Use of OBX-11/OBR-25 in IHE LAB3 context.
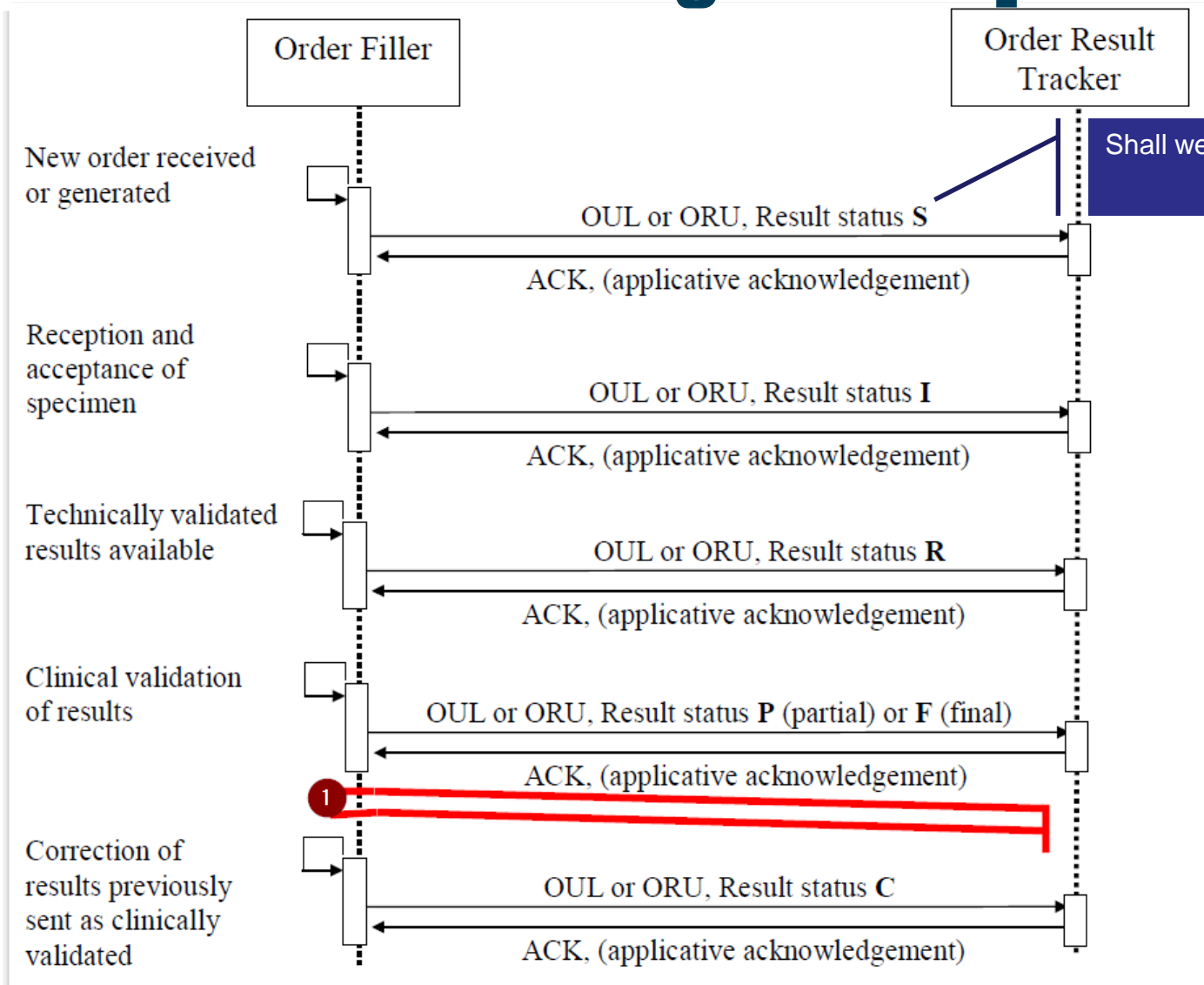
IHE-PaLM
13 Nov. 2017
Filip Migom

Order Results Management [LAB-3]

OBX-11 : Observation Result Status

○ IHE : LAB-3: uses Reference HL7 V2.5.1

○ *Refer to HL7 table 0085 - Observation result status codes interpretation for valid values (source HL7 V2.7)*

HL7 Table 0085 - Observation Result Status Codes Interpretation

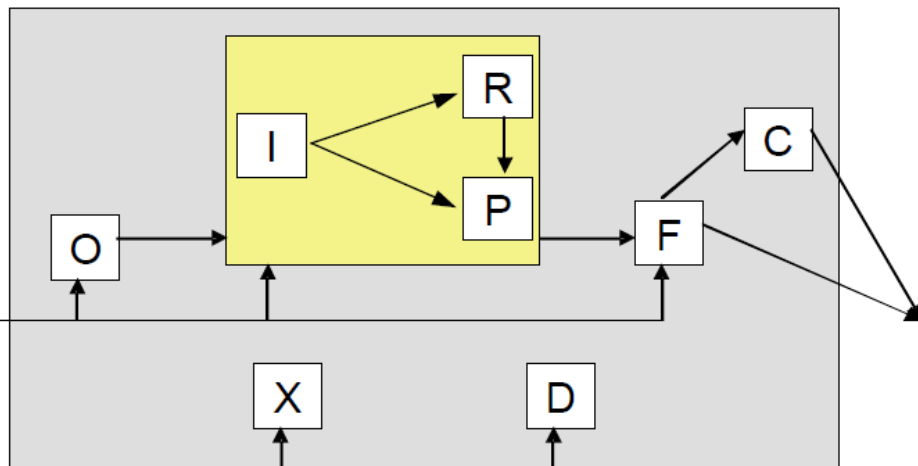| Value	Description	
C	Record coming over is a correction and thus replaces a final result	
D	Deletes the OBX record	
F	Final results; Can only be changed with a corrected result.	
I	Specimen in lab; results pending	
N	Not asked; used to affirmatively document that the observation identified in the OBX was not sought when the universal service ID in OBR-4 implies that it would be sought.	
O	Order detail description only (no result)	
P	Preliminary results	
R	Results entered -- not verified	
S	Partial results. Deprecated. Retained only for backward compatibility as of V2.6.	Deprecated.
X	Results cannot be obtained for this observation	
U	Results status change to final without retransmitting results already sent as 'preliminary.' E.g., radiology changes status from preliminary to final	
W	Post original as wrong, e.g., transmitted for wrong patient	

A record may have an empty OBX-5 ?

Shall we apply "S"or "O"

C.10.2.3 OBX-11: Observation Result Status
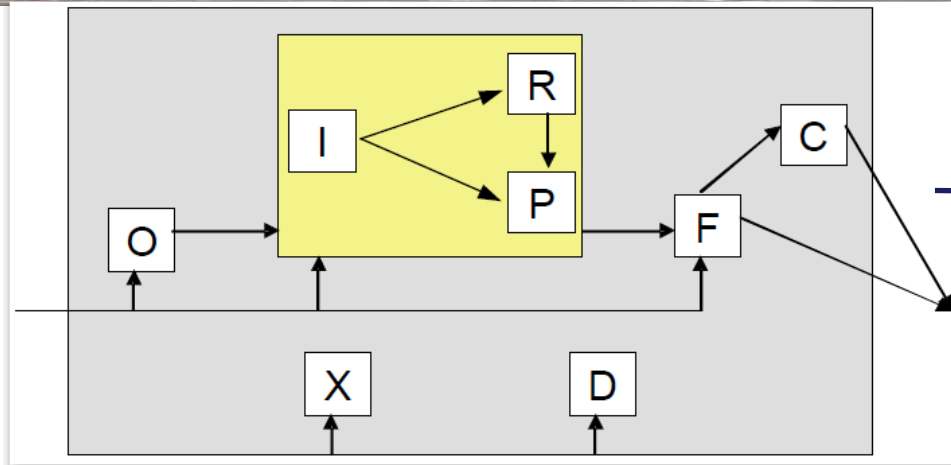
Shall we apply "S"or "O"

O: Order detail description only. No result
I: Specimen in lab, results pending
R: Result entered, not verified, i.e., not technically or clinically validated (depending on the transaction)
P: Preliminary (partial) result verified, i.e., technically or clinically validated (depending on the transaction)
F: Final result verified, i.e., technically or clinically validated (depending on the transaction)
C: Correction after final result. Result still final and verified.
X: Result cannot be obtained for this observation
D: Deletes the OBX record

Figure C.10.2.3-1: The OBX-11 Status Transition Diagram

"C" Result still final and verified !!!

Shall we replace a diagram with a table view

Can we agree on this Table view ?

The status diagram in Figure C.10.2.3-1 above shows that, during normal processing, the initial status code in OBX-11 will be O, F, or one of the three codes shown in the center block. If the status code equals I, the next status code could be either I, R, P or F. If the status code equals P, the next status code could be either F or P.

The special status codes X (Result cannot be obtained for this observation) and D may occur at any stage of processing.

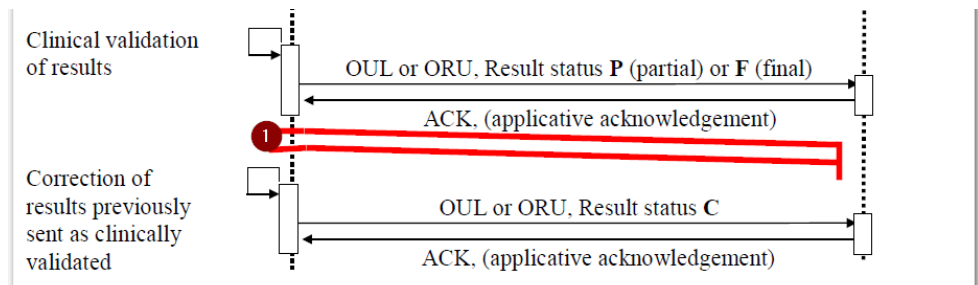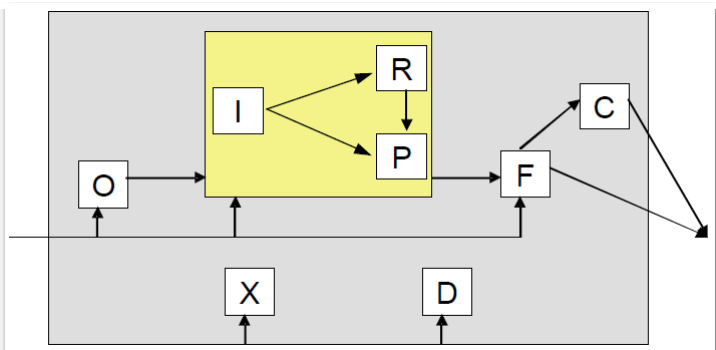|		OBX-11 (new Result / new message)							
OBX-11 (Existing Result / Previous message)		**O**	**I**	**R**	**P**	**F**	**C**	**X**	**D**
O	Order detail description only. No Result	S	A	A	A	Q	Q	A	A
I	Specimen in lab, results pending		S	A	A	A	Q	A	A
R	Result entered, not verified		Q	S	A	C	Q	A	A
P	Preliminary (partial) result verified		Q	Q	S	A	Q	A	A
F	Final result verified		Q	Q	Q	S	C	A	A
C	Correction after final result		Q	Q	Q		S	A	A
X	Result cannot be obtained							S	A
D	Delete		Q	Q	Q		Q	A	S

OBX-11

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**I**|||20171102120000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**P**|||20171102122000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**F**|||20171102122100|FM

- CASE : A correction is required

To discuss a CORRECTION

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL||||||**?**|||20171102123000|FM
  - *The result has been re-opened for examination. The result itself is initial. A new report can be triggered. What status should we report in ? [W] or [I] or [C] or [D]*

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OBX-11 : Observation Result Status

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**I**|||20171102120000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**P**|||20171102122000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**F**|||20171102122100|FM

To discuss a **CORRECTION**

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL||||||**?**|||20171102123000|FM
  - *The result has been re-opened for examination. The result itself is initial. A new report can be triggered. What status should we report in ? [W] or [I] or [C] or [D]*
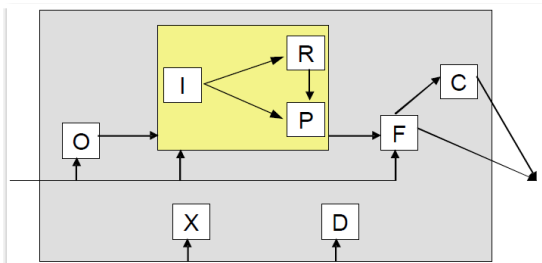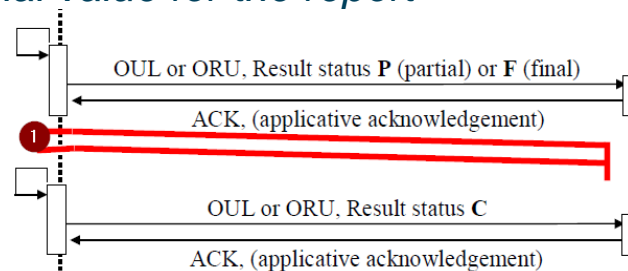- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL||||||**?**|||20171102124500|FM
  - *A result is available but not yet confirmed*
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL||||||**?**|||20171102125000|FM
  - *A result is confirmed and available for the report, but it is not verified*
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL||||||**?**|||20171102125500|FM
  - *A result is validated and verified as a final value for the report*

Clinical validation of results — OUL or ORU, Result status P (partial) or F (final) — ACK, (applicative acknowledgement)

Correction of results previously sent as clinically validated — OUL or ORU, Result status C — ACK, (applicative acknowledgement)

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OBX-11 : Observation Result Status

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**I**|||20171102120000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**P**|||20171102122000|FM
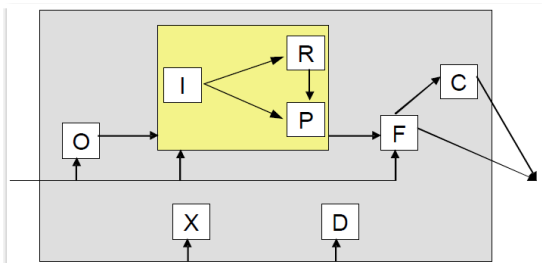- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**F**|||20171102122100|FM

> To discuss a CORRECTION

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**I**|||20171102123000|FM
  - *The result has been re-opened for examination. The result itself is initial. A new report can be triggered. What status should we report in ? [W] or [I] or [C] or [D]*

> "I" is not allowed after "F"

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**I**|||20171102124500|FM
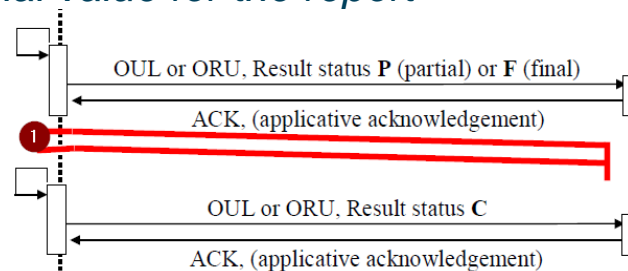 - *A result is available but not yet confirmed*
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**P**|||20171102125000|FM
  - *A result is confirmed and available for the report, but it is not verified*
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**F**|||20171102125500|FM
  - *A result is validated and verified as a final value for the report*

Clinical validation of results — OUL or ORU, Result status P (partial) or F (final) — ACK, (applicative acknowledgement)

Correction of results previously sent as clinically validated — OUL or ORU, Result status C — ACK, (applicative acknowledgement)

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OBX-11 : Observation Result Status

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**I**|||20171102120000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**P**|||20171102122000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**F**|||20171102122100|FM

> **To discuss a CORRECTION**

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**W**|||20171102123000|FM
  - *The result has been re-opened for examination. The result itself is initial. A new report can be triggered. What status should we report in ? [W] or [I] or [C] or [D]*

> **"W" Is not supported by IHE LAB-3**

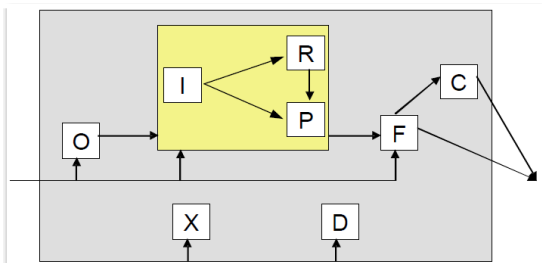- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**I**|||20171102124500|FM
  - *A result is available but not yet confirmed*
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**P**|||20171102125000|FM
  - *A result is confirmed and available for the report, but it is not verified*
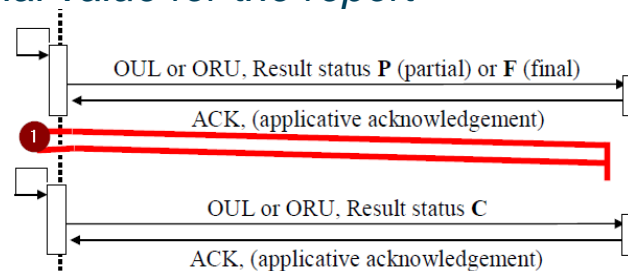- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**F**|||20171102125500|FM
  - *A result is validated and verified as a final value for the report*

Clinical validation of results — OUL or ORU, Result status P (partial) or F (final) — ACK, (applicative acknowledgement)

Correction of results previously sent as clinically validated — OUL or ORU, Result status C — ACK, (applicative acknowledgement)

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OBX-11 : Observation Result Status

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**I**|||20171102120000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**P**|||20171102122000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**F**|||20171102122100|FM

> To discuss a CORRECTION

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**W**|||20171102123000|FM
  - *The result has been re-opened for examination. The result itself is initial. A new report can be triggered. What status should we report in ? [W] or [I] or [C] or [D]*

> "W" Is not supported by IHE LAB-3

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**I**|||20171102124500|FM
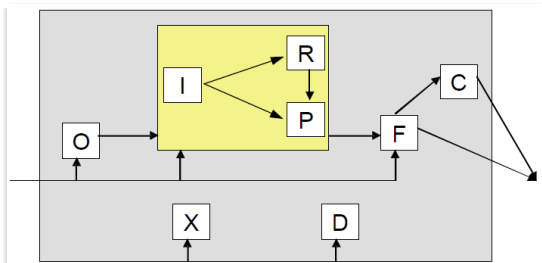 - *A result is available but not yet confirmed*
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**P**|||20171102125000|FM
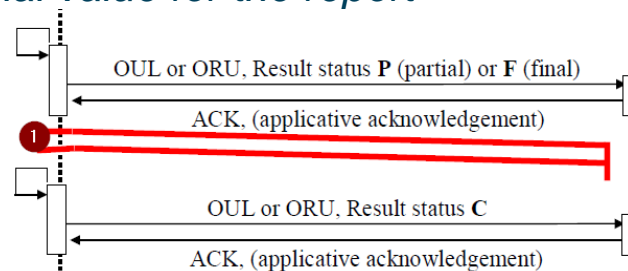 - *A result is confirmed and available for the report, but it is not verified*
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**C**|||20171102125500|FM
  - *A result is validated and verified as a final value for the report*

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Clinical validation of results — OUL or ORU, Result status P (partial) or F (final)
ACK, (applicative acknowledgement)

Correction of results previously sent as clinically validated — OUL or ORU, Result status C
ACK, (applicative acknowledgement)

OBX-11 : Observation Result Status

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**I**|||20171102120000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**P**|||20171102122000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**F**|||20171102122100|FM

> To discuss a CORRECTION

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**W**|||20171102123000|FM
    - *The result has been re-opened for examination. The result itself is initial. A new report can be triggered. What status should we report in ? [W] or [I] or [C] or [D]*
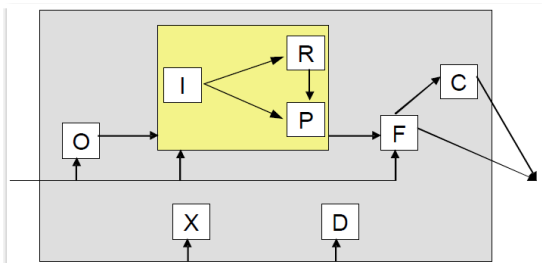- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**I**|||20171102124500|FM
    - *A result is available but not yet confirmed*

> "W" Is not supported by IHE LAB-3

- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**C**|||20171102125000|FM
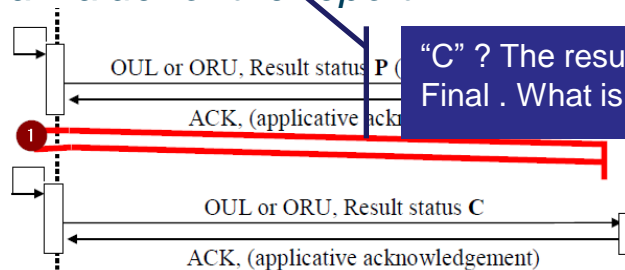   - *A result is confirmed and available for the report, but it is not verified*
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**C**|||20171102125500|FM
    - *A result is validated and verified as a final value for the report*

> "C" ? The result is not Final . What is best ?

Clinical validation of results — OUL or ORU, Result status P — ACK, (applicative ack...)

Correction of results previously sent as clinically validated — OUL or ORU, Result status C — ACK, (applicative acknowledgement)

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OBX-11 : Observation Result Status

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**I**|||20171102120000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**P**|||20171102122000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**F**|||20171102122100|FM
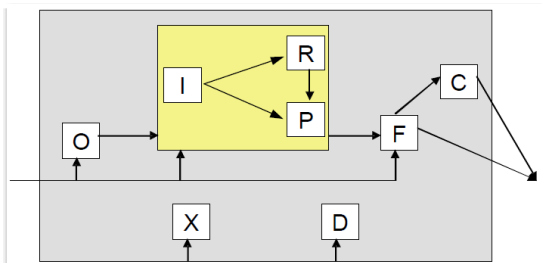
> To discuss a CORRECTION

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**W**|||20171102123000|FM
  - *The result has been re-opened for examination. The result itself is initial. A new report can be triggered. What status should we report in ? [W] or [I] or [C] or [D]*
- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**W**|||20171102124500|FM
  - *A result is available but not yet confirmed*
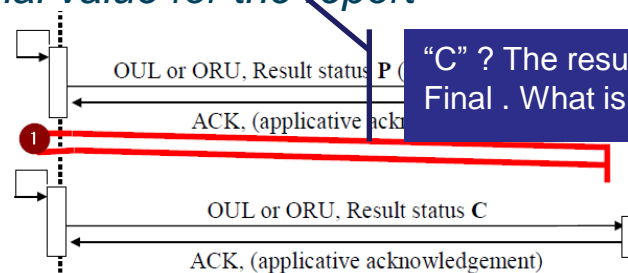
> "W" Is not supported by IHE LAB-3

- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**C**|||20171102125000|FM
  - *A result is confirmed and available for the report, but it is not verified*
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**C**|||20171102125500|FM
  - *A result is validated and verified as a final value for the report*

> "C" ? The result is not Final . What is best ?

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Clinical validation of results — OUL or ORU, Result status P — ACK, (applicative acknowledgement)

Correction of results previously sent as clinically validated — OUL or ORU, Result status C — ACK, (applicative acknowledgement)

OBX-11 : Observation Result Status

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**I**|||20171102120000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**P**|||20171102122000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**F**|||20171102122100|FM

> To discuss a CORRECTION

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**W**|||20171102123000|FM
  - *The result has been re-opened for examination. The result itself is initial. A new report can be triggered. What status should we report in ? [W] or [I] or [C] or [D]*

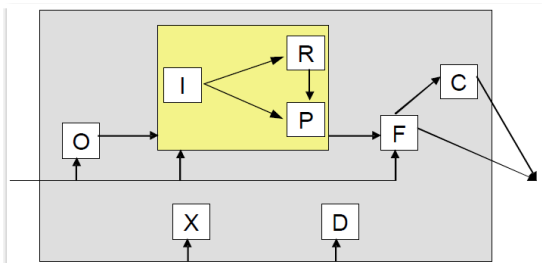- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**W**|||20171102124500|FM
  - *A result is available but not yet confirmed*

> "W" Is not supported by IHE LAB-3

- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**W**|||20171102125000|FM
  - *A result is confirmed and available for the report, but it is not verified*

- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**C**|||20171102125500|FM
  - *A result is validated and verified as a final value for the report*

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Clinical validation of results — OUL or ORU, Result status P (partial) or F (final)

ACK, (applicative acknowledgement)

1

Correction of results previously sent as clinically validated — OUL or ORU, Result status C

ACK, (applicative acknowledgement)

OBX-11 : Observation Result Status

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**I**|||20171102120000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**P**|||20171102122000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**F**|||20171102122100|FM

> To discuss a CORRECTION

- OBX|8|NM|82310^CALCIUM^GH|8|""""|MG/DL|||||**C**|||20171102123000|FM
  - *The result has been re-opened for examination. The result itself is initial. A new report can be triggered. What status should we report in ? [W] or [I] or [C] or [D]*
- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**C**|||20171102124500|FM
  - *A result is available but not yet confirmed*

> "C" ? Shall we allow C when no result is available

- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**C**|||20171102125000|FM
  - *A result is confirmed and available for the report, but it is not verified*
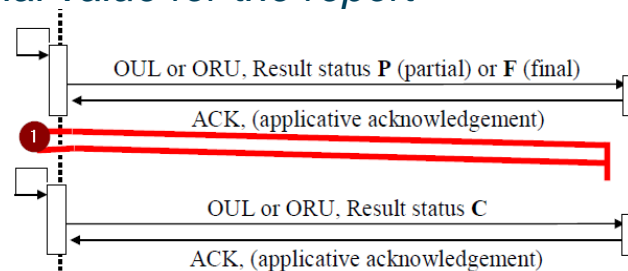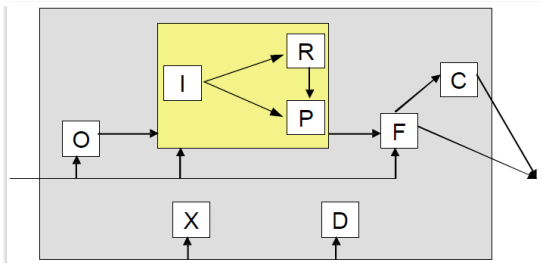- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**C**|||20171102125500|FM
  - *A result is validated and verified as a final value for the report*

> "C" ? The result is not Final . What is best ?

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Clinical validation of results — OUL or ORU, Result status P — ACK, (applicative acknowledgement)

Correction of results previously sent as clinically validated — OUL or ORU, Result status C — ACK, (applicative acknowledgement)

OBX-11 : Observation Result Status

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**I**|||20171102120000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**P**|||20171102122000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**F**|||20171102122100|FM

> To discuss a CORRECTION

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**D**|||20171102123000|FM
  - *The result has been re-opened for examination. The result itself is initial. A new report can be triggered. What status should we report in ? [~~W~~] or [I] or [C] or [D]*
- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**D**|||20171102124500|FM
  - *A result is available but not yet confirmed*

> "D" Is supported by IHE LAB-3

- OBX|8|NM|82310^CALCIUM^GH|8|~~10.1~~|MG/DL|||||**D**|||20171102125000|FM
  - *A result is confirmed and available for the report, but it is not verified*
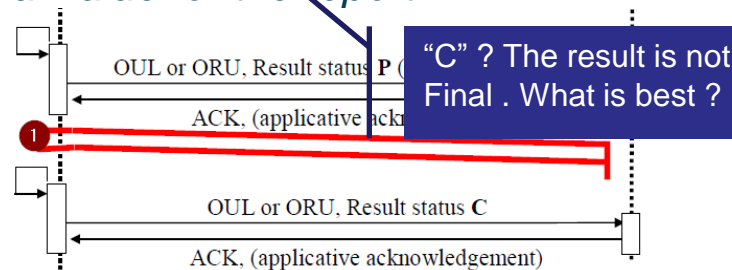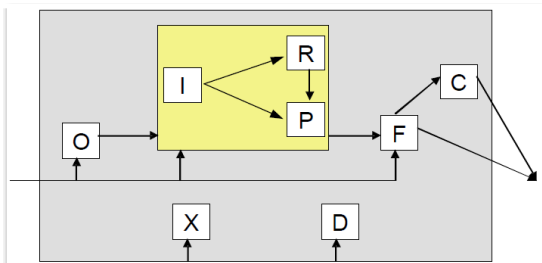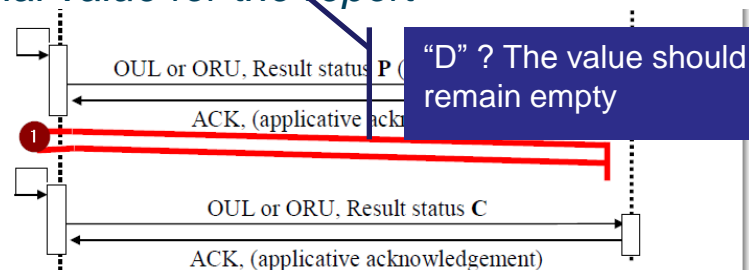- OBX|8|NM|82310^CALCIUM^GH|8|**10.1**|MG/DL|||||**C**|||20171102125500|FM
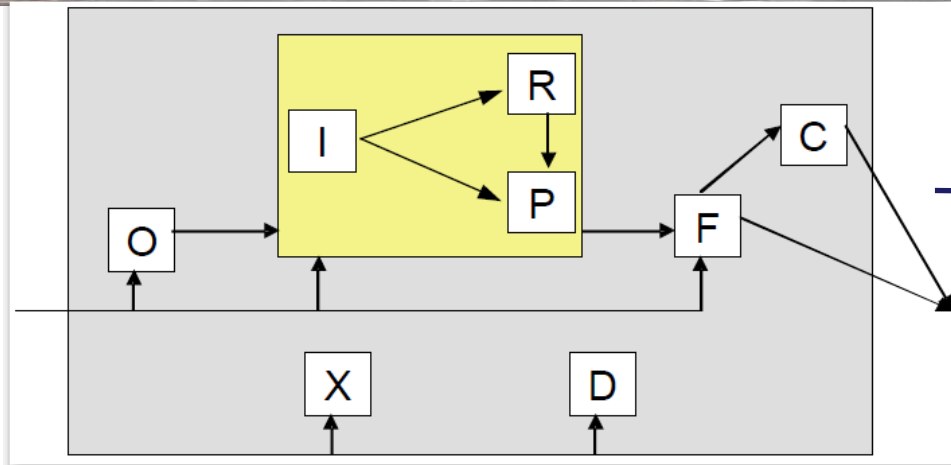 - *A result is validated and verified as a final value for the report*

> "D" ? The value should remain empty

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Shall we replace a diagram with a table view

Can we agree on this Table view ?

The status diagram in Figure C.10.2.3-1 above shows that, during normal processing, the initial status code in OBX-11 will be O, F, or one of the three codes shown in the center block. If the status code equals I, the next status code could be either I, R, P or F. If the status code equals P, the next status code could be either F or P.

The special status codes X (Result cannot be obtained for this observation) and D may occur at any stage of processing.

		OBX-11 (new Result / new message)							
	OBX-11 (Existing Result / Previous message)	**O**	**I**	**R**	**P**	**F**	**C**	**X**	**D**
O	Order detail description only. No Result	S	A	A	A	Q	Q	A	A
I	Specimen in lab, results pending		S	A	A	A	Q	A	A
R	Result entered, not verified		Q	S	A	C	Q	A	A
P	Preliminary (partial) result verified		Q	Q	S	A	Q	A	A
F	Final result verified		Q	Q	Q	S	C	A	A
C	Correction after final result		Q	Q	Q		S	A	A
X	Result cannot be obtained							S	A
D	Delete		Q	Q	Q		Q	A	S

Shall we replace a diagram with a table view

Can we agree on this Table view ?
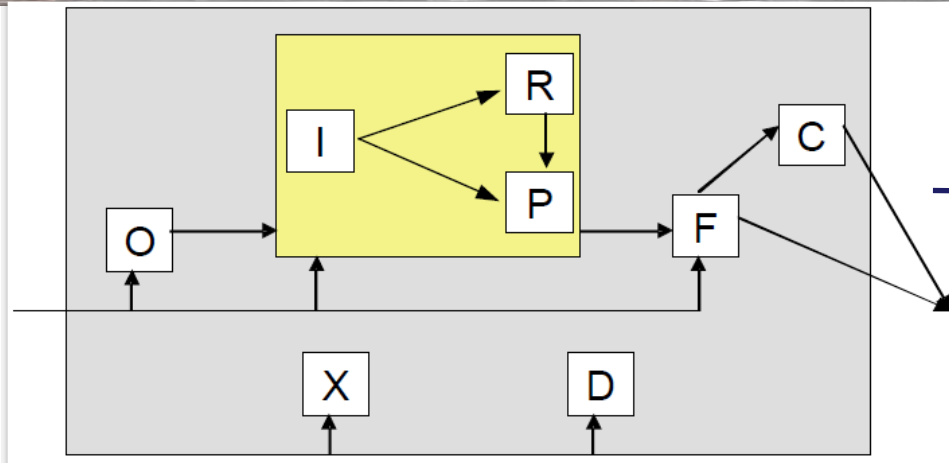
The status diagram in Figure C.10.2.3-1 above shows that, during normal processing, the initial status code in OBX-11 will be O, F, or one of the three codes shown in the center block. If the status code equals I, the next status code could be either I, R, P or F. If the status code equals P, the next status code could be either F or P.

The special status codes X (Result cannot be obtained for this observation) and D may occur at any stage of processing.

		OBX-11 (new Result / new message)							
OBX-11 (Existing Result / Previous message)		O	I	R	P	F	C	X	D
O	Order detail description only. No Result	S	A	A	A	A	A	A	A
I	Specimen in lab, results pending		S	A	A	A	A	A	A
R	Result entered, not verified			S	A	A	A	A	A
P	Preliminary (partial) result verified				S	A	A	A	A
F	Final result verified					S	A	A	A
C	Correction after final result						S	A	A
X	Result cannot be obtained						A	S	A
D	Delete						A	A	S

What do we have to change in IHE-PaLM Technical Framework

A NEW CP

CP … : Agreed to the message

- OBX|8|NM|82310^CALCIUM^GH|8||MG/DL|||||**I**|||20171102120000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**P**|||20171102122000|FM
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL|||||**F**|||20171102122100|FM

> **To discuss a CORRECTION**

- OBX|8|NM|82310^CALCIUM^GH|8|**""**|MG/DL||**""**|||**C**|||20171102123000|FM
  - *The result has been re-opened for examination. The result itself is initial. A new report can be triggered.*
- OBX|8|NM|82310^CALCIUM^GH|8|**""**|MG/DL||**""**|||**C**|||2017110212454...
  - *A result is available but not yet confirmed*

> OBX-11 = |C|
> OBR-25 = |C|
> ORC-5 = |A|
> OBX-5 = |""|
> OBX-8 = |""| clear the flag

- OBX|8|NM|82310^CALCIUM^GH|8|**10.1**|MG/DL||<?>|||**C**|||20171102125000|FM
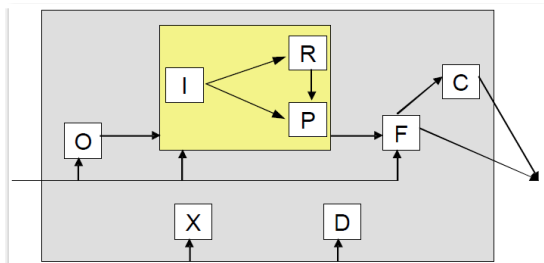 - *A result is confirmed and available for the report, but it is not verified*
- OBX|8|NM|82310^CALCIUM^GH|8|10.1|MG/DL||<?>|||**C**|||20171102125500|FM
  - *A result is validated and verified as a final value for the report*

> ORBX-11 = |C|
> OBR-25 = |C|
> ORC-5 = |CM|

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Clinical validation of results — OUL or ORU, Result status **P** — ACK, (applicative ack...)

Correction of results previously sent as clinically validated — OUL or ORU, Result status **C** — ACK, (applicative acknowledgement)

CP…
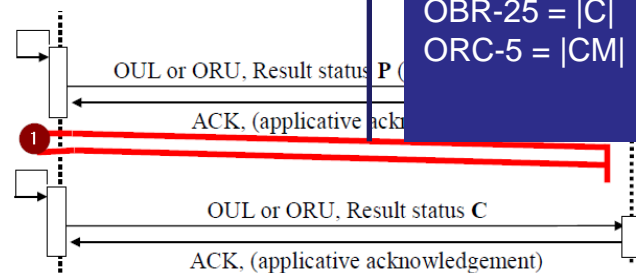
- Replace the meaning of "C"
    - Old : C: Correction after final result. Result still final and verified.
   - New (as in HL7 2.7 definition):

C	Record coming over is a correction and thus replaces a final result

    - Check if OBX-5 can be || when OBX-11 = |C| ?

    - Value C, to indicate that at least one result contained in one of the following OBX segments has been modified after the results have been transmitted with the F status. This C value should never be used before results have been transmitted with the F status. Since a Corrected result is supposed to be clinically validated, the identity of the clinical expert should be indicated in the OBR-32 field when the value of the Result Status is C.

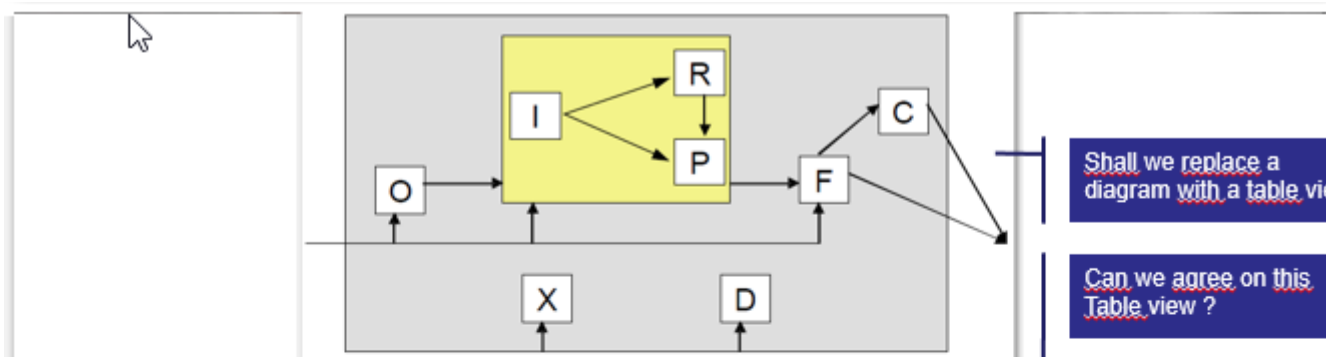- Change the diagram to use Status "O" for the first message
    - Replace "S" with "O"
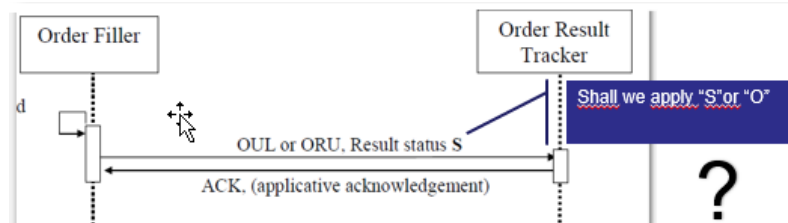
CP…

- Change the diagram (make it more comprehensive)

Shall we replace a diagram with a table view?

Can we agree on this Table view?

The status diagram in Figure C.10.2.3-1 above shows that, during normal processing, the initial status code in OBX-11 will be O, F, or one of the three codes shown in the center block. If the status code equals I, the next status code could be either I, R, P or F. If the status code equals P, the next status code could be either F or P.

The special status codes X (Result cannot be obtained for this observation) and D may occur at any stage of processing.

OBX-11 (Existing Result / Previous message)		OBX-11 (new Result / new message)							
		O	I	R	P	F	C	X	D
O	Order detail description only. No Result	S	A	A	A	A	A	A	A
I	Specimen in lab, results pending		S	A	A	A	A	A	A
R	Result entered, not verified			S	A	A	A	A	A
P	Preliminary (partial) result verified				S	A	A	A	A
F	Final result verified					S	A	A	A
C	Correction after final result						S	A	A
X	Result cannot be obtained						A	S	A
D	Delete						A	A	S

CP…

- ??? ORC-5 correlated to OBR-25 OBX-11
- Add a row A / C / C : for none final corrected results
- Correct "(CM)" into "CM"

	HL7 Table 0038 - Order status	
Value	**Description**	
A	Some, but not all, results available	
CA	Order was canceled	
CM	Order is completed	
DC	Order was discontinued	

Table C.10.1-1: Summary of the 3 Relevant Reference Tables:

Order Table 0038 (ORC-5)	Request Table 0123 (OBR-25)	Result Table 0085 (OBX-11)	Description (combined from 3 tables)
	O	O	Order received; specimen not yet received. Order detail description only (OBX contains no result). This value should only be used in ORL event acknowledgment messages. It should not be used in OML messages.
SC	S		No results available; procedure scheduled, but not done. The specimen may not have arrived at the laboratory. No OBX is present
IP	I	I	In process; The specimen is available in the laboratory; results are pending; the procedure is incomplete
		D	Deletes the OBX record
A	R	R	(Some) results entered -- not yet verified
A	P	P	(Some) preliminary verified results: (technically validated in LAB-5, clinically validated in LAB-3). The final results are not yet obtained
CM	F	F	Final results; results stored and verified: (technically validated in LAB-5, clinically validated in LAB-3). Can only be changed with a corrected result.
(CM)	C	C	Record coming over is a correction and thus replaces a final result
CA	X	X	(OBX) Results cannot be obtained for this observation. (ORC/OBR) No results available; Order canceled.