IHE Change Proposal

Tracking information:

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DEV TF Vol2 – PCD-03 appendix example corrections	
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Integration Profile(s) affected:	Point-of-Care Infusion Verification (PIV)
Actor(s) affected:	Infusion Order Consumer (IOC)
IHE Technical Framework or Supplement modified:	Appendix E in DEV TF, revision 9.0, dated Dec 12, 2019
Volume(s) and Section(s) affected:	Vol 2, changes and additions to E.2

Rationale for Change:

Currently in the PCD profile (and more importantly, in the field) the Infusion Order Consumer (IOC) actor is expected to respond with an Application Acknowledgement to the Infusion Order Programmer (IOP) for either a successful or unsuccessful workflow. That is, the IOP is expected to populate a value of AL in the MSH-16 field

in the RGV^O15 message, and the IOC is expected to send a value of AA or AR, depending on the scenario, in the MSA segment of the RRG^O16 message.

Although it is technically possible for the MSH-16 value in the RGV^O15 message to be valued as ER (only send the Application Acknowledgement in cases of an error), no implementors of this PCD profile have done this, nor have any Connectathon tests used this as a scenario. The IHE Devices Infusion Pump WG prescribed implementation is to use an AL/AL configuration for MSH 15/16 in PCD-03 RGV^O15 messages.

Knowing this, the example in appendix E, section E.2.2, illustrates a use case where the IOP has sent a value of "ER" in MSH-16 in the RGV^O15 message. The diagrams within show that the IOC does not need to send back an Application Acknowledgement in the "success" use case. While technically accurate based on the HL7 used, this is not realistic and could lead consumers of the Technical Framework unfamiliar with the context and background of the workflow to arrive at a poor outcome of their implementation of this transaction. The "error condition" diagrams are still accurate regardless of MSH-16 value and do not need to be updated.

Further, any indication throughout the Technical Framework regarding the use of "ER" for MSH-16 will be removed and clarification will be added that "ER" is no longer allowed, adding a constraint to this field as to which values are available for use.

Lastly, there are some HL7 errors and inconsistencies within the examples in E.2.3 that should be corrected.

This Change Proposal (CP) proposes changes to the existing appendix text, diagrams, and accompanying HL7 that is behind the examples in E.2.

*Section 3.3.4.4.1 "**MSH – Message Header Segment**", Update text and table regarding MSH-16 to constrain to only using "AL" in PCD-03 RGV^O15 messages; Section 3.3.4.4.11 "**Expected Actions**", update text to assume "AL" is used for MSH-16 and that we send application acknowledgement always, not just on error:*

On line 543 change "will be" to "shall be" to remain consistent with other parts of the Technical Framework.

On line 547, change "RGV^015" to "RGV^O15".

Change the paragraph at line 549 from:

- This is required for all messages. The application acknowledgement field informs the receiver whether the sender can process application acknowledgements and under what conditions to send the additional acknowledgement. The receiving system must send (or not send) acknowledgements as specified by this field.

To:

- This is required for all messages. The application acknowledgement field informs the receiver whether the sender can process application acknowledgements and under what conditions to send the additional acknowledgement. **For RGV^O15 messages, the value shall be "AL", and for RRG^O16 the value shall be "NE"**. The receiving system must send (or not send) **application** acknowledgements as specified by this field.

On line 553, change “When the sending application requests an application acknowledgement” to “When sending an application acknowledgement”.

On line 560, add “with MSH-15=’NE’ and MSH-16=’NE’, since the sender does not need to reply to an Accept Acknowledgement.”

On line 563, change “RRG^016” to “RRG^O16”.

On line 565, change “ACK^016” to “ACK^O16”.

On line 566, add “with MSH-15=’NE’ and MSH-16=’NE’, since the sender does not need to reply to an Accept Acknowledgement.”

Remove lines 567 to 573. The sentence at line 567 is redundant. The paragraph at line 569 talks about different configuration options for MSH-16, but the changes above now restrict the usage of what value is allowed in this field, so the paragraph is no longer relevant.

Update the table at line 575:

- Change the text from “Possible Values for MSH-16 in PCD-03 Message” to “Possible Values for MSH-16 in PCD-03 RGV^O15 and RRG^O16 Messages”.
- The comments for the “AL” row should be “The sender expects to receive an application acknowledgement in addition to the accept acknowledgement. This value shall be used in RGV^O15 messages.”
- The comments for the “NE” row should be “The sender does not expect to receive an application acknowledgement. This value shall be used in RRG^O16 messages.”
- The row for “ER” should be completely removed.

The paragraph at line 577 should be completely removed. “AL” is required and stated as such earlier, and there are no other options, so the paragraph is no longer needed.

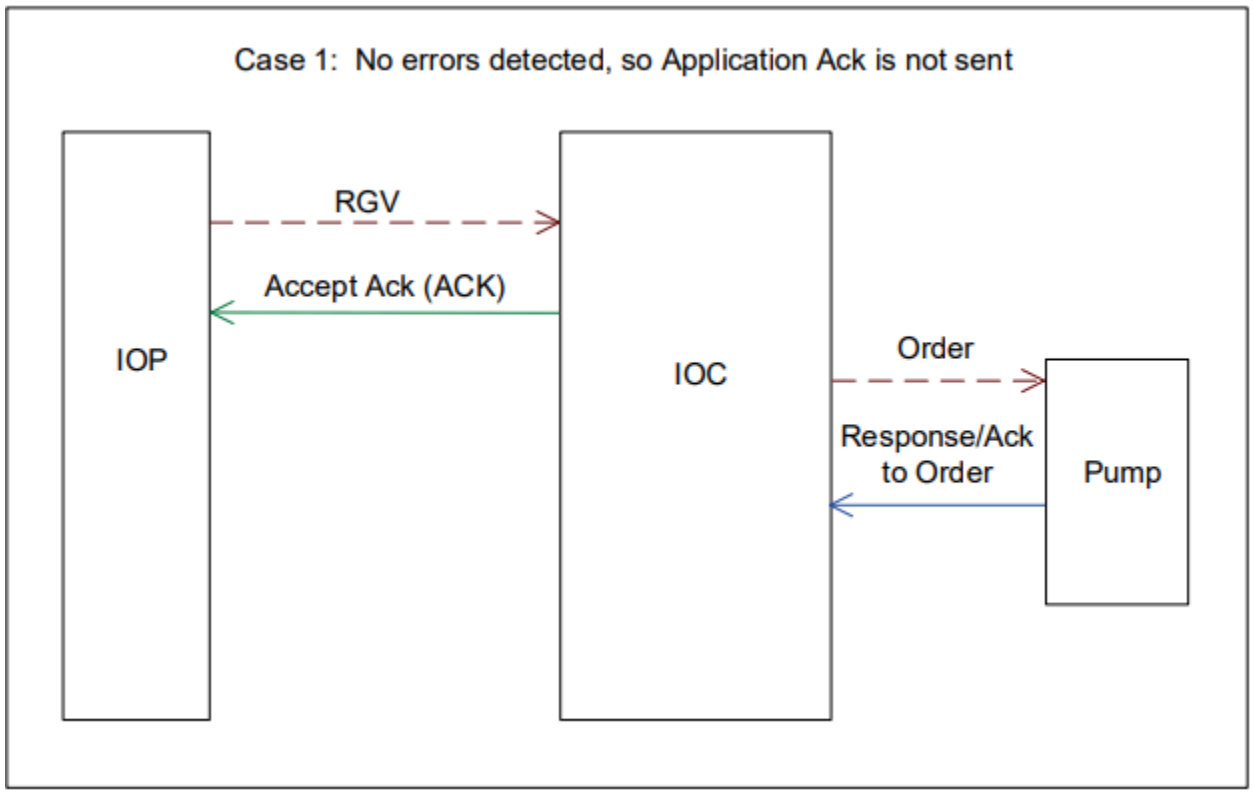
The paragraph at line 581 should be completely removed. This requirement is stated earlier and this paragraph is redundant.

Update paragraph at line 1120 to read as:
The receiving system validates the message and responds with an accept acknowledgment message (ACK^O15^ACK) on the same port as the RGV^O15 message was received. The IOC also responds with a Pharmacy/Treatment Give Acknowledgement Message (RRG^O16^RRG_O16) on a new port and connection.

On line 1132, replace “If MSH-16 (Application Acknowledgement Type) is valued as "ER" or "AL"” with “If applicable,”.

Section E.2 ***E.2.2 Interaction Diagram****, update diagram to include IOC sending Application Acknowledgement to IOP, page 179, line 4565;* ***E.2.3 Messages****, update HL7 to reflect reality and correct errors:*

Change



To include a yellow-colored arrow (matching the other examples in this section) pointing one-way from the IOC to the IOP with a label of "Application Ack (RRG)" above it. This arrow and label should be placed below the green arrow with comfortable spacing and the label should have centered text with the other labels above it. Below the yellow arrow, the text "MSA-1 indicates success or failure" should be added. The label at the top of the diagram should also be changed to not state "Application Ack is not sent", since that is false.

For Case 2 and Case 3 diagrams below this one, add the text "MSA-1 indicates failure" below the existing yellow lines for Application Ack (RRG).

In the block diagrams for Case 1, Case 2, and Case 3, add an arrow for the Accept ACK from the IOP to the IOC

E.2.3 Messages, Examples 1 and 2

Change MSH-16 values in both examples in the Communicate Infusion Order HL7 box from "ER" to "AL".

In Example 1, add a new box below the **Accept Acknowledgement** box. The header for this new box should be **Application Acknowledgement** and the header along with the HL7 that will go inside of the box should be formatted like the text for **Accept Acknowledgement**. For this example, the following HL7 should be used inside the box to match the scenario:

```
MSH|^~\&|IOCVENDOR^6543210000000001^EUI-64|IOCVENDOR|IOPVENDOR^1234560
000000001^EUI-64|IOPVENDOR|20080101123456-0600||
RRG^O16^RRG_O16|1|P|2.5|||AL|NE||ASCII|EN^English^ISO659||IHE_PCD_PIV_
001
MSA|AA|1
```

Across Examples 1 and 2 in all instances where “2.5” is used for the HL7 version, I would *recommend* using “2.6” instead as this is typically used today in the field and is more contemporary.

In Examples 1 and 2, the value for ORC-9 in the **Communicate Infusion Order** HL7 is empty, but the field is required. This value can be 20080101123446-0600 in both examples which is 10 seconds earlier than the MSH timestamp.

In Examples 1 and 2, the value for RXR-1 in the **Communicate Infusion Order** HL7 should change from “IV” to “^IV^HL70162”.

In Examples 1 and 2, the value for RXR-3 in the **Communicate Infusion Order** HL7 should change from “IVP” to “^IVP^HL70164”.

In Examples 1 and 2, the value for RXR-4 in the **Communicate Infusion Order** HL7 should be added as “^IV^HL70165”.

In Example 2, the value for MSA-2 in the **Accept Acknowledgement** example should change from *null* to “2” to indicate the correct control ID from the **Communicate Infusion Order** HL7.

In Examples 1 and 2, MSH-15 in the **Accept Acknowledgement** example should be added, with a value of “NE”

In Examples 1 and 2, MSH-16 in the **Accept Acknowledgement** example should be added, with a value of “NE”

In Example 2, the value for MSA-2 in the **Application Acknowledgement** example should change from “102” to “2” to indicate the correct message control ID from the **Communicate Infusion Order** HL7.

In Example 2, MSH-15 in the **Application Acknowledgement** example should be added, with a value of “AL”

In Example 2, MSH-16 in the **Application Acknowledgement** example should be added, with a value of "NE"

In RGV^O15 for both examples, change OBX-18 for MDC_DEV_PUMP_INFUS_VMD to "A0001^^6543210000000001^EUI-64"