

SYNTACTIC ORDERING OF HL SEGMENTS

Request

The submitted request for interpretation asks whether the syntactic ordering of a set of HL segments must parallel the semantic ordering of the hierarchy the segments define.

X12 Standards

The documents relevant to this interpretation are:

- | | | |
|--------|---|---------------------|
| X12.1 | Transaction Set Directory
TS 837 Health Care Claim | Version 4 Release 5 |
| X12.22 | Segment Directory
Segment BHT Beginning of Hierarchical Transaction
Segment HL Hierarchical Level | Version 4 Release 5 |
| X12.3 | Data Element Dictionary
DE 628 Hierarchical ID Number
DE 734 Hierarchical Parent ID Number
DE 735 Hierarchical Level Code
DE 736 Hierarchical Child Code
DE 1005 Hierarchical Structure Code | Version 4 Release 5 |
| X12.6 | Application Control Structure | Version 4 Release 5 |

Interpretation

The Standards relevant to this interpretation vary in their scope.

X12.6 is applicable across all X12 Transaction Set Standards.

X12.22 is applicable across each X12 Transaction Set Standard defined in X12.1, to the extent that a given Transaction Set references specific segments defined in X12.22.

X12.3 is applicable across each Transaction Set Standard defined in X12.1, to the extent that a given Transaction Set references segments containing specific data element references.

X12.1 is applicable to individual Transaction Set Standards.

X12.6 imposes specific syntactic ordering of segments in a transaction set to facilitate the parsing of a transaction set instance and its association with its related semantics as expressed within a specific X12 Transaction Set Standard. The constraint X12.6 imposes on segment order does not extend to semantic ordering within a repeating set of segments.

The X12C Communications and Controls Subcommittee concludes that X12.6 does not constrain the order in which instances of the HL segment must occur.

X12.22 Segment BHT is used “To define the business hierarchical structure of the transaction set and identify the business application purpose and reference data, i.e., number, date, and time”. The X12J Technical Assessment Subcommittee observes that the term “business hierarchical structure” does not impose specific constraints on the syntactic ordering of hierarchical data. The BHT segment requires the presence of Data Element 1005 Hierarchical Structure Code.

Data Element 1005 Hierarchical Structure Code is the “Code indicating the hierarchical application structure of a transaction set that utilizes the HL segment to define the structure of the transaction set.”

An example of a code that might appear in the Hierarchical Structure Code of a Health Care Claim is:

Code 0085 Information Source, Information Receiver, Provider of Service, Patient.

In the definition of this data element, the phrase “hierarchical application structure” uses terminology also used in X12.6 “Application Control Structure”. The X12J Subcommittee responsible for maintenance of this data element concludes that the phrase “hierarchical application structure” does not constrain the syntactic ordering of a sequence of Hierarchical Level segments to the ordering specified by the code value provided in Data Element 1005 Hierarchical Structure Code.

X12.22 Segment HL is used “To identify dependencies among and the content of hierarchically related groups of data segments”. The X12J Technical Assessment Subcommittee concludes that the word ‘identify’ used in the segment definition is not sufficient to constrain order of HL segments within a transaction set instance.

Comments associated with the HL segment:

X12.22 Segment HL Hierarchical Level content fields 01, 02 and their associated comments provide the means to relate subordinate data to its parent HL segment. While the information provided in these fields is sufficient to determine these parent/child relationships regardless of segment order, it is not sufficient of itself to specify the context of the related data. Business context is provided in the BHT segment (DE 1005), whereas field 03, Hierarchical Level Code provides a link between business context and syntax.

The comment to HL03 Hierarchical Level Code states:

HL03 indicates the context of a series of segments following the current HL segment up to the next occurrence of an HL segment in the transaction. For example, HL03 is used to indicate that subsequent segments in the HL loop form a logical grouping of data referring to shipment, order, or item-level information.

It is clear from this comment that the context linkage between subordinate data and a specific HL segment requires that subordinate data immediately follow the HL segment to which it is subordinate.

None of the fields of the HL Hierarchical Level segment provide a linkage between the syntax of a document instance and the ‘hierarchical application structure’ provided in DE 1005 Hierarchical Structure Code provided in the BHT segment. If only single hierarchical tree threads were supported by the HL segment, it would be possible to construct the thread from the instance data, and then, from the instance thread, associate the data with the ‘hierarchical application structure’. While none of the existing code values in DE 1005 appear to define a multi-threaded hierarchical structure, the definition of the HL segment does not exclude such a structure.

The X12J Technical Assessment Subcommittee determines that an intent of the HL segment is not to express multiple threaded hierarchies.

Within a set of peer HL segments, the referenced standards do not impose a sequencing requirement.

X12.1 Transaction Set 837 Health Care Claim provides no specific constraints on the ordering of hierarchical data. Supplementary material prepared during development of this transaction set is silent on this matter.

Please note that an Implementation Guide may impose further constraints upon the ordering of segments within a transaction set, consistent with constraints imposed by the X12 Standards.