

NIST LOI Test Tool Implementation Decisions

This document clarifies conformance requirements and other aspects of the HL7 Version 2.5.1 Implementation Guide: **S&I Framework Laboratory Orders from EHR, Release 1 - US Realm (December 2013)** implementation guide (the LOI Implementation Guide or 'LOI IG'). This document does not specify additional requirements. Rather, it clarifies existing requirements given in the LOI IG. It also identifies areas where the LOI IG was ambiguous or contradictory for testing tool implementation.

Therefore, this document also lists the implementation decisions made by National Institute of Standards and Technology (NIST) during the creation of the NIST LOI Conformance Test Tool.

Decision Number	Message Element	Description	Decision
NIST_LOI-1	ORC-30	The table 'HL70482' referenced in LOI-35 conformance statement is wrong and should be 'HL70483'	LOI-35 is interpreted as following in the NIST LOI Test Tool for both context free and context based validations : LOI-35: If ORC.1 (Order Control) is valued 'OP' then ORC-16 (Order Control Code Reason) SHALL contain the value "Oral request confirmation" and ORC.30 (Enterer Authorization Mode) SHALL contain 'VO^Voice^HL70483'.
NIST_LOI-2	XPN-7 (PID-5, PID-6) XPN_1.7 (NK1-2, NK1-30, IN1-16, GT1-3) XCN_GU.10 & XCN_NG.10 (ORC-12, OBR-16, OBR-28, PRT-5)	The only values permitted by the guide in table HL70200 are 'L, S, U'. For the Public Health Profile Component the value 'M' (for maiden name) needs to be permitted in that table to use in PID.6.	The value 'M' is added to the LOI_HL70200 table.
NIST_LOI-3	OBR-4 OBX-3	The use of LOINC in OBR-4/OBX-3 is not a requirement since since local code may be sent when no valid orderable LOINC exists.	The NIST LOI Test Tool does not require the use of LOINC in OBR-4 and/or OBX-3 in the context free validation. For context based validation, the NIST Test Tool MAY require the use of LOINC in OBR-4 and/or OBX-3, based on the test objective.
NIST_LOI-4	OBR-4 OBX-3	The NIST LOI Test Tool is not validating OBR-4 and OBX-3 against the LOINC value set (decision NIST_LOI-3) . The tool still needs to be able to check that a provided code is valid when the LOINC code system is used.	The NIST Test Tool will validate any message against the following conformance statements in both context free and context based validation : NIST-8 : If OBR-4.3 (Name of Coding System) value is 'LN', OBR-4.1 (Identifier) SHALL be a valid LOINC code identifier format. NIST-9 : If OBR-4.6 (Name of Coding System) value is 'LN', OBR-4.4 (Identifier) SHALL be a valid LOINC code identifier format. NIST-10 : If OBX-3.3 (Name of Coding System) value is 'LN', OBX-3.1 (Identifier) SHALL be a valid LOINC code identifier format. NIST-11 : If OBX-3.6 (Name of Coding System) value is 'LN', OBX-3.4 (Identifier) SHALL be a valid LOINC code identifier format.
NIST_LOI-5	All TS flavors	The requirements on the TS flavors need to be implemented as conformance statements.	The NIST Test Tool will validate any message against the following conformance statements in both context free and context based validation : NIST-1 : TS_0 SHALL be precise to the year. NIST-2 : TS_1 SHALL be precise to the second. NIST-3 : TS_2 SHALL be precise to the year. NIST-4 : TS_3 SHALL be precise to the year. NIST-5 : TS_4 SHALL be precise to the day OR be valued '0000'. NIST-6 : TS_5 SHALL be precise to the day.

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NIST_LOI-6	XAD.5	The value set is listed as USPS postal code and the value set is just listed as zzzzz and zzzzz-zzzz. [not sure about that because there is no value set defined in the guide]	The following conformance statements were added in both context free and context based validation : NIST-7 : XAD.5 SHALL be a valid USPS postal code.
NIST_LOI-7	SPM-8	The content of the 'SNOMED' value set is not defined in the NIST LOI Test Tool.	The NIST LOI Test Tool tool will not perform validation against the SNOMED value set in both context free and context based validation. For context based validation, the NIST Test Tool MAY require the use of a particular SNOMED code in SPM-8, based on the test objectives.
NIST_LOI-8	DG1-3	The content of the 'ICD-9CM & ICD-10CM' value set is not defined in the NIST LOI Test Tool.	The NIST LOI Test Tool tool will not perform validation against the 'ICD-9CM & ICD-10CM' value set in both context free and context based validation. For context based validation, the NIST Test Tool MAY require the use of a particular 'ICD-9CM & ICD-10CM' code in DG1-3, based on the test objectives.
NIST_LOI-9	SPM-4	The content of the 'SNOMED & HL70487' value set is not defined in the tool.	The NIST LOI Test Tool tool will not perform validation against the 'SNOMED & HL70487' value set in both context free and context based validation. For context based validation, the NIST Test Tool MAY require the use of a particular 'SNOMED & HL70487' code in SPM-4, based on the test objectives.
NIST_LOI-10	IN1-2	The content of the 'HL70072 & HL70353' value set is not defined in the tool.	The NIST LOI Test Tool tool will not perform validation against the 'HL70072 & HL70353' value set in both context free and context based validation. For context based validation, the NIST Test Tool MAY require the use of a particular 'HL70072 & HL70353' code in IN1-2, based on the test objectives.
NIST_LOI-11	multiple message locations	The guide is silent on whether conformance statements applying to complex data element should also apply to underlying optional data elements.	For conformance statements that may apply on optional elements or sub elements, the NIST LOI Test tool will NOT enforce the checks on optional elements. For example : LOI-38 : The value of ORC-12 (Ordering Provider) SHALL be identical to the value of OBR-16 (Ordering Provider) within the same Order Group. ORC-12/OBR.16 have numerous components that are O (optional). A message that would have a value in ORC-12.4 (Second and Further Given Names or Initials Thereof) and no value or a different value in OBR-16.4 would NOT fail.
NIST_LOI-12	NK1-11	The condition predicate on NK1-11 is incomplete in the implementation guide.	The NIST LOI Test Tool will interpret the condition predicate as following : If NK1-7.1 (Contact Role.Identifier) is 'E' (employer).
NIST_LOI-13	ORC-26	The condition predicate on ORC-26 is incomplete in the implementation guide.	The NIST LOI Test Tool will interpret the condition predicate as following : If ORC-20.1 (Advanced Beneficiary Notice Code.Identifier) is valued '4'.

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NIST_LOI-14	Optional Coded elements (CE, CWE, CNE datatypes)	The LOI NIST Test Tool uses the the HL7 tables defined in the standard to validate optional (O) data elements. However, HL70396 is a dynamic table and therefore the NIST LOI Test Tool should not use a static version of that table.	The online version of HL7 table HL70396 will be used to validate optional fields. http://www.hl7.org/special/committees/vocab/table_0396/index.cfm
NIST_LOI-15	INSURANCE group condition predicate DG1 condition predicate PID-11 condition predicate LOI-29 conformance statement LOI-30 conformance statement	The condition predicate and conformance statements based on PV1-20 are incomplete in the implementation guide.	All the predicates and conformance statements based on PV1-20 will be interpreted by the NIST LOI Test Tool as referring to PV1-20.1 (Financial Class.Financial Class Code) instead of PV1-20 (Financial Class).
NIST_LOI-16	PRT-1	The implementation guide lists PRT-1 datatype as EI.	The NIST LOI Test Tool is validating PRT-1 as followed, in both context free and context based validation : - PRT-1 will be validated as EI_GU in all GU profiles. - PRT-1 will be validated as EI_NG in all NG profiles.
NIST_LOI-17	MSH-21	The implementation guide does not specify the MSH-21 requirements as conformance statement for optional profile components.	The NIST Test Tool will validate any message against the following conformance statement in both context free and context based validation, for the PH (Public Health) profile : NIST-12 : An occurrence of MSH-21 (Message Profile Identifier) SHALL be valued with '2.16.840.1.113883.9.94' (LOI_PH_Component).
NIST_LOI-18	MSH-21	The implementation guide does not specify the MSH-21 requirements as conformance statement for optional profile components.	The NIST Test Tool will validate any message against the following conformance statement in both context free and context based validation, for the FI (Financial Information) profile : NIST-13 : An occurrence of MSH-21 (Message Profile Identifier) SHALL be valued with '2.16.840.1.113883.9.80' (LAB_FI_Component).
NIST_LOI-19	DG1-3	The NIST LOI Test Tool does not perform validation against the 'ICD-9CM & ICD-10CM' value set (implementation choice #NIST_LOI-8).	The NIST Test Tool will validate any message against the following conformance statement in both context free and context based validation : NIST-14 : Either DG1-3.3 (Diagnosis Code - DG1.Name of Coding System) or DG1-3.6 (Diagnosis Code - DG1.Name of Alternate Coding System) SHALL be valued 'I9C' or 'I10C'.
NIST_LOI-20	SPM-4	The NIST LOI Test Tool does not perform validation against the 'SCT & HL70487' value set (implementation choice #NIST_LOI-9). The following conformance statement was added to ensure the SCT or HL70487 code system is used in the element SPM-4.	The NIST Test Tool will validate any message against the following conformance statement in both context free and context based validation : NIST-15 : When present, either SPM-4.3 (Specimen Type.Name of Coding System) or SPM-4.6 (Specimen Type.Name of Alternate Coding System) SHALL be valued 'SCT' or 'HL70487'.