Integrating the Healthcare Enterprise

IHE Patient Care Coordination
Technical Framework Supplement

Cross-enterprise Tumor Board Workflow Definition Profile (XTB-WD)

Trial Implementation

Date: November 9, 2012

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Foreword

This is a supplement to the IHE Patient Care Coordination Technical Framework V8.0. Each supplement undergoes a process of public comment and trial implementation before being incorporated into the volumes of the Technical Frameworks.

This supplement is published for Trial Implementation on November 9, 2012 and may be available for testing at subsequent IHE Connectathons. The supplement may be amended based on the results of testing. Following successful testing it will be incorporated into the Patient Care Coordination Technical Framework. Comments are invited and may be submitted at http://www.ihe.net/pcc/pcccomments.cfm.

This supplement describes changes to the existing technical framework documents and where indicated amends text by addition (**bold underline**) or removal (~~**bold strikethrough**~~), as well as addition of new sections introduced by editor's instructions to "add new text" or similar, which for readability are not bolded or underlined.

"Boxed" instructions like the sample below indicate to the Volume Editor how to integrate the relevant section(s) into the relevant Technical Framework volume:

Replace Section X.X by the following:

General information about IHE can be found at: www.ihe.net.

Information about the IHE Patient Care Coordination domain can be found at: http://www.ihe.net/Domains/index.cfm.

Information about the structure of IHE Technical Frameworks and Supplements can be found at: http://www.ihe.net/About/process.cfm and http://www.ihe.net/profiles/index.cfm.

The current version of the IHE Patient Care Coordination Technical Framework can be found at: http://www.ihe.net/Technical_Framework/index.cfm.

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Introduction to this Supplement

The Cross-enterprise Tumor Board Review Workflow Definition (XTB-WD) profile builds upon the ITI Cross Enterprise Document Workflow (XDW) profile to manage the workflow related to a multidisciplinary tumor board review.

The management of the workflow related to clinical process is becoming a fundamental topic with the increasing of the use by different sectors of document sharing related IHE profiles. IHE ITI has approved in Trial Implementation the Cross-Enterprise Document Workflow profile but the work done by ITI has been on the definition of the technical structure to manage a clinical workflow and not on the definition of the clinical processes, which is the domain of Workflow Definition documents such as this.

The Cross-enterprise Tumor Board Review Workflow Definition Profile defines a typical workflow related to process of the Tumor Board Review. The definition of a workflow with fixed rules and task is needed in a scenario cross enterprise in which many actors are involved in the same process.

Open Issues and Questions

None

Closed Issues

1. **What should be the format of a XTB-WD template document?**
   It could be just a .doc document where the different applications implement the rules inside their business logics, or it could be a more automated description (BPEL, etc.). For a linear workflow as the tumor board could be we could create a complete WD document as example and use a document to describe the rules. In the future we will define a template with IHE, but at the moment it is too early.

2. **How should XDW documents be linked to each other?**
   In the current situation, an XDW document can be added as output document. Is this enough for linking purposes, or is a stronger linking mechanism necessary? In practice, a care pathway of a patient is described by a series of smaller XDW documents. This XDW documents series describe a part of the care pathway, and we are looking for a way to connect these XDW documents.
   Also, some Workflow definitions are a description of one of the tasks in another Workflow definition; see the example in Chapter 1.5. In this case, there is a kind of hierarchy in the description of the tasks, where a Task in one WD is described in more detail (and more Tasks) in another WD. We think that the Owner of a certain Task should have the possibility to register what WD he has used to perform that Task, thereby linking the two XDW documents logically together. In other words: the Owner of a Task says: these are my Input- and Output Documents, and I used WD <XYZ> for the execution of the Task.
   Is it possible to add a parameter to a Task that holds this kind of reference to a 'lower-

level' Workflow definition document?
Decision: When linking Workflow definitions, there are two possibilities. The first is that at the end of a Workflow Definition, there is a link to the next phase of the process. In this case as link you have to use not the documentId of the new WD but the folderId in which the WD to be linked is (you have to use the folderId because the WD is replaced step by step and so the documentId).

3. **How should XTB-WD be tested?**
The different Tasks in a workflow can be described as 'lightweight' actors. These are grouped with one or more of the XDW actors (Content Creator, Content Consumer and Content Updater). By describing the actors for each Task of the workflow (grouping), the tasks that have to be performed can be described. We propose to deliver a 'test-set' of documents that can be used by all participants in the Connectathon, as well as some expected end-results in terms of what the XDW documents should look like at the end of each stage of the process.
At the Connectathon there will be 2 level of tests:
- basic level: the different Actors have to create/read/update (it depends by the actor tested) a WD. For example if we are testing the Actor Content Updater we will check it is able to read a WD and update it (the tests will be done in an XDS-b infrastructure)
- scenarios test: we will simulate for example a tumor board workflow with the update of the XDW step by step.

4. **Can the Owner of a certain Task change anything in another Task, such as its state or input document?**
We would advocate that this should be possible, especially if you look at the XDW documents as possible drivers for processes.
An example: after the Requestor in Task 1 (Request TBR) has written the Request Document, this document may be one of many output documents in the first Task. The Owner of the first Task knows what document is needed as Input document for the second Task. Our proposal would be, that the Owner of the first Task changes the status of that Task to 'Completed', and of the next Task to 'Ready'. This could function as a trigger for any XDW-document monitoring applications to pick up the availability of a next action that has to be performed.

Decision: Yes, it is possible to create a next task and fill in some data.
NOTE: tasks that have been set to the status COMPLETED or FAILED, can still be changed to other states.

5. **Are all input- and output documents in a XDW document available to all the Tasks in the Workflow Definition?**
Decision: every document attached to any of the Tasks is available to all participants, unless they do not have the right to see these documents. The setting and enforcing of these rules are out of scope of this document.

Version history

Revision	Date	Author(s)
v0.3.3	January 23rd, 2012	Vincent van Pelt
v0.3.4	February 17th, 2012	Vincent van Pelt
V0.3.6- V0.4.3	May 2nd, 2012	Vincent van Pelt
V0.4.4-v0.4.8	May 15th, 2012	Robert Breas, Vincent van Pelt
V0.4.9	May 16th, 2012	Vincent van Pelt
V0.5-V.0.6.6	May 18th, 2012	Vincent van Pelt, Robert Breas, Charles Parisot
V 0.6.7-0.6.8	June 11th, 2012	Vincent van Pelt, Robert Breas
V 0.7	June 27th, 2012	Vincent van Pelt
V 0.7.1	July 15th, 2012	Vincent van Pelt, Wendy Scharber
V 0.7.2-0.7.4	July 19th, 2012	Vincent van Pelt, Mauro Zanardini
V 0.7.5	July 27th, 2012	Vincent van Pelt, Mauro Zanardini
V 0.8	September 5th, 2012	Mary Jungers (edited in preparation for publication)
1.0	September 10th, 2012	Published for Public Comment
1.01 - 1.02	October 29th, 2012	Edited after Change Proposals
1.03	October 31st, 2012	Edited after TI WebEx
1.1	November 9, 2012	Published for Trial Implementation

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Volume 1 – Profiles

X Cross-Enterprise Tumor Board Workflow Definition Profile

Screening, diagnosis, treatment and aftercare of oncological patients require cooperation of a multidisciplinary team of healthcare professionals. Typically, an oncological care pathway is both multidisciplinary and often cross-enterprise, including participants from different specialisms and different hospitals. In order to be able to work together and study the different patient cases, the participating specialists, radiologists, pathologists, nurses and paramedics must have access to the relevant medical information. They also need an overview of the current status of the process to see whether the required information is available.

X.1 Purpose and Scope

Tumor Board Reviews are meetings where a team of medical professionals of different professions, and often from different hospitals, get together (physically or by remote conference) to assess the cases of oncological patients (using medical images and other relevant medical information), discuss the cases, and advise on the further treatment of the patient. In many countries, the Tumor Board Review is an important phase in the multidisciplinary oncological care pathway.

Note: The specifics apply to the Dutch situation; these specifics may vary per country, or even per region. The XTB-Workflow is applicable in many different types of Tumor Board Review.

In the Netherlands, most Tumor Board Review (TBR) meetings are held for specific tumor types, such as esophageal cancer, colon cancer, lung cancer, et cetera. They are held after the diagnostic studies have been completed (pre-therapeutic TBR), and often also after the treatment of the patient (post-therapeutic). At a typical Tumor Board Review, which usually takes 1 hour, between 5 and 15 patients are being reviewed. On average, between 5 and 20 different Tumor Board meetings are held each week per hospital.

The main output of a Tumor Board Review is a report containing the collective findings, conclusions and recommendations for the further treatment of the patient.

This may also include the recommendation to include a patient in a clinical research trial.

Tumor Board Review meetings also serve as a platform for sharing the latest guidelines, developments and insights in the diagnosis and treatment of the specific cancer type. The sharing of knowledge is seen as a valuable asset.

A typical TBR team consists of the following participants:

Table X.1-1: Typical TBR Team Participants

Role	Function
<any specialist>	diagnosis, (surgery)
Radiologist	review of medical images
Pathologist	review of biopsies

Role	Function
Oncologist	chemotherapy
Radiotherapist	radiotherapy
Specialized nurse	counseling, main contact person

Also, other healthcare professionals such as plastic surgeons, case managers, psychologists, or others may participate; in cross-enterprise settings, more than one radiologist or pathologist may participate.

The Cross-enterprise Tumor Board Workflow Definition (XTB-WD) describes the different Tasks of a Tumor Board Review process, and the accompanying information in the form of input- and output documents that are linked to the different Tasks in the process. The XTB-WD describes a relatively small part of a larger workflow definition, in this case an oncological care pathway. Other parts of the oncological pathway can be defined in a later stage, in other Workflow Definitions. The different Workflow Definitions can be seen as 'building blocks' that describe the actual care pathway of an individual patient. Below is a schematic overview of the place of the XTB Workflow Definition (XTB-WD) in an oncological pathway:

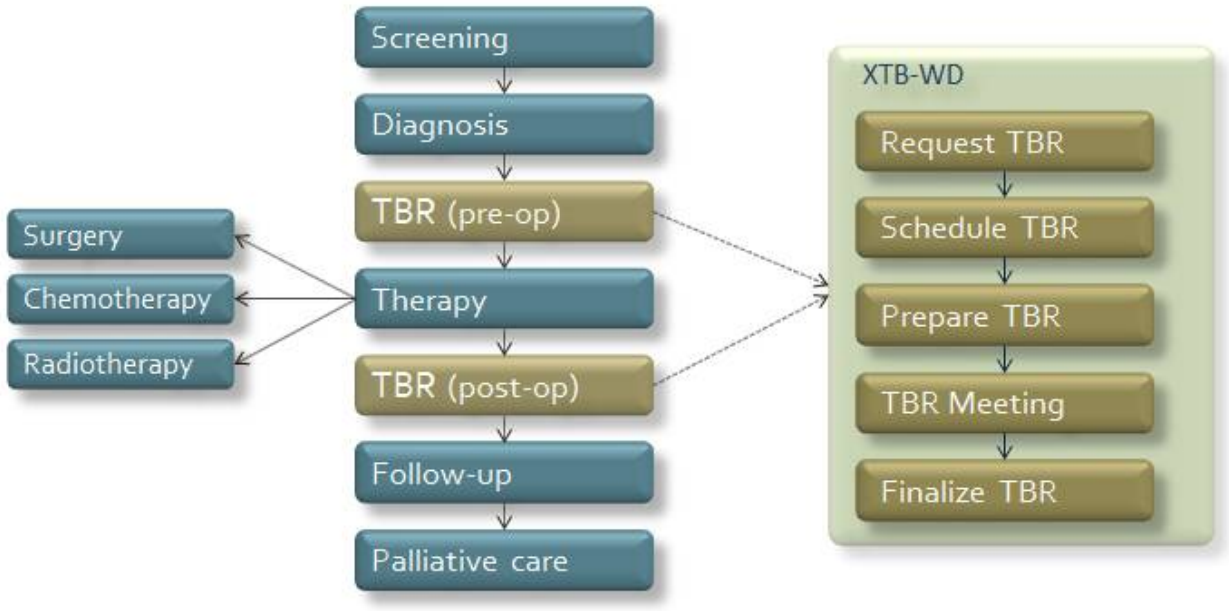

Figure X.1-1: XTB-WD in relation to the oncological pathway

During a care episode, different Workflow Definition documents describe the actual steps of the care pathway. The unpredictability of the different steps or tasks in a care episode requires a flexible method that allows the total process to be divided into smaller Workflow Definitions.

The XTB-Workflow Definition is one of those building blocks. By linking different WD documents, the relation between the different XDW documents can be created.

For the correct management of a Tumor Board Review, each of the participants of the Tumor Board must have the possibility to share all relevant medical information. Currently, this is not possible, as there are no standardized means of monitoring and managing the different stages of the workflow, or of the documents that are created and attached in these different Tasks.

The key elements for improvement of the current processes are:

- Managing the TBR workflow
- Tracking the relevant events and related documents
- Tracking the status of each subtask in the workflow
- Access to all relevant images, reports and other documents created in (or used in) the process
- Linking the created documents to the different Tasks in the process, thereby defining the context of these documents.

Problems with the current processes

In the current situation, problems arise at all of the above stages:

1. Request TBR

   Specialists complain about the cumbersome process of gathering the necessary images, reports, and excerpts from their EPR. Currently, texts are faxed (and have to be re-entered into the electronic patient record EPR of the hospital where the TB meeting is held), and images are sent by CD or DVD. The images and reports on these cd's have to be linked manually to the right patient in the receiving HIS/EPR. This is a time consuming and error-prone process.

2. Schedule TBR

   The chairperson of the Tumor Board has to decide whether the patient fits the constraints for the particular TB meeting, and whether all necessary documents and images are available. If the maximum number of patients has been reached, the chairperson has to determine which patients can be postponed to a later TB meeting. These tasks are time-consuming and often require extra phone calls to the requestor. There is no overview of the status of all requests.

3. Prepare TBR

   In the current situation, results from diagnostic studies such as CT scans, X-ray images and endoscopic images can only be seen by the radiologist. Faxes have to be copied if someone wishes to prepare the TB meeting beforehand. In most cases, preparation is not possible for most team members except the radiologist. Also, tracking whether the required documents are available is a time-consuming chore.

4. TBR Meeting

During the TB Meeting, sometimes patients that were scheduled cannot be discussed because DVD's have not arrived on time, or not at the right address, or have not yet been linked to the patient.

Since the patient come from different hospitals, the medical information is presented in different ways, on different EPR systems. Since most participants have never met the patients they discuss, this can lead to confusion. Also, the notes that are taken during the discussion of a patient can often not be seen or checked by the all participants.

During the TB Meeting, a scribe writes down the findings, conclusions and recommendations for treatment of the patient. These texts have to be checked and validated by the chairperson.

5. Finalize TBR

After the TB meeting, the validated findings, conclusions and recommendations are incorporated into a Tumor Board Review Report. The TBR report is then ready for distribution to the Requestor, and /or other designated healthcare professionals. In the current situation, this is a time consuming process, with manual insertion of the texts into a document that is not automatically created or distributed.

X.2 Workflow Participants and Process Flow

In this section we present the Workflow actors involved in the tumor board process, and we describe in detail process transactions and interactions between them.

A Workflow Participant is an abstraction of systems along with users involved in the tumor board process. They can be identified, based on their roles in the process, as one of five specific participants. Each of these workflow participants has specific rights and duties in the process. They drive the process from one step to another, performing determinate actions on the workflow.

Table X.2-1: Workflow Participant Descriptions

Workflow Participant	Description
TBR Requestor	Participant (Healthcare Professional, e.g., gastroenterologist) who initiates the XTB-WD workflow. Produces the Request and the related supporting documents
TBR Scheduler	Participant responsible for the scheduling of the Tumor Board Review, by providing one of the timeslots for the requested TBR
TBR Preparator	Any Participant that is part of the Tumor Board, and involved in the review process
TBR Report Writer	A Participant (usually a Healthcare Professional) who writes down the conclusions of the Tumor Board Review
TBR Finalizer	A Participant who validates the preliminary Tumor Board Review report

X.2.1 Use Cases

X.2.1.1 Use Case 1

The following Use Case illustrates the Workflow of a Cross-enterprise Tumor Board Review in a cross-enterprise setting as it is performed in the Netherlands, both in small and academic hospitals. Some parts of the Use case describe new possibilities that the XTB-WD Profile provides, such as the preparation of the case in advance of the actual Tumor Board Meeting.

Request TBR

Dr. Smith, an ENT specialist in hospital A, has a patient with swallowing problems. After physical examination, a MRI of the neck region is performed, and a dense nodule is seen in the esophageal region. Biopsy of the tumor has indicated that the patient has esophageal cancer. In the hospital where Dr. Smith works, there is a protocol that all patients with a diagnosis esophageal cancer shall be discussed in a weekly Tumor Board Review, which is held in hospital B. This is a multidisciplinary and cross-enterprise meeting, where doctors from the different hospitals in the region discuss the patients. In most cases, there is also an expert physician on the specific type of tumor, who acts as a consultant in difficult cases. This expert is often from an academic hospital.

Schedule TBR

Dr. Smith sends a message to Dr. Kondriakin, the chairperson of the Tumor Board, asking for discussion of his patient at the next Tumor Board meeting. He also sends medical information (images, reports, and a medical summary) that is relevant to the case. In the case of esophageal cancer, often an MRI or a CT-scan, a pathology report, and a short summary of the patient's case are used.

Dr. Kondriakin, the chairperson of the Tumor Board, receives the request and the medical information, and decides whether the patient meets the inclusion criteria of this particular type or Tumor Board Review. If this is the case, the chairperson sends a Decision Notice to Dr. Smith that his patient will be discussed on the next Tumor Board Review meeting.

Prepare TBR

The radiologist of hospital A has already looked at the MRI of the patient, but in this case, the radiologist of hospital B also will also study them. This 'second opinion' is part of the protocol that the hospitals A and B have agreed upon.

Besides the radiologist, all participants of the Tumor Board (oncologists, case manager, et cetera) in both hospitals have access to the images, reports and request information, at any time and any place. They are also are able to comment on the case before the actual Tumor Board Review is being held. This allows for a more efficient processing of the patients at the actual Tumor Board meeting.

TBR Meeting

The actual Tumor Board meeting is held from a special room in hospital B, which usually contains a video conferencing system that allows the participants in both hospitals to see and hear each other. On Wednesday afternoon, all participants in both hospital A and hospital B get together in their respective conference rooms, and a video conferencing connection is set up. The case of the patient with esophageal is discussed, and an advice for the optimal treatment methods (surgery, radiotherapy, chemotherapy, or a combination) is written down during the meeting by a scribe.

Finalize TBR

This advice is then agreed upon by all members, and incorporated in a Tumor Board Report. The Tumor Board Report is now ready to be sent to Dr. Smith (and to other recipients if so desired) directly after the Tumor Board meeting.

Note 1: The preparation of the TBR Meeting, using a discussion thread is a new feature. Currently, this is not the practice in the Netherlands, but several doctors indicated that this would be a good thing. It would allow them to preparate the 'easier' cases, thereby creating more time for the discussion of complicated cases. Also, in very urgent cases, the discussion thread would create a possibility to discuss a patient before the actual (weekly or bi-weekly) TBR Meeting.

Note 2: The above Use Case describes a workflow where two hospitals are involved. However, any number of hospitals or care institutes can be involved in the XTB-WD workflow, including only 1. In this last case, the different tasks in the workflow -Definition are basically the same, although the need for videoconferencing facilities will be less obvious.

X.2.1.2 Use Case 2

In this second Use Case, a more basic Workflow of a Cross-enterprise Tumor Board Review is described; this example us from the United Sates. Although this Profile describes a Cross-enterprise process where information is exchanged between different healthcare institutions, Dr. Smith, an ENT specialist in hospital A, has a patient with swallowing problems. After physical examination, a MRI of the neck region is performed, and a dense nodule is seen in the esophageal region. Biopsy of the tumor has indicated that the patient has esophageal cancer. In the hospital where Dr. Smith works, only the more complicated patients with a diagnosis esophageal cancer are discussed in a weekly Tumor Board Review, which is held in hospital B. This is a multidisciplinary and cross-enterprise meeting, where doctors from the different hospitals in the region discuss the patients. In most cases, there is also an expert physician on the specific type of tumor, who acts as a consultant in difficult cases. This expert is often from an academic hospital.

Dr. Smith sends a message to Dr. Kondriakin, the chairperson of the Tumor Board, asking for discussion of his patient at the next Tumor Board meeting. He also sends medical information (images, reports, and a medical summary) that is relevant to the case. This is a meeting where more types of tumor will be discussed.

Dr. Kondriakin, the chairperson of the Tumor Board, receives the request and the medical information, and plans the patient for the Tumor Board Review. He creates a Decision Notice and sends it to Dr. Smith.

All participants of the Tumor Board (oncologists, case manager, et cetera) in both hospitals have access to the images, reports and request information. They are also are able to comment on the case before the actual Tumor Board Review is being held.

The actual Tumor Board meeting is held in a special room in hospital B, which usually contains a video conferencing system that allows the participants in both hospitals to see and hear each other. On Wednesday afternoon, all participants in both hospital A and hospital B get together in their respective conference rooms, and a video conferencing connection is set up. The case of the patient with esophageal is discussed, and an advice for the optimal treatment methods (surgery, radiotherapy, chemotherapy, or a combination) is written down during the meeting by a scribe. This advice is then agreed upon by all members.

The advice document (the Tumor Board Report)

Note: The actual content of the Preliminary_TBR_Report (and of the Tumor_Board_Report) is to be defined by the parties who partake in the Tumor Board Review.

X.2.2 Diagrams

The above Use Case of a typical Tumor Board Review (TBR) process can be described by the following chronological tasks, participants and roles of the participants:

The table below shows each task of the process, the participant involved and the role performed by this participant in the workflow.

Table X.2.2-1: Tumor Board Review Tasks

Task	Participant	Workflow Participant
Request_TBR	Dr. Smith, ENT doctor	TBR Requestor
Schedule_TBR	Dr. Kondriakin, chairperson	TBR Scheduler
Prepare_TBR	(all participants)	TBR Preparer
TBR_Meeting	(all participants)	TBR Report writer
Finalize_TBR	Dr. Kondriakin, chairperson	TBR Finalizer

In an XDW Workflow definition, each Task in the Workflow Definition is accompanied by input- and output documents, as shown in the schema below:

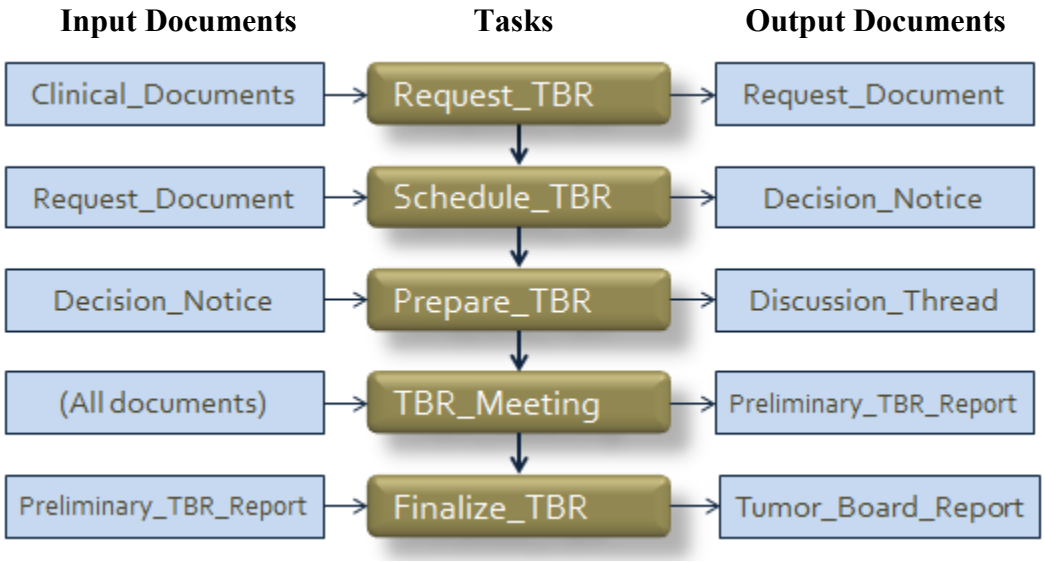

Figure X.2.2-1: XTB-WD Tasks and accompanying Input- and Output Documents

Note: the names of the Tasks are written 'Request_TBR' instead of 'Request TBR' in these tables (and in Part 2 of this document), because no spaces are allowed in the official names (XML Qnames) of the tasks. This is also the case for the names of the input- and output documents.

In this Workflow Definition, the different Input and Output documents, such as Request_Document, Decision_Notice, or Tumor_Board_Report are not the documents themselves, but labels (placeholders) that describe the function or role of the documents that will be attached in the course of the workflow. In the course of an actual workflow process, links to the actual Input- and Output documents will be added to the Workflow document. The actual documents will be marked with these labels to signify their role in the workflow process. In other words: the content of the different documents is not defined in this Profile; they must be defined by and within the Affinity Domain, as a subset of specification of the workflow definition.

The Tasks of the XTB-WD are explained below:

- **Request_TBR**
  If a patient meets the in- and exclusion criteria of a certain Tumor Board Review, the attending physician may decide to present the case to the Tumor Board for review. The owner of this Task is called the *TBR Requestor*. In this Task, any documents, images or reports that have led to the diagnosis of the patient may be added as Input Documents for this Task. As Output Documents, the TBR Requestor describes the reason for referral to the Tumor Board Review, and gives a short description of the patient's case. This document is labeled *Request_Document*.
- **Schedule_TBR**
  The owner of this Task is called the *TBR Scheduler*. The TBR Scheduler can be the chairperson of the TBR, or a medical secretary. The TBR Scheduler reads the request for

admission to the TBR, checks the inclusion- and exclusion criteria for the TBR at hand. The Scheduler uses the information that has been attached to the first Task for the assessment, and decides whether, and when, the case will be presented in one of the next TBR Meetings. The Output Document of this Task is the *Decision_Notice*, which describes the decision of the TBR Scheduler if, and when, the patient will be presented. The Decision_Notice can be sent separately to the requestor. For each requested patient, a Decision_Notice is created. The Decision Notices can be used to create the work list for the next Tumor Board Review.

- **Prepare_TBR**
  In this phase, all members of the Tumor Board have access to all the images and documents that have been linked to the TBR workflow so far. This information can be used to prepare for the actual meeting. In the case where extra input from any of the members is requested, a second opinion or report may be added to this Task as Output Document. Also, if someone wishes to pose a question or a remark on the case, he or she can add this as an Output Documents. This also creates the possibility of a discussion between the members even before the actual TBR Meeting, to increase the efficiency of the actual meeting. During the process, a *Discussion_Thread* document is built up, containing each of the remarks of the members.
- **TBR_Meeting**
  In this stage, all members of the Tumor Board convene and discuss the cases that have been scheduled, using all relevant information that has been gathered by the team members. The discussion between members leads to a consensus-based diagnosis, and a recommendation for the further treatment of the patient. These findings and recommendations are written down by a scribe, and must be validated by all participants. This is used as the Output Document of this stage, and is called the *Preliminary_TBR_Report*.
- **Finalize_TBR**
  In the final phase of the workflow, the Preliminary_TBR_Report is used to create the Final *Tumor_Board_Report*, which is the output Document of this Task. This consists of a document with the relevant patient information, the original request of the Requestor, and the information of the Preliminary_TBR_Report. The exact content of this report may vary between the specific Tumor Boards. The finalized Tumor_Board_Report document can be sent to the designated recipients of the Report, such as the Requestor, the General Physician of the patient, or any other designated party.

Most types of Tumor Board Review workflow can be described in these five simple Tasks. As is the case with XDW, each Task of the Workflow Definition can be viewed as a black box as far as the execution of the task is concerned.

The Owner of a Task can decide how the task is being performed, as long as the defined output documents are being filled in properly. The difference between a TBR for colon cancer and lung cancer lies in the definition of the content of the input- and output documents that are linked to these Tasks. The actual content of the documents depend on the type of tumor, the agreements between different parties and the technical possibilities to import and export these documents.

Below is a diagram of the process flow of XTB-WD:

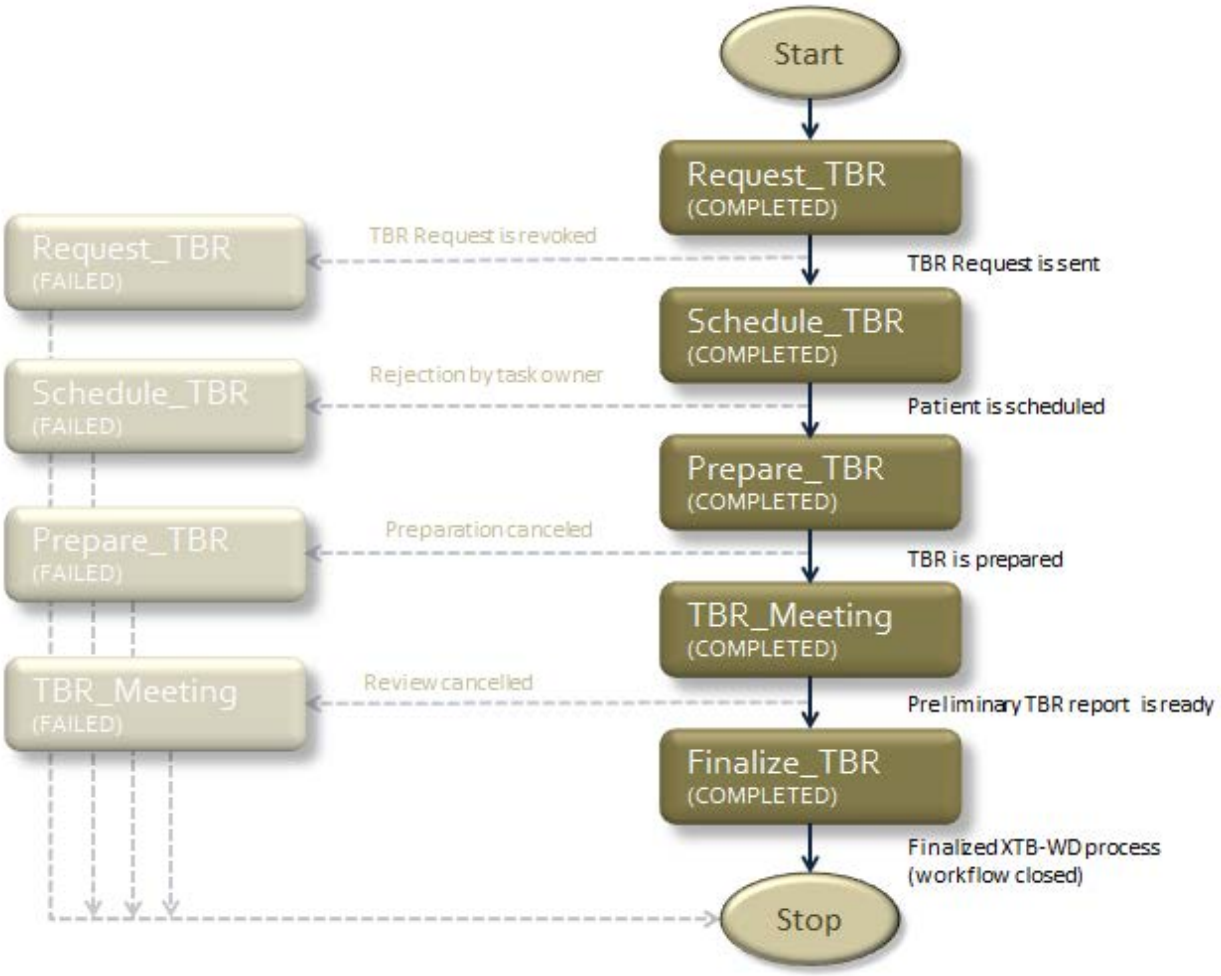

Figure X.2.2.-2: XTB-WD Default Process Flow

455 Note: Any task in this workflow can be performed in any of the hospitals – basically, this Workflow Definition provides an integration of all participants in one shared workflow.

The following figure is an UML-version of the basic process flow:

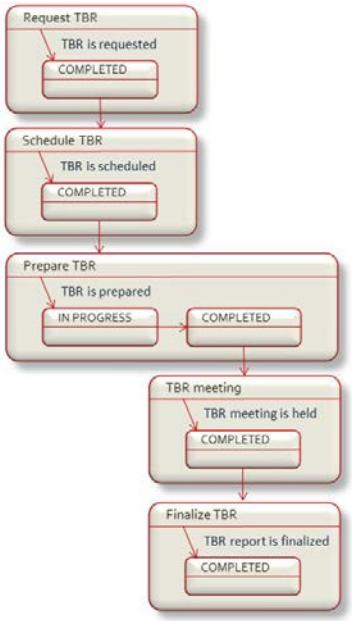

Figure X.2.2-3: UML-version of the basic process flow

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For the different Tasks in the XTB-WD, the following schema is produced for the different input- and output documents. In practice, the actual documents that accompany the Tasks is different for specific types of Cross-enterprise Tumor Board Reviews – for example, a Tumor Board Review of colon cancer requires different documents than one that focuses on lung cancer.
465 We can, however, describe the type of documents that accompany the different Tasks of the XTB Workflow.

Table X.2.2-2: Task Status and Accompanying Documents

Task Name	Task Status	Input Docs	Option	Output Docs	Option
Request_TBR	Completed	<Medical Documents > such as a medical Summary (CCD, XDS-MS), X-rays, CT scans, pathology reports &cetera>	O	<Request_Document> Contains the request for a TBR, and (optionally) the reason for the request>	R
Schedule_TBR	Completed	<Request_Document>	O	<Decision_Notice> describes the decision made by the TBR Scheduler, and the date of the TBR Meeting>	O
	Failed	N/A	O	<Decision_Notice> notifies the Requestor that the patient cannot be reviewed by the Tumor Board >	O
Prepare_TBR	Completed	<Decision_Notice>	O	<N/A >	O

Task Name	Task Status	Input Docs	Option	Output Docs	Option
		(Any document any member may want to add)			
	Failed	N/A	O	<Cancellation_Notification >	R
TBR_Meeting	Completed	N/A	O	<Preliminary_TBR_Report>	O
	Failed	N/A	O	<Cancellation_Notification >	R
Finalize_TBR	Completed	<Preliminary_TBR Report>	O	< TBR_Report> Finalized TBR Report	O
	Failed	N/A	O	<Cancellation_Notification.> Notification document stating the reason for failing of a task	R

X.2.3 Basic process flow

Below is a schema for the basic process flow of the XTB-WD:

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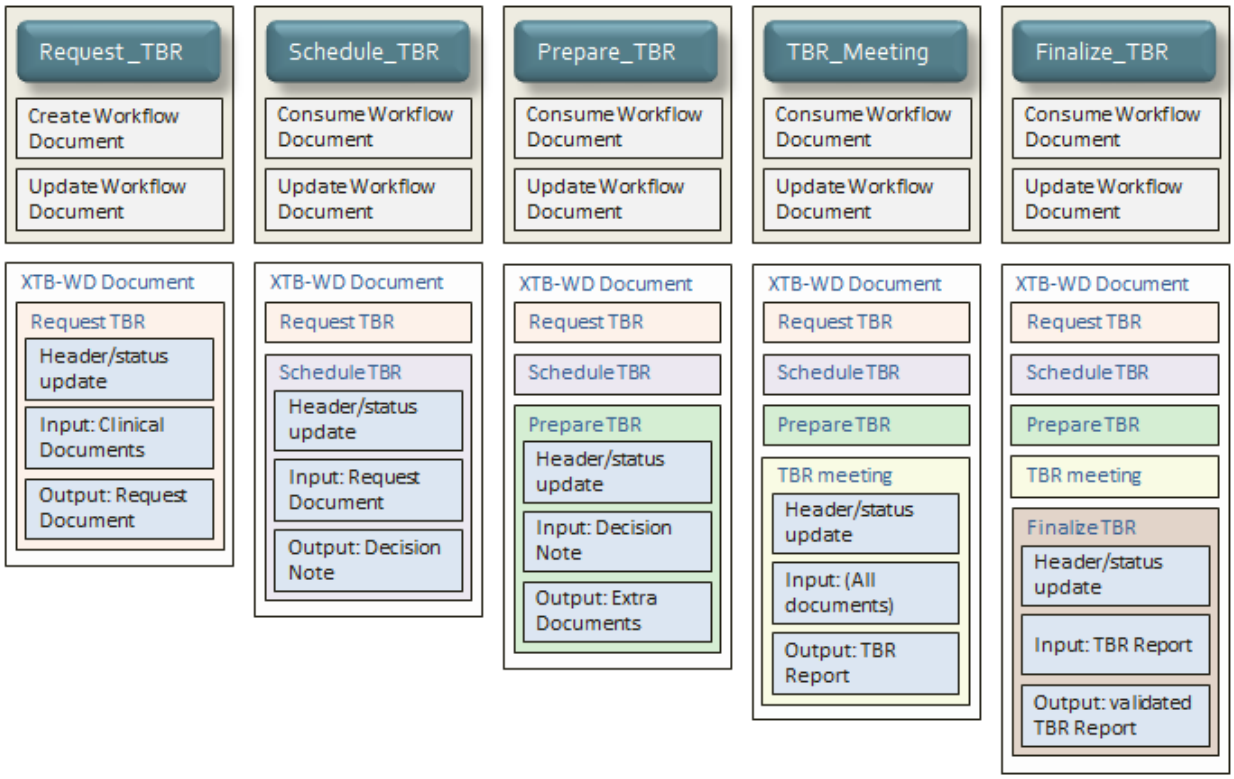

Figure X.2.3-1: Management of the workflow Document in a basic process flow

X.2.4 Failing Situations

475 Below is an overview of possible FAILED situations:

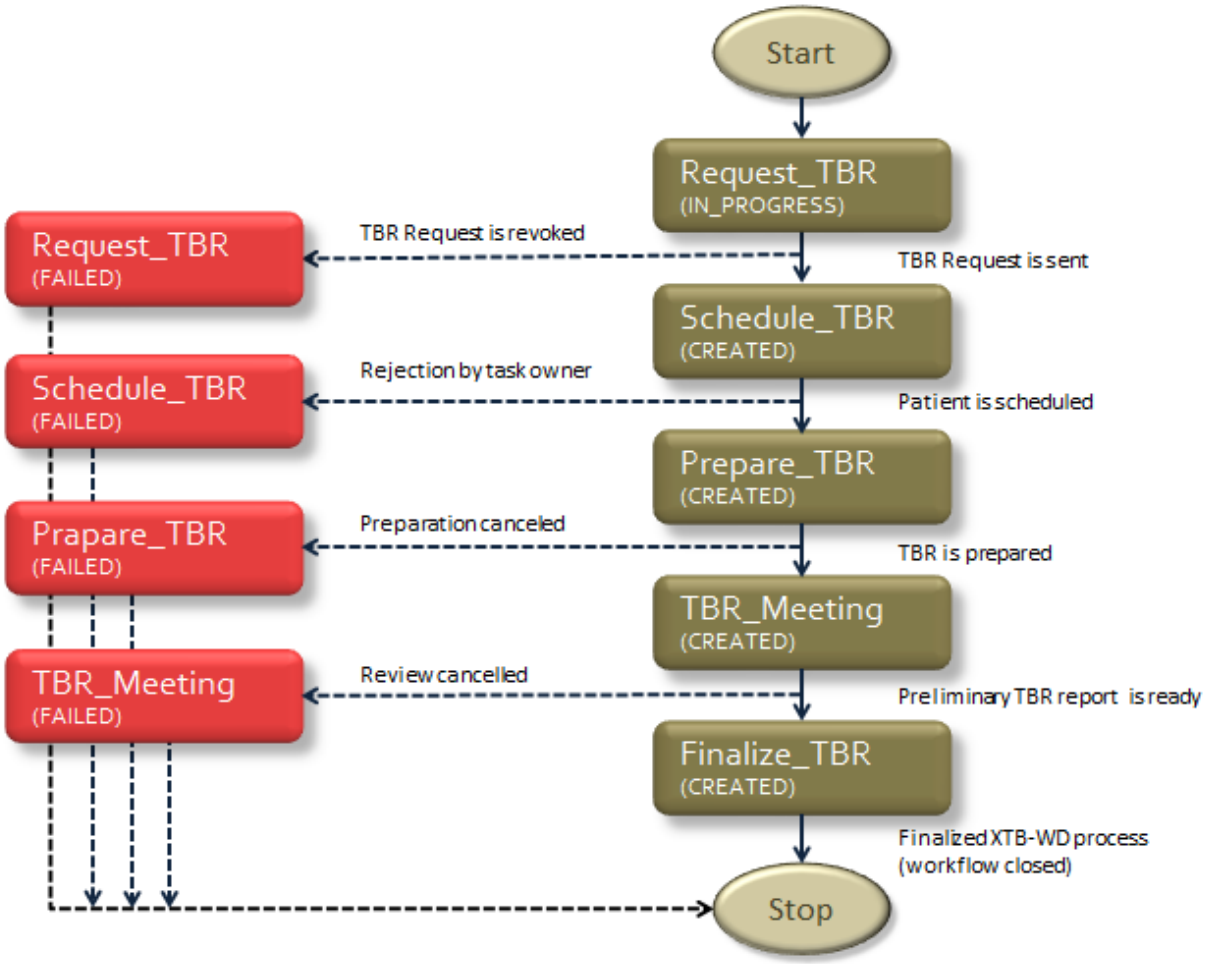

Figure X.2.4-1: FAILED Tasks in the XTB-WD

During the workflow it is possible that the workflow as described above is aborted due to various reasons, e.g., when insufficient information is available for the preparation, the TBR schedule is overbooked or when the patient has died.

Below is a schema of some possible reasons of failure:

Table X.2.4-1: Possible Reasons for Failure

Failure of	Reason of failure	Example
Request_TBR	Request is revoked by the requestor	A patient is transferred to another hospital.
Schedule_TBR	Any reason that a patient cannot be scheduled for a TBR.	It's not possible to schedule all required specialists.
Prepare_TBR	Rejection of the preparation by the task owner.	Demise of the patient
TBR_Meeting	Cancellation of the TBR Meeting	Technical failure of communication means for TBR

X.2.5 Options

In this section we describe which variations from the normal process are allowed. It is mandatory for implementers to explicitly define which workflow options, if any, are addressed by their products.

Options that may be selected for this Profile are listed below along with the Workflow Participants to which they apply.

This Workflow Definition Profile is intended to be combined with other IHE Profiles. These other profiles may have their specific options. These are not addressed in this section, which focuses only on the Options identified for this Workflow Definition Profile.

X.2.5.1 Workflow Input-and Output

The XTB-WD Profile uses Document Labels to describe the Input- and Output Documents for the different tasks, such as 'Request_Document', or 'Decision_Notice' or 'TBR_Report'. This has been done to accommodate for the many different types of Cross-enterprise Tumor Board Meeting. The Input- and Output Document Labels can be seen as placeholders for the actual documents that are going to be attached as the workflow unfolds.

However, within an Affinity Domain, it is possible to define a Workflow definition where actual document templates are linked to the Labels in the template. This can be done by linking a certain type of document (for instance, a CCD of XDS-MS document) to any of the Input- or Output Document Labels.

Below is an example of how this can be implemented.

Table X.2.5.1-1 Example of a specific TBR-Workflow Document

Actor	Input/Output	Document Placeholder	Optionality	Examples
Request_TBR	Input	Clinical _Documents	O O	Medical_CCD Nursing-Summary
Request_TBR	Output	Request_Document	R	TBR_ColonCa_Request
Schedule_TBR	Output	Decision_Notice	O	TBR_Decision_Note
Prepare_TBR	Output	Discussion_Thread	O	TBR-Discussion
TBR_Meeting	Output	TBR_Report	R	TBR_ColonCa_Report

X.3 Workflow Definition Actors and Options

Workflow Participants introduced in Section X.2 are expected to be supported by Workflow Definition Actors that represents abstractions of IT systems. Compliance to this workflow definition profile and its options are based on selecting the implementation of one or more of these Workflow Definition Actors.

X.3.1 Workflow Definition Actors

Table X.3.1-1 specifies the mapping of Workflow Participants to Workflow Definition Actors.

Table X.3.1-1: XTB-WD Workflow Participants grouping with Workflow Definition Actors

Workflow Participant	Workflow Definition Actor
TBR Requestor	TBR Requestor Actor
TBR Scheduler	TBR Scheduler Actor
TBR Preparer	TBR Preparer Actor
TBR Report Writer	TBR Report Writer Actor
TBR Finalizer	TBR Finalizer Actor

X.3.2 Workflow Options

Table X.3.2-1 specifies the options that are available, if any for each selected Workflow Actors.

Table X.3.2-1: XTB Profile Workflow Definition Actors and Options

XTB-WD Workflow Definition Actor	Option	Volume & Section
TBR Requestor Actor	Workflow Input-and Output	PCC TF-1: X.2.4.1
TBR Scheduler Actor	Workflow Input-and Output	PCC TF-1: X.2.4.1
TBR Preparer Actor	Workflow Input-and Output	PCC TF-1: X.2.4.1
TBR Report Writer Actor	Workflow Input-and Output	PCC TF-1: X.2.4.1
TBR Finalizer	Workflow Input-and Output	PCC TF-1: X.2.4.1

X.3.3 Workflow Definition Profile Grouping with other Profiles

This Workflow Definition Profile is intended to be combined with other IHE Profiles. The profiles that are candidates for such combinations and the associated rules are specified in this Section.

Figure X.3.3-1 presents an overview for the major classes of IHE Profiles that shall or may be grouped:

- The Workflow Definition Profile SHALL be grouped with the XDW Profile.

- The Workflow Definition Profile SHOULD be grouped with one or more Document Content Profiles matched to the input and output reference "Document Labels" in the Workflow Definition Profile (Defined in Vol.2). The Workflow Definition Profile provides only "Document Labels" for these input and output reference documents and not the actual specifications. This selection of the actual document content specification (IHE Content profiles or others), need to be made by the environment that deploys the Workflow Definition Profile.
- The Workflow Definition Profile, the XDW Profile and the selected Document Content Profiles shall be grouped as decided by the deployment environment, with the suitable Integration Profile supporting a document transport service such as XDS for Document Sharing, XDR/XDM for point-to-point directed transport, or other functionally equivalent profiles.

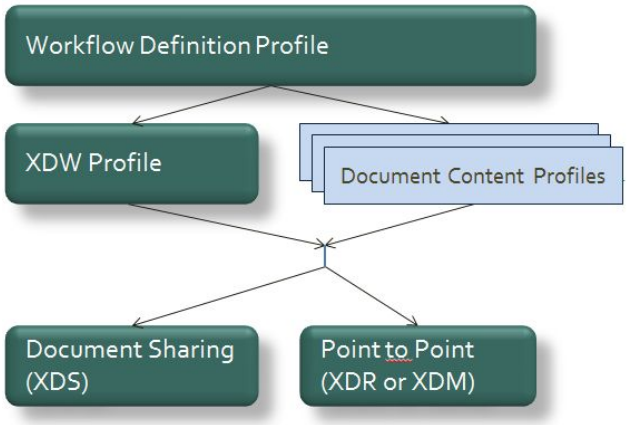

Figure X.3.3-1: Grouping of profiles

The grouping of XDW actors with each of the XTB-WD workflow definition actors is specified in Table X.3.3-1. These XDW Actors support the creation, consumption and update of the XDW workflow document which is the shared data structure which is tracking the evolution of the workflow. This allows the XTB-WD workflow definition actors, at any point in the workflow to access the most current status of the workflow and share the tasks performed with all other workflow definition actors.

Note: See IHE ITI TF-1: Section 30.3 (XDW Supplement) for other groupings that are needed for the XDW Actors to permit sharing of a Workflow Document with IHE XDS, XDR or XDM Profiles.

Table X.3.3-1: XTB-WD workflow definition actors grouping with XDW Profile Actors

Table X.3.3-1: Groupings of XTB-WD Workflow Participants and XDW actors

Workflow Definition actor	Groups with	Note
TBR Requestor Actor	XDW Content Creator XDW Content Consumer XDW Content Updater	The TBR Requestor actor shall create the XTB-WD to start the process. It also consumes and maybe updates the XTB-WD document in case of modification to the Request.
TBR Scheduler Actor	XDW Content Consumer XDW Content Updater	The TBR Scheduler actor consumes and updates the XTB-WD after validation of a TBR Request.
TBR Preparator Actor	XDW Content Consumer XDW Content Updater	The TBR Preparator actor consumes and updates the XTB-WD after adding a comment or question to the discussion thread.
TBR Report Writer Actor	XDW Content Consumer XDW Content Updater	The TBR Report writer actor consumes and updates the XTB-WD after adding the final comment or question to the discussion thread, and creating the Preliminary_TBR_Report document
TBR Finalizer Actor	XDW Content Consumer XDW Content Updater	The TBR Finalizer actor consumes and updates the XTB-WD after creating the Finalized Tumor_Board_Report and sending it to the TBR Requestor.

X.4 Security Considerations

For this section please see section ITI TF-1: 30.5.

Glossary

Add the following terms to the Glossary:

No new terms.

Volume 2 – Transactions and Content Modules

Y.1 XTB Workflow Definition - XDW Workflow Document – Common Attributes

This workflow definition profile is assigned a specific OID that shall be used to identify the workflowDefinitionReference element of a Workflow Document that tracks an XTB-WD process.

type of Workflow	Workflow Definition Reference
Tumor Board Review workflow OID	1.3.6.1.4.1.19376.1.5.3.1.5.3

The XTB-WD Workflow Definition does not introduce new metadata and all the metadata elements used are the common XDS document metadata specified in ITI TF-3:4.1.5 and in ITI TF-3:5.4.6. In this section only the use of some specific metadata for the use of XDW in the XTB-WD context is specified.

XDS Metadata Attribute	Definition
typeCode	For the Workflow Document which tracks the XTB-WD process the code for the typeCode shall be: XX_TB-WD (still to be decided by LOINC)
classCode	For the Workflow Document which tracks the XTB-WD process the code for the classCode is defined by the XDW profile. the ClassCode shall be: as specified in the XDW Profile
eventCodeList	**Rule 1:** An XTB-WD workflow shall be created with code OPEN and shall remain in this status until it is set to CLOSED. **Rule 2:** An XTB-WD workflow should be set to CLOSED when: - one of the tasks has the status FAILED; or - when you complete the workflow with the Finalize TBR task in status COMPLETED. See ITI TF-3: 5.4.5.7 for a general description of this attribute.
serviceStartTime	It is the time at which work began on the first task for this workflow.
serviceStopTime	It is the time at which the status of the overall Workflow is changed from OPEN to CLOSED. It shall be empty when the workflow is still in OPEN state.

Y.2 XDW Workflow Content Modules

The main instrument of the Cross-enterprise Tumor Board Workflow Definition Profile is the Workflow Document defined in the XDW Profile. This document does not include clinical information about the patient directly. It shall only contain information necessary for organizing and defining work tasks. All clinical information regarding any task shall be provided through separate documents that are referenced from the associated input or output documents.

Detailed knowledge of the Cross-enterprise Document Workflow (XDW) profile is indispensable in understanding the following sections. For more detailed, refer to ITI TF-3: 5.4.

Y.3 Task Specifications

In the WS-Human Task specification, these are the allowed Task statuses:

CREATED	The Task is defined, but not active (yet)
READY	The Task is ready to be picked up by an owner
RESERVED	(not used in this profile)
IN_PROGRESS	The Task has been picked up by an owner, but has not been finished yet
SUSPENDED	(not used in this profile)
COMPLETED	The Task has been performed
FAILED	The Task has failed
ERROR	(not used in this profile)
EXITED	(not used in this profile)
OBSOLETE	(not used in this profile)

In the XTB-WD Profile, the following statuses are used: CREATED, READY, IN_PROGRESS, COMPLETED and FAILED. The role of the different statuses is explained below.

Status CREATED

In order to see the different tasks in a care pathway, including the ones that are in the future, some (or all) of the tasks in a workflow definition can be present at the beginning of the workflow. The tasks that are in the future can be given the status ‘CREATED’, which means that the workflow is defined, but has not started yet.

Status READY

When a Task has been completed by a Task Owner, he/she can update the XDW-document in the following manner: the status of the current Task is set to COMPLETED, and the status of the next Task is set to READY. This status can be used as a trigger for the Owner of the next Task. When the Owner of the next Task picks up the Task, the status of that Task can be switched to IN_PROGRESS.

Status COMPLETED

The Owner of a certain Task has finished the Task. If there are Required Output Documents; these should be present. If there is a validation system in place, the COMPLETED status can act as a trigger to validate that the Task fulfills the requirements of that Task

Status FAILED

This status is used to indicate that a Task has not been performed. This status can be used to show where a workflow has been stopped.

Below are the specifications of the Tasks and their possible task statuses in the XTB-WD Profile:

Table Y.3-1: Cross-enterprise Tumor Board Workflow Definition Task Specifications

Task Type	Requirement For task initiation	Task Statuses *valid when task initiated	Task property	Input docs	Option	Output docs	Option
Request_TBR	At XDW doc creation	CREATED* READY* IN_PROGRESS* COMPLETED* FAILED	Cardinality: 1..1 Removable: no	Clinical_Documents	O	Request_Document	R
Schedule_TBR	When Request TBR is completed	CREATED* READY* IN_PROGRESS* COMPLETED* FAILED*	Cardinality: 1..1 Removable: no	Request_Document	O	Decision_Note	O
Prepare_TBR	When Schedule TBR is completed	CREATED* READY* IN_PROGRESS* COMPLETED* FAILED*	Cardinality: 1..1 Removable: no	(all_documents)	O	Discussion_Thread	O
TBR_Meeting	When Prepare TBR is completed	CREATED* READY* IN_PROGRESS* COMPLETED* FAILED*	Cardinality: 1..1 Removable: no	(all_documents)	O	Preliminary_TBR_Report	R
Finalize_TBR	When TBR Meeting is completed	CREATED* READY* IN_PROGRESS* COMPLETED* FAILED*	Cardinality: 1..1 Removable: no	Preliminary_TBR_Report	O	Tumor_Board_Report	R

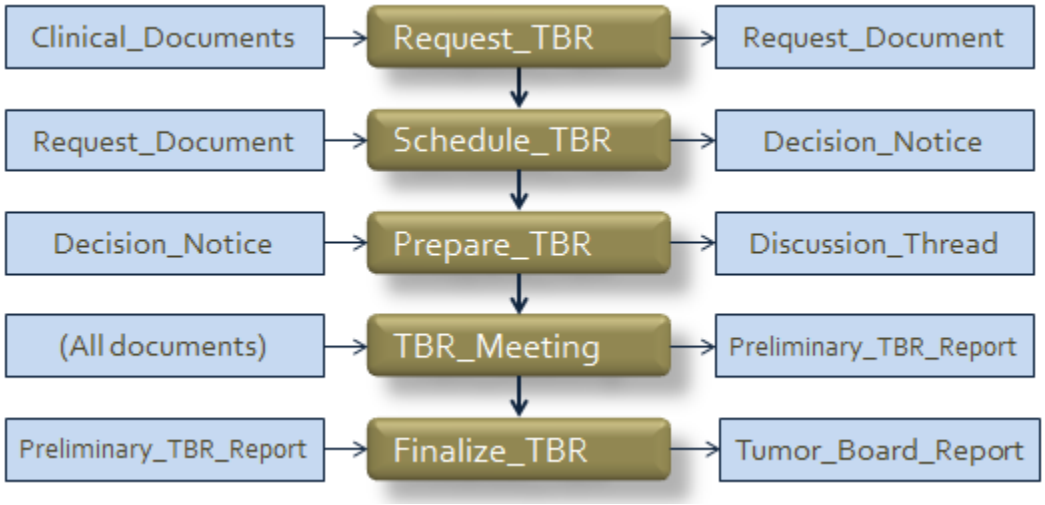

Figure Y.3-1: Overview of the different tasks

In this section we define rules and constraints for the creation of the XDW Workflow Document related to the Tumor Board Review process. These rules are necessary to manage transition between tasks. For each task are defined:

- The task attributes: ID, name, type description;
- The sequence of the tasks: the previous and the next task;
- Who is allowed to create each task and to change the status;
- The task event;
- The input and output documents.

The rules in the workflow definition ensure that the different participants in a workflow operate jointly to advance within tasks and to move from one task to another in a consistent way.

Y.3.1 Task: Request_TBR

Table Y.3.1-1: Request_TBR Task Rules

Task attributes	Rules for the task "Request_TBR"
Task id	Unique id of the instance of the task
Task Type	**Request_TBR**

<table>
<tr><th>Task attributes</th><th>Rules for the task “Request_TBR”</th></tr>
<tr><td>Task Name</td><td>Request Tumor Board Review</td></tr>
<tr><td>Task Description</td><td>A tumor board review meeting for a patient is requested by the organizer.</td></tr>
<tr><td>Task Dependencies</td><td>Ancestors: None
Successors: Schedule_TBR</td></tr>
<tr><td>Status Allowed</td><td>CREATED
Task ‘Request_TBR’ is created, but it is not active yet.

READY
Task ‘Request_TBR’ is ready to be picked up by a Task Owner

IN_PROGRESS
The Owner of the Task ‘Request_TBR’ has picked up the Task, but has not finished yet.

COMPLETED
Task ‘Request_TBR’ is completed.

FAILED
Task ‘Request_TBR’ has been revoked by the requestor.</td></tr>
<tr><td>Status Transactions (*)</td><td>From CREATED or READY or IN_PROGRESS to COMPLETED or FAILED
<table>
<tr><th>Initial Status</th><th>Final Status</th><th>eventType</th></tr>
<tr><td>None</td><td>CREATED</td><td>create</td></tr>
<tr><td>None</td><td>READY</td><td>create</td></tr>
<tr><td>None</td><td>IN_PROGRESS</td><td>create</td></tr>
<tr><td>None</td><td>COMPLETED</td><td>create</td></tr>
<tr><td>None</td><td>FAILED</td><td>fail</td></tr>
</table></td></tr>
<tr><td>Input</td><td>• Required
o All relevant documents for the understanding of the case.</td></tr>
<tr><td>Output</td><td>• Required
o Request_Document.
• Optional
o CCD Document or CDA Content Module document
o Any other relevant document</td></tr>
<tr><td>Owner</td><td>TBR_Requestor</td></tr>
<tr><td>Owner Changes</td><td>No</td></tr>
<tr><td><TaskEvent></td><td>Only one</td></tr>
</table>

Task attributes	Rules for the task "Request_TBR"
Task Removal Allowed	No
Task Duplication	No

(*) The element eventType stores the type of event that produces the change in the task status. In the "Status transactions" we want to associate the specific type of event to the status transaction that is produced. For further details on eventType element see the XDW profile.

Y.3.2 Task: Schedule_TBR

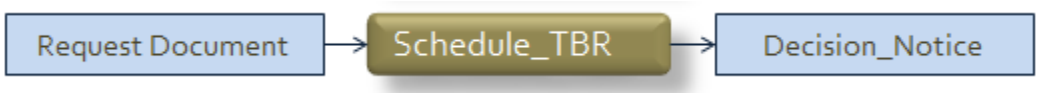

Table Y.3.2-1: Schedule_TBR Task Rules

Task attributes	Rules for the task "Schedule_TBR"
Task id	Unique id of the instance of the task
Task type	**Schedule_TBR**
Task name	Schedule Tumor Board Review
Task description	Scheduling the patients for a certain Tumor Board Review Meeting.
Task dependencies	Ancestors: Request_TBR Successors: Prepare_TBR
Status allowed	**CREATED** Task 'Schedule_TBR' is created, but it is not active yet. **READY** Task 'Schedule_TBR' is ready to be picked up by a Task Owner **IN_PROGRESS** Task 'Schedule_TBR' is being performed by the Owner, but not finished yet. **COMPLETED** Task 'Schedule_TBR' shall be set to COMPLETED when the request for a Tumor Board Review is accepted by the task owner. **FAILED** Task 'Schedule_TBR' shall be set to FAILED when the request for a Tumor Board Review is rejected by the task owner.

<table>
<tr><th>Task attributes</th><th>Rules for the task “Schedule_TBR”</th></tr>
<tr><td>Status transactions</td><td>From CREATED or READY or IN_PROGRESS to COMPLETED or FAILED
<table>
<tr><th>Initial Status</th><th>Final Status</th><th>eventType</th></tr>
<tr><td>None</td><td>CREATED</td><td>create</td></tr>
<tr><td>None</td><td>READY</td><td>create</td></tr>
<tr><td>None</td><td>IN_PROGRESS</td><td>create</td></tr>
<tr><td>None</td><td>COMPLETED</td><td>create</td></tr>
<tr><td>None</td><td>FAILED</td><td>fail</td></tr>
</table></td></tr>
<tr><td>Input</td><td>• Required
o Request_Document.</td></tr>
<tr><td>Output</td><td>• Required
o Decision_Note.</td></tr>
<tr><td>Owner</td><td>TBR_Scheduler</td></tr>
<tr><td>Owner changes</td><td>No</td></tr>
<tr><td><taskEvent></td><td>Only one</td></tr>
<tr><td>Task Removal Allowed</td><td>No</td></tr>
<tr><td>Task Duplication</td><td>No</td></tr>
</table>

Y.3.3 Task: Prepare_TBR

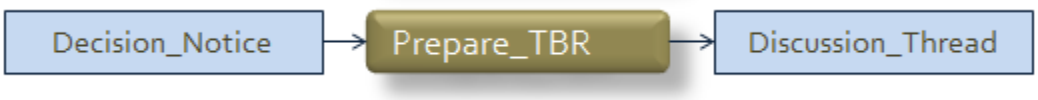

Table Y.3.3-1: Prepare_TBR Task Rules

Task attributes	Rules for the task “Prepare_TBR”
Task id	Unique id of the instance of the task
Task type	**Prepare_TBR**
Task name	Prepare Tumor Board Review
Task description	TBR preparation by (individual) participants is made.
Task dependencies	Ancestors: Schedule_TBR Successors: TBR_Meeting
Status allowed	**CREATED** Task ‘Prepare_TBR’ is created, but it is not active yet.

<table>
<tr><th>Task attributes</th><th>Rules for the task “Prepare_TBR”</th></tr>
<tr><td></td><td>READY
Task ‘Prepare _TBR’ is ready to be picked up by a Task Owner

IN_PROGRESS
The Owner of the Task ‘Prepare_TBR’ is being performed by the Owner, but not finished yet.

COMPLETED
Task ‘Prepare_TBR’ shall be set to COMPLETED when all relevant preparation work is done before the TBR Meeting.

FAILED
Task ‘Prepare_TBR’ shall be set to FAILED when a review of this patient for the TBR Meeting is cancelled in this phase.</td></tr>
<tr><td>Status transactions</td><td>From CREATED or READY or IN_PROGRESS to COMPLETED or FAILED
<table>
<tr><th>Initial Status</th><th>Final Status</th><th>eventType</th></tr>
<tr><td>None</td><td>CREATED</td><td>create</td></tr>
<tr><td>None</td><td>READY</td><td>create</td></tr>
<tr><td>None</td><td>IN_PROGRESS</td><td>create</td></tr>
<tr><td>None</td><td>COMPLETED</td><td>create</td></tr>
<tr><td>None</td><td>FAILED</td><td>fail</td></tr>
</table></td></tr>
<tr><td>Input</td><td>• Required
o Decision_Note</td></tr>
<tr><td>Output</td><td>• Optional
o Extra documents necessary for the case.</td></tr>
<tr><td>Owner</td><td>TBR_Preparer(s)</td></tr>
<tr><td>Owner changes</td><td>Yes
The owner may change; different participants may add information necessary for the TBR.</td></tr>
<tr><td><taskEvent></td><td>At least one</td></tr>
<tr><td>Task Removal Allowed</td><td>No</td></tr>
<tr><td>Task Duplication</td><td>No</td></tr>
</table>

640

Y.3.4 Task TBR_Meeting

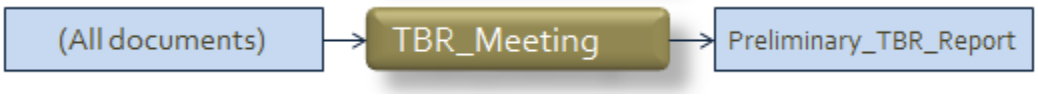

Table Y.3.4-1: TBR_Meeting Task Rules

Task attributes	Rules for the task "TBR_Meeting"
Task id	Unique id of the instance of the task
Task type	**TBR_Meeting**
Task name	Tumor Board Review Meeting
Task description	TBR Meeting with input from relevant participants.
Task dependencies	Ancestors: Prepare_TBR Successors: Finalize_TBR
Status allowed	**CREATED** Task 'TBR_Meeting' is created, but it is not active yet. **READY** Task 'TBR_Meeting' is ready to be picked up by a Task Owner **CREATED** Task 'TBR_Meeting' is created, but the Owner has not started the Task yet **IN_PROGRESS** Task 'TBR_Meeting' is being performed by the Owner(s), but not finished yet. **COMPLETED** Task 'TBR_Meeting' shall be set to COMPLETED when the patient has been discussed during the TBR Meeting. **FAILED** Task 'TBR_Meeting' shall be set to FAILED when a review of this patient during the TBR Meeting has been cancelled.
Status transactions	From **CREATED** or **READY** or **IN_PROGRESS** to **COMPLETED** or **FAILED**

Initial Status	Final Status	eventType
None	CREATED	create
None	READY	create
None	IN_PROGRESS	create
None	COMPLETED	create

Task attributes	Rules for the task "TBR_Meeting"
	None / FAILED / fail
Input	• Required ○ (All relevant documents for the TBR Meeting)
output	• Required ○ Preliminary_TBR_Report
owner	Chairman of the Tumor Board
Owner changes	No
<taskEvent>	At least one
Task Removal Allowed	No
Task Duplication	No

Y.3.5 Task Finalize_TBR

Table Y.3.5-1: Finalize_TBR Task Rules

Task attributes	Rules for the task "Finalize_TBR"
Task id	Unique id of the instance of the task
Task type	**Finalize_TBR**
Task name	Finalize Tumor Board Review
Task description	Finalize the Tumor Board Report
Task dependencies	Ancestors: TBR_Meeting Successors: None
Status allowed	**CREATED** Task 'Finalize_TBR' is created, but it is not active yet. **READY** Task 'Finalize_TBR' is ready to be picked up by a Task Owner **IN_PROGRESS** Task 'Finalize_TBR' is being performed by the Owner, but not finished yet.

<table>
<tr><th>Task attributes</th><th>Rules for the task “Finalize_TBR”</th></tr>
<tr><td></td><td>COMPLETED
Task ‘Finalize_TBR’ shall be set to COMPLETED when the TBR Report has been completed, validated and is sent to the designated recipients.

FAILED
Task ‘Finalize_TBR’ shall be set to FAILED when the TBR Report has not been created or has not been approved, and will not be approved in the future.</td></tr>
<tr><td>Status transactions</td><td>From CREATED or READY or IN_PROGRESS to COMPLETED or FAILED
<table>
<tr><th>Initial Status</th><th>Final Status</th><th>eventType</th></tr>
<tr><td>None</td><td>CREATED</td><td>create</td></tr>
<tr><td>None</td><td>READY</td><td>create</td></tr>
<tr><td>None</td><td>IN_PROGRESS</td><td>create</td></tr>
<tr><td>None</td><td>COMPLETED</td><td>create</td></tr>
<tr><td>None</td><td>FAILED</td><td>fail</td></tr>
</table></td></tr>
<tr><td>Input</td><td>• Required
o Preliminary_TBR_Report</td></tr>
<tr><td>output</td><td>• Required
o Tumor_Board_Report</td></tr>
<tr><td>owner</td><td>Chairman of the TBR.</td></tr>
<tr><td>Owner changes</td><td>No</td></tr>
<tr><td><taskEvent></td><td>At least one</td></tr>
<tr><td>Task Removal Allowed</td><td>No</td></tr>
<tr><td>Task Duplication</td><td>No</td></tr>
</table>

Y.4 Input- and output documents

650 The WS-Human Task element that permits to store the reference of an object in input or output sections is described in IHE ITI TF-3:5.4.3

In table Y.4-1 we define the kind of document involved in the tumor board process. For each type of document, this table defines the Documents Labels of the document. This Label describes the function or the role that the document performs in the course of the process or during the
655 execution of a task, and defines the type of information conveyed and expected by the owner of the task.

Table Y.4-1 Document Labels involved in the XTB-WD process

Document Label	Examples of actual document
Clinical Documents	CCD / XDS-MS, X-thorax, Pathology report
Request Document	Request for Tumor Board Review document
Decision Note	Appointment confirmation, rejection-note
Discussion thread	Document with all discussed texts
TBR Report	End-result of the workflow, finalized Tumor Board Report
Cancellation Notification	Document explaining the reason for a failed task or failed workflow

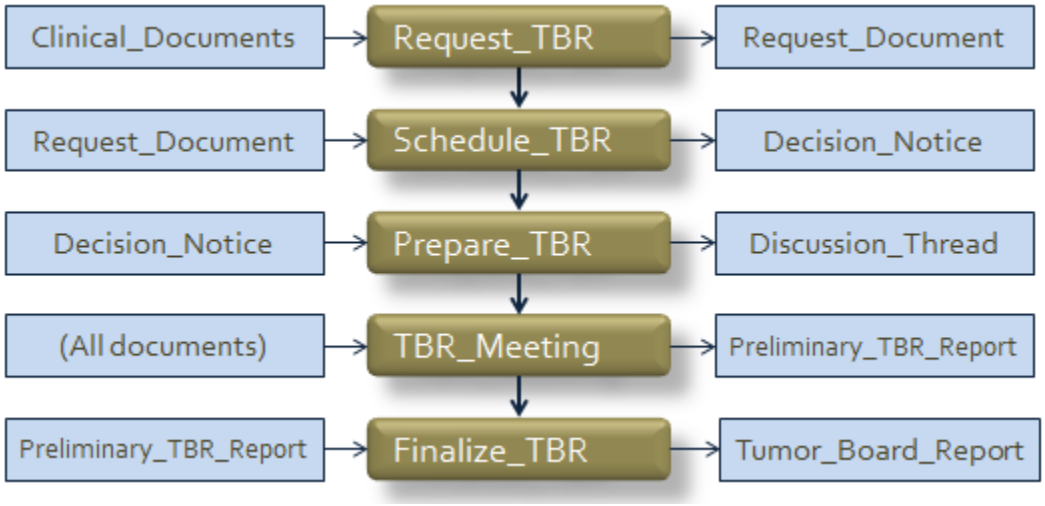

Figure Y.4-1: Overview of the different tasks

Appendix A - Complete XML example

In this appendix we present a complete example for the Workflow Document at the end of the XTB process.

665

```
<?xml version="1.0" encoding="UTF-8"?>
<ns3:XDW.WorkflowDocument
    xmlns:ns1="urn:hl7-org:v3"
    xmlns:ns2="http://docs.oasis-open.org/ns/bpel4people/ws-humantask/types/200803"
    xmlns:ns3="urn:ihe:iti:2011:xdw"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="urn:ihe:iti:2011:xdw file:C: XDW-2011-09-13.xsd">
   <ns3:id root="1.2.3.4.5"/>
   <ns3:effectiveTime value="20110401031520"/>
   <ns3:confidentialityCode code="1.24.3.3.3"/>
   <ns3:patient>
      <ns3:id root="1.3.6.1.4.1.21367.13.20.1000" extension="33333"
      assigningAuthorityName="IHERED"/>
   </ns3:patient>
   <ns3:author>
      <ns3:assignedPerson>
          <ns1:name>
              <ns1:family>Brum</ns1:family>
              <ns1:prefix>Dr.</ns1:prefix>
          </ns1:name>
      </ns3:assignedPerson>
  </ns3:author>
  <ns3:workflowInstanceID>urn:oid:1.2.3.4</ns3:workflowInstanceID>
  <ns3:workflowDocumentSequenceNumber>3</ns3:workflowDocumentSequenceNumber>
  <ns3:workflowStatus>CLOSED</ns3:workflowStatus>
  <ns3:workflowStatusHistory>
      <ns3:documentEvent>
         <ns3:eventTime>2006-05-04T18:13:51.0Z</ns2:eventTime>
         <ns3:eventType>create</ns2:eventType>
         <ns3:taskEventIdentifier>urn:oid:1.1.1.1.4</ns2:taskEventIdentifier>
         <ns3:author>Mr. Rossi</ns2:author >
         <ns3:previousStatus></ns2:previousStatus>
         <ns3:actualStatus>OPEN</ns2:actualStatus>
      </ns3:documentEvent>
```

```
      <ns3:documentEvent>
         <ns3:eventTime>2006-05-07T09:53:45.0Z</ns2:eventTime>
         <ns3:eventType>complete</ns2:eventType>
         <ns3:taskEventIdentifier>urn:oid:1.1.1.1.7</ns2:taskEventIdentifier>
         <ns3:author>Dr. Brum</ns2:author >
         <ns3:previousStatus>OPEN</ns2:previousStatus>
         <ns3:actualStatus>CLOSED</ns2:actualStatus>
      </ns3:documentEvent>
   </ns3:workflowStatusHistory>
xxx - what to do here with the oid?
<ns3:workflowDefinitionReference>urn:oid:
1.3.6.1.4.1.19376.1.5.3.1.5.3</ns3:workflowDefinitionReference>
<ns3:TaskList>
   <ns3:XDWTask>
       <ns3:taskData>
              <ns3:taskDetails>
                     <ns2:id>urn:oid:1.1.1.2.1</ns2:id>
                     <ns2:taskType>REQUEST_TBR</ns2:taskType>
                     <ns2:name>Request Tumor Board Review</ns2:name>
                     <ns2:status>COMPLETED</ns2:status>
                      <ns2:createdTime>2006-05-04T18:13:51.0Z</ns2:createdTime>
                      <ns2:lastModifiedTime>2006-05-04T18:13:51.0Z</ns2:lastModifiedTime>
                     <ns2:renderingMethodExists>false</ns2:renderingMethodExists>
                     <ns2:actualOwner>Dr. Rossi</ns2:actualOwner>
                     <ns2:createdBy>Dr. Rossi</ns2createdBy>
              </ns3:taskDetails>
              <ns2:description>code for the type of visit requested</ns2:description>
              <ns3:taskInput>
                     <ns3:documentReference>              <!--Lab Report-->
                     <ns2:identifier>urn:oid:1.2.3.4.1</ns2:identifier>
                      <ns2:name>Laboratory Report</ns2:name>
                  </ns3:documentReference>
              </ns3:taskInput>
              <ns3:taskOutput>
                     <ns3:documentReference>            <!—XTB-WD Request Document-->
                     <ns2:identifier>urn:oid:1.2.3.4.2</ns2:identifier>
                      <ns2:name>Request document 1</ns2:name>
                  </ns3:documentReference>
              </ns3:taskOutput>
```

```
        </ns3:taskData>
        <ns3:taskEventHistory>
                <ns3:taskEvent>
                        <ns3:id>1</ns3:id>
                        <ns3:eventTime>2006-05-04T18:13:51.0Z</ns3:eventTime>
                        <ns3:identifier>urn:oid:1.1.1.2.2.1</ns3:identifier>
                        <ns3:eventType>create</ns3:eventType>
                        <ns3:status>COMPLETED</ns3:status>
                </ns3:taskEvent>
        </ns3:taskEventHistory>
    </ns3:XDWTask>
    <ns3:XDWTask>
        <ns3:taskData>
                <ns3:taskDetails>
                        <ns2:id>urn:oid:1.1.1.2.2</ns2:id>
                        <ns2:taskType>SCHEDULE_TBR</ns2:taskType>
                        <ns2:name>Schedule Tumor Board Review</ns2:name>
                        <ns2:status>COMPLETED</ns2:status>
                        <ns2:createdTime>2006-05-05T08:53:45.0Z</ns2:createdTime>
                        <ns2:lastModifiedTime>2006-05-05T08:53:45.0Z</ns2:lastModifiedTime>
                        <ns2:renderingMethodExists>false</ns2:renderingMethodExists>
                        <ns2:actualOwner>HIS</ns2:actualOwner>
                        <ns2:createdBy>HIS</ns2:createdBy>
                </ns3:taskDetails>
                <ns3:description>code for the type of visit booked and visit
info</ns3:description>
                <ns3:taskInput>
                       <ns3:documentReference>           <!--Request Document-->
                        <ns2:identifier>urn:oid:1.2.3.4.2</ns2:identifier>
                         <ns2:name>Request Document</ns2:name>
                    </ns3:documentReference>
                </ns3:taskInput>
                <ns3:taskOutput>
                       <ns3:documentReference>     <!--Clinical Report-->
                        <ns2:identifier>urn:oid:1.2.3.4.3</ns2:identifier>
                        <ns2:name>Decision Note</ns2:name>
                    </ns3:documentReference>
                </ns3:taskOutput>
        </ns3:taskData>
```

```
      <ns3:taskEventHistory>
            <ns3:taskEvent>
                  <ns3:id>1</ns3:id>
                  <ns3:eventTime>2006-05-05T08:53:45.0Z</ns3:eventTime>
                  <ns3:identifier>urn:oid:1.1.1.2.2.2</ns3:identifier>
                  <ns3:eventType>create</ns3:eventType>
                  <ns3:status>COMPLETED</ns3:status>
            </ns3:taskEvent>
      </ns3:taskEventHistory>
</ns3:XDWTask>
<ns3:XDWTask>
      <ns3:taskData>
            <ns3:taskDetails>
                  <ns2:id>urn:oid:1.1.1.2.3</ns2:id>
                  <ns2:taskType>PREPARE_TBR</ns2:taskType>
                  <ns2:name>Prepare Tumor Board Review</ns2:name>

                  <ns2:status>COMPLETED</ns2:status>
                  <ns2:createdTime>2006-05-07T08:50:00.0Z</ns2:createdTime>
                  <ns2:lastModifiedTime>2006-05-07T09:53:45.0Z</ns2:lastModifiedTime>
                  <ns2:renderingMethodExists>false</ns2:renderingMethodExists>
                  <ns2:actualOwner>Dr. Brum</ns2:actualOwner>
                  <ns2:createdBy>HIS</ns2:createdBy>
            </ns3:taskDetails>
            <ns3:description>code for the type of visit</ns3:description>
            <ns3:taskInput>
                  <ns3:documentReference>     <!—XTB-WD Input Document Document-->
                  <ns2:identifier>urn:oid:1.2.3.4.4</ns2:identifier>
                  <ns2:name>Decision Note</ns2:name>
                </ns3:documentReference>
            </ns3:taskInput>
            <ns3:taskOutput>
                  <ns3:documentReference>     <!--Clinical Report-->
                  <ns2:identifier>urn:oid:1.2.3.4.5</ns2:identifier>
                  <ns2:name>Clinical Texts</ns2:name>
                </ns3:documentReference>
            </ns3:taskOutput>
      </ns3:taskData>
      <ns3:taskEventHistory>
```

```
                <ns3:taskEvent>
                        <ns3:id>3</ns3:id>
                        <ns3:eventTime>2006-05-07T08:50:00.0Z</ns3:eventTime>
                        <ns3:identifier>urn:oid:1.1.1.2.2.3</ns3:identifier>
                       <ns3:eventType>create</ns3:eventType>
                        <ns3:status>IN_PROGRESS</ns3:status>
                        <ns3:startOwner>HIS</ns3:startOwner>
                        <ns3:endOwner>Dr. Brum</ns3:endOwner>
                </ns3:taskEvent>
                <ns3:taskEvent>
                        <ns3:id>4</ns3:id>
                        <ns3:eventTime>2006-05-07T09:53:45.0Z</ns3:eventTime>
                        <ns3:identifier>urn:oid:1.1.1.2.2.4</ns3:identifier>
                        <ns3:eventType>create</ns3:eventType>
                        <ns3:status>COMPLETED</ns3:status>
                </ns3:taskEvent>
        </ns3:taskEventHistory>
  </ns3:XDWTask>
  <ns3:XDWTask>
        <ns3:taskData>
                <ns3:taskDetails>
                        <ns2:id>urn:oid:1.1.1.2.4</ns2:id>
                        <ns2:taskType>TBR_MEETING</ns2:taskType>
                        <ns2:name> Tumor Board Review Meeting</ns2:name>
                        <ns2:status>COMPLETED</ns2:status>
                        <ns2:createdTime>2006-05-05T08:53:45.0Z</ns2:createdTime>
                        <ns2:lastModifiedTime>2006-05-05T08:53:45.0Z</ns2:lastModifiedTime>
                        <ns2:renderingMethodExists>false</ns2:renderingMethodExists>
                        <ns2:actualOwner>HIS</ns2:actualOwner>
                        <ns2:createdBy>HIS</ns2:createdBy>
                </ns3:taskDetails>
                <ns3:description>code for the type of visit booked and visit
info</ns3:description>
                <ns3:taskOutput>
                       <ns3:documentReference>     <!--Clinical Report-->
                        <ns2:identifier>urn:oid:1.2.3.4.6</ns2:identifier>
                        <ns2:name>TBR Report_unvalidated</ns2:name>
                    </ns3:documentReference>
                </ns3:taskOutput>
```

```
        </ns3:taskData>
        <ns3:taskEventHistory>
                <ns3:taskEvent>
                        <ns3:id>5</ns3:id>
                        <ns3:eventTime>2006-05-05T08:53:45.0Z</ns3:eventTime>
                        <ns3:identifier>urn:oid:1.1.1.2.2.5</ns3:identifier>
                        <ns3:eventType>create</ns3:eventType>
                        <ns3:status>COMPLETED</ns3:status>
                </ns3:taskEvent>
        </ns3:taskEventHistory>
  </ns3:XDWTask>
  <ns3:XDWTask>
        <ns3:taskData>
                <ns3:taskDetails>
                        <ns2:id>urn:oid:1.1.1.2.5</ns2:id>
                        <ns2:taskType>FINALIZE_TBR</ns2:taskType>
                        <ns2:name>Finalize Tumor Board Review Report</ns2:name>
                        <ns2:status>COMPLETED</ns2:status>
                        <ns2:createdTime>2006-05-05T08:53:45.0Z</ns2:createdTime>
                        <ns2:lastModifiedTime>2006-05-05T08:53:45.0Z</ns2:lastModifiedTime>
                        <ns2:renderingMethodExists>false</ns2:renderingMethodExists>
                        <ns2:actualOwner>HIS</ns2:actualOwner>
                        <ns2:createdBy>HIS</ns2:createdBy>
                </ns3:taskDetails>
                <ns3:description>code for the type of visit booked and visit
info</ns3:description>
                <ns3:taskInput>
                       <ns3:documentReference>           <!—XTB-WD Document-->
                        <ns2:identifier>urn:oid:1.2.3.4.7</ns2:identifier>
                         <ns2:name> TBR Report_unvalidated</ns2:name>
                    </ns3:documentReference>
                </ns3:taskInput>
                <ns3:taskOutput>
                       <ns3:documentReference>     <!--Clinical Report-->
                        <ns2:identifier>urn:oid:1.2.3.4.8</ns2:identifier>
                        <ns2:name>Finalized TBRReport</ns2:name>
                    </ns3:documentReference>
                </ns3:taskOutput>
        </ns3:taskData>
```

```
        <ns3:taskEventHistory>
                <ns3:taskEvent>
                        <ns3:id>6</ns3:id>
                        <ns3:eventTime>2006-05-05T08:53:45.0Z</ns3:eventTime>
                        <ns3:identifier>urn:oid:1.1.1.2.2.6</ns3:identifier>
                        <ns3:eventType>create</ns3:eventType>
                        <ns3:status>COMPLETED</ns3:status>
                </ns3:taskEvent>
        </ns3:taskEventHistory>
  </ns3:XDWTask>
 </ns3:TaskList>
</ns3:XDW.WorkflowDocument>
```