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# ISBT 128 Standard for XML

## Electronic Messaging - Standardized XML Elements for Medical Products of Human Origin

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Version 1.2.0

**April 2025**

Tracking Number ICCBBA ST-020

ISBN-13: 978-1-957177-18-2



Published by:  
ICCBBA

PO Box 11309, San Bernardino, CA 92423-1309 USA

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# 1 Introduction

## 1.1 Purpose

The purpose of this standard is to provide specifications of XML elements for use in electronic messages in order to provide information regarding MPHO in a consistent and standardized format.

Throughout this document where the word “shall” is used, it represents a requirement; where the word “should” is used, it represents a recommendation; and where the word “may” is used, it represents an option.

## 1.2 Scope

This standard provides rules for the construction of XML elements that meet the ISBT 128 Standard. These elements are for the purpose of transferring information related to MPHO. The standard does not address the messages in which these elements may appear. Information held in the XML element uses ISBT 128 coding as specified in the ISBT 128 Technical Specification and data elements are referenced using their globally uniform resource identifier (URI) as assigned by ICCBBA.

## 1.3 Intended Audience

The intended audience of this document is developers of systems generating and interpreting electronic messages and organizations with an interest in sending and receiving information on MPHO.

## 1.4 Normative Reference

*ISBT 128 Standard Technical Specification* ([ST-001](#))

*ISBT 128 Standard ISBT 128 Dictionary of Standard Data Elements* ([ST-027](#))

## 1.5 Other Reference

[Reference Table RT042](#) – ISBT 128 Data References for use in Electronic Messages

## 1.6 Changes in the Version

The following table indicates the changes between Version 1.1.0 and Version 1.2.0.

Version Control: Version 1.1.0 vs. Version 1.2.0

	Version 1.1.0	Version 1.2.0	Change	Rationale
1.	Copyright	Copyright	Provided an updated copyright statement	Per legal recommendations
2.	Standards Committee	Standards Committee	Updated the Standards Committee list with its current members	New members
3.	1.4	1.4	Added hyperlinks to the referenced ICCBBA publications Added ST-027	User friendliness and for completeness
4.	1.5	1.5	Added hyperlink and reference to ICCBBA reference table RT042	User friendliness and for completeness
5.	5	5	Added additional sub-elements to table	For consistency with the sub-elements displayed in RT042
6.	6.1	6.1	Updated the sample XML message so the PDC within the MPHOUUniqueIdentifier is E0001	For consistency within the ISBT 128 Standard
7.	6.1	6.1	Updated the sample XML message so the DIN assignment year within MPHOU Unique Identifier is 20	For consistency with the collection date sub-element in the same message
8.	6.1	6.1	Updated the sample XML message so the assignment year within the DIN is 20	For consistency with other sub-elements in the same message.
9.	6.2	6.2	Added additional sub-elements to XML example message	For consistency with the sub-elements displayed in section 5
10.	7	7	Added additional sub-elements to XML schema	For consistency with the sub-elements displayed in section 5
11.	8	8	Added additional sub-elements to table.	For consistency with the sub-elements displayed in RT042

	Version 1.1.0	Version 1.2.0	Change	Rationale
12.	Chapter, Section, Table, or Figure	Chapter, Section, Table, or Figure End of Document	Added a reference page for internal ICCBBA use only	To facilitate document control

## 2 ISBT 128 Data Elements and Uniform Resource Identifiers

ISBT 128 traditionally provides standard data structures for use in bar coding. These data structures may carry a single piece of information, or several pieces of information. In addition, one piece of information may occur in more than one data structure.

For example:

- Data Structure 018 contains a single data element, the container lot number;
- Data Structure 001 contains two data elements, the donation identification number and the flag characters;
- the division number of a product may appear in Data Structure 003 or in Data Structure 032.

For the purposes of electronic messaging it is necessary to unambiguously identify each of the pieces of information (data elements). This has previously been achieved by using globally unique object identifiers (OIDs) as a uniform resource identifier (URI). ICCBBA assigns OID identifiers in accordance with the global registration process established by the International Standards Organization (ISO) and the International Telecommunications Union (ITU). ICCBBA has been assigned an OID via HL7 (2.16.840.1.113883.6.18) and all ICCBBA assigned OIDs are sub-nodes of this OID. ICCBBA uses the numeric dot notation to represent OIDs.

More recently there has been a move to replace the OID notation with a URL as a URI. This is the preferred format of URI for HL7 FHIR messages. In order to accommodate this change ICCBBA has assigned a URL to each data element used in standard electronic message elements. The URL root <https://www.isbt128.org/uri> will be used with the XML tag as the identifier for each data element. Thus, for the element identified by XML tag `DonationIdentificationNumber` the corresponding URL will be <https://www.isbt128.org/uri/DonationIdentificationNumber>. The URL will resolve to a web page describing the data element resource.

ICCBBA Reference Table RT042 is the ISBT 128 URI registry and defines each URL and OID that has been assigned by ICCBBA. This table specifies the information held in the resource and maps it to the corresponding ISBT 128 data structures and reference tables. ISBT 128 provides URLs for individual data elements, and OIDs for individual data elements and also for full ISBT 128 data structures.



### 3 ISBT 128 XML Elements

ISBT 128 XML elements are defined as stand-alone elements that can be incorporated into a variety of messages and each element has its own namespace URL. Each standardized element is a complex type with sub-elements designed to support communication of a specific data set.

Sub-elements shall consist of XML elements with attributes of identifier and value. Each of these sub-elements shall be identified using an XML tag as referenced in RT042.

The identifier attribute shall be populated with the uniform resource identifier (URI) of the data item using the URL as referenced in RT042.

The value attribute shall be populated with the corresponding data value.

The format of the data in the value attribute shall comply with the specification in RT042.

When interpreting a standard message the URL shall be used as the definitive reference.

Examples of sub-elements:

The following sub-element carries the Donation Identification Number:

```
<DonationIdentificationNumber  
Identifier="https://www.isbt128.org/uri/DonationIdentificationNumber"  
value="W000018123456"/>
```

The element tag is: DonationIdentificationNumber

The uniform resource identifier is <https://www.isbt128.org/uri/DonationIdentificationNumber>

The value is: W000018123456

The following sub-element carries a Product Description Code:

```
<ProductDescriptionCode  
Identifier="https://www.isbt128.org/uri/ProductDescriptionCode" value="E0001"/>
```

The element tag is: ProductDescriptionCode

The uniform resource identifier is <https://www.isbt128.org/uri/ProductDescriptionCode>

The value is: E0001

## 4 Schema Definition

ICCBBA provides an XML schema definition (.xsd) for each standard element. The xsd provides an approved structure for the element identifying the sub-elements that may occur in the element, the order of appearance, the cardinality, and some format verification. The schema also verifies that the URI in the identifier attribute is the correct one for the tag. Messages incorporating ICCBBA standard elements should be verified against the relevant schema definition.

## 5 The MPHOP Product XML Element

The MPHOP Product element is intended to provide the data set associated with a single MPHOP Product for transfer from the processor to healthcare organization (e.g., from blood center to hospital blood bank). It incorporates all of the information traditionally carried in bar codes on the product label together with the opportunity to include further product specific information. It could form a repeating element in a dispatch note message with one occurrence for each product in the dispatch, or could be used as a response to an API request for information on a specific product.

The MPHOP Product element shall be identified using the tag <MPHOPProduct> and the default namespace shall be specified using xmlns="https://www.isbt128.org/uri/MPHOPProduct"

The sub-elements of this XML element are as shown below:

Tag	Cardinality	XML Type
MPHOUUniqueIdentifier	1	String
DonationIdentificationNumber	1	String
FlagCharacters	0..1	String
CollectionDateTime	0..1	dateTime
ABORhD	0..1	String
ProductDescriptionCode	1	String
CollectionType	0..1	String
DivisionIdentifier	1	String
ProductionDateTime	0..1	dateTime
ExpirationDateTime	0..1	dateTime
ContainerManufacturerID	0..1	String
ContainerCatalogNo	0..1	String
ContainerLotNo	0..1	String
ProcessorFIN	0..1	String
FacilityProductCode	0..1	String
SingleEuropeanCode	0..1	String
GRID	0..1	String
TTIResults	0..1	String
RedCellAntigen	0..unbounded	String
SpecialTestCode	0..unbounded	String
PlateletHLAandAg	0..1	String
Dimension	0..unbounded	String
ChainOfIdentityIdentifier	0..1	String
ProcessorProductIdentificationCode	0..1	String
ProductConsignment	0..1	String
HPAType	0..1	String
TTIStatus	0..1	Integer

The MPHOPProduct element shall contain, as a minimum, the sub-elements:

- MPHOUUniqueIdentifier
- DonationIdentificationNumber
- ProductDescriptionCode
- DivisionIdentifier

An example MPHOPProduct element is shown in Appendix A and the corresponding schema is in Appendix B.

When mapping information from ISBT 128 data structures into an MPHOPProduct XML Element the mapping provided in Appendix C shall be followed.

The schema for the MPHOPProduct XML Element is MPHOPProduct.xsd (see Appendix B) and is available to download from the ICCBBA website (<https://www.isbt128.org/uri>).

## 6 Appendix A Sample MPHOPProduct XML Elements

### 6.1 Example XML Message

An example message is shown below. (Some optional fields have been omitted.)

```
<?xml version="1.0" encoding="UTF-8"?>
<MPHOPProduct xsi:schemaLocation="https://www.isbt128.org/MPHOPProductXSD">
  <MPHOUUniqueIdentifier Identifier="https://www.isbt128.org/uri/MPHOUUniqueIdentifier"
    value="W9999E0001W000020123456A00000"/>
  <DonationIdentificationNumber Identifier="https://www.isbt128.org/uri/DonationIdentificationNumber" value="W000020123456"/>
  <CollectionDateTime Identifier="https://www.isbt128.org/uri/CollectionDateTime" value="2020-03-02T14:49:32-06:00"/>
  <ABORhD Identifier="https://www.isbt128.org/uri/ABORhD" value="62"/>
  <ProductDescriptionCode Identifier="https://www.isbt128.org/uri/ProductDescriptionCode" value="E0001"/>
  <CollectionType Identifier="https://www.isbt128.org/uri/CollectionType" value="V"/>
  <DivisionIdentifier Identifier="https://www.isbt128.org/uri/DivisionIdentifier" value="A00000"/>
  <ExpirationDateTime Identifier="https://www.isbt128.org/uri/ExpirationDateTime" value="2020-03-02T20:49:32"/>
  <ContainerManufacturerID Identifier="https://www.isbt128.org/uri/ContainerManufacturerID" value="IC"/>
  <ContainerCatalogNo Identifier="https://www.isbt128.org/uri/ContainerCatalogNo" value="0027QZE"/>
  <ContainerLotNo Identifier="https://www.isbt128.org/uri/ContainerLotNo" value="0000123456"/>
  <ProcessorFIN Identifier="https://www.isbt128.org/uri/ProcessorFIN" value="W9999"/>
  <TTIResults Identifier="https://www.isbt128.org/uri/TTIResults" value="34441400000000000000"/>
  <RedCellAntigen Identifier="https://www.isbt128.org/uri/RedCellAntigen" value="0040020204"/>
  <RedCellAntigen Identifier="https://www.isbt128.org/uri/RedCellAntigen" value="0040040104"/>
  <RedCellAntigen Identifier="https://www.isbt128.org/uri/RedCellAntigen" value="0040030104"/>
  <RedCellAntigen Identifier="https://www.isbt128.org/uri/RedCellAntigen" value="0040050204"/>
  <RedCellAntigen Identifier="https://www.isbt128.org/uri/RedCellAntigen" value="0060010103"/>
</MPHOPProduct>
```

### 6.2 Example XML Message Containing All Fields

A test message containing all fields of the MPHOPProduct XML Element is shown below. (Note: This message is for illustration of the message structure only. It does not correspond to any MPHOP product and field data may be contradictory.)

```
<?xml version="1.0" encoding="UTF-8"?>
<MPHOPProduct xsi:schemaLocation="https://www.isbt128.org/MPHOPProductXSD">
  <MPHOUUniqueIdentifier Identifier="https://www.isbt128.org/uri/MPHOUUniqueIdentifier"
    value="00000T0000A999920123456000001"/>
  <DonationIdentificationNumber Identifier="https://www.isbt128.org/uri/DonationIdentificationNumber" value="A999920123456"/>
  <FlagCharacters Identifier="https://www.isbt128.org/uri/FlagCharacters" value="01"/>
  <CollectionDateTime Identifier="https://www.isbt128.org/uri/CollectionDateTime" value="2020-02-27T20:49:00"/>
  <ABORhD Identifier="https://www.isbt128.org/uri/ABORhD" value="62"/>
  <ProductDescriptionCode Identifier="https://www.isbt128.org/uri/ProductDescriptionCode" value="T0000"/>
  <CollectionType Identifier="https://www.isbt128.org/uri/CollectionType" value="V"/>
  <DivisionIdentifier Identifier="https://www.isbt128.org/uri/DivisionIdentifier" value="000001"/>
  <ProductionDateTime Identifier="https://www.isbt128.org/uri/ProductionDateTime" value="2020-02-28T20:49:00"/>
  <ExpirationDateTime Identifier="https://www.isbt128.org/uri/ExpirationDateTime" value="2020-03-02T20:49:00"/>
  <ContainerManufacturerID Identifier="https://www.isbt128.org/uri/ContainerManufacturerID" value="IC"/>
  <ContainerCatalogNo Identifier="https://www.isbt128.org/uri/ContainerCatalogNo" value="1239873"/>
  <ContainerLotNo Identifier="https://www.isbt128.org/uri/ContainerLotNo" value="0000A19453"/>
  <ProcessorFIN Identifier="https://www.isbt128.org/uri/ProcessorFIN" value="00000"/>
  <FacilityProductCode Identifier="https://www.isbt128.org/uri/FacilityProductCode" value="000024"/>
  <SingleEuropeanCode Identifier="https://www.isbt128.org/uri/SingleEuropeanCode"
    value="XX001234A999920123456A00T000000120200302"/>
  <GRID Identifier="https://www.isbt128.org/uri/GRID" value="9991012070433201632"/>
  <TTIResults Identifier="https://www.isbt128.org/uri/TTIResults" value="34441400000000000000"/>
  <RedCellAntigen Identifier="https://www.isbt128.org/uri/RedCellAntigen" value="0040020204"/>
```

```
<RedCellAntigen Identifier="https://www.isbt128.org/uri/RedCellAntigen" value="0040040104"/>
<RedCellAntigen Identifier="https://www.isbt128.org/uri/RedCellAntigen" value="0040030104"/>
<RedCellAntigen Identifier="https://www.isbt128.org/uri/RedCellAntigen" value="0040050204"/>
<RedCellAntigen Identifier="https://www.isbt128.org/uri/RedCellAntigen" value="0060010103"/>
<SpecialTestCode Identifier="https://www.isbt128.org/uri/SpecialTestCode" value="N0109"/>
<SpecialTestCode Identifier="https://www.isbt128.org/uri/SpecialTestCode" value="N0003"/>
<PlateletHLAandAg Identifier="https://www.isbt128.org/uri/PlateletHLAandAg" value="0299079939999999"/>
<Dimension Identifier="https://www.isbt128.org/uri/Dimension" value="01000200010000"/>
<ChainOfIdentityIdentifier Identifier="https://www.isbt128.org/uri/ChainOfIdentityIdentifier" value="CHA999920123456"/>
<ProcessorProductIdentificationCode Identifier="https://www.isbt128.org/uri/ProcessorProductIdentificationCode"
  value="A9999AB1234T1234"/>
<ProductConsignment Identifier="https://www.isbt128.org/uri/ProductConsignment" value="A9991221234560103"/>
<HPAType Identifier="https://www.isbt128.org/uri/HPAType" value="0106HPA-1a"/>
<TTIStatus Identifier="https://www.isbt128.org/uri/TTIStatus" value="01002"/>
  </MPHOPProduct>
```

## 7 Appendix B MPHOPProduct Schema

The MPHOPProduct schema is shown below. The above example messages comply with this schema. Note that the schema enforces cardinality (minOccurs and maxOccurs attributes) and verifies that the correct URI has been allocated to each tag (fixed attribute). It does not verify that the data values comply with the specification of the resource.

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema attributeFormDefault="unqualified" elementFormDefault="qualified" xmlns="http://www.w3.org/2001/XMLSchema"
targetNamespace="https://www.isbt128.org/MPHOPProductXSD">
<xs:element name="MPHOPProduct">
<xs:complexType>
<xs:sequence>
<xs:element name="MPHOUUniqueIdentifier">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/MPHOUUniqueIdentifier"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="DonationIdentificationNumber">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/DonationIdentificationNumber"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="FlagCharacters" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/FlagCharacters"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="CollectionDateTime" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/CollectionDateTime"/>
<xs:attribute type="xs:dateTime" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="ABORhD" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/ABORhD"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="ProductDescriptionCode">
<xs:complexType>
```

```

<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/ProductDescriptionCode"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="CollectionType" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/CollectionType"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="DivisionIdentifier">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/DivisionIdentifier"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="ProductionDateTime" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/ProductionDateTime"/>
<xs:attribute type="xs:dateTime" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="ExpirationDateTime" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/ExpirationDateTime"/>
<xs:attribute type="xs:dateTime" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="ContainerManufacturerID" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/ContainerManufacturerID"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="ContainerCatalogNo" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/ContainerCatalogNo"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="ContainerLotNo" minOccurs="0">
<xs:complexType>

```



```

<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/ContainerLotNo"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="ProcessorFIN" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/ProcessorFIN"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="FacilityProductCode" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/FacilityProductCode"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="SingleEuropeanCode" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/SingleEuropeanCode"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="GRID" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/GRID"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="TTIResults" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/TTIResults"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="RedCellAntigen" maxOccurs="unbounded" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/RedCellAntigen"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="SpecialTestCode" maxOccurs="unbounded" minOccurs="0">
<xs:complexType>

```

```

<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/SpecialTestCode"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="PlateletHLAandAg" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/PlateletHLAandAg"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="Dimension" maxOccurs="unbounded" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/Dimension"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="ChainOfIdentityIdentifier" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/ChainOfIdentityIdentifier"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="ProcessorProductIdentificationCode" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/ProcessorProductIdentificationCode"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="ProductConsignment" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/ProductConsignment"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="HPAType" minOccurs="0">
<xs:complexType>
<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/HPAType"/>
<xs:attribute type="xs:string" name="value"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="TTIStatus" minOccurs="0">
<xs:complexType>

```

```
<xs:simpleContent>  
<xs:extension base="xs:string">  
<xs:attribute type="xs:string" name="Identifier" fixed="https://www.isbt128.org/uri/TTIStatus"/>  
<xs:attribute type="xs:integer" name="value"/>  
</xs:extension>  
</xs:simpleContent>  
</xs:complexType>  
</xs:element>  
</xs:sequence>  
</xs:complexType>  
</xs:element>  
</xs:schema>
```

## 8 Appendix C Mapping from ISBT 128 Data Structures to XML Sub-elements

Data Structure	DataStructure Data	Data Element	XML map	Notes	XML data
1	A99992012345601	DIN Flags	DonationIdentificationNumber FlagCharacters		A999920123456 01
2	62S0	ABO/Rh Rh K Mia/Mur	ABORhD RedCellAntigen		62 0060010106
3	E4306VA0	PDC Collection Type Divisions	ProductDescriptionCode CollectionType DivisionIdentifier		E4306 V A00000
4	020032	Expiration Date	ExpirationDateTime		2020-02-01
5	0200321445	Expiration Date and Time	ExpirationDateTime		2020-02-01T14:45:00
6	020032	Collection Date	CollectionDateTime		2020-02-01
7	0200321445	Collection Date and Time	CollectionDateTime		2020-02-01T14:45:00
8	020032	Production Date	ProductionDateTime		2020-02-01
9	0200321445	Production Date and Time	ProductionDateTime		2020-02-01T14:45:00
10	N0130	Special Testing Codes	SpecialTestCode	Repeating field. Where a special testing code encodes multiple pieces of information, it should be resolved to individual values. Thus N0131="High titer antibody to either the A or B antigen present; Test for Zika virus negative" resolves to	N0109 N0127

	N0008	Special Testing Codes (CMV)	TTIResults	N0109 (High titer antibody to either A or B antigens present) and N0127 (Test for Zika virus negative)	000001000000000000
12	6799999999999999999  99999999999999199 99999999999999996 99999999999999998	Red Blood Cell Antigens  CMV HbS Negative IgA deficient	RedCellAntigen  TTIResults SpecialTestCode SpecialTestCode	Repeating field. Each antigen result has its own entry in the message.	0040020106 0040040206 0040030206 0040050106 0060010106 0060020206  000001000000000000 N0106 N0003
13	6799999999999999999  99999999999999998	Red Blood Cell Antigens  IgA deficient	RedCellAntigen  SpecialTestCode	Repeating field, each antigen result has its own entry in the message.	0040020106 0040040206 0040030206 0040050106 0060010106 0060020206  N0003
14	029907993999999101  000000003999999900	Platelet HLA and Antigens CMV High titer anti-A and B status HPA Type	PlateletHLAandAg TTIResults SpecialTestCode HPAType		02990799399999999 000001000000000000 N0124 0106HPA-1a
17	1BA1239873	Manufacturer code Catalog Number	ContainerManufacturerID ContainerCatalogNo		BA 1239873
18	0000A19453	Container Lot No	ContainerLotNo		0000A19453
27	321415000000000000	TTI Marker	TTIResults		321415000000000000
28	A9991221234560103	Product Consignment	ProductConsignment		A9991221234560103
29	020100020001000001000300002000	Dimensions	Dimension	Repeating field	010002000100 010003000020
30	003006001010400700101040070020104	Red Cell Antigens with test history	RedCellAntigen	Repeating field, each antigen result has its own entry in	0060010104 0070010104 0070020104

				the message.	
31	2001202009301500 2002202009301500 2003202009301500	Flexible Date and Time - Expiry Flexible Date and Time - Collection Flexible Date and Time - Production	ExpirationDateTime CollectionDateTime ProductionDateTime		2020-09-30T15:00:00Z 2020-09-30T15:00:00Z 2020-09-30T15:00:00Z
32	001932	Product Divisions	DivisionIdentifier		001932
33	A9999193211	Processing Facility Identification Number Facility Defined Product Code	ProcessorFIN FacilityProductCode		A9999 193211
34	A9999193211T1234	Processing Facility Identification Number Facility Defined Product Code Product Description Code	ProcessorFIN FacilityProductCode ProductDescriptionCode		A9999 193211 T1234
38	GB123456A999920123456A00T123401220200930	SEC	SingleEuropeanCode		GB123456A999920123456A00T123401220200930
39	9991012070433201632	GRID	GRID		9991012070433201632
40	CHA999922ABC123	Chain of Identity Identifier	ChainOfIdentityIdentifier		CHA999922ABC123

**END OF PUBLICATION**

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These links are for internal document control and cannot be used externally:

[ST-001 ISBT 128 Standard Technical Specification](#)

[ST-027 ISBT 128 Dictionary of Standard Data Elements](#)