SYSTEMATIC

SERVICE LOGISTICS-10697

Interface Specification for Task Management version 1.1

Prepared for:

Integrators

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SYSTEMATIC

1 Introduction

This document describes the Task Management public programming interface. The API is available via HL7 and HTTP/JSON services.

The Task Management System aims to help healthcare personnel coordinate, share and complete tasks more efficiently using IT technology. The system exposes services which allow users to create various logistical tasks, and monitor the progress of the tasks.

1.1 Definitions

HL7	HL7 Messaging Standard
Task	A task in the Task Management System which will be performed by users of the Task Management system
Order	An order is a HL7 specific way to deliver and receive information. In this context an external system can order a task to be executed.
Organization	Organization is the organizational body which a healthcare worker is stationed in.
Task requester	Task requester is the healthcare worker ordering a specific task to be executed.

1.2 References

[HL7]	HL7 Messaging Standard Version v2.5.0
Task management service specification	WADL/JSON-Schema service specification of the task management service can be found in IFS0004_version_1.zip

1.3 Change log

This chapter describes the major changes involved in each change set.

Version	Date	Notes
1.1	March 5th 2015	HTTP access to get and create task added.

2 HL7 Interface

2.1 General Communication Flow

2.1.1 HL7 Communication

HL7 version 2.5.0 is the chosen standard for communication.

2.1.1.1 Acknowledgements

With regards to acknowledgements the original processing rules are applied as defined in [HL7] section 2.9.2.

If a message does not conform to the message profiles defined in chapter 3. A general acknowledgement describing the error can occur.

2.1.1.2 Character Encoding

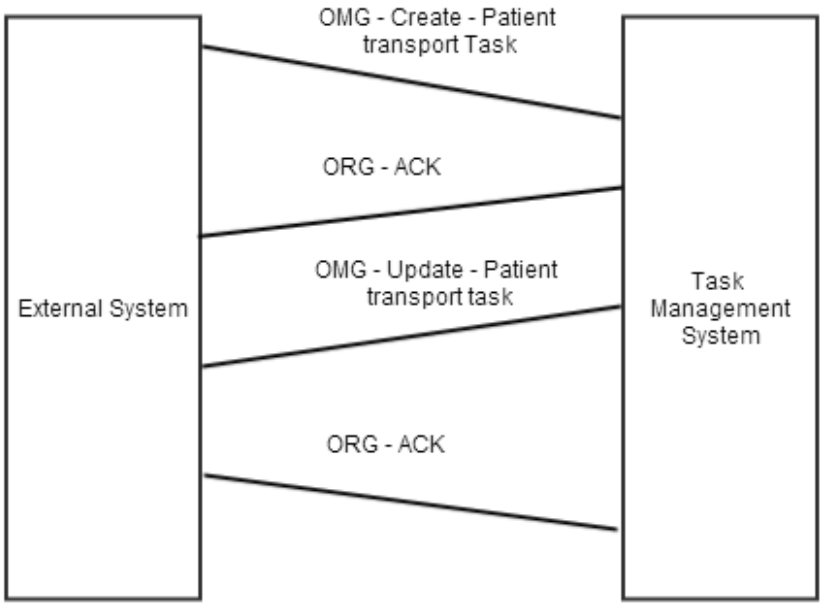
The Task Management System only supports HL7 messages encoded in UTF-8 to support non-ASCII characters.

2.1.1.3 Protocol

The Task Management System implements MLLP protocol and only supports transient connections.

2.1.2 General Flow

The general flow for communication with the Task Management System will consist of primarily of three types of message pr. Service. The services support creation, update and cancellation of an order. The normal flow of communication would be the external system ordering a task such as a patient transport. The Task Management System will always accept such an order request if it is capable of providing it. Otherwise the Task Management System will reject the order. If an order is successfully created, the Task Management System will provide any updates to the specific order to the external system.



2.2 Detailed Message Descriptions

This section describes each of the services supported by the Task Management System in detail using a schema structure. All services may result in a HL7 Fault. For each service an example request, response is given.

The Task Management System HL7 interface, allows an external system to "order" tasks using OMG and ORG message definitions to deliver and receive order details. To order a task, a client must specify a task ID. This ID needs to be globally unique, for this purpose a 32 digit GUID should be used. Preferably in the following format:

00000000-0000-0000-0000-000000000000

The service operations are:

- `Order patient transport`
  - Allows creation, update and cancellation of a patient transport task, based on OMG and ORG messages.
- `Order bed`
  - Allows creation, update and cancellation of a bed task, based on OMG and ORG messages.
- `Order bed transport`
  - Allows creation, update and cancellation of a bed transport task, based on OMG and ORG messages.

In normal use tasks are not expected to be deleted, as such only the create operations are used. The `Cancel` operations are only to be used in special cases in which a previous call to a Create operation was performed by mistake.

2.2.1 General definitions

In this chapter the fields of the message segments are defined in detail, but only for the segments used in the published OMG and ORG messages.

The segments are not all required in all contexts, as such a message profile will be introduced for each context which is create, update and cancel. The message header segment is common for all profiles and will therefore not be repeated for each profile.

Order details are considered read-only, only the order submitter can request an update or cancel an order. The system determines the submitter by comparing MSH field 3.

2.2.1.1 Column definition for tables below

Field: Defines the field number of a particular segment.

Description: Describes the content of the field

Type: States the HL7 data type of the segment field. For more information about the HL7 data types, see [HL7] chapter 2A.

HL7 Opt: HL7 optionality.

R = Required
O = Optional

Comments/examples: Describes the contents of the segment field in further detail.

The tables presented will only display the message segments and fields which will be processed; any omitted fields will be ignored.

2.2.2 MSH Message Header segment

The MSH segment defines the intent, source, destination, and some specifics of the syntax of a message.

MSH field	Description	Type	HL7 Opt	Comments/examples
MSH-1	Field separator	ST	R	'|'
MSH-2	Encoding characters	ST	R	'^~&\'
MSH-3	Sending application	HD	O	'TaskManagement'
MSH-5	Receiving application	HD	O	'ExternalSystem'
MSH-7	Date/Time of message	TS	R	'201401201231-0000'
MSH-9	Message type	MSG	R	'OMG^O19'
MSH-10	Message control ID	ST	R	'XYZ-1234567890'
MSH-11	Processing ID	PT	R	'P'
MSH-12	Version ID	VID	R	'2.5'
MSH-18	Character set	ID	R	'UNICODE UTF-8'
MSH-21-1	Message Profile Identifier	ST	R	For valid values see user defined table 0002

Table 1 MSH Segment

2.2.2.1 Template for an MSH segment

MSH|^~\&|SendingApp||ReceivingApp||TimeStamp||MessageCode|MessageID|ProcessingID|Version|||||CharacterSet|||MessageProfileIdentifier

2.2.2.2 Example of an MSH segment

MSH|^~\&|TaskManagement||ExternalSystem||201401201231-0000||OMG^O19|MSID12341234|P|2.5|||||UNICODE UTF-8|||pt_cr

2.2.3 Message – General Order Acknowledgement

The General order acknowledgment message is the application level acknowledgment of any OMG message.

MSH field	Description	Type	HL7 Opt	Comments/examples
Field	Description	Type	HL7 Opt	Comments/examples
MSA-1	AcknowledgmentCode	ID	R	'AA'
MSA-2	Message Control ID	ST	R	'XYZ-1234567890'
MSA-3	Text message	ST	O	'Reason for error/rejection'
ORC-1	Control field	ID	R	OK/XR/CR/UA/UX/UC.
ORC-2	Task id	ST	R	Globally unique ID, created by client
ORC-5	Task status	ID	O	For valid values see user defined table 0003

Table 2 General Order Acknowledgement

2.2.3.1 Template for a General Order Response message

MSH|^~\&|SendingApp||ReceivingApp||TimeStamp||MessageCode|MessageID|ProcessingID|Version||||||CharacterSet|||MessageProfileIdentifier

MSA|AckCode|MsgID

ORC|ControlField|TaskId

2.2.3.2 Example - General Order Response message

MSH|^~\&|TaskManagement||ExternalSystem||201401201231-0000||ORG^O20|MSID1234|P|2.5||||||UNICODE UTF-8|||goa

MSA|AA|MSID1234

ORC|OK|cb05885c-8502-44d7-9caf-580ebb14b9ca

2.2.4 Message - Patient Transport Order

The Patient transport task is separated into three message profiles representing the different contexts a patient transport message can be in, i.e. create, update and cancel.

2.2.4.1 Create message profile

Field	Description	Type	HL7 Opt	Comments/examples
PID-3-1	Patient identification number	ST	R	'1901889091'
PID-5-1-1	Patient family name	ST	O	'Jensen'
PID-5-2	Patient given name	ST	R	'Jens'
ORC-1	Control field	ID	R	NW
ORC-2	Task id	ST	R	Globally unique ID, created by client
ORC-5	Task status	ID	O	For valid values see user defined table 0003
ORC-10	TaskRequester	XCN	R	TaskRequester information
ORC-10-1	TaskRequesterId	ST	O	'jej'
ORC-10-2-1	TaskRequesterFamily Name	ST	O	'Jensen'
ORC-10-3	TaskRequesterGivenName	ST	O	'Jens'
ORC-10-4	TaskRequesterPhone Number	ST	R	'12345678'
ORC-17-2	TaskRequesterOrganisation	ST	O	'ADF1'
OBR-2-1	Task id	ST	R	Globally unique ID, created by client
OBR-4	Service Identifier	CE	R	1^pt^CLS0001
OBR-19	Transport type	ST	R	For valid values see master data 0003
OBR-20	Task origin location	ST	R	Location-id
OBR-21	Task destination	ST	R	Location-id
OBR-27-4	Start time of task	ST	R	YYYY[MM[DD[HHMM]]][+/-ZZZZ]
OBR-39-2	Comments	ST	O	'bring a carrier'

Table 3 Message create patient transport

2.2.4.2 Template for a create patient transport message

MSH|^~\&|SendingApp||ReceivingApp||TimeStamp||MessageCode|MessageID|ProcessingID|Version||||||CharacterSet|||MessageProfileIdentifier
PID|||PatientId||FamilyName^GivenName
ORC|ControlField|TaskId|||||||Id^FamilyName^GivenName^PhoneNumber|||||||^Organisation
OBR||TaskId||ServiceIdentifier|||||||||||||||TransportType|TaskOrigin|TaskDestination||||||^^^StartTime||||||||||||^Comments

2.2.4.3 Example - create patient transport message

```
MSH|^~\&|TaskManagement||ExternalSystem||201401201231-0000||OMG^O19
|MSID1234|P|2.5|||||UNICODE UTF-8|||pt_cr
PID|||1901889091||Jensen^Jens
ORC|NW|cb05885c-8502-44d7-9caf-580ebb14b9ca|||||||jej^Jensen^Jens^123456789|||||||^ADF1
OBR||cb05885c-8502-44d7-9caf-
580ebb14b9ca||1^pt^CLS0001|||||||||||||BU|1|2|||||^^^201401201301-0200||||||||||^Bring
carrier
```

2.2.4.4 Update message profile

Field	Description	Type	HL7 Opt	Comments/examples
PID-3-1	Patient identification number	ST	O	'1901889091'
PID-5-1-1	Patient family name	ST	O	'Jensen'
PID-5-2	Patient given name	ST	O	'Jens'
ORC-1	Control field	ID	R	XX/XO
ORC-2	Task id	ST	R	Globally unique ID, created by client
ORC-5	Task status	ID	O	For valid values see user defined table 0003
ORC-10	TaskRequester	XCN	O	TaskRequester information
ORC-10-1	TaskRequesterId	ST	O	'jej'
ORC-10-2	TaskRequesterFamily Name	ST	O	'Jensen'
ORC-10-3	TaskRequesterGivenName	ST	O	'Jens'
ORC-10-4	TaskRequesterPhone Number	ST	O	'12345678'
ORC-17-2	TaskRequesterOrganisation	ST	O	'ADF1'
OBR-2	Task id	ST	R	Globally unique ID, created by client
OBR-4	Service Identifier	CE	R	1^pt^CLS0001
OBR-19	Transport type	ST	O	For valid values see master data 0003
OBR-20	Task origin location	ST	O	Location-id
OBR-21	Task destination	ST	O	Location-id
OBR-27-4	Start time of task	ST	O	YYYY[MM[DD[HHMM]]][+/-ZZZZ]
OBR-39-2	Comments	ST	O	'bring a carrier'

Table 4 Message update patient transport

2.2.4.5 Template for a update patient transport message

MSH|^~\&|SendingApp||ReceivingApp||TimeStamp||MessageCode|MessageID|ProcessingID|Version||||||CharacterSet|||MessageProfileIdentifier
PID|||PatientId||FamilyName^GivenName
ORC|ControlField|TaskId|||||||Id^FamilyName^GivenName^PhoneNumber|||||||^Organisation
OBR||TaskId||ServiceIdentifier|||||||||||||TransportType|TaskOrigin|TaskDestination||||||^^^StartTime||||||||||^Comments

2.2.4.6 Example - update patient transport message

```
MSH|^~\&|TaskManagement||ExternalSystem||201401201231-0000||OMG^O19
|MSID1234|P|2.5||||||UNICODE UTF-8|||pt_up
PID|||1901889091||Jensen^Jens
ORC|XO|cb05885c-8502-44d7-9caf-580ebb14b9ca|||||||jej^Jensen^Jens^123456789|||||||^ADF1
OBR||cb05885c-8502-44d7-9caf-
580ebb14b9ca||1^pt^CLS0001|||||||||||||||BU|1|2||||||^^^201401201301-0200||||||||||^Bring
carrier
```

2.2.4.7 Cancel message profile

Field	Description	Type	HL7 Opt	Comments/examples
ORC-1	Control field	ID	R	CA/OC
ORC-2	Task id	ST	R	Globally unique ID, created by client

Table 5 Message cancel patient transport

2.2.4.8 Template for a cancel patient transport message

MSH|^~\&|SendingApp||ReceivingApp||TimeStamp||MessageCode|MessageID|ProcessingID|Version|||||CharacterSet|||MessageProfileIdentifier
ORC|ControlField|TaskId

2.2.4.9 Example - cancel patient transport message

MSH|^~\&|TaskManagement||ExternalSystem||201401201231-0000||OMG^O19|MSID1234|P|2.5|||||UNICODE UTF-8|||pt_ca
ORC|CA|cb05885c-8502-44d7-9caf-580ebb14b9ca

2.2.5 Message - Bed Order

The Bed Order is separated into three message profiles representing the different contexts a bed message can be in, i.e. create, update and cancel.

2.2.5.1 Create message profile

Field	Description	Type	HL7 Opt	Comments/examples
ORC-1	Control field	ID	R	NW
ORC-2	Task id	ST	R	Globally unique ID, created by client
ORC-5	Task status	ID	O	For valid values see user defined table 0003
ORC-10	TaskRequester	XCN	R	TaskRequester information
ORC-10-1	TaskRequesterId	ST	O	'jej'
ORC-10-2	TaskRequesterFamily Name	ST	O	'Jensen'
ORC-10-3	TaskRequesterGivenName	ST	O	'Jens'
ORC-10-4	TaskRequesterPhone Number	ST	R	'12345678'
ORC-17-2	TaskRequesterOrganisation	ST	O	'ADF1'
OBR-2	Task id	ST	R	Globally unique ID, created by client
OBR-4	Service Identifier	CE	R	2^be^CLS0001
OBR-18	Bed type	ST	R	For valid values see master data 0001
OBR-19	Bed equipment	ST	O	For valid values see master data 0002
OBR-20	Bed placement	ST	R	Numeric location indicator of bed
OBR-21	Order destination	ST	R	Location-id
OBR-27-5	Arrival time	ST	R	YYYY[MM[DD[HHMM]]][+/-ZZZZ]
OBR-39-2	Comments	ST	O	'bring a carrier'

Table 6 Message create bed order

2.2.5.2 Template for a create bed order message

MSH|^~\&|SendingApp||ReceivingApp||TimeStamp||MessageCode|MessageID|ProcessingID|Version||||||CharacterSet|||MessageProfileIdentifier
ORC|ControlField|TaskId|||||||Id^FamilyName^GivenName^PhoneNumber|||||||^Organisation
OBR||TaskId||ServiceIdentifier|||||||||||||BedType|BedEquip|BedPlace|Destination||||||^^^^ArrivalTime ||||||||||||^Comments

2.2.5.3 Example - create bed order message

MSH|^~\&|TaskManagement||ExternalSystem||201401201231-0000||OMG^O19|MSID1234|P|2.5|||||UNICODE UTF-8|||be_cr

ORC|NW|cb05885c-8502-44d7-9caf-580ebb14b9ca|||||||jej^Jensen^Jens^123456789|||||||^ADF1
OBR||cb05885c-8502-44d7-9caf-580ebb14b9ca||2^be^CLS0001|||||||||||||LB|BP|25|2|||||^^^^201401201301-0200|||||||||||^Bring carrier

2.2.5.4 Update message profile

Field	Description	Type	HL7 Opt	Comments/examples
ORC-1	Control field	ID	R	XX/XO
ORC-2	Task id	ST	R	Globally unique ID, created by client
ORC-5	Task status	ID	O	For valid values see user defined table 0003
ORC-10	TaskRequester	XCN	O	TaskRequester information
ORC-10-1	TaskRequesterId	ST	O	'jej'
ORC-10-2	TaskRequesterFamily Name	ST	O	'Jensen'
ORC-10-3	TaskRequesterGivenName	ST	O	'Jens'
ORC-10-4	TaskRequesterPhone Number	ST	O	'12345678'
ORC-17-2	TaskRequesterOrganisation	ST	O	'ADF1'
OBR-2	Task id	ST	R	Globally unique ID, created by client
OBR-4	Service Identifier	CE	R	2^be^CLS0001
OBR-18	Bed type	ST	O	For valid values see master data 0001
OBR-19	Bed equipment	ST	O	For valid values see master data 0002
OBR-20	Bed placement	ST	O	Numeric location indicator of bed
OBR-21	Order destination	ST	O	Location-id
OBR-27-5	Arrival time	ST	O	YYYY[MM[DD[HHMM]]][+/-ZZZZ]
OBR-39-2	Comments	ST	O	'bring a carrier'

Table 7 Message update bed order

2.2.5.5 Template for a update bed order message

MSH|^~\&|SendingApp||ReceivingApp||TimeStamp||MessageCode|MessageID|ProcessingID|Version|||AcceptACK|||CharacterSet|||MessageProfileIdentifier
ORC|ControlField|TaskId|||||||Id^FamilyName^GivenName^PhoneNumber|||||||^Organisation
OBR||TaskId||ServiceIdentifier|||||||||||||BedType|BedEquip|BedPlace|Destination||||||^^^^ArrivalTime||||||||||||^Comments

2.2.5.6 Example - update bed order message

MSH|^~\&|TaskManagement||ExternalSystem||201401201231-0000||OMG^O19|MSID1234|P|2.5|||||UNICODE UTF-8|||be_up

ORC|NW|cb05885c-8502-44d7-9caf-580ebb14b9ca|||||||jej^Jensen^Jens^123456789|||||||^ADF1
OBR||cb05885c-8502-44d7-9caf-580ebb14b9ca||2^be^CLS0001|||||||||||||LB|Bed pusher|25|2||||||^^^^201401201301-0200||||||||||||^Bring carrier

2.2.5.7 Cancel message profile

Field	Description	Type	HL7 Opt	Comments/examples
ORC-1	Control field	ID	R	CA/OC.
ORC-2	Task id	ST	R	Globally unique ID, created by client

Table 8 Message cancel bed order

2.2.5.8 Template for a cancel bed order message

MSH|^~\&|SendingApp||ReceivingApp||TimeStamp||MessageCode|MessageID|ProcessingID|Version|||||CharacterSet|||MessageProfileIdentifier
ORC|ControlField|TaskId

2.2.5.9 Example – cancel bed order message

MSH|^~\&|TaskManagement||ExternalSystem||201401201231-0000||OMG^O19|MSID1234|P|2.5|||||UNICODE UTF-8|||be_ca

ORC|CA|cb05885c-8502-44d7-9caf-580ebb14b9ca

2.2.6 Message - Bed Transport Order

The Bed Transport Order is separated into three message profiles representing the different contexts a patient transport message can be in, i.e. create, update and cancel.

2.2.6.1 Create message profile

Field	Description	Type	HL7 Opt	Comments/examples
ORC-1	Control field	ID	R	NW
ORC-2	Task id	ST	R	Globally unique ID, created by client
ORC-5	Task status	ID	O	For valid values see user defined table 0003
ORC-10	TaskRequester	XCN	R	TaskRequester information
ORC-10-1	TaskRequesterId	ST	O	'jej'
ORC-10-2	TaskRequesterFamily Name	ST	O	'Jensen'
ORC-10-3	TaskRequesterGivenName	ST	O	'Jens'
ORC-10-4	TaskRequesterPhone Number	ST	R	'12345678'
ORC-17-2	TaskRequesterOrganisation	ST	O	'ADF1'
OBR-2	Task id	ST	R	Globally unique ID, created by client
OBR-4	Service Identifier	CE	R	3^bt^CLS0001
OBR-18	Bed type	ST	R	For valid values see master data 0001
OBR-19	Bed Id	ST	O	Unique identification number for a bed
OBR-20	Bed placement	ST	R	Numeric location indicator of bed
OBR-21	Pickup location	ST	R	Location-id
OBR-27-4	Pickup time	ST	R	YYYY[MM[DD[HHMM]]][+/-ZZZZ]
OBR-39-2	Comments	ST	O	'bring a carrier'

Table 9 Message create bed transport

2.2.6.2 Template for a bed transport message

MSH|^~\&|SendingApp||ReceivingApp||TimeStamp||MessageCode|MessageID|ProcessingID|Version||||||CharacterSet|||MessageProfileIdentifier
ORC|ControlField|TaskId|||||||Id^FamilyName^GivenName^PhoneNumber|||||||^Organisation
OBR||TaskId||ServiceIdentifier|||||||||||||BedType|BedId|BedPlace|PickupLoc||||||^^^StartTime||||||||||^Comments

2.2.6.3 Example - bed transport message

```
MSH|^~\&|TaskManagement||ExternalSystem||201401201231-0000||OMG^O19
|MSID1234|P|2.5|||||UNICODE UTF-8|||bt_cr
ORC|NW|cb05885c-8502-44d7-9caf-580ebb14b9ca|||||||jej^Jensen^Jens^123456789|||||||^ADF1
OBR||cb05885c-8502-44d7-9caf-580ebb14b9ca||3^bt^CLS0001|||||||||||||LB
|123|25|2|||||^^^201401201301-0200|||||||||||^Bring carrier
```

2.2.6.4 Update message profile

Field	Description	Type	HL7 Opt	Comments/examples
ORC-1	Control field	ID	R	XX/XO
ORC-2	Task id	ST	R	Globally unique ID, created by client
ORC-5	Task status	ID	O	For valid values see user defined table 0003
ORC-10	TaskRequester	XCN	O	TaskRequester information
ORC-10-1	TaskRequesterId	ST	O	'jej'
ORC-10-2	TaskRequesterFamily Name	ST	O	'Jensen'
ORC-10-3	TaskRequesterGivenName	ST	O	'Jens'
ORC-10-4	TaskRequesterPhone Number	ST	O	'12345678'
ORC-17-2	TaskRequesterOrganisation	ST	O	'ADF1'
OBR-2	Task id	ST	R	Globally unique ID, created by client
OBR-4	Service Identifier	CE	R	3^bt^CLS0001
OBR-18	Bed type	ST	O	For valid values see master data 0001
OBR-19	Bed Id	ST	O	Unique identification number for a bed
OBR-20	Bed placement	ST	O	Numeric location indicator of bed
OBR-21	Pickup location	ST	O	Location-id
OBR-27-4	Pickup time	ST	O	YYYY[MM[DD[HHMM]]][+/-ZZZZ]
OBR-39-2	Comments	ST	O	'bring a carrier'

Table 10 Message update bed transport

2.2.6.5 Template for a update bed transport message

```
MSH|^~\&|SendingApp||ReceivingApp||TimeStamp||MessageCode|MessageID|ProcessingID|V
ersion||||||CharacterSet|||MessageProfileIdentifier
ORC|ControlField|TaskId|||||||Id^FamilyName^GivenName^PhoneNumber|||||||^Organisati
on
OBR||TaskId||ServiceIdentifier|||||||||||||BedType|BedId|BedPlace|PickupLoc||||||^^^Star
tTime||||||||||||^Comments
```

2.2.6.6 Example - update bed transport message

MSH|^~\&|TaskManagement||ExternalSystem||201401201231-0000||OMG^O19
|MSID1234|P|2.5|||||UNICODE UTF-8|||bt_up

ORC|XO|cb05885c-8502-44d7-9caf-580ebb14b9ca
OBR||cb05885c-8502-44d7-9caf-580ebb14b9ca||3^bt^CLS0001|||||||||||||||||||||||||||||||^Bring another carrier instead

2.2.6.7 Cancel message profile

Field	Description	Type	HL7 Opt	Comments/examples
ORC-1	Control field	ID	R	CA/OC
ORC-2	Task id	ST	R	Globally unique ID, created by client

Table 11 Message cancel bed transport

2.2.6.8 Template for a cancel bed transport message

MSH|^~\&|SendingApp||ReceivingApp||TimeStamp||MessageCode|MessageID|ProcessingID|Version||||||CharacterSet|||MessageProfileIdentifier
ORC|ControlField|TaskId

2.2.6.9 Example – cancel bed transport message

MSH|^~\&|TaskManagement||ExternalSystem||201401201231-0000||OMG^O19
|MSID1234|P|2.5|||||UNICODE UTF-8|||bt_ca

ORC|CA|cb05885c-8502-44d7-9caf-580ebb14b9ca

2.3 Non-functional characteristics

It is important to note that it is only possible to update or cancel as task while the task status is HD (ORC-5), once the task changes status to any other value is will no longer be possible for the task requester to update or cancel the task.

As mentioned previously it is possible to create, update and cancel a task, to indicate this context, the following ORC control field values will be used.

Message Profiles	OMG Request	ORG Response
Create	NW	OK/UA
Update	XO/XX	XR/UX
Cancel	CA/OC	CR/UC

XX control field is used to notify the external system of any updates to tasks ordered by the external system.

OC control field is used to notify the external system of cancellation of tasks.

Valid task status and control field

	HD	SC	CM	CA
OK	x			
XX	x	x	x	
XR				
CR				x

XR has no valid task status as it is a response to a task update request. Task update requests can change task details such as comments and start time, but not the task status.

2.4 Error handling

The error handling will follow HL7 standards, and use always acknowledge mode. The systems will always repeatedly try to send a message until an acknowledgment is received.

The Task Management System uses three levels of error handling.

A malformed message:

System responds with MSA with acknowledgment code AR.

A well-formed message with invalid values.

System responds with acknowledgment code AA, and ORC-1: UA/UC/UX depending on context.

A well-formed message with correct values, causes unknown error

System responds with acknowledgment code AE.

Error codes emitted and accepted by Task Management are the following and can be found in the error segment as the identifier ERR-3-1:

Errorcode	**Description**	**Coding system**
203	Unsupported version id	HL70357
101	Required filed missing	HL70357
103	Table value not found	HL70357
401	Order already exists	CLS0002
402	Order does not exist	CLS0002
403	Constraint violation	CLS0002
404	Out of synchronization	CLS0002
405	Request failed try again	CLS0002
500	Internal error	CLS0002

More specific error codes regarding an error, can be found in the diagnostic field ERR-7:

Errorcode	Description	**Coding system**
420	PID fields missing	CLS0002
421	placer order number missing (ORC)	CLS0002
422	placer order number invalid (ORC)	CLS0002
423	Entered by phonenumber missing	CLS0002
424	placer order missing (OBR)	CLS0002
425	Universal service identifier missing	CLS0002
426	Universal service identifier coding system missing	CLS0002
427	Universal service identifier text missing	CLS0002
428	Origin location missing	CLS0002
429	Bed placement missing	CLS0002
430	Bed id is missing	CLS0002
431	Destination location missing	CLS0002
432	Start time missing	CLS0002
433	Arrival time missing	CLS0002
434	Order control value error	CLS0002
435	Transport type value error	CLS0002

436	Message profile identifier value error	CLS0002
437	Universal service identifier value error	CLS0002
438	Bed type value error	CLS0002
439	Bed equipment value error	CLS0002

3 HTTP Interface

Tasks can also be retrieved, created, and edited via HTTP using JSON as data format. The base endpoint for available operations is:

```
http://{baseURL}/taskservices/{instance}/V1/public/taskmgt/
```

BaseURL is the machine and port.

Instance is a name typically used to distinguish separate installations used by different organizations.

3.1 Resources available

Name	Http Methods	Section
/tasks/{taskId}	PUT	0
/tasks	GET	3.1.2
/tasks/{taskId}	DELETE	3.1.3

Further details are available directly from the service at this URL:

```
http://{baseURL}/taskservices/{instance}/V1/public/taskmgt/help
```

3.1.1 Create or update a task

This endpoint is used for creating or updating a task. New tasks are placed on a number of task lists according to the configured rules. The request body contains the JSON representation of a task (see 3.2 for object details).

This method does not support assignment to other than task requester, status updates or cancelling of a task.

```
/tasks/{taskId}
```

Parameters explained:

Parameter name	Value	Description
taskId	string	Id of task to be created or updated.

Response codes:

Code	Description
200 – OK	Task created or updated is returned in response body. See 3.2 for object details.
400 – Bad Request	See response body for details.
401 – Unauthorized	Response body is empty.
403 – Forbidden	Response body is empty.
409 – Conflict	Response body is empty. Not using the latest version of the task while trying an update.
500 – Internal Server Error	Response body contains error code.

3.1.2 Get existing tasks

This resource returns a list of existing tasks. Tasks can be filtered using query parameters or by using the ETag in the http headers. The result may be cached for a few seconds.

```
/tasks?tasklists={delimiterSeparatedListNames}&organizations={delimiterSeperated
OrganizationIds}&statuses={delimiterSeparatedStatusValues}&sourcesystems={delimi
terSeperatedSourceSystemNames}
```

Response headers contain the ETag for returned tasks.

Parameters explained:

Parameter name	Value	Description
delimiterSeparatedListNames	string	Values for filtering tasks based on task lists. This filter is ignored if no values are entered. e.g. tasklist1][tasklist2
delimiterSeperatedOrganizationIds	string	Values for filtering tasks belonging to an organization. This filter is ignored if no values are entered. Here are expected the organization keys. e.g. organizationKey1][organizationKey2
delimiterSeparatedStatusValues	string	Values for filtering tasks having a status. This filter is ignored if no values are entered. Possible values: • Unassigned – UNAS • Assigned – ASSI • In progress – INPR • Completed – COMP • Cancelled - CANC e.g. UNAS][ASSI
delimiterSeperatedSourceSystemNames	string	Values for filtering tasks created by source system. This filter is ignored if no values are entered. e.g. bedSystem][trolleySystem

For all query parameters, multiple values can be specified by using the delimiter '][’.

Response codes:

Code	Description
200 – OK	Response body contains a JSON list of task objects. See 3.2 for object details.
304 – Not Modified	No changes since last ETag provided in the request headers. Response body is empty.

400 – Bad Request	Bad request see response for details
500 – Internal Server Error	Response body contains error code.

3.1.3 Cancel a task

This resource is used for cancelling a task. The task will no longer be available at the specified URI.

Only the creator of the task can cancel the task and cannot cancel with workers assigned to it.

```
/tasks/{taskId}?sourcesystem={systemName}
```

Parameters explained:

Parameter name	Value	Description
taskId	string	Id of task to be cancelled
systemName	string	The source system for the task to be cancelled. This parameter is required. When this parameter is badly specified a status code 401 – Unauthorized is returned.

Response codes:

Code	Description
204 – No Content	Task was cancelled. See 3.2 for object details
400 – Bad Request	Bad request see response for details
401 – Unauthorized	Empty
404 – Not found	Task not found
409 – Conflict	Empty. Not using the latest version of the task while trying an update.
500 – Internal Server Error	Response body contains error code.

The response body is empty.

3.2 Json Objects explained

Below is an example of a task object:

```
[
...
{
    "CreatedTime": 1430122055,
    "EndLocation": "urn:epc:id:sgln:57980100.3939.0",
    "LastChanged": 550643061,
    "NoOfWorkersRequired": 2,
    "OrganizationUniqueId": null,
    "RequesterComments": "Patient is angry",
    "SourceSystem": "TaskManagement",
    "StartLocation": "urn:epc:id:sgln:57980100.3949.0",
    "StartTime": 1430134200,
    "TaskAssignees": [],
```

```
    "TaskProperties": [{
        "Id": "TRFO",
        "Value": "WC"
    }, {
        "Id": "PANA",
        "Value": "Hans Andersen"
    }, {
        "Id": "PAID",
        "Value": "1234567890"
    }, {
        "Id": "SRNO",
        "Value": "Room 1"
    }, {
        "Id": "ERNO",
        "Value": "Room 6"
    }],
    "TaskRequester": {
        "Name": "Hans Jensen",
        "OrganizationalUserId": "taskman1",
        "Phonenumber": "12345678"
    },
    "TaskStatus": "UNAS",
    "Type": "PT",
    "UniqueId": "e2ecd4fe-2f52-4568-896b-3688f0e91a45",
    "Urgency": "DFLT"
},
...
]
```


Task object fields:

Field	Description	Type	Mandatory	Comments
CreatedTime	Created time in UTC format as integer.	Integer	Yes	This is number of seconds since 1970-01-01 (Unix Time).
EndLocation	End location id. The ID uses the GLN standard. (See GLN-Health)	String	No	Example: "urn:epc:id:sgln:57980100.3939.0"
LastChanged	Timestamp as integer.	Integer	Yes	When doing updates for a task, the ETag provided in the HTTTP headers has to match the LastChanged value for a task.
NoOfWorkersRequired	Number of workers required to complete the task.	Integer	Yes	This can have values 1 or 2.
OrganizationUniqueId	ID of the organization that the task belongs to.	String	No	Example: "OrganizationUniqueId": "org1",
RequesterComments	Text value with remarks.	String	No	

Field	Description	Type	Mandatory	Comments
SourceSystem	Source system for the task.	String	Yes	Tasks created by different systems will have a corresponding value: Example for values: "TaskManagement" – tasks created by Task System "BedManagementSystem" – tasks created by Bed System "TrolleyManagementSystem" – tasks created by Trolley System
StartLocation	Start location id. The ID uses the GLN standard. (See GLN-Health)	String	No	Example: "urn:epc:id:sgln:57980100.3939.0"
StartTime	Start time in UTC format as integer.	Integer	No	This is number of seconds since 1970-01-01 (Unix Time). After a task was started this will have the UTC time that the task was started at.
TaskAssignees	Array of objects containing information about task assignees.	Array of objects	No	The object describing an assignee has the following fields: • Name – worker name; • OrganizationalUserId – organizational user id for worker; • Phonenumber – contact phone number for worker; • TaskStatus – see TaskStatus field for possible values; Example: "TaskAssignees": [{ "Name": "Worker489yø lorizzle lorizzle tørtør lorizzle ", "OrganizationalUserId": "UserID489", "Phonenumber": null, "TaskStatus": "ASSI" }],

TaskProperties	Array of objects containing task properties	Array of objects	No	The object describing a task property has the following fields:
				• Id – property code
				• Value – property value
				Example:
				"TaskAssignees": [{
				"Id": "PANA",
				"Value": "patient13tørtør tørtør "
				}, {
				"Id": "PAID",
				"Value": "1234513"
				}, {
				"Id": "SIGN",
				"Value": "1234513"
				}, {
				"Id": "COMM",
				"Value": "COM3"
				}],

Field	Description	Type	Mandatory	Comments
TaskRequester	Object describing creator of the task	Object	Yes	The fields for a task requester are: • Name – name of requester; • OrganizationalUserId – organizational user id; • Phonenumber – contact phone number; Example: "TaskRequester": { "Name": "posloguser", "OrganizationalUserId": "posloguser", "Phonenumber": "12345" },
TaskStatus	Task status code	String	Yes	The code for the task status. Possible status codes are: • Unassigned – UNAS; • Assigned – ASSI; • In progress – INPR; • Completed – COMP; • Cancelled – CANC; Example: "TaskStatus": "ASSI"
Type	Task type code	String	Yes	The code for task type. Possible task types are: • PT – Patient transport; • MO – Mobilization; • MI – Other; • BE – Bed order; • BT – Bed transportation; • OT – Other transportation; • TT – trolley transport; • BD – blood transport; Example: "Type": "PT"
UniqueId	Unique ID for a task.	String	Yes	This is a GUID value.
Urgency	Urgency code	String	Yes	The code for task urgency. Possible values are: • DFLT – normal; • URGN – urgent; • CRIT – critical; Example: "Urgency": "CRIT"

4 Master Data interface

The available master data is exposed on restful services described in further detail in the following sections. It is important to note that this master data is dynamic and can change in unforeseen ways; it is therefore not advised to depend on the specific values received from these services.

The master data is received in a format containing a name and a type.

The name attribute is a displayable string. The code is a constant value which represents the type.

Since the master data will be used for validation of messages it is recommended to pull data from services in an interval of at least 5 seconds, to insure data integrity.

Task management services formal WADL/JSON specification can be found by following the task management service specification reference.

Master data service details can be viewed by visiting the following url.

```
http://{baseURL}/taskservices/{instance}/V1/public/master/help/
```

The instance attribute of the URL represents the hospital in which the service is deployed.

4.1 Resources available

Name	Http Methods	Section
/bedTypes	GET	4.1.1
/bedEquipment	GET	4.1.2
/transportTypes	GET	4.1.3
/locationsUpdate	POST	4.1.4
/version	GET	4.1.5

4.1.1 Bed Types

The accepted values for bed types can be retrieved using the restful service:

```
http://{baseURL}/taskservices/{instance}/V1/public/master/bedTypes
```

The instance attribute of the URL represents the hospital in which the service is deployed.

The response format is in JSON

```
[
  {
      "Name": "Large bed",
      "Type": "LB",
  }
      "Name": "Small bed",
      "Type": "SB",
   }
]
```

4.1.2 Bed equipment

The accepted values for bed equipment can be retrieved using the restful service:

```
http://{baseURL}/taskservices/{instance}/V1/public/master/bedEquipment
```

The response format is in JSON

```
[
  {
      "Name": "Bed pusher",
      "Type": "BP",
  }
      "Name": "Oxygen",
      "Type": "OX",
   }
]
```

4.1.3 Transport type

The accepted values for transport types can be retrieved using the restful service:

```
http://{baseURL}/taskservices/{instance}/V1/public/master/transportTypes
```

The response format is in JSON

```
[
  {
      "Name": "Bus",
      "Type": "BU",
  }
      "Name": "Bed",
      "Type": "SE",
   }
]
```

4.1.4 Locations update

Accessing this endpoint will triggers locations import on the Task system. The import is done using data from the Location system and is started asynchronously. The import can be started with the following URL:

```
http://{baseURL}/taskservices/{instance}/V1/public/master/transportTypes
```

The response is empty and status code should be 200 – OK if import is queued.

4.1.5 Version

Returns current version for the Task system as a string. This can be accessed with the following restful URL:

```
http://{baseURL}/taskservices/{instance}/V1/public/master/version
```

```
"1.2.3.4"
```

5 Appendix A: User defined tables

This chapter contains the user defined tables used in the segments described in chapter 1. Each table only contains the values needed for this interface.

User defined table 0001 – Service Identifiers

Describes the service identifier used in the MSH header to indicate service required. There are three service identifiers each representing one of the services defined in chapter 1. The first component of the identifier is an ID, the second is a description and the last element is the code name.

Value	Description	Comment
1^pt^CSL0001	pt	Patient transport id
2^be^CLS0001	be	Bed order id
3^bt^CLS0001	bt	Bed transport id

User defined table 0002 – Message Identifier Profiles

The message identifier profile describes the context and service in which a message is used, i.e. creation of a task or update and patient transport or bed transport.

Value	Description	Comment
pt_cr	Create patient t. order	
pt_up	Update patient t. order	
pt_ca	Cancel patient t. order	
be_cr	Create bed order	
be_up	Update bed order	
be_ca	Cancel bed order	
bt_cr	Create bed t. order	
bt_up	Update bed t. order	
bt_ca	Cancel bed t. order	
goa	General order acknowledgment	

User defined table 0003 – Task Status

Describes the status values a task can attain

Value	Description	Comment
HD	Task is not started	
SC	Task is started	
CM	The task is completed	
CA	The task is cancelled	