NATIONAL BLOOD AUTHORITY
AUSTRALIA

BLOODNET

LIS Interface Web Service API Specification

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www.blood.gov.au

Version Control

Version Control		
Version	**Revision Date:**	**Revision Description**
1.0	1 Jun 2012	Initial version.
2.0	3 May 2013	Minor updates to format and included reference values in the Supporting Information section.

2.1	2 April 2014	Minor updates to reference values, format and graphics.
		
		Updated Items List
		
		• Receipted Issue Notes Service Update
		• Real Time Inventory Levels Services Update
		• Fate of Unit Services Update
		• Amendment to Entity Diagrams
		  ○ Amended diagrams
		  ○ Attributes removed
		  ○ Legend added
		  ○ Root Contract and Contract Displayed
		• Attributes amended and redisplayed in alphabetical order.
		• Addition to Enumerations – RhBloodGroupPhenotype

2.2	20 June 2014	Minor updates to reference wording values, format and graphics. Updated Items List • Extended attribute remove mandatory elements • Request Contract correct wording • GetReceiptedIssueNotes Response Contract attributes mandatory elements removed • ReceiptedIssueNoteLine UnitVolume correct wording • Update ComponentID and ProductID mandatory wording
3.0	22 May 2015	Major updates and additions to datasets, data elements, reference wording and numbering values, format and graphics.
3.1	27 May 2015	Amendment to the ABOGroupPhenotype Enumeration (p.71).
3.2	31 August 2015	Amendment to GetReceiptedIssueNote (Dispatch DateTime value) and Mandatory fields within service operations. Added Get Manufacturer Operation. Added TotalAvailableIssueNotes to the GetReceiptedIssueNotes operation. Removed errant single

		space in name of ArrayOfDispenseLocation in the GetDispenseLocations Operation. Added ManufacturerID to ReceiptedIssueNoteLine operation. Also added a note relating to optimal processing of Issue Notes
3.3	18/11/2015	Amendment to Patient data structure, removed mandatory requirement for ABOBloodGroupPhenotype and RhBloodGroupPhenotype. Added note where BirthDate is unknown, use 1/1/1. Added GTIN to FacilityInventoryProducts on Real Time Inventory. Added GTIN to SupplierProduct on GetSupplierProducts.

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Contents

1 Introduction

1.1 Purpose of Document

The purpose of this technical document is to describe the specifications for the BloodNet Laboratory Information System (LIS) interface. It is intended for use by software developers and LIS Administrators who are integrating with the BloodNet LIS API for exchanging information with BloodNet.

The document covers each of the elements required for the interface, and outlines the specifications for each of the data elements. Appendices to the document provide supporting information including references, glossary terms and example issue notes.

1.2 Scope

This document covers the technical specification of BloodNet-LIS interface. It includes the overview of the LIS Interface and web service contracts.

1.3 Data Governance

Each health service before implementing a BloodNet – LIS interface must ensure that they have addressed their legislative and policy obligations to enable the exchange of data through an interface. In particular, each service should refer to the Jurisdictional Blood Committee endorsed NBA Data and Information Governance Framework document which is available from NBA Data and Information Governance Framework | National Blood Authority.

2 Overview of LIS Interface

The BloodNet-LIS interface has 4 types of operation:

1. Download issued line item data from BloodNet to LISs for all units issued by the supplier and receipted in BloodNet to the relevant laboratory, which replaces the process of laboratory staff manually entering inventory into the LIS.

2. Upload real time Inventory Levels of blood components and blood products stored in a laboratory from the LIS to BloodNet to enable real time management of the national inventory, particularly in times of inventory shortage and to remove the requirement for manual data entry of this information into BloodNet.

3. Upload data from the LIS to BloodNet relating to the status of units contained in the laboratory inventory, specifically when a unit's disposition changes (e.g. dispensed, discarded, transferred to another laboratory or transfused etc.). This will inform supply planners and hospital staff in relation to the efficient operations of the national supply chain, and will replace the manual data entry processes currently undertaken by the majority of laboratories nationally into the Fate Module in BloodNet.

4. Download of Reference Data defined within BloodNet system.

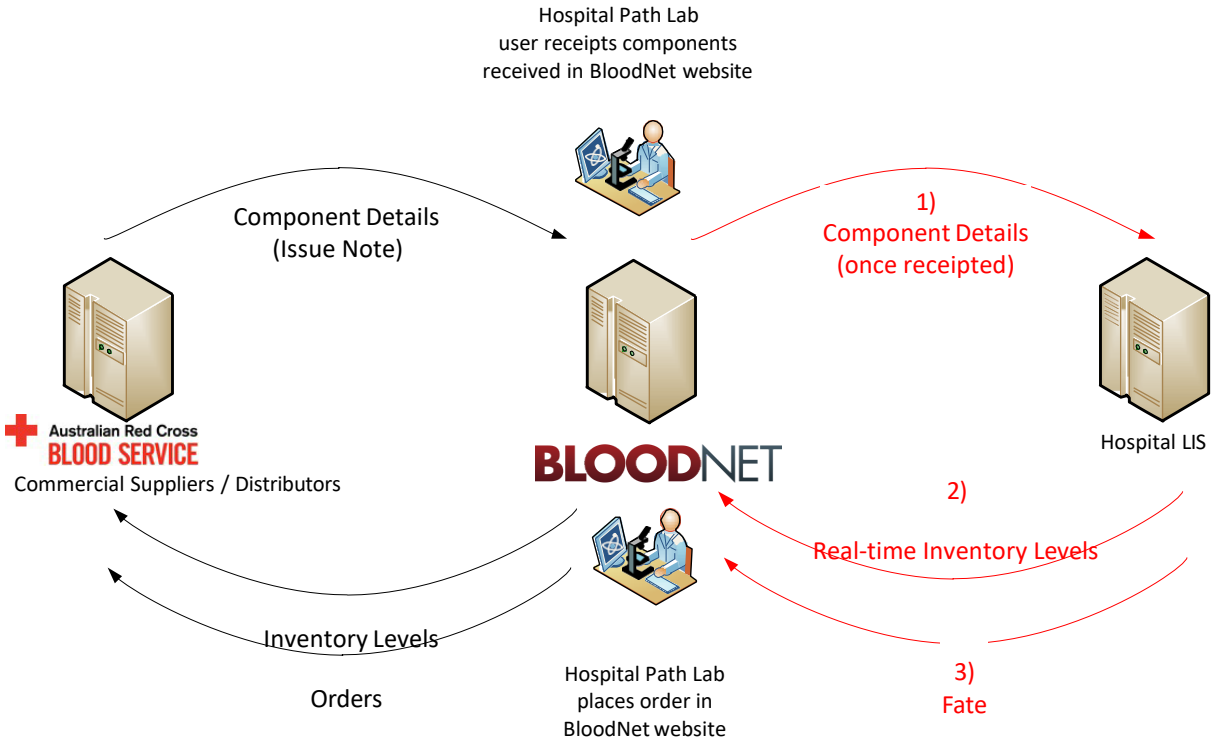


Figure 1 LIS Interactions in context of information flow between BloodNet/Blood Service, Commercial Suppliers-Distributors/LIS

The purpose of the LIS interface is as follows:

1. To automate, every 5 minutes or via user initiation, a previously manual process of entering **received items from BloodNet into the LIS System**, providing the following benefits:
    - Improved efficiency;
    - Provision of additional fields (such as phenotypes) in a machine readable format that can then be used in the LIS reducing entry times; and
    - Prevention of data entry errors and hence improved accuracy.

2. To automate, every 15 minutes or via user initiation, a previously manual process of entering the **fate of received items from the LIS into BloodNet**, providing the following benefits:
    - Improved efficiency;
    - Prevention of data entry errors improving accuracy;
    - Entry of additional fate types previously not supported (i.e. transfusions).

3. To automate, every 15 minutes**,** a previously manual process of entering **inventory stock levels into BloodNet** when placing a stock order, providing the following benefits:
    - Improved efficiency;
    - Prevention of data entry errors improving accuracy;
    - Provision of real-time data to assist with national supply and demand planning, particularly in times of shortages or activation of the National Blood Supply Contingency Plan (NBSCP - http://www.blood.gov.au/nbscp); and
    - Pre-population of last known inventory levels from LIS when creating stock orders, minimising the amount of data entry a user needs to make when calculating their required stock.

2.1 BloodNet/LIS Interactions

The high level interactions between BloodNet and LIS are shown in the diagram below. The direction of the arrows indicates that the LIS invokes services in BloodNet.

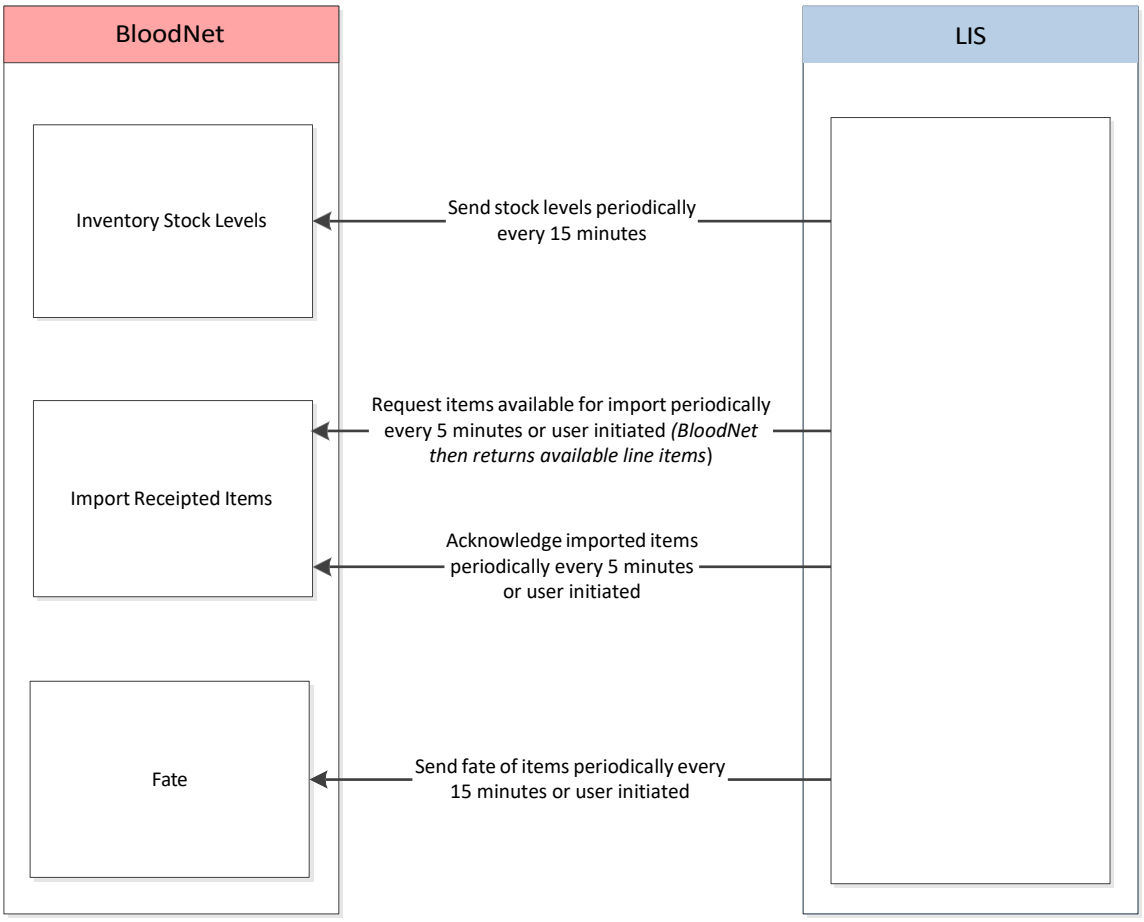


Figure 2 - BloodNet/LIS interactions

2.2 LIS in Context of BloodNet Workflow

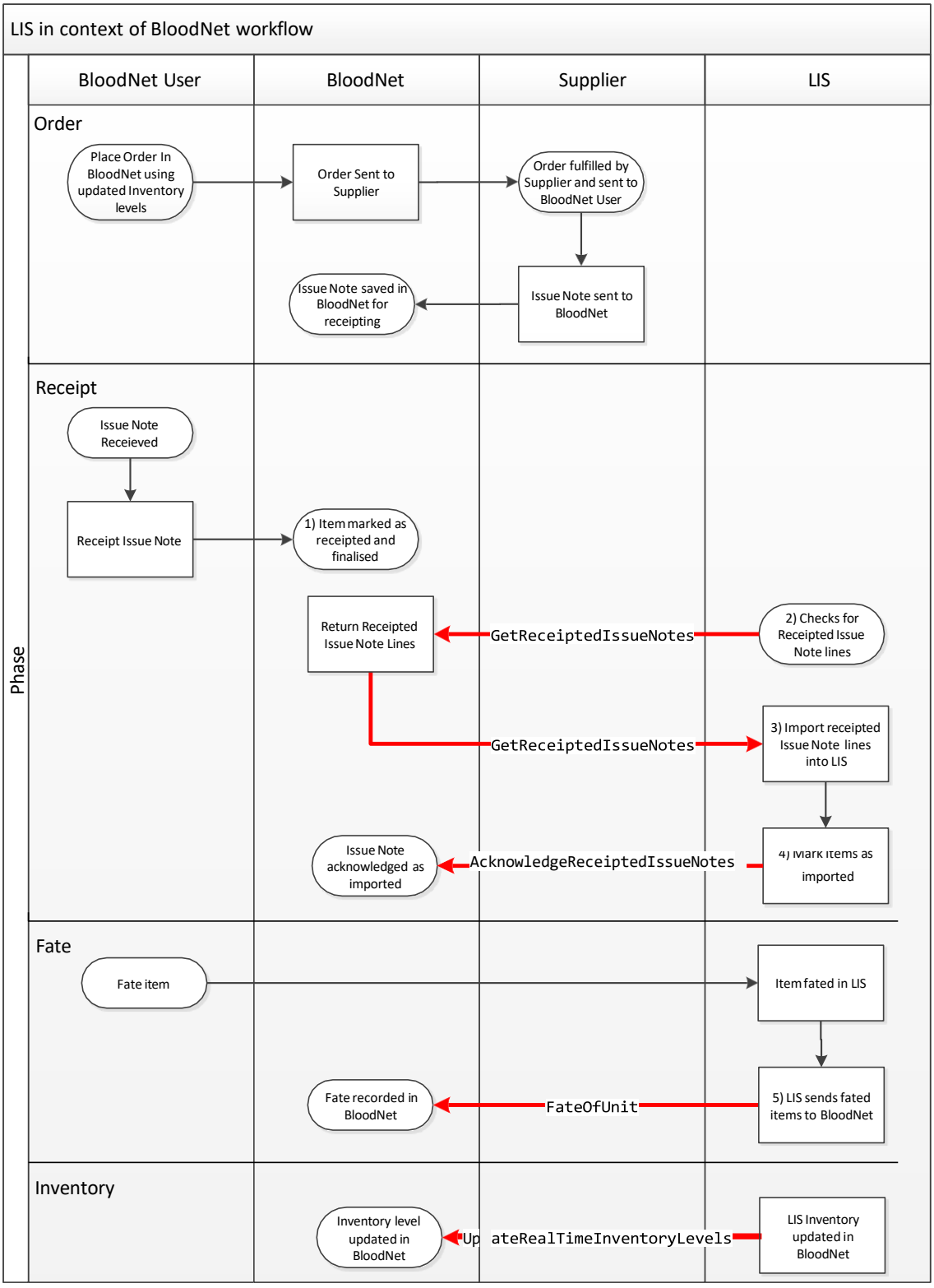


Figure 3 - LIS in context of BloodNet workflow

2.3 Product / Component Exclusion

Products and Components can be excluded from LIS systems through the BloodNet LIS Import Exclusions module. Adding a Product or Component to the Exclusion list will result in the LIS not accepting items containing that particular product or component. For example, inventory for a Facility may be managed via two separate systems – one for manufactured batch products (such as a pharmacy system) and another for fresh components (such as a Laboratory Information System).

In this situation it is possible to configure a LIS not to accept certain products or components. This in turn influences the treatment of the data that BloodNet provides for that LIS and also the data that is expected from that LIS.

If a certain product or component is excluded for a LIS:

- Any information containing that product or component is not sent to the LIS when requesting Receipted Issue Notes.
- Real time inventory levels for the product or component will not be provided from the LIS.
- Fate for the product or component will not be provided by the LIS.

Affected behaviour when invoking *Get Receipted Issue Notes* will be:

- Issue Note Line items for units of that type will be dropped when providing issue note information.
- Acknowledging issue notes will mark those units as acknowledged in BloodNet system.
- Issue notes that only have items that are excluded will not be returned and will be marked off as acknowledged in BloodNet system automatically.

Affected behaviour when invoking *Real Time Inventory Levels* will be:

- Real time inventory data for this type of unit will be obtained via another LIS if possible or will need to be provided manually via the existing processes by entering the information into a routine order.
- Real time inventory data for this type of unit will be ignored if provided via current LIS by invoking *Real Time inventory Levels* service.

Affected behaviour when invoking *Fate of Unit* will be:

- Fate of unit or status change of unit will be ignored if provided.

2.4 Product/Component inclusion across more than one LIS

BloodNet supports more than one LIS-like system for each facility to provide limited support for considerations mentioned above in *2.3* Product / Component Exclusion. As the functionality offered is limited, BloodNet only supports the same Product or Component in one LIS.

If a Facility has the same inventory composition in more than one LIS the Facility will be responsible for ensuring the data is brokered correctly before reaching BloodNet. In some situations this could be as simple as not passing data from one LIS and replicating the Issue Note data out to several LISs after performing Receipting in the brokering system. Other situations may require more complicated aggregation and fating rules.

When a Facility has a second LIS added the default configuration will be to exclude all product and components from that LIS. From here the products and components that should be available in that LIS would have to be excluded from the first LIS before being added to the second. The recommendation is to add the primary LIS to BloodNet first to limit the amount of reconfiguration needed.

2.5 Product/Component Not Registered in BloodNet

Products or Components not registered in BloodNet cannot be returned via the LIS in Fate of Unit or Real Time Inventory episodes. This will result in the generation of an error.

2.6 Supplier Exclusion

At present BloodNet contains product information from only one supplier. It is understood that a LIS may only have support for a single supplier.

In order to improve compatibility with LISs that cannot handle multiple suppliers a LIS/Facility can be configured to exclude suppliers via the BloodNet LIS Module.

2.7 Releases, Upgrades and Support for Legacy Versions

Any changes will be made to new versions of the data objects via a new endpoint. In specific cases supported older versions may be made available dependent on further discussions between the NBA and vendors. In all instances, vendors will be notified.

If the BloodNet Laboratory Information System Services are running in *Offline Mode* the core methods will continue to operate without error however non-core methods will return a *BloodNet Offline* exception.

Releases will be performed to minimise downtime where possible.

2.8 Exception Scenarios

There are several foreseeable exception scenarios. The key scenarios are:

1 Lack of internet connectivity between BloodNet and LIS.
2 Service unavailability from the LIS.
3. Service unavailability from BloodNet.
4. Backend server maintenance.
5. Releases of other BloodNet systems.

2.8.1 Scenario 1 - Lack of internet connectivity between BloodNet and LIS

This scenario covers any internet related fault beyond the control of the NBA or the network the LIS is on.

Under the conditions of Scenario 1 where there is no connectivity, no data transfer can occur between the LIS and BloodNet.

In this scenario, changes to the fate of a unit would not be communicated to BloodNet until connectivity was restored.

Issue Notes and Receipted Issue Notes (depending on where the failure occurs) will remain unacknowledged in BloodNet. It would be expected that the LIS would continue to support processes that are currently in place- specifically any receipting and quarantining. It is then critical that a LIS supports a process to acknowledge receipted issue notes without loading any data, or allowing that data past quarantine.

Real time inventory levels can tolerate a greater level of loss however if the connection between BloodNet and a LIS was to be unavailable for an extended period of time the inventory levels would have to be entered manually into routine orders as per the current non LIS-interfaced processes. To assist with identifying this issue, details about the last time inventory information was provided are provided on the routine order pages.

2.8.2 Scenario 2 – Service unavailability from LIS

This scenario covers situations where the LIS is completely unavailable, or where the Client is unable to properly perform processes relating to the interaction with the BloodNet Laboratory Information System Services.

When the LIS is completely unavailable it is expected that existing processes for handling downtime of the LIS are followed. Fate of units and inventory levels can be entered into the BloodNet facility web site if required. Once the LIS becomes available again and information is entered into the LIS it is understood that some duplicated information would be provided. BloodNet will endeavour to ensure the consistency of this data however the fate of some of the units may change.

As in Scenario 1 receipted issue notes will continue to queue in BloodNet. See Scenario 1 for more details of how this should be handled.

When the Client is unable to interact with the LIS, data should be provided in BloodNet web site. The information is not required to be re-transmitted to BloodNet once the Client is operational. If the Client is not capable of filtering out the data, BloodNet will endeavour to ensure the consistency of this data however the fate of some of the units may change.

2.8.3 Scenario 3 - Service unavailability from BloodNet

This scenario covers any unexpected, major infrastructure or software fault within the NBA.

The conditions that apply under Scenario 1 also apply to Scenario 3 with the additional requirement for real time inventory levels in the event of an extended outage.

Real time inventory levels can tolerate a greater level of loss however if the system was to be unavailable for an extended period of time the NBA would require the inventory levels to be provided via an alternate means such as a manual order in BloodNet. Regardless of whether inventory information is queued and provided at a later time it is expected that manual orders would include the inventory information where appropriate.

2.8.4 Scenario 4 - Backend server maintenance.

This is dealt with via durable messaging and the concept of Offline Services – see below for details.

2.8.5 Scenario 5 - Releases of other BloodNet systems.

This is dealt with via durable messaging and the concept of Offline Services – see below for details.

2.8.6 Offline Services

Core BloodNet Laboratory Information System Services will be designed around an offline service model. This allows for maintenance work on BloodNet to be performed with minimal effect on Clients.

Offline Capable Services (OCS) can be configured to run online or offline based on a configuration setting. When offline the OCS will return only information that can be determined outside of the core BloodNet system. Where the client expects information to be returned empty lists or results should be returned. Services that will be Offline Capable would generally be services that provide information from BloodNet to the Lab Clients. An example of an OCS is the *GetReceiptedIssueNotes* service. Upon calling this service an empty list of Issue Notes would be returned.

Durable Message Services would be any service where data was provided to BloodNet. Durable Message Services allow messages to be posted and queued for later processing. This provides both a method for high performance and timeout avoidance, and a way for data to be posted while BloodNet core components are offline without losing data or affecting the Lab Clients service.

Other Utility Services will not use OCS or Durable Messages and can be expected to fail with a BloodNetOffline exception if called while the site is offline.

Before any set of actions is to be performed where there is a dependency on services that are not offline capable the client should check whether the services are online or offline and only attempt the action if the services are online. BloodNet services will be taken offline based on maintenance Windows identified in any communication to BloodNet users. This, however, does not help automated systems and it is possible this change occurs half way through a client operation (consisting of several calls) and therefore there is still a need to appropriately handle BloodNetOffline exceptions in all calls.

2.9 Communicating Processing Errors to LIS Administrators

In the situation where an error occurs during the processing of an episode, the resulting error message is logged, allowing the LIS Administrator to use the "View Error Logs" functionality within the BloodNet LIS Module to determine the nature of, or reason for the error. A notification will be provided to the LIS Administrator advising of the error. This notification will be configurable, allowing the Administrator to turn notifications on or off as well as selecting the receipt method (SMS or Email).

2.10 Time Zones

BloodNet utilises the local time zone of the facility as specified during creation.

In order to produce consistent results any time value sent or received between the LIS and BloodNet will be in UTC.

Any data sourced outside BloodNet such as the ReceiptedIssueNote DespatchDateTime or ReceiptedIssueNoteLine ItemExpirationDate is not adjusted by BloodNet. This information is provided by the supplier in a format decided by the supplier.

2.11 Change Control for Service Definitions

Service definition changes will be limited to critical updates and after appropriate consultation has taken place.

Large changes will be implemented via versioned service contracts, messages, and endpoints.

2.12 Handling of Product Codes and Lot Numbers

Product codes and lot numbers are vitally important to identification of the correct unit when performing an operation in both the Receipted Issue Notes and the Fate of Unit service operations. Frequently this information is represented by one or more barcodes and/or written on a product.

There are inherent complications in this data due to several factors including, but not limited to:

- Data being stored in two or more different formats such as text on the product, a barcode or barcodes on the product, and information presented on the Issue Note.
- Different information presented in each of the above places.
- Differing barcode standards between products.
- Limited handling of information encoded in a barcode in the different applications (including BloodNet).
- Differing scanner configurations.
- Different product codes on Issue Notes than provided on the product package.
- Not knowing which barcode represents which field.
- Scanning the wrong barcode into a field.
- Different product configuration in each LIS.
- Information that is not relevant in the form of text or barcode in the product.
- Changes to any of this data in the future and the impact it has on the system.
- Differing interpretations of the data presented.
- Different product codes used by the manufacturer for the same product.

The section *Example Product Packaging and Codes* provides some examples of the differing data that could be encountered.

The information provided to BloodNet in Issue Notes is defined by the supplier. The supplier provides their own product codes and determines the lot number provided by the manufacturer unless they are also the manufacturer in which case they must provide both the product code and lot number.

Following are some examples of the data included in the lot number:

- Components have the “d” removed from the beginning and end of the donation/lot number.
- CSL products usually do not have the “C” removed from the beginning and end of the donation/lot number.
- There are some indications of a product codes being built into the barcode used on CSL products (the first 6 numbers) with the rest being the actual lot number.
- The barcoded lot number of certain products scans with a 0NNNNN while the textual lot number is FNNNNNN – the issue note uses the text version.
- The Blood Service also define an additional level of encoding on top of their product codes for components – specifically they include a 0 as the start sequence and 3b as the stop sequence of their Codabar barcodes.
- The Blood Service product code for Octagam 5g/100ml is 84004, the manufacturer’s code is OC2000 and the GTIN is 09006477840034.

As these codes are typically determined by the manufacturer or supplier there are several things that need to be considered. BloodNet may have different supplier codes for the same product but should manage the set of lot numbers for the same product from different suppliers. As product codes and lot numbers on product packaging are determined by the manufacturer, any recognised barcode format could be used. A Barcode could contain a string of numeric or alphanumeric characters.

BloodNet approaches this in several ways.

The Lot Number or Donation Number provided by the Supplier on the Issue Note is left in its original data format, no start and stop codes are removed and the data is provided as is. BloodNet will also provide a Derived Lot Number which will be the original Lot Number processed through an appropriate algorithm to extract the data based on the product's configuration.

For example CSL products use Codabar – the start and stop codes, as defined in the Codabar standard will be removed. For products with a GS1 or similar code, the Lot Number will be extracted where the application identifier 10 can be clearly determined (it starts with a 10 or; any other fixed length application identifiers once removed leave an application identifier of 10, followed by some character sequence). When a parse rule fails for the Issue Note Line, the flag "Derived Lot Number Parse Error" is set to true and the Derived Lot Number field is not set. If the data in the issue note is parsed without requiring any modification, the Derived Lot Number and the Lot Number fields will have the same data and the flag "Derived Lot Number Parse Error" will be set to false.

2.13 Barcoding

The barcode symbology used on blood and blood products funded under the National Blood Arrangements are changing (Blood product labelling | National Blood Authority). To ensure compatibility with these impending changes BloodNet will pass a Barcode field with each Issue Note Line which is intended to record the entire "primary" barcode for an item.

The National Blood Authority on behalf of all Australian governments will in all current and future procurements for blood and blood products funded under the National Blood Arrangements, require suppliers and distributors to implement global barcode standards in relation to funded products.

Australia will move to the globally recognised standards of:

- ISBT128 DataMatrix for all fresh blood products (Red Cells, Platelets, Clinical Fresh Frozen Plasma, Cryoprecipitate, Cryo-depleted Plasma and Serum Eye Drops).
- GS1 DataMatrix for all plasma, recombinant and diagnostic products.

The adoption of these standards aims to:

1. Enhance safety and supply security;
2. Improve inventory management and financial sustainability;
3. Increase efficiencies; and
4. Facilitate global compliance and benchmarking.

To enable health providers, laboratory information system providers and suppliers/distributors to update their systems and processes, transition labels will be used during the implementation period. During this time, units will be issued by the supplier which contain barcodes in the current symbology (such as Codabar), as well as barcodes in the new symbology. At the conclusion of the implementation period, the transition labelling will cease and units will only contain the new (i.e. ISBT128 or GS1) barcodes, meeting the National Blood Authority Barcoding Specification.

In implementing these barcode standards, suppliers and distributors must ensure that:

1) Both the unit and all levels of packaging (such as the unit/vial, pack, carton etc.) have the barcode applied in accordance with the relevant standard with the exception of the reusable cardboard shippers used by the Blood Service.
2) All data elements relating to the specific characteristics of a unit that may be required to be entered into a health provider's systems are provided in the barcode. However, there is no need for the recipient details of a unit (where the unit has been supplied from the supplier or distributor on a named patient basis) to be provided in a barcode.
3) All units are able to be uniquely identifiable globally, which shall be achieved through the DIN for ISBT 128 DataMatrix and through product serialisation for GS1 DataMatrix.

4) All products with different characteristics shall be assigned different product codes (for example, irradiated red cells must have a different product code than non-irradiated red cells).
5) For products labelled using ISBT 128, all relevant information is included in the National Blood Authority's National Blood Product Catalogue.
6) For products labelled using GS1 DataMatrix, all relevant information except pricing is included in the National E-Health Transition Authority's National Product Catalogue.
7) For products labelled using ISBT 128 DataMatrix, the data elements are to be those nominated by the National Blood Authority, noting that these may change over time.
8) For products labelled using GS1 DataMatrix or another GS1 barcode symbology for higher levels of packaging, the following minimum data elements must be contained in the DataMatrix, noting that suppliers may choose to include additional elements:
    a) GTIN – Global Trade Item Number (GTIN)
    b) AI (10) – Batch / Lot Number
    c) AI (17) – Expiry Date
    d) AI (21) – Serial Number
9) In addition to specific requirements for 'Human Readable Interpretation' requirements where the data contained in the barcode is reproduced for users above or below the code, all relevant information must also be included in a form that would enable a user to interpret the data without any knowledge of the relevant barcode standard (for example, Lot# ABC123).
10) Implementation of these standards is conducted in accordance with relevant Therapeutic Goods Administration regulatory requirements.

BloodNet will also include its known product barcode configuration via the *GetSupplierProducts* service operation within Utility services. This allows for a better understanding of the methods we are using for parsing the Lot Number for any product type. This can also be used with the *GetCandidateProducts* service operation for Lot Number service operation to diagnostically identify a Product within BloodNet. These service operations do not operate on Components.

Any calls sending data to BloodNet should provide a lot number without start and stop codes based on the human readable version of the barcode. BloodNet may perform some cleansing on the value in order to find an appropriate match. For example a product may have a printed lot number starting with an *F* but the scanned lot number starts with a *0*.

BloodNet deals with different product codes per supplier by using BloodNet Product ID's as the key in all calls throughout the system. As long as a LIS returns the appropriate BloodNet Product ID, batch searches can be performed across products from all suppliers.

Any calls back that fail to find a match will be indicated in the error log within BloodNet Website LIS Module. The messaging system will also be used for keeping these failed requests for diagnostics or retransmission if required. A LIS can also re-fate the same unit with changed barcodes if necessary but BloodNet does not provide a system to determine which units failed to get identified in a fate episode programmatically.

3 Web Service Definition

3.1 Introduction

This section details the Web Service API for BloodNet-LIS interfaces. This interface is used by the client application and windows service to communicate with BloodNet.

3.2 Implementation

The BloodNet Laboratory Information System web services are based upon SOAP.

3.3 Error Handling

Web service errors that will be reported and returned to the caller include:

- Insufficient permissions or invalid client (LIS).
- Data format errors.
- Channel failures.

Examples of errors that will not be reported include:

- Data for Facilities not managed by the LIS according to BloodNet.
- Products not supported by BloodNet.

Hiding errors that are not important to the client allows greater scope for changing the internals of the solution without breaking clients.

3.4 Credentials and Authentication

The credentials provided will be specific to a LIS installation thereby allowing a LIS to support several laboratories (e.g. hospitals) or a single laboratory, based upon the configuration of the LIS.

Authentication is required for all the service operations and username/password should be included in the SOAP header.

All service operations require a request object and return a response object. This approach helps with standardising required request/response values.

3.5 Service Operations

This section describes the key data structures used in the BloodNet Laboratory Information System Web Service.

The data structures are based on a Request and Response model where each service operation accepts a request object and returns a fault or response object. The request and response messages are designed as Data Transfer Objects (DTO's) and fulfil very specific requirements for each service operation. This approach takes some of the coordination requirements from the LIS and reduces the complexity of troubleshooting across process boundaries but does require more complex data transformations.

There are 4 Service Operations defined for the LIS:

1. *Getting* Receipted Issue Notes.
2. *Providing* Real Time Inventory Levels.
3. *Providing* the Fate of Units.
4. *Providing reference data via Utility Service.*

To ensure the integrity of the data collected by the NBA, service 1 (*Getting* Receipted Issue Notes) will only be enabled by the NBA for those laboratories that are fully populating and implementing services 2 (*Providing* Real Time Inventory Levels) and 3 (*Providing* the Fate of Units).

3.5.1 Get Receipted Issue Notes

Process Rules

The Get Receipted Issue Notes service provides the ability to get the individual unit details from newly receipted issue notes once the units have been receipted in BloodNet. The following are process rules this service operation follows:

- This service operation has a maximum number of 100 issue notes to send out in a single call to limit the resource demands of the call on both the LIS and BloodNet infrastructure.
- A call to this service operation will return all unacknowledged issue notes including the full unit details for each unit (the unit must have a Receive Quantity greater than zero) on the issue note to the LIS.
- If an Issue Note has been acknowledged however one of its unit's Received Quantity increased within in BloodNet system, then this Issue Note will be returned to LIS in next service operation call.
- Following the receipt of issue notes via this service operation the client should make a second call to Acknowledge Receipted Issue Notes service to acknowledge receipt of these items. Failure to call the acknowledge service operation will result in the same items being returned in the next call to get unacknowledged items.
- If a Facility is managed by several LISs the acknowledgement only applies to that LIS. Issue notes that have been acknowledged by one LIS will not be picked up by another.
- This method must not be called more frequently than once every five minutes unless there is an expectation that there is a backlog that needs to be cleared and such an approach has been approved by BloodNet Support.

If an issue note need to be re-posted to the LIS (to enable testing, following an outage or roll-back etc.) operations are available from the BloodNet website that enable a BloodNet Facility Administrator (i.e. a Senior Scientist from the affected laboratory) to manually reset an issue note to unacknowledged. This means that the issue note will be provided again in the next call from the LIS. Using this process, it is not possible to select individual units on an issue note to resend. All items on the issue note must be resent.

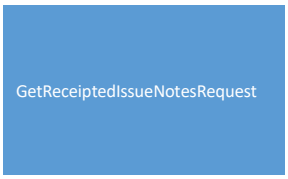
Those responsible for configuring and maintaining a LIS that interfaces into BloodNet using this service must ensure that the units whose details are passed through this service are held in a receipting area electronically in the LIS until the normal group checks and other validation steps have been completed and recorded in the LIS.

Service Operation

```
GetReceiptedIssueNotesResponse GetReceiptedIssueNotes (GetReceiptedIssueNotesRequest)
```

Request Contract

The Get Receipted Issue Notes method takes an optional Facility ID. The Facility ID can be used to pull down a specific facility's issue notes if the user knows that there are receipted items to pull down. This also assists in reducing the number of duplicates pulled down by excessive user triggered events.



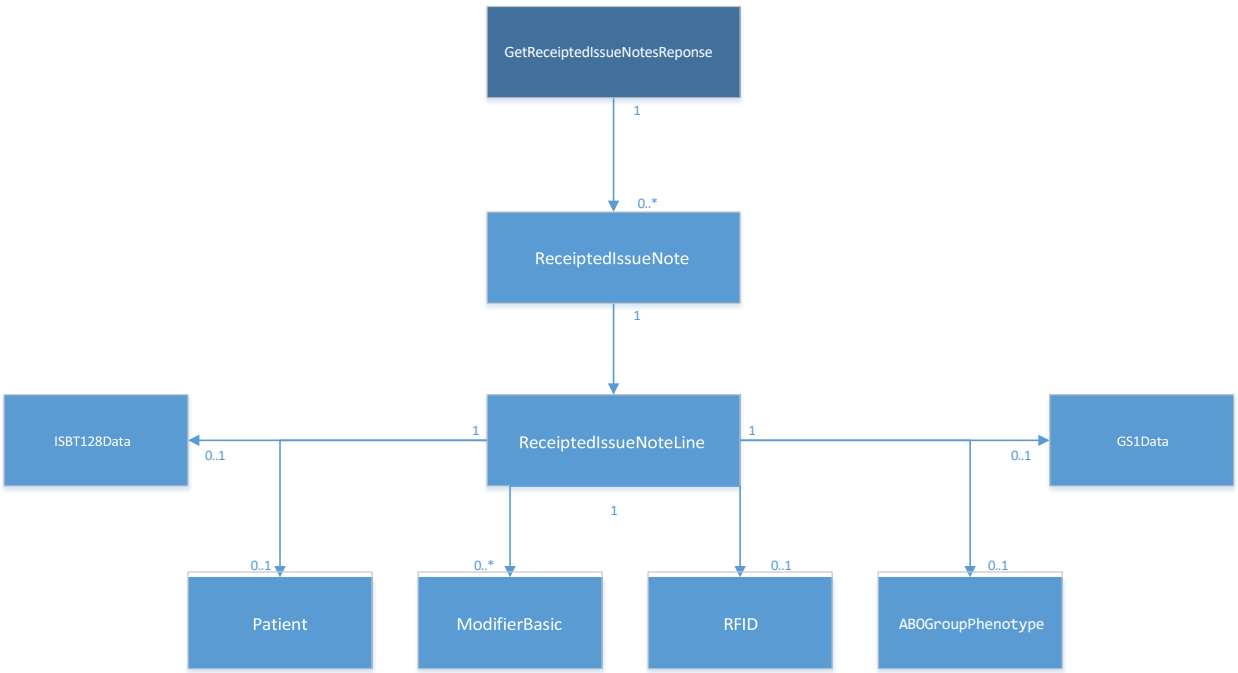
GetReceiptedIssueNotesRequest

Name	Definition	Constraint
FacilityID	***xs:int*** The Unique Identifier within the BloodNet system for the Facility, specifically a number representing a facility defined within BloodNet.	Greater than 0

Response Contract

The response contains one or many (maximum 100 per service operation call) Receipted Issue Notes and each of which has one or many Receipted Issue Note Lines.

Note: While this call will return as many as 100 issue notes under optimal circumstances it may be necessary to reduce this number for performance reasons. The TotalAvailableIssueNotes value returned as part of the response should be used to determine if there are more issue notes available than could be returned in a single call.



GetReceiptedIssueNotesResponse

Name	Definition	Constraint
ReceiptedIssueNotes	***tns:ArrayOfReceiptedIssueNotes***	
TotalAvailableIssueNotes	***xs:int*** This is the count of Receipted issue notes that currently have un-acknowledged lines.	Mandatory

ReceiptedIssueNote

Name	Definition	Constraint
AHPReference	***xs:string*** A user defined code that is included on the order and the issue note. This field allows for a user entered textual string to be included in the order.	X(50)
Comments	***xs:string*** The supplier line issue note comments. Comments are used to provide information about individual lines or the entire Issue Note to the Facility.	
DispatchDateTime	***xs:dateTime*** It is the value from the dispatch date and time of this issue note. Stored in the database as an offset, but not converted to UTC.	
FacilityID	***xs:int*** The Unique Identifier within the BloodNet system for the Facility specifically a number representing a facility defined within BloodNet.	Integers above 0
HealthProviderCode	***xs:string*** The AHP Code for a Facility (Hospital). If a hospital has several AHP codes for different sections then the AHP value that was provided when the Facility was created in BloodNet.	X(50)
IssueNoteID	***xs:int*** The identifier assigned to the Issue Note in BloodNet.	Mandatory Integers above 0
OrderNumber	***xs:string*** It reflects the identifier of the order that the customer placed with the supplier or distributer. In the case of BloodNet orders it will be the BloodNet Order ID. Where a valid BloodNet Order ID cannot be found and the order did originate from BloodNet the value will be null or a string such as: **not BloodNet.**	X(30)
OrderSourceSystem	***xs:string*** A string representing the system an order was placed through	X(10)
ReceiptedIssueNoteLines	***tns:ArrayOfReceiptedIssueNoteLine*** An array of ReceiptedIssueNoteLine types. Zero or many receipted issue note line can be attached to one issue note.	Receipted issue notes lines may exist for a receipted issue note.
SupplierID	***xs:int*** The BloodNet Supplier ID for the supplier that provided this Issue Note.	Mandatory Integers above 0
SupplierIssueNoteID	***xs:long*** A unique identifier for the Issue Note as supplied by the supplier.	Integers above 0
Ward	***xs:string*** Chief/Supervising Scientist in charge of Transfusion. For example: SCIENTIST IN CHARGE (000001) SCIENTIST-IN-CHARGE (000001)	X(200)

ReceiptedIssueNoteLine

Name	Definition	Constraint
ABOGroupPhenotype	***tns:ABOGroupPhenotype*** The ABO Blood Group, See the ABOGroupPhenotype enumeration.	
AcknowledgedReceivedQuantity	***xs:int*** The amount of units that match Issue Note Line that have already been acknowledged.	Mandatory
DefectReason	***xs:int*** The defect reason id chosen by the user receipting the item into BloodNet. It can be obtained by the GetDefectReasons service operation within Utility Service.	
DerivedLotNumber	**xs:string** The Lot or Batch Number as extracted from the Lot Number provided by the supplier in the Issue Note LotNumber field.	
DerivedLotNumberParseError	***xs:boolean*** A flag indicating whether the parsing algorithms implemented by BloodNet successfully identified the Lot Number.	
DonationLotNumber	***xs:string*** A number provided by the supplier or manufacturer that identifies the donation for components or lot number for manufactured products. This value is not guaranteed to be unique. This identifier is frequently included on the outer packaging of manufactured products as a barcode.	X(50)
Gram	***xs:int*** The quantity of gram in each unit. e.g. This value for product **FLEBOGAMMA 5% DIF (10G/200ML)** will be ***10.***	Mandatory
GS1Data	***xs:tnsGS1Data*** It contains the minimum required product information as specified in the Barcoding Specification for products using GS1 DataMatrix.	Only available if the unit is plasma, recombinant and diagnostic products.
HasDefect	***xs:boolean*** This can indicate there was an actual defect in the unit or there was some other inconsistency with the received unit such as it was not ordered.	Mandatory
ISBT128Data	***xs:tnsISBT128Data*** For products labelled using ISBT 128, all relevant information is included in the National Blood Authority's National Blood Product Catalogue. For more details, please refer to section 2.13 Barcoding.	Only available if: • Red Cells, • Platelets, • Clinical Fresh Frozen Plasma, • Cryoprecipitate, Cryo-depleted Plasma and; • Serum Eye Drops
IssuedQuantity	***xs:int*** The number of items that are indicated to have been receipted for this Issue Note Line.	Mandatory
IssueNoteLineID	***xs:int*** The identifier assigned to the Issue Note Line item in BloodNet.	Mandatory
ItemExpirationDate	***xs:dateTime*** The date and time that the unit will expire according to the issue note. It is the local time at the facility which is holding the unit (i.e. no change based on time zone) – this does mean for example, that if two units of platelets are issued with the same expiry date/time to two AHPs – one in Sydney and one in Perth – that the units could actually expire at a time that is three hours (or two hours in winter) apart.	Mandatory

IUQuantity	***xs:int*** This quantity is the International Unit amount for the individual presentations of Products. e.g. the '1000' in BENEFIX FACTOR IX 1000 IU.	Mandatory Integers above 0
ManufacturerCode	***xs:string*** The Manufacturer's code that is defined within BloodNet system.	
ManufacturerID	***xs:int*** Unique identifier within the BloodNet system for the Manufacturer. It can be obtained from the **GetManufacturers** operation.	Mandatory
ManufacturerItemCode	***xs:string*** The unique Component Code or Product Code provided by the Manufacturer.	
Modifiers	**tns:ArrayOfModifierBasic** Zero-to-many modifiers can be attached to a component.	
Patient	***tns:Patient*** A patient may be attached to this Issue Note Line.	
Percentage	***xs:string*** The percentage concentration of the product. e.g. This value for product **FLEBOGAMMA 5% DIF (10G/200ML)** will be ***'5%'.***	
PhenotypeBarcode	***xs:string*** A numeric sequence encoded as a barcode representing the exact antigens contained in a component. The phenotype string is provided by the Blood Service on units where they have been tested.	
PhenotypeText	***xs:string*** A space delimited string containing the phenotype information provided for the Component unit. Products have an empty value. The phenotype string is provided by the Blood Service on units where they have been tested. e.g. R1r C+ E- c+ e+ K-	
ProductID	***xs:int*** The unique identifier for a Product defined within BloodNet. It can be obtained from the **GetSupplierProducts** operation.	
ProductionDate	***xs:dateTime,.***	
ReceiptedBy	***xs:string*** The logged in user's full name in BloodNet who performed the receipting. The last name will be in upper case. For example: FirstName LASTNAME.	
ReceiptedDateTime	***xs:dateTime*** The UTC date and time that the Issue Note Line was receipted into.	Mandatory
ReceiptedSequence	***xs:int*** A number representing the order that the item was Receipted. It is unique within each Issue Note – even over many receipting sessions. It is used to ensure the order in which items are receipted is replicated in the LIS. Items should be unpacked and receipted into BloodNet and stored in such a way as the original receipting sequence is maintained. Once receipting is complete and group labels are printed they can be attached to the correct unit based on the physical order and the Receipted Sequence.	Mandatory Integer greater than 1
RFID	***tns:RFID*** Radio Frequency Identification. Not currently used. Reserved for future use.	
RhBloodGroupPhenotype	***xs:boolean*** Flag indicating whether the unit is RhD positive or RhD negative.	
SupplierComponentID	**xs:int** The BlooodNet internal supplier component ID for this unit. This can be obtained from the ***GetSupplierComponents*** service operation in Utility Service.	
SupplierItemCode	***xs:string*** A unique identifier for the Product or Component as provided by the	X(50)

	supplier. Presently this value is provided by the Blood Service but will contain Product or Component Codes from other suppliers in the future. The uniqueness of this value must be ensured by the supplier and will only be unique within the supplier i.e. other suppliers may generate the same value.	
SupplierItemName	***xs:string*** The full name of the Component or Product provided by the Supplier. Example: RED CELLS IN SAG-M LEUCODEPLETED, BENEFIX FACTOR IX 1000 IU.	
SupplierID	***xs:int*** The Supplier ID as detailed in BloodNet	Mandatory
UnacknowledgedReceivedQuantity	***xs:int*** When receipting over more than one session, particularly for products or anything that does not exist as a single Issue Note Line, this value represents the number of items receipted that have not been acknowledged. This value needs to be taken into consideration with AcknowledgedReceivedQuantity to determine how many items have actually been received for this Issue Note Line. If delivery was received in error and the items were put into stock the UnacknowledgedReceivedQuantity value would be the number of items to put into stock but HasDefect would be set to true. This set of units would usable units and should pass receipting in the LIS pending any other checks required.	Mandatory
UnitVolume	***xs:int*** The volume of each unit in millilitres. While the quantity contained and net volume values in several standards are close to usable none are clear enough to be of any benefit and the additional flexibility offered by these standards does not warrant the use of them. As a result the UnitVolume is the actual or stickered volume of the product or component if it is known. e.g. This value for product **FLEBOGAMMA 5% DIF (10G/200ML)** will be ***200.***	

ISBT128Data

ISBT 128 DataMatrix for all fresh blood products (Red Cells, Platelets, Clinical Fresh Frozen Plasma, Cryoprecipitate, Cryo-depleted Plasma and Serum Eye Drops). For more details, please refer to section 2.13 Barcoding.

Name	Definition	Constraint
BloodGroup	**xs:string** This field indicates the blood groups [ABO and RhD] of a product and may include information defining the type of donation or collection.	(6)
CollectionDateTime	***xs:dateTime*** It indicates the date and time of collection or recovery of the product.	
DonationIdentificationNumber	***xs:string*** Donation Identification Number (DIN) is a unique identification of a donation event [collection or recovery] or a product pool from anywhere in the world over a one hundred year period.	X(16)
ExpiryDateTime	***xs:dateTime*** The date and time that the unit will expire according to the issue note. It is the local time at the facility which is holding the unit (i.e. no change based on time zone) – this does mean for example, that if two units of platelets are issued with the same expiry date/time to two AHPs – one in Sydney and one in Perth – that the units could actually expire at a time that is three hours (or two hours in winter) apart.	
ProductCode	**xs:string** • Identify a product intended for human use. • optionally encode information about the type of donation or collection, and • Encode whether or not the product has been divided.	X(10)
SpecialTesting	***xs:string*** It provides information regarding red blood cell phenotypes, CMV antibody, IgA, Parvovirus B19, and Haemoglobin S status of the product.	X(20)

GS1Data

GS1 DataMatrix for all plasma, recombinant and diagnostic products at the level of unit packaging. For more details, please refer to section 2.13 Barcoding.

Name	Definition	Constraint
ExpiryDate	***xs:dateTime*** The date and time that the unit will expire according to the supplier. It is the local time at the facility which is holding the unit.	X(17)
GTIN	***xs:string*** It is the Global Trade Item Number for this unit.	X(20)
LotNumber	***xs:string*** It is the Batch/Lot number for this unit.	X(10)
SerialNumber	***xs:string*** The Serial Number of the unit.	X(21)

Patient

When an Issue Note Line is intended for a patient, their details may be attached to the Issue Note Line by the supplier.

Name	Definition	Constraint
ABOGroupPhenotype	***tns:ABOGroupPhenotype*** The ABO Blood Group, please see the ABOGroupPhenotype enumeration.	
BirthDate	***xs:dateTime*** The date that the patient was born.	Date
FirstName	***xs:string*** Patient's First Name. Health services must ensure that they have addressed all legislative and policy obligations before exchanging this data element with BloodNet.	X(40)
IHI	***xs:long*** The patients Individual Healthcare Identifier. Health services must ensure that they have addressed all legislative and policy obligations before exchanging this data element with BloodNet.	
LastName	***xs:string*** The patients last name. Health services must ensure that they have addressed all legislative and policy obligations before exchanging this data element with BloodNet.	X(40)
RhBloodGroupPhenotype	***xs:boolean*** Flag indicating whether the unit is RhD positive or RhD negative.	
SexCode	***tns:SexCode*** A code indicating the biological distinction between male and female as reported by a person or as determined by an interviewer. Please refer to SexCode enumeration.	
URNumber	***xs:string*** An AHP generated unique reference number to identify the patient. As the format for the URN number or MRN of a patient is controlled by the system the patient is registered in, this field is left open.	X(30)

ModifierBasic

Name	Definition	Constraint
ModifierID	***xs:int*** The BloodNet Modifier ID for a modifier attached to this Issue Note Line. One or more of the Modifier ID values returned from the GetAvailableModifiers service operation within Utility Service.	

RFID

The RFID entity is not mandatory and there cannot be any more than one of them for the Issue Note Line they represent.

Name	Definition	Constraint
MB01	***xs:base64Binary*** The contents of Memory Bank 01 of a RFID Tag or equivalent. The data contained in this field is dump of all information stored in one of the Memory Banks of the RFID tag. Assuming the implementation we decide upon is based on the ISO/IEC 18000-6 standard this will be MB01 or the Unique Unit Identification number. The field size is 128 bits to correspond to the full MB01 size rather than the size provided by the Memory Bank for the UII (96 bits).	
MB11	***Xs:base64Binary*** The content of Memory Bank 11 of a RFID Tag or equivalent. The data contained in this field is dump of all information stored in one of the Memory Banks of the RFID tag. Assuming the implementation we decide upon is based on the ISO/IEC 18000-6 standard this will be MB11 or the user data Memory Bank. The field size of 4096 bits is not guaranteed to fit all the data we require however as the data in MB11 must conform to the list of Data Identifiers and Application Identifiers in ANSI MH10.8.2 there is probably limited use for this for large data applications. The primary use for this will be storing values current stored in barcodes. Any information stored in this field that matches a field on the Issue Note Line or Issue Note will be extracted from this data and stored on the appropriate field on the Issue Note or Issue Note Line.	
MiscellaneousData	***Xs:base64Binary*** The content from an RFID tag that does not fit into MB01 or MB11. This field will contain any data from an RFID tag that does not fit into MB01 and MB11 for example data from a temperature logger.	
UnitIdentificationNumber	***xs:string*** A semi unique number of the unit of component or product as contained in the RFID tag or other permanently attached unique code. This may be in the form of an EPC SGTIN-96, ISBT-128 Donation Identification Number or some other format - a standard has not been agreed upon. The goal will be that whatever standard is agreed upon provides a unique unit code here and that code fits within the allocated memory. It is understood that if the ISBT-128 Donation Identification Number is stored here then the unit will not be unique. This value may be a duplicate of the MB01 data.	

3.5.2 Acknowledge Receipted Issue Notes

When a user receipts an issued item in a LIS, there is a requirement for the lab to send an acknowledgement to BloodNet indicating that the unit is now in stock at the facility.

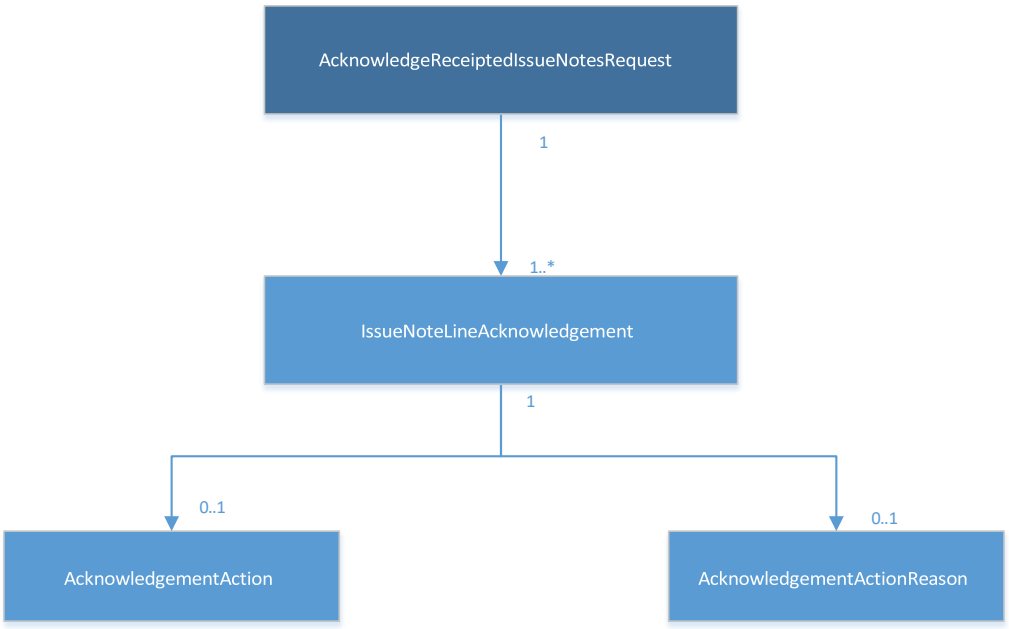
Process Rules

- Following the call to Get Receipted Issue Note service operation the client should make a second call to the AcknowledgeReceiptedIssueNotes service to acknowledge receipt of these items.
- Failure to call this service operation will result in the same items being returned in the next call to get unacknowledged items.

Service Operation

```
AcknowledgeReceiptedIssueNotesResponse AcknowledgeReceiptedIssueNotes
(AcknowledgeReceiptedIssueNotesRequest)
```

Request Contract



AcknowledgeReceiptedIssueNotesRequest

This contract contains an array of IssueNoteLineAcknowledgement.

Name	Definition	Constraint
IssueNoteLineAcknowledgement	***tns*:ArrayOfIssueNoteLineAcknowledgement**	

IssueNoteLineAcknowledgement

Name	Definition	Constraint
AcknowledgedBy	***xs:string*** The name of the person who performed the acknowledgement.	
Action	***tns:AcknowledgementAction*** The action that was taken for the Issue Note Line during the Receipting process – specifically whether it was accepted or rejected. Please refer to **AcknowledgementAction** enumeration.	Mandatory
ActionReason	***tns:AcknowledgementActionReason*** The reason the action chosen was taken during the Receipting process. See the **AcknowledgementActionReason** enumeration.	Mandatory
ClientTransferEventNumber	***xs:string*** A LIS supplied number relating to a particular Issue Note transfer event that can be used to assist in marking a set of Issue Note related data back to unacknowledged. A LIS should provide a unique/semi unique value back to BloodNet to assist in identification of the items in a transfer event or receipting action. This value can be searched for within BloodNet to identify items to be unacknowledged so they can then be sent back to the LIS. It is up to the implementation on the LIS side to determine whether all items in a single receipting event get the same event number or each line is to be treated individually.	
FacilityUnitUniqueIdentifier	***xs:string*** The unique unit identifier attached to a unit by the Facility. BloodNet can leverage this value for more accurate data keeping within any Facility that has put in place procedures to more accurately track an individual Component or Product unit.. The value provided here would be used for tracking the item in later unit fate calls.	
IssueNoteLineID	***xs:int*** The Identifier of the issue note line to be acknowledged. This can be obtained from the **GetReceiptedIssueNotes** method. As lines are accepted or rejected during receipting the results should be sent back to BloodNet. All Issue Note Line ID's from the same issue note do not have to be sent back at the same time, and Issue Note Lines from several issue notes can be sent back together. This also does not have to happen as each Issue Note Line is processed during receipting, however in order to reduce the number of Issue Note Lines that are sent down more than once this process should be performed as soon as possible after being receipted.	Mandatory
Quantity	***xs:int*** The quantity of items that was accepted or rejected into the LIS. The value should be greater than zero and less than the total number of items on the issue note. For items that are not uniquely identified this allows a number of the items represented by an individual line to be acknowledged. For items that are uniquely identified this should always be one. If the number of items received is greater than the number of receipted items, the number of items acknowledged will be the number of receipted items.	Mandatory Integer greater than 0

Response Contract

AcknowledgeReceiptedIssueNotesResponse
This contract contains a GUID value which correlates with current service operation request.

3.5.3 Real Time Inventory Levels

Real Time Inventory Levels Services allow laboratories to provide up to date information of their stock levels. This information is used by BloodNet to assist BloodNet website users with stock level information required when placing a stock order. It is used by the NBA, Jurisdictions and the supplier to manage the national supply of blood and blood products.

Process Rules

Inventory Levels can be provided for a laboratory or all laboratories managed by a LIS. Data will be aggregated to the Product/Component level and must only include units that are available for transfusion. For example, units that are cross-matched for a patient must not be reported in the same way as they are not normally available for issue to another patient on demand.

Inventory levels for a Component with a blood group and a modifier would be considered one inventory level item. Inventory levels are not at the unit level and do not include a lot number or an expiry date. A LIS should provide updated inventory levels for all of the laboratories it holds data for at each call.

Real time inventory levels must be provided **every fifteen** minutes unless negotiated separately with the National Blood Authority. If inventory levels for several Facilities are being provided from one LIS and the calls only include one Facility then several consecutive calls can be made until the entire inventory of the LIS has been provided. The data provided by this method is not validated in BloodNet against agreed inventory levels, issued, receipted or fated units and will therefore allow data to be provided that is improbable when considering the other data sets contained in BloodNet.

Real time inventory data for components is expected to contain modifier information if it is to be presented in the ordering screens for the best effect. Failure to do so will only provide real time inventory levels for the basic components. Additionally if certain components and modifiers, or products are represented in the LIS by a different product type the LIS would be expected to make the conversion back into the appropriate BloodNet component modifier combination.

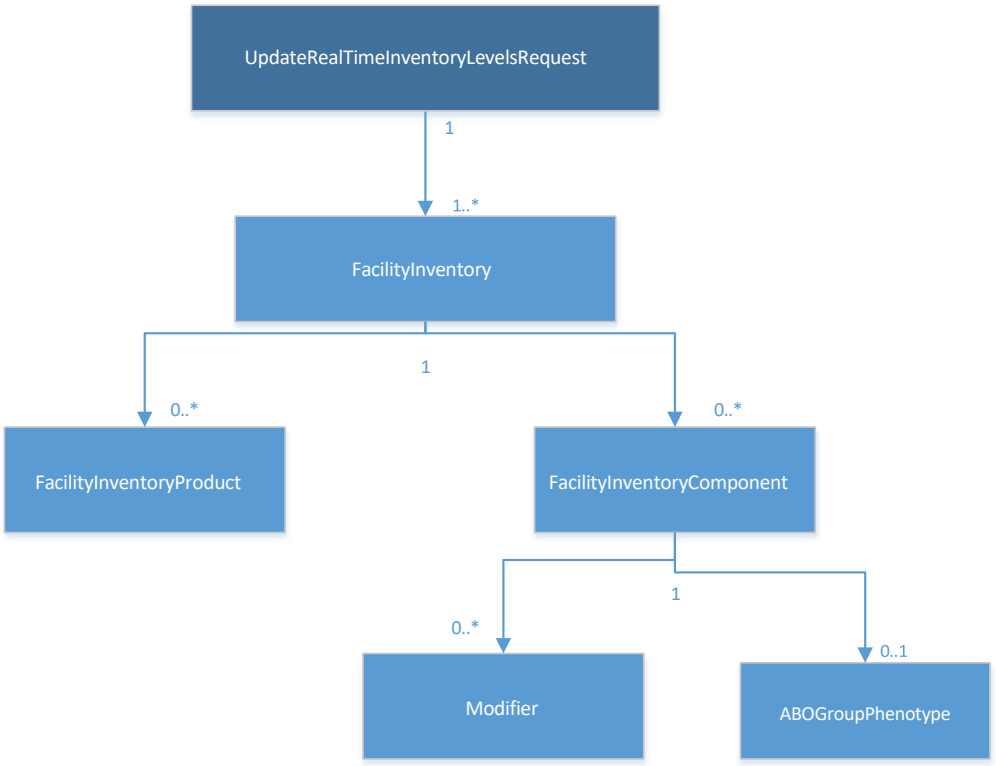
In certain scenarios, where data is not processed, such failures will be made available for review through the action logs and in future, via email notification when such a failure occurs. This removes the LIS from the process of managing data errors on the BloodNet side and also removes any requirement for the LIS to handle invalid data.

The Real Time Inventory levels provided through this service will be displayed to users of the BloodNet website on the Stock Order Templates, indicating the date and time of the last update.

Service Operation

```
UpdateRealTimeInventoryLevelsResponse UpdateRealTimeInventoryLevels
(UpdateRealTimeInventoryLevelsRequest)
```

Request Contract



UpdateRealTimeInventoryLevelsRequest

Name	Definition	Constraint
Date	***xs:dateTime*** The date/time (**in UTC**) contained in this real time inventory request.	Any date in the past. The date should be adjusted for **UTC** time.
FacilityInventories	***tns:ArrayOfFacilityInventory*** An array of FacilityInventory types.	

FacilityInventory

Name	Definition	Constraint
AllocatedComponents	***tns: ArrayOfFacilityInventoryComponent*** An array of FacilityInventoryComponent types that have been allocated to patients.	
AllocatedProducts	***tns:ArrayOfFacilityInventoryProduct*** An array of FacilityInventoryProduct types that have been allocated to patients.	
FacilityID	***xs:int*** A unique identifier of a Facility within BloodNet system. It can be obtained from the GetManagedFacilities method.	Integer greater than 0; **Mandatory**
UnallocatedComponents	***tns:ArrayOfFacilityInventoryComponent*** An array of FacilityInventoryComponent types that have not been allocated to patients.	
UnallocatedProducts	***tns:ArrayOfFacilityInventoryProduct*** An array of FacilityInventoryProduct types that have not been allocated to patients.	

FacilityInventoryComponent

Component items in facility inventory for each component type / modifier combination.

Name	Definition	Constraint
ABOGroupPhenotype	***tns:ABOGroupPhenotype*** The ABO Blood Group, please see the ABOGroupPhenotype enumeration.	
ComponentID	***xs:int*** The BloodNet internal Component ID. This can be obtained from ***GetFacilityRoutineComponents*** service operation within utility services.	
Modifiers	***tns:ArrayOfModifierBasic*** Zero-to-many modifiers can be attached to a component.	
OnHand	***xs:int*** The number of units in this stock category.	Mandatory
RhBloodGroupPhenotype	***xs:boolean*** Flag indicating whether the unit is RhD positive or RhD negative.	
SupplierComponentID	***xs:int*** The Supplier Component ID within BloodNet system. This can be obtained from ***GetSupplierComponents*** service operation within utility services.	Mandatory

FacilityInventoryProduct

Name	Definition	Constraint
OnHand	***xs:int*** The number of units in this stock category.	Mandatory
ProductID	***xs:int*** The BloodNet Product ID for this unit if it is a Product. It can be obtained from ***GetFacilityRoutineProducts*** within Utility services.	
SupplierProductID	***xs:int*** The SupplierProductID within BloodNet system. This can be obtained from ***GetSupplierProducts*** service operation within utility services.	Mandatory if ProductID or GTIN not supplied
GTIN	***xs:int*** The Global Trade Identification Number for the product.	

ModifierBasic

Zero-to-many modifiers can be attached to a component. Modifiers represent a specific requirement for a component that cannot (is not) represented by a different product. Modifiers are used for things such as 'Irradiated', 'CMV Negative', and '< 10 Days' Components. Modifiers cannot be attached to a product. See the *GetAvailableModifiersResponse* for more information.

Name	Definition	Constraint
ModifierID	***xs:int*** The BloodNet Modifier ID for a modifier attached to this Issue Note Line. One of the Modifier ID values returned from the GetAvailableModifiers service operation within Utility Service	Mandatory

Response Contract

UpdateRealTimeInventoryLevelResponse
This contract contains a GUID value which correlates with current service operation request.

3.5.4 Fate of Unit

The fate of unit data set is provided per unit as the status of the unit changes.

Process Rules

The Fate of a unit should be provided whenever that unit is in a state in which its Fate is determined or changed.

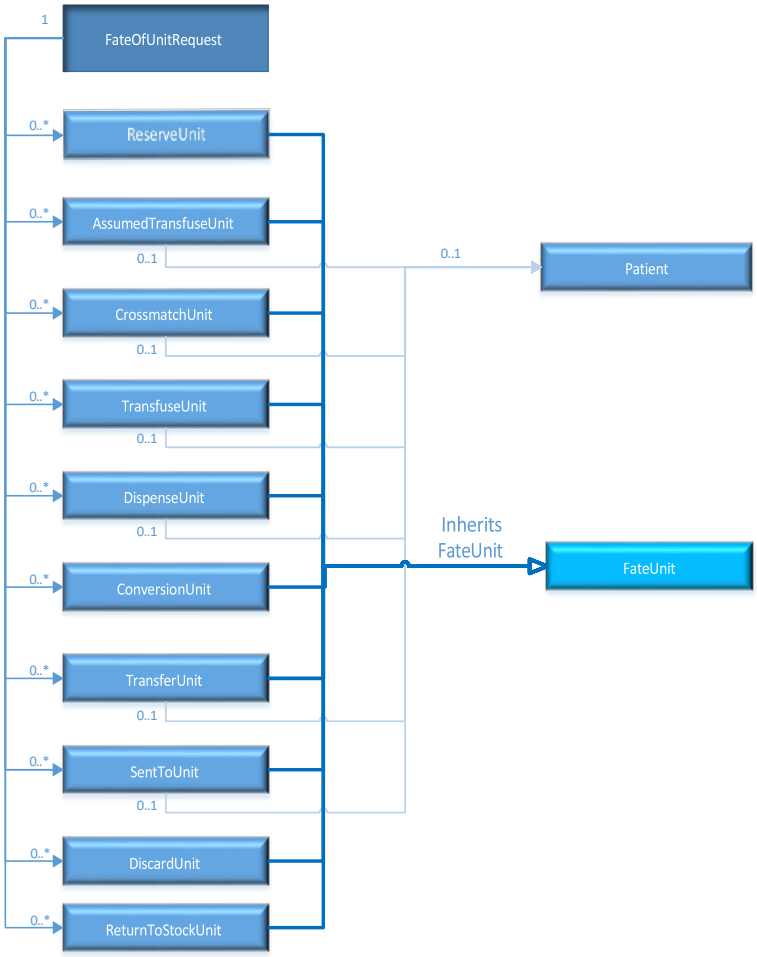
- The service does not need to be called when the unit arrives at the laboratory.
- The SentTo unit can be sent when a Crossmatched unit has been sent to a ward or particular area for use by the patient that was allocated the product at Crossmatch.
- The Dispense unit should be sent when the unit has been allocated (either serologically or by direct electronic issue) to a specific patient.
- Assume Transfuse unit should be sent if the unit has been sent for use and has not been returned after a set time frame, so is assumed to be transfused by the patient that was allocated at Crossmatch.
- Reserve unit should be sent when unit has been 'put aside' for a specific patient, but not yet allocated by Crossmatch or direct issue. The product should not be counted in available inventory.
- Convert unit should be sent when FFP unit that has been thawed and converted to ELP or Red cell unit that has been irradiated.
- The Discard unit should be sent when a unit is recorded as Discarded or equivalent status.
- Transfuse unit should be sent when a unit is known to have been transfused to the patient that was allocated at Crossmatch.
- Transferred unit should be sent when the unit has been moved to another site and should now appear in their inventory (or be discarded by them).
- Return to Stock unit can be sent to reverse the above fate types.

Fate must include the facility that the unit was fated at, the Donation/Lot Number, BloodNet internal Supplier Component ID/Product ID, Collection Date and Expiry Date will indicate whether the product was Dispensed, Discarded, Reserved, Assume Transfused, Transfused, or Transferred to another laboratory. For detail information, Please see following Request Contract section of Fate of Unit.

Service Operation

```
FateOfUnitResponse FateOfUnit(FateOfUnitRequest fateOfUnitRequest)
```

Request Contract



FateOfUnitRequest

Name	Definition	Constraint
AssumedTransfuseUnits	***tns:ArrayOf*AssumedTransfuseUnit**	
ConvertUnits	***tns:ArrayOfConvertUnit***	
CrossMatchUnits	***tns:ArrayOfCrossMatchUnit***	
DiscardUnits	***tns:ArrayOfDiscardUnits***	
DispenseUnits	***tns:ArrayOfDispenseUnit***	
ReserveUnits	***tns:ArrayOfReserveUnit***	
ReturnToStockUnits	***tns:ArrayOfReturnToStockUnit***	
SentToUnits	***tns:ArrayOfSentToUnit***	
TransferUnits	***tns:ArrayOfTransferUnit***	
TransfuseUnits	***tns:ArrayOfTransfuseUnit***	

FateUnit

Name	Definition	Constraint
Comments	***xs:string*** The comments that relate to the fate unit.	X(1000)
DonationLotNumber	***xs:string*** A number provided by the supplier or manufacturer that identifies the donation for components or lot number for manufactured products. This value is not guaranteed to be unique. This identifier is frequently included on the outer packaging of manufactured products as a barcode.	Mandatory
ExpiryDate	***xs:dateTime*** The date and time that the unit will expire according to the issue note. It is the local time at the facility which is holding the unit (i.e. no change based on time zone) – this does mean for example, that if two units of platelets are issued with the same expiry date/time to two AHPs – one in Sydney and one in Perth – that the units could actually expire at a time that is three hours (or two hours in winter) apart. For example: • Fresh Component: YYYY-MM-DD 23:59:00 (e.g. 2015-06-16 23:59:00). • Product: YYYY-MM-DD 00:00:00(e.g. 2016-03-31 00:00:00).	Mandatory
FacilityID	***xs:int*** Unique Identifier of a Facility within BloodNet system.	Mandatory Integer greater than 0
FacilityUnitUniqueIdentifier	***xs:string*** The unique unit identifier attached to a unit by the Facility. This is the value chosen by a Facility or LIS to uniquely identify a unit as a component or product. It is the LIS's responsibility to ensure the value is unique for the Facility.	
FatedBy	***xs:string*** The name of the user who fated the unit.	
PreviousStatus	***xs:string*** The previous status of this unit.	
ProductID	***xs:int*** The BloodNet Product ID for this unit if it is a Product .This can be obtained from GetBloodNetProduct service operation within Utility services.	Mandatory only if the unit is a product.
Quantity	***xs:int*** The number of units that this unit fate represents. If the unit is individually tracked then the quantity will always be one. For units that are not individually tracked then the quantity can be above one.	Mandatory Integer greater than 0
SupplierComponentID	***xs:int*** The Supplier Component ID defined within BloodNet system. This can be obtained from ***GetSupplierComponents*** service operation within utility services.	Mandatory only if the unit is a fresh component. Integer greater than 0
AllocatedPatient	***tns: Patient*** The patient allocated the unit.	This field is Mandatory for the following fate episodes: • AssumedTransfuse, • Crossmatch, • Dispense, • Transfuse

Patient

Name	Definition	Constraint
ABOGroupPhenotype	***tns:ABOGroupPhenotype*** The ABO Blood Group, please see the ABOGroupPhenotype enumeration.	
BirthDate	***xs:dateTime*** The date that the patient was born.	Mandatory – If unknown use 1/1/1
FirstName	***xs:string*** The patient's First Name. Health services must ensure that they have addressed all legislative and policy obligations before exchanging this data element with BloodNet.	X(40)
IHI	***xs:long*** The patient's Individual Healthcare Identifier. Health services must ensure that they have addressed all legislative and policy obligations before exchanging this data element with BloodNet.	
LastName	***xs:string*** The patient's last name. Health services must ensure that they have addressed all legislative and policy obligations before exchanging this data element with BloodNet.	X(40)
RhBloodGroupPhenotype	***xs:boolean*** Flag indicating whether the unit is RhD positive or RhD negative.	
SexCode	***tns:SexCode*** A code indicating the biological distinction between male and female as reported by a person or as determined by an interviewer. Please refer to SexCode enumeration.	Mandatory
URNumber	***xs:string*** An AHP generated unique reference number to identify the patient. As the format for the URN number or MRN of a patient is controlled by the system the patient is registered in, this field is left open.	X(30) Mandatory

AssumedTransfuseUnit

Name	Definition	Constraint
AssumedTransfuseDateTime	***xs:dateTime*** The assumed date/time the transfusion was performed.	Mandatory It is a UTC date time that is in the past.
CustomTransfuseLocation	***xs:string*** The location within the hospital premises that the transfusion occurred. If the transfusion location is neither in the list returned from ***GetTransfusionLocations*** nor ***GetCustomLocations*** within Utility services then use this filed to specify the transfusion location.	X(100) Mandatory if neither TransfuseLocationID nor CustomTransfuseLocationID provided. **This field will be ignored if CustomTransfuseLocationID or TransfuseLocationID is provided.**
CustomTransfuseLocationID	***xs:int*** The location within the hospital premises that the transfusion occurred and it is one of the custom locations created within BloodNet for a facility. It is one of the CustomLocationID values returned from ***GetCustomLocations*** within Utility services.	Mandatory if TransfuseLocationID is not provided. **This field will be ignored if TransfuseLocationID is provided.**
MedicalOfficerFirstName	***xs:string*** The First Name of the person who ordered the transfusion. Health services must ensure that they have addressed all legislative and policy obligations before exchanging this data element with BloodNet.	X(50)
MedicalOfficerLastName	***xs:string*** The Last Name of the person who ordered the transfusion. Health services must ensure that they have addressed all legislative and policy obligations before exchanging this data element with BloodNet.	X(50)
MedicalOfficerHPI-I	***xs:int*** The HPI-I of the person who ordered the transfusion. Health services must ensure that they have addressed all legislative and policy obligations before exchanging this data element with BloodNet.	
MedicalOfficerSpeciality	***xs:string*** The Speciality of the person who ordered the transfusion.	
TransfuseLocationID	***xs:int*** It is the one of the locations that were defined by the BloodNet system where transfusion was performed within the hospital premises. It is one of the TransfusionLocationID values returned from ***GetTransfusionLocations*** within Utility services.	It should be provided if applicable. Otherwise CustomTransfuseLocationID or CustomTransfuseLocation should be provided.

ConvertUnit

Name	Definition	Constraint
ConvertDateTime	***xs:dateTime*** It is the UTC date time when conversion was performed on this unit.	Mandatory It is a UTC date time that is in the past.
ConvertTypeID	***xs:int*** The conversion type that was performed on a unit. Please refer to: ConvertType enumeration.	Mandatory

CrossmatchUnit

Name	Definition	Constraint
CrossmatchDateTime	***xs:dateTime*** The assumed date time the transfusion was performed.	Mandatory It is a UTC date time that is in the past.
MedicalOfficerFirstName	***xs:string*** The First Name of the person who ordered the transfusion. Health services must ensure that they have addressed all legislative and policy obligations before exchanging this data element with BloodNet.	X(50)
MedicalOfficerLastName	***xs:string*** The Last Name of the person who ordered the transfusion. Health services must ensure that they have addressed all legislative and policy obligations before exchanging this data element with BloodNet.	X(50)
MedicalOfficerHPI-I	***xs:int*** The HPI-I of the person who ordered the transfusion. Health services must ensure that they have addressed all legislative and policy obligations before exchanging this data element with BloodNet.	
MedicalOfficerSpeciality	***xs:string*** The Speciality of the person who ordered the transfusion.	

DiscardUnit

Name	Definition	Constraint
CustomDiscardLocation	***xs:string*** The location within the hospital premises where the discard was performed; however if this location is neither in the list of locations that returned from **GetDiscardLocations** nor **GetCustomLocations** within Utility Services then use this filed to specify the discard location.	**X(100)** It is required when neither DiscardLocationID nor CustomDiscardLocationID is provided. **This filed will be ignored if one of CustomDiscardLocationID or DiscardLocationID provided.**
CustomDiscardLocationID	***xs:int*** The location within the hospital premises where the discard was performed at and it is one of the custom locations created within BloodNet for a facility. It is one of the CustomLocationID values returned from **GetCustomLocations** within Utility services.	It is required when DiscardLocationID is not provided. **This filed will be ignored if DiscardLocationID provided.**
DiscardDateTime	***xs:dateTime*** It is the UTC date time when discard was performed on this unit. This value is not related to the expiry date of the unit or the date that the discard was entered into the system but the date the discard actually occurred. If units are discarded and recorded as discarded on paper before being put into the system the value should be the date that record was taken on paper.	Mandatory It is a UTC date time that is in the past.
DiscardLocationID	***xs:int*** The location that the discard was performed at. This location is one of the discard locations defined by BloodNet system. It is one of DiscardLocationID values from the **GetDiscardLocations** within Utility services.	It is required if applicable, otherwise the CustomDiscardLocationID or CustomDiscardLocation should be provided.
DiscardReasonID	***xs:int*** The reason that the discard was performed based on a list of discard reasons defined by the BloodNet User Group. It is one of the DiscardReasonID values returned from **GetDiscardReasons** within Utility services.	Mandatory

DispenseUnit

Name	Definition	Constraint
CustomDispenseLocation	***xs:string*** The location that the unit has been dispensed within the hospital however it is neither one of the location values returned from ***GetDispenseLocations*** nor ***GetCustomLocations*** within Utility services.	X(100) It is required if neither DispenseLocationID nor CustomDispenseLocationID is provided. **This field will be ignored if one of CustomDispenseLocationID or DispenseLocationID provided.**
CustomDispenseLocationID	***xs:int*** The location within the hospital premises where the dispense action was performed and it is one of the custom locations created within BloodNet for a facility. It is one of the CustomLocationID values returned from **GetCustomLocations** within Utility services.	It is required when DispenseLocationID is not provided. **This field will be ignored if DispenseLocationID provided.**
DispenseDateTime	***xs:dateTime*** The date time when dispense was performed on the unit.	Mandatory It is a UTC date time that in the past.
DispenseLocationID	***xs:int*** The location that the unit has been dispensed within the hospital. It is one of the DispenseToLocationID values returned from ***GetDispenseToLocations*** within Utility services.	It should be provided if applicable. Otherwise, CustomDispenseLocationID or CustomDispenseLocation should be provided.

ReserveUnit

Name	Definition	Constraint
ReserveDateTime	***xs:dateTime*** The date time when the unit was 'put aside' for a specific patient, but not yet allocated by Crossmatch or direct issue.	Mandatory A UTC date time that is in the past.

ReturnToStockUnit

Name	Definition	Constraint
ReturnToStockDateTime	***xs:dateTime*** The date time when the unit was returned to stock from its previous status. E.g. a unit crossmatched to a patient that was returned back to stock.	Mandatory A UTC date time that is in the past.

SentToUnit

Name	Definition	Constraint
SentToCustomLocation	***xs:string*** The location that the unit has been sent to within the hospital but it is neither one of the locations returned from ***GetSentToLocations*** nor ***GetCustomLocations*** within Utility services.	X(100) It is required if neither SentToLocationID nor SentToCustomLocationID is provided. **This field will be ignored if either SentToLocationID or SentToCustomLocationID is provided.**
SentToCustomLocationID	***xs:int*** The location within the hospital premises where the unit has been sent to and it is one of the custom locations created within BloodNet for a facility. It is one of the CustomLocationID values returned from **GetCustomLocations** within Utility services.	It is required if SentToLocationID is not provided. **It will be ignored if SentToLocationID is provided.**
SentToDateTime	***xs:dateTime*** The date time when unit was sent to the destination within the facility (hospital).	Mandatory It is a UTC date time that in the past.
SentToLocationID	***xs:int*** The location that the unit has been sent to within the hospital. It is one of the SentToLocationID values returned from ***GetSentToLocations*** within Utility services.	Required if applicable, otherwise SentToCustomLocationID or SentToCustomLocation should be provided.

TransferUnit

Name	Definition	Constraint
TransferDateTime	***xs:dateTime*** The date and time that the transfer was performed on. This value represents the date and time that a unit is going to be transferred to another facility. It is understood that is it not practical to record the date and time that a unit is picked up by a courier and consider any date value that appropriately represents the time a unit is transferred is acceptable.	Mandatory It is a UTC date time in the past.
TransferReasonID	***xs:int*** The reason that the transfer was performed on this unit based on a list of transfer reasons defined by BloodNet User Group. It is one of the TransferReasonID values returned from **GetTransferReasons** within Utility services.	Mandatory
TransferToCustomLocation	***xs:string*** The location the unit was/is being transferred to that is not managed by BloodNet. Facilities, Distribution Sites, component or product users, and suppliers that are not managed by BloodNet are considered Custom Locations.	Required if none of TransferToFacilityID, TransferToCustomLocationID and TransferToDistributionSiteID is provided. Ignored if one of TransferToFacilityID, TransferToCustomLocationID and TransferToDistributionSiteID is provided.
TransferToCustomLocationID	***xs:int*** The location the unit was/is being transferred to that is not managed by BloodNet. However these locations were created by BloodNet users for a facility. It is one of the CustomLocationID values returned from the **GetCustomTransferLocations** within Utility services.	Required if none of TransferToFacilityID and TransferToDistributionSiteID is provided. Ignored if one of TransferToFacilityID and TransferToDistributionSiteID is provided.
TransferToDistributionSiteID	***xs:int*** The identifier of the distribution site that the unit was transferred to. If the unit has been recalled by supplier or otherwise sent back to the supplier the Destination Distribution Site ID should be provided.	Required if transfer to a distribution site.
TransferToFacilityID	***xs:string*** The facility ID within the BloodNet system that this unit was transferred to. This is one of FacilityID values that returned back from **GetManagedFacilities** service operation within Utility Service.	Required if transfer to a BloodNet managed facility.

TransfuseUnit

Name	Definition	Constraint
CustomTransfuseLocation	***xs:string*** The location within the hospital premises that the transfusion occurred. If the transfusion location is neither in the list returned from ***GetTransfusionLocations*** nor ***GetCustomLocations*** within Utility services then use this filed to specify the transfusion location.	X(100) Mandatory if neither TransfuseLocationID nor CustomTransfuseLocationID provided. **This field will be ignored if CustomTransfuseLocationID or TransfuseLocationID is provided.**
CustomTransfuseLocationID	***xs:int*** The location within the hospital premises that the transfusion occurred and it is one of the custom locations created within BloodNet for a facility. It is one of the CustomLocationID values returned from ***GetCustomLocations*** within Utility services.	Mandatory if TransfuseLocationID is not provided. **This field will be ignored if TransfuseLocationID is provided.**
MedicalOfficerFirstName	***xs:string*** The First Name of the person who ordered the transfusion. Health services must ensure that they have addressed all legislative and policy obligations before exchanging this data element with BloodNet.	X(50)
MedicalOfficerHPI-I	***xs:int*** The HPI_I of the person who ordered the transfusion. Health services must ensure that they have addressed all legislative and policy obligations before exchanging this data element with BloodNet.	
MedicalOfficerLastName	***xs:string*** The Last Name of the person who ordered the transfusion. Health services must ensure that they have addressed all legislative and policy obligations before exchanging this data element with BloodNet.	X(50)
MedicalOfficerSpeciality	***xs:string*** The Speciality of the person who ordered the transfusion.	
TransfuseDateTime	***xs:dateTime*** The assumed DateTime the transfusion was performed.	Mandatory It is a UTC date time that is in the past.
TransfuseLocationID	***xs:int*** It is the one of the locations that were defined by the BloodNet system where transfusion was performed within the hospital premises. It is one of the TransfusionLocationID values returned from ***GetTransfusionLocations*** within Utility services.	It should be provided if applicable. Otherwise CustomTransfusLocationID or CustomTransfusLocation should be provided.

3.5.5 Utility Services

The Utility Service contains a number of service operations which provide information (such as reference data) from BloodNet system. Each of these service's contract has been provided in the following section.

GetAvailableModifiers

This returns all modifiers available within BloodNet. These modifiers are used to define modifiers imported using GetReceiptedIssueNotes and when providing real time inventory levels.

GetAvailableModifiersRequest: there is no field in this request.

GetAvailableModifiersResponse:

Name	Definition
Modifiers	***tns:ArrayOfModifier*** Returns an array of Modifiers available for a unit.

Modifier Type:

Name	Definition	Constraint
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
Description	***xs:string*** The description of the modifier, possible values: Irradiated, CMV negative, Autologous Blood.	
LastUpdated	***xs:datetime*** The recent date time this record was updated.	
ModifierID	***xs:int*** Unique identifier within the BloodNet system for the Modifier.	Mandatory
SerialNumber	***xs:long*** A number indicating an arbitrary version of the record.	

GetBarcodeTypes

This returns an array of available Barcode Types being used within BloodNet.

GetBarcodeTypesRequest: no field required in this request.

GetBarcodeTypesResponse:

Name	Definition
BarcodeTypes	***tns:ArrayOfBarcodeType*** An array of BarcodeType types.

BarcodeType type:

Name	Definition	Constraint
BarcodeTypeID	***xs:int*** Unique identifier within the BloodNet system for the Barcode type.	Mandatory
ContainsCustomEncoding	***xs:boolean*** Indicates whether the Barcode contains additional data or not.	Mandatory
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
Description	***xs:string*** Description of the Barcode encoding this barcode represents.	
HasStartStopCodes	***xs:boolean*** Indicates whether the Barcode has start and stop codes.	Mandatory
IsConcatenated	***xs:boolean*** Indicates the whether the Barcode is a concatenated or not.	Mandatory
IsISBT128	***xs:boolean*** Indicates whether the Barcode complies with the ISBT standard.	Mandatory
IsGS1	***xs:boolean*** Indicates whether the Barcode complies with the GS1 standard.	Mandatory
LastUpdated	***xs:datetime*** The recent date time this record was updated.	
Length	***xs:int*** Expected length of the Barcode.	Mandatory
SerialNumber	***xs:long*** A number indicating an arbitrary version of the record.	
Symbology	***xs:string*** Description of the symbology used by the Barcode Type.	X(30)
UsesApplicationIdentifiers	***xs:boolean***	Mandatory

GetBloodNetProduct

This returns a specific Product within BloodNet based on the ProductID that is provided by the service operation request.

GetBloodNetProductRequest:

Name	Definition	Constraint
ProductID	***xs:int*** Unique identifier within the BloodNet system for one Product.	Mandatory

GetBloodNetProductResponse: Returns a BloodNet Product.

Name	Definition	Constraint
BarcodeType	***tns:BarcodeType*** For detailed information please refer to the ***GetBarcodeTypes Operation***.	
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
LastUpdated	***xs:datetime*** The most recent date/time this record was updated.	
ProductID	***xs:int*** Unique identifier within the BloodNet system for one Product.	
ProductName	***xs:string*** The name of the product.	X(50)
ProductType	***tns:ProductType*** For detailed information please refer to the ***GetProductTypes Operation***.	
SerialNumber	***xs:long*** A number indicating an arbitrary version of the record.	
Suppliers	***tns:ArrayOfSupplier*** For detailed information please refer to the ***GetSuppliers Operation***.	

GetCandidateProductsForLotNumber

This returns a list of BloodNet Products matching the LotNumber that is provided in the service operation request.

GetCandidateProductsForLotNumberRequest:

Name	Definition	Constraint
LotNumber	***xs:string*** This field will be used to match products which have the same LotNumber.	Mandatory

GetCandidateProductsForLotNumberResponse:

Name	Definition
CandidateProducts	***tns:ArrayOfCandidateProduct***

CandidateProduct: inherits from **Product** type, please refer to **GetBloodNetProduct** service operation.

Name	Definition	Constraint
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
ExpiryDates	***q1:ArrayOfdateTime*** The expiry dates of the product.	
LastUpdated	***xs:datetime*** The most recent date/time this record was updated.	
SerialNumber	***xs: long*** A number indicating an arbitrary version of the record.	

GetComponentTypes

This will return a list of fresh components that are used within BloodNet.

GetComponentTypesRequest: no field in this request

GetComponentTypesResponse:

Name	Definition
ComponentTypes	***tns:ArrayOfComponentType***

ComponentType:

Name	Definition	Constraint
ComponentTypeID	***xs:int*** The component ID used within BloodNet system.	
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
LastUpdated	***xs:datetime*** The most recent date/time this record was updated.	
Name	***xs:string*** The name of the Component.	X(50)
SerialNumber	***xs: long*** A number indicating an arbitrary version of the record.	

GetCustomLocations

It returns a list of custom locations for a specific facility. This can be used to define the following items when LIS users send fate data back to LIS

- Custom discard location for Discard Unit
- Custom dispense location for Dispense Unit
- Custom sent to location for SentTo Unit
- Custom transfuse location for Transfuse Unit

.

GetCustomLocationsRequest:

Name	Definition	Constraint
FacilItyID	***xs:int*** The unique identifier of a Facility within BloodNet system.	***Integer above zero***

GetCustomLocationsResponse:

Name	Definition	
CustomDiscardLocations	***tns:ArrayOfCustomLocation***	

CustomLocation:

Name	Definition	Constraint
CustomLocationID	***xs:int*** The unique identifier of CustomLocation within BloodNet system.	
Deprecated	**xs:boolean** A flag indicating that the record has been deprecated and is not available for use.	
Description	***xs:string*** The description of the custom location.	X(200)
LastUpdated	***xs:datetime*** The recent date time this record was updated.	
Location	***xs:string*** The friendly name for the Custom Location.	X(100)
SerialNumber	***xs: long*** A number indicating an arbitrary version of the record.	

GetCustomTransferLocations

It returns a list of custom transfer locations for a specific BloodNet facility. These custom transfer locations can be used when

GetCustomTransferLocationsRequest:

Name	Definition
FacilityId	***xs:int*** A BloodNet Facility's Id. Please refer to the ***GetFacilities service operation***.

GetCustomTransferLocationsResponse:

Name	Definition
CustomTransferLocatons	***tns:ArrayOfCustomTransferLocation***

CustomTransferLocation:

Name	Definition	Constraint
CustomLocationID	***xs:int*** The identifier of the custom location as assigned within BloodNet.	
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
LastUpdated	***xs:datetime*** The recent date time this record was updated.	
LocationDescription	***xs:string*** The detailed description of this custom location.	X(200)
LocationName	***xs:string*** The user entered name of the location this custom transfer location represents.	X(50)
SerialNumber	***xs:long*** A number indicating an arbitrary version of the record.	

GetDefectReasons

It returns a list of defect reasons which are used to define the defect reason that is specified within IssueNoteLines and imported using GetReceiptedIssueNotes.

GetDefectReasonsRequest: there is no field in this request

GetDefectReasonsResponse:

Name	Definition
DefectReasons	***tns:ArrayOfDefectReason***

DefectReason:

Name	Definition	Constraint
DefectReasonID	***xs:int*** The unique identifier of DefectReason within BloodNet system.	
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
Description	***xs:string*** Description of the DefectReason.	X(500)
LastUpdated	***xs:datetime*** The most recent date/time this record was updated.	
MustNotUser	***xs:boolean*** Indicates whether the DefectReason is usable or not.	
Name	***xs:string*** The name of the DefectReason.	X(100)
SerialNumber	***xs: long*** A number indicating an arbitrary version of the record.	

GetDiscardLocations

It returns a list of discard locations which are defined within BloodNet. These locations are used to define the discard location for a Discard Unit when sending Fate data to the BloodNet LIS system.

GetDiscardLocationsRequest: there is no field in this request

GetDiscardLocationsResponse:

Name	Definition
DiscardLocations	***tns:ArrayOfDiscardLocation***

DiscardLocation:

Name	Definition	Constraint
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
Description	***xs:string*** The description of the discard location.	X(200)
DiscardLocationID	***xs:int*** The unique identifier of DiscardLocation within BloodNet system.	
LastUpdated	***xs:datetime*** The most recent date/time this record was updated.	
Location	***xs:string*** The friendly name for the discard location.	X(100)
SerialNumber	***xs long*** A number indicating an arbitrary version of the record.	

GetDiscardReasons

It returns a list of discard reasons within BloodNet system. These reasons are used to define the discard reason for a Discard Unit when sending Fate information to BloodNet LIS system.

GetDiscardReasonsRequest: no field required in this request

GetDiscardReasonsResponse:

Name	Definition
DiscardReasons	***tns:ArrayOfDiscardReason***

DiscardReason type:

Name	Definition	Constraint
Description	**xs:string** The description of the reason.	X(500)
DiscardReasonID	***xs:int*** The unique identifier of DiscardReason within BloodNet system.	
Reason	**xs:string** The friendly name of the reason.	X(100)

GetDispenseLocations

It returns a list of dispense locations are defined within BloodNet system. These locations are used to define the dispense location for a Dispense Unit when sending Fate information to BloodNet LIS system.

GetDispenseLocationRequest

Name	Definition	Constraint
FacilltyID	***xs:int*** The unique identifier of a Facility within BloodNet system.	Integer above zero

GetDispenseLocationResponse:

Name	Definition	
DispenseLocations	***tns:ArrayOfDispenseLocation***	

DispenseLocation:

Name	Definition	Constraint
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
Description	***xs:string*** The description of the dispense location.	X(200)
DispenseLocationID	***xs:int*** The unique identifier of dispense location within BloodNet system.	
LastUpdated	***xs:datetime*** The most recent date/time this record was updated.	
Location	***xs:string*** The friendly name for the dispense location.	X(100)
SerialNumber	***xs long*** A number indicating an arbitrary version of the record.	

GetDistributionSites

Returns a list of supplier distribution sites used within BloodNet.

GetDistributionSitesRequest: no field requires in this request

GetDistributionSitesResponse:

Name	Definition
DistributionSites	***tns:ArrayOfDistributionSite***

DistributionSite:

Name	Definition	Constraint
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
DistributionSiteID	***xs:int*** The unique identifier of DistributionSite within BloodNet system.	Mandatory
Fax	***xs:string*** Fax number of the distribution site.	X(10)
LastUpdated	***xs:datetime*** The most recent date/time this record was updated.	
LocalityName	***xs:string*** The name of the locality/suburb of the address.	X(50)
Name	***xs:string*** The name of the DistributionSite.	X(50)
Postcode	***xs:string*** Postcode of the distribution site.	N(4)
SerialNumber	***xs: long*** A number indicating an arbitrary version of the record.	
State	***xs:string*** The state or territory code of the distribution site.	X(30)
StreetAddress	***xs:string*** The physical street address of the distribution site.	X(100)
SupplierID	***xs:int*** The unique identifier of Supplier within BloodNet system.	Mandatory
Telephone	***xs:string*** Telephone number of the distribution site.	X(10)

GetFacilities

This returns all Facilities (Hospitals etc.) available within BloodNet. Information about those facilities can be used when accessing other services, for example FacilityID will be used when sending Fate messages back to the BloodNet Laboratory Interface System or providing real time inventory levels.

GetFacilitiesRequest: no field required in this request.

GetFacilitiesResponse: An array of Facility type

Name	Definition
Facilities	***tns:ArrayOfFacility*** Returns an array of facilities managed by laboratory, e.g. Facilities are managed by Pathwest.

Facility:

Name	Definition	Constraint
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
FacilityID	***xs:int*** Unique identifier within the BloodNet system for the Facility.	Mandatory
Fax	***xs:string*** Fax number of the facility.	X(10)
HealthProviderCode	***xs:strin***g The Australia Health Provider Code for a facility (Hospital).	X(50)
LastUpdated	***xs:datetime*** The most recent date/time this record was updated.	
LocalityName	***xs:string*** Suburb name where facility located.	X(50)
Name	***xs:string*** Name of the facility.	X(50)
SerialNumber	***xs:long*** A number indicating an arbitrary version of the record.	
State	***xs:string*** State or Territory Code.	X (3). E.g. QLD,ACT
Telephone	***xs:string*** Telephone number of the facility.	X(10)

GetFacilityRoutineComponents

It returns a list of routine fresh components for a specified BloodNet Facility, available from a specified Supplier.

GetFacilityRoutineComponentsRequest:

Name	Definition	Constraint
FacilityID	***xs:int*** The unique identifier of DistributionSite within BloodNet system, this is mandatory field and you need specify it in order to get the routine products of this Facility.	Mandatory
SupplierID	***xs:int*** The BloodNet Supplier ID for the supplier that provides this unit. This value can be obtained from **GetSuppliers** service operation.	Mandatory

GetFacilityRoutineComponentsResponse:

Name	Definition
RoutineComponents	***tns:ArrayOfRoutineComponent***

RoutineComponent type:

Name	Definition	Constraint
ABOGroupPhenotype	***tns: ABOGroupPhenotype*** It is the ABO blood group.	See the ABOGroupPhenotype enumeration
ComponentID	***xs:int*** The unique identifier of Component Type within BloodNet system.	
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
LastUpdated	***xs:datetime*** The most recent/ date time this record was updated.	
MaxStock	***xs:int*** The maximum stock level that configured for this Routine Component of this Facility.	
Modifiers	***tns:ArrayOfModifier*** An array of **Modifier** types associated with current component; please refer to ***GetAvailableModifiers*** service operation.	
RhBloodGroupPhenotype	***xs:boolean*** A flag indicating whether current component is RhD positive or negative.	
SerialNumber	***xs:long*** A number indicating an arbitrary version of the record.	

GetFacilityRoutineProducts

It returns a list of routine products for a specified BloodNet Facility, available from a specified Supplier.

GetFacilityRoutineProductsRequest:

Name	Definition	Constraint
FacilityID	***xs:int*** The unique identifier of DistributionSite within the BloodNet system, this is mandatory field and you need specify it in order to get the routine products of this Facility.	Mandatory
SupplierID	***xs:int*** The BloodNet Supplier ID for the supplier that provides this unit. This value can be obtained from **GetSuppliers** service operation.	Mandatory

GetFacilityRoutineProductsResponse:

Name	Definition
RoutineProducts	***tns:ArrayOfRoutineProduct***

RoutineProduct:

Name	Definition	Constraint
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
LastUpdated	***xs:datetime*** The most recent date/time this record was updated.	
MaxStock	***xs:int*** The maximum stock level that configured for this Routine Product of this Facility.	
ProductID	***xs:int*** The unique identifier of the Product within BloodNet system.	
SerialNumber	***xs:long*** A number indicating an arbitrary version of the record.	

GetManagedFacilities

This returns a list of Facilities which are managed by the Laboratory. Information about those facilities can be used when accessing other services, for example FacilityID will be used when sending Fate messages back to Laboratory Interface System or providing real time inventory levels.

GetManagedFacilitiesRequest: no field in this request

GetManagedFacilitiesResponse: An array of Facility types

Name	Definition
Facilities	***tns:ArrayOfFacility*** Returns an array of facilities managed by laboratory, e.g. Facilities managed by Pathwest. Please refer to GetFacilities service operation for Facility details.

GetManufacturers

This returns an array of available Manufacturers within BloodNet.

GetManufacturersRequest: no field required in this request.

GetManufacturersResponse:

Name	Definition
`Manufacturers`	***tns:ArrayOf Manufacturers*** An array of `Manufacturers` types.

Manufacturer type:

Name	Definition	Constraint
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	Mandatory
LastUpdated	***xs:datetime*** The recent date time this record was updated.	Mandatory
ManufacturerID	***xs:int*** Unique identifier within the BloodNet system for the Manufacturer.	Mandatory
ManufacturerName	***xs:string*** The name of the manufacturer.	Mandatory
SerialNumber	***xs:long*** A number indicating an arbitrary version of the record.	Mandatory

GetProductTypes

This returns an array of available Product Types being used within BloodNet.

GetProductTypesRequest: there is no field required in this request.

GetProductTypesResponse:

Name	Definition
ProductTypes	***tns:ArrayOfProductType***

ProductType type

Name	Definition	Constraint
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
LastUpdated	***xs:datetime*** The most recent date/time this record was updated.	
Name	***xs:string*** The name of the product type.	X(50)
ProductTypeID	***xs:int*** Unique identifier within the BloodNet system for the Product type.	
SerialNumber	***xs:long*** A number indicating an arbitrary version of the record.	

GetSentToLocations

It returns a list of sent to locations that are defined within BloodNet system. These locations are used to define the sent to location for a SentTo Unit when sending Fate information to BloodNet LIS system.

GetSentToLocationRequest

Name	Definition	Constraint
FacilltyID	***xs:int*** The unique identifier of a Facility within BloodNet system.	***Integer above zero***

GetSentToLocationResponse:

Name	Definition	
SentToLocations	***tns:ArrayOfSentToLocation***	

SentToLocation:

Name	Definition	Constraint
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
Description	***xs:string*** The description of the sent to location.	X(200)
SentToLocationID	***xs:int*** The unique identifier of sent to Location within BloodNet system.	
LastUpdated	***xs:datetime*** The most recent date/time of the item was updated.	
Location	***xs:string*** The friendly name for the discard location.	X(100)
SerialNumber	***xs long*** A number indicating an arbitrary version of the record.	

GetSuppliers

This returns all suppliers who are defined within BloodNet.

GetSuppliersRequest: No field in this request.

GetSuppliersResponse:

Name	Definition
Suppliers	***tns:ArrayOfSupplier***

Supplier:

Name	Definition	Constraint
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
LastUpdated	***xs:datetime*** The most recent date/time this record was updated.	
Name	***xs:string*** The name of this supplier.	X(200)
SerialNumber	***xs:long*** A number indicating an arbitrary version of the record.	
SupplierID	***xs:int*** Unique identifier within the BloodNet system for the Supplier.	Mandatory
SuppliesComponents	***xs xs:boolean*** Indicates whether this supplier supplies components or not.	Mandatory
SuppliesProducts	***xs:boolean*** Indicates whether this supplier supplies products.	Mandatory

GetSupplierComponents

It returns a list of fresh components available from a specified Supplier.

GetSupplierComponentsRequest:

Name	Definition	Constraint
SupplierID	***xs:int*** The BloodNet Supplier ID for the supplier that provides this unit. This value can be obtained from **GetSuppliers** service operation.	Mandatory

GetSupplierComponentsResponse:

Name	Definition
SupplierComponents	***tns:ArrayOfSupplierComponent***

SupplierComponent:

Name	Definition	Constraint
SupplierComponentID	***xs:int*** The unique identifier of Supplier Component within BloodNet system.	
ComponentTypeID	***xs:int*** The component ID used within BloodNet system.	**Mandatory**
ComponentName	***xs:string*** The name of the component as registered within BloodNet system.	X(150)
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
LastUpdated	***xs:datetime*** The most recent date/time this record was updated.	
SerialNumber	***xs: long*** A number indicating an arbitrary version of the record.	
SuppliersComponentIdentifier	***xs:string*** The component identifier that supplier uses.	X(50)
SuppliersMnemonic	***xs:string*** The name of the component shown on the issue note from supplier.	X(100)
UsesABOGroup	***xs:boolean*** A flag indicating whether this component carries an ABO Blood Group Phenotype finding or not.	
UsesRhGroup	***xs:boolean*** A flag indicates whether this component carries an Rh Blood Group Phenotype finding in the form of RhD positive or negative.	

GetSupplierProducts

It returns a list of products available from a specified Supplier.

GetSupplierProductsRequest:

Name	Definition	Constraint
SupplierID	***xs:int*** The BloodNet Supplier ID for the supplier that provides this unit. This value can be obtained from **GetSuppliers** service operation.	Mandatory

GetSupplierProductsResponse:

Name	Definition
SupplierProducts	***tns:ArrayOfSupplierProduct***

SupplierProduct:

Name	Definition	Constraint
BarcodeType	***tns:BarcodeType*** Please refer to **GetBarcodeTypes** service operation.	
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
LastUpdated	***xs:datetime*** The recent date time this record was updated.	
ProductID	***xs:int*** The unique identifier of the Product within BloodNet system.	
ProductName	***xs:string*** The name of the product as registered within BloodNet.	X(50)
ProductType	***tns:ProductType*** Please refer to **GetProductTypes** service operation.	
SerialNumber	***xs: long*** A number indicating an arbitrary version of the record	
SupplierProductIdentifier	***xs:string*** The product identifier the supplier uses.	X(50)
SupplierProductID	***xs:int*** The unique Supplier Product Id specified by BloodNet This can be obtained from ***GetSupplierProducts*** service operation within utility services.	
SuppliersMnemonic	***xs:string*** The name of the product shown on the issue note from supplier.	X(100)
GTIN	***xs:int*** The Global Trade Identification Number for the product.	

GetTransferReasons

This service returns the list of transfer reasons defined within BloodNet. These transfer reasons are used to define the transfer reason for a Transfer Unit when sending Fate information to the BloodNet LIS system.

GetTransferReasonsRequest: no field requires in this request

GetTransferReasonsResponse:

Name	Definition
TransferReasons	***tns:ArrayOfTransferReason***

TransferReason:

Name	Definition	Constraint
Definition	***xs:string*** The description of this transfer reason.	X(500)
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
LastUpdated	***xs:datetime*** The most recent/date time this record was updated.	
Reason	***xs:string*** The friendly name for the transfer reason.	X(100)
SerialNumber	***xs: long*** A number indicating an arbitrary version of the record.	
TransferReasonID	***xs:int*** The unique identifier of the transfer reason within BloodNet System.	

GetTransfusionLocations

It returns a list of transfuse locations defined within BloodNet to indicate where the transfusion happened. These transfusion locations are used to define the transfusion location for a Transfuse Unit when sending Fate information to BloodNet LIS system.

GetTransfusionLocationsRequest: no field required in this request

GetTransfusionLocationsResponse:

Name	Definition
TransfusionLocation	***tns:ArrayOfTransfusionLocation***

TransfusionLocation

Name	Definition	Constraint
Definition	***xs:string*** The description for the transfusion location.	X(500)
Deprecated	***xs:boolean*** A flag indicating that the record has been deprecated and is not available for use.	
LastUpdated	***xs:datetime*** The most recent date/time this record was updated.	
Location	***xs:string*** The friendly name for the transfusion location.	X(100)
SerialNumber	***xs: long*** A number indicating an arbitrary version of the record.	
TransfusionLocationID	***xs:int*** The unique identifier of the transfusion location within BloodNet System.	

4 Enumerations

4.1 ABOGroupPhenotype

Code	Description	Definition
1	O	The O Blood Group.
2	A	The A Blood Group.
3	B	The B Blood Group.
4	AB	The AB Blood Group.

4.2 AcknowledgementAction

Code	Description	Definition
0	Accept	The unit is now in the LISs inventory.
1	Reject	The unit is not in the LISs inventory.
2	Not Applicable	The LIS does not support the concept of Accepting or Rejecting a unit, or the action taken in receipting does not reflect the concept of Acceptance or Rejection of a unit.

4.3 AcknowledgementActionReason

Code	Description	Definition
0	Unknown Item	Some information presented in the Issue Note Line failed to match a known Component or Product in the LIS.
1	Unsupported Item	The item presented was known but understood not to work correctly or not configured in the LIS for some other reason.
2	Unit Defected	The defected unit had a defect type that resulted in a certain action. Unit Defected can be used for an Acceptance reason or a Rejection reason.
3	Already In Inventory	The unit was entered into the LISs inventory already via a manual process or due to acknowledgement being set by the user.
4	Failed System Checks	Any checks applied automatically by the LIS resulted in the unit being rejected.
5	Failed User Checks	Any check performed by the user resulted in the unit being rejected.
6	Accepted	Default accepted reason. This should be used if no other match can be found.
7	Rejected	Default rejected reason. This should be used if no other match can be found.
8	Other	To support the Not Applicable action.

4.4 ConvertType

Code	Description	Definition
0	Irradiate	The process of converting Red Cells to Irradiated Red Cells.
1	FFP to ELP	The process of converting a unit of Fresh Frozen Plasma (FFP)to Extended Life Plasma (ELP).

4.5 RhBloodGroupPhenotype

Code	Description	Definition
1	RhD Positive	RhD antigen is present on red cells.
0	RhD Negative	RhD antigen is not present on red cells.

4.6 SexCode

See AS4590-2006.

Code	Description	Definition
1	Male	
2	Female	
3	IntersexOrIndeterminate	Intersex or Indeterminate. See AS4590-2006 for more information.
0	Unknown	Not stated/Inadequately described

4.7 UnitFate

Code	Description	Definition
0	NotFinal	Any unit status that cannot be categorised as one of the following statuses.
1	Transfuse	Product is known to have been transfused to the patient that was allocated at crossmatch.
2	Discard	Any unit that is Discarded, Assumed Discarded, Confirmed Discarded, or equivalent should use this value.
3	Transferred	Product has been moved to another BloodNet or NYB BloodNet site and should now appear in their inventory.
4	Crossmatch	Product has been allocated (either serologically or by direct electronic issue) to a specific patient.
5	Dispense	Crossmatched product has been sent to a ward or particular area for use by the patient that was allocated the product at crossmatch.
6	AssumedTransfused	Product has been sent for use and has not been returned after a set time frame, so is assumed to be transfused by the patient that was allocated at crossmatch.
7	Reserve	Product has been 'put aside' for a specific patient, but not yet allocated by crossmatch or direct issue. The product should not be counted in available inventory.
8	SentTo	Product has been sent to another location (usually within the hospital, e.g. emergency O Negative units in theatre fridge) but **HAS NOT** been allocated to a specific patient. (This could potentially be used instead of transfer for helicopter retrieval service or inter hospital movement for NYB sites).
9	Convert	FFP unit that has been thawed and converted to ELP or Red cell unit that has been irradiated.
10	Return to Stock	The above fate types will need to be reversible to allow a unit's previous status to be reset to a preceding status, whilst still retaining an audit trail displaying any other prior statuses set for a unit.

5 Appendices

5.1 Appendix A: BloodNet Web Site

BloodNet is a web based inventory management system used by pathology laboratories to:

- Order blood and blood products (units) from the Australian Red Cross Blood Service (Blood Service)
- Receipt these units on arrival in the laboratory, providing feedback (using the defect reason field) if required to the National Blood Authority and the Blood Service
- Record the Fate of a unit
- Provide advice on Inventory levels to inform the management of the national inventory.

BloodNet is interfaced to the Blood Service eProgesa system (known by the Blood Service as the *National Blood Management System* or *NBMS*) and receives electronic information on the contents of deliveries including donor numbers, lot numbers, product codes, expiry dates and some phenotype information. This data also needs to be entered into laboratory information systems. Historically this has been done manually using a combination of bar code scanning and key strokes.

The NBA is currently planning to provide a BloodNet interface to all other suppliers under the National Blood Arrangements. This work is now in train, with expected completion by the end of 2017. Following this work, feeds of data from these suppliers and inventory holdings of these products will flow through the BloodNet-LIS Interface Web Service APIs.

A range of functionalities were built to support LIS in the BloodNet Web Site that are only available for a Facility that has LIS configured, those functions include:

1. BloodNet LIS Administration Home
    - User can view all facilities are administered.
    - User can view action logs for each of the key service operations was called.
    - User can view error logs for each of the Key service operations was called.

2. Receipting module, where user can
    - View a list of Issue Note Line Items yet to be processed for the LIS.
    - View a list of Issue Note Line Items that have been processed for the LIS.

3. BloodNet Inventory Page, it shows current inventory level as provided by the LIS for a Facility

4. AHPDashboard is a module of BloodNet, presented as a dashboard that will be located on the wall of the health provider's laboratory. The dashboard will convey key information from BloodNet to laboratory staff relating to their order status, inventory levels, close to expiry units and other critical information such as details of NBSCP[1] activations.

Further information on BloodNet (including User Manuals, Training Materials and Newsletters) is available from the NBA website at BloodNet for blood products from Lifeblood | National Blood Authority.

[1] National Blood Supply Contingency Plan was developed by the NBA in collaboration with Australian Red Cross Blood Service (ARCBS) and other relevant stakeholders to provide a guide to coordinate an appropriate national response in the event of a domestic health threat or disaster that affects the provision of a safe and adequate blood supply in Australia.

5.2 Appendix B: Supporting Information

5.2.1 Name

The Name is the preferred name of the data element. The BloodNet Laboratory Information System Services will be implemented according to this name with the exception of legacy services where the specification will match the preferred name and the legacy services will match one of the synonyms. This will be a single word.

5.2.2 Definition

A Definition is a statement describing the meaning of the data element.

5.2.3 Source Standard

The Source Standard is a standard that contributes to the definition of the data element or other sources or standards that influence the definition of the data element.

5.2.4 Mandatory

Indicates whether a data element is mandatory or not and under which conditions it is. For example whether there are any pre or co-requisites.

5.2.5 Implementation of Data Types

The implementations of value types used within the BloodNet Laboratory Information System Services are based on .NET 4.0 C# simple types and the string (a string is not a .NET simple type). While all attempts are made to ensure changes in the hardware platform and version of the .NET framework do not change these types it is beyond our control and therefore not documented in detail in this specification.

For reference the following sources are the best spot to start for understanding the specific constraints of each of these types.

http://msdn.microsoft.com/en-us/library/ya5y69ds.aspx msdn - Built-In Types Table (C# Reference)

http://msdn.microsoft.com/en-us/library/bfft1t3c.aspx msdn - Value Types Table (C# Reference)

http://msdn.microsoft.com/en-us/library/1dhd7f2x.aspx msdn - Types Reference Tables (C# Reference)

References and Standards

BloodNet documentation including the user manual and newsletters can be found on the NBA website (BloodNet for blood products from Lifeblood | National Blood Authority).

The following where referenced throughout the specification:

- NEHTA eProcurement Despatch Advice: http://www.nehta.gov.au/connecting-australia/e-health-procurement
- GS1 XML Standards: GS1 set of XML standards | GS1
- GS1 Despatch Advice: See GS1 XML Standards.
- GS1 XML Built-in Types: XML syntax components used in GS1 XML 3 | GS1
- GS1 General Specification, GS1 Application Identifiers (pp. 133-137): GS1 Application Identifiers
- GS1 DataMatrix for all plasma, recombinant and diagnostic products
- ISBT128 DataMatrix for all fresh blood products (Red Cells, Platelets, Clinical Fresh Frozen Plasma, Cryoprecipitate, Cryo-depleted Plasma and Serum Eye Drops)
- Australian Red Cross Blood Service: Introduction of ISBT 128 2D DataMatrix and removal of transition Codabar barcodes | Lifeblood
- Independent Hospital Pricing Authority AR-DRG Version 6.x addendum: AR-DRG Version 6.x | Resources | IHACPA
- Department of Health and Ageing The Review of the AR-DRG Classification System Development Process: http://www.health.gov.au/casemix
- NEHTA Individual Health Identifiers (IHI): http://www.nehta.gov.au/connecting-australia/healthcare-identifiers
- AS 4590-2006: Interchange of Client Information.
- National Blood Authority Barcoding Standards Blood product labelling | National Blood Authority.
- National Blood Authority Barcode Specifications – PDF | Word versions

Wherever possible the NEHTA eProcurement standards or the GS1 standards have been followed however we have found some differences or incompatibilities in the data types use and therefore have used our own data types in order to provide the necessary business functions.

Interpretation of the GS1 Message Related Standards

Some data defined in the NEHTA eProcurement Despatch Advice, the GS1 Despatch Advice, GS1 XML Standards, and the GS1 Application Identifiers may not match the specific requirements for the data within the system, or the data within the system is already not compliant with these standards.

While we have gone to efforts to make sure this data matches there are certain areas where this does not match.

Following are the key changes that have been made to the data types in order to preserve compatibility the data the system uses which may be outside the data definitions in the source standards.

Dates and Date Time

The *GS1 Application Identifiers* do not define DateTime or Time within the standard but the GS1 XML Standards do define it.

BloodNet requires both date and time for some fields (i.e. Expiry Date) which according to all standards only needs to be a date.

Given the data types that will be used for passing date and/or time information to the LIS is based on a .NET DateTime object that does deal with dates and time as a single type and in the above requirements the DateTime data used will always include both a date and a time component.

One other weakness in the standards is clarity on whether times are UTC or local. The GS1 XML Standards indicate that simple types are based upon the W3C XML data types which support date and time with and without a time zone (ISO 8601). An example is when Receipted Issue Notes despatchDateTime does not provide the time zone that it was dispatched from and further information available from the Receipted Issue Note does not indicate the location is was dispatched from, or whether the location is currently operating under daylight savings time.

The result of this is that these times provided by suppliers are not adjusted to UTC but presented as they are presented to BloodNet.

5.2.6 Technical references for connecting to WCF

Sample links below:

- http://social.msdn.microsoft.com/Forums/en/wcf/thread/53db9228-a497-4f33-b40c-1a42cf1cd571 - Consuming WCF Service methods in Java apps
- http://romenlaw.blogspot.com/2008/07/consuming-wcf-web-service-using-java.html
- http://hoonzis.blogspot.com.au/2011/07/consuming-wcf-services-with-java-client.html
- http://www.kevingao.net/wcf-java-interop/java-client-and-wcf-server.html
- http://docs.oracle.com/cd/E17802_01/webservices/webservices/reference/tutorials/wsit/doc/DataBinding5.html
- http://msdn.microsoft.com/en-us/library/cc197940%28v=vs.95%29.aspx
- http://msdn.microsoft.com/library/ee958158.aspx
- http://www.codeproject.com/KB/aspnet/wcfinjavascript.aspx
- http://cgeers.wordpress.com/2009/08/20/using-wcf-services-with-php-5/

5.2.7 Example Product Packaging and Codes

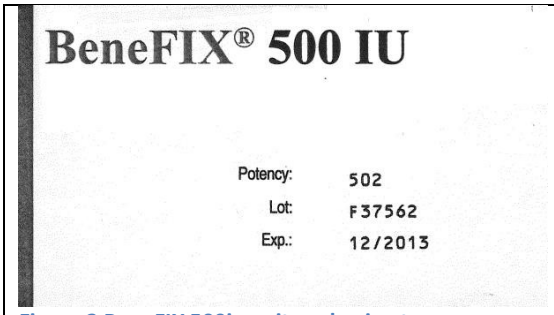


Figure 2 BeneFIX 500iu unit packaging top

Figure 3 BeneFIX 500iu barcode

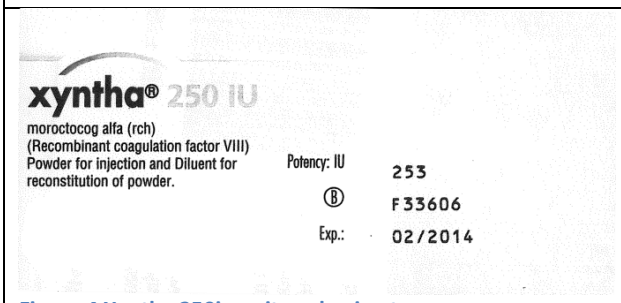


Figure 4 Xyntha 250iu unit packaging top

Figure 5 Xyntha 250ui barcode

No unit packaging top information for Rh (D) IG IM 2VI 250IU Glycine

Figure 6 Rh (D) IG IM 2VI 250IU Glycine

5.2.8 Definitions, acronyms and abbreviations

Acronym / abbreviation	Definition
API	Application Programming Interface
Blood Service	Australian Red Cross Blood Service
BURG	BloodNet User Reference Group.
Component Modifier	A descriptive tag applied to a component by the Blood Service or another party that allows sub-classification of a Component
DTO	Data Transfer Objects
ELP	Extended Life Plasma
eProgesa	The Blood Service National Blood Management System (NBMS)
Facility or Laboratory	Any source location that places orders with the Blood Service (private and public sector)
Facility Web Site	The BloodNet website. Used by Laboratory Users for Ordering, Receipting, and Fate.
FFP	Fresh Frozen Plasma
HPI-I	Health Provider Identifier – Individual
IU	International Units
JBC	Jurisdictional Blood Committee
LIS	Laboratory Information System
NBA	National Blood Authority
NBSCP	National Blood Supply Contingency Plan
NYB	Not Yet BloodNet
OCS	Offline Capable Services
SOAP	Simple Object Access Protocol
Unit	An individual item of comprising of a Blood Component (for example Red Cells) or a manufactured Blood Product (for example IVIg).

Acronym / abbreviation	Definition
WCF	Windows Communication Foundation
Web service / Web Service	A listening service that receives and processes API calls
WIF	Windows Identity Foundation. A library for token and claim based authentication.
WSDL	Web Service Definition Language

5.3 Issue Note examples

Following are some example Issue Notes from suppliers marked to indicate how the data is presented in the response.