**ORU\_Cerner Lab\_Glucommander\_Requirements**

**Version 1.1**

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# **Document Control**

## Resources:

Project Distribution List*:* (include Project Team Members, Liaisons, Vendor Contacts, etc.)

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|  |  |  |
|  |  |  |

## Document Version Control

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Modifier** | **Description** |
| V1.0 | 9/12/2019 | Lois Whitley | Originally Created |
| V1.1 | 9/17/2019 | Tom Fredrickson | Added Technical specifications |
|  |  |  |  |
|  |  |  |  |

# 1. Introduction

## 1.1 Purpose

The purpose of this document is to describe the Results (ORU) interface from Cerner PathNet to Glytec Glucommander for the purpose of providing required point of care test results to Glucommander for insulin dosing adjustments. This provides alerts to clinicians for patients who may be out of a clinically acceptable range. Glucommander is a clinical decision support application for personalized insulin dosing. Surveillance analyzes real-time results to discover meaningful patterns in patient’s glucose history. Patients with multiple episodes of hyperglycemia, within a specified time interval, are identified and flagged as potential candidates for insulin therapy.

## 1.2 Project Scope

The scope of this project is to automate the integration of the Glytec Glucommander application with Soarian via an HL7 ADT interface and the Cerner EMR via HL7 ADT and Results interfaces.

**The current document describes the ORU interface from Cerner Millennium to Glucommander for the purpose of sending point of care test result to Glucommander.**

## 1.3 Terminology Standards

### 1.3.1 Acronyms

ORU – Observation Result Unsolicited message

### 1.3.2 Glossary

Glytec – vendor name

Glucommander - software

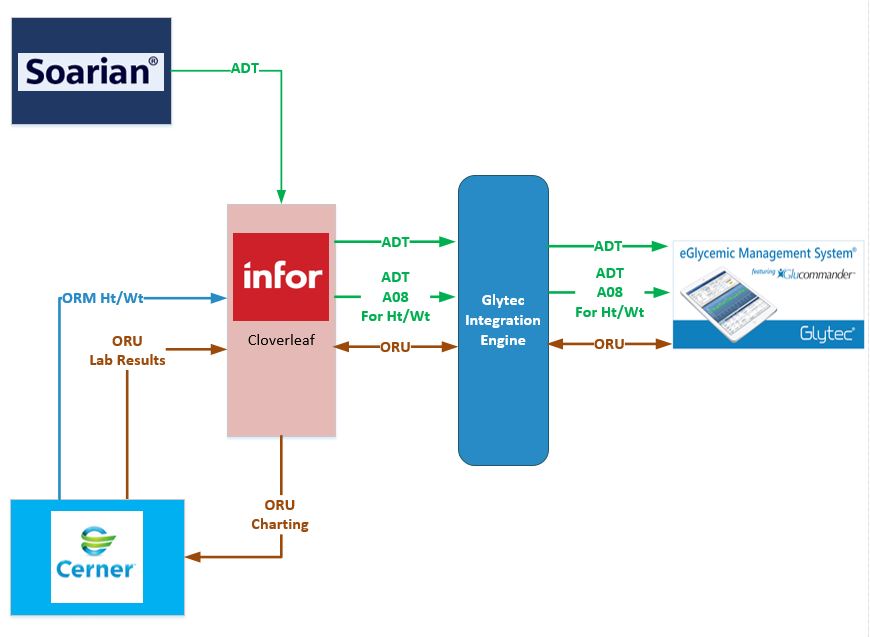
## 1.4 Document References

Documents located on SharePoint in the Application Folder:

1. Technical Assessment Deck
2. Glytec Interface Planning and Implementation Guide\_

# 2. Diagram

Provide a solution diagram that depicts the integration of components specified in this IDBB. This diagram must include the data flow for the interfaces (source and target).



# 3. Core Requirements

## 3.1 Cloverleaf Functional Requirements

Provide detail for the below functional requirements. The message transformation requirements for the components defined in this specification should be specified in section 4.2 of this document.

|  |  |  |
| --- | --- | --- |
| **Cloverleaf** | | |
| **Number** | **Requirement Name** | **Description** |
| FR.2019.9.1 | ORU\_R01 message types allowed |  |
| FR.2019.9.2 | Filter down to just the main hospital facilities. | Filtering on the MSH-4 Sending Facility field. Valid codes:  BAH BRM MCS MDU MPH NBY SAH SFB SJH SJN SJS SJW WHH WHW |
| FR.2019.9.3 | Filter out any messages with no Date/Time of Birth | If the PID-7 Date/Time of Birth field is blank kill the message. |
| FR.2019.9.4 | Limit the type of segments outbound to Glytec. | Filter down to just the following segment types:  MSH PID OBR OBX |
| FR.2019.9.5 | Filter down to just the lab messages. | If the OBR-24 Diagnostic Service Section ID is not “Lab” then kill the message. |
| FR.2019.9.6 | Strip off the assigning authority and other sub-fields for PID-18 FIN. |  |
| FR.2019.9.7 | Replace any ampersand characters with AND in the following fields: OBR-13, OBR-27.7, OBR-31.2 |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

## 3.2 Cerner FSI Functional Requirements

|  |  |  |
| --- | --- | --- |
| **Cerner FSI** | | |
| **Number** | **Requirement Name** | **Description** |
| FR.2019.9.1 | **ESO Interface Trigger:**  Observation Reporting/ORU Discrete Gen Lab/CE Server GLB/GRP | This trigger causes the BayCare Laboratory results to be processed outbound when entered in Pathnet as long as the result items are not aliased with DONOTSEND for contributor source INVISION on code set 72.  - The following segments are set to be sent outbound by this trigger:   * HL7 MSH * HL7 PID * HL7 PV1   HL7 OBR/OBX/NTE |
| FR.2019.9.2 | Global Script:  - route\_out | route\_out (global script): Logic to route BayCare Laboratory results to the ORU\_LAB\_RESULTS\_OUT comserver. Logic is based on:   * Message Type = ORU, cqm\_type in “AP”, “MICRO”, or “GRP” * End logic for all ORU messages outbound is sent to these comservers:   - ORU\_LAB\_RESULTS\_OUT |
| FR.2019.9.3 | fsi\_common (generic)  oru\_lab\_out (mod object)  fsi\_add\_pcpe (generic) | oru \_lab\_out, Mod Object script, for BayCare Laboratory  results outbound:   * Calls the fsi\_common generic script to load all subroutines * Adds the correct ordering provider to OBR.16, the correct order name/description to OBR.4, and the correct order alias to OBR.3 for AP results. * Replace any primary care physician (PCP) with the PCP at the encounter level in the PD1 segment. * Deletes any DONOTSEND\* result items and renumbers the OBX segments accordingly. \*Note: This is a known Cerner issue where LOINC coding overrides the DONOTSEND functionality. Custom Coding was needed to fix the issue.   Filters all ORU messages if there is no OBX segment after the OBX segments are stripped as described above. |
|  |  |  |

## 3.3 Non-Functional Requirements

Provide concise detail for the below non-functional requirements. This would include external table ownership, hours of support, etc. The below requirements must be evaluated for every project.

|  |  |  |
| --- | --- | --- |
| **Number** | **Requirement Name** | **Description** |
| NFR.2019.9.1 |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

## 3.4 Messaging Protocols

Below are listed the details for the messaging protocols that will be leveraged for this integration. This includes: TCP/IP, FTP, Web Services, etc.

### 3.4.1 Protocol From or to Vendor

|  |  |
| --- | --- |
| FTP |  |
| MLLP Socket Connection (TCP/IP) |  |
| Local File Drop by Midrange Team |  |
| Other | Click here to enter text. |

### 3.4.2 FSI Comm Server Names

|  |  |
| --- | --- |
| Names | Click here to enter text. |
|  |  |

# 4. HL7 Messaging

## 4.1 Messaging Format

### 4.1.1 Segments

The segments utilized for this interface are:

MSH

PID

OBR

OBX

*Message Construction Notes:*

*[Square Brackets] – Optional*

*{Curly Brackets} – Repeatable*

*MSH – Message Header*

*PID – Patient ID segment*

*OBR – Observation Request segment*

*OBX – Observation Result segment*

*[{ – Start of optional, repeatable group*

*}] – End of optional, repeatable group*

### 4.1*.*2 Messaging Event Types

Below are the messages types necessary for this integration

|  |  |
| --- | --- |
| **Event Type** | **Description** |
| ORU^R01 | Unsolicited transmission of an observation |

### 4.1*.*3 Cloverleaf Configuration Files

Here is the Tcl procedure stack for this interface:

tpsCernerCommonCode.tcl is used for the Cerner Model realignment executing code that used to reside in Cerner FSI.

tpsCernerLabResultsModifier.tcl – more Cerner Model realignment executing code for labs results that used to reside in Cerner FSI.

tpsCernerLabsToGlytec.tcl this is the project specific code for Glucommander.

### 4.1.4 Cloverleaf Site Location

cerner\_results\_7\_p

### 4.1.5 Cerner FSI Impacted Scripts

## 4.2 Data Transformation Requirements

| **Field Description** | **HL7 Field Loc.** | **Required R/O/C** | **Notes** | **Middleware (CL / FSI / Mule)** |
| --- | --- | --- | --- | --- |
| Message Header Segment | MSH |  | Path copy the entire segment | CL |
| Receiving Application | MSH.5 |  | Hard code “GLYTEC” | CL |
| Patient Identifier | PID.2 |  | BayCare CPI | CL |
| Patient Identifier List | PID.3 |  | BayCare MRN | CL |
| Patient Name | PID.5 |  | Copy entire field | CL |
| Date/Time of Birth | PID.7 |  | Copy entire field | CL |
| Administrative Sex | PID.8 |  | Copy entire field | CL |
| Race | PID.10 |  | Copy entire field | CL |
| Patient Address | PID.11 |  | Copy entire field | CL |
| Patient Phone Number | PID.13 |  | Copy | CL |
| Primary Language | PID.15 |  | Copy entire field | CL |
| Marital Status | PID.16 |  | Copy entire field | CL |
| Religion | PID.17 |  | Copy entire field | CL |
| Patient Account Number | PID.18 |  | Copy PID.18, first subfield | CL |
| Filler Order Number | OBR.3 |  | Copy | CL |
| Universal Service Identifier | OBR.4 |  | Copy; Test ordered; i.e. Glucose | CL |
| Observation Date/Time | OBR.7 |  | Copy | CL |
| Specimen Received Date/Time | OBR.14 |  | Copy | CL |
| Specimen Source | OBR.15 |  | Copy | CL |
| Ordering Provider | OBR.16 |  | OBR-16 Ordering Doctor filter down to just NPI Number, DEA No, and BayCare Dr Number(MS). | CL |
| Filler Field | OBR.20 |  | Copy | CL |
| Results Rpt/Status Change Date/Time | OBR.22 |  | Copy | CL |
| Diagnostic Serv Sect ID | OBR.24 |  | Copy; If the OBR-24 Diagnostic Service Section ID is not “Lab” then kill the message. | CL |
| Result Status | OBR.25 |  | Copy; message will be skipped if result is pending (P) status | CL |
| Quantity/Timing | OBR.27 |  | Copy | CL |
| Scheduled Date/Time | OBR.36 |  | Copy | CL |
| Value Type | OBX.2 |  | Copy | CL |
| Observation Identifier | OBX.3 |  | Copy; There is no filtering based on this field as Glytec wanted all lab results. No filter such as “Glucose”; from accepted list of LOINC codes. | CL |
| Observation Value | OBX.5 |  | Copy | CL |
| Units | OBX.6 |  | Copy; i.e. mg/dL | CL |
| Reference Ranges | OBX.7 |  | Copy | CL |
| Interpretation Codes | OBX.8 |  | Copy; Abnormal Flags | CL |
| Observation Result Status | OBX.11 |  | Copy | CL |
| Date/Time of Observation | OBX.14 |  | Copy | CL |
| Responsible Observer | OBX.16 |  | Copy | CL |
| Observation Method | OBX.17 |  | Copy | CL |

## 4.3 Sample Message

### 4.3.1 Inbound to Cloverleaf

MSH|^~\&|HNAM|CERNER|INVISION|BAYCARE|20190815145011||ORU^R01|Q5536906808T7529935389||2.3||||||8859/1

PID|1|7000111740^^^BayCare MRN^MRN^SOARIAN|7000111740^^^BayCare MRN^MRN^SOARIAN~810123863^^^BayCare CMRN^Community Medical Record Number^SOARIAN||GLYTEC^INTEGRATIONIV^^^^^Current||19701025|M||W|1234 COOKIE DR^^Odessa^FL^33556^^Home||(727)281-9101^PRN||ENG|S|CHR|6000145184^^^BayCare FIN^FIN NBR^SOARIAN||||NOH|||0

PV1|1|I|A3EA^3212^A^SJS^^Bed(s)^SJS|X|||MS079453^Ywjamihs^Ajnwja^C^^^^^Username^Personnel^^^Username^CACTUS~1487041620^Ywjamihs^Ajnwja^C^^^^^NPI Number^Personnel^^^National Provider Identifier^CACTUS~MS079453^Ywjamihs^Ajnwja^C^^^^^BayCare Dr Number^Personnel^^^ORGANIZATION DOCTOR^CACTUS~OS15056^Ywjamihs^Ajnwja^C^^^^^Doctor License Number^Personnel^^^LICENSENBR^CACTUS~079453^Ywjamihs^Ajnwja^C^^^^^SJN^Personnel^^^ORGANIZATION DOCTOR^CACTUS~079453^Ywjamihs^Ajnwja^C^^^^^SJS^Personnel^^^ORGANIZATION DOCTOR^CACTUS~079453^Ywjamihs^Ajnwja^C^^^^^SJH^Personnel^^^ORGANIZATION DOCTOR^CACTUS~079453^Ywjamihs^Ajnwja^C^^^^^SJW^Personnel^^^ORGANIZATION DOCTOR^CACTUS~FC7301423^Ywjamihs^Ajnwja^C^^^^^DEA No^Personnel^^^DOCDEA^CACTUS~6072960738002^Ywjamihs^Ajnwja^C^^^^^SureScripts Prescriber ID^Personnel^^^SureScripts Prescriber Index~6072960738004^Ywjamihs^Ajnwja^C^^^^^SureScripts Prescriber ID^Personnel^^^SureScripts Prescriber Index~6072960738003^Ywjamihs^Ajnwja^C^^^^^SureScripts Prescriber ID^Personnel^^^SureScripts Prescriber Index|||MED||||EO|||MS079453^Ywjamihs^Ajnwja^C^^^^^Username^Personnel^^^Username^CACTUS~1487041620^Ywjamihs^Ajnwja^C^^^^^NPI Number^Personnel^^^National Provider Identifier^CACTUS~MS079453^Ywjamihs^Ajnwja^C^^^^^BayCare Dr Number^Personnel^^^ORGANIZATION DOCTOR^CACTUS~OS15056^Ywjamihs^Ajnwja^C^^^^^Doctor License Number^Personnel^^^LICENSENBR^CACTUS~079453^Ywjamihs^Ajnwja^C^^^^^SJN^Personnel^^^ORGANIZATION DOCTOR^CACTUS~079453^Ywjamihs^Ajnwja^C^^^^^SJS^Personnel^^^ORGANIZATION DOCTOR^CACTUS~079453^Ywjamihs^Ajnwja^C^^^^^SJH^Personnel^^^ORGANIZATION DOCTOR^CACTUS~079453^Ywjamihs^Ajnwja^C^^^^^SJW^Personnel^^^ORGANIZATION DOCTOR^CACTUS~FC7301423^Ywjamihs^Ajnwja^C^^^^^DEA No^Personnel^^^DOCDEA^CACTUS~6072960738002^Ywjamihs^Ajnwja^C^^^^^SureScripts Prescriber ID^Personnel^^^SureScripts Prescriber Index~6072960738004^Ywjamihs^Ajnwja^C^^^^^SureScripts Prescriber ID^Personnel^^^SureScripts Prescriber Index~6072960738003^Ywjamihs^Ajnwja^C^^^^^SureScripts Prescriber ID^Personnel^^^SureScripts Prescriber Index|I||8|||||||||||||||||||SJS||Active|||20190815140700

OBR|1|18847660675^HNAM\_ORDERID||4930006^PC GLUCOSE|||20190815144900|||||||20190815144900|Blood&Blood^^^^^Venous Draw|MS079453^Ywjamihs^Ajnwja^C^^^^^Username^Personnel^^^Username^CACTUS~1487041620^Ywjamihs^Ajnwja^C^^^^^NPI Number^Personnel^^^National Provider Identifier^CACTUS~MS079453^Ywjamihs^Ajnwja^C^^^^^BayCare Dr Number^Personnel^^^ORGANIZATION DOCTOR^CACTUS~OS15056^Ywjamihs^Ajnwja^C^^^^^Doctor License Number^Personnel^^^LICENSENBR^CACTUS~079453^Ywjamihs^Ajnwja^C^^^^^SJN^Personnel^^^ORGANIZATION DOCTOR^CACTUS~079453^Ywjamihs^Ajnwja^C^^^^^SJS^Personnel^^^ORGANIZATION DOCTOR^CACTUS~079453^Ywjamihs^Ajnwja^C^^^^^SJH^Personnel^^^ORGANIZATION DOCTOR^CACTUS~079453^Ywjamihs^Ajnwja^C^^^^^SJW^Personnel^^^ORGANIZATION DOCTOR^CACTUS~FC7301423^Ywjamihs^Ajnwja^C^^^^^DEA No^Personnel^^^DOCDEA^CACTUS~6072960738002^Ywjamihs^Ajnwja^C^^^^^SureScripts Prescriber ID^Personnel^^^SureScripts Prescriber Index~6072960738004^Ywjamihs^Ajnwja^C^^^^^SureScripts Prescriber ID^Personnel^^^SureScripts Prescriber Index~6072960738003^Ywjamihs^Ajnwja^C^^^^^SureScripts Prescriber ID^Personnel^^^SureScripts Prescriber Index||||000002019227001463^HNA\_ACCN~85845632^HNA\_ACCNID||20190815145005||Lab|F||1^^^20190815144900^^ROUTINE~^^^^^TODAY|||||||||20190815144900

OBX|1|NM|L1848801^PC Glucose^^L1848801^PC Glucose^BCLAB||352|mg/dL^mg/dL|70-99^70^99|H|||F|||20190815145003||^Wfit^Cjah^Z^^^^^^Personnel|^^^BC Telcor Solicited

### 4.3.2 Outbound from Cloverleaf

MSH|^~\&|CERNER|SJS|GLYTEC|SJS|20190815140700||ORU^R01|Q5536906808T7529935389||2.7||||||8859/1

PID|1|810123863|7000111740||GLYTEC^INTEGRATIONIV^^^^^||19701025|M||W|1234 COOKIE DR^^Odessa^FL^33556^^Home||(727)281-9101^PRN||ENG|S|CHR|6000145184||||NOH|||0

OBR|1|^^^|18847660675^HNAM\_ORDERID^^|4930006^PC GLUCOSE|||20190815144900|||||||20190815144900|Blood&Blood^^^^^Venous Draw|1487041620^Ywjamihs^Ajnwja^C^^^^^NPI Number^Personnel^^^National Provider Identifier^CACTUS~MS079453^Ywjamihs^Ajnwja^C^^^^^BayCare Dr Number^Personnel^^^ORGANIZATION DOCTOR^CACTUS||||000002019227001463^HNA\_ACCN~85845632^HNA\_ACCNID||20190815145005||Lab|F||1^^^20190815144900^^ROUTINE~^^^^^TODAY|||||||||20190815144900

OBX|1|NM|L1848801^PC Glucose^^L1848801^PC Glucose^BCLAB||352|mg/dL^mg/dL|70-99^70^99|H|||F|||20190815145003||^Wfit^Cjah^Z^^^^^^Personnel|^^^BC Telcor Solicited

# 5. Alerts

Are you going to need alerting on this connection?

|  |  |
| --- | --- |
| Yes |  |
| No |  |

If the answer is yes, please complete the table below:

|  |  |  |  |
| --- | --- | --- | --- |
| **Site Name** | **Hours of Support** | **Distribution Group** | **Comments** |
|  |  |  |  |
| cerner\_results\_7\_p | 24/7 | ISClinAppsPowerchartTeam@baycare.org | Primary: PowerChart team/Cerner Orders/Clin Doc  IS Application Owner / IS Liaison: Deb McCracken, Manager, Clinical Systems |

# Appendix A: Risks, Concerns & Issues

|  |  |  |  |
| --- | --- | --- | --- |
| **Project Name** | |  | |
| **Number** | **Risk/Concern/Issue** | **Comment** | **Mitigation** |
|  |  |  |  |
| RCI.2019.9.1 |  |  |  |
|  |  |  |  |
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* End of document