena sends this message when the stock level of a drug is lower than the specified level of the drug.

```
Originator: Athena
Destination:      External system
Other info:
XML message:
```

```xml
<sinteco_message message_id="ab" xmlns="http://www.sintecorobotics.com/namelocation">
    <restock_order restock_code="ab" quantity_in_stock="dd" quantity_requested="dd"
    priority="ab">
        <components>
            <medication medication_code="ab" medication_pharmacy_code="ab"/>
        </components>
    </restock_order>
</sinteco_message>
```

```
Attributes:
        MESSAGE HL7 – OMS^O05
```

| Attribute | Use | HL7 CONVERSION | Remark |
|---|---|---|---|
| message_id | required | MSH.10 | Identifies the message. Usually a GUID. |
| restock_code | required | ORC.2.0 | Unique identifier for the restock. Usually a GUID. |
| quantity_in_stock | required | Not Used | Quantity of drug in stock. |
| quantity_requested | required | RQD.5 | Quantity of drug being requested. |
| medication_code | required | RQD.2.0 | Code for the drug in Athena. |
| medication_pharmacy_code | optional | Not Implemented | Code for the drug in the pharmacy. |
| priority | optional | Not Used | "N" : Normal<br>"U" : Urgent (default value) |

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## 6.5    Restock In transit
▲

This message is the result of a restock order by Athena. It indicates to Athena that the drugs requested are on the way.

```
Originator: External system
Destination:      Athena
Other info:
XML message:
```

```xml
<sinteco_message message_id="ab" xmlns="http://www.sintecorobotics.com/namelocation">
    <restock_in_transit restock_code="ab" delivery_code="ab"
                                        quantity_on_route="dd" priority="ab">
        <components>
            <medication medication_code="ab" medication_pharmacy_code="ab"
                        medication_lot_number="ab" medication_exp_date="d"/>
        </components>
    </restock_in_transit>
</sinteco_message>
```

Attributes:

**MESSAGE HL7 – RDS^O13**

| Attribute | Use | HL7 CONVERSION | Remark |
|---|---|---|---|
| message_id | required | MSH.10 | Identifies the message. Usually a GUID. |
| restock_code | required | ORC.2.0 | Identifier from *restock order*. |
| delivery_code | required | ORC.3.0 | Unique identifier of the restock delivery. |
| priority | optional | Fixed: "N" | U : Urgent<br>N : Normal (default value) |
| quantity_on_route | required | RXD.4 | Quantity of drugs on the way from the pharmacy to Homerus. Physically being transported. |
| medication_code | required | RXD.2.0 | Code for the drug in Athena. |
| medication_pharmacy_code | optional | RXD.2.0 | Code for the drug in the pharmacy. |
| medication_lot_number | required | RXD.18 | Lot number of the drug delivered. |
| medication_exp_date | required | RXD.19 | Expiration date of the drug delivered. |

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## 6.6    Restock acknowledgement
▲

Athena sends this message when the drugs have arrived to Homerus and the drugs have been registered with Athena.

Originator: Athena
Destination:        External system
Other info:
XML message:

```
<sinteco_message message_id="ab" xmlns="http://www.sintecorobotics.com/namelocation">
    <restock_ack restock_code="ab" delivery_code="ab" quantity_received="dd"
                                stock_arrival="dt" received_by_user="ab">
        <components>
            <medication medication_code="ab" medication_pharmacy_code="ab"
                        medication_lot_number="ab" medication_exp_date="d"/>
        </components>
    </restock_ack>
</sinteco_message>
```

Attributes:
**MESSAGE HL7 – RDS^O13**

| Attribute | Use | HL7 CONVERSION | Remark |
|---|---|---|---|
| message_id | required | MSH.10 | Identifies the message. Usually a GUID. |
| restock_code | required | ORC.2.0 | Identifier from *restock order*. |
| delivery_code | required | ORC.3.0 | Identifier from *restock in transit*. |
| quantity_received | required | RXD.4 | Quantity of drugs physically arriving at the Homerus inventory. |
| stock_arrival | required | ORC.9 | Date and time when drugs arrived. |
| received_by_user | required | ORC.10.2 | The user who accepted the drugs. |
| medication_code | required | RXD.2.0 | Code for the drug in Athena. |
| medication_pharmacy_code | optional | *Not Implemented* | Code for the drug in the pharmacy. |
| medication_lot_number | required | RXD.18 | Lot number of the drug delivered. |
| medication_exp_date | required | RXD.19 | Expiration date of the drug delivered. |

## 6.7    Medication returns
▲

Athena sends this message when wards return drugs to Homerus. It is sent to notify the external system that a set of drugs have been returned to the inventory of Athena.

```
Originator: Athen
Destination:      External system
Other info:
XML message:
```

```xml
<sinteco_message message_id="ab" xmlns="http://www.sintecorobotics.com/namelocation">
    <medication_returns quantity_returned="dd" when_returned="dt" user="ab">
        <delivery medication_order_code="ab" patient_code="ab"/>
        <location ward_code="ab"/>
        <components>
            <medication medicationcode="ab" medication_pharmacy_code="ab"
                        medication_lot_number="ab" medication_exp_date="d"/>
        </components>
        <homerusbags count="dd">
            <homerusbag bag_number="ab" container="ab"/>
            …
        </homerusbags>
    </medication_returns>
</sinteco_message>
```

```
Attributes:
```
**MESSAGE HL7 – RDS^O13**

| Attribute | Use | HL7 CONVERSION | Remark |
|---|---|---|---|
| message_id | required | MSH.10 | Identifies the message. Usually a GUID. |
| quantity_returned | required | RXD.4 | Quantity of drugs returned. |
| when_returned | required | ORC.9 | Date and time when drugs were returned. |
| user | required | ORC.10.2 | The user who accepted the drugs. |
| medication_order_code | required | ORC.2.0 | The medication order that is being returned from. |
| patient_code | required | PV1.19.0 | The code of the patient who received the drugs. |
| ward_code | required | RXD.13.0 | The identifier of the ward returning the drugs. |
| medicationcode | required | RXD.2.0 | Code for the drug in Athena. |
| medication_pharmacy_code | optional | RXD.2.0 | Code for the drug in the pharmacy. |
| medication_lot_number | required | RXD.18 | Lot number of the drug delivered. |
| medication_exp_date | required | RXD.19 | Expiration date of the drug delivered. |
| bag_number | required | RXD.25.1(.0) | The homerus bag number of the returned drug. |
| container | required | RXD.25.1(.1) | The ETA bag/PERSOBIN containing the homerus bag returned. |

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## 6.8    Medication discards
▲

Athena sends this message when an operator has for some reason discarded drugs from the Athena Inventory. Drugs can be discarded from the Athena Inventory if they are expired or for some reason are not used any more.

```
Originator: Athena
Destination:      External system
Other info:
XML message:
```

```xml
<sinteco_message message_id="ab" xmlns="http://www.sintecorobotics.com/namelocation">
    <medication_discards quantity_discarded="dd" reason="ab" when_discarded="dt"
                                        from_inventory="ab" user="ab">
        <location ward_code="ab"/>
        <components>
            <medication medication_code="ab" medication_pharmacy_code="ab"
                        medication_lot_number="ab" medication_exp_date="d"/>
        </components>
        <homerusbags count="xx">
            <homerusbag bag_number="ab"/>
            …
        </homerusbags>
    </medication_discards>
</sinteco_message>
```

Attributes:
    **MESSAGE HL7 – Not implemented**

| Attribute | Use | HL7 CONVERSION | Remark |
|---|---|---|---|
| message_id | required | | Identifies the message. Usually a GUID. |
| quantity_discarded | required | | Quantity of drugs discarded. |
| Reason | required | | Why the drug was discarded. Can take the values 'EXPIRED' and 'LOTNUMBER'. |
| when_discarded | required | | Date and time when drugs were discarded. |
| from_inventory | optional | | The inventory from where the drugs were discarded. |
| User | required | | The user who discarded the drugs. |
| ward_code | Optional | | Service |
| medication_code | required | | Code for the drug in Athena. |
| medication_pharmacy_code | optional | | Code for the drug in the pharmacy. |
| medication_lot_number | required | | Lot number of the drug delivered. |
| medication_exp_date | required | | Expiration date of the drug delivered. |
| bag_number | required | | The bag number of the returned drug. |

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## 6.9    Inventory check
▲

The external systems have the option to request at any time the available quantity of a drug within Athena. To do this they send this message.

```
Originator: External system
Destination:       Athena
Other info:
XML message:
```

```
<sinteco_message message_id="ab" xmlns="http://www.sintecorobotics.com/namelocation">
    <inventory_check operation="ab">
        <components>
            <medication medication_code="ab" medication_pharmacy_code="ab"/>
        </components>
    </inventory_check>
</sinteco_message>
```

```
Attributes:
```
**MESSAGE HL7 – Not implemented**

| Attribute | Use | HL7 CONVERSION | Remark |
|-----------|-----|----------------|--------|
| message_id | required | | Identifies the message. Usually a GUID. |
| Operation | optional | | Can contain the values "count" or "current_status", default value is "current_status". |
| medication_code | required | | Code for the drug in Athena. |
| medication_pharmacy_code | optional | | Code for the drug in the pharmacy. |

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## 6.10 Inventory result
▲

Athena sends this message as a response to any Inventory Check message it receives. It might take a while before the response is sent since Athena might need to do a manual check of all drugs within the machines.

```
Originator: Athena
Destination:      External system
Other info:
XML message:
```

```xml
<sinteco_message message_id="ab" xmlns="http://www.sintecorobotics.com/namelocation">
    <inventory_result operation="ab" when_executed="dt">
        <totals qty="dd" qty_counted="dd"/>
        <inventories count="dd">
                <inventory name="ab" qty="dd" qty_counted="dd" reorder_point="dd"
    reorder_qnt="dd" valid_data="ab"/>
                …
        </inventories>
        <components>
            <medication medication_code="ab" medication_pharmacy_code="ab"/>
        </components>
    </inventory_result>
</sinteco_message>
```

```
Attributes:
```
**MESSAGE HL7 – MFN^M15**

| Attribute | Use | HL7 CONVERSION | Remark |
|---|---|---|---|
| message_id | required | MSH.10 | Identifies the message. Usually a GUID. |
| operation | optional | Not Used | The operation carried out. See inventory check. |
| when_executed | required | IIM.11 | When the request was executed. |
| qty | required | IIM.12 | Quantity of drugs in Homerus according to the inventory, total. |
| qty_counted | optional | Not Used | Quantity if drugs counted, total. |
| count | required | Not Used | The number of inventories containing the drug. |
| name | required | Not Used | The name of the inventory containing the drug. |
| inventory qty | required | Not Used | Quantity of drugs in Homerus according to the inventory. |
| inventory qty_counted | optional | Not Used | Quantity if drugs counted. |
| reorder_point | optional | Not Used | Reorder point of the sub stock |
| reorder_qnt | optional | Not Used | Reorder qnt of the sub stock |
| valid_data | optional | Not Used | Valid data |
| medication_code | required | IIM.1.0 | Code for the drug in Athena. |
| medication_pharmacy_code | optional | Not Used | Code for the drug in the pharmacy. |

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## 6.11  Medication
▲

Athena receives this message from the external system when the system wants to notify Athena about a change in the drug's database.

```
Originator: External system
Destination:     Athena
Other info:
XML message:
```

```xml
<sinteco_message message_id="ab" xmlns="http://www.sintecorobotics.com/namelocation">
    <medication medication_code="ab" pharmacy_code="ab" barcode="ab"
                label_name="ab" sticker_label1="ab" sticker_label2="ab"
                legal_notice="ab" category="ab"
                strength="ab" volume="f" dose="f" list="ab">
        <galenic_form galenic_form="ab"/>
        <strength_unit strength_unit="ab"/>
        <volume_unit volume_unit="ab"/>
        <dose_unit dose_unit="ab"/>
        <inventories>
                <inventory name="ab" reorder_point="dd" reorder_quantity="dd"/>
        </inventories>
        <machine_attributes machine_attr1="ab" machine_attr2="ab"
                machine_attr3="ab" machine_attr4="ab" machine_attr5="ab"
                machine_attr6="ab" machine_attr7="ab" machine_attr8="ab"
                machine_attr9="ab" machine_attr10="ab" machine_attr11="ab"
                machine_attr12="ab" machine_attr13="ab" machine_attr14="ab"
                machine_attr15="ab" machine_attr16="ab" machine_attr17="ab"
                machine_attr18="ab" machine_attr19="ab" machine_attr20="ab"
                machine_attr21="ab" machine_attr22="ab" machine_attr23="ab"
                machine_attr24="ab" machine_attr25="ab" machine_attr26="ab"/>
    </medication>
</sinteco_message>
```

```
Attributes:
        MESSAGE HL7 – MFN^M16
```

| Attribute | Use | HL7 CONVERSION | Remark |
|---|---|---|---|
| message_id | required | MSH.10 | Identifies the message. Usually a GUID. |
| medication_code | required | ITM.1.0 | Code for the drug in Athena. |
| pharmacy_code | optional | ITM.1.0 | Code for the drug in the pharmacy. |
| Barcode | optional | ITM.1.0 | Local barcode of the drug. If this is not specified then it defaults to pharmacy_code. This value needs to be unique. |
| label_name | required | ITM.2 | Label of the drug. This will be placed in the BrandName field. |
| sticker_label1 | optional | ZAI.1 | Text of the first line of sticker. This will be placed in the Description field. |
| sticker_label2 | optional | ZAC.2.0.1 se ZAC.1 = "ATC" e se ZAC.2.1 = "1" | Text of the second line of sticker. This will be placed in the ActivePrinciples field. |
| legal_notice | optional | Empty | The legal notice to be printed on the Homerus bag where required. |
| category | optional | Empty | A category value of the drug. Used to group drugs together. |
| strength | optional | Empty | The strength field. Note that the XML is valid for any string here, but Athena only imports the value if it contains a float value, since Athena does not support multiple strength |

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| | | | values for medications. Also see strength_unit below. |
|---|---|---|---|
| volume | optional | *Empty* | Volume of the drug, see volume_unit below. |
| dose | optional | *Empty* | Drug dose, see dose_unit below. |
| galenic_form | required | ZAI.49.1 | The form of the drug. |
| strength_unit | required | *Empty* | Unit of the strength. Must contain a value if the strength_unit element is included. |
| volume_unit | required | *Empty* | Unit of the volume. Must contain a value if the volume_unit element is included. |
| dose_unit | required | ZAI.49.2 | Unit of the dose. Must contain a value if the dose_unit element is included. |
| name | required | *Empty* | Only valid if inventories element is included. Name of the inventory that will be updated by the values in reorder_point and reorder_quantity |
| reorder_point | required | *Empty* | At what level a restock is to be issued. |
| reorder_quantity | required | *Empty* | How much of the drug to order during restock. |
| machine_attr1 | required | Fixed: "-1" | Machine attribute: Bag length. |
| machine_attr2 | optional | Fixed: "-1" | Machine attribute: Items per bag. This is not supported any more. All drugs will have one item per bag. |
| machine_attr3 | optional | Fixed: "-1" | Machine attribute: Calypso management ('A' or 'M') |
| machine_attr4 | optional | Fixed: "-1" | Machine attribute: Load code |
| machine_attr5 | optional | Fixed: "-1" | Machine attribute: Maximum quantity per Xydis. |
| machine_attr6 | optional | Fixed: "-1" | Machine attribute: Hyperion step. If 0 the drug must be stored on picking station. |
| machine_attr7 | optional | Fixed: "-1" | Machine attribute: Ready to use. If F the drug is sent with as patient name the ward name |
| machine_attr8 | optional | Fixed: "-1" | Machine attribute: expiring time, if zero Homerus use expiring date, otherwise it means 'maximum number of days inside Homerus' starting from the first Xydis filling. |
| machine_attr9 | Optional | Fixed: "-1" | Machine attribute: speed reduction, vel=default_vel/speed red. |
| machine_attr10 | optional | Fixed: "-1" | Machine attribute: Vacuum level of the robot pipe in KPa |
| machine_attr11 | Optional | Fixed: "-1" | Machine attribute: Vacuum level of the aux pipe in KPa |
| machine_attr12 | Optional | Fixed: "-1" | Machine attribute: X Step in 0.1 mm |
| machine_attr13 | Optional | Fixed: "-1" | Machine attribute: Y Step in 0.1 mm |
| machine_attr14 | Optional | Fixed: "-1" | Machine attribute: Z step in 0.1 mm |
| machine_attr15 | Optional | Fixed: "-1" | Machine attribute: Max step in X |
| machine_attr16 | Optional | Fixed: "-1" | Machine attribute: Max step in Y |
| machine_attr17 | Optional | Fixed: "-1" | Machine attribute: Max step in Z |
| machine_attr18 | Optional | Fixed: "-1" | Machine attribute: X Offset in 0.1 mm |
| machine_attr19 | Optional | Fixed: "-1" | Machine attribute: Y Offset in 0.1 mm |
| machine_attr20 | Optional | Fixed: "-1" | Machine attribute: Area of the Blister in mm2 |
| machine_attr21 | Optional | Fixed: "-1" | Machine attribute: % of tolerances in area measurement |
| machine_attr22 | Optional | Fixed: "-1" | Machine attribute: straws changing, if T at the end of any Calypso packaging the straw is rejected |
| machine_attr23 | Optional | Fixed: "-1" | Main robot straw number |
| machine_attr24 | Optional | Fixed: "-1" | Auxiliary robot straw number |
| machine_attr25 | Optional | Fixed: "-1" | Drug length |
| machine_attr26 | Optional | Fixed: "-1" | Disable vision |

Note! Groups *strength_unit*, *volume_unit*, *dose_unit, inventories* and *machine_attributes* are optional. If *machine_attributes is* -1 Athena uses internally stored data.

## 6.12  Ward
▲

Athena receives this message to update its inner table of valid wards where it may send medication in response to a medication order.

```
Originator  : External system
Destination : Athena
Other info  :
XML message :

    <sinteco_message message_id="ab" xmlns="http://www.sintecorobotics.com/namelocation">
        <ward ward_code="ab" ward_name="ab">
            <location location_id="ab" location_descr="ab" location_addres/>
        </ward>
    </sinteco_message>

Attributes:
```
**MESSAGE HL7 – MFN^M05**

| Attribute | Use | HL7 CONVERSION | Remark |
|---|---|---|---|
| message_id | required | MSH.10 | Identifies the message. Usually a GUID. |
| ward_code | required | LOC.1.0 | Unique identifier of the ward. |
| ward_name | required | LOC.2 | Name of the ward. |
| location_id | optional | Empty | Unique identifier of the location |
| location_descr | optional | Empty | Description of the final location |
| location_addres | optional | Empty | Address of the final location |

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## 6.13   Reset pharmacy stock
▲
No more used.


## 6.14   Medication Order Validation
▲
External system can send this message in order to change the validation_time tag of the message medication order.
The Change is effectuated only if the medication order is not processed by Athena.


```
Originator:   External system
Destination:  Athena
Other info:

XML message:

        <sinteco_message message_id="ab" xmlns="http://www.sintecorobotics.com/namelocation">
                <medication_order_validation message_validation_code="ab">
                        <messages count="d">
                                <message patient_code="ab" validation_time="dt"/>
                                <message patient_code="ab" validation_time="dt"/>
                                <message patient_code="ab" validation_time="dt"/>
                                …
                        </messages>
                </medication_order_validation>
        </sinteco_message>

Attributes:
```
**MESSAGE HL7 – Not implemented**

| Attribute | Use | Remark |
|---|---|---|
| message_id | required | Identifies the message. Usually a GUID. |
| message_validation_code | required | Unique identifier for the medication order validation. |
| count | Required | Number of patient to modify |
| patient_code | Required | Unique identifier for the Patient. |
| validation_time | Required | New value for validation_time |

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## 6.15 Restock Ward order
▲

The External System sends this message to Athena in order to receive the mono-dose with the Sinteco serial number .

```
Originator:        External system
Destination:       Athena
Other info:
XML message:
```

```xml
<sinteco_message message_id="ab" xmlns="http://www.sintecorobotics.com/namelocation">
    <restock_ward_order restock_code="ab" ward_code="ab" quantity_requested="dd">
        <medication medication_code="ab" medication_pharmacy_code="ab"/>
    </restock_ward_order>
</sinteco_message>
```

```
Attributes:
      MESSAGE HL7 – OMS^O05
```

| Attribute | Use | HL7 CONVERSION | Remark |
|---|---|---|---|
| message_id | required | MSH.10 | Identifies the message. Usually a GUID. |
| restock_code | required | ORC.2.0 | Unique identifier for the restock. Usually a GUID. |
| ward_code | required | RQD.9.0 | Ward code |
| quantity_requested | required | RQD.5 | drug code in Athena. |
| medication_code | required | RQD.2.0 | drug pharmacy code |
| medication_pharmacy_code | optional | RQD.2.0 | Code for the drug in the pharmacy. |

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### 6.16   Restock Ward In transit
▲

This message is the result of a restock order by External system to Athena. It indicates to external system that the required drugs are on the way.

```
Originator:        Athena
Destination:       External Sistem
Other info:
XML message:
```

```xml
<sinteco_message message_id="ab" xmlns="http://www.sintecorobotics.com/namelocation">
    <restock_ward_in_transit restock_code="ab" delivery_code="ab" ward_code="ab"
    quantity_on_route="dd">
        <medication medication_code="ab" medication_pharmacy_code="ab">
           <lot_number count_lot="dd">
              <bags count_bags="dd" medication_lot_number="ab" medication_exp_date="d">
                 <bag bagnumber="ab" container="ab"/>
                 …
              </bags>
              …
           </lot_number>
        </medication>
    </restock_ward_in_transit>
</sinteco_message>
```

```
Attributes:
        MESSAGE HL7 – RDS^O13
```

| Attribute | Use | HL7 CONVERSION | Remark |
|---|---|---|---|
| message_id | required | MSH.10 | Identifies the message. Usually a GUID. |
| restock_code | required | ORC.2.0 | Identifier from *restock order*. |
| delivery_code | required | ORC.3.0 | Unique identifier of the restock delivery. |
| ward_code | required | RXD.13.0 | Ward code |
| quantity_on_route | required | RXD.4 | Quantity of drugs on the way from Athena to External System. Physically being transported. |
| medication_code | required | RXD.2.0 | drug code in Athena. |
| medication_pharmacy_code | optional | RXD.2.0 | drug pharmacy code |
| count_lot | required | Not Used | Number of different delivered lot Numbers |
| medication_lot_number | required | RXD.18 | Lot number of the drug delivered. |
| medication_exp_date | required | RXD.19 | Expiration date of the drug delivered. |
| count_bags | required | *Not Used* | Quantity of doses delivered with the same lot Number |
| bagsnumber | required | RXD.25.1(.0) | Number of the bags |
| container | required | RXD.25.1(.1) | Etabag |
|  |  |  |  |

## 6.17   Restock Ward acknowledgement
▲

Athena master receives this message when the drugs have been received by External System.

```
Originator:        External system Athena
Destination:       Athena
Other info:
XML message:
```
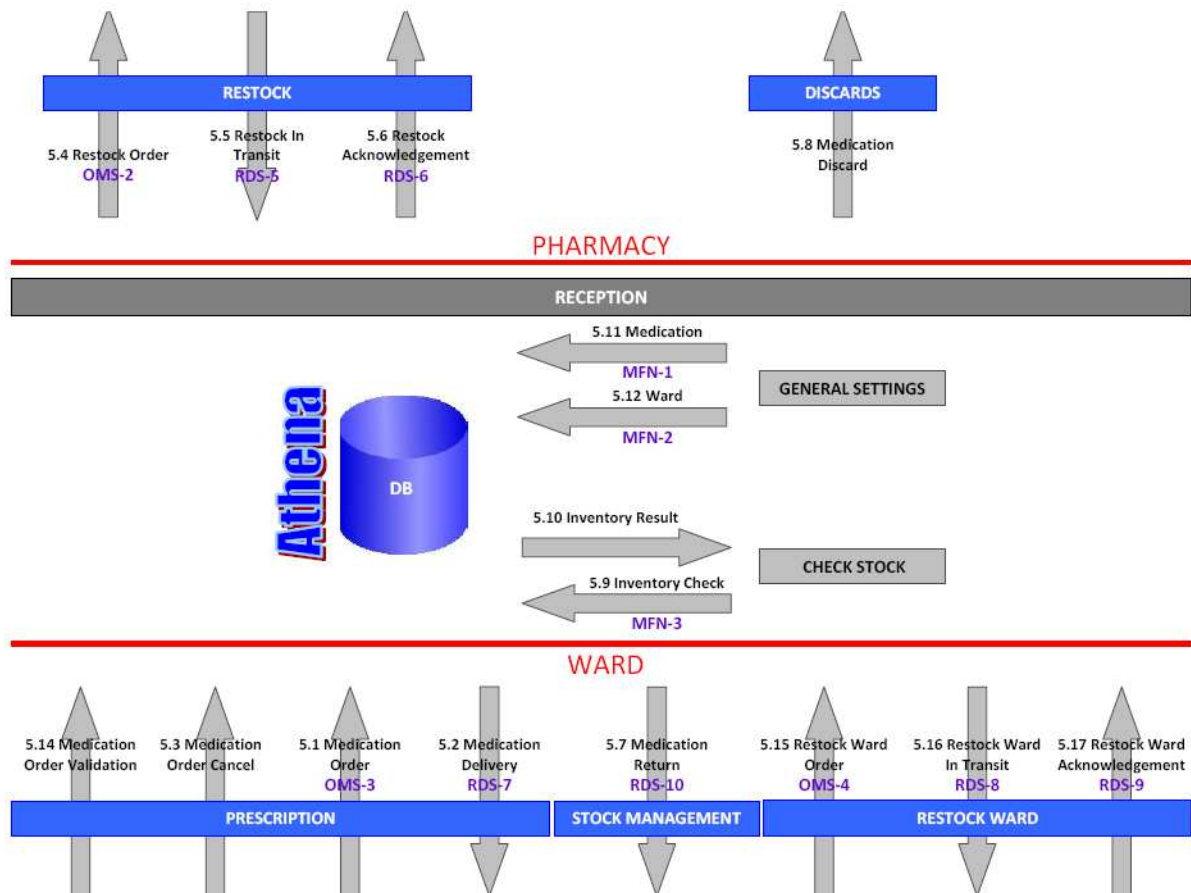
```xml
<sinteco_message message_id="ab" xmlns="http://www.sintecorobotics.com/namelocation">
    <restock_ward_ack restock_code="ab" delivery_code="ab" ward_code="ab" quantity_received="dd"
    stock_arrival="dt" received_by_user="ab">
        <medication medication_code="ab" medication_pharmacy_code="ab">
            <lot_number count_lot="dd">
                <bags count_bags="dd" medication_lot_number="ab" medication_exp_date="d">
                    <bag bagnumber="ab" container="ab"/>
                    …
                </bags>
                …
            </lot_number>
        </medication>
    </restock_ward_ack>
</sinteco_message>
```

```
Attributes:
        MESSAGE HL7 – Not implemented
```

| Attribute | Use | HL7 CONVERSION | Remark |
|---|---|---|---|
| message_id | required | | Identifies the message. Usually a GUID. |
| restock_code | required | | Identifier from *restock order*. |
| delivery_code | required | | Identifier from *restock in transit*. |
| ward_code | required | | Ward code |
| quantity_received | required | | Quantity of drugs physically arriving at the Athena inventory. |
| stock_arrival | required | | Date and time when drugs arrived. |
| received_by_user | required | | The user who accepted the drugs. |
| medication_code | required | | Code for the drug in Athena. |
| medication_pharmacy_code | optional | | Code for the drug in the pharmacy. |
| count_lot | required | | Number of different delivered lot Numbers |
| medication_lot_number | required | | Lot number of the drug delivered. |
| medication_exp_date | required | | Expiration date of the drug delivered. |
| count_bags | required | | Quantity of doses delivered with the same lot Number |
| bagsnumber | required | | Number of the bags |
| container | required | | Etabag |

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# 7    Messages overview

# 8    HL7 messages definitions

## 8.1    HL7 messages structure

### 8.1.1    MFN^M05

| MFN^M05 | Patient Location Master File |
|---|---|
| MSH | Message Header |
| [{ SFT }] | Software |
| [ UAC ] | User Authentication Credential |
| MFI | Master File Identification |
| { | --- MF_LOCATION begin |
| MFE | Master File Entry |
| LOC | Patient Location Master |
| [{LCH}] | Location Characteristic |
| [{LRL}] | Location Relationship |
| { | --- MF_LOC_DEPT begin |
| LDP | Location Department |
| [{LCH}] | Location Characteristic |
| [{LCC}] | Location Charge Code |
| } | --- MF_LOC_DEPT end |
| } | --- MF_LOCATION end |

### 8.1.2    MFN^M15

| MFN^M15 | Master File Notification - Inventory Item |
|---|---|
| MSH | Message Header |
| [{ SFT }] | Software |
| [ UAC ] | User Authentication Credential |
| MFI | Master File Identification |
| { | --- MF_INV_ITEM begin |
| MFE | Master File Entry |
| IIM | Inventory Item Master |
| } | --- MF_INV_ITEM end |

### 8.1.3    MFN^M16

| MFN^M16 | Inventory Item Master File Message – Enhanced |
|---|---|
| MSH | Message Header |
| [{ SFT }] | Software |
| [ UAC ] | User Authentication Credential |
| MFI | Master File Identification |
| { | --- MATERIAL_ITEM_RECORD begin |
| MFE | Master File Entry |
| ITM | Material Item |
| [{NTE}] | Notes for ITM |
| [{ | --- STERILIZATION begin |
| STZ | Sterilization Parameters |
| [{NTE}] | Notes for STZ |
| }] | --- STERILIZATION end |

| [{ | --- PURCHASING_VENDOR begin |
| --- | --- |
| VND | Purchasing Vendor |
| ZAP | Price Segment |
| [{ | --- PACKAGING begin |
| PKG | Packaging |
| [{PCE}] | Patient Charge Cost Center Exception |
| }] | --- PACKAGING end |
| }] | --- PURCHASING_VENDOR end |
| [{ | --- MATERIAL_LOCATION begin |
| IVT | Material Location |
| [{ILT}] | Material Lot/Quantity |
| [{NTE}] | Notes for IVT |
| }] | --- MATERIAL_LOCATION end |
| ZAI | Extended Item segment |
| [{ZAA}] | Apb Code Segment |
| [{ZAB}] | Item Barcode Segment |
| [{ZAC}] | Alternative Code Segment |
| [{ | --- MATERIAL_LOCATION begin |
| ZAS | Site Segment |
| [{ZAL}] | Location Segment |
| }] | --- MATERIAL_LOCATION end |
| [{ZAR}] | Route of Administation Segment |
| [{ZAU}] | Administation Unit Segment |
| [{ZAX}] | Article Property Segment |
| [{ZAT}] | Traceability Segment |
| } | --- MATERIAL ITEM RECORD end |

### 8.1.4   OMS^O05

| OMS^O05 | Stock Requisition Order Message |
| --- | --- |
| MSH | Message Header |
| [{ SFT }] | Software |
| [ UAC ] | User Authentication Credential |
| [{ NTE }] | Notes and Comments (for Header) |
| [ | --- PATIENT begin |
| PID | Patient Identification |
| [ PD1 ] | Additional Demographics |
| [{ NTE }] | Notes and Comments (for Patient ID) |
| [ | --- PATIENT_VISIT begin |
| PV1 | Patient Visit |
| [ PV2 ] | Patient Visit – Additional Info |
| ] | --- PATIENT_VISIT end |
| [{ | --- INSURANCE begin |
| IN1 | Insurance |
| [ IN2 ] | Insurance Additional Information |
| [ IN3 ] | Insurance Additional Information, Certification |
| }] | --- INSURANCE end |
| [ GT1 ] | Guarantor |
| [{ AL1 }] | Allergy Information |
| ] | --- PATIENT end |
| { | --- ORDER begin |

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| ORC | Common Order |
|---|---|
| [{ | --- TIMING begin |
| TQ1 | Timing/Quantity |
| [{ TQ2 }] | Timing/Quantity Order Sequence |
| }] | --- TIMING end |
| RQD | Requisition Detail |
| [ RQ1 ] | Requisition Detail-1 |
| [{ NTE }] | Notes and Comments (for RQD) |
| [{ | --- OBSERVATION begin |
| OBX | Observation/Result |
| [{ NTE }] | Notes and Comments (for OBX) |
| }] | --- OBSERVATION end |
| [ BLG ] | Billing Segment |
| } | --- ORDER end |

## 8.1.5    RDS^O13

| RDS^O13 | Pharmacy/treatment dispense message |
|---|---|
| MSH | Message Header |
| [{ SFT }] | Software |
| [ UAC ] | User Authentication Credential |
| [{ NTE }] | Notes and Comments (for Header) |
| [ | --- PATIENT begin |
| PID | Patient Identification |
| [ PD1 ] | Additional Demographics |
| [{ NTE }] | Notes and Comments (for PID) |
| [{ AL1 }] | Allergy Information |
| [ | --- PATIENT_VISIT begin |
| PV1 | Patient Visit |
| [ PV2 ] | Patient Visit – Additional Info |
| ] | --- PATIENT_VISIT end |
| ] | --- PATIENT end |
| { | --- ORDER begin |
| ORC | Common Order |
| [{ | --- TIMING begin |
| TQ1 | Timing/Quantity |
| [{ TQ2 }] | Timing/Quantity Order Sequence |
| }] | --- TIMING end |
| [ | --- ORDER_DETAIL begin |
| RXO | Pharmacy /Treatment Order |
| [ | --- ORDER_DETAIL_SUPPLEMENT begin |
| { NTE } | Notes and Comments (for RXO) |
| { RXR } | Pharmacy/Treatment Route |
| [{ | --- COMPONENT begin |
| RXC | Pharmacy/Treatment Component |
| [{ NTE }] | Notes and Comments (for each RXC) |
| }] | --- COMPONENT end |
| ] | --- ORDER_DETAIL_SUPPLEMENT end |
| ] | --- ORDER_DETAIL end |
| [ | --- ENCODING begin |
| RXE | Pharmacy/Treatment Encoded Order |

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| [{ NTE }] | Notes and Comments (for RXE) |
|---|---|
| { | --- TIMING_ENCODED begin |
| TQ1 | Timing/Quantity |
| [{ TQ2 }] | Timing/Quantity Order Sequence |
| } | --- TIMING_ENCODED end |
| { RXR } | Pharmacy/Treatment Route |
| [{ RXC }] | Pharmacy/Treatment Component |
| ] | --- ENCODING end |
| RXD | Pharmacy/Treatment Dispense |
| [{ NTE }] | Notes and Comments (for RXD) |
| { RXR } | Pharmacy/Treatment Route |
| [{ RXC }] | Pharmacy/Treatment Component |
| [{ | --- OBSERVATION begin |
| OBX | Results |
| [{ NTE }] | Notes and Comments (for OBX) |
| }] | --- OBSERVATION end |
| [{ FT1 }] | Financial Transaction segment |
| } | --- ORDER end |

## 8.2    General

### 8.2.1    Product synchronization

**Goal :**             Send all of External system's internal product to keep external parties up to date
**Sender :**              External system
**Receiver :**       Anyone
**Sinteco type :** Medication (paragraph 5.11)
**HL7 type :**       MFN^M16
**HL7 Definition :** HL7 MFN^M16 Message definition
**Message ID :**    MFN-1
**Triggered by :** User action in External system software
**In Response to :**      N/A

*Example of message HL7*

```
MSH|^~\&|Ihc.Viper.Export|IHC|||20120521100125||MFN^M16^MFN_M16|d44bd443-f8b4-420e-8190-
cc2d23cbb4a4|P|2.6|||||BE||fra
ITM|296047|BRUFEN FORTE DRAG 600 MG
VND|1|KNOLL|Knoll Belgium nv|X|N
ZAP|20000301000000^99991231000000|6.017^BEF|0.06
VND|2|ABBOTT|Abbott Products nv|P28001|Y
ZAP|20090501000000^99991231000000|0.09713^EUR|0.06
VND|3|ST JAN|AZ Sint-Jan  Brugge-Oostende AV|X|N
ZAP|20090501000000^99991231000000|0.09713^EUR|0.06
ZAI|BRUFEN FORTE DRAG 600
MG|||702167^702167^1|702167^702167^1|1|1|0|0|0|0|1|0|0|0|0|1|0|0|1|1|1392647^1392662^1392
670^1392779^2069640^1392530|||||1|0|1||F|R|19010101000000|||0|""|""|""|0.079^EUR|0.0648^EUR
|0.079^EUR|STUK^Pièce(s)|||||BRUFEN FORTE^DRAG^600 MG
ZAA|702167&BRUFEN FORTE DRAG 600 MG^0|1
ZAA|867556&BRUFEN FORTE 30 COMP 600 MG^0|30
ZAA|2639763&BRUFEN FORTE 60 TABL 600 MG^1|60
ZAC|ATC|M01AE01&IBUPROFENE^1
ZAC|GGR|015010005001&Ibuprofène^1
```

```
ZAC|GGR|510001035025&Ibuprofeen^0
ZAC|GGR|598005010&X^0
ZAS|2|ARX-Sinteco Testomgeving|||1/07/24/1|60000/01203/9|60000012039||0|F|1|1|0|0|1
ZAL|C|011^KAST: 011||5|1|6
ZAL|C|030^KAST: 030||9|1|8
ZAL|C|010^KAST: 010||9|1|10
ZAL|C|100^KAST: 100||19|1|19
ZAL|C|040^KAST: 040||5|1|6
ZAR|19^ORAL
ZAU|3&DRAGEE^1
ZAU|8&MG^600
```

*Translation in xml*

```xml
<sinteco_message message_id="d44bd443-f8b4-420e-8190-cc2d23cbb4a4">
  <medication volume="0" strength="" sticker_label2="IBUPROFENE" sticker_label1="BRUFEN FORTE DRAG 600
  MG" pharmacy_code="296047" medication_code="296047" legal_notice="" label_name="BRUFEN FORTE
  DRAG 600 MG" dose="" category="" barcode="296047" list="">
    <galenic_form galenic_form="DRAG" />
    <strength_unit strength_unit="" />
    <volume_unit volume_unit="" />
    <dose_unit dose_unit="600 MG" />
    <inventory reorder_quantity="" reorder_point="" name="" />
    <machine_attributes machine_attr9="-1" machine_attr8="-1" machine_attr7="-1" machine_attr6="-1"
    machine_attr5="-1" machine_attr4="-1" machine_attr3="-1" machine_attr26="-1" machine_attr25="-1"
    machine_attr24="-1" machine_attr23="-1" machine_attr22="-1" machine_attr21="-1" machine_attr20="-1"
    machine_attr2="-1" machine_attr19="-1" machine_attr18="-1" machine_attr17="-1" machine_attr16="-1"
    machine_attr15="-1" machine_attr14="-1" machine_attr13="-1" machine_attr12="-1" machine_attr11="-1"
    machine_attr10="-1" machine_attr1="-1" />
  </medication>
</sinteco_message>
```

| MSH | 0 | | | Message Segment Header | | |
|---|---|---|---|---|---|---|
| | 10 | | | Message control id | Message control id (GUID) | message_id |
| ITM | 0 | | | Material Item Segment | | |
| | 1 | | | Item Identifier | Product | |
| | | 0 | | Entity Identifier | Product ID | medication_code |
| | | 1 | | Namespace ID | - | |
| | | 2 | | Universal ID | - | |
| | | 3 | | Universal ID Type | - | |
| | 2 | | | Item Description | Product description (language dependant of MSH.PrincipalLanguageOfMessage) | label_name |
| ZAI | 0 | | | Extended Item segment | | |
| | 1 | | | Item Description | Pharmacy's internal product description (language dependant of MSH.PrincipalLanguageOfMessage) | sticker_label1 |
| | 49 | | | Detailed Item Description | Detailed product description | |
| | | 0 | | Item name | Product name | |
| | | 1 | | Item form | Product Form | galenic_form |
| | | 2 | | Item dose | Product Dose | dose_unit |
| ZAC | 0 | | | Alternative Code Segment | | |
| | 2 | | | Code | ATC/GGR | |
| | | 0 | | Identifier | ATC/GGR ID and description | |
| | | | 0 | Identifier | ATC/GGR ID | |
| | | | 1 | Text | ATC/GGR description | sticker_label2 (if ZAC.1 == "ATC" && ZAC.2.1 == 1) |
| | | 1 | | Numeric Value | Is this the products main ATC or GGR? 0/1 | |

### 8.2.2 Location synchronization

**Goal :**        Send all of External system's internal locations to keep external parties up to date

**Sender :**          External system
**Receiver :**       Anyone
**Sinteco type :** Ward (paragraph 5.12)
**HL7 type :**      MFN^M05
**HL7 Definition :** HL7 MFN^M05 Message definition
**Message ID :**   MFN-2
**Triggered by :** User action in External system software
**In Response to :**    N/A

*Example of message HL7*

```
MSH|^~\&|Ihc.Viper.Export|IHC|||20120710102400||MFN^M05^MFN_M05|ed8a01c0-0854-45c5-af1f-
f47580ad7ae4|P|2.6|||||BE||nld
MFI|LOC||REP
MFE|MAD
LOC|02291|Spoed|N|AZ Damiaan^^154
LDP|||||||19000101||||2291
```

*Translation in xml*

```
<sinteco_message message_id="ed8a01c0-0854-45c5-af1f-f47580ad7ae41">
  <ward ward_name="Spoed" ward_code="02291">
    <location location_id="" location_descr="" location_addres="" />
  </ward>
</sinteco_message>
```

| MSH | 0 | | | Message Segment Header | | |
|-----|---|---|---|---|---|---|
| | 10 | | | Message control id | Message control id (GUID) | message_id |
| LOC | 0 | | | Location Identification Segment | | |
| | 1 | | | Primary Key Value - LOC | Location | |
| | | 0 | | Point Of Care | Location Id | ward_code |
| | 2 | | | Location Description | Location name | ward_name |

## 8.3    Loading

The process of loading starts when Sinteco's distribution robot sends a « restock order » message to External system.
Once the order has been handled by a user in External system and the products are ready to be delivered to the distribution robot, then External system notifies the distribution of this with a « restock in transit ».
Once the products have been received and loaded into the distribution robot, the robot finally confirms the delivery by sending a « restock acknowledgement » message.

### 8.3.1    Into the distribution robot

#### 8.3.1.1 Request

**Goal :**            Request to load medication into the distribution robot in order to increase the stock
**Sender :**           Sinteco
**Receiver :**      External system

**Sinteco type :** Restock order (paragraph 5.4)
**HL7 type :** OMS^O05
**HL7 Definition :** HL7 OMS^O05 Message definition - restock_order
**Message ID :** OMS-2
**Triggered by :** Low stock in distribution robot, possibly combined with user action in Sinteco software
**In Response to :** N/A

*Example of message xml*

```
<sinteco_message message_id="1595463" xmlns="http://www.sintecorobotics.com/namelocation">
  <restock_order Priority="N" quantity_requested="10" quantity_in_stock="0" restock_code="42646">
    <components>
      <medication medication_code="296047"/>
    </components>
  </restock_order>
</sinteco_message>
```

*Translation in HL7*

```
MSH|^~\&|Athena|SintecoRobotics|||201206011002||OMS^O05^OMS_O05|1595463|P|2.6|||||BE||fra
ORC|RF|42646
RQD|1|296047|||10
```

| MSH | 0 | | | Message Segment Header | | |
|---|---|---|---|---|---|---|
| | 10 | | | Message control id | Message control id (GUID) | message_id |
| ORC | 0 | | | Common Order Segment | | |
| | 2 | | | Placer Order Number | Placer order number: uniquely identifies this order | |
| | | | 0 | Entity Identifier | Order Identifier (GUID) | restock_code |
| RQD | 0 | | | Requisition Detail Segment | | |
| | 2 | | | Item Code - Internal | Product | |
| | | 0 | | Identifier | Product Id | medication_code |
| | 5 | | | Requisition Quantity | Amount to deliver | quantity_requested |

### 8.3.1.2 Response

**Goal :** Notify the distribution robot that the placed order is about to be delivered.
**Sender :** External system
**Receiver :** Sinteco
**Sinteco type :** Restock In Transit (paragraph 5.5)
**HL7 type :** RDS^O13
**HL7 Definition :** HL7 RDS^O13 Message definition - restock_in_transit
**Message ID :** RDS-5
**Triggered by :** Order being confirmed in External system software
**In Response to :** OMS-2 message

*Example of message HL7*

```
MSH|^~\&|Ihc.Viper.Export|IHC|||20120529164312||RDS^O13^RDS_O13|145b2529-8899-422a-968d-6888fddc7617|P|2.6|||||BE||nld
ORC|OF|42646|85330595-c5b8-4abc-92f0-a05b00df5ad7
RXD|1|296047||10|||||||||||||||||1485|20130914
```

*Translation in xml*

```
<sinteco_message message_id="145b2529-8899-422a-968d-6888fddc7617">
```

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```xml
<restock_in_transit restock_code="42646" quantity_on_route="10" priority="N" delivery_code="85330595-c5b8-4abc-92f0-a05b00df5ad7">
  <components>
    <medication medication_pharmacy_code="296047" medication_lot_number="1485"
    medication_exp_date="2013-09-14T00:00:00" medication_code="296047"/>
  </components>
</restock_in_transit>
</sinteco_message>
```

| | | | | | |
|---|---|---|---|---|---|
| **MSH** | 0 | | **Message Segment Header** | | |
| | 10 | | Message control id | Unique message identifier (GUID) | message_id |
| **ORC** | 0 | | **Common Order Segment** | | |
| | 2 | | Placer Order Number | Placer order number: uniquely identifies this refill | |
| | | 0 | Entity Identifier | Order Identifier --> Must correlate to same field in request message | restock_code |
| | 3 | | Filler Order Number | Filler order number: uniquely identifies this refill | |
| | | 0 | Entity Identifier | Filler's Order Identifier | delivery_code |
| **RXD** | 0 | | **Pharmacy/Treatment Dispense Segment** | | |
| | 2 | | Dispense/Give Code | Product | |
| | | 0 | Identifier | Product Id | medication_code |
| | 4 | | Actual Dispense Amount | Actual amount that is being delivered to the robot | quantity_on_route |
| | 18 | | Substance Lot Number | Lot Number | medication_lot_number |
| | 19 | | Substance Expiration Date | Expiration Date | medication_exp_date |

### 8.3.1.3 Acknowledgement

**Goal :**            Notify External system that the delivered order has been received.
**Sender :**            Sinteco
**Receiver :**        External system
**Sinteco type :**  Restock acknowledgement (paragraph 5.6)
**HL7 type :**       RDS^O13
**HL7 Definition :** HL7 RDS^O13 Message definition - restock_acknowledgement
**Message ID :**    RDS-6
**Triggered by :**   Order being received by the distribution robot
**In Response to :**      RDS-5 message

*Example of message xml*

```xml
<sinteco_message xmlns="http://www.sintecorobotics.com/namelocation" message_id="1631327">
  <restock_ack restock_code="125" delivery_code="" quantity_received="40" stock_arrival="2012-10-25T13:59:57"  received_by_user="Admin">
  <components>
      <medication medication_code="1880005" medication_lot_number="138748E01"
    medication_exp_date="2013-01-31"/>
  </components>
  </restock_ack>
</sinteco_message>
```

*Translation in HL7*

```
MSH|^~\&|Athena|Sinteco Robotics|||201211121435||RDS^O13^RDS_O13|1631327|P|2.6|||||BE||fra
ORC|OF|125|||||||20121025135957|^^Admin
RXD|1|1880005||40||||||||||||||138748E01|20130131000000
```

| | | | | |
|---|---|---|---|---|
| DOCUMENT N: | AT0001S-EN | | | |
| REVISION: | 4.3 | | | |
| DATE: | 24/04/2013 | | | |

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| | | | | | | |
|---|---|---|---|---|---|---|
| **MSH** | 0 | | | **Message Segment Header** | | |
| | 10 | | | Message control id | Unique message identifier (GUID) | message_id |
| **ORC** | 0 | | | **Common Order Segment** | | |
| | 2 | | | Placer Order Number | Placer order number: uniquely identifies this refill | |
| | | 0 | | Entity Identifier | Order Identifier --> Must correlate to same field in request message | restock_code |
| | 3 | | | Filler Order Number | Filler order number: uniquely identifies this refill | |
| | | 0 | | Entity Identifier | Filler's Order Identifier | delivery_code |
| | 9 | | | Date/Time of transaction | Date/Time on which the product arrived | stock_arrival |
| | 10 | | | Entered By | User that entered the transaction | |
| | | 0 | | ID Number | Login of the user that accepted the product | |
| | | 1 | | Family Name | - | |
| | | 2 | | Given Name | The full name of the user that accepted the product | received_by_user |
| **RXD** | 0 | | | **Pharmacy/Treatment Dispense Segment** | | |
| | 2 | | | Dispense/Give Code | Product | |
| | | 0 | | Identifier | Product Id | medication_code |
| | 4 | | | Actual Dispense Amount | Amount actually received | quantity_received |
| | 18 | | | Substance Lot Number | Lot Number | medication_lot_number |
| | 19 | | | Substance Expiration Date | Expiration Date | medication_exp_date |

## 8.4    Withdrawal

### 8.4.1    From the distribution robot for delivery to a patient

The process of withdrawing products from the distribution robot for delivery to a patient starts when External system sends a « medication orders » to the distribution robot.
The robot replies with a « medication delivery » message when the products have been withdrawn from the robot.

#### 8.4.1.1  Request

**Goal :**                Request to withdraw medication from the distribution robot for delivery to a patient
**Sender :**                External system
**Receiver :**    Sinteco
**Sinteco type :**  Medication orders (paragraph 5.1)
**HL7 type :**        OMS^O05
**HL7 Definition :** HL7 OMS^O05 Message definition - medication_orders
**Message ID :**    OMS-3
**Triggered by :** User confirming a distribution list in External system software
**In Response to :**        N/A

*Example of message HL7*

```
MSH|^~\&|Ihc.Viper.Export|IHC|||20120828105500||OMS^O05^OMS_O05|043234d0-18c1-44e5-b18f-
6f4e3c202395|P|2.6|||||BE||nld
PID|||||TEST^QCARE 1||19500101000000
PV1|||^2202^01||||||||||||||||||1290003330
ORC|RF|7c1cf8fd-a558-48c1-b594-92a752cade48|||1_a556ef0e-162c-4104-8d84-
c75f94f742c5|||3^^^20120828140000^^PRN ^|
RQD|1|7519|||5|||||2200^HEELKUNDE 1
```

*Translation in xml*

```
<sinteco_message message_id="043234d0-18c1-44e5-b18f-6f4e3c2023952">
  <medication_order validation_time="1900-01-01T00:00:00" priority="L" number_of_unit_doses="3"
  num_fractional_doses="3" medication_time_code="7c1cf8fd-a558-48c1-b594-92a752cade48"
  medication_order_code="1_a556ef0e-162c-4104-8d84-c75f94f742c5" delivery_time="2012-11-08T00:00:00"
  administration_time="2012-08-28T14:00:00" if_necessary="1">
```

```
    <patient sex="" code="1290003330" birthdate="1950-01-01" barcode="1290003330">
      <person_name last_name=" TEST " first_name=" QCARE 1" />
    </patient>
    <location ward_code="N2200" sequence_code="1">
      <room room_code="2202">
        <bed bed_code="01" />
      </room>
    </location>
    <components>
      <medication medication_pharmacy_code="7519" medication_code="7519" />
    </components>
    <grouping gather="1071_a556ef0e-162c-4104-8d84-c75f94f742c5" />
  </medication_order>
</sinteco_message>
```

| MSH | 0 | | | Message Segment Header | | |
|---|---|---|---|---|---|---|
| | 10 | | | Message control id | Message control id (GUID) | message_id |
| **PID** | 0 | | | Patient Identification Segment | | |
| | 5 | | | Patientname | - | |
| | | 0 | | Family Name | Patient family name | last_name |
| | | 1 | | Given Name | Patient given name | first_name |
| | 7 | | | Date/Time of Birth | Date/Time of Birth | birthdate |
| **PV1** | 0 | | | Patient Visit Segment | | |
| | 3 | | | Assigned Patient Location | Patient location | |
| | | 0 | | Point of Care | - | |
| | | 1 | | Room | The room where the patient is located | room_code |
| | | 2 | | Bed | The bed in which the patient lies | bed_code |
| | 19 | | | Visit Number | Visit number IHC | patient code |
| **ORC** | 0 | | | Common Order Segment | | |
| | 2 | | | Placer Order Number | Placer order number: uniquely identifies this order | |
| | | 0 | | Entity Identifier | Order Identifier (IHC: distribution line ID) | medication_order_code |
| | 4 | | | Placer Group Number | Placer group number | |
| | | 0 | | Entity Identifier | Number of orders in group + _ + Group number of the placer (IHC: distribution list ID) | medication_time_code |
| | 7 | | | Quantity/Timing | Administration moments details | |
| | | 0 | | Quantity | Quantity and unit | |
| | | | 0 | Quantity | Quantity to administer on this administration moment | number_of_unit_doses |
| | | | 1 | Units | - | |
| | | 1 | | Interval | - | |
| | | 2 | | Duration | - | |
| | | 3 | | Start Date/Time | Date/Time of the administration moment | administration_time |
| **RQD** | 0 | | | Requisition Detail Segment | | |
| | 1 | | | Requisition Line Number | Incremental number; starts at 1 for each new message | sequence_code |
| | 2 | | | Item Code - Internal | Product | |
| | | 0 | | Identifier | Product Id | medication_code |
| | 9 | | | Deliver To ID | Service or Cupboard | |
| | | 0 | | Identifier | Service ID or Cupboard ID IHC | ward_code |
| | | 1 | | Text | Service description or Cupboard description IHC | |
| | 10 | | | Date Needed | Date on which the order must be delivered (IHC: currently date of distribution list) | delivery_time |

### 8.4.1.2 Response

**Goal :** Notify External system that the requested products have been withdrawn from the robot
**Sender :** Sinteco
**Receiver :** External system
**Sinteco type :** Medication delivery (paragraph 5.2)
**HL7 type :** RDS^O13
**HL7 Definition :** HL7 RDS^O13 Message definition - medication_delivery
**Message ID :** RDS-7
**Triggered by :** Products being withdrawn from the distribution robot, possibly combined with user action in Sinteco software
**In Response to :** OMS-3

*Example of message xml*

```xml
<sinteco_message xmlns="http://www.sintecorobotics.com/namelocation" message_id="2296583">
  <medication_delivery medication_delivery_code="MD1775883" medication_order_code="1_3333e5bb-cf2e-
4097-b618-60be317cbcaf" medication_time_code="8caf91d6-a69a-4a6c-b7f2-0b28d111222w"
  medication_admin_time="2012-10-25T13:59:57" number_of_units_ordered="2" number_of_units_delivered="2">
    <patient code="1201140161" birthdate="1978-08-03" barcode="1201140161">
      <person_name last_name="ONBEKEND" first_name="ONBEKEND" />
    </patient>
    <location ward_code="5012" sequence_code="441">
      <room room_code="ONBEKEND">
        <bed bed_code="ONBEKEND" />
      </room>
    </location>
    <homerusbags count="2">
      <homerusbag bagnumber="B00012345" container="169998" medication_code="12345"
      medication_pharmacy_code="12345" lot_number="AAA" exp_date="2012-12-31" />
      <homerusbag bagnumber="B00012346" container="167098" medication_code="12345"
      medication_pharmacy_code="12345" lot_number="BBB" exp_date="2015-01-01" />
    </homerusbags>
  </medication_delivery>
</sinteco_message>
```

## Translation in HL7

```
MSH|^~\&|Athena|Sinteco Robotics|||201207040821||RDS^O13^RDS_O13|2296583|P|2.6|||||BE||fra
PID|||||ONBEKEND^ONBEKEND||19780803000000
PV1|||||||||||||||||||||1201140161
ORC|OF|8caf91d6-a69a-4a6c-b7f2-0b28d111222w|MD1775883|1_3333e5bb-cf2e-4097-b618-
60be317cbcaf|||1^^^20121025135957^^^^SINTECOBAG:B00012345:169998
RXD|1|12345||1|||||||||5012^ONBEKEND^ONBEKEND|||||AAA|20121231000000
ORC|OF|8caf91d6-a69a-4a6c-b7f2-0b28d111222w|MD1775883|1_3333e5bb-cf2e-4097-b618-
60be317cbcaf|||1^^^20121025135957^^^^SINTECOBAG:B00012346:167098
RXD|1|12345||1|||||||||5012^ONBEKEND^ONBEKEND|||||BBB|20150101000000
```

| Seg | | | | Field | Description | Attribute |
|---|---|---|---|---|---|---|
| MSH | 0 | | | Message Segment Header | | |
| | 10 | | | Message control id | Unique message identifier (GUID) | message_id |
| PID | 0 | | | Patient Identification Segment | | |
| | 5 | | | Patientname | - | |
| | | 0 | | Family Name | Patient family name | last_name |
| | | 1 | | Given Name | Patient given name | first_name |
| | 7 | | | Date/Time of Birth | Date/Time of Birth | birthdate |
| PV1 | 0 | | | Patient Visit Segment | | |
| | 19 | | | Visit Number | Visit Number IHC | patient code |
| ORC | 0 | | | Common Order Segment | | |
| | 2 | | | Placer Order Number | Placer order number: uniquely identifies this refill | |
| | | 0 | | Entity Identifier | Order Identifier --> Must correlate to same field in request message | medication_order_code |
| | 3 | | | Filler Order Number | Filler order number: uniquely identifies this refill | |
| | | 0 | | Entity Identifier | Filler's Order Identifier | medication_delivery_code |
| | 4 | | | Placer Group Number | | |
| | | 0 | | Entity Identifier | Number of orders in group + "_" + group identifier --> must correlate to same field in request message | medication_time_code |
| | 7 | | | Quantity/Timing | - | |
| | | 0 | | Quantity | Quantity and unit | |
| | | | 0 | Quantity | Quantity to administer on this administration moment | number of units_delivered |
| | | | 1 | Units | - | |
| | | 1 | | Interval | - | |
| | | 2 | | Duration | - | |
| | | 3 | | Start Date/Time | - | |
| | | 4 | | End Date/Time | | |
| | | 5 | | Priority | | |
| | | 6 | | Condition | | |
| | | 7 | | Text | Sinteco's HomerusBags reference for this administration moment | bagnumber:container:drawer:module:drugscariage |
| RXD | 0 | | | Pharmacy/Treatment Dispense Segment | | |
| | 2 | | | Dispense/Give Code | Product | |
| | | 0 | | Identifier | Product Id | medication_code |
| | 4 | | | Actual Dispense Amount | Total amount actually delivered (sum of all ORC.7.0.0 fields) | number_of_units_delivered tot |
| | 13 | | | Dispense-to Location | Location for which the delivered medication is destined | |
| | | 0 | | Point of Care | Ward on which the patient is located | ward_code |
| | | 1 | | Room | Room in which the patient is located | room_code |
| | | 2 | | Bed | Bed in which the patient is located | bed_code |
| | 18 | | | Substance Lot Number | Lot Number | medication_lot_number |
| | 19 | | | Substance Expiration Date | Expiration Date | medication_exp_date |

### 8.4.2    From the distribution robot for delivery to an emergency cupboard

The process of withdrawing products from the distribution robot for delivery to an emergency cupboard starts when External system sends a « Restock ward order » to the distribution robot.
The robot replies with a « Restock ward in transit » message when the products have been withdrawn from the robot.
Once the products have been received from the robot, External system finally confirms the delivery by sending a « restock ward acknowledgement » message.

#### 8.4.2.1  Request

**Goal :**           Request to withdraw medication from the distribution robot for delivery to an emergency cupboard
**Sender :**           External system
**Receiver :**   Sinteco
**Sinteco type :**  Restock Ward Order (paragraph 5.15)
**HL7 type :**       OMS^O05
**HL7 Definition :** HL7 OMS^O05 Message definition - restock_ward_order
**Message ID :**    OMS-4
**Triggered by :** User confirming a distribution list in External system software
**In Response to :**      N/A

*Example of message HL7(mapped on Medication Order)*

```
MSH|^~\&|Ihc.Viper.Apo|IHC|||20121108093712||OMS^O05^OMS_O05|672959fa-2f69-48cb-88d8-
7f608e193ce7|P|2.6|||||BE||nld
ORC|RF|1bff6fe2-a5dc-4655-b9a5-2f5f4a4da06f|||10_ac8ff7e7-738b-433d-a7c0-
c6179836a026||||||20121108093752
RQD|1|79500|||3|||||2200^KAST ZE220 HEELKUNDE 1
```

*Translation in xml*

```xml
<sinteco_message message_id="95B349AD4CB43C49AAA69DB066B743CD">
  <medication_order validation_time="1900-01-01T00:00:00" priority="L" number_of_unit_doses="3"
  num_fractional_doses="0" medication_time_code="1900-01-01T00:00:00" medication_order_code="1bff6fe2-
  a5dc-4655-b9a5-2f5f4a4da06f " delivery_time="2012-11-13T12:00:00" administration_time="2012-11-
  13T12:00:00" " if_necessary="0">
    <patient sex="" code="RESTOCK WARD ORDER" birthdate="1900-01-01" barcode="RESTOCK WARD ORDER">
      <person_name last_name="WARD" first_name="WARD" />
    </patient>
    <location ward_code=" C2200" sequence_code=" C2200">
      <room room_code=" C2200">
        <bed bed_code=" C2200" />
      </room>
    </location>
    <components>
      <medication medication_pharmacy_code="79500" medication_code="79500" />
    </components>
    <grouping gather="" />
  </medication_order>
</sinteco_message>
```

| MSH | 0 | | | Message Segment Header | | |
|---|---|---|---|---|---|---|
| | 10 | | | Message control id | Message control id (GUID) | message_id |
| ORC | 0 | | | Common Order Segment | | |
| | 2 | | | Placer Order Number | Placer order number: uniquely identifies this order | |
| | | 0 | | Entity Identifier | Order Identifier (GUID) | restock_code |
| RQD | 0 | | | Requisition Detail Segment | | |
| | 2 | | | Item Code - Internal | Product | |
| | | 0 | | Identifier | Product Id | medication_code |
| | 5 | | | Requisition Quantity | Amount to be delivered | quantity_requested |
| | 9 | | | Deliver To ID | Location | |
| | | 0 | | Identifier | Cupboard Id | ward_code |
| | | 1 | | Text | Cupboard Description | |

### 8.4.2.2 Response

**Goal :**            Notify External system that the requested products are about to be delivered
**Sender :**          Sinteco
**Receiver :**        External system
**Sinteco type :** Restock ward in transit (paragraph 5.16)
**HL7 type :**     RDS^O13
**HL7 Definition :** HL7 RDS^O13 Message definition - restock_ward_in_transit
**Message ID :** RDS-8
**Triggered by :** Products being withdrawn from the distribution robot, possibly combined with user action in Sinteco software
**In Response to :**     OMS-4

*Example of message xml (mapped on Medication delivery)*
```
<sinteco_message xmlns="http://www.sintecorobotics.com/namelocation" message_id="65000">
 <medication_delivery medication_delivery_code="MD000111" medication_order_code="1_1s9cac2-77ii-
 333a-9721-6638ec9b541b" medication_time_code="8caf91d6-e33e-4a6c-b7f2-0b28d1111111e"
 number_of_units_ordered="4" number_of_units_delivered="4">
   <patient code="RESTOCK WARD ORDER" birthdate="1900-01-01" barcode="RESTOCK WARD ORDER">
    <person_name last_name="WARD" first_name="WARD" />
   </patient>
   <location ward_code="011" sequence_code="011">
    <room room_code="011">
      <bed bed_code="011" />
    </room>
   </location>
   <homerusbags count="4">
    <homerusbag bagnumber="B000001A1" container="222000" medication_code="12109"
    medication_pharmacy_code="12109" lot_number="ABC" exp_date="2013-12-31" />
    <homerusbag bagnumber="B00000267" container="166000" medication_code="12109"
    medication_pharmacy_code="12109" lot_number="ABC" exp_date="2013-12-31" />
    <homerusbag bagnumber="C000002BA" container="111000" medication_code="12109"
    medication_pharmacy_code="12109" lot_number="ABC" exp_date="2013-12-31" />
    <homerusbag bagnumber="B0000084F" container="444444" medication_code="12109"
    medication_pharmacy_code="12109" lot_number="WWWWW" exp_date="2016-10-31" />
   </homerusbags>
 </medication_delivery>
</sinteco_message>
```

*Translation in HL7*

```
MSH|^~\&|Athena|Sinteco Robotics|||201207050837||RDS^O13^RDS_O13|65000|P|2.6|||||BE||fra
ORC|OF|8caf91d6-e33e-4a6c-b7f2-0b28d111111e|MD000111|1_1s9cac2-77ii-333a-9721-6638ec9b541b
RXD|1|12109||1|||||||||011|||||ABC|20131231000000|||||SINTECOBAG^B000001A1:222000
ORC|OF|8caf91d6-e33e-4a6c-b7f2-0b28d111111e|MD000111|1_1s9cac2-77ii-333a-9721-6638ec9b541b
RXD|1|12109||1|||||||||011|||||ABC|20131231000000|||||SINTECOBAG^B00000267:166000
ORC|OF|8caf91d6-e33e-4a6c-b7f2-0b28d111111e|MD000111|1_1s9cac2-77ii-333a-9721-6638ec9b541b
RXD|1|12109||1|||||||||011|||||ABC|20131231000000|||||SINTECOBAG^C000002BA:111000
ORC|OF|8caf91d6-e33e-4a6c-b7f2-0b28d111111e|MD000111|1_1s9cac2-77ii-333a-9721-6638ec9b541b
RXD|1|12109||1|||||||||011|||||WWWWW|20161031000000|||||SINTECOBAG^B0000084F:444444
```

| | | | | | | |
|---|---|---|---|---|---|---|
| **MSH** | 0 | | **Message Segment Header** | | | |
| | 10 | | Message control id | Unique message identifier (GUID) | | message_id |
| **ORC** | 0 | | **Common Order Segment** | | | |
| | 2 | | Placer Order Number | Placer order number: uniquely identifies this refill | | |
| | | 0 | Entity Identifier | Order Identifier --> Must correlate to same field in request message | | restock_code |
| | 3 | | Filler Order Number | Filler order number: uniquely identifies this refill | | |
| | | 0 | Entity Identifier | Filler's Order Identifier | | delivery_code |
| **RXD** | 0 | | **Pharmacy/Treatment Dispense Segment** | | | |
| | 2 | | Dispense/Give Code | Product | | |
| | | 0 | Identifier | Product Id | | medication_code |
| | 4 | | Actual Dispense Amount | Total amount in transit | | quantity_on_route |
| | 13 | | Dispense-to Location | Location | | |
| | | 0 | Point of Care | Cupboard Id | | ward_code |
| | 18 | | Substance Lot Number | Lot Number | | medication_lot_number |
| | 19 | | Substance Expiration Date | Expiration Date | | medication_exp_date |
| | 25 | | Supplementary Code | - | | |
| | | 0 | Identifier | always SINTECOBAG | | |
| | | 1 | Text | Bagnumber and container ID | | bagnumber:container |

### 8.4.2.3 Acknowledgement

**Goal :**          Notify Sinteco that the delivered order has been received.
**Sender :**          External system
**Receiver :**   Sinteco
**Sinteco type :** Restock ward acknowledgement (paragraph 5.17)
**HL7 type :**   RDS^O13
**HL7 Definition :** HL7 RDS^O13 Message definition - restock_ward_acknowledgement
**Message ID :**  RDS-9
**Triggered by :** User confirming that the order has been received in External system software
**In Response to :**     RDS-8

**NB** : *Not implemented !!*

### 8.5    Inventory

**Goal :**          Synchronizing the stock of the distribution robot with that of External system's software
**Sender :**          Sinteco
**Receiver :**   External system
**Sinteco type :** Inventory result (paragraph 5.10)
**HL7 type :**   MFN^M15
**HL7 Definition :** HL7 MFN^M15 Message definition - inventory_result
**Message ID :**  MFN-3
**Triggered by :** Fixed time each day
**In Response to :**     N/A

*Example of message HL7*

Sinteco S.p.A
Zona Industriale Villanova – 32013 Longarone (Belluno)
Tel. +39 0437 772146 r.a. Fax +39 0437 573411
e-mail: sinteco@sintecorobotics.com  web: www.sintecorobotics.com

BUCCI
INDUSTRIES

```
MSH|^~\&|Athena|Sinteco Robotics|||201207120930||MFN^M15^MFN_M15|MFN3_2012-07-
12|P|2.6|||||BE||fra
IIM|001||||||||||2012-07-12|1168
IIM|002||||||||||2012-07-12|1170
IIM|003||||||||||2012-07-12|1176
```

| MSH | 0 | | | Message Segment Header | | |
|---|---|---|---|---|---|---|
| | 10 | | | Message control id | Message control id (GUID) | message_id |
| IIM | 0 | | | Inventory Item Master | | |
| | 1 | | | Primary Key Value | Product | |
| | | 0 | | Identifier | Product Id | medication_code |
| | 11 | | | Inventory On Hand Date | Date/Time on which the inventory was executed | when_executed |
| | 12 | | | Inventory On Hand Quantity | Quantity of the product currently in stock | qty |

## 8.6    Medication returns

**Goal :**          Notify External system that a certain already delivered product has been returned to the distribution robot.

**Sender :**                Sinteco

**Receiver :**      External system

**Sinteco type :** Medication returns (paragraph 5.7)

**HL7 type :**      RDS^O13

**HL7 Definition :** HL7 RDS^O13 Message definition - medication  returns

**Message ID :**  RDS-10

**Triggered by :** A product being returned to the distribution robot.

**In Response to :**        N/A

*Example of message xml*

```
<sinteco_message xmlns="www.sintecorobotics.com/namelocation" message_id="1275591">
  <medication_returns quantity_returned="1" when_returned="2011-12-22" user="admin">
    <delivery medication_order_code="1_8caf91d6-a69a-4a6c-b7f2-0b28d111222w"
    patient_code="018504591" />
    <location ward_code="3106" />
    <components>
      <medication medication_code="089678" medication_pharmacy_code="089678"
      medication_lot_number="9129803" medication_exp_date="2012-01-01" />
    </components>
    <homerusbags count="1">
      <homerusbag bag_number="B0009719D" container="135009" />
    </homerusbags>
  </medication_returns>
</sinteco_message>
```

*Translation in HL7*

```
MSH|^~\&|Athena|Sinteco Robotics|||201207091220||RDS^O13^RDS_O13|1275591|P|2.6|||||BE||fra
PID
PV1|||||||||||||||||||||||||018504591
ORC|OD|1_8caf91d6-a69a-4a6c-b7f2-0b28d111222w|||||||20111222000000|^^admin
RXD|1|089678|1|||||||||3106|||||9129803|20120101000000||||||SINTECOBAG^B0009719D:135009
```

| Segment | | | | Field | Description | Variable |
|---|---|---|---|---|---|---|
| MSH | 0 | | | Message Segment Header | | |
| | 10 | | | Message control id | Unique message identifier (GUID) | message_id |
| PV1 | 0 | | | Patient Visit Segment | | |
| | 19 | | | Visit Number | Visit Number IHC | patient_code |
| ORC | 0 | | | Common Order Segment | | |
| | 2 | | | Placer Order Number | Placer order number: uniquely identifies this refill | |
| | | 0 | | Entity Identifier | Order Identifier --> Must correlate to same field in initial request message | medication_order_code |
| | 9 | | | Date/Time of transaction | Date/Time on which the product was returned | when_returned |
| | 10 | | | Entered By | User that entered the transaction | |
| | | 0 | | ID Number | Login of the user that accepted the product | |
| | | 1 | | Family Name | - | |
| | | 2 | | Given Name | The full name of the user that accepted the product | user |
| RXD | 0 | | | Pharmacy/Treatment Dispense Segment | | |
| | 2 | | | Dispense/Give Code | Product | |
| | | 0 | | Identifier | Product Id | medication_code |
| | 4 | | | Actual Dispense Amount | Total amount returned | quantity_returned |
| | 13 | | | Dispense-to Location | Location for which the delivered medication is destined | |
| | | 0 | | Point of Care | Ward for which the original order was destined | ward_code |
| | 18 | | | Substance Lot Number | Lot Number | medication_lot_number |
| | 19 | | | Substance Expiration Date | Expiration Date | medication_exp_date |
| | 25 | | | Supplementary Code | - | |
| | | 0 | | Identifier | always SINTECOBAG | |
| | | 1 | | Text | Bagnumber and container ID | bagnumber:container |