

Figure 212: Referenced Frames Observation Example

```
<observation classCode="ROIBND" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.6.2.10"/>
  <code code="121190" codeSystem="1.2.840.10008.2.16.4" displayName="Referenced Frames"/>
  <entryRelationship typeCode="COMP">
    <!-- Boundary Observation -->
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.6.2.11"/>
      <code code="113036" codeSystem="1.2.840.10008.2.16.4" displayName="Frames for
Display"/>
      <value xsi:type="INT" value="1"/>
    </observation>
  </entryRelationship>
</observation>
```

3.92 Result Observation (V3)

[observation: identifier urn:hl7ii:2.16.840.1.113883.10.20.22.4.2:2015-08-01
(open)]

Table 457: Result Observation (V3) Contexts

Contained By:	Contains:
Health Concern Act (V2) (optional) Result Organizer (V3) (required) Risk Concern Act (V2) (optional)	Author Participation (optional)

This template represents the results of a laboratory, radiology, or other study performed on a patient. The result observation includes a statusCode to allow recording the status of an observation. “Pending” results (e.g., a test has been run but results have not been reported yet) should be represented as “active” ActStatus.

Table 458: Result Observation (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.2:2015-08-01)					
@classCode	1..1	SHALL		1198-7130	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		1198-7131	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		1198-7136	
@root	1..1	SHALL		1198-9138	2.16.840.1.113883.10.20.22.4.2
@extension	1..1	SHALL		1198-32575	2015-08-01
id	1..*	SHALL		1198-7137	
code	1..1	SHALL		1198-7133	urn:oid:2.16.840.1.113883.6.1 (LOINC)
statusCode	1..1	SHALL		1198-7134	
@code	1..1	SHALL		1198-14849	urn:oid:2.16.840.1.113883.11.20.9.39 (Result Status)
effectiveTime	1..1	SHALL		1198-7140	
value	1..1	SHALL		1198-7143	
interpretationCode	0..*	SHOULD		1198-7147	urn:oid:2.16.840.1.113883.1.11.78 (Observation Interpretation (HL7))
methodCode	0..1	MAY	SET<CE>	1198-7148	
targetSiteCode	0..1	MAY	SET<CD>	1198-7153	
author	0..*	SHOULD		1198-7149	Author Participation (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119)
referenceRange	0..*	SHOULD		1198-7150	
observationRange	1..1	SHALL		1198-7151	
code	0..0	SHALL NOT		1198-7152	
value	1..1	SHALL		1198-32175	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6 **STATIC**) (CONF:1198-7130).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001 **STATIC**) (CONF:1198-7131).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:1198-7136) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.2"** (CONF:1198-9138).
 - b. **SHALL** contain exactly one [1..1] **@extension="2015-08-01"** (CONF:1198-32575).
4. **SHALL** contain at least one [1..*] **id** (CONF:1198-7137).
5. **SHALL** contain exactly one [1..1] **code**, which **SHOULD** be selected from CodeSystem LOINC (urn:oid:2.16.840.1.113883.6.1) (CONF:1198-7133).
 - a. This code **SHOULD** be a code from the LOINC that identifies the result observation. If an appropriate LOINC code does not exist, then the local code for this result **SHALL** be sent (CONF:1198-19212).
6. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1198-7134).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet [Result Status](#) urn:oid:2.16.840.1.113883.11.20.9.39 **STATIC** (CONF:1198-14849).
7. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1198-7140).
Note: Represents the clinically relevant time of the measurement (e.g., the time a blood pressure reading is obtained, the time the blood sample was obtained for a chemistry test).
8. **SHALL** contain exactly one [1..1] **value** (CONF:1198-7143).

NOTE: The base CDA R2.0 standard requires @unit to be drawn from UCUM, and best practice is to use case sensitive UCUM units

- a. If Observation/value is a physical quantity (**xsi:type="PQ"**), the unit of measure **SHOULD** be selected from ValueSet **UnitsOfMeasureCaseSensitive** urn:oid:2.16.840.1.113883.1.11.12839 **DYNAMIC** (CONF:1198-31484).
 - b. A coded or physical quantity value **MAY** contain zero or more [0..*] translations, which can be used to represent the original results as output by the lab (CONF:1198-31866).
 - c. If Observation/value is a CD (**xsi:type="CD"**) the value **SHOULD** be SNOMED-CT (CONF:1198-32610).
9. **SHOULD** contain zero or more [0..*] **interpretationCode**, which **SHALL** be selected from ValueSet [Observation Interpretation \(HL7\)](#) urn:oid:2.16.840.1.113883.1.11.78 **DYNAMIC** (CONF:1198-7147).
10. **MAY** contain zero or one [0..1] **methodCode** (CONF:1198-7148).
11. **MAY** contain zero or one [0..1] **targetSiteCode** (CONF:1198-7153).
12. **SHOULD** contain zero or more [0..*] [Author Participation](#) (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119) (CONF:1198-7149).
13. **SHOULD** contain zero or more [0..*] **referenceRange** (CONF:1198-7150).
 - a. The referenceRange, if present, **SHALL** contain exactly one [1..1] **observationRange** (CONF:1198-7151).
 - i. This observationRange **SHALL NOT** contain [0..0] **code** (CONF:1198-7152).

- ii. This observationRange **SHALL** contain exactly one [1..1] **value** (CONF:1198-32175).

Table 459: Observation Interpretation (HL7)

Value Set: Observation Interpretation (HL7) urn:oid:2.16.840.1.113883.1.11.78 (Clinical Focus: Codes specifying a rough qualitative interpretation of the observation, such as "normal", "abnormal", "below normal", "change up", "resistant", "susceptible", etc.), (Data Element Scope:), (Inclusion Criteria: all reportable codes in the code system ObservationInterpretation), (Exclusion Criteria: Collector codes in the code system) This value set was imported on 4/24/2019 with a version of 20190104. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.78/expansion			
Code	Code System	Code System OID	Print Name
<	ObservationInterpretation	urn:oid:2.16.840.1.113883.5.83	Off scale low
>	ObservationInterpretation	urn:oid:2.16.840.1.113883.5.83	Off scale high
A	ObservationInterpretation	urn:oid:2.16.840.1.113883.5.83	Abnormal
AA	ObservationInterpretation	urn:oid:2.16.840.1.113883.5.83	Critical abnormal
AC	ObservationInterpretation	urn:oid:2.16.840.1.113883.5.83	Anti-complementary substances present
B	ObservationInterpretation	urn:oid:2.16.840.1.113883.5.83	Better
CAR	ObservationInterpretation	urn:oid:2.16.840.1.113883.5.83	Carrier
Carrier	ObservationInterpretation	urn:oid:2.16.840.1.113883.5.83	Carrier
D	ObservationInterpretation	urn:oid:2.16.840.1.113883.5.83	Significant change down
DET	ObservationInterpretation	urn:oid:2.16.840.1.113883.5.83	Detected
...			

Figure 213: Result Observation (V3) Example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.2" extension="2015-08-01" />
  <id root="7c0704bb-9c40-41b5-9c7d-26b2d59e234f" />
  <code code="20570-8" displayName="Hematocrit" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" />
  <statusCode code="completed" />
  <effectiveTime value="200803190830-0800" />
  <value xsi:type="PQ" value="35.3" unit="%" />
  <interpretationCode code="L" codeSystem="2.16.840.1.113883.5.83" />
  <author>
    <time value="200803190830-0800" />
    <assignedAuthor>
      <id extension="333444444" root="1.1.1.1.1.1.4" />
      <addr>
        <streetAddressLine>1017 Health Drive</streetAddressLine>
        <city>Portland</city>
        <state>OR</state>
        <postalCode>99123</postalCode>
        <country>US</country>
      </addr>
      <telecom use="WP" value="tel:+1(555)555-1017" />
      <assignedPerson>
        <name>
          <given>William</given>
          <given qualifier="CL">Bill</given>
          <family>Beaker</family>
        </name>
      </assignedPerson>
      <representedOrganization>
        <name>Good Health Laboratory</name>
      </representedOrganization>
    </assignedAuthor>
  </author>
  <referenceRange>
    <observationRange>
      <text>Low</text>
      <value xsi:type="IVL_PQ">
        <low value="34.9" unit="%" />
        <high value="44.5" unit="%" />
      </value>
      <interpretationCode code="L" codeSystem="2.16.840.1.113883.5.83"/>
    </observationRange>
  </referenceRange>
</observation>
```

3.93 Result Organizer (V3)

[organizer: identifier urn:hl7ii:2.16.840.1.113883.10.20.22.4.1:2015-08-01
(open)]

Table 460: Result Organizer (V3) Contexts

Contained By:	Contains:
Health Concern Act (V2) (optional) Results Section (entries optional) (V3) (optional) Results Section (entries required) (V3) (required) Risk Concern Act (V2) (optional)	Author Participation (optional) Result Observation (V3) (required)

This template provides a mechanism for grouping result observations. It contains information applicable to all of the contained result observations. The Result Organizer code categorizes the contained results into one of several commonly accepted values (e.g., “Hematology”, “Chemistry”, “Nuclear Medicine”).

If any Result Observation within the organizer has a statusCode of "active", the Result Organizer must also have a statusCode of "active".