**BAR Cerner Soarian Reqs**

**Version 1.0**

**Prepared By: Rich Allison**

**Date: 8/1/2018**

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# **Document Control**

## Resources: (include Project Team Members, Liaisons, Vendor Contacts, etc.)

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## Project Distribution List

## Document Version Control

|  |  |  |  |
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|  |  |  |  |

# 1. Introduction

## 1.1 Purpose

This document outlines the contents and logic of the Cerner BAR messages to Soarian interface.

## 1.2 Project Scope

Develop a Cerner to Soarian BAR message interface.

## 1.3 Terminology Standards

### 1.3.1 Acronyms

MLLP – Minimum Lower Layer Protocol for messaging framing a HL7 message.

### 1.3.2 Glossary

List the terms that require definition with respect to Cloverleaf and the product whose requirements are defined in this document. The definitions are specific to this document and may not be identical to the definitions of these terms in common use.

## 1.4 Document References

# 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).



cerner\_adt\_siu\_bar\_5\_p



soarf\_outbound\_23\_p

# 3. Requirements

## 3.1 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** | **Requirement Description** |
| FR.20XX.1.0 | Cerner BAR interface to Soarian | Develop a BAR interface from Cerner to Soarian. |

MSH EVN PID PV1 OBX DG1 DRG and ZPV segments are sent.

Inbound messages from Cerner are BAR^ZM2 messages.

Outbound messages to Soarian are ADT^A08 messages.

## 3.2 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.

|  |  |  |
| --- | --- | --- |
| **Cloverleaf** |  |  |
| **Number** | **Requirement Name** | **Requirement Description** |
| NFR.20XX.1.0 | Click here to enter text. | Click here to enter text. |

## 3.3 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.

TCP/IP

### 3.3.1 Inbound to the BayCare Cloverleaf

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

### 3.3.2 Outbound to the BayCare Cloverleaf

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

### 3.3.3 Inbound to the Vendor

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

### 3.3.4 Outbound to the Vendor

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

# 4. HL7 Messaging

## 4.1 Messaging Format

### 4.1.1 Segments

The segments utilized for this interface are:

MSH

EVN

PID

PV1

OBX

DG1

DRG

ZPV

*Message Construction Notes:*

*[Square Brackets] – Optional*

*{Curly Brackets} – Repeatable*

*MSH – Message Header*

*EVN – Event segment*

*PID – Patient ID segment*

*PV1 – Patient Visit segment*

*ORC – Common Order segment*

*IN1 – Insurance 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** |
| BAR\_ZM2 | Add/change billing account -  inbound |
| ADT\_A08 | Update patient information - outbound |

### 4.1*.*3 Cloverleaf Configuration Files

Variants:

None

TCL Scripts:

tpsCerToSoarfBar – TCL script used to format segments and data

Xlates:

None

Filters:

None

### 4.1.4 Cloverleaf Site Location

Inbound: cerner\_adt\_siu\_bar\_5

Outbound: soarf\_outbound\_23

## 4.2 Data Transformation Requirements

| **Field Description** | **HL7 Field Loc.** | **Required Y/N** | **Notes** |
| --- | --- | --- | --- |
| Message Header | MSH | Y | Split the segment on the field delimiter |
| Sending Facility | MSH.4 |  | Extract the facility from MSH.4 |
| Sending Application | MSH.3 |  | COPY “HDM” |
| Sending Facility | MSH.4 |  | Table Lookup to convert the 3 character facility to the Invision facility. ie. MCS 🡪 60A0 |
| Receiving Application | MSH.5 |  | COPY “SOARF” |
| Message Type | MSH.9 |  | COPY “ADT^A08” |
| Version ID | MSH.12 |  | COPY “2.5.1” |
| New MSH Segment | MSH |  | Join the MSH Segment and append to the segment list  lappend nSegList $nwMsh |
| Event Type | EVN | Y | Split the segment on the field delimiter |
| Operator ID | EVN.5 |  | Extract the User ID  Split the Operator ID on component delimiter into usernum  Set Operator ID from usernum 0  #IB EVN not continued here recreated below ??? |
| Patient Identification | PID | Y | Split the segment on the field delimiter |
| Patient Identifier List | PID.3 |  | For each ID in PID.3… Search for \*CMRN\*  IF string match \*CRMN\*  Set patCPI “CPI^^^900000^PN" |
| Patient Birth Date | PID.7 |  | Extract the Patient Birth Date |
| Patient Sex | PID.8 |  | Extract the Patient Sex |
| Patient Account Number | PID.18 |  | Extract the Patient Account Number  Set patAct “$patAct^^^504^VCD” |
| New PID Segment |  |  | "PID|||${patCpi}||||${patBdt}|${patSex}||||||||||${patAct}"  lappend nSegList $nwPid |
| Patient Visit | PV1 | Y | Split the segment on the field delimiter |
| Patient Class | PV1.2 |  | Extract the Patient Class |
| Attending Doctor | PV1.7 |  | Extract Attending Doctor |
| Referring Doctor | PV1.8 |  | Extract the Referring Doctor |
| Consulting Doctor | PV1.9 |  | Extract Consulting Doctor |
| Admitting Doctor | PV1.17 |  | Extract Admitting Doctor |
| Assigned Patient Location | PV1.3 |  | Null field |
| Attending Doctor | PV1.7 |  | Replace Attending Doctor |
| Referring Doctor | PV1.8 |  | Replace Referring Doctor |
| Consulting Doctor | PV1.9 |  | Replace Consulting Doctor |
| Hospital Service | PV1.10 |  | Null field |
| Admit Source | PV1.14 |  | Null field |
| VIP Indicator | PV1.16 |  | Null field |
| Admitting Doctor | PV1.17 |  | Replace Admitting Doctor |
| Visit Number | PV1.19 |  | Null Field |
| Financial Class | PV1.20 |  | Null Field |
| Discharge to Location | PV1.37 |  | Null Field |
| Admit Date | PV1.44 |  | Extract Admit Date/Time |
| Discharge Date | PV1.45 |  | Extract the Discharge Date/Time |
| New PV1 Segment |  |  | set nwPv1 [string trimright [join ${nwPv1Flds} ${fld\_delim}] "|"  lappend nSegList $nwPv1 |
| Diagnosis | DG1 | Y | Split the segment on the field delimiter |
| Set ID | DG1.1 |  | Extract the Set ID |
| Diagnosis Code | DG1.2 |  | Extract the Diagnosis Code |
| ICD 9 Code | DG1.3 |  | Extract the ICD 9 Codes…  dgCode and dgType – F20.0^^ICD-10-CM |
| Diagnostic Related Group | DG1.6 |  | Modify DG1.6 based on the value in DG1.6…  Ie. DG1.6 = “DA” convert to “Adm”  DG1.6 = “DF” convert to “Fnl”…  switch -glob -- ${dgType} {  DF {set dgType "Fnl"}  Final {set dgType "Fnl"}  Final\* {set dgType "Fnl"}  DA {set dgType "Adm"}  Admitting {set dgType "Adm"}  default {set dgType BROKEN}  } |
| Confidential Indicator | DG1.15 |  | Set dgPrty – dg1Flds 15 |
|  | DG1.26 |  | For OP encounters that are linked to an IP (not through a transition) must have the POA indicators on the Diagnosis for the IP to drop a claim.  IF {[string equal ${ptClss} "O"]} {  set dgPoa "U"  } else {  set dgPoa [lindex ${dg1Flds} 26]  } |
| New DG1 Segment |  |  | set nwDg1 [string trimright "DG1|${dgStId}|${srCdMthd}|${dgCode}|||${dgType}||||||||${dgType}|${dgPrty}|||||||||||${dgPoa}" "|"]  lappend nSegList ${nwDg1} |
|  |  |  | {[string equal ${setID} 1] && [string equal ${dgType} "Adm"]} {  switch -exact -- ${ptClss} {  E – O {  incr dgStId  set rvtDg1 [string trimright "DG1|${dgStId}|${srCdMthd}|${dgCode}|||Rvt|||||||||${dgPrty}|||||||||||${dgPoa}" "|"  }  } |
|  |  |  | lappend nSegList ${nwDg1}  if {![string equal ${rvtDg1} ""]} {  lappend nSegList ${rvtDg1}  set rvtDg1 ""  }  incr dgStId |
| Diagnosis Related Group | DRG | Y | Split the segment on the field delimiter |
|  | DRG.1 |  | Extract the Diagnostic Related Group  Extract the drgNamCdSys  IF [string equal ${drgNamCdSys} "MS-DRG"]  Extract the encounter DRG  Set nwDRG “DRG|${encrDrg}"  lappend nSegList ${nwDrg}  ex. DRG|885^Psychoses^MS-DRG| 🡪 DRG|885|… |
| Procedures | PR1 | Y | Split the segment on the field delimiter |
| Set ID – PR1 | PR1.1 |  | Extract the Set ID |
| Procedure Code | PR1.2 |  | Extract the Procedure Code  # Call Sub Proc to Allocate Soarian Trans Values  transCdngMthd ${prCdMthd} |
| Procedure Date/Time | PR1.3.0  PR1.3.1 |  | Extract PR1.3.0 (Code) 🡪 code  Extract PR1.3.1 (Description) 🡪 prDesc  Set prCode “${code}^^${srCdNm}"  Set modsList “null”  For each value in PR1.3, split on component delimiter…  IF string is not equal to “Procedure”  append “value” to modsLst  Set mods [join modsLst with repeat delimiter] |
| Procedure Minutes | PR1.5 |  | Extract the Date and Time  Set prDtTm, length 0 to 11 |
| Anesthesia Code | PR1.6 |  | Extract the Anesthesia Code |
| Doctor | PR1.12 |  | Extract the Doctor  Set Surgeon [soarDrGetFrmt 12 ${drNumType} ${seg}] |
| New PR1 Segment |  |  | set nwPr1 [string trimright "PR1|${prStId}|${srCdMthd}|${prCode}|${prDesc}|${prDtTm}|${srFnctTp}|||||${prSurgeon}|||${prPrty}||${mods}|" "|"]  lappend nSegList $nwPr1 |
|  |  |  | EVN needs to be created outside of loop because it is pulling data out of order? |
| Event Type | EVN | Y | Split the segment on the field delimiter |
| Event Occurred | EVN.6 |  | IF Discharge Date is not null,  Set Date/Time to the Discharge Date/Time  Subtracting five minutes from final time for EVN:6 so that message will post to work list in Soarian, very silly  ELSEIF  IF Admit Date is not null  Set Date/Time to the Admit Date/Time  ELSE  Set Date/Time to the Message Date/Time |
| New EVN Segment |  |  | Set nwEvn "EVN|A08|${msgDtTm}|||BAR|${dtTm}"  set nSegList [linsert ${nSegList} 1 ${nwEvn}] |
| Observation/Result | OBX | Y | Set nwobx "OBX|1||2CODERS^^LSFUSERDATAE||${userID}||||||R||||||"  set nSegList [linsert ${nSegList} 4 ${nwobx}] |
| User Data | ZPV | Y | New ZPV requested with 'Cmplt' to update Soarian encounters with coding completed indicator.  set nwZpv "ZPV|||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||Cmplt"  set nSegList [linsert ${nSegList} end ${nwZpv}] |
| Create New Message |  |  | set newMsg [join ${nSegList} ${seg\_delim}]  msgset $mh ${newMsg}  lappend dispList "CONTINUE $mh" |
|  |  |  |  |
|  |  |  |  |

## 4.3 Sample Message

Inbound:

MSH|^~\&|HNAM|CERNER|SJW|BAYCARE|20180719165449||BAR^ZM2|Q4417631560T5798373025||2.3||||||8859/1

EVN|ZM2|20180719165447|||EPK48507

PID|1|7000058066^^^BayCare MRN^MRN^SOARIAN|7000058066^^^BayCare MRN^MRN^SOARIAN~810068766^^^BayCare CMRN^Community Medical Record Number^SOARIAN|810068766^^^BayCare EAD CPI^Historical CMRN^SOARIAN|EVENTTWOB^THREEMOM^^^^^Current||19810612|F||White|77 SUNSET DR^^Saint Petersburg^FL^33712^^Home||(813)999-2222^Home1||EN|D|Christian|6000088348^^^BayCare FIN^FIN NBR^SOARIAN||||Non HIS or LAT|||0

PV1|1|I|W4E1^4101^01^SJW^^Bed(s)^SJW|Elective|||1669435335^Solomon^Kenneth^J^^^^^NPI Number^Personnel^^^National Provider Identifier^CACTUS~MS006599^Solomon^Kenneth^J^^^^^BayCare Dr Number^Personnel^^^ORGANIZATION DOCTOR^CACTUS|||OBS||||RP||N|1669435335^Solomon^Kenneth^J^^^^^NPI Number^Personnel^^^National Provider Identifier^CACTUS~MS006599^Solomon^Kenneth^J^^^^^BayCare Dr Number^Personnel^^^ORGANIZATION DOCTOR^CACTUS|I||H||||||||||||||||AHR|||SJW||Discharged|||20180716123000|20180718183900

DG1|1|ICD10|Z34.83^Encounter for supervision of other normal pregnancy, third trimester^ICD10|Encounter for supervision of other normal pregnancy, third trimester||DA|||||||||1

DG1|2|ICD10|O34.211^Maternal care for low transverse scar from previous cesarean delivery^ICD10|Maternal care for low transverse scar from previous cesarean delivery||DF||Y|||||||1|||||||||||Y

DG1|3|ICD10|O14.04^Mild to moderate pre-eclampsia, complicating childbirth^ICD10|Mild to moderate pre-eclampsia, complicating childbirth||DF||Y|||||||2|||||||||||Y

DG1|4|ICD10|O99.52^Diseases of the respiratory system complicating childbirth^ICD10|Diseases of the respiratory system complicating childbirth||DF||Y|||||||3|||||||||||Y

DG1|5|ICD10|J45.909^Unspecified asthma, uncomplicated^ICD10|Unspecified asthma, uncomplicated||DF||Y|||||||4|||||||||||Y

DG1|6|ICD10|Z3A.37^37 weeks gestation of pregnancy^ICD10|37 weeks gestation of pregnancy||DF||E|||||||5|||||||||||E

DG1|7|ICD10|Z37.0^Single live birth^ICD10|Single live birth||DF||E|||||||6|||||||||||E

DRG|766^Cesarean section w/o CC/MCC^MS-DRG|20180719153012||||0

DRG|540^CESAREAN DELIVERY^APR-DRG|20180719153012||||0

PR1|1|ICD10PCS|10D00Z1^Extraction of Products of Conception, Low Cervical, Open Approach^ICD10PCS^^^Procedure||20180716130000|CD:614418||||0||4302^SOLOMON^KENNETH^^^^^^SJH Dr Number^^^^Surgeon~4302^SOLOMON^KENNETH^^^^^^SJW Dr Number^^^^Surgeon~30865^SOLOMON^KENNETH^^^^^^SFB Dr Number^^^^Surgeon~2618^SOLOMON^KENNETH^^^^^^MDU Dr Number^^^^Surgeon~2618^SOLOMON^KENNETH^^^^^^MPH Dr Number^^^^Surgeon~2618^SOLOMON^KENNETH^^^^^^NBY Dr Number^^^^Surgeon~2618^SOLOMON^KENNETH^^^^^^MCS Dr Number^^^^Surgeon~4302^SOLOMON^KENNETH^^^^^^SJN Dr Number^^^^Surgeon~2618^SOLOMON^KENNETH^^^^^^SAH Dr Number^^^^Surgeon~MS006599^SOLOMON^KENNETH^^^^^^BayCare Dr Number^^^^Surgeon~006599^SOLOMON^KENNETH^^^^^^CD:1224392299^^^^Surgeon~006599^SOLOMON^KENNETH^^^^^^CD:1224388639^^^^Surgeon~4302^SOLOMON^KENNETH^^^^^^CD:1025606149^^^^Surgeon||1

PR1|2|ICD10PCS|30233H1^Transfusion of Nonautologous Whole Blood into Peripheral Vein, Percutaneous Approach^ICD10PCS^^^Procedure||20180716150000|||||0||4302^SOLOMON^KENNETH^^^^^^SJH Dr Number^^^^Surgeon~4302^SOLOMON^KENNETH^^^^^^SJW Dr Number^^^^Surgeon~30865^SOLOMON^KENNETH^^^^^^SFB Dr Number^^^^Surgeon~2618^SOLOMON^KENNETH^^^^^^MDU Dr Number^^^^Surgeon~2618^SOLOMON^KENNETH^^^^^^MPH Dr Number^^^^Surgeon~2618^SOLOMON^KENNETH^^^^^^NBY Dr Number^^^^Surgeon~2618^SOLOMON^KENNETH^^^^^^MCS Dr Number^^^^Surgeon~4302^SOLOMON^KENNETH^^^^^^SJN Dr Number^^^^Surgeon~2618^SOLOMON^KENNETH^^^^^^SAH Dr Number^^^^Surgeon~MS006599^SOLOMON^KENNETH^^^^^^BayCare Dr Number^^^^Surgeon~006599^SOLOMON^KENNETH^^^^^^CD:1224392299^^^^Surgeon~006599^SOLOMON^KENNETH^^^^^^CD:1224388639^^^^Surgeon~4302^SOLOMON^KENNETH^^^^^^CD:1025606149^^^^Surgeon||2

ZDR||||1|1

Outbound:

MSH|^~\&|HDM|Y0A5|SOARF|BAYCARE|20180719165449||ADT^A08|Q4417631560T5798373025||2.5.1||||||8859/1

EVN|A08|20180719165449|||BAR|201807181834

PID|||810068766^^^900000^PN||||19810612|F||||||||||6000088348^^^504^VCD

PV1|1|I||Elective|||006599^^^^^^^^183^^^^PRN||||||||||006599^^^^^^^^183^^^^PRN|I||||||||||||||||||AHR|||SJW||Discharged

OBX|1||2CODERS^^LSFUSERDATAE||EPK48507||||||R||||||

DG1|1|I10|Z34.83^^ICD10-CM|||Adm||||||||Adm|1

DG1|2|I10|O34.211^^ICD10-CM|||Fnl||||||||Fnl|1|||||||||||Y

DG1|3|I10|O14.04^^ICD10-CM|||Fnl||||||||Fnl|2|||||||||||Y

DG1|4|I10|O99.52^^ICD10-CM|||Fnl||||||||Fnl|3|||||||||||Y

DG1|5|I10|J45.909^^ICD10-CM|||Fnl||||||||Fnl|4|||||||||||Y

DG1|6|I10|Z3A.37^^ICD10-CM|||Fnl||||||||Fnl|5|||||||||||E

DG1|7|I10|Z37.0^^ICD10-CM|||Fnl||||||||Fnl|6|||||||||||E

DRG|766

PR1|1|I10|10D00Z1^^ICD10-CM|Extraction of Products of Conception, Low Cervical, Open Approach|201807161300|PC|||||006599^^^^^^^^183^^^^PRN|||1

PR1|2|I10|30233H1^^ICD10-CM|Transfusion of Nonautologous Whole Blood into Peripheral Vein, Percutaneous Approach|201807161500|PC|||||006599^^^^^^^^183^^^^PRN|||2

ZPV|||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||Cmplt

# 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\_adt\_siu\_bar\_5 | 24/7 | Primary: Contact the Cerner Interface oncall group | Cerner BAR messages to Soarian  bar\_cer\_in to bar\_soarf\_out\_xo23 |
| soarf\_outbound\_23 | 24/7 |  | Outbound connection to Soarian  bar\_cer\_in\_xi5 to adt\_soarf\_out\_10282 |

# Appendix A: Risks and Concerns

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Project Name** |  |  | | |  |  |  |  |
| **Number** | **Risk / Concern** | **Comment** | **Mitigation** | | |  |  |  |
| RC.2013.1.0 |  |  | |  | |  |  |  |

# Appendix B: Issues List

This is a dynamic list of the open issues related to the IDBB that remain to be solved, including but not limited to TBDs, pending decisions, information needed, conflict awaiting resolution, and the like.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Project Name** |  |  | | |  |  |  |  |
| **Number** | **Issue** | **Comment** | **Fix** | | |  |  |  |
| I.2013.1.0 |  |  | |  | |  |  |  |

* End of document