ThermoFisher
SCIENTIFIC

IDM / Prime
LIS
Communication Protocol

►ASTM format◄

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1 INTRODUCTION

1.1 Purpose

The purpose of this document is to define a common external interface ("LIS" connection) for Phadia software products. The specification is a Phadia specific implementation of the standard LIS2-A2.

1.2 Scope

The document covers the interface on the same level as the LIS2-A2 standard. It also covers some aspects of the lower level of communication. Lower levels of communication are detailed described in LIS01-A2 standard.

1.3 References

This document is associated with/makes references to the following documents:

[1]	ASTM E1394-91	Standard Specification for Transferring Information Between Clinical Instruments and Computer Systems
[2]	ASTM E1381-95	Standard Specification for Low-Level Protocol to Transfer Messages Between Clinical Laboratory Instruments and Computer Systems
[3]	LIS2-A2	Specification for Transferring Information Between Clinical Laboratory Instruments and Information Systems
[4]	LIS01-A2	Specification for Low-Level Protocol to Transfer Messages Between Clinical Laboratory Systems and Computer Systems

2 LOW-LEVEL PROTOCOL

This protocol is used to send messages between two systems that are connected. One system transmits while the other system monitors the communication link. The information flows in only one direction at a time. Replies occur after information is sent, never at the same time. None of the system is a master, instead the system who wants to transmit information, tries to establish the communication.

The low-level protocol has the following three communication phases:

- Establishment phase
- Transfer phase
- Termination phase

2.1 Establishment phase

The establishment phase determines the direction of information flow and prepares the receiver to accept information.

After determining that the data link layer is in a neutral state, the sender transmits an [ENQ] to the receiver. The receiver must respond with an [ACK] or an [NAK] within 15 seconds.

The following cases can occur during the Establishment phase:

- Sending [ENQ] Receiving [ACK]
- Sending [ENQ] Receiving [NAK]
- Sending [ENQ] Receiving [ENQ]

Receiving [ACK] means that the receiver is ready to accept information, and the systems are moved to transfer phase.
Receiving [NAK] means that the receiver is not ready to accept information. The sender must wait at least 10 seconds before sending a new [ENQ]
Receiving [ENQ] means that both systems are in contention. In that case IDM/Prime has first priority and will resend an [ENQ] after 1 second. The host must wait at least 20 seconds before sending a new [ENQ]

2.2 Transfer phase

Messages are sent in frames (see table below) which contains a maximum of 247 characters.
After a frame is sent, the sender stops transmitting and waits for an respond from the receiver. The possible responds are as follows and must be received within 15 seconds after the last character of a frame:

- [ACK] Message Acknowledged
- [NAK] Message not Acknowledged
- [EOT] End of transmission

A reply of [ACK] acknowledges that the last frame was received successfully and that the receiver is ready for another frame. The sender sends the next frame, or terminates the transfer.
A reply of [NAK] means that the last frame was not received successfully and that the receiver is ready to receive the frame again. Retransmission must be done by the sender.
A reply of [EOT] acknowledges that the last frame was received successfully and that the receiver is ready for another frame, but the receiver is requesting that the sender stops transmitting.

2.3 Termination phase

During the termination phase the sender transmits the [EOT] transmission control character, notifying the receiver that all of the information has been sent.

The frame structure is illustrated as follows:

Symbol	Character	Description
[STX]	Start of Text transmission control character	First
F#	Frame number	The frame number is a ASCII digit from 0 to 7. Its purpose is to permit the receiver to distinguish between new and re-transmitted frames. It begins with 1 and increments by 1 every time a new frame is transmitted and acknowledged. After 7, the number starts at 0 and repeats the above sequence
Message	Data Content of message	Max number of characters is 240. Allowed characters are described in section 4.2
[ETB]	End of transmission Block transmission character	Character used to indicate end of an intermediate frame Used when the Message to send is more than 240 characters long, in that case the message are divided into more than one frames. The last frame will end with an [ETX] character.
[ETX]	End of Text transmission control character	Character used to indicate the end of an end frame. An option in the system will make it possible to use only ETX frame for messages.
[CS1]	Most significant character of checksum 0 to 9 and A to F	The checksum is encoded as 2 characters. The checksum is computed by adding the binary values of the characters (modulo 256), keeping least significant 8 bits of the result. The 8 bits can be considered as 2 groups of 4 bits which are converted to ASCII and represented in hexadecimal format. The [STX] character initializes the checksum to zero. The first character used in the checksum is the frame number. The last character used is the [ETB] or [ETX]. Example of a complete frame: [STX] 1 ABCDEFGHI [ETX] A1 [CR] [LF]
[CS2]	Least significant character of checksum 0 to 9 and A to F	
[CR]	Carriage Return	Character used to end a record The [CR] character may not appear in the message text.
[LF]	Line Feed	The [LF] character is used as the last character of a frame. The [LF] character may not appear in the message text.

2.4 Frame Examples

End Frame

[STX][F#][Message][ETX][CS1][CS2][CR][LF]

Intermediate Frame

[STX][F#][Message][ETB][CS1][CS2][CR][LF]

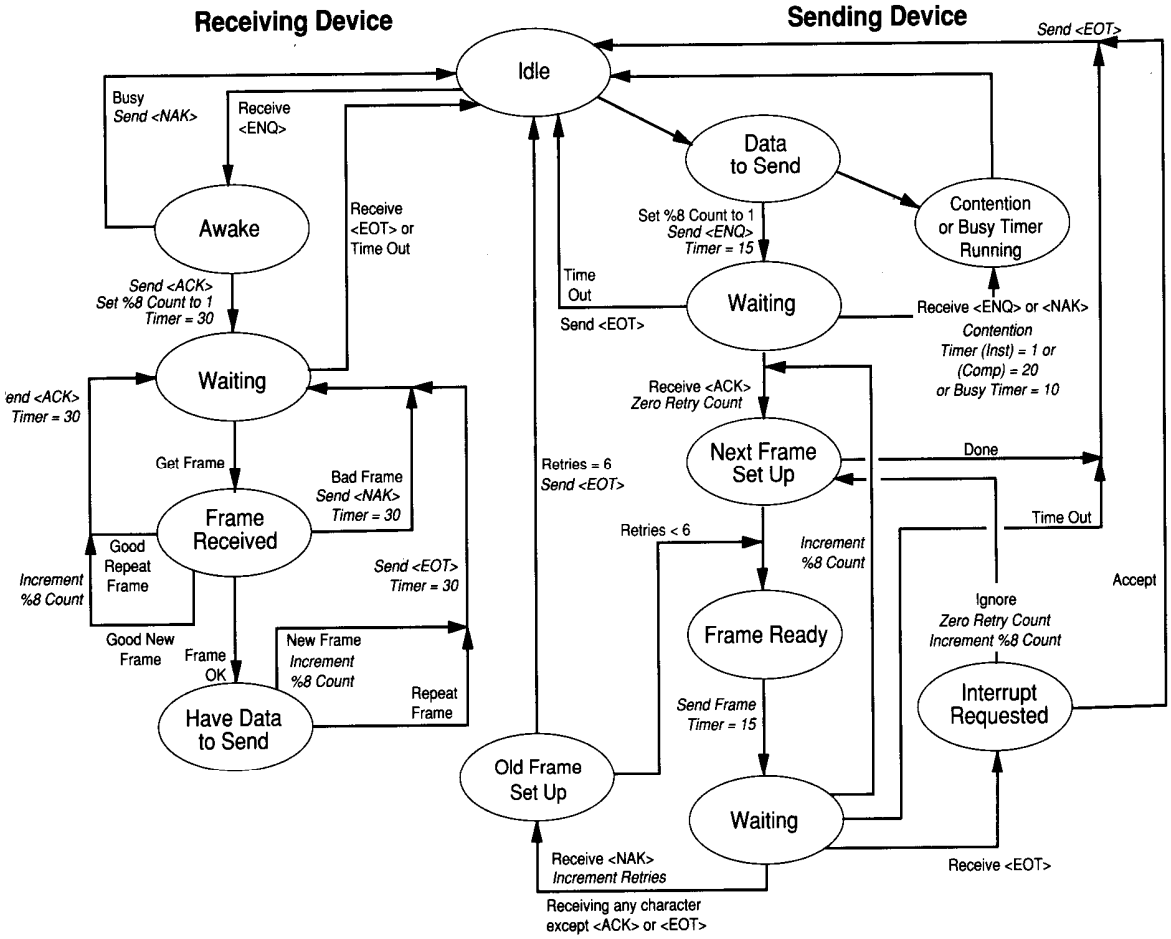
Multiple Frames

[STX][1][Message ……][ETB][CS1][CS2][CR][LF]
[STX][2][Message continued…][ETB][CS1][CS2][CR][LF]
[STX][3][Message last part…...][ETX][CS1][CS2][CR][LF]

Multiple Frames with only ETX setting

[STX][1][Message one reord……..][ETX][CS1][CS2][CR][LF]
[STX][2][Message another record.][ETX][CS1][CS2][CR][LF]
[STX][3][Message last record……][ETX][CS1][CS2][CR][LF]

ASTM E 1381
A1 STATE DIAGRAM



NOTE 1 – "%8" represents modulo 8.
NOTE 2 – "=" represents assignment of a value. "Timer: = 15" resets the timer to 15 s as used here.
NOTE 3 – Arrow associated normal text denotes a condition; arrow associated italicized text denotes action taken.

Code chart

Character	Decimal/Hex	Description
STX	002/02H	Start of Text transmission
ETX	003/03H	End of text transmission
EOT	004/04H	End of transmission
ENQ	005/05H	Enquiry
ACK	006/06H	Acknowledge
NAK	021/15H	No acknowledge
ETB	023/17H	End of transmission Block
LF	010/0AH	Line Feed
CR	013/0DH	Carriage Return

3 UNIFACE MESSAGES

3.1 Records

Uniface messages consist of a hierarchy of records of various types. The following table describes the records.

Table 1: Record types

Record type	Record ID	Level	Description	Section in [1]	Section in [3]
Header	H	0	Identifies the message	7	6
Patient information	P	1	Contains information about a patient.	8	7
Request information	Q	1	Used to request information on a specimen from the host system.	12	11
Test order	O	2	Contains information defining a specimen and test to be performed on the specimens.	9	8
Result	R	3	Contains information about a test result.	10	9
Comment	C	1-4	Contains a comment about the preceding record.	11	10
Manufacturer information	M	1-4	Not used by IDM/Prime	15	14
Scientific	S	N/A	Not used by IDM/Prime	14	13
Message terminator	L	0	Terminates the message.	13	12

3.2 Character Codes

3.2.1 General

All data shall be represented as eight bit values, within the range (0-255), where 0-127 is defined by the ASCII standard and values 128-255 are undefined by this standard.

Allowed characters: 7, 9, 11, 12, 13, 32-126, 128-254
Disallowed characters: 0-6, 8, 10, 14-31, 127, 255

3.2.2 Text data fields

Only the ASCII characters 32-126 and the undefined characters 128-254 are permitted as usable characters (excluding those used as delimiter characters in a particular transmission). Unless otherwise stated, contents of data fields shall be case sensitive.
The codepage used by IDM/Prime to convert the characters to Unicode is 437.

3.3 Maximum Field Length

This specification assumes that all fields are variable in length.

3.4 Maximum Record Length

None imposed.

3.5 Delimiters

The following table describes the characters Uniface use as delimiters.

Table 2: Delimiters

Delimiter type	Character		Description
Record		Carriage return	Ends a record.
Field	|	Vertical bar	Separates fields within records.
Repeat	\	Backslash	Separates multiple occurrences for the same type of information within a field.
Component	^	Caret	Separates a field into smaller groups of characters.
Escape	**&**	Ampersand	Allows imbedding of special characters within the data.

Uniface uses these delimiters when sending messages. Uniface accepts any characters defined in the header record and transmitted by the host as the delimiters for that message.

3.5.1 Field delimiter

A field delimiter marks the end of a field. Two consecutive field delimiters indicate that the field does not contain any information.

A carriage return indicates that all the remaining fields in the record are empty. A carriage return can replace the field delimiter for the last field in a record.

3.5.2 Repeat delimiter

Some fields can use repeat delimiters to separate equal elements of the same set. When used, the repeat elements of a field relate to the rest of the record in the same way as if the whole record were replicated, with the only difference being the repeat field.

Uniface supports repeat delimiters only in fields where so is specified.

3.5.3 Component delimiter

Some fields are made of more than one data element. These fields use component delimiters to separate the data elements.

3.5.4 Escape delimiter

Escape delimiters provide a way to signal certain special characteristics of portions of a text field, e.g. imbedded delimiters. An escape sequence consists of the escape delimiter character followed by a single escape code ID, followed by zero or more data characters followed by another (closing) occurrence of the escape delimiter character. An example is `&F&`, which signals an imbedded field delimiter character.

IDM/Prime accepts the escape delimiter, and handles the following escape sequences (where `&` is the escape delimiter used by the communicating system):

- `&F&` Imbedded field delimiter
- `&S&` Imbedded component delimiter
- `&R&` Imbedded repeat delimiter
- `&E&` Imbedded escape delimiter

All other use of the escape delimiter will be parsed but ignored.

3.6 Floating point numbers

A period (“`.`”) will always be used as decimal delimiter, regardless of the current locale setting. The floating point value `17.5` will be transmitted as the string “`17.5`”, never e.g. “`17,5`”.

3.7 Defined fields

The following fields are defined by Uniface:

Table 3: Defined fields

Field name	Field in [1]	Field in [3]
Universal test ID	6.6.1	5.6.1
Sender name or ID	7.1.5	6.5
Specimen ID	9.4.3	8.4.3
Instrument specimen ID	9.4.4	8.4.4
Action code	9.4.12	8.4.12
Report type	9.4.26	8.4.26
Data/measurement	10.1.4	9.4
Request information status code	12.1.13	11.13

3.7.1 Universal test ID

The field is used to identify a test. The Universal test ID is composed of four parts, where the first three are reserved for future use. The fourth part is defined by each manufacturer. Uniface uses the following components for this part:

Table 4: Universal test ID components

Component	Required	Explanation	IDM version	Prime version
Test	Yes	The laboratory name for the test to be performed, as defined in the method. This is the “Lab test name” of the test, not to be confused with “Full test name” or “Test name”.	1.00	1.2.0
LIS method ID	Yes	The LIS method ID, as defined in the instrument. This is typically the same as the method name (e.g. `sIgE`), but can e.g. be an integer for hosts that cannot handle lower case letters.	1.00	1.2.0
Instrument dilution	No	The factor with which the instrument should dilute the specimen for this test. If no instrument dilution factor is provided (or a dilution factor of 0 is received), then the default value for the method will be used. A value of `1` represents “no dilution”.	1.00	1.2.0
Supress reflex	No	Set to 1 to suppress any reflex testing connected to this test	1.20	1.2.0
Reflex Name	No	The associated reflex name	4.00	1.2.0
Replicates	No	The number of replicates requested	5.31	1.2.0

When all components are used, the Universal test ID is transmitted as follows:

```
^^^Test^LIS_method_ID^Instrument_dilution^Supress_reflex^Reflex_Name^Replicates
```

3.7.2 Sender name or ID

This field is used within the header record to identify the communicating software. The field consists of the following components:

Table 5: Sender name components

Component	Required	Explanation	IDM version	Prime version
System name	No	Name of the communicating software, e.g. "ImmunoCAP Data Manager" / "Phadia.Prime".	1.00	1.2.0
Software version	No	Version number of the communicating software, e.g. `1.2.0.12371`.	1.00	1.2.0
Uniface version	No	Version number of the Uniface protocol supported by the above software, e.g. `14.0`.	1.00	1.2.0

When all components are used, the Sender name or ID is transmitted as follows:
`System_name^Software_version^Uniface_version`

IDM / Prime will always transmit this field.

3.7.3 Specimen ID

Uniface defines the following components for the Specimen ID:

Table 6: Specimen ID components

Component	Required	Explanation	IDM version	Prime version
Specimen ID	Yes[1]	Unique identifier for the specimen.	1.00	1.2.0
Tube type	No	Type of tube used for the sample. Valid values are `N` for normal tube and `C` for child. If no value is supplied, a normal tube is assumed.	1.00	1.2.0
Rack ID	No	ID of the rack the specimen is placed in.	1.00	1.2.0
Rack position	No	The rack position the specimen is placed in.	1.00	1.2.0
Tray ID	No	The Tray Id where the specimen is placed in.	5.44	TBD

When all components are used, the Specimen ID is transmitted as follows:
`Specimen_ID^Tube_type^Rack_ID^Rack_position^Tray_ID`

The `Rack_ID^Rack_position` components are only needed to identify the specimen if the specimen tube is not labelled with bar code containing the Specimen ID.
An option will make it possible to force the instrument to only use the specimen ID component

[1] See Instrument specimen ID.

3.7.4 Instrument specimen ID

The instrument specimen ID is used by IDM/ Prime to communicate information about the specimen to the host. It is interpreted together with the Specimen ID:

Table 7: Specimen ID and Instrument specimen ID connection

Specimen ID	Instrument specimen ID	Meaning	IDM version	Prime version
Supplied	Blank	Normal case. No changes have been made to the specimen. The Result records following the Order record are based on the sample dilution factor that was downloaded to the instrument.	1.00	1.2.0
Supplied	Supplied, and identical to the Specimen ID	Same as above.	1.00	1.2.0
Supplied	Supplied, and differs from the Specimen ID	The specimen has been diluted on operator demand, and some tests have been rerun. This happens e.g. if test results for the specimen are out of range. The operator can decide to dilute the specimen and process a selection of the ordered tests again. The Instrument specimen ID is the ID entered by the operator for this "new" specimen, and the Specimen ID is the ID for the original specimen, as downloaded from the host. The used dilution factor is returned in the Relevant clinical information field.	1.00	1.2.0
Blank	Supplied	The specimen has been manually defined by the operator. The entered specimen ID is communicated in the Instrument specimen ID field.	1.00	1.2.0

3.7.5 Action code

The Action code indicates what do with a test order for a particular specimen. Uniface support the following codes:

Table 8: Action codes

Action code	Explanation	IDM version	Prime version
C	Cancel request for the named test.	TBD	TBD
N	New test request accompanying a new specimen. If the specimen already exists, the test is added. If the test already exists, it is ignored as a duplicate transmission.	1.00	1.2.0
A	Add the requested test to an existing specimen. If the test already exists, it is ignored as a duplicate transmission. If the specimen does not exist, it is added.	1.00	1.2.0
R	Retest. If the test already exist and have status Ready or Reported the test is added	1.20	1.2.0
Q	Treat specimen as a Quality Control test specimen	1.00	1.2.0

Note that N and A are semantically identical, trying to do the best of the situation. Uniface support both codes, and host implementations are encouraged to use the code that is conceptually correct.

IDM / Prime currently treat N and A as equals.

3.7.6 Report type

The Report type identifies the purpose of the patient/order or patient/order/result transmission. The allowed codes are:

Table 9: Report types

Report type	Code	Explanation	IDM version	Prime version
Order	`O`	Indicates a normal request from the host. Host system also use this code when answering a request for orders for a specimen.	1.00	1.2.0
Final result	`F`	Indicates a normal report of results to a host system.	1.00	1.2.0
Cancel	`X`	Indicates that no result will be forthcoming for this order. Sent in response to a cancel test request. This code may also be used when an instrument error occurred while processing the order, indicating that no result will be transmitted.	1.00	1.2.0
Instrument pending	`I`	Indicates that no final result is available for the order. Result records with e.g. preliminary results accompany the record. The code is used to indicate that a specimen is known to the responding system (through a previous order), but that it has not yet been inserted into the instrument. It is used for all kind of results that are not final or do indicate an error.	1.00	1.2.0

3.7.7 Data/measurement

The field is used to return the final results of a test. The following table describes the components that are returned from IDM / Prime.

Table 10: Data/measurement

Component	Explanation	IDM version	Prime version
Concentration	Calculated concentration, e.g. `17.500`.	1.00	1.2.0
Class	Class test, e.g. `2` or `Medium`.	1.00	1.2.0
Cut-off	Cut-off text, e.g. `Positive`.	1.00	1.2.0
Cut-off 2	Cut-off 2 text, e.g. `0/1`.	1.00	1.2.0
Quotient	Quotient, e.g. `1.300`.	1.00	1.2.0
Sensitization	Description of the or the level of sensitization, e.g. `Very low`	4.00	TBD
Clinical relation	Describe relation between the sensitization and a clinical response, e.g. `Uncommon`	4.00	TBD
Long Result interpretation Comment ID	Comment ID 0 to 10, identify a comment to this level of sensitization for this method	4.00	TBD

3.7.8 Data report options

A number of export options are available for exporting results with ASTM. Notice that some of the fields may be empty according to the report setting for the corresponding test.

3.7.8.1 All

If all components are be sent, the Data/measurement is transmitted as follows (in a one row message)

```
Concentration^Class^Cut-off^Cut-off_2^Quotient^Sensitization
```

3.7.8.2 Use 4 fields in result reporting

An option will transmit the data/measurement in the following format:

```
Concentration^Class^Cut-off^Quotient
```

cut-off are either cut-off or cut-off_2 depending on the report setting for the corresponding test.

If a test use both cut-off and cut-off_2 report setting, the selection on what to report will be defined by a separate setting (e.g. primary report type), examples:

for a mix:

```
Concentration^Class^Cut-off^Quotient
```

for a non mix test:

```
Concentration^Class^Cut-off_2^Quotient
```

for a test with both cut-off and cut-off_2 (depending on "primary report type"):

```
Concentration^Class^Cut-off or Cut-off_2^Quotient
```

3.7.8.3 Include Result Interpretation (IDM version 4.00, Prime version: TBD)

An option will include the export of fields that report "Result interpretation"-results. Notice that result interpretation must be enabled in Preferences/Service and in LIS/Uniface(ASTM) settings for data to be transmitted with this option. The fields are (in a one row record):

```
…^Quotient^Sensitization^Clin_relation^Long_Result_Interpretation_Comment_Id
```

Rules for enabling the export of these fields will combine with the rules for selections in "Use 4 fields in result reporting" above i.e. may be reported with 4 or 5 result fields.

3.7.9 Request information status code

When using request information records (queries), the following codes are allowed:

Table 11: Request information status codes

Code	Explanation	IDM version	Prime version
A	Abort/cancel last request. Allows a new request to follow (since only one request can be outstanding at a time).	1.00	TBD
O	Request test orders. Used by the instrument system when asking for new orders or requesting orders for a specific specimen.	1.00	1.2.0

IDM / Prime will not abort request. It relies on that the host either answers or cancels.

3.7.10 Ordering Physician

For ordering physician data fields, please find the layout of what we recommend to have your LIS sending using the existing ASTM interface to be able to get information needed for the Test Statistics functionality on LabCommunity (see LabCommunity documentation for more information).

ASTM field	Field name	Usage for Lab Community	Example
9.4.17	Ordering Physician Code	Client ID which will match the Requestor ID stored in IDM / Prime	123453
9.4.17	Name	Must stay consistent with what is stored in IDM / Prime	Dr. Johnson
9.4.17	Shortcut code	Must stay consistent with what is stored in IDM / Prime	
9.4.19	Address Line 1 & 2 & 3	Used for Company or Department Name and Street Address	2020 SE Blue Parkway^Suite 900^
9.4.19	Address Line 1 & 2 & 3	Used for Company or Department Name and Street Address	Kansas City, MO 64063-9841
9.4.19	Address Line 5	Repeated ZIP code information for easy identification	64063-9841
9.4.19	Comment	Used for Department or Hospital ID	

Example of data transmission:

```
H|\^&|||LIS|||||UniCAP||P|1||20090202143407
P|1|AG707416||AG707416|NAME,ALISON||20051111|F
O|1|0548905||^^^f209^1\^^^a-IgE^2||20051130084634||||||||||12345^DR. BILL
JOHNSON||BADER & GONDAL 53^112-47
QUEENS BLVD#208 ^^FOREST HILLS, NY 64064-9841^64064-9841|||||||O
```

3.8 Records and fields

Note:

- All fields or components marked with •
  - Should be transmitted from host.
  - Will be transmitted from IDM / Prime.
- Not supported field's means that IDM / Prime ignores any received values and transmits empty fields (or end-of-record if remaining fields in a record are empty).
- Some notes in the description are in parenthesis and are used for easier understanding of how this field will be used by IDM / Prime.

3.8.1 Message header record

Table 11: Message header record

ASTM Field [1] Field [3]	Field name	Transmitted (to host)	Received (from host)	Description	IDM version	Prime version
7.1.1 6.1	Record type	H	H	IDM / Prime transmits upper case, receives upper or lower case.	1.00	1.2.0
7.1.2 6.2	Delimiters Field Repeat Component Escape	 | \ ^ &	 • • • •	IDM / Prime accepts any valid delimiters specified in the header record. See section Delimiters for further description.	1.00	1.2.0
7.1.3 6.3	Message Control ID			Not supported	-	-
7.1.4 6.4	Access password			Not supported	-	-
7.1.5 6.5	Sender name or ID System name ^Software version ^Uniface version	•		See section Defined fields for description.	1.00	1.2.0
7.1.6 6.6	Sender Address			Not supported	-	-
7.1.7 6.7	Reserved			Not supported	-	-
7.1.8 6.8	Sender telephone			Not supported	-	-
7.1.9 6.9	Characteristics of sender			Not supported	-	-
7.1.10 6.10	Receiver ID Hostname ^IP address	•	•	Not supported for serial connections. Network implementations use this field to contain the name and TCP/IP address of the host (LIS) system.	1.00	1.2.0
7.1.11 6.11	Comment			Not supported	-	-
7.1.12 6.12	Processing ID	P D Q	P D	Production: Treat message as an active message to be completed according to standard processing. `P` is default if no value is supplied when receiving. Debugging: Message is initiated for the purpose of a debugging program. Quality Control: Message is initiated for the purpose of transmitting quality control	1.00	1.2.0 TBD 1.2.0
7.1.13 6.13	Version number	1	1		1.00	1.2.0
7.1.14 6.14	Date and time	YYYY MMDD HHMMSS	YYYY MMDD HHMMSS	The date and time the message was generated.	1.00	1.2.0

Example:

```
H|\^&|||ImmunoCAP Data Manager^1.00.12371^4.00|||||||P|1|20131004080000
H|\^&|||Phadia.Prime^1.2.0^^4.00|||||||P|1|20131004080000
```

3.8.2 Patient record

Table 12: Patient record

ASTM Field [1] Field [3]	Field name	Transmitted (to host)	Received (from host)	Description	IDM version	Prime version
8.1.1 7.1	Record type	P	P	IDM/Prime transmits upper case, receives upper or lower case.	1.00	1.2.0
8.1.2 7.2	Sequence number	•	•	Shall be 1 for the first patient transmitted, 2 for the second etc.	1.00	1.2.0
8.1.3 7.3	Practice PID (PatientId)	•	•	Shall be the processing number assigned to the patient by the practice. IDM/Prime returns this field unchanged to the host. (PatientID). It is not required unless other patient info is used; either of Practice PID or Laboratary PID is needed in that case.	1.00	1.2.0
8.1.4 7.4	Laboratory PID (RequestId)	•	•	Shall be the processing number assigned to the patient by the laboratory. IDM/Prime returns this field unchanged to the host. (RequestID). It is not required unless other patient info is used; either of Practice PID or Laboratary PID is needed in that case.	1.00	1.2.0
8.1.5 7.5	Patient ID no. 3 (Patient Number)	•	•	Number defined for the Patient (Patient Number) It is not required.	3.00	1.2.0
8.1.6 7.6	Patient name	• •	• •	Shall be the complete name of the patient. It is not required. LISQCId – LIS QC if received and the setting AskQCID is enabled, IDM/Prime will save this information for each QC bottle and send back to LIS when result is ready. **Note!** One of Practice PID or Laboratory PID is required if Patient info is used	3.00 5.34	1.2.0 TBD
8.1.7 7.7	Mother's maiden name			Not supported	-	-
8.1.8 7.8	Date of birth	YYYY MMDD	YYYY MMDD	Patients birth date. It is not required. Used by AllerQuest to determine age of patient	3.00 3.20	1.2.0 TBD
8.1.9 7.9	Patient sex	 U M F	 U M F	Patient gender. It is not required. Undefined Male Female	3.00	1.2.0
8.1.10 7.10	Patient race – ethnic origin			Not supported	-	-
8.1.11 7.11	Patient address Address Line 1 ^ Address Line 2 ^ Address Line 3 ^ Address Line 4 ^ Address Line 5	 • • • • •	 • • • • •	Patients address (Max 5 lines of address). It is not required.	3.00	1.2.0
8.1.12 7.12	Reserved			Not supported	-	-

8.1.13 7.13	Patient phone			Not supported	-	-
8.1.14 7.14	Attending physician			Not supported	-	-
8.1.15 7.15	Special field 1 Patient Comment 1 ^Patient Comment 2 ^Patient Comment 3 ^Patient Comment 4 ^Patient Comment 5	 • • • • •	 • • • • •	It is not required Comment about the patient (max 5 lines)	3.00	1.2.0
8.1.16 7.16	Special field 2 Patient Age	 •	 •	It is not required Age of patient.	3.00	1.2.0
8.1.17 7.17	Patient height			Not supported	-	-
8.1.18 7.18	Patient weight			Not supported	-	-

8.1.19 7.19	Patient's diagnosis ^Symptom1\Symptom2\Symptom3…..	• •	• •	Free text of the diagnosis of the patient. It is not required. Symptom of patient, It is not required. Possible to define any number of symptoms. Currently used codes for symptoms: 1 - Rhino-conjunctivitis 2 - Atopic ecxema/dermatitis syndrome (AEDS) 3 - Urticaria 5 - Oral Allergy Syndrome (OAS) 6 - Childhood wheezing 7 - Asthma 9 - Gastrointestinal symptoms 10 – Anaphylaxis 12 – Other	3.00 3.20	1.2.0 1.2.0
8.1.20 7.20	Patient medications			Not supported	-	-
8.1.21 7.21	Patient's diet			Not supported	-	-
8.1.22 7.22	Practice field no. 1 Medical record number	 •	 •	 Medical record number for the patient. It is not required.	3.00	1.2.0
8.1.23 7.23	Practice field no. 2			Not supported	-	-
8.1.24 7.24	Admission or discharge dates			Not supported	-	-
8.1.25 7.25	Admission status			Not supported	-	-
8.1.26 7.26	Location			Not supported	-	-
8.1.27 7.27	Nature of diagnostic codes			Not supported	-	-

8.1.28 7.28	Alternative diagnostic codes			Not supported	-	-
8.1.29 7.29	Patient religion			Not supported	-	-
8.1.30 7.30	Martial status			Not supported	-	-
8.1.31 7.31	Isolation status			Not supported	-	-
8.1.32 7.32	Language			Not supported	-	-
8.1.33 7.33	Hospital service			Not supported	-	-
8.1.34 7.34	Hospital institution			Not supported	-	-
8.1.35 7.35	Dosage category			Not supported	-	-

Example:

```
P|1|PID001|RID001
```

3.8.3 Test order record

Table 13: Test order record

ASTM Field [1] Field [3]	Field name	Transmitted (to host)	Received (from host)	Description	IDM version	Prime version
9.4.1 8.4.1	Record type	O	O	IDM/Prime transmits upper case, receives upper or lower case.	1.00	1.2.0
9.4.2 8.4.2	Sequence number	•	•	Shall be 1 for the first order transmitted, 2 for the second etc.	1.00	1.2.0
9.4.3 8.4.3	Specimen ID field			See section Defined fields for description.		
	Specimen ID	•	•	IDM/Prime only returns the Specimen ID part. (LIS SampleID)	1.00	1.2.0
	^Tube type	N C 1-5	N C 1-5	Normal tube. Default if no value supplied. Child tube Type 1 to Type 5	1.00 4.00	1.2.0 1.2.0
	^Rack ID	•	•	The location information (Rack ID^Rack position) is mainly used to uniquely identify samples with no bar code. It is optional for samples with bar code.	1.00	1.2.0
	^Rack position	•	•		1.00	1.2.0
	^Tray ID	•		The Tray ID where the specimen is last used	5.44	TBD
9.4.4 8.4.4	Instrument specimen ID field	•		See section Defined fields for description. (Sample Id)	1.00	1.2.0
9.4.5 8.4.5	Universal test ID			See section Defined fields for description. Repeat delimiters are allowed in this field. IDM/Prime never repeats this field when transmitting. Separate records are sent for each test.		
	^^^Test	•	•	Laboratory name for the test, as defined in the method.	1.00	1.2.0
	^LIS method ID	•	•	ID of the method, as defined in the IDM/Prime method.	1.00	1.2.0
	^Instrument dilution	•	•	Number of times (integer) the instrument should dilute for this test. If left blank, the method default is used. A value of `1` represents “no dilution”.	1.00	1.2.0
	^Supress reflex		•	Set to 1 to suppress any reflex testing connected to this test	1.20	1.2.0
	^Reflex name		•	The associated reflex name	4.00	TBD
	^Replicates		•	The number of replicates requested	5.31	1.2.0
9.4.6 8.4.6	Priority			Not supported	-	-
9.4.7 8.4.7	Requested date/time	YYYY MMDD HHMMSS	YYYY MMDD HHMMSS	The date the request was ordered. It is not required.	-	-

9.4.8 8.4.8	Specimen collection date and time	YYYY MMDD HHMMSS	YYYY MMDD HHMMSS		3.00	1.2.0
9.4.9 8.4.9	Collection end time			Not supported	-	-
9.4.10 8.4.10	Collection volume			Not supported	-	-
9.4.11 8.4.11	Collector ID			Not supported	-	-

9.4.12 8.4.12	Action code			See section Defined fields for description.		
			C	Cancel is not supported.	-	-
		N	N	New test request accompanying a new specimen. If the specimen already exists, the test is added. If the test already exists, it is ignored as a duplicate transmission.	1.00	1.2.0
			A	Add the requested test to an existing specimen.	1.00	1.2.0
			R	Retest. If the test already exist and have status Ready or Reported the test is added	1.20	1.20
		Q	Q	Quality Control specimen	1.10	1.2.0
9.4.13 8.4.13	Danger code			Not supported	-	-
9.4.14 8.4.14	Relevant clinical information			IDM/Prime uses this field for the specimen dilution factor. A value of 1 means that the specimen is not diluted.		
	Dilution	•	•	If left blank (or 0) (from host), the method default dilution is assumed. IDM/Prime always returns a value.	1.00	1.2.0
9.4.15 8.4.15	Date/time specimen received			Not supported	-	-
9.4.16 8.4.16	Specimen descriptor			Not supported	-	-
9.4.17 8.4.17	Ordering physician			(Requestor). It is not required.		
	Code	•	•	Unique code of the physician (RequestorID)	3.00	1.2.0
	^Name	•	•	Complete name of the requestor.	3.00	1.2.0
	^Shortcut code	•	•	The shortcut code for the requestor (See IDM/Prime for usage) See also section Ordering physician	3.00	1.2.0
9.4.18 8.4.18	Physician's phone			It is not required. Phone number to the physician.	4.24	1.2.0

9.4.19 8.4.19	User field no. 1			It is not required.		
	Address Line 1	•	•	Address of the physician	3.00	1.2.0
	^Address Line 2	•	•		3.00	1.2.0
	^Address Line 3	•	•		3.00	1.2.0
	^Address Line 4	•	•		3.00	1.2.0
	^Address Line 5	•	•		3.00	1.2.0
	^Comment	•	•	Comment about the physician	3.00	1.2.0
	^Reflex testing	•	•	Reflex testing enabled (1= Enabled, 0 = Disabled) See also section Ordering physician	3.00	1.2.0
9.4.20 8.4.20	User field no. 2			Not supported	-	-
9.4.21 8.4.21	Lab field no. 1			It is not required.		
	Request Origin	•	•	Origin of the request. Values can be defined in IDM/Prime. (e.g. 01-External, 02-In hospital/lab)	3.00	1.2.0
9.4.22 8.4.22	Lab field no. 2			Not supported	-	-
9.4.23 8.4.23	Date/time reported	YYYY MMDD HHMMSS		The Date and Time the request where reported. It is not required.	3.00	1.2.0
9.4.24 8.4.24	Instrument charge			Not supported	-	-
9.4.25 8.4.25	Instrument section ID	•		ID of the instrument who performed the test.	1.00	1.2.0

9.4.26 8.4.26	Report types			See section Defined fields for description.		
			O	Order. Normal request from host. Default if no value is supplied when receiving.	1.00	1.2.0
		F		Final results.	1.00	1.2.0
		X		Request cannot be done. Request cancelled.	1.00	1.2.0
		I		Instrument pending	1.00	1.2.0
9.4.27 8.4.27	Reserved field			Not supported.	-	-
9.4.28 8.4.28	Location or ward of specimen collection			It is not required.		
	Hospital code	•	•	Shortcut code of the hospital. (See IDM/Prime for usage)	3.00	1.2.0
	^Hospital Name	•	•	Name of the hospital	3.00	1.2.0
	^Section Code	•	•	Shortcut code of the section. (See IDM/Prime for usage)	3.00	1.2.0
	^Section Name	•	•	Name of the section	3.00	1.2.0
	^Ward Code	•	•	Shortcut code of the ward. (See IDM/Prime for usage)	3.00	1.2.0
	^Ward Name	•	•	Name of the ward	3.00	1.2.0
9.4.29 8.4.29	Nosocomial infection flag			Not supported	-	-
9.4.30 8.4.30	Specimen service			Not supported	-	-
9.4.31 8.4.31	Specimen institution			Not supported	-	-

Example:

```
O|1|SID001^N^01^5||^^^f1^sIgE^1|||20010226090000||||N||1||||||||||||IID001|O
```

Receive reflex

The received “Reflex name” in 9.4.5 is used to let the LIS specify tests that should be executed if a reflex condition triggers. The reflex condition must be pre-defined in the IDM / Prime software. Only the tests that shall be executed can be specified by the LIS, not the trigger test it self.

The *test order record* must contain the trigger test and the trigger test must precede all tests that shall be executed if the reflex condition triggers. The trigger test and the following tests that should be executed if a reflex condition triggers is combined together to a block by the “Reflex Name”.

The tests that should be executed if a reflex condition triggers will only be executed if the reflex condition triggers

Tests that should be executed if a reflex condition triggers will be reported back to the LIS even if the reflex condition triggers does not trigger. The “Result status” in the “Result record” will then be set to “X” (Test cannot be completed).

Reflex Example:

```
O|1|SID001^N^01^5||^^^fx5^sIgE^1^^RN\^^^f2^sIgE^1^^RN|||||||N||1||||||||||||O
```

Aavailable from Prime TBD
Aavailable from IDM 3.00

Panel expansion
Panel expansion can be enabled in IDM / Prime. To send a panel to IDM / Prime use the *Test* field for the Panel name and leave the *LIS method ID* and *Reflex Name* empty.

Panel expansion Example:

```
O|1|S001^N^01^5||^^^anca^^1^1|||20020226123456||||N||1||||||||||||IID001|O|||
```

Avaliable from Prime 1.3.0
Avaliable from IDM 4.20

3.8.4 Result record

Table 14: Result record

ASTM Field [1] Field [3]	Field name	Transmitted (to host)	Received (from host)	Description	IDM version	Prime version
10.1.1 9.1	Record type	R		IDM/Prime transmits upper case. Result records are not accepted from host systems.	1.00	1.2.0
10.1.2 9.2	Sequence number	•		Shall be 1 for the first result transmitted, 2 for the second etc	1.00	1.2.0
10.1.3 9.3	Universal test ID ^^^Test ^LIS method ID ^Instrument dilution	 • • •		See section Defined fields for description. Laboratory name for the test, as defined in the method. ID of the method, as defined in the IDM/Prime method. Number of times (integer) the instrument should dilute for this test. If left blank or 0, the method default is used. A value of 1 represents “no dilution”.	1.00	1.2.0
10.1.4 9.4	Data/measurement Concentration ^Class ^Cut-off ^Cut-off 2 ^Quotient ^Sensitization ^ClinRelation ^CommentID ^Lotnumbers	 • • • • • • • • •		See section Defined fields for description. Note! % character when reporting Quotient as percent will be excluded. LotNumbers for the result separated by a comma, preceded by a code that indicates type of lot number. The type of lot number and actual lot number separated by an underline. Example: ….^1_ABCDE,2_HGFRT,6_HGFRT Code Meaning 1 ImmunoCAP 2 Conjugate 3 Calibrator strip 4 Curve control strip 5 Quality control vial 6 Development solution 7 Stop solution 8 Wash solution 9 FluoroC 10 Diluent 11 Calibrator vial 12 Curve control vial	1.00 3.20 4.00 4.00 4.00 5.65	1.2.0 1.2.0 TBD TBD TBD TBD

				15 EliA Well 16 EliA Calibrator Well 17 Quality control small vial 18 Quality Club vial 19 Dilution Well 20 Washing solution concentrate 21 Washing solution additive *Note! LotNumbers is enabled by setting*		
10.1.5 9.5	Units	•		IDM/Prime returns the unit for the concentration component of the data/measurement field, e.g. “ml/g”.	1.00	1.2.0
10.1.6 9.6	Reference ranges			Not supported	-	-
10.1.7 9.7	Result abnormal flag			Not supported	-	-
10.1.8 9.8	Nature of abnormality			Not supported	-	-
10.1.9 9.9	Result status	F P I X M		Final results Preliminary results, will never be used by IDM/Prime In instrument, result pending. Test cannot be completed. Indicates a processing error. Final result transmitted with manual defined tests.	1.00	1.2.0
	^Pending Status	I^Q I^M I^E I^N I^P		I^Q = Test not completed, due to QNS I^M = Test not completed, due to Missing CAP I^E = Test not completed, due to Missing CAP (Esoteric allergen) I^N = Test not completed, status “Not started” in IDM and it is not any of QNS, Missing CAP or Esoteric Allergen I^P = Test is currently processing or “ready but not approved” in instrument *Pending Status is enabled by setting Pending Status works for Phadia 1000 and Phadia 2500/5000 instruments only*	5.65	TBD
10.1.10 9.10	Date if change in instrument values			Not supported	-	-
10.1.11	Operator ID	•		User id (user that has approved /	5.65	-

9.11				rejected the corresponding results) *Note! Operator Id is enabled by setting*		
10.1.12 9.12	Date/time test started			Not supported	-	-
10.1.13 9.13	Date/time test completed	YYYY MMD D HHM MSS			1.00	1.2.0
10.1.14 9.14	Instrument ID	•		ID of the instrument who performed the test.	1.00	1.2.0

Example:

```
R|1|^^^f1^sIgE^1|17.500^2^Positive^0/1^1.300|ml/g||||F||||20010226100000|I000001<CR>
```

3.8.5 Comment record

Table 15: Comment record

ASTM Field [1] Field [3]	Field name	Transmitted (to host)	Received (from host)	Description	IDM version	Prime version
11.1.1 10.1	Record type	C		IDM/Prime transmits upper case. Comment records are not accepted from host systems.	1.00	1.2.0
11.1.2 10.2	Sequence number	•		Shall be 1 for the first comment transmitted, 2 for the second etc	1.00	1.2.0
11.1.3 10.3	Comment source	I O A R N L T		Inventory information from specific instrument Raw Data LotNumber User Id AllerQ Report Result Interpretation ImmunoCAP Guide Tray Comment	3.20 1.20 3.20 4.00 4.00 4.20 5.60	TBD 1.20 TBD TBD TBD TBD TBD
11.1.4 10.4	Comment text	•			1.00	1.2.0
11.1.5 10.5	Comment type	G I		Generic/free text comment Automatic comment.	- 1.20	- 1.20

Example:

```
C|1|I|Example Result Comment|G
```

Raw Data, LotNumber and User Id Comments

The following types of information may be included as comment records for each result record:

- Raw data (response values)
- Lot numbers
- Operator id (user that has approved / rejected the corresponding results)

The comment records are only included if the corresponding IDM / Prime preferences are enabled and if the information is available.

Lot-numbers can be sent for the following article types:

- ImmunoCAP
- Conjugate
- Calibrator strip
- Curve control strip
- Quality control vial
- Development solution
- Stop solution
- Wash solution
- FluoroC
- Diluent
- Calibrator vial
- Curve control vial
- EliA Well
- EliA Calibrator Well
- Quality control small vial
- Quality Club vial
- Dilution Well
- Washing solution concentrate
- Washing solution additive

Notes!

- Lot-number can be empty
- The lot-number will be added directly after the article-name with a single space character between article-name and the lot-number.
- The name of the article type is different depending on the language set for IDM /Prime

An example of a complete result record with "all types of comment records" included

```
R|1|^^^fx5^sIgE^1|0.35^^^^|kUA/l||||I||||20020226110557|UC1000#1
C|1|O|Operator id Phadia|I
C|2|O|ImmunoCAP 652IC|I
C|3|O|Conjugate 452CO|I
C|4|O|Development solution 234DE|I
C|5|O|Response value in RU 420|I
```

Inventory Comments
The following types of information may be transmitted as comment records as a response to Request Information Record (requesting inventory information)

InstrumentName^InventoryType^Identity^Amount (for Inventory types that use identity field)
InstrumentName^InventoryType ^Amount (for Inventory types that do not use identity field)

The Inventory comment records are only sent in response to the Request Information Record and if the information is available.

InstrumentName
Name of instrument

InventoryTypes:
Note! Amount can be amount, doses or volume
1 ImmunoCAP (amount)
2 Conjugate (doses)
3 Calibrator strip (amount)
4 Curve control strip (amount)
6 Development solution (doses)
7 Stop solution (doses)
10 Diluent (volume (ml))
100-Disposable tips (amount)

Identity
MethodName, ConjugateId, DiluentId or Testname
Note! Identity is not used for InventoryType 1,6,7,100

An example of a record with "Inventory information" included

```
H|\^&||| ImmunoCAP Data Manager^1.00^1.00|||||||P|1|20010226080000
C|5|I|UC1000#1^1^a_IgE^912|I
C|5|I|UC1000#1^2^tIgE^50|I
C|5|I|UC1000#1^6^ ^600|I
C|5|I|UC1000#1^100^^480|I
C|5|I|UC250#1^9^ECP diluent^600|I
L|1|F
```

Available from Prime TBD
Available from IDM 3.20

AllerQ Comments
The following types of information may be included as comment records for each result record:
The following components can be transmitted:
AllerQ comment^AllerQ comment Id^AllerQ comment type^ AllerQ Symptom Id^Reference^Reference mail address^InvitroSight link address

AllerQ comment – AllerQ Comment generated for the result
AllerQ comment Id – Unique Id of the Comment generated by AllerQ
AllerQ comment type – Type of AllerQ comment
S-Symptom comment, specific for a certain symptom,

R-Result comment, specific for certain result
AllerQ symptom id – Unique Id of symptom (only for Symptom comments)
Currently used codes for symptoms:
1 - Rhino-conjunctivitis
2 - Atopic ecxema/dermatitis syndrome (AEDS)
3 - Urticaria
5 - Oral Allergy Syndrome (OAS)
6 - Childhood wheezing
7 - Asthma
9 - Gastrointestinal symptoms
10 - Anaphylaxis
Reference – example "Phadia"
Reference mail address – example "info@allergietest.nl"
InvitroSight link address – Address to InvitroSight information page

The comment records are only included if the corresponding IDM/Prime preferences are enabled and if the information is available.

An example of a result record with "AllerQ" included

```
R|1|^^^d1^sIgE^1|^^Positive^^|kUA/l||||I||||20020226110557|UC1000#1
C|1|A|Direct skin contact with mites can increase disease
activity.^3^S^1^Phadia^info@allergietest.nl^c:/phar/uc_ivs_c/templates/pg000071.htm|I
```

Available from Prime TBD
Available from IDM 3.20

ImmunoCAP Guide Comments

The comment records are only included if the corresponding IDM/Prime preferences are enabled and if the information is available.

An example of a patient record with "ImmunoCAP Guide" included

```
P|1|PID|||||18991230|U||^^^^||||^^^^|12||||||
C|1|L|SUMMARY|I
C|2|L|IgE abs have been detected. Comments regarding test results in relation to clinical symptoms are not
available since no symptoms have been reported.|I
C|3|L||I
C|4|L|PLEASE NOTE: The following allergens have a positive test result but have not been included in the
list of most common allergens to be commented on in all aspects as part of this pilot test: box elder.
Hence there might be no comments at all or only comments regarding some aspects for these allergens.|I
```

Available from Prime TBD
Available from IDM 4.20

Report Comment

A name of a report generated for the result, it can be a complete address or only the filename of the sample report in pdf format, depending on settings within IDM/Prime.

Available from Prime TBD
Available from IDM 4.00

Long Result Interpretation Comment
The information included in comment records that hold a “Long result interpretation comment” is:
Long result interpretation comment ID^ Long result interpretation comment

An example of a result record with result interpretation and result interpretation long comment
```
R|1|^^^t1^01^1|<0.35^0^^^TXTSens^TXTClinRel^1^|kUA/l||||F||||20030503124915|I1000-1
C|1|N|1^Long comment text long comment text long comment text long comment text|I
```

An example of a result record with “Sample Report” included
```
R|1|^^^d1^sIgE^1|^^Positive^^|kUA/l||||I||||20020226110557|UC1000#1
C|1|R|S00120060210.pdf |I
```
Available from Prime TBD
Available from IDM 4.00

Tray Comments
The following types of information may be transmitted as comment records when a tray is removed from the instrument for a Phadia 2500/5000 instrument, it will only be sent if the setting to send Tray Comment is enabled.

TrayId^RackId^RackPosition^SampleId^SamplePosition

TrayId :
Id of the Tray, either a number representing the tray or the TrayID entered by the operator

RackId:
Id if the Rack

RackPosition:
The position of the rack in the Tray (start with 1 from the front of the tray)

SampleId:
Id of the Sample

SamplePosition:
Position of the Sample in the Rack

An example of a Tray comment record
H|\^&||| ImmunoCAP Data Manager^1.00^1.00||||||P|1|20010226080000<CR>
C|1|T|TRAY001^RACK1^1^S001^1|I<CR>
C|2|T|TRAY001^RACK1^2^S002^2|I<CR>
C|3|T|TRAY001^RACK1^3^S003^3|I<CR>
C|4|T|TRAY001^RACK1^4^S004^4|I<CR>
C|5|T|TRAY001^RACK1^5^S005^5|I<CR>
L|1|F <CR>

Available from Prime TBD
Available from IDM 5.60

Examples of different kind of comments

Raw Data

```
H|\^&|||Phadia.Prime^1.2.0.12371^4.0|||||^127.0.0.1||P|1|20120522101251
P|1||||||18991230|||^^^^||||^^^^|0||||||
O|1|B7650020^N^^0|B7650020|^^^t2^sIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||1899123000
0000||I1000-1|F||^^^^^
R|1|^^^t2^sIgE^1|9.34^^^^|kUA/l||||F||||20030503124704|I1000-1
C|1|O|Response value in RU 2140|I
O|2|B7650020^N^^0|B7650020|^^^t3^sIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||1899123000
0000||I1000-1|F||^^^^^
R|1|^^^t3^sIgE^1|Examine^^^^|kUA/l||||F||||20030503124706|I1000-1
C|1|O|Response value in RU 576|I
O|3|B7650020^N^^0|B7650020|^^^a-
IgE^tIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||18991230000000||I1000-1|F||^^^^^
R|1|^^^a-IgE^tIgE^1|199^^^^|kU/l||||F||||20030503124710|I1000-1
C|1|O|Response value in RU 1575|I
L|1|N
```

LotNumber

```
H|\^&|||Phadia.Prime^1.2.0.12371^4.0|||||^127.0.0.1||P|1|20120522100931
P|1||||||18991230|||^^^^||||^^^^|0||||||
O|1|B7650020^N^^0|B7650020|^^^t2^sIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||1899123000
0000||I1000-1|F||^^^^^
R|1|^^^t2^sIgE^1|9.34^^^^|kUA/l||||F||||20030503124704|I1000-1
C|1|O|ImmunoCAP 392A1|I
C|2|O|Conjugate BGRA1|I
C|3|O|Development solution |I
C|4|O|Stop solution |I
C|5|O|Wash solution |I
O|2|B7650020^N^^0|B7650020|^^^t3^sIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||1899123000
0000||I1000-1|F||^^^^^
R|1|^^^t3^sIgE^1|Examine^^^^|kUA/l||||F||||20030503124706|I1000-1
C|1|O|ImmunoCAP 352A1|I
C|2|O|Conjugate BGRA1|I
C|3|O|Development solution |I
C|4|O|Stop solution |I
C|5|O|Wash solution |I
O|3|B7650020^N^^0|B7650020|^^^a-
IgE^tIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||18991230000000||I1000-1|F||^^^^^
R|1|^^^a-IgE^tIgE^1|199^^^^|kU/l||||F||||20030503124710|I1000-1
C|1|O|ImmunoCAP 863A1|I
C|2|O|Conjugate BGPA1|I
C|3|O|Development solution |I
C|4|O|Stop solution |I
C|5|O|Wash solution |I
L|1|N
```

User ID

```
H|\^&|||Phadia.Prime^1.2.0.12371^4.0|||||^127.0.0.1||P|1|20120522100647
P|1||||||18991230|||^^^^||||^^^^|0||||||
O|1|B7650020^N^^0|B7650020|^^^t2^sIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||1899123000
0000||I1000-1|F||^^^^^
R|1|^^^t2^sIgE^1|9.34^^^^|kUA/l||||F||||20030503124704|I1000-1
C|1|O|Operator id Bette|I
O|2|B7650020^N^^0|B7650020|^^^t3^sIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||1899123000
0000||I1000-1|F||^^^^^
R|1|^^^t3^sIgE^1|Examine^^^^|kUA/l||||F||||20030503124706|I1000-1
C|1|O|Operator id Bette|I
O|3|B7650020^N^^0|B7650020|^^^a-
IgE^tIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||18991230000000||I1000-1|F||^^^^^
R|1|^^^a-IgE^tIgE^1|199^^^^|kU/l||||F||||20030503124710|I1000-1
C|1|O|Operator id Bette|I
L|1|N
```

Inventory

```
H|\^&|||Phadia.Prime^1.2.0.12371^4.0|||||^127.0.0.1||P|1|20120522123746
C|1|I|I250-1^2^sIgE^430|I
C|2|I|I250-1^3^sIgE^2|I
C|3|I|I250-1^4^sIgE^3|I
```

C|4|I|I250-1^1^e3^43|I
C|5|I|I250-1^1^t5^44|I
C|6|I|I250-1^1^t6^1|I
C|7|I|I250-1^10^Diluent^533|I
C|8|I|I250-1^6^43|I
C|9|I|I250-1^7^433|I
L|1|N

AllerQ Comments

H|\^&|||Phadia.Prime^1.2.0.12371^4.0|||||^127.0.0.1||P|1|20120522130930
P|1||||||18991230|||^^^^|||^^^^|0||||||
O|1|B7650020^N^^0|B7650020|^^^t2^sIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||1899123000
0000||I1000-1|F||^^^^^
R|1|^^^t2^sIgE^1|9.34^^^^|kUA/l||||F||||20030503124704|I1000-1
C|1|A|Closely related allergens: Common silver birch -t3, Horn beam -Rt209, Hazel -
t4^NGCt2^R^^^^Allergens.asp?id=2291|I
C|2|A|Common silver birch related food allergens: Carrot -f31, Celery -f85, Hazel nut -f17, Walnut -f256,
Cashew nut -f202, Almond -f20, Peach -f95, Apple -f49, Potato -f35, Kiwi -f84, Brazil nut -f18, Poppy seed
-f224^NGFt2^R^^^^Allergens.asp?id=2291|I
C|3|A|High degree of sensitization. Relation to symptoms is high.^55^R^^^^|I
O|2|B7650020^N^^0|B7650020|^^^t3^sIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||1899123000
0000||I1000-1|F||^^^^^
R|1|^^^t3^sIgE^1|Examine^^^^|kUA/l||||F||||20030503124706|I1000-1
C|1|A|Closely related allergens: Grey alder -t2, Horn beam -Rt209, Hazel -
t4^NGCt3^R^^^^Allergens.asp?id=2284|I
C|2|A|Common silver birch related food allergens: Carrot -f31, Celery -f85, Hazel nut -f17, Walnut -f256,
Cashew nut -f202, Almond -f20, Peach -f95, Apple -f49, Potato -f35, Kiwi -f84, Brazil nut -f18, Poppy seed
-f224^NGFt3^R^^^^Allergens.asp?id=2284|I
C|3|A|Moderate degree of sensitization. Relation to symptom is common.^54^R^^^^|I
C|4|A|OAS (Oral Allergy Syndrome) is often seen in patients with allergic pollenosis due to cross-
reactivity between pollen and various fruits, tree nuts and vegetables.^98^R^^^^Allergens.asp?id=2284|I
O|3|B7650020^N^^0|B7650020|^^^a-
IgE^tIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||18991230000000||I1000-1|F||^^^^^
R|1|^^^a-IgE^tIgE^1|199^^^^|kU/l||||F||||20030503124710|I1000-1
L|1|N

Report

H|\^&|||Phadia.Prime^1.2.0.12371^4.0|||||^127.0.0.1||P|1|20120522132939
P|1||||||18991230|||^^^^|||^^^^|0||||||
O|1|B7650020^N^^0|B7650020|^^^t2^sIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||1899123000
0000||I1000-1|F||^^^^^
R|1|^^^t2^sIgE^1|9.34^^^^|kUA/l||||F||||20030503124704|I1000-1
C|1|R|c:\UDM\SRC\Prime 5.40\Data\SR_B7650020_120522132937000.pdf|I
O|2|B7650020^N^^0|B7650020|^^^t3^sIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||1899123000
0000||I1000-1|F||^^^^^
R|1|^^^t3^sIgE^1|Examine^^^^|kUA/l||||F||||20030503124706|I1000-1
C|1|R|c:\UDM\SRC\Prime 5.40\Data\SR_B7650020_120522132937000.pdf|I
O|3|B7650020^N^^0|B7650020|^^^a-
IgE^tIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||18991230000000||I1000-1|F||^^^^^
R|1|^^^a-IgE^tIgE^1|199^^^^|kU/l||||F||||20030503124710|I1000-1
C|1|R|c:\UDM\SRC\Prime 5.40\Data\SR_B7650020_120522132937000.pdf|I
L|1|N

Result Interpretation

H|\^&|||Phadia.Prime^1.2.0.12371^4.0|||||^127.0.0.1||P|1|20120522132718
P|1||||||18991230|||^^^^|||^^^^|0||||||
O|1|B7650020^N^^0|B7650020|^^^t2^sIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||1899123000
0000||I1000-1|F||^^^^^
R|1|^^^t2^sIgE^1|9.34^^^^^^^|kUA/l||||F||||20030503124704|I1000-1
O|2|B7650020^N^^0|B7650020|^^^t3^sIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||1899123000
0000||I1000-1|F||^^^^^
R|1|^^^t3^sIgE^1|Examine^^^^^^^1|kUA/l||||F||||20030503124706|I1000-1
C|1|N|1^The degree of sensitization is very low and the relation to symptoms is uncommon. However, these
low levels are of interest in order to follow the development of sensitization, especially in young
children. Allergy to drugs and venoms are other situations where low levels may be of importance.|I
O|3|B7650020^N^^0|B7650020|^^^a-
IgE^tIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||18991230000000||I1000-1|F||^^^^^
R|1|^^^a-IgE^tIgE^1|199^^^^^^^|kU/l||||F||||20030503124710|I1000-1
L|1|N

ImmunoCAP Guide

H|\^&|||Phadia.Prime^5.43^4.0|||||^127.0.0.1||P|1|20120515142242
P|1||||||18991230|||^^^^|||^^^^|0||||||

```
C|1|L|TO CONSIDER|I
C|2|L|Any airway symptoms during the pollen season should be investigated due to observed IgE abs to
pollen.|I
C|3|L||I
C|4|L|POLLEN|I
C|5|L|Airway symptoms during pollen season due to moderate levels of IgE abs to box elder are common. The
observed IgE abs to birch are associated with a low probability of airway symptoms during pollen season.|I
O|1|B7650002^N^^0|B7650002|^^^t1^sIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||1899123000
0000||I1000-1|F||^^^^^
R|1|^^^t1^sIgE^1|3.80^^^^|kUA/l||||F||||20030503124454|I1000-1
O|2|B7650002^N^^0|B7650002|^^^t2^sIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||1899123000
0000||I1000-1|F||^^^^^
R|1|^^^t2^sIgE^1|<0.35^^^^|kUA/l||||F||||20030503124456|I1000-1
O|3|B7650002^N^^0|B7650002|^^^t3^sIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||1899123000
0000||I1000-1|F||^^^^^
R|1|^^^t3^sIgE^1|1.30^^^^|kUA/l||||F||||20030503124459|I1000-1
O|4|B7650002^N^^0|B7650002|^^^a-
IgE^tIgE^1||18991230000000|20030503000000||||N||1|||^^||^^^^^^0||||18991230000000||I1000-1|F||^^^^^
R|1|^^^a-IgE^tIgE^1|90.2^^^^|kU/l||||F||||20030503124502|I1000-1
L|1|N
```

Tray Comment

```
H|\^&|||Phadia.Prime^1.2.0.12371^4.0|||||^127.0.0.1||P|1|20120522123746
C|1|T|TRAY001^RACK1^1^S001^1|I
C|2|T|TRAY001^RACK1^2^S002^2|I
C|3|T|TRAY001^RACK1^3^S003^3|I
C|4|T|TRAY001^RACK1^4^S004^4|I
C|5|T|TRAY001^RACK1^5^S005^5|I
C|1|T|TRAY001^RACK2^1^S006^1|I
C|2|T|TRAY001^RACK2^2^S007^2|I
C|3|T|TRAY001^RACK2^3^S008^3|I
C|4|T|TRAY001^RACK2^4^S009^4|I
C|5|T|TRAY001^RACK2^5^S010^5|I
L|1|N
```

3.8.6 Request information record

Table 16: Request information record

ASTM Field [1] Field [3]	Field name	Transmitted (to host)	Received (from host)	Description	IDM version	Prime version
12.1.1 11.1	Record type	Q	Q	IDM/Prime transmits upper case. Request information records are accepted from host systems.	1.00 3.20 (host)	1.2.0
12.1.2 11.2	Sequence number	•	•	Shall be 1 for the first request information transmitted, 2 for the second etc	1.00	1.2.0
12.1.3 11.3	Starting range ID Patient ID ^Specimen ID	 ALL	 INV	ALL means that all tests being ordered should be sent to the instrument at this time. PatientID not supported. INV means that inventory information is requested	 1.00 3.20 (host)	1.2.0 TBD
12.1.4 11.4	Ending range ID			Not supported	-	-
12.1.5 11.5	Universal test ID			Not supported	-	-
12.1.6 11.6	Request time limits			Not supported	-	-
12.1.7 11.7	Beginning request date/time			Not supported	-	-
12.1.8 11.8	Ending request date/time			Not supported	-	-
12.1.9 11.9	Requesting physician name			Not supported	-	-
12.1.10 11.10	Requesting physician phone			Not supported	-	-
12.1.11 11.11	User field no. 1			Not supported	-	-
12.1.12 11.12	User field no. 2			Not supported	-	-
12.1.13 11.13	Request status codes	O	 D	Requesting test orders (O). Requesting inventory information (D).	1.00 3.20 (host)	1.2.0 TBD

Example:

```
Q|1|^ALL||||||||||O
Q|1|INV||||||||||O
```

3.8.7 Message terminator record

Table 17: Message terminator record

ASTM Field [1] Field [3]	Field name	Transmitted (to host)	Received (from host)	Description	IDM version	Prime version
13.1.1 12.1	Record type	L	L	IDM transmits upper case, receives upper or lower case.	1.00	1.2.0
13.1.2 12.2	Sequence number	1	1	Sequential number.	1.00	1.2.0
13.1.3 12.3	Termination code	N	N I F	Normal termination. If the field is not transmitted, N is assumed. Information not available on last request. Finished processing last request.	1.00	1.2.0

Example:
L|1|F

4 SETTINGS

It is possible to control the behaviour of the messages sent to the mainframe. Controlling settings are found on the Mainframe tab in Preferences (figure "*Mainframe tab in Preferences*") and in form "Settings Mainframe ASTM" (figure "*Settings Mainframe ASTM"*), opened by the "Protocol, Setting" button. Settings that are not managed by components in the user interface are managed using the Settings Tool.

4.1 Settings controlled within IDM

The settings that are managed from within IDM are described here.

4.1.1 Setting controlled in Preferences Mainframe tab

Settings of the Mainframe tab in Preferences (*fig.* "*Mainframe tab in Preferences"*) that affect the ASTM export format are the "Combine samples in one rack to one message" setting (table "*Combine samples in one rack to one message")* and "Export" settings listed in table "*Mainframe tab in Preferences - Export"* Table that shows how the samples/tests are exported with different settings. The Export Button in Request form in IDM are not affected by these settings and will send all tests for each Sample, one record per Sample. A complete approval will also send all tests for each Sample, one record per Sample.

FIGURE: ***"Mainframe tab in Preferences"***

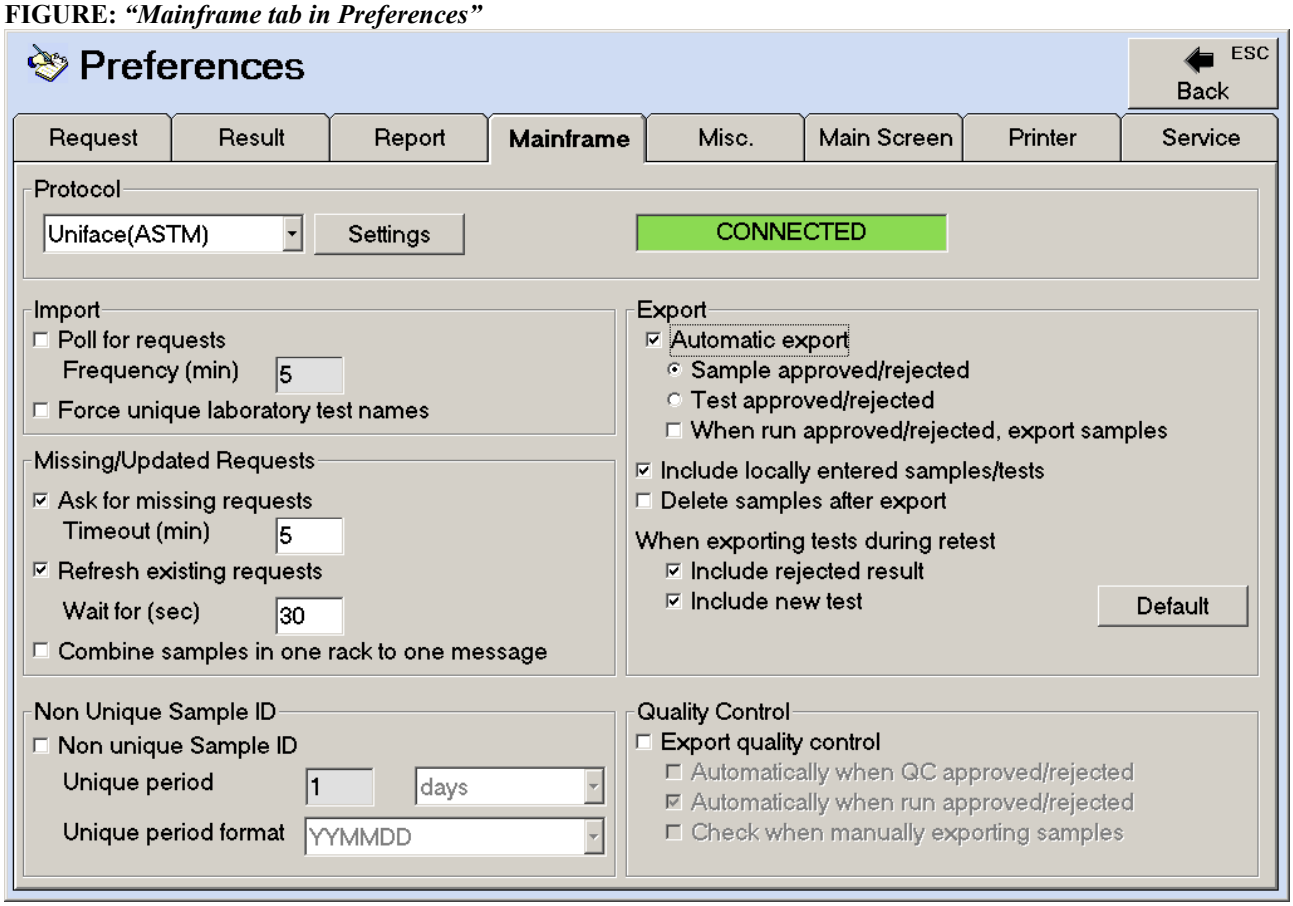


TABLE: ***"Mainframe tab in Preferences- Export"***

Setting	Explanation
Automatic export	Will enable automatic export.
Automatic export - Sample approved/rejected	Only completely Approved/Rejected Samples are exported, one record per Sample. If reflex tests are generated the Sample will not be exported **Note:** This applies both for manual approval and or automatic approval.
Automatic export – Test approved/rejected	Only Approved/Rejected Tests are exported, one record per Test Already reported tests are excluded **Note:** This applies both for manual approval and or automatic approval.

TABLE: ***Combine samples in one rack to one message***

Selection	Explanation
Selected	When asking for requests for samples in one rack, the samples in one rack are combined in one message. For further details, see 3.8.6.
Not selected	The samples in one rack are requested individually.

4.1.2 Settings controlled in Settings Mainframe ASTM

The table *"Settings Mainframe ASTM"* describe the settings found on the "*Settings Mainframe ASTM*" page (figure "*Settings Mainframe ASTM"*), that control the bahaviour of the ASTM export. It is also possible to get extended debug information in logfiles during ASTM communication by setting the Debug/Trace checkbox. This is the default behaviour. Can be turned of to prevent the logfiles to be created.

FIGURE: ***"Settings Mainframe ASTM"***

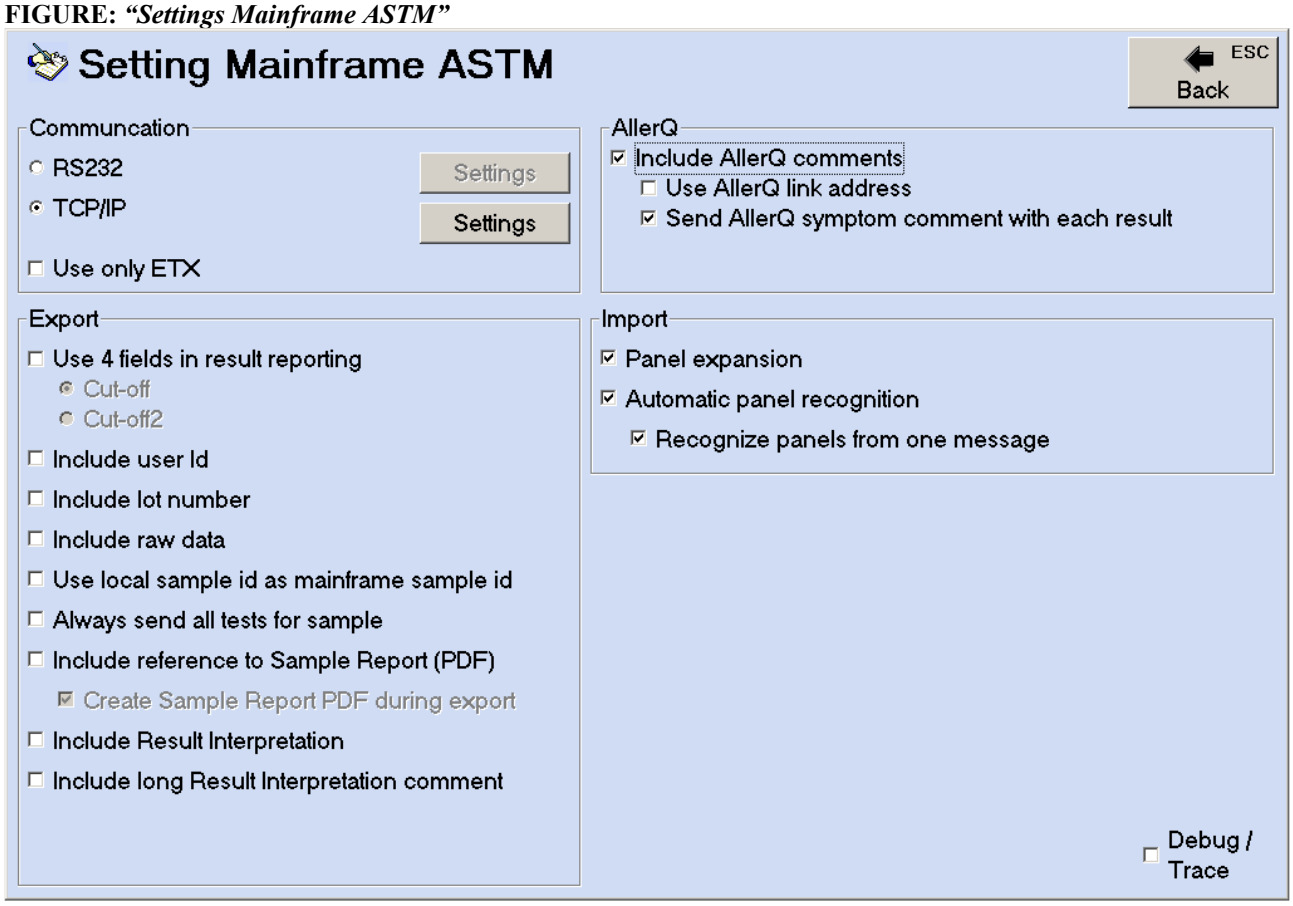


TABLE: ***Settings Mainframe ASTM***

Setting	Explanation
Use only ETX	It will send the frames using only the ETX character. See 2.4 Frame Examples
Use 4 fields in result reporting option: Cut-off option: Cut-off2	This setting controls how many fields to use in the data/measurement field (ASTM field 10.1.4) when sending the result to the mainframe. Default is disabled and will send all 5 fields (Concentration, Class, Cut-off, Cut-off2 and Quotient) If enabled it is possible to choose to send the Cut-off or the Cut-off2 result

Include user Id Include lot number Include raw data	These 3 settings control the type of comment to include in the comment record when sending the result to the mainframe. See 3.8.5 Comment Record (Raw Data, LotNumber and Operator Id Comments section) for an explanation of comments
Use local sample id as mainframe sample id	This setting will put the SampleId (ASTM field 9.4.4) also in the Specimen ID field (ASTM field 9.4.3) for locally entered SampleID (Samples entered manually in IDM).
Always send all tests for sample	If set, all results for one sample will be sent regardless if reported before when a new result was generated.
Include reference to Sample Report (PDF)	In order to make the Sample Report more available for customers using ASTM, this setting will send the reference to a sample report in PDF format if the report exist or if it is created on export (due to sub-selection). Sent as text in the comment field, see 3.8.5 Comment Record. **Note:** For this functionality the PDF Report folder must be on a network drive.
Include reference to Sample Report (PDF) – Create Sample Report PDF during export	If set, exporting a Sample will trigger that a Sample Report in PDF format is generated and the reference to the report is exported. **Note:** Due to time-consuming PDF-generation the report may not exist yet when the reference is exported.
Include Result Interpretation	Setting controls if fields Sensitization, Clin. Relation and long result interpretation comment ID are included with the results or not.
Include long result interpretation comment	If to use the comment field for exporting the long comment that appear with result interpretation as text in the comment field, see 3.8.5 Comment Record. **Notice**: If setting "Include Result Interpretation" is selected the index of the comment is exported with the result even if this option is not selected.
Include AllerQ comments	This setting controls if AllerQ comments shall be included in the comment record when sending the result to the mainframe. See 5.8.5 Comment Record (AllerQ section) for an explanation of comment.
Include AllerQ comments/ Use AllerQ link address	If Use AllerQ Link address is enabled it will use the AllerQ Link addres instead of the Invitrosight link address.
Include AllerQ comments/ Send AllerQ comment with each result	If this setting is selected IDM will send the AllerQ symptom comments together with every result (is selected by default). Deselect this setting to only send the AllerQ symptom comments with the first result of a sample, to minimize the amount of data sent to the mainframe.

Available from IDM 4.20

Panel expansion	This setting controls if IDM should interpret the Test field as a Panel. If a Panel is detected, and the fields Mainframe method and Reflex name is empty, the Panel will be exanded (i.e. process all Panel Tests).
Panel recognition - Recognize panels from one message	If this setting is enabled, IDM will detect if the imported tests matches an IDM Panel. If it matches, the tests will be marked as beeing requested from a Panel. In case there are more than one Panel that matches, IDM will select the Panel with the most tests. If the setting "Recognize panels from one message" is set, IDM will check tests from one ASTM message. If the mainframe sends indivual messages for each test of the Panel, this setting should be unchecked (i.e. IDM will include all non-processed tests found in the IDM's database for the imported sample in the Panel check).

4.1.3 Settings controlled in Settings Tool

4.1.3.1 Setting Tool - ASTM

Setting	Explanation
ExportResultOneOrderRecord ("Setting tool details" below)	This setting will send the results for one sample with only one order record, can be used to minimize the amount of information sent to mainframe.
ASTMUseLaboratoryPID	0 = Use PracticePID <default> 1 = Use LaboratoryPID
ASTMInstrumentID	Set a name to use instead of InstrumentID (ASTM Field 9.4.25, 10.1.14) Empty will use the Instrument names defined in IDM
ASTMReconnectIntervall	Interval between reconnect retries for TCP CLIENT connection Set an interval between 1000 and 600000 mS Set to 0 to disable Default interval is 10000 mS **Note:** IDM needs to be restarted.

Available from IDM 4.12

DelayBetweenRequestInformationRecords	Insert a delay in seconds between RequestInformation Records to let the LIS be able to respond. 0 = Off <default>
ExcludeRejectedTest	Exclude rejected tests when exporting to LIS. 0 = Rejected test not excluded <default> 1 = Rejected test excluded

Available from IDM 4.20

`ENQCompetitionTimeout`	Timeout when an ENQ competition occur Interval between 1 and 60 seconds <default 1 second> IDM will wait this number of seconds before try another ENQ if an ENQ competition has occurred.
`ASTMETXOnlyNormalFrameBlockSize`	Use normal frameblock size 240 chr for ETX only mode, otherwise CR is used as frameblock delimiter 1 = On <default> 0 = Off *See LowLevel examples in the end of this document*
`ASTMETXOnlySplitLargeRecords`	Use normal frameblock size for frameblock bigger than 240 chr. Used if ASTMETXOnlyNormalFrameBlockSize = 0 1 = On 0 = Off <default> *See LowLevel examples in the end of this document*
`ASTMMAxNumberOfMessages`	Max number of ASTM records in the send buffer. <default 500> If Automatic export –Test approved/rejected is set then there is a possibility the send buffer will be filled if a complete run with around 1000 results are approved at once. To prevent the buffer fill condition set this to a value higher than the number of results approved. (e.g. 1500) **Note:** IDM needs to be restarted

Available from IDM 4.24

CombineRequestorAddress	Handle the combination of the 5 lines of address received in section 3.8.3 Test Order Record (9.4.19) Line 1 to 3 is combined separated with comma 0 = No combination <default> 1 = Use combination
SkipExportOfRequestorInfo	Skip export of Requestor Information 0 = Do not skip <default> 1 = Skip
NonUniqueOrderingPhysicianCode	Handle non-unique requestor id 0 = Imported requestor id is unique <default> 1 = Imported requestor id and requestor name makes a unique combination

Available from IDM 4.31

ASTMTimer	Buffer check timer. Change to 1250 when run on Windows Vista Default: 1000 ms

Available from IDM 5.20

ExportPanelNameInOrderRecord	Send Panelname instead of testname in order record 0 = Send TestName <default> 1 = Send Panel Name
ImportIgnorePreDilutionFactor	Ignore predilution factor imported from LIS 0 = Use pre-dilution factor from LIS <default> 1 = Do not use pre-dilution factor from LIS instead use IDM setting

ImportIgnoreInstrumentDilutionFactor	Ignore Instrument dilution factor imported from LIS 0 = Use instrument dilution factor from LIS <default> 1 = Do not use instrument dilution factor from LIS instead use IDM setting

Available from IDM 5.20

ASTMPatientNameIn2Fields	Handle patient name divided in 2 component fields 0 = Complete Patient name in one component field <default> 1 = Patient name divided in 2 component fields

Available from IDM 5.31

ImportIgnoreReplicates	Ignore number of replicates imported from LIS 0 = Use replicates from LIS <default> 1 = Do not use replicates from LIS instead use IDM setting

Available from IDM 5.34

AskQCId	Ask LIS for QC identifier 0 = Do not ask LIS <default> 1 = Ask LIS *See section 4.2.3.2 AskQCId below*
QCIdMaxSecondsToWait	Timeout when Ask LIS for QC identifier default 300 sec (5 minutes)
UseExternalReportGenerator	Use an external program to generate sample report files to be referenced in export to LIS.\n0 = Disabled <default>\n1 = Use external program
ExternalReportGeneratorExePath	Path to program to use for sample report file generation
ExternalReportGeneratorExtraParameters	Extra parameters for program to use for sample report file generation
ExternalReportGeneratorWorkingDirectory	Working directory for program to use for sample report file generation

Available from IDM 5.40

ASTMExtendedLogging	Include extended logging of communication data 0 = Disable <default> 1 = Enable Note: The extended data may include sensitive information. Only to be used for integration purposes.

Available from IDM 5.44

ASTMExportResultForAllPanels	Export extra Result record for all panels where the test was included in during order. 0 = No extra export<default> 1 = Extra export
`ASTMIncludeTrayIdInExport`	Include Tray Id in export 0 = No Tray Id in export<default> 1 = Include Tray Id in export

Available from IDM 5.60

DoNotExportEmptyLotNumbers	Set to not export any Lotnumber if they are empty 0 = Disabled<default> 1 Enabled
SendTrayRemovedToLIS	Export Tray Information when tray is removed 0 = Disabled<default> 1 Enabled

Available from IDM 5.65

IncludePendingResultInformationInASTMExport	Include additional status to Pending Result in Result Record (9.9) 0 - Not activated <default> 1 – Include additional status in exported results 2 – Export all Pending results for exported samples and include additional status
SendLotNumberInData_MeasurementFieldInResultRecord	Include Lotnumbers in Data/Measurement field in result record (9.4) 0 = Disabled<default> 1 Enabled
SendUserIdInOperatorIDFieldInResultRecord	Send User ID in Operator ID Field in Result Record (9.11) 0 = Disabled<default> 1 Enabled

4.1.4 Setting Tool – ImmunoCAP Guide

Available from IDM 4.20

`RequestLabWizardComments`	Set to request ImmunoCAP Guide comment from server. 0 = Disable <default> 1 = When results are exported. 2 = When results are approved and when results are exported.
`RequestCommentWhenAllApproved`	Request labiwizard comment only when all tests for the patient/sample are approved. 0 = Disable 1 = Enable <default>
`ExportLabWizardComments`	Set to enable ImmunoCAP Guide comment in mainframe communication using ASTM protocol 0 = Disable <default> 1 = Enable **Note:** RequestLabwizardComments must be enabled for this setting to work
`ExportUseSavedLabWizardComments`	Set to use ImmunoCAP Guide comment saved in IDM database during export (if valid and approved) 0 = Disable 1 = Enable <default> **Note**: RequestLabwizardComments and ExportLabWizardComments must be enabled for this setting to work

LabWizardCommentsInPatientRecord	Flag to indicate in which section in ASTM to send the comments. 0 = In result record section 1 = In patient record section <default>
LabWizardCommentSource	The character to use for comment source in ASTM protocol (see section 11.1.3). Default is "L", AllerQ is using "A"
LabwizardUseAllerQForSuppressedComments	Flag to send AllerQ comments for suppressed ImmunoCAP Guide comments 0 = No <default> 1 = Yes **Note:** Include AllerQ comments in preferences (*Settings Mainframe ASTM*) must be enabled for this setting to work
LabwizardUseAllerQForEmptyComments	Flag to send AllerQ comments for empty ImmunoCAP Guide comments 0 = No <default> 1 = Yes **Note:** Include AllerQ comments in preferences (*Settings Mainframe ASTM*) must be enabled for this setting to work
LabwizardUseAllerQForErronousComments	Flag to send AllerQ comments for erroneous ImmunoCAP Guide comments 0 = No <default> 1 = Yes **Note:** Include AllerQ comments in preferences (*Settings Mainframe ASTM*) must be enabled for this setting to work

UserName	The user name used to connect to the WGServer. Note! This is the same setting as LabCommunity uses.
Password	The password used to connect to the WGServer.
UseOnlyWGWebserver	Select server to use for retreiving comments. 0=Use Labwizard server (WebServiceURL) 1=Use ImmunoCAP Guide server (WGWebServiceURL) (Default)
WebServiceURL	The URL to the labwizard server. Example: http://<COMPUTER>:8090/Interpret?WSDL
WGWebServiceURL	The URL to the wg server. Default is https://extranet.phadia.com/qcwebservices/wgwebservice.asmx
KBCode	The code for the Knowledgebase to use. Currently AL shall be used
Site	The site where IDM is installed (e.g. Laboratory name)
Country	The Country where the site is located

LabNum	The laboratory number of the lab
CheckTimer	The period to check for new labwizard comment requests Default value is 1000 msec **Note:** Set to a value below 100 will turn the timer off! IDM need to be restarted.
CheckApprovedTimer	The period to check for approved labwizard comment requests Default value is 300000 msec (5 minutes) **Note:** Set to a value below 100 will turn the timer off! IDM need to be restarted.
RetryCount	Number of times to retry connecting to server. Default value is 2
RetryTimer	Number of times to wait between each CheckTimer before connecting to server after retry. A setting of 60 mean one minute if CheckTimer is set to 1000. Default value is 60
DebugEnabled	Flag to enable debugging of Labwizard. 0 = Disable 1 = Enable <default>
DebugFolder	The Folder where debug files are saved. Default is in a subfolder (LabwizardLog) of UDM folder
ConcentrationNumberOfDecimals	Number of decimals to use for results sent to server. Default = 4 **Note:** Setting the value to 0 will send all available decimals
LabwizardMethodsToInclude	Only results for the methods in this string will be included in the query to Labwizard If string is empty all methods will be included Format of the string is for example to include only sIgE and tIgE "'sIgE', 'tIgE'"
EpisodeHandling	Set to indication how the episodes shall be handled. 0=The parameters (HourUntilSecondPeriod, DayUntilThirdPeriod, HandleAsMixesInFirstPeriod) are used. Only used when UseOnlyWGWebserver = 0 1=Send results for each sampleId in separate episodes (Default)
HourUntilSecondPeriod	Number of hours after first result until treating the result as second period. Only used when UseOnlyWGWebserver = 0 and EpisodeHandling = 0
DayuntilThirdPeriod	Number of days after first result until treating the result as third period. Only used when UseOnlyWGWebserver = 0 and EpisodeHandling = 0
HandleAsMixesInFirstPeriod	The tests to handle as mixes in first period, other tests will be moved to second period (reflexes). Only used when UseOnlyWGWebserver = 0 and EpisodeHandling = 0

4.1.5 Setting Tool details

4.1.5.1 ExportResultOneOrderRecord

When disabled it will send the result in the following format:

```
H|\^&|||ImmunoCAP Data Manager (IDM)^3.23.0^3.0|||||^127.0.0.1||P|1|20050406160924<CR>
P|1||SID||||18991230|||^^^^||||^^^^|0||||||<CR>
O|1|SID^N^^0|SID|^^^f1^sIgE^1||20050406000000|20050406000000||||N||1|||^^||^^^^^^0||||18991230000000|||I||
^^^^^<CR>
R|1|^^^f1^sIgE^1|^^^^|kUA/l||||I||||18991230000000|<CR>
O|2|SID^N^^0|SID|^^^f2^sIgE^1||20050406000000|20050406000000||||N||1|||^^||^^^^^^0||||18991230000000|||I||
^^^^^<CR>
R|1|^^^f2^sIgE^1|^^^^|kUA/l||||I||||18991230000000|<CR>
O|3|SID^N^^0|SID|^^^f3^sIgE^1||20050406000000|20050406000000||||N||1|||^^||^^^^^^0||||18991230000000|||I||
^^^^^<CR>
R|1|^^^f3^sIgE^1|^^^^|kUA/l||||I||||18991230000000|<CR>
L|1|N<CR>
```

When enabled it will send the result in the following format:

```
H|\^&|||ImmunoCAP Data Manager (IDM)^3.23.0^3.0|||||^127.0.0.1||P|1|20050406161028<CR>
P|1||SID||||18991230|||^^^^||||^^^^|0||||||<CR>
O|1|SID^N^^0|SID|^^^f4^sIgE^1||20050406000000|20050406000000||||N||1|||^^||^^^^^^0||||18991230000000|||I||
^^^^^<CR>
R|1|^^^f1^sIgE^1|^^^^|kUA/l||||I||||18991230000000|<CR>
R|2|^^^f2^sIgE^1|^^^^|kUA/l||||I||||18991230000000|<CR>
R|3|^^^f3^sIgE^1|^^^^|kUA/l||||I||||18991230000000|<CR>
L|1|N<CR>
```

Note! This must be used with care if there is different dilution factors for the same SampleId, since the dilution factor for the Sample are only included in the Order record (ASTM field 9.4.14).

4.1.5.2 AskQCId

When enabled IDM will check the test order record received to see if the information is for a QC (see 9.4.12) and if there is a LIS QCId in the 8.1.6 field of Patient Record the LIS QC ID will be saved in IDM and used when the QC result are sent to LIS. This will only work for QC placed in a QC rack.

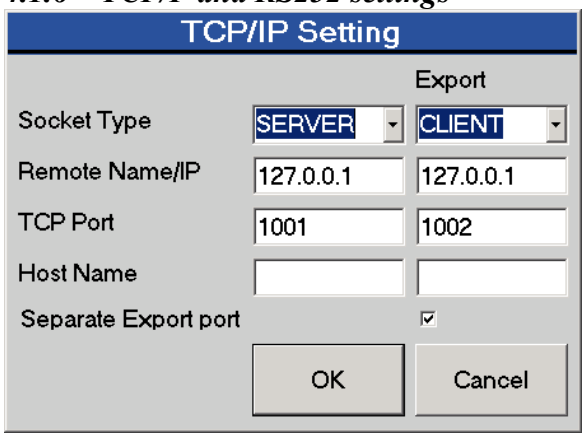
(LIS QC Id requested when operator enter QCID in consumables)
(Available from IDM version 5.41)

1. When operator enter the QCSample (e.g. tIgE H) in Consumables IDM will ask LIS for a request
2. The LIS answer with one LIS QCId for each request received from IDM
3. When a QC Rack is inserted into the instrument and a QCID already exist IDM will use the LIS QCId received previously and not ask LIS for a LIS QCId, if more than one LIS QCId has been received from LIS for the same QC Id, IDM will assign the LIS QCId in the order they were received.
4. IDM send the request defined in the QC profile selected for the QC Rack to the instrument.
5. When results is received and approved IDM will send the each result and the LIS QCId to LIS

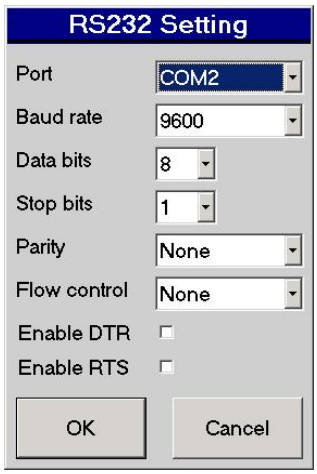
Note! Not completely safe to use if more than one instrument is used, since there is no way to be sure that the LIS QCId received are connected to the correct QC to be run, they will be added to the QC in the order they are inserted in the instruments.

See LIS QC Id examples in the message examples section below

4.1.6 TCP/P and RS232 settings



Setting	Explanation
Socket Type	Set to indicate if IDM shall act as SERVER or CLIENT. If set to act as as SERVER no other setting is needed. If set to act as a CLIENT the Remote name/IP must be set and also the TCP Port
Remote Name/IP	When Socket Type is set to CLIENT this is the name or IP address of the mainframe computer
TCP Port	Set the TCP port to use for communication. Default is 1001, 1002.
Host Name	The Host name is transmitted in the ASTM field 7.1.10
Separate Export port	Set to export data from IDM on a separate TCP port



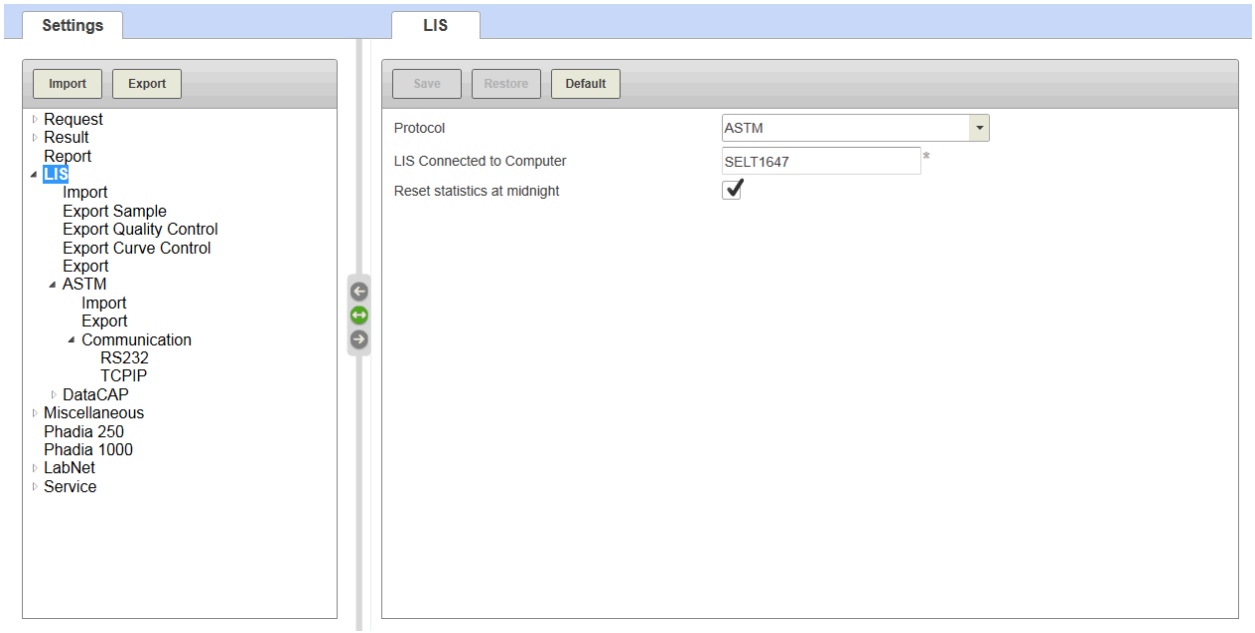
For RS232 setting it is possible to set Baud rate, Data bits, Stop bits, parity and it is also possible to set the flow control to use (Xon/Xoff, RTS or combined). To control the signals RTS and DTR set the check boxes accordingly.

4.2 Settings controlled within Prime

The settings that are managed from within Prime are described here.

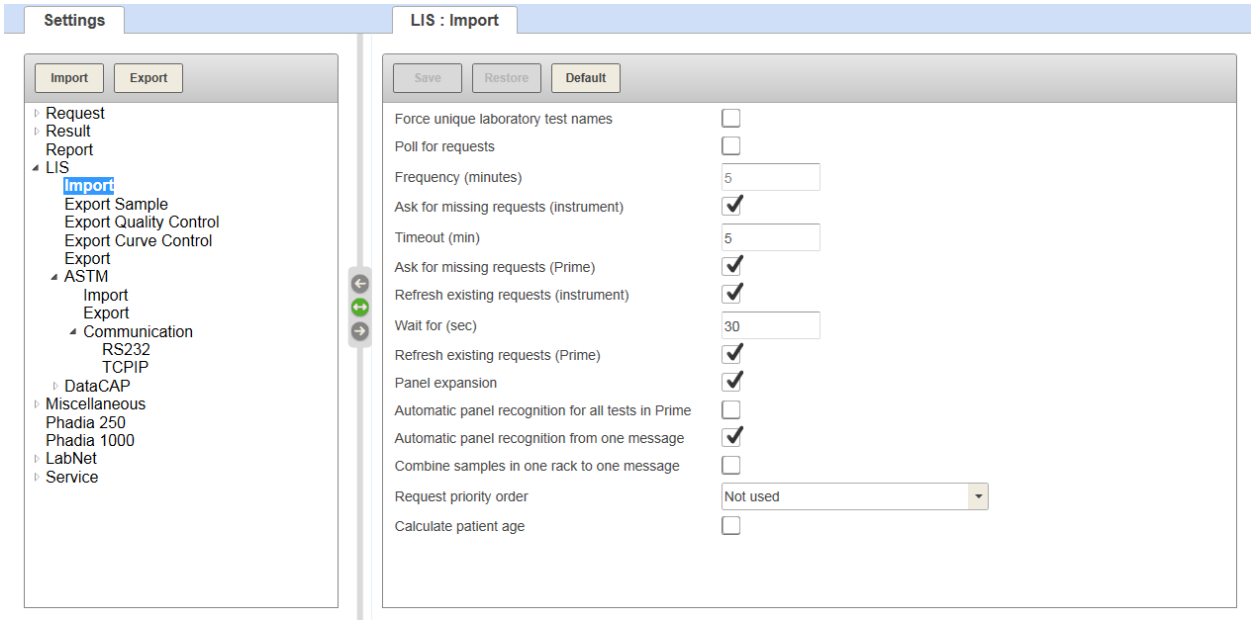
The Export Button in Request form in Prime are not affected by these settings and will send all tests for each Sample, one record per Sample.

4.2.1 LIS



Setting	Explanation	Prime Version
Protocol	Set the LIS protocol to use (standalone, DataCAP or ASTM)	1.2
LIS Connected to Computer	Set the computer that LIS is connected to	1.2
Reset statistics at midnight	Reset the statistics shown on LIS view at midnight	1.3

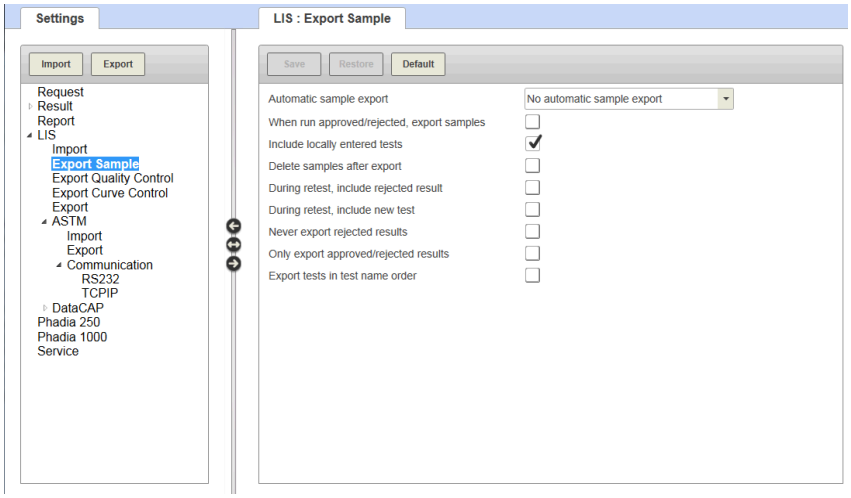
4.2.2 *Import*



Setting	Explanation	Prime Version
Force unique laboratory test name	If checked, Prime will check that the laboratory test names are unique, thus allowing Mainframe import on test name only. Prime will log all non-unique laboratory test names to the System Log.	1.2
Poll for requests	If checked, IDM will poll the LIS automatically for new requests	1.2
Frequency (minutes)	The frequence of the poll intervall in minutes.	1.2
Ask for missing requests (instrument)	When the operator loads a Sample in an instrument that is not known to Prime, Prime will automatically ask LIS for the request.	1.2
Timeout (min)	Prime will wait up to *"Timeout"* minutes before sending the request to the instrument.	1.2
Ask for missing requests (Prime)	When the operator reads a Sample Id with the barcode reader that is not known to Prime, Prime will automatically ask LIS for the request.	1.2
Refresh exising requests (instrument)	When the operator loads a known sample in an instrument Prime will automatically ask LIS to update the request.	1.2
Wait for (sec)	Prime will wait up to *"Wait for (sec)"* seconds before sending the request to the instrument.	1.2
Refresh exising requests (Prime)	When the operator reads a known Sample Id with the barcode reader in the Request window, Prime will automatically ask LIS to update the request.	1.2
Panel Expansion	This setting controls if Prime should interpret the Test field as a Panel. If a Panel is detected, and the fields LIS method and Reflex name is empty, the Panel will be exanded (i.e. process all Panel Tests).	1.2
Automatic panel recognition for all tests in Prime	If this setting is enabled, Prime will detect if the imported tests matches a Prime Panel. If it matches, the tests will be marked as beeing requested from a Panel. In case there is more than one Panel that matches, Prime will select the Panel with the most tests.	1.2
Automatic panel recognition from one message	Prime will check tests from one ASTM message. If the LIS sends indivual messages for each test of the Panel, this setting	1.2

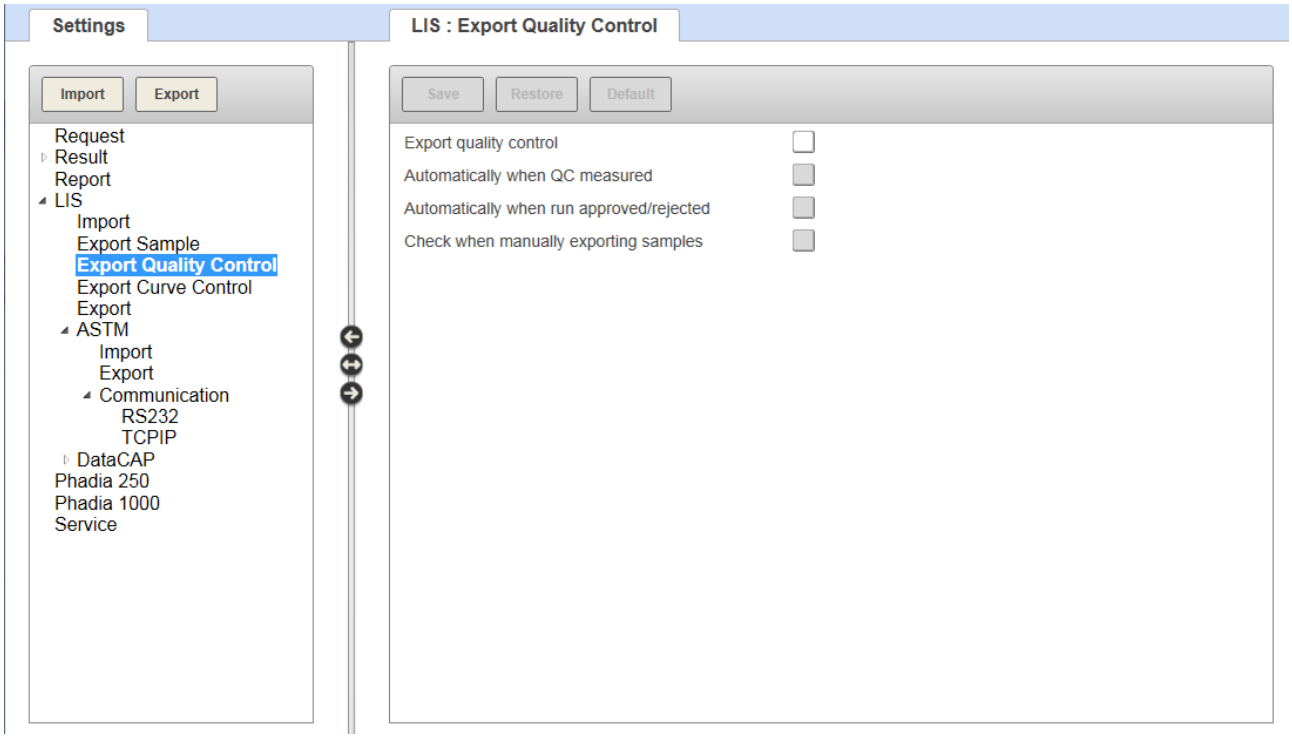
	should be unchecked (i.e. Prime will include all non-processed tests found in the Prime's database for the imported sample in the Panel check).	
Combine samples in one rack to on message	When asking for requests for samples in one rack, the samples in one rack are combined in one message. See examples section	1.2
Request priority order	Configure if to use request priority order A or B. Request priority order can be defined per test, and controls the processing order of the tests.	1.2
Calculate patient age	Automatic calculate patient age when birthdate is available. Only occurs when patient age is not available	

4.2.3 Export Sample



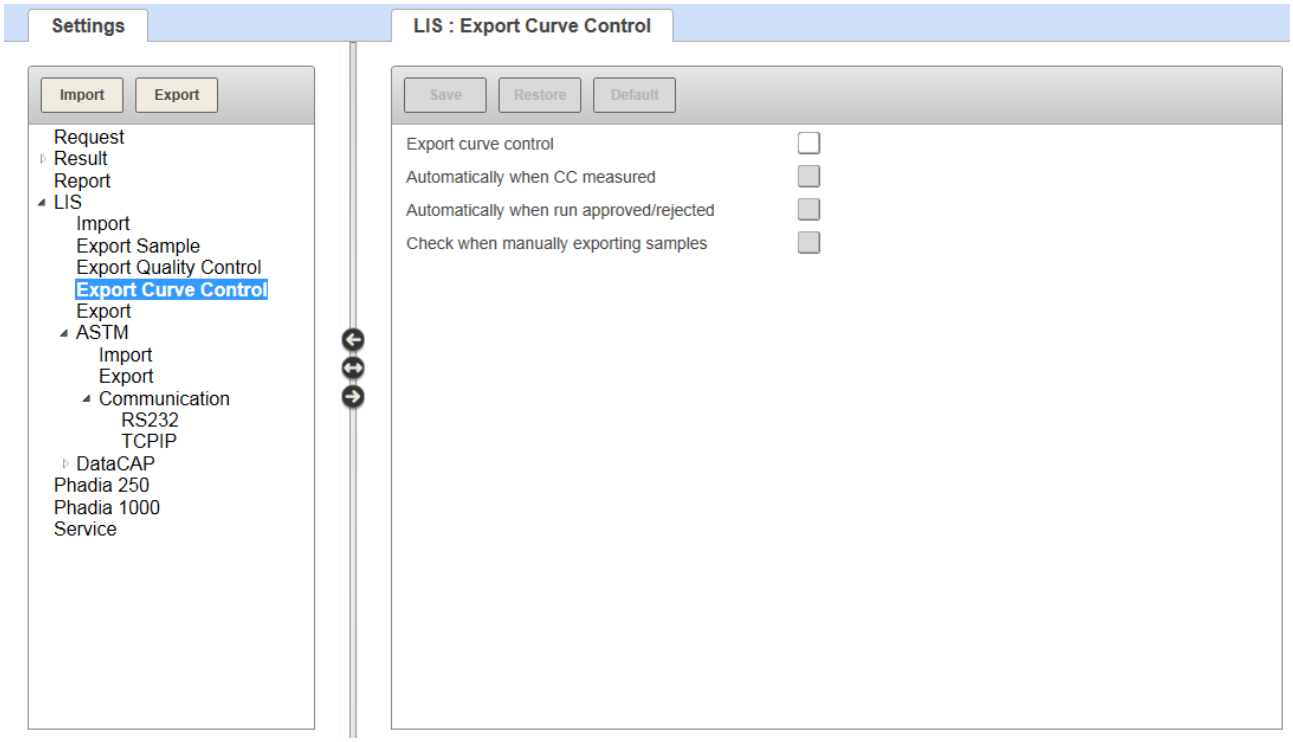
Setting	Explanation	Prime Version
Automatic sample export	**No automatic sample export** Disable automatic sample export **Test approved/rejected** Only Approved/Rejected Tests are exported, one record per Test Already reported tests are excluded **Sample approved/rejected** Only completely Approved/Rejected Samples are exported, one record per Sample. If reflex tests are generated the Sample will not be exported **Note!** This applies both for manual approval and or automatic approval	1.2
When run approved/rejected, export samples	If checked, Prime will, when an Analytical Run is approved, export all tests for all samples in that run. **Note!** Applies when Automatic sample export is enabled.	1.2
Include locally entered tests	If checked Prime will include locally entered samples / tests in the export. By default, the export will only contain samples / tests that have been imported from LIS.	1.2
Delete samples after export	If checked, Prime will automatically delete samples / tests after export.	1.2
During retest, include rejected result	If checked, Prime will include the result from the test that was rejected and triggered a retest “on the same sample” in the export. *Only valid when the result for the new test is not yet ready.*	1.2
During retest, include new test	If checked, Prime will include the newly added retest in the export. *Only valid when the result for the new test is not yet ready.*	1.2
Never Export rejected results	Exclude rejected tests when exporting to LIS. Unchecked = Rejected test not excluded <default> Checked = Rejected test excluded	1.2
Only export approved/rejected results	Only export results that have been approved or rejected	1.2
Export tests in test name order	Export the tests in the testname order	1.2

4.2.4 Export Quality Control



Setting	Explanation	Prime Version
Export quality control	If checked, an export button is available in Quality, Quality Controls View.	1.2
Automatically when QC measured	If checked, Prime will automatically export quality controls when QC is measured, and automatic approval is enabled.	1.2
Autiomatically when run approved/rejected	If checked, Prime will automatically export quality controls when an Analytical Run becomes approved/rejected.	1.2
Check when manually exporting samples	If checked, Prime will automatically check for non reported quality controls for the last 14 days, and ask the operator if to export these, when the Export button in Request View is pressed.	1.2

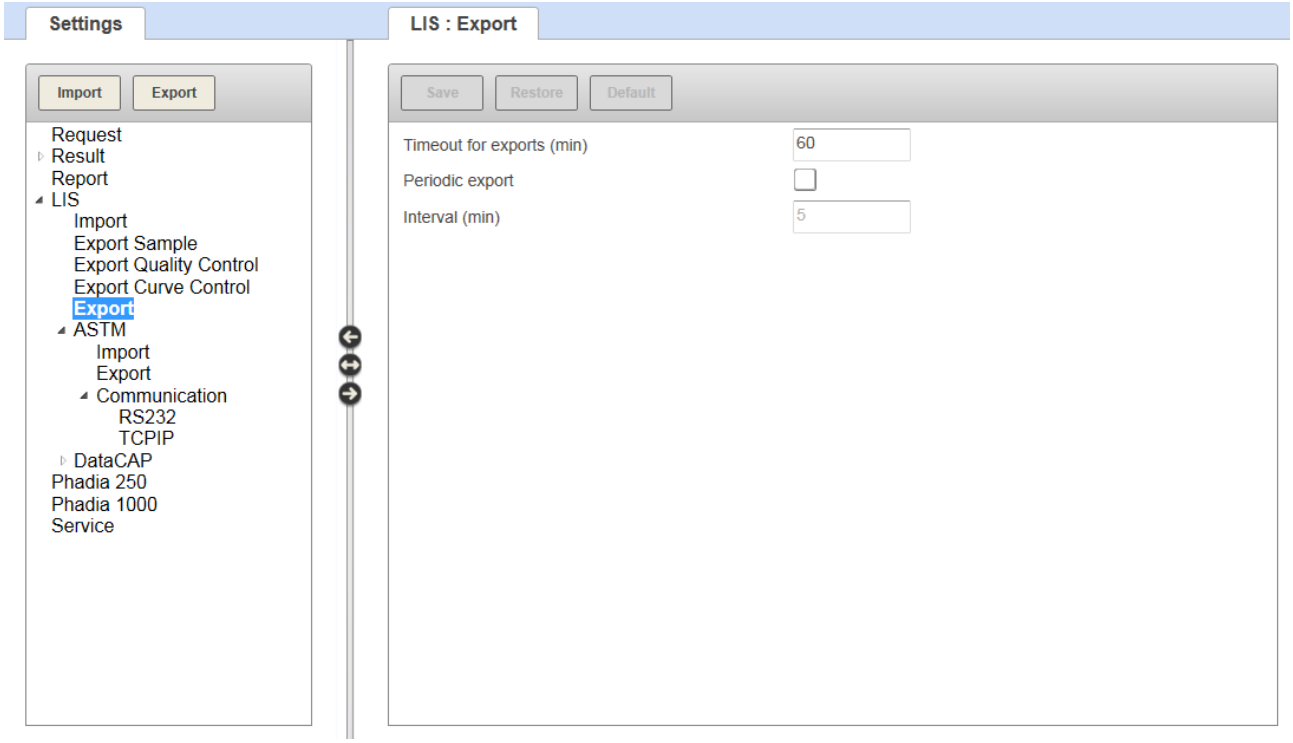
4.2.5 Export Curve Control



Note! Curve Control export is not available for ASTM.

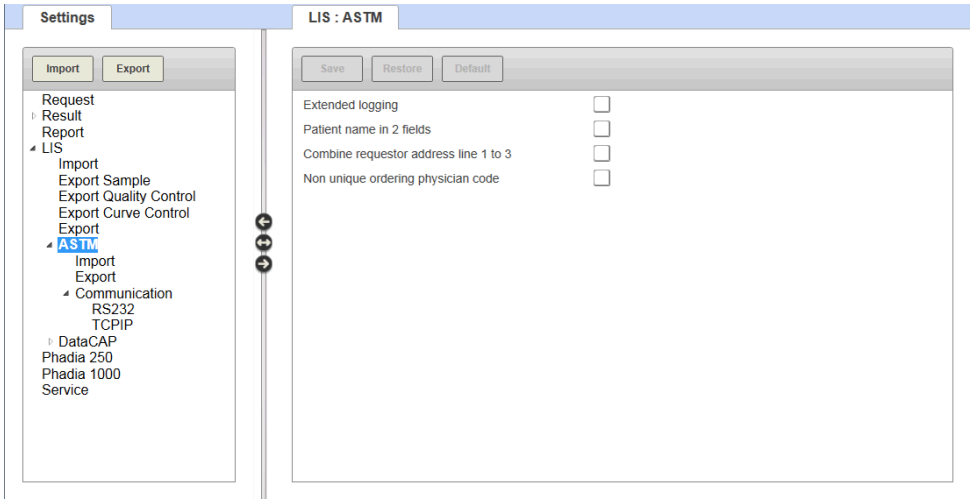
Setting	***Explanation***	**Prime Version**
Export curve control	If checked, an export button is available in Quality, Curve Controls View.	1.2
Automatically when CC measured	If checked, Prime will automatically export quality controls when CC is measured, and automatic approval is enabled.	1.2
Autiomatically when run approved/rejected	If checked, Prime will automatically export curve controls when an Analytical Run becomes approved/rejected.	1.2
Check when manually exporting samples	If checked, Prime will automatically check for non reported curve controls for the last 14 days, and ask the operator if to export these, when the Export button in Request View is pressed.	1.2

4.2.6 Export



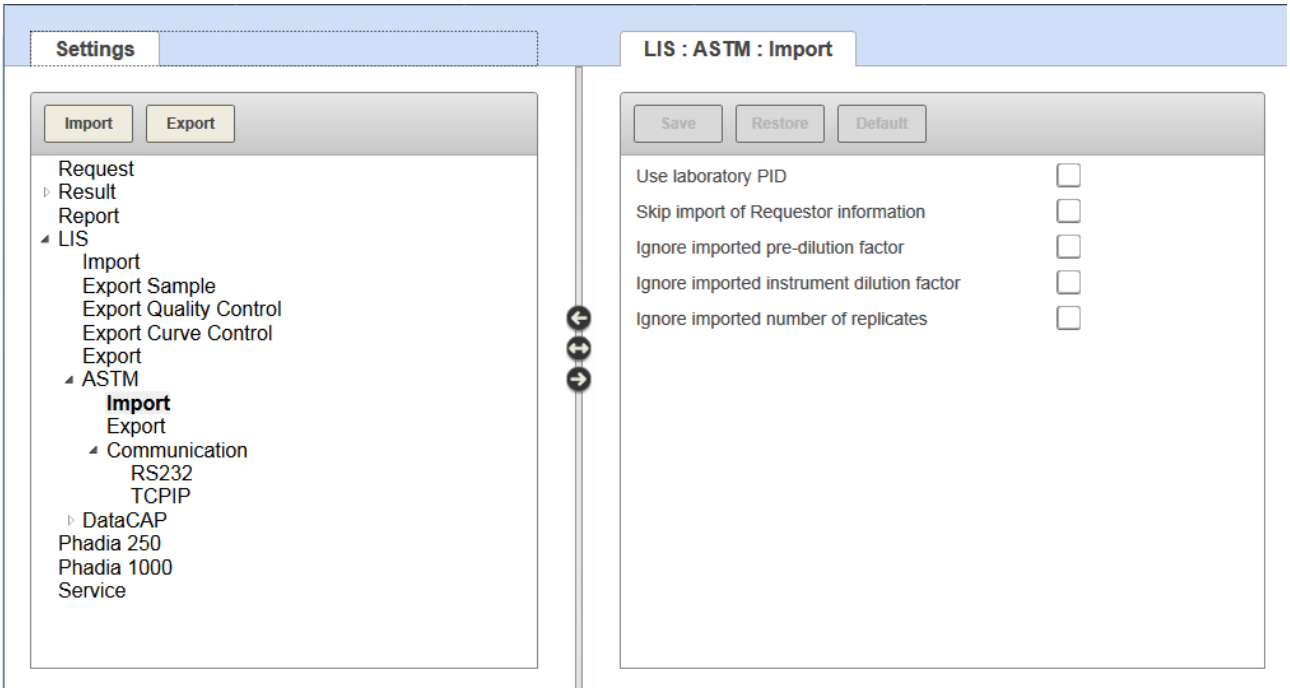
Setting	Explanation	Prime Version
Timeout for exports (min)	Set the timout how long Prime will wait for an export confirmation.	1.2
Periodic export	If checked, all exports for a time period will be collected and exported at one time. Note! The exported results will be sent as separate records and not combined to one record.	1.2
Interval (min)	The interval/frequency of the periodic check.	1.2

4.2.7 General ASTM



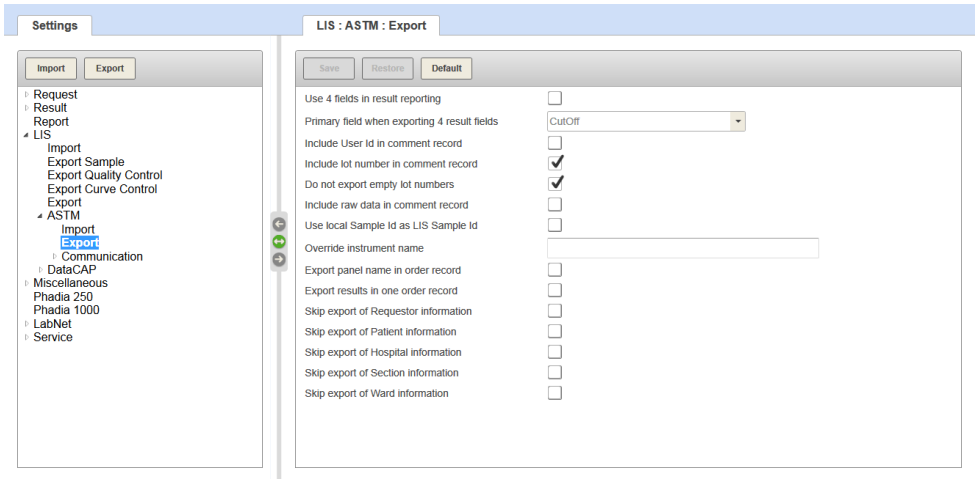
Setting	Explanation	Prime Version
Extended logging	Include extended logging of communication data **Note!** The extended data may include sensitive information. Only to be used for integration purposes.	1.2
Patient name in 2 fields	Handle patient name divided in 2 component fields Unchecked = Complete Patient name in one component field <default> Checked = Patient name divided in 2 component fields	1.2
Combine requestor address line 1 to 3	Handle the combination of the 5 lines of address received in Test Order Record (9.4.19) Line 1 to 3 is combined separated with comma	1.2
Non unique ordering physician code	Handle non-unique requestor id Unchecked = Imported requestor id is unique <default> Checked = Imported requestor id and requestor name makes a unique combination	1.2

4.2.8 Import



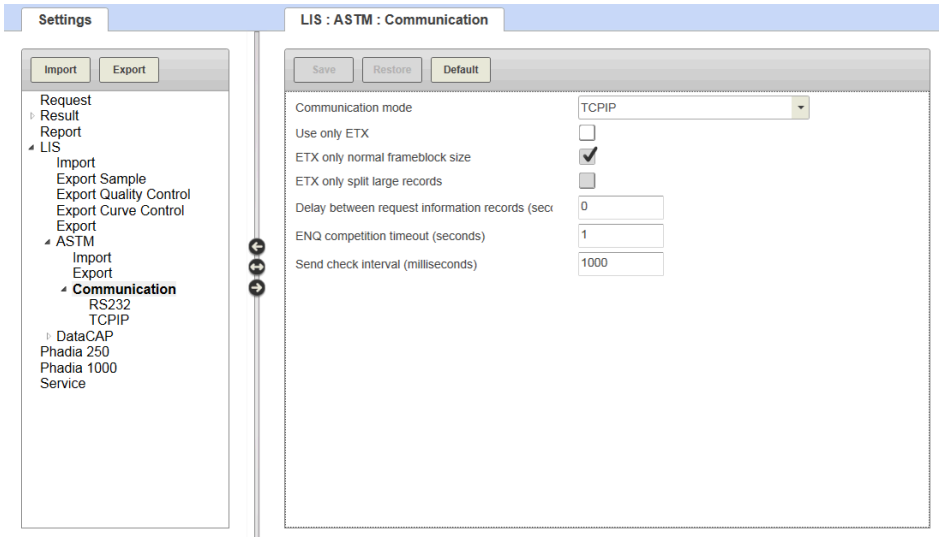
Setting	Explanation	Prime Version
Use laboratory PID as Patient id	Unchecked = Use PracticePID <default> Checked = Use LaboratoryPID	1.2
Skip import of Requestor information	Unchecked = Import Requestor information Checked = Skip import of Requestor information	1.2
Ignore imported pre-dilution factor	Ignore predilution factor imported from LIS Unchecked = Use pre-dilution factor from LIS <default> Checked = Do not use pre-dilution factor from LIS instead use Prime setting	1.2
Ignore imported instrument dilution factor	Ignore Instrument dilution factor imported from LIS Unchecked = Use instrument dilution factor from LIS <default> Checked = Do not use instrument dilution factor from LIS instead use Prime setting	1.2
Ignore imported number of replicates	Ignore number of replicates imported from LIS Unchecked = Use replicates from LIS <default> Checked = Do not use replicates from LIS instead use Prime setting	1.2

4.2.9 Export



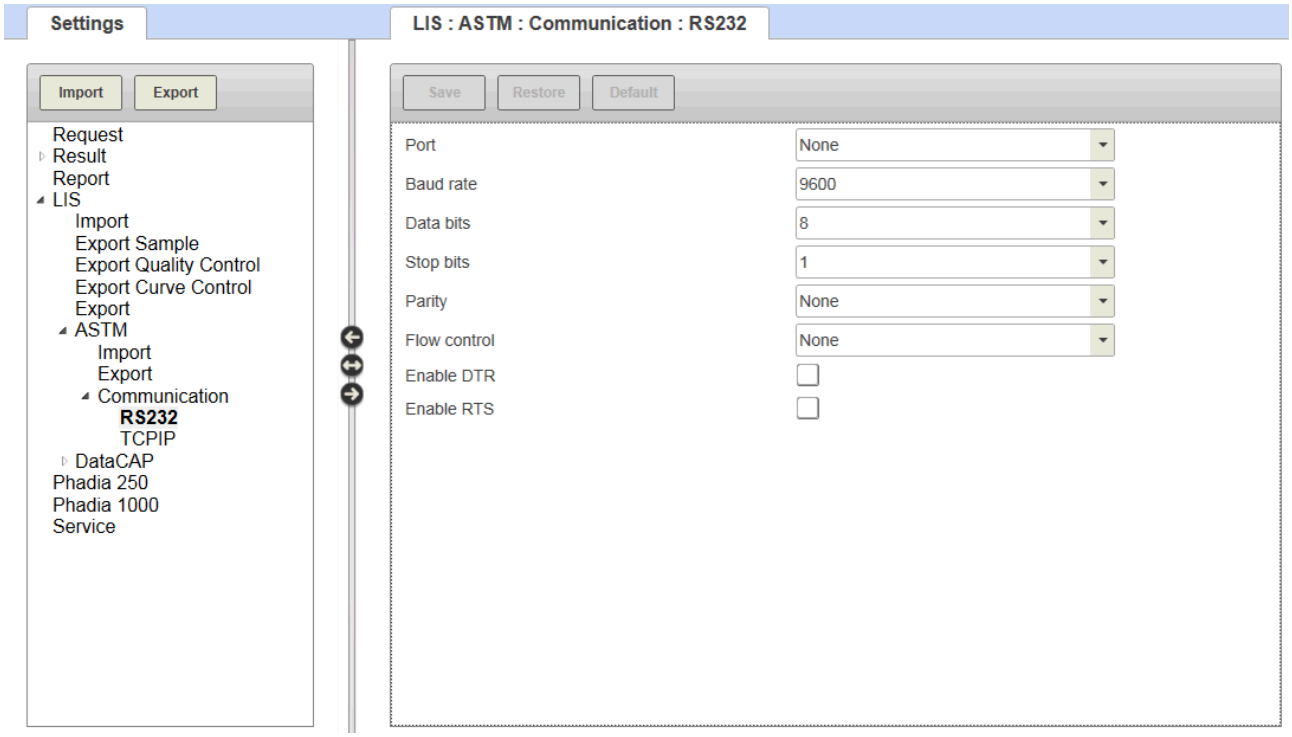
Setting	Explanation	Prime Version
Use 4 fields in result reporting	This setting controls how many fields to use in the data/measurement field (ASTM field 10.1.4) when sending the result to the LIS. Default is disabled and will send all 5 fields (Concentration, Class, Cut-off, Cut-off2 and Quotient)	1.2
Primary field when exporting 4 result fields	If "Use 4 fields in result reporting" is enabled it is possible to choose to send the Cut-off or the Cut-off2 result	1.2
Include user Id Include lot number Include raw data	Control the type of comment to include in the comment record when sending the result to the LIS. See Comment Record (Raw Data, LotNumber and User Id Comments section) for an explanation of comments	1.2
Do not export empty lot numbers	Set to not export any Lotnumber if they are empty	1.3
Use local sample id as LIS sample id	This setting will put the SampleId (ASTM field 9.4.4) also in the Specimen ID field (ASTM field 9.4.3) for locally entered SampleID (Samples entered manually in Prime).	1.2
Export results in one order record	This setting will send the results for one sample with only one order record; can be used to minimize the amount of information sent to LIS. **Note!** This must be used with care if there is different dilution factors for the same SampleId, since the dilution factor for the Sample are only included in the Order record (ASTM field 9.4.14).	1.2
Override instrument name	Set a name to use instead of InstrumentID (ASTM Field 9.4.25, 10.1.14) Empty will use the Instrument names defined in Prime	1.2
Export panel name in order record	Send Panelname instead of testname in order record Unchecked= Send TestName <default> Checked = Send Panel Name	1.2
Skip export of requestor information	Checked – Skip send this information	1.2
Skip export of patient information	Checked – Skip send this information	1.2
Skip export of hospital information	Checked – Skip send this information	1.2
Skip export of section information	Checked – Skip send this information	1.2
Skip export of ward information	Checked – Skip send this information	1.2
Send Tray Removed To LIS	Export Tray Information when tray is removed	TBD

4.2.10 Communication



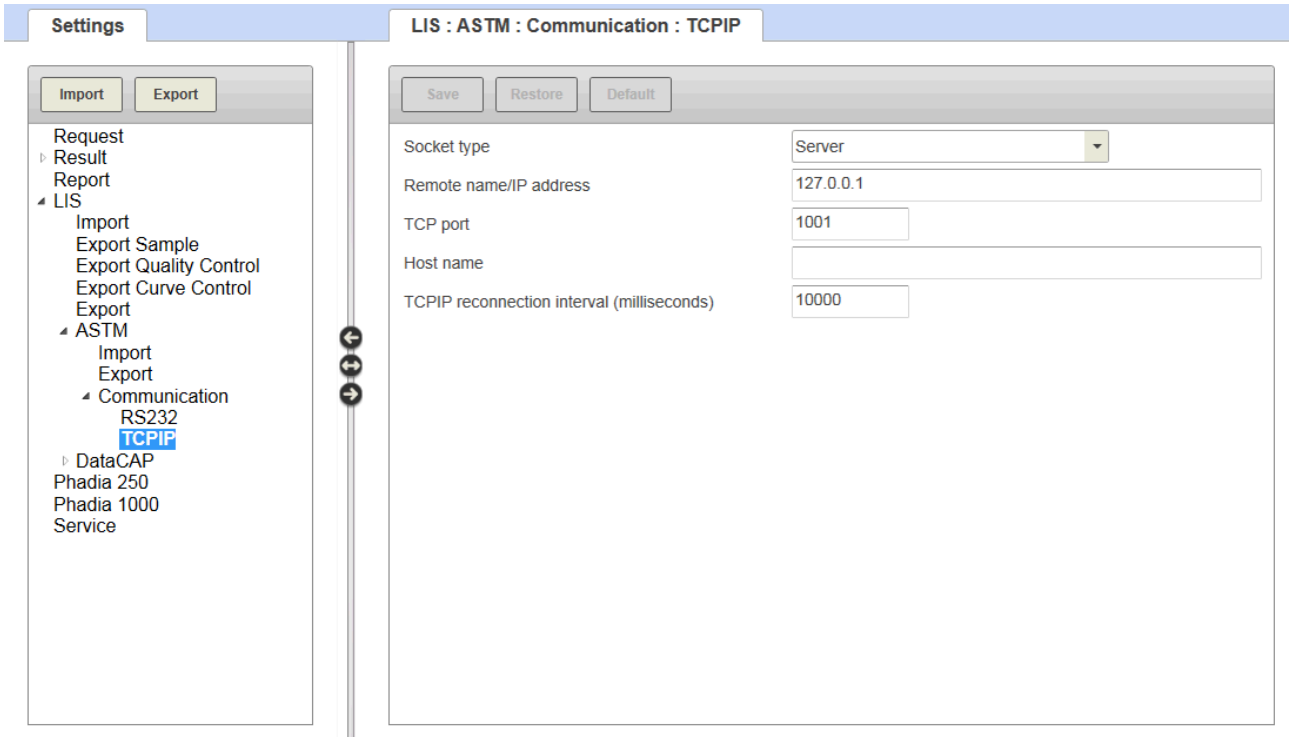
Setting	Explanation	Prime Version
Communication mode	Select between RS232 and TCPIP	1.2
Use only ETX	It will send the frames using only the ETX character. See Frame Examples in the end of this document	1.2
ETX only normal frameblock size	Use normal frameblock size 240 chr for “Use only ETX” mode, otherwise CR is used as frameblock delimiter See LowLevel examples in the end of this document	1.2
ETX only split large records	Use normal frameblock size for frameblock bigger than 240 chr. Only used if “ETX only normal frameblock size” is not set See LowLevel examples in the end of this document	1.2
Delay between request information records	Insert a delay in seconds between RequestInformation Records to let the LIS be able to respond.	1.2
ENQ competition timeout (seconds)	Timeout when an ENQ competition occur Interval between 1 and 60 seconds Default: 1 second Prime will wait this number of seconds before try another ENQ if an ENQ competition has occurred.	1.2
Send check intervall (milliseconds)	The interval to check if there is anything to send in the buffer Default: 1000 ms	1.2

4.2.11 RS232



Setting	Explanation	Prime Version
Port	Set the port to use COM1, COM2…	1.2
Baud rate	Set the baud rate to use	1.2
Data bits	Set the number of data bits to use	1.2
Stop bits	Set the number of stop bits to use	1.2
Parity	Set the parity to use (Even, Mark, None, Odd or Space)	1.2
Flow control	Xon/Xoff, RTS or a combination	1.2
Enable DTR	Enable the DTR signal	1.2
Enable RTS	Enable the RTS signal	1.2

4.2.12 TCIP



Setting	Explanation	Prime Version
Socket type	Set to indicate if Prime shall act as SERVER or CLIENT. If set to act as as SERVER no other setting is needed. If set to act as a CLIENT the Remote name/IP must be set and also the TCP Port	1.2
Remote Name/IP address	When Socket Type is set to SERVER this is the name or IP address of the LIS computer	1.2
TCP port	Set the TCP port to use for communication. Default is 1001.	1.2
Separate Export Port	Set to use a separate port for export	TBD
TCP portExport	Set the TCP port to use for communication during export. Default is 1002.	TBD
Host name	The Host name is transmitted in the ASTM field 7.1.10	1.2
TCPIP reconnection intervall (milliseconds)	Interval between reconnect retries for TCP CLIENT connection Set an interval between 1000 and 600000 mS Set to 0 to disable. Default interval is 10000 mS	1.2

5 MESSAGE EXAMPLES

Single Order single test Record Example (From LIS to IDM/Prime)

```
H|\^&|||Host|||||||P|1|20010226080000
P|1|PID001|RID001
O|1|SID001^N^01^5||^^^f1^sIgE^1|||20010226090000||||N||1||||||||||||O
L|1|F
```

Single Order multiple test Record Example (From LIS to IDM/Prime)

```
H|\^&|||Host|||||||P|1|20010226080000
P|1|PID001|RID001
O|1|SID001^N^01^5||^^^f1^sIgE^1\^^^f2^sIgE^1|||20010226090000||||N||1||||||||||||O
L|1|F
```

Multiple Orders single and multiple tests Record Example (From LIS to IDM/Prime)

```
H|\^&|||Host|||||||P|1|20010226080000
P|1|PID001|RID001
O|1|SID001^N^01^5||^^^f1^sIgE^1\^^^f2^sIgE^1\^^^phad^sIgE^1|||20010226090000||||N||1||||||||||
||O
P|2|PID002|RID002
O|1|SID002^N^01^5||^^^t1^sIgE^1\^^^t2^sIgE^1\^^^phinf^sIgE^1|||20010226090000||||N||1|||||||||
|||O
L|1|F
```

Request Information Record (From IDM/Prime to Host)

```
H|\^&|||ImmunoCAP Data Manager (IDM)^4.20^4.0|||||^SELT1067||P|1|20080829083732
Q|1|^ALL||||||||||O
L|1|N
```

Request Information Record (specific sample) (From IDM/Prime to Host)

```
H|\^&|||ImmunoCAP Data Manager (IDM)^4.20^4.0|||||^SELT1067||P|1|20080829084031
Q|1|^SID1||||||||||O
L|1|N
```

Request Information Record (combined samples from one rack) (From IDM/Prime to Host)

```
H|\^&|||ImmunoCAP Data Manager (IDM)^4.20^4.0|||||^SELT1067||P|1|20080829084122
Q|1|^SID1||||||||||O
Q|2|^SID2||||||||||O
Q|3|^SID3||||||||||O
Q|4|^SID4||||||||||O
Q|5|^SID5||||||||||O
L|1|N
```

Single Result Record Example (From IDM/Prime to Host)

```
H|\^&||| ImmunoCAP Data Manager^1.00^1.00|||||||P|1|20010226080000
P|1|PID001|RID001
O|1|SID001^N^01^5||^^^f1^sIgE^1|||20010226090000||||N||1||||||||||||O
R|1|^^^f1^sIgE^1|17.500^2^Positive^0/1^1.300|ml/g||||F||||20010226100000|I000001
L|1|F
```

Multiple Result Record Example (From IDM/Prime to Host)

```
H|\^&||| ImmunoCAP Data Manager^1.00^1.00|||||||P|1|20010226080000
P|1|PID001|RID001
O|1|SID001^N^01^5||^^^f1^sIgE^1|||20010226090000||||N||1||||||||||||O
R|1|^^^f1^sIgE^1|17.500^2^Positive^0/1^1.300|ml/g||||F||||20010226100000|I000001
O|1|SID001^N^01^5||^^^f2^sIgE^1|||20010226090000||||N||1||||||||||||O
R|2|^^^f2^sIgE^1|17.500^2^Positive^0/1^1.300|ml/g||||F||||20010226100000|I000001
O|1|SID001^N^01^5||^^^phad^sIgE^1|||20010226090000||||N||1||||||||||||O
R|3|^^^phad^sIgE^1|17.500^2^Positive^0/1^1.300|ml/g||||F||||20010226100000|I000001
P|2|PID001|RID001
O|1|SID001^N^01^5||^^^t1^sIgE^1|||20010226090000||||N||1||||||||||||O
R|1|^^^t1^sIgE^1|17.500^2^Positive^0/1^1.300|ml/g||||F||||20010226100000|I000001
O|1|SID001^N^01^5||^^^t2^sIgE^1|||20010226090000||||N||1||||||||||||O
R|2|^^^t2^sIgE^1|17.500^2^Positive^0/1^1.300|ml/g||||F||||20010226100000|I000001
O|1|SID001^N^01^5||^^^phinf^sIgE^1|||20010226090000||||N||1||||||||||||O
R|3|^^^phinf^sIgE^1|17.500^2^Positive^0/1^1.300|ml/g||||F||||20010226100000|I000001
L|1|F
```

LIS QC Id example (AskQCId enabled in setting tool)

```
One QC rack with 2 bottles sIgE Pos (4 doses remaining in each bottle)
The QC profile will run 5 tests
-          sIgE Pos, d1
-          sIgE Pos, e1
-          sIgE Pos, f14
-          sIgE Pos, g6
-          sIgE Pos, m6

Queries from IDM (2 queries since there is 2 bottles):
1H|\^&|||ImmunoCAP Data Manager (IDM)^4.11^4.0|||||^||P|1|20110526132822
2Q|1|^sIgE Pos||||||||||O$C(13,3)D2
3L|1|N$C(13,3)06

1H|\^&|||ImmunoCAP Data Manager (IDM)^4.11^4.0|||||^||P|1|20110526132822
2Q|1|^sIgE Pos||||||||||O$C(13,3)D2
3L|1|N$C(13,3)06

LIS Reponse #1: (Note! Order received not used by IDM, QC profile will be used)
1H|\^&||PASSWORD|UNKNOWN|||||UNKNOWN||P|18D
2P|1|sIgE Pos |||sIgE Pos,123|
3O|1|sIgE Pos||^^^d1^1^1\e1^1^1\f14^1^1\g6^1^1\m6^1^1|R||||||Q|||||||||||||||Q
4L|1|F

LIS Reponse #2: (Note! Order received not used by IDM, QC profile will be used)
1H|\^&||PASSWORD|UNKNOWN|||||UNKNOWN||P|18D
2P|1|sIgE Pos|||sIgE Pos,124|
3O|1|sIgE Pos||^^^d1^1^1\e1^1^1\f14^1^1\g6^1^1\m6^1^1|R||||||Q|||||||||||||||Q
4L|1|F

The results from IDM #1:
1H|\^&|||ImmunoCAP Data Manager (IDM)^4.11^4.0|||||^||Q|1|20110525083555
2P|1|sIgE Pos|||sIgE Pos,123||18991230|||^^^^||||^^^^|0||||||
3O|1|^N^^0|sIgE
Pos|^^^d1^1^1||18991230000000|20110525071543||||Q||1|||^^||^^^^^^0||||18991230000000||SIM|F||^^^^^
4R|1|^^^d1^2^1|94.6^^^^|kU/l||||M||||20100506121400|SIM
5L|1|N

1H|\^&|||ImmunoCAP Data Manager (IDM)^4.11^4.0|||||^||Q|1|20110525083555
2P|1|sIgE Pos|||sIgE Pos,123||18991230|||^^^^||||^^^^|0||||||
3O|1|^N^^0|sIgE
Pos|^^^e1^1^1||18991230000000|20110525071543||||Q||1|||^^||^^^^^^0||||18991230000000||SIM|F||^^^^^
4R|1|^^^e1^2^1|94.6^^^^|kU/l||||M||||20100506121400|SIM
5L|1|N

1H|\^&|||ImmunoCAP Data Manager (IDM)^4.11^4.0|||||^||Q|1|20110525083555
2P|1|sIgE Pos|||sIgE Pos,123||18991230|||^^^^||||^^^^|0||||||
3O|1|^N^^0|sIgE
Pos|^^^f14^1^1||18991230000000|20110525071543||||Q||1|||^^||^^^^^^0||||18991230000000||SIM|F||^^^^^
4R|1|^^^f14^2^1|94.6^^^^|kU/l||||M||||20100506121400|SIM
5L|1|N

1H|\^&|||ImmunoCAP Data Manager (IDM)^4.11^4.0|||||^||Q|1|20110525083555
2P|1|sIgE Pos|||sIgE Pos,123||18991230|||^^^^||||^^^^|0||||||
3O|1|^N^^0|sIgE
Pos|^^^g6^1^1||18991230000000|20110525071543||||Q||1|||^^||^^^^^^0||||18991230000000||SIM|F||^^^^^
4R|1|^^^g6^2^1|94.6^^^^|kU/l||||M||||20100506121400|SIM
5L|1|N

1H|\^&|||ImmunoCAP Data Manager (IDM)^4.11^4.0|||||^||Q|1|20110525083555
2P|1|sIgE Pos|||sIgE Pos,124||18991230|||^^^^||||^^^^|0||||||
3O|1|^N^^0|sIgE
Pos|^^^m6^1^1||18991230000000|20110525071543||||Q||1|||^^||^^^^^^0||||18991230000000||SIM|F||^^^^^
4R|1|^^^m6^2^1|94.6^^^^|kU/l||||M||||20100506121400|SIM
3L|1|N
```

LowLevel example Query session

Tx <ENQ>
Rx <ACK>
Tx <STX>0H|\^&||| ImmunoCAP Data Manager^1.00^1.00|||||||P|1|20010226080000<CR>
Tx Q|1|ALL||||||||||O<CR>L|1<CR><ETX>77<CR><LF>
Rx <ACK>
Rx <ENQ>
Tx <ACK>
Rx <STX>1H|\^&|||Host|||||||P|1|20010226080000<CR><ETX>BA<CR><LF>
Tx <ACK>
Rx <STX>2P|1|PID001|RID001CR><ETX>C1<CR><LF>
Tx <ACK>
Rx <STX>3O|1|SID001^N^01^5||^^^f1^sIgE^1|||20010226090000||||N||1||||||||||||O<CR> Rx
<ETX>82<CR><LF>
Tx <ACK>
Rx <STX>4L|1|F<CR><ETX>FB<CR><LF>
Tx <ACK>

LowLevel example Result upload session

Tx <ENQ>
Rx <ACK>
Tx <STX>0H|\^&||| ImmunoCAP Data Manager^1.00^1.00|||||||P|1|20010226080000<CR>
Tx P|1|PID001|RID001<CR>
Tx O|1|SID001^N^01^5||^^^f1^sIgE^1|||20010226090000||||N||1||||||||||||O<CR>
Tx R|1|^^^f1^sIgE^1|17.500^2^^^|ml/g||||F||||20010226100000|I000001<CR>
Tx L|1|F<CR><ETX>34<CR><LF>
Tx <ACK>

LowLevel example Result upload session with ETB frame

Tx <ENQ>
Rx <ACK>
Tx <STX>0H|\^&||| ImmunoCAP Data Manager^1.00^1.00|||||||P|1|20010226080000<CR>
Tx P|1|PID001|RID001<CR>
Tx O|1|SID001^N^01^5||^^^f1^sIgE^1|||20010226090000||||N||1||||||||||||O<CR>
Tx R|1|^^^f1^sIgE^1|17.500^2^^^|ml/g||||F||||20010226100000|I000001<CR>
Tx O|2|SID001^N^01^5||^^^f2^sIgE^1|||20010226090000||||N||1||||||||||||O<CR>
Tx R|2|^^^f2^sIgE^1|17.50<ETB>34<CR><LF>
Tx <STX>10^2^Positive^0/1^1.300|ml/g||||F||||20010226100000|I000001<CR>
Tx L|1|F<CR><ETX>34<CR><LF>
Tx <ACK>

LowLevel example Result upload session with only ETX frame

Tx <ENQ>
Rx <ACK>
Tx <STX>0H|\^&||| ImmunoCAP Data Manager^1.00^1.00|||||||P|1|20010226080000<CR><ETX>34<CR><LF>
Tx <STX>1P|1|PID001|RID001<CR><ETX>34<CR><LF>
Tx <STX>2O|1|SID001^N^01^5||^^^f1^sIgE^1|||20010226090000||||N||1||||||||||||O<CR><ETX>34<CR><LF>
Tx <STX>3R|1|^^^f1^sIgE^1|17.500^2^^^|ml/g||||F||||20010226100000|I000001<CR><ETX>34<CR><LF>
Tx <STX>4R|2|^^^f2^sIgE^1|17.50<ETX>34<CR><LF>
Tx <STX>50^2^Positive^0/1^1.300|ml/g||||F||||20010226100000|I000001<CR><ETX>34<CR><LF>
Tx <STX>6L|1|F<CR><ETX>34<CR><LF>
Tx <ACK>

- **note:**

frame numbers and checksums may be incorrect as this is examples.

LowLevel example Result upload session with only ETX frame

Setting: ASTMETXOnlyNormalFrameBlockSize=0

IDM <ENQ>
LIS: <ACK>
IDM: <STX>0H|\^&||| ImmunoCAP Data Manager^1.00^1.00|||||||P|1|20010226080000<CR><ETX>34<CR><LF>
LIS: <ACK>
IDM: <STX>1P|1|PID001|RID001<CR><ETX>34<CR><LF>
LIS: <ACK>
IDM: <STX>2O|1|SID001^N^01^5||^^^f1^sIgE^1|||20010226090000||||N||1||||||||||O<CR><ETX>34<CR><LF>
LIS: <ACK>
IDM: <STX>3R|1|^^^f1^sIgE^1|17.500^2^^^|ml/g||||F||||20010226100000|I000001<CR><ETX>34<CR><LF>
LIS: <ACK>
IDM: <STX>4O|2|SID001^N^01^5||^^^f2^sIgE^1|||20010226090000||||N||1||||||||||O<CR><ETX>34<CR><LF>
LIS: <ACK>
IDM: <STX>5R|2|^^^f2^sIgE^1|17.500^2^Positive^0/1^1.300|ml/g||||F||||20010226100000|I000001<CR><ETX>47<CR><LF>
LIS: <ACK>
IDM: L|1|F<CR><ETX>47<CR><LF>
LIS: <ACK>
IDM: <EOT>

LowLevel example Result upload session with only ETX frame

Setting: ASTMETXOnlyNormalFrameBlockSize=1

IDM <ENQ>
LIS: <ACK>
IDM: <STX>0
H|\^&||| ImmunoCAP Data Manager^1.00^1.00|||||||P|1|20010226080000<CR>
P|1|PID001|RID001<CR>
O|1|SID001^N^01^5||^^^f1^sIgE^1|||20010226090000||||N||1||||||||||O<CR>
R|1|^^^f1^sIgE^1|17.500^2^^^|ml/g||||F||||20010226100000|I000001<CR>
O|2|SID001^N^01^5||^^^f2^sIgE^1|||20010226090000||||N||1||||||||||O<CR>
R|2|^^^f2^sIgE^1|17.50<ETX>34<CR><LF>
LIS: <ACK>
IDM: <STX>1
0^2^Positive^0/1^1.300|ml/g||||F||||20010226100000|I000001<CR>
L|1|F
<CR><ETX>47<CR><LF>
LIS: <ACK>
IDM: <EOT>

LowLevel example Result upload session with only ETX frame, large record

Setting: ASTMETXOnlyNormalFrameBlockSize=0
Setting: ASTMETXOnlySplitLargeRecord=1

IDM <ENQ>
LIS: <ACK>
IDM: <STX>0H|\^&||| ImmunoCAP Data Manager^1.00^1.00|||||||P|1|20010226080000<CR><ETX>34<CR><LF>
LIS: <ACK>
IDM: <STX>1P|1|PID001|RID001<CR><ETX>34<CR><LF>
LIS: <ACK>
IDM: <STX>2O|1|SID001^N^01^5||^^^f1^sIgE^1|||20010226090000||||N||1||||||||||O<CR><ETX>34<CR><LF>
LIS: <ACK>
IDM: <STX>3R|1|^^^f1^sIgE^1|17.500^2^^^|ml/g||||F||||20010226100000|I000001<CR><ETX>34<CR><LF>
LIS: <ACK>
IDM: <STX>4O|2|SID001^N^01^5||^^^f2^sIgE^1|||20010226090000||||N||1||||||||||O<CR><ETX>34<CR><LF>
LIS: <ACK>
IDM: <STX>5R|2|^^^f2^sIgE^1|17.500^2^Positive^0/1^1.300|ml/g||||F||||20010226100000|I000001<CR><ETX>47<CR><LF>
LIS: <ACK>
IDM: <STX>6C||********** large record ********** large record**********<ETX>47<CR><LF>
LIS: <ACK>
IDM: <STX>7C||********** large record ********** large record**********<CR><ETX>47<CR><LF>
LIS: <ACK>
IDM: L|1|F<CR><ETX>47<CR><LF>
LIS: <ACK>
IDM: <EOT>

6 CHANGE LOG

Doc. Ver.	Change
6.0	Updated with new standards ref 3 and ref 4 (see section 1.3) Updated tables with ref to new standards
6.0	Added reflex name in 3.7.1 Universal test id
6.0	Added symptom other in 3.8.2 Patient Record (8.1.19/7.19)
6.0	Added Panel expansion section after table in 3.8.3 test order record
6.0	Added ImmunoCAP Guide in 3.8.5 Comment Record (11.1.3/10.3)
6.0	Added ImmunoCAP Guide Comments section after table in 3.8.5 Comment Record
6.0	Updated settings tables in 4.1.2 and 4.2.1
6.0	Added 4.2.2 Setting Tool – ImmunoCAP Guide
6.0	Added Exmples in 5. Message examples - Request Information Record (From ImmunoCAP Data Manager to Host) - - Request Information Record (specific sample) (From ImmunoCAP Data Manager to Host) - Request Information Record (combined samples from one rack) (From ImmunoCAP Data Manager to Host) - LowLevel example Result upload session with only ETX frame - LowLevel example Result upload session with only ETX frame - LowLevel example Result upload session with only ETX frame, large record
7.0	Updated 9.4.18 Physicians phone
7.0	Added new setting for IDM 4.24 in section 4.2.1
8.0	Branding, changed to Phadia IDM + logotypes
9.0	Added 3 new settings for IDM 5.20 *ExportPanelNameInOrderRecord* *ImportIgnorePreDilutionFactor* *ImportIgnoreInstrumentDilutionFactor*
10.0	Added Replicates in Universal test ID in 5.8.3 TestOrderRecord
10.0	Added the extra setting for Labwizard needed for local solution
10.0	Added section 3.7.10 Ordering Physician
10.0	Set to “not supported” in 3.7.5 Action Code regarding code “Cancel”
11.0	Added support for QCId in patient name, see 3.8.1- 8.1.6 Patient record and 4.2.1 Settings tool
11.0	New example LIS QC Id example (AskQCId enabled in setting tool)
11.0	Branding Thermo Fisher logotype
12.0	Added 4.2.3.2 section
13.0	Corrected version number on first page
14.0	Added examples in section 3.8.4 Comment record
14.0	Clarified the Identity usage for different inventory types in section 3.8.4
15.0	Removed example for QC LIS Id in 4.2.3.2 (In IDM 5.43 IDM no longer ask for QCLIS Id when rack is inserted)
15.0	Added setting for IDM 5.34, IDM 5.40 and IDM 5.44 in section 4.2.1
15.0	Added Tray ID in 3.8.2 Test order Record (9.4.3)
16.0	Added note in 3.8.1 Section 8.1.6
17.0	Added information about supported articles for Lotnumber in 3.8.4 Comment record in section “Raw Data, LotNumber and Operator Id Comments”
18.0	Added T in 3.8.4 11.1.3 Tray Comment

18.0	Added Tray Comments section in 3.8.4
18.0	Added setting for 5.60 in 4.2.1 DoNotExportEmptyLotNumbers and SendTrayRemovedToLIS
18.0	Added separate ports in 4.3
19.0	New Pending status in 3.8.3 Result Record 9.9
19.0	Added Lotnumbers in 3.8.3 Result Record 9.4
19.0	Added OperatorId in 3.8.3 Result Record 9.11
19.0	Added new settings for version 5.65 in section 4.2
20.0	Added Prime everywhere where applicable
20.0	Added Prime version column for all records
20.0	Change expression “Mainframe” to LIS
20.0	Minor adjustments in comments for some records
20.0	Added section “Settings controlled within Prime”
20.0	3.7.1 Updated instrument dilution comment to show that a dilution factor of 0 is received will be treated the same way as an empty dilution factor
20.0	3.8.2 Updated dilution comment to show that a dilution factor of 0 is received will be treated the same way as an empty dilution factor
20.0	3.8.3 Updated instrument dilution comment to show that a dilution factor of 0 is received will be treated the same way as an empty dilution factor
20.0	4.2.6 Added note regarding periodic export Note! The exported results will be sent as separate records and not combined to one record.