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1 Summary

Deliverable 1.7 contains the final specification of *Process Building Blocks (PBB)* identified and evaluated within Work Package 1. First the approach for identification and construction of *PBB* will be presented. This approach bases upon a generalisation and extraction of *Activities* (represented by a verb) out of common descriptions of activities, functions or tasks. In that way the identified heterogeneity of process modelling within European Public Administrations will be harmonised. This enables distributed modelling projects by defining a similar and comparable level of abstraction and detail.

However in order to measure the value of ICT support within organisation spanning processes further information is needed. That information can be gathered by *PBB* related *Attributes*. *Attributes* in that context specialise the previously generalised *PBB* and provide a potential opportunity to dynamically control the modelling process. Three general *Attributes* have been defined:

- *Processed Objects* (describing the information or document used to perform a specific *Activity*)
- *Responsibility* (describing the organisational unit which is responsible for performing an *Activity*)
- *Supporting Elements* (describing elements that are necessary to perform an *Activity*, e.g. existing Information Systems, check lists or catalogues)

Especially *Processed Objects* are quite important because they contain own *Attributes* as well. Thus, the identified set of *Attributes* has to be divided into two categories:

- *Attributes* that describe a *PBB*
- *Attributes* that describe a *Processed Object*

Besides the final specification of 37 *PBB* (which is within the expected range of 25 to 40 *PBB*) this document contains a first set of 25 *Attributes* including brief descriptions and (wherever possible) potential values. With these the construction of comprehensive and goal-oriented Process Building Blocks is possible, e.g. "The official in charge, Mr. X, sends the (paper-based) approval (consisting of two pages at an average) within three weeks by mail to the applicant.", "The approval is produced by a template based business application." or "The medium of the document changes from electronical into paper-based by printing (which causes a media break) because it has to be signed by hand." and so on.

Additionally this specification mentions various dependencies between *PBB*, *Attributes* and values. Those dependencies are an important basis for the development of a rule base within subsequent Work Packages. Such a rule base will significantly enhance the quality of resulting models because users will be dynamically guided and the plausibility checks can be performed.

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2 Approach for Identification and Construction of Process Building Blocks

First source to identify appropriate *Process Building Blocks (PBB)* was the collection of process models in the partner cities. This task was part of the state-of-the-art analysis and is documented in deliverable 1.1. Additionally for deliverable 1.2 specific administrative processes have been selected and documented in new process models. So there was a reasonable basis of process models for the further activities of analysis.

Within the analysis of process models the different typical *Activities* have been extracted and consolidated to a "*Pool of Process Activities*". Thereby we identified two main problems. The first problem concerns the heterogeneity of these blocks. Neither the levels of detail or abstraction nor the naming and meaning of the *Activities* were comparable and consistent. For example some *Activities* are modelled by *Tasks* or *Functions*, other *Activities* are described by *Organisational Units* or a *Document Flow*. The second problem is the high number of different *Activities*. The subsequent examples illustrate this problem.

- "Receive an Application"
- "Receive a Document"
- "Receive an eMail"
- "Answer the Phone"
- "Get an Information"
- "Accept an Application Form"
- "Incoming Application Form"
- "Mail Receipt"
- "Post Office"
- etc.

Each of these *Activities* concerns the receiving of an electronic or paper-based document or other information by different mediums. So first we tried to harmonise the *PBB* but even in doing so, a quite large number of *PBB* remained (e.g. "Receive an email", "Receive a document", etc.).

Trying to solve this problem and following an idea of Klaus Lang¹ we generalised frequently used *PBB* by separating the actual *Activity* (represented by a verb). Afterwards we identified relevant *Attributes* that specify the *Activity* in more detail.

¹ Lang, Klaus: *Gestaltung von Geschäftsprozessen mit Referenzprozessbausteinen*, Dissertation der Universität Erlangen-Nürnberg, Gabler, Wiesbaden 1997, page 31 et sqq.

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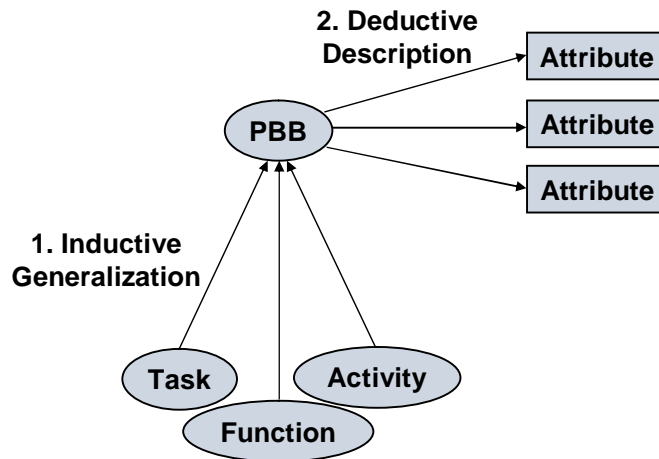


Fig. 1: Approach to identify Process Building Blocks (PBB)

In combination with a standardisation of the *Activities* (levels of detail and abstraction as well as naming) this approach enables a reduction of the *PBB* to 35 blocks which is within the expected range of 25 to 40 blocks (see the "Description of Work", page 62). These *PBB* have been evaluated at several workshops. During the two evaluation periods new *PBB* have been identified and existing *PBB* have been confirmed, rejected or changed. Thus, the final specification is verified by end users.

However the *Activities* are not sufficient to appropriately describe a process landscape. In order to gather information about organisational interfaces, media breaks, process costs or other relevant measurement parameters of the PICTURE method, necessary *Attributes* had to be identified. One of the most important *Attributes* is the so called *Processed Object*. A *Processed Object* describes the information, document, message or any other object that is processed by the corresponding *Activity*. The next figure explains this structure with an example.

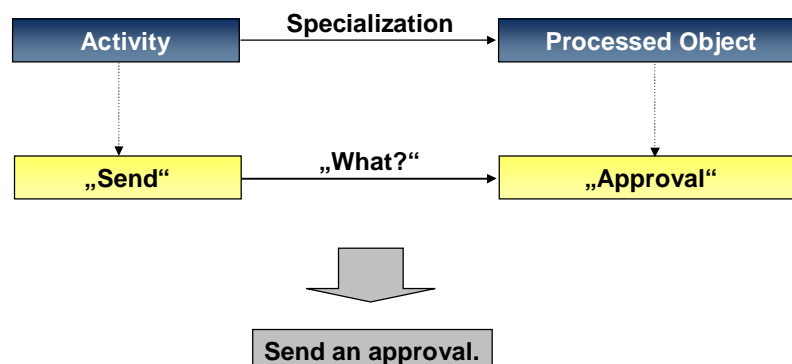


Fig. 2: Structuring PBB - The Processed Object

Another *Attribute* is the organisational responsibility. In order to model procedural and organisational structures of a public administration the creation of an organisational chart could be a good start. The level of detail depends on the local preferences.

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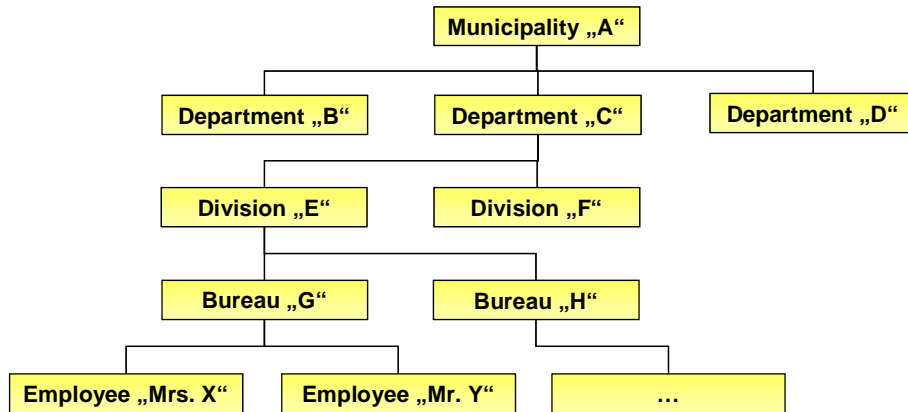


Fig. 3: Organisational Chart - (Example)

Each responsible official in charge has to model his own *Activities*. Then each of the *Activities* is assigned to his position within the organisation. If he only works in a specific sub-process the different parts can be merged later. Because of the standardised levels of detail and abstraction a distributed process modelling is enabled and a holistic view on the whole organisation will be possible. If the acquisition of information is not performed by an official in charge but by another specialist (e.g. an external consultant or an expert from the unit for organisational issues or human resources) there should be a possibility to assign other positions or units out of the organisational chart to the modelled *Activities* (depending on the level of detail).

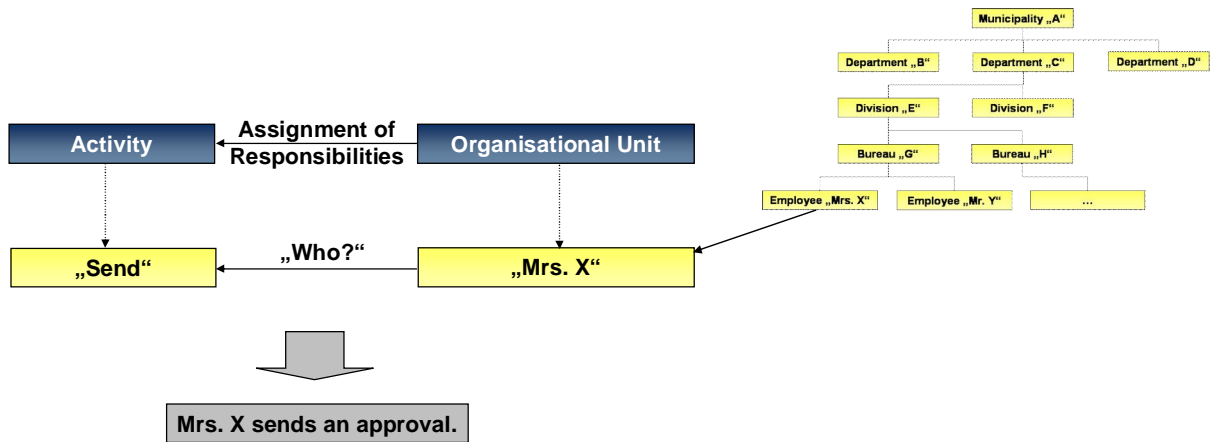


Fig. 4: Structuring PBB - The Organisational Responsibility

Besides the *Activity* its *Processed Object*, and the assignment of an *Organisational Unit* a third general *Attribute* was identified. In the same way as the organisational responsibility the *Supporting Elements* can be assigned to each PBB. *Supporting Elements* are those elements that support the *Activity*, e.g. check lists, catalogues and existing Information Systems.

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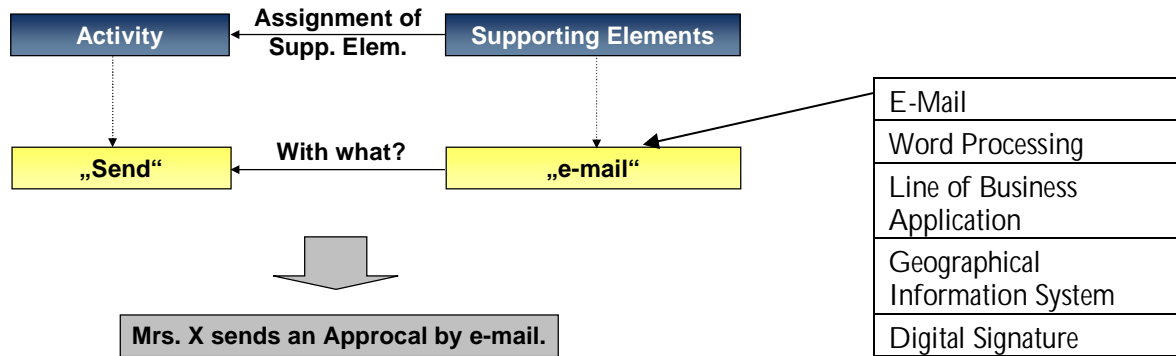


Fig. 5: Structuring PBB - The Supporting Element

For example a simple list of used applications or a more complex diagram with the application architecture could be generated before the processes are modelled. This enables the official in charge to assign supporting Information Systems to the *Activities*. Thus, technical interfaces can be identified which is another prerequisite for the methods of measurement and analysis within PICTURE.

Processed Object, Responsibility and Supporting Element have been identified as "core" *Attributes*. It is not obligatory to use *Processed Object* and *Supporting Element* for each *PBB* but they may be used for each *PBB*. In contrast to that *Responsibility* is an obligatory *Attribute*. Because of their general validity these attributes can be categorised as "*General Attributes*".

In order to establish a capable measurement methodology more *Attributes* (such as "Duration", "Medium" or "Channel") are necessary. So within Work Package 1 further *Attributes* have been identified and their values or data types are rudimentarily (not formal) defined. Those *Attributes* had to be distinguished into two kinds. The first kind of *Attributes* describes the *PBB* (the actual *Activity*) more detailed (e.g. "Duration" of an *Activity*). The second kind of *Attributes* specifies the *Processed Object* (e.g. "Medium" of a document). This differentiation is necessary to gather relevant information about processes, organisational responsibilities and interfaces, document flows and Information System support in a structured way. A detailed list of all *Attributes* can be found in Appendix A of this document. Although trying to cover the most important *Attributes* this list should not be considered as a complete specification. It is rather intended to identify more relevant *Attributes* during subsequent Work Packages, e.g. when the Measurement Methodology and the Landscaping Methodology are developed. So the catalogue must be extended continuously.

The next section contains an overview of the evaluated *Process Building Block* specification and associates potential *Attributes* of *PBB* and *Processed Objects*.

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3 Survey of Process Building Blocks and Attributes

The subsequent mindmap (*Fig. 6*) contains all evaluated Process Building Blocks. The different *PBB* are marked with different symbols:

- ✓ confirmed
- ⚠ further evaluation recommended
- 💡 newly introduced

Confirmed *PBB* (green checkmark) have been successfully evaluated. Their applicability was verified by end users. *PBB* marked with a yellow exclamation mark are not finally confirmed yet. Their relevance should be tested within further evaluation activities. Finally the bulb characterises newly introduced *PBB*. Those *PBB* should also be evaluated within further workshops.



Fig. 6. Survey of *PBB*

The *PBB* are not explained here in detail. The final specification with a detailed description of each *PBB* can be found in section 4 of this document.

There are three *PBB* that should be evaluated further. Reasons for that are mentioned within the corresponding tables in section 4. Within recent workshops additionally the necessity for three more *PBB* has been expressed by participants. In these cases and also regarding some other

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PBB there are differences between the particular levels of abstraction.² An example for that is the *PBB* "Archive" which can also be modelled more detailed by a sequence of other *PBB* such as "Receive", "Registrate", and so on. Furthermore there is some overlapping between several *PBB*. Examples for that are "Check" and "Analyse" which have nearly the same meaning but are often perceived differently by the user. However those *PBB* simplify the modelling process enhancing the intuitive comprehensibility. If we know about such overlappings it will be possible to support this issue actively, e.g. by reusing similar attributes³ or substituting the internal representation of the *PBB*. An example case is the use of "Produce" and "Send". If the *Attribute* "Medium" of the produced and sent document (*Processed Object*) has the specific value "paper-based" it has to be printed (*PBB* "Print") before it is sent.⁴ (In this case additionally a media break can be identified.)

A disadvantage of such overlapping is the rising number of *PBB*. However within the Landscaping Methodology specific rules will be defined that can reduce the number of selectable elements depending on the context (*PBB* around) or the values of *Attributes*.

As mentioned above, in order to gather all relevant information about process structures and ICT support we identified a first set of *Attributes* describing both - the *PBB* and the related *Processed Objects*. The subsequent figure illustrates this first set.

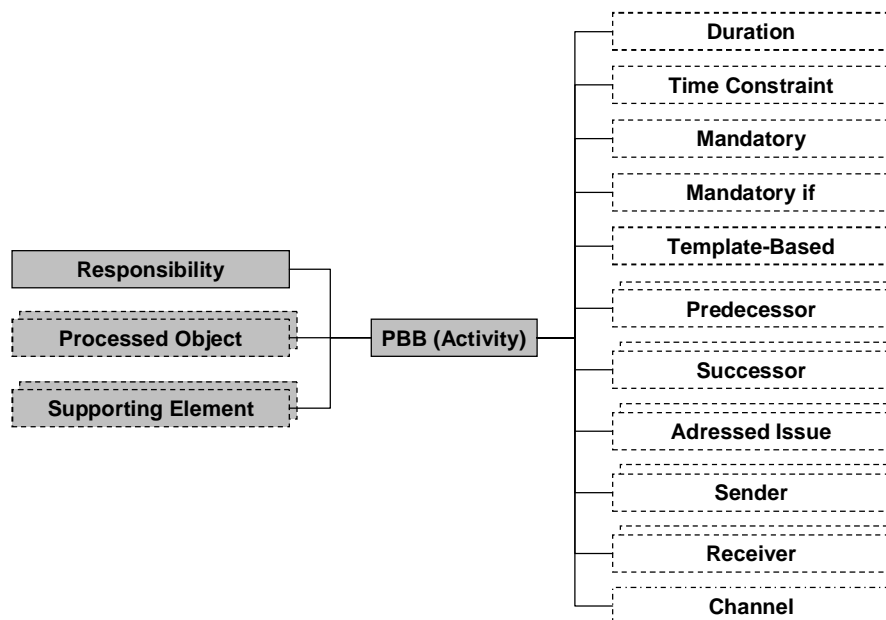


Fig. 7: Survey of Attributes of *PBB*

Attributes on the left side are the so called "General *Attributes*". On the right side there are some more *Attributes* that are not obligatorily used for all *PBB*. The illustration of Fig. 7 is not very precise because mandatory *Attributes* and cardinalities are not universally valid. Because the mandatory elements, cardinalities and even the values of *Attributes* have to be individually defined for each *PBB* we describe these details within the tables in section 4.

² An explanation of what is meant by the level of abstraction can be found in: Malone, T. W., Crowston, K., Lee, J., Pentland, B., Dellarocas, C., Wyner, G., Quimby, J., Osborn, C. S., Bernstein, A., Herman, G., Klein, M., O'Donnell, E.: *Tools for Inventing Organizations: Toward a Handbook of Organizational Processes*, In: *Organizing Business Knowledge - MIT Process Handbook*, Malone, T. W., Crowston, K., Herman, A., The MIT Press Cambridge (Massachusetts), London (England) 2003, page 17

³ In most cases *PBB* with potential overlapping use same *Attributes*. Details are described in the particular Specification Boxes in section 4.

⁴ In this case additionally a media break can be identified. Potential points for media breaks are mentioned within the specification of *PBB* (see section 4) and the list of *Attributes* (see appendix A).

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The next figure contains those *Attributes* that describe a *Processed Object* in detail.

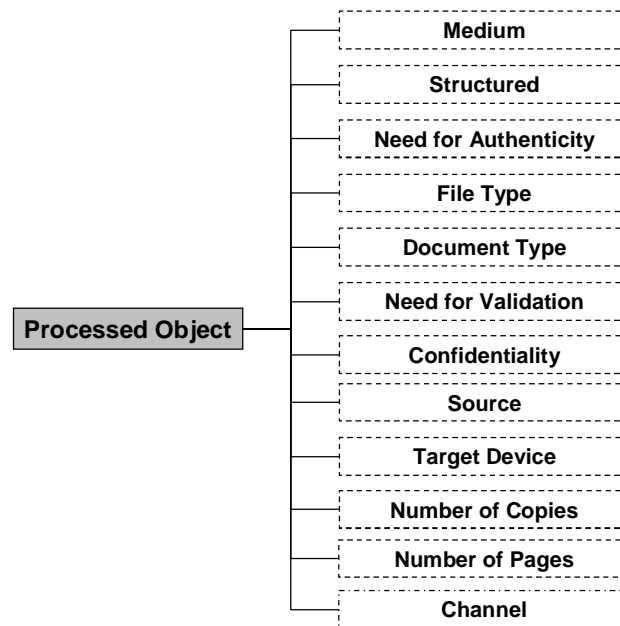


Fig. 8: Survey of Attributes of Processed Objects

These *Attributes* especially will help to understand document flows (e.g. by filling "Source" and "Target Device"), to calculate process costs (e.g. by analysing the "number of copies" or the "number of pages per copy") and to identify media breaks (e.g. by varying values of "Medium" for the same *Processed Object*).

One peculiarity is the *Attribute* "Channel" which seems to be relevant for both - describing an *Activity* and a *Processed Object*.

However precise *Processed Objects* (the values of this *Attribute*) are not fully identified yet. There are a lot of different possibilities of what a *Processed Object* is and the level of abstraction is also quite variable.⁵

The current set of *Attributes* with corresponding descriptions can be found in appendix A. Regarding completeness we must say that a final set of *Attributes* and their values is not available at the moment. However it should be one of the objectives for further development to identify and define more *Attributes* and their values in a goal-oriented way (e.g. regarding necessary information for the Landscaping or the Measurement Methodology).

⁵ A *Processed Object* can be a file/record, an application, an application form and even a specific information or data contained in a form or dataset. During further application of the PICTURE method potential *Processed Objects* should be identified and collected to simplify the modelling process by offering selectable values for this *Attribute*. Afterwards the idea to reuse already introduced or produced *Processed Objects* can be realized.

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4 Evaluated Specification of Process Building Blocks

Name	[Name of the Building Block]
ID	[ID]
Description	[Description]
Potential Overlapping	[Overlapping]
Further Comments	[Comments]
Status of Evaluation	[Current Status (evaluated, newly suggested, further evaluation necessary)]
General Attributes	Responsibility [Cardinality], Supporting Element [Cardinality], Processed Object [Cardinality]
Additional Attributes	[Additional Attributes [Cardinality]]

Tab. 1: Specification - Pattern

To describe *PBB* precisely and detailed we defined a table for each *PBB* (see Tab. 1). The tables contain the subsequent information:

- Naming,
- Unique ID,
- Description,
- Overlapping,
- Further Comments,
- Status of Evaluation,
- List of "General *Attributes*",
- List of relevant "Additional *Attributes*".

The description provides important details of the *PBB* and helps to understand in which cases the *PBB* should be used. Furthermore the description can be used as a contextual help within the PICTURE Tool.

Furthermore potential overlapping is documented. There are two possibilities: On the one hand there is overlapping when a *PBB* can be substituted by another one with similar meaning. On the other side there is overlapping when a *PBB* can be substituted by a combination (e.g. a sequence) of other *PBB*. Esp. the last case occurs when a *PBB* is defined too general (differing levels of abstraction). In general the identification of potential overlapping will be helpful when the Landscaping Methodology (including rules for the combination of *PBB* and their *Attributes*) will be developed. Furthermore the plausibility of process models can be checked using mechanisms to identify overlapping.




The overlapping is explained more detailed within the comments field which contains also information about other characteristics or dependencies. Esp. dependencies are an important aspect of the PICTURE Methodologies. A dependency occurs when the use of a *PBB* or a specific *Attribute* including its values is related to other *PBB*, *Attributes* or values. These dependencies must be represented by adequate rules within the Landscaping Methodology. Thus, there can be rules that motivate the use of a specific *PBB* in a modelled context. An example is the *PBB* "Decide" that typically follows after the *PBB* "Check". Furthermore the use of *PBB* depends on the related *Attributes* (e.g. *Processed Objects*) and their values. On the other hand also the

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use of *Attributes* depends on the "nearby" occurring *PBB* (e.g. the *Attribute* "Adressed Issue" is only relevant for some specific *PBB*; "Successor" resp. "Predecessor" are relevant only at the beginning or the end of a process). There are a lot of other dependencies (such as *Attribute* ⇔ *Attribute*, *Attribute* ⇔ Value of another *Attribute* or Value of an *Attribute* ⇔ Value of another *Attribute*, e.g. "Mandatory" of a *PBB* and "Mandatory if" or "IF Medium='paper-based' THEN Channel != 'eMail'").

These dependencies are quite important to limit selections and to simplify the modelling process. Furthermore they can be used to check plausibility and to ensure the consistency and quality of the whole model.

The next field of the tables contains information about the evaluation status. The used values are similar to the mindmap (see Fig. 6):

-  confirmed
-  further evaluation recommended
-  newly introduced

Last aspect covered by the specification are the *Attributes*. The cells distinguish between the three "General *Attributes*" and "Additional *Attributes*". "General *Attributes*" are relevant for each *PBB*. However they are always mentioned separately because the particular cardinalities may differ. Cardinalities define how many instances of an *Attribute* may be associated with a *PBB*. The notation is similar to common modelling notations: [m..n]. "m" specifies the minimum, "n" specifies the maximum of occurrences. Examples are [0..1] (not necessary or one time usable), [1..1] (must be filled exactly one time), [0..n] (need not but might be used a few times). So the cardinality defines the level of necessity of an *Attribute* (obligatory vs. optional). As also cardinalities of one *Attribute* might differ for different *PBB* the cardinalities are also mentioned for each *Attribute* in each *PBB* separately.

The next pages contain the specification tables for each *PBB*:

Name	Receive
ID	<i>P1</i>
Description	<i>This PBB describes the activity of receiving a message, document, dataset or information (by different mediums and different channels). The PBB also includes that someone physically accepts documents.</i>
Potential Overlapping	-
Further Comments	-
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n]; Sender [1..n];</i>

Tab. 2: Specification - Receive (P1)

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Name	Send / Give
ID	<i>P2</i>
Description	<i>This PBB describes the activity of sending sth. or delivering sth. by hand (analogue PBB "Reveice") - also in the meaning of an internal handoff to another colleague.</i>
Potential Overlapping	-
Further Comments	-
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n]; Receiver [1..n];</i>

Tab. 3: Specification - Send / Give (P2)

Name	Retrieve / Gather / Enquire
ID	<i>P3</i>
Description	<i>This PBB describes the activity of retrieving an information or a document.</i>
Potential Overlapping	-
Further Comments	-
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Source [1..n]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 4: Specification - Retrieve / Gather / Enquire (P3)

Name	Capture / Enter
ID	<i>P4</i>
Description	<i>This PBB describes the activity of capturing information or entering data into an Information System. It also includes the filling of a form, which might be an input mask of an information system.</i>
Potential Overlapping	-
Further Comments	-
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Source [0..n]; Target Device [0..n]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 5: Specification - Capture / Enter (P4)

STREP- Project	PICTURE	Project - No	027717
PICTURE	Process Building Block Specification	Workpackage	WP1
Document	Deliverable Number: 1.7	Date	31.12.2006

Name	Produce / Create / Generate
ID	<i>P5</i>
Description	<i>This PBB describes the activity of creating a new document or message, e.g. an approval, letter or email.</i>
Potential Overlapping Further Comments	<i>P2 or P13 For example the activity "create an email" includes the sending of the message. On paper-based documents the "Creation" often includes the printing of the document.</i>
Status of Evaluation	<i>confirmed</i>
General Attributes Additional Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n]; Duration [0..1]; Time Constraint [0..1]; Template-Based [0..1]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 6: Specification - Produce / Create / Generate (P5)

Name	Certify / Legalize
ID	<i>P6</i>
Description	<i>This PBB describes the activity of certifying, e.g. a document, an authenticity or a signature. The PBB includes the sealing (putting an official seal onto a document). The sealing implies a media break.</i>
Potential Overlapping Further Comments	<i>- -</i>
Status of Evaluation	<i>confirmed</i>
General Attributes Additional Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n]; Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 7: Specification - Certify / Legalize (P6)

Name	Assign
ID	<i>P7</i>
Description	<i>This PBB describes the activity of assigning a task or a responsibility for a specific case or application to someone else. The issuer of an instruction is mostly a supervisor. The "passive" counterpart is P8 ("Take from"). The forwarding of a document because of missing responsibilities is not included into this PBB (see P33, "Forward/Delegate").</i>
Potential Overlapping Further Comments	<i>P33 -</i>
Status of Evaluation	<i>confirmed</i>
General Attributes Additional Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n]; Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n]; Receiver [1..1];</i>

Tab. 8: Specification - Assign (P7)

STREP- Project	PICTURE	Project - No	027717
PICTURE	Process Building Block Specification	Workpackage	WP1
Document	Deliverable Number: 1.7	Date	31.12.2006

Name	Take from
ID	P8
Description	<i>This PBB describes the activity of taking a responsibility to do sth. from so., e.g. the responsibility for a task or a case. The "active" counterpart is P7 ("Assign"), meaning to assume responsibility for a task.</i>
Potential Overlapping	P1
Further Comments	-
Status of Evaluation	confirmed
General Attributes	Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];
Additional Attributes	Duration [0..1]; Time Constraint [0..1]; Source [0..1]; Predecessor [0..n]; Successor [0..n]; Sender [1..1];

Tab. 9: Specification - Take from (P8)

Name	Register
ID	P9
Description	<i>This PBB describes the activity of registering an incoming document (e.g. a letter or any other (mostly written) information) by stamping the date or a specific number on it. Often additional information (e.g. date, sender or addressee) about the document is entered into an Information System (e.g. a book documenting all incoming mail).</i>
Potential Overlapping	P4, P5 or P10
Further Comments	-
Status of Evaluation	confirmed
General Attributes	Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];
Additional Attributes	Duration [0..1]; Time Constraint [0..1]; Target Device [0..n]; Predecessor [0..n]; Successor [0..n];

Tab. 10: Specification - Register (P9)

Name	Start / Open
ID	P10
Description	<i>This PBB describes the activity of starting a new record or opening a new file/folder, e.g. when a new application or case is received. The PBB is mostly associated with assigning a unique number.</i>
Potential Overlapping	-
Further Comments	-
Status of Evaluation	confirmed
General Attributes	Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];
Additional Attributes	Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n];

Tab. 11: Specification - Start / Open (P10)

STREP- Project	PICTURE	Project - No	027717
PICTURE	Process Building Block Specification	Workpackage	WP1
Document	Deliverable Number: 1.7	Date	31.12.2006

Name	Change / Update / Complete
ID	<i>P11</i>
Description	<i>This PBB describes the activity of editing a file or folder, e.g. by adding new information or documents or by inserting or changing specific data within an existing file, folder or dataset.</i>
Potential Overlapping	-
Further Comments	-
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 12: Specification - Change / Update / Complete (P11)

Name	Close
ID	<i>P12</i>
Description	<i>This PBB describes the activity of finalising a subject matter (e.g. the case, documented within a record). Typically the archiving process starts afterwards.</i>
Potential Overlapping	-
Further Comments	<i>There might be potentials for misunderstanding concerning the rejection of an application (e.g. because of incompleteness).</i>
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 13: Specification - Close (P12)

Name	Print
ID	<i>P13</i>
Description	<i>This PBB describes the activity of sending an electronic document to a printer (mostly by pressing the "Print" Button within an Information System). The PBB causes a media break.</i>
Potential Overlapping	<i>P5</i>
Further Comments	-
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 14: Specification - Print (P13)

STREP- Project	PICTURE	Project - No	027717
PICTURE	Process Building Block Specification	Workpackage	WP1
Document	Deliverable Number: 1.7	Date	31.12.2006

Name	Scan
ID	<i>P14</i>
Description	<i>This PBB describes the activity of digitising a paper-based document. This activity causes a media break.</i>
Potential Overlapping	-
Further Comments	-
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 15: Specification - Scan (P14)

Name	Copy
ID	<i>P15</i>
Description	<i>This PBB describes the activity of duplicating a document (by a copy machine) or a dataset.</i>
Potential Overlapping	-
Further Comments	-
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 16: Specification - Copy (P15)

Name	Pay
ID	<i>P16</i>
Description	<i>This PBB describes the activity of honouring debts by giving or transferring money to someone.</i>
Potential Overlapping	<i>Sequence of (P5, P13, P21 and P2)</i>
Further Comments	<i>The PBB is defined at a higher abstraction layer. So P16 could also be represented by a combination/sequence of P5, P13, P21 and P2 using the processed object "remittance order".</i>
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Target Device [1..n]; Predecessor [0..n]; Successor [0..n]; Receiver [1..1];</i>

Tab. 17: Specification - Pay (P16)

STREP- Project	PICTURE	Project - No	027717
PICTURE	Process Building Block Specification	Workpackage	WP1
Document	Deliverable Number: 1.7	Date	31.12.2006

Name	Encash
ID	<i>P17</i>
Description	<i>This PBB describes the activity of accepting or requesting a payment for a specific service delivery, e.g in the citizens office or the cash office.</i>
Potential Overlapping Further Comments	<i>Sequence of (P5, P13, P21 and P2) The PBB is defined at a higher abstraction layer; P17 could also be represented by a combination/sequence of P5, P13, P21 and P2 using the processed object "acceptance order".</i>
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Source [1..n]; Predecessor [0..n]; Successor [0..n]; Sender [1..1];</i>

Tab. 18: Specification - Encash (P17)

Name	Check / Verify
ID	<i>P18</i>
Description	<i>This PBB describes the activity of checking specific characteristics of a document or case. Included is also a periodical check (in the meaning of observation), if an event (e.g. a payment or the elapsing of a particular period) occurred or not. The PBB distinguishes from a passive "Wait for" by its active character.</i>
Potential Overlapping Further Comments	<i>P29 A Check or Verification is always followed by a decision (PBB "Decide"). The decision does not have to follow directly because further activities could have to be performed before (e.g. creating and sending of documents) and often different people are responsible for the check and the decision.</i>
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n]; Addressed Issue [1..n];</i>

Tab. 19: Specification - Check / Verify (P18)

STREP- Project	PICTURE	Project - No	027717
PICTURE	Process Building Block Specification	Workpackage	WP1
Document	Deliverable Number: 1.7	Date	31.12.2006

Name	Decide
ID	P19
Description	<i>This PBB describes the activity of deciding on something. The PBB does not only contain final (e.g. approval vs. rejection) but also intermediate decisions (e.g. about the completeness of an application form or the organisational responsibility).</i>
Potential Overlapping Further Comments	- <i>A check (PBB "Check/Verify") has to be executed before a decision. The check does not necessarily have to be performed directly before the decision because further PBB could be necessary between both activities (e.g. create or/and send a document) and even the "Check/Verify" and Decide" can performed by different people. Furthermore a decision is usually followed by branching, that means at least two process paths. The modeller has to decide if the branching is represented by an OR or an XOR-Connector (if these connectors are supported by the used modelling notation). In some cases the PBB is not followed by branching, e.g. within a sequence of "decide about an application", "create a notification", "print the notification", send the notification". The notification can contain either a positive (approval) or negative (rejection) answer but the process flow remains the same.</i>
Status of Evaluation	confirmed
General Attributes	Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];
Additional Attributes	Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n]; Adressed Issue [1..n];

Tab. 20: Specification - Decide (P19)

Name	Take notice / To be informed
ID	P20
Description	<i>This PBB means that someone needs to be informed (passive activity) about the circumstances of a case (e.g. by sending him the copy of a document or message). There is no further action directly implied for the informed person. The actual main process goes on, but the adressed person (mostly a supervisor) has the opportunity to intervene if necessary.</i>
Potential Overlapping Further Comments	<i>P1 or sequence of (P18 and P19) The PBB might be substituted by P1 ("Receive" an information) or by a sequence of P18 ("Check") and P19 ("Decide"). This PBB does not represent the end of a process path because the responsible person has the opportunity to intervene.</i>
Status of Evaluation	confirmed
General Attributes	Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];
Additional Attributes	Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n];

Tab. 21: Specification - Take notice / To be informed (P20)

STREP- Project	PICTURE	Project - No	027717
PICTURE	Process Building Block Specification	Workpackage	WP1
Document	Deliverable Number: 1.7	Date	31.12.2006

Name	Sign
ID	P21
Description	<i>This PBB describes the activity of signing a document or dataset. Documents are signed to confirm a specific, often legal importance.</i>
Potential Overlapping	-
Further Comments	-
Status of Evaluation	confirmed
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Mandatory [1..1]; Mandatory if [0..1]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 22: Specification - Sign (P21)

Name	Archive
ID	P22
Description	<i>This PBB describes the activity of sending documents to an archive, including electronic archives. Archiving documents actually is an independent process. Within the context of a typical service process of a public administration the archiving typically is one of the last steps. Although the activity "Archive" can also be expressed by "Send [a document to the archive]" and the actual archiving process includes much more activities, this PBB has been considered as relevant and more intuitive. This PBB also includes the electronic archiving.</i>
Potential Overlapping	-
Further Comments	-
Status of Evaluation	confirmed
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 23: Specification - Archive (P22)

Name	Dispose / Delete
ID	P23
Description	<i>This PBB describes the activity of removing paper-based or electronic documents. The disposal of documents or the deletion of electronic records mostly occurs if retention periods are expired. Furthermore information is destroyed if there is no retention period or storage duty (e.g. for memos) or if the storage is even forbidden (e.g. because of privacy reasons).</i>
Potential Overlapping	-
Further Comments	-
Status of Evaluation	confirmed
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 24: Specification - Dispose / Delete (P23)

STREP- Project	PICTURE	Project - No	027717
PICTURE	Process Building Block Specification	Workpackage	WP1
Document	Deliverable Number: 1.7	Date	31.12.2006

Name	Wait until
ID	P24
Description	<i>This passive PBB describes the intermission/break within a process flow until an event occurs. The event can be an incoming mail or the expiration of a time limit. Of course this activity does not express that an employee is just waiting for something (without doing anything else). It might have an observing character.</i>
Potential Overlapping Further Comments	P18 <i>There is a correlation with the PBB "Check/Verify" which however has a more active meaning.</i>
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 25: Specification - Wait until (P24)

Name	On-Site Visit
ID	P25
Description	<i>This PBB describes the activity of leaving the office in order to check a location or estimate a specific situation. This PBB is often used in building, traffic or social affairs, mostly in order to prepare a decision. The PBB also includes the meaning of an outside inspection.</i>
Potential Overlapping Further Comments	P18 or P29 <i>There might be overlapping regarding P18 ("Check/Verify") or P29 ("Examine/Analyse"). However the "On-Site Visit" means that the office is left by the responsible person. On-Site there might be further activities like P18 or P29.</i>
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 26: Specification - On-Site Visit (P25)

Name	Coordinate
ID	P26
Description	<i>This PBB describes the activity of communicating, checking things, etc. in order to achieve a specific goal. Coordination is needed in nearly all tasks with project character.</i>
Potential Overlapping Further Comments	- <i>The PBB is very general and fuzzy.</i>
Status of Evaluation	<i>further evaluation recommended</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Channel [0..n]; Duration [0..1]; Predecessor [0..n]; Successor [0..n]; Sender [0..n]; Receiver [0..n];</i>

Tab. 27: Specification - Coordinate (P26)

STREP- Project	PICTURE	Project - No	027717
PICTURE	Process Building Block Specification	Workpackage	WP1
Document	Deliverable Number: 1.7	Date	31.12.2006

Name	Consult (external meaning)
ID	P27
Description	In contrast to P28 ("Discuss") this PBB means that employees inform or consult external parties regarding their requests. It includes the active discussion, e.g. about a building project or an application.
Potential Overlapping	-
Further Comments	-
Status of Evaluation	confirmed
General Attributes	Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];
Additional Attributes	Duration [0..1]; Predecessor [0..n]; Successor [0..n]; Adressed Issue [0..n]; Receiver [1..n];

Tab. 28: Specification - Consult (external meaning) (P27)

Name	Discuss (internal meaning)
ID	P28
Description	In contrast to the P27 ("Consult") this PBB describes the internal coordination and discussion with colleagues. Especially internal project or coordination meetings should be modelled by this PBB.
Potential Overlapping	-
Further Comments	-
Status of Evaluation	confirmed
General Attributes	Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];
Additional Attributes	Duration [0..1]; Predecessor [0..n]; Successor [0..n]; Adressed Issue [0..n]; Receiver [1..n];

Tab. 29: Specification - Discuss (internal meaning) (P28)

Name	Examine / Analyse
ID	P29
Description	The Analysis contains all activities around the evaluation and interpretation of information within a specific context. Thus the PBB is much broader than a pure check. The analysis is also part of the preparation of a decision.
Potential Overlapping	P18 or P19
Further Comments	-
Status of Evaluation	confirmed
General Attributes	Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];
Additional Attributes	Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n];

Tab. 30: Specification - Examine / Analyse (P29)

STREP- Project	PICTURE	Project - No	027717
PICTURE	Process Building Block Specification	Workpackage	WP1
Document	Deliverable Number: 1.7	Date	31.12.2006

Name	Calculate
ID	<i>P30</i>
Description	<i>This PBB describes the activity of computing specific values, e.g. dimensions of a building or taxes.</i>
Potential Overlapping	-
Further Comments	-
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 31: Specification - Calculate (P30)

Name	Notify
ID	<i>P31</i>
Description	<i>This PBB describes the activity of informing somebody (e.g. a manager) about the circumstances and decisions of a case to give him an opportunity to intervene or influence the situation. The PBB is the counterpart to P20 ("Take notice/To be informed").</i>
Potential Overlapping	<i>P2, P7, P27, P28, P33, P36</i>
Further Comments	<i>There is a lot of potential overlapping. So the PBB should be carefully evaluated.</i>
Status of Evaluation	<i>newly suggested</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n]; Receiver [1..n];</i>

Tab. 32: Specification - Notify (P31)

Name	Invalidate
ID	<i>P32</i>
Description	<i>This PBB describes the activity of terminating the validity of a document. E.g. a passport has to be invalidated when a new one is delivered or its validity period expires.</i>
Potential Overlapping	-
Further Comments	-
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 33: Specification - Invalidate (P32)

STREP- Project	PICTURE	Project - No	027717
PICTURE	Process Building Block Specification	Workpackage	WP1
Document	Deliverable Number: 1.7	Date	31.12.2006

Name	Forward / Delegate
ID	P33
Description	<i>This PBB describes the activity of sending information or documents to another organisation or organisational unit. For example, if an administration is not responsible for an application/request, the documents or a case are forwarded to another administration who is responsible. This forwarding does not imply any authority to instruct somebody, instead, the rights to proceed the application are delegated. This PBB also includes that a legal right is subrogated to another institution.</i>
Potential Overlapping	P7
Further Comments	-
Status of Evaluation	<i>further evaluation recommended</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n]; Receiver [1..1];</i>

Tab. 34: Specification - Forward / Delegate (P33)

Name	Reserve / Book
ID	P34
Description	<i>This PBB describes the reservation of specific resources that are necessary in current or further process activities, e.g. an official car or a conference room.</i>
Potential Overlapping	-
Further Comments	<i>The reservation of a resource need not be necessarily modelled by PICTURE. So the PBB is considered as irrelevant but should be evaluated furthermore.</i>
Status of Evaluation	<i>further evaluation recommended</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 35: Specification - Reserve / Book (P34)

Name	Demand sth. / To Follow Up
ID	P35
Description	<i>This PBB should be used if there are e.g. incorrect or incomplete dossiers. In this case, an employee tries to follow up and clarify those facts by communicating with a customer or colleague. Often missed documents or information are demanded to complete requirements. So there can be some overlapping with some other PBB, e.g. "Send [an additional claim or letter]".</i>
Potential Overlapping	-
Further Comments	-
Status of Evaluation	<i>confirmed</i>
General Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n];</i>
Additional Attributes	<i>Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n]; Receiver [1..n];</i>

Tab. 36: Specification - Demand sth. / To Follow Up (P35)

STREP- Project	PICTURE	Project - No	027717
PICTURE	Process Building Block Specification	Workpackage	WP1
Document	Deliverable Number: 1.7	Date	31.12.2006

Name	Publish
ID	<i>P36</i>
Description	<i>This PBB describes the activity of providing information to interested parties resp. making an information public.</i>
Potential Overlapping Further Comments	<i>Sequence of (P5 and P2) The PBB can be substituted by a sequence of P5 ("Create") and P2 ("Send"). However it seems to be a frequently needed activity. So a seperate PBB will improve the intuitive modelling process.</i>
Status of Evaluation	<i>newly suggested</i>
General Attributes Additional Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n]; Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n]; Receiver [0..n];</i>

Tab. 37: Specification - Publish (P36)

Name	Document
ID	<i>P37</i>
Description	<i>This PBB describes the activity of capturing specific information to record a history, changes and the development of a project, case or decision (e.g. as justification in case of conflicts).</i>
Potential Overlapping Further Comments	<i>P4, P5, P11 To check the relevance of this PBB there should be further evaluation.</i>
Status of Evaluation	<i>newly suggested</i>
General Attributes Additional Attributes	<i>Responsibility [1..n]; Supporting Element [0..n]; Processed Object [1..n]; Duration [0..1]; Time Constraint [0..1]; Predecessor [0..n]; Successor [0..n];</i>

Tab. 38: Specification - Document (P37)

STREP- Project	PICTURE	Project - No	027717
PICTURE	Process Building Block Specification	Workpackage	WP1
Document	Deliverable Number: 1.7	Date	31.12.2006

5 Conclusion

This document describes a set of 37 *Process Building Blocks* and 25 *Attributes* to be used for modelling administrative processes. First the approach of structuring *PBB* into *Activities* and related *Attributes* (such as *Processed Objects*) is explained. Furthermore the characteristic of each *PBB* and *Attribute* is described very detailed. Especially the problems of overlapping and dependencies between *PBB*, *Attributes* and their particular values are specified for each element. As an outcome of this the consequences and potentials for the development of a rule base within the Landscaping Methodology are discussed.

Summarizing, we can state that modelling with *Process Building Blocks* implicates two main problems: The first problem concerns the levels of abstraction. In order to ensure consistent and well-defined process models it was a requirement for *PBB* to harmonise the level of abstraction. However this requirement becomes secondary since the requirement for intuitive comprehensibility turned out to be more important for broad acceptance of the whole method. So the set of *PBB* also contains *Activities* that might be substituted by other *PBB* or a sequence of other *PBB* (overlapping). In doing so different types of people involved and their different understanding of processes will be covered. As these dependencies are known they can be handled adequately by the PICTURE Tool.

The second problem concerns the level of detail. In order to measure the values of ICT support within organisation-spanning processes, very detailed and precise information has to be gathered. Thus, the *PBB* are defined on a very detailed level. This leads to a time-consuming modelling process. Further evaluation will reveal if this disadvantage is acceptable or other mechanisms of simplification should be investigated. One possibility for simplification of the modelling process is the identification of common process fragments. Modelling with those fragments will reduce the complexity for users. However the resulting process models have to be adapted to situational and local requirements. The advantage of this idea is the opportunity to re-use these fragments (in modified version) to generate potential suggestions for optimised processes, e.g. in consideration of identified ICT support.

Another point concerns the *Processed Objects*. Previous workshops did not provide a sufficient basis of values for this *Attribute*. In order to obtain an appropriate list we suggest conducting further evaluations focusing on these *Processed Objects*. Similarly the specification of other *Attributes* and their corresponding values will be completed.

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6 Appendix A - Catalogue of Attributes

ID	Name	Description	Dependencies	Classification*	Value(s)
A1	Responsibility	Link to the items of an organisational chart, different levels of detail are possible (e.g. organisation/organisational unit/position or person); this is an obligatory attribute for each PBB that can be filled automatically (e.g. if the responsible persons model "their" parts of the process)	Responsibility should be selectable by a deposited organisational chart or a list.	PBB	Link / ID
A2	Supporting Element	Link to the items of a list or chart (e.g. checklist, information system)	Supporting Elements should be selectable or introduced by text input.	PBB	Link / ID
A3	Processed Object	Text or link to the items of a list of introduced objects	Newly introduced PO* should be selectable by a list. If the PO is not introduced yet there must be a possibility to insert new text.	PBB	Text / Link / ID
A4	Channel	Communication channel for the transmission of information	Depends on Values of A10 and A5	PBB and PO	"Mail" "eMail" "Phone" "Fax" "Person ally" "Electronic Data Interchange" "eForm" ...
A5	Medium	Medium that contains the PO*	Values depend on the values of the A4 and A10, not all	PO	"Electronically" "Voice-Based" "Paper-Based" "Visual" ... (?)

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			combinations are possible (see Rules section)						
A6	Duration	Time needed to performe the PBB (average)		PBB	Minutes/ Hours/Da ys				
A7	Structured	Information is structured if it is presented in a way that enables the automatic identification of the information and its semantic (e.g. xml format or any kind of form (also Paper-Based!) with specific fields)		PO	"Structure d"	"Semi- Structur ed"	"Unstructu red"		
A8	Need for Authenticity	Describes that a document (e.g. an application form) or any declaration of intent needs to be signed by the originator.		PO	"yes"	"no"			
A9	File Type	Describes the structure of an electronic file to be processed within a specific application.	Depends on A5 (only relevant if A5 = "Electronically")	PO	"xls"	"doc"	"pdf"	"xml"	...
A10	Document Type	Describes the nature of a document	Values may influence A5 and A4 as well as A7 and A9	PO	"Letter"	"Applica tion Form"	"Approval"	"Photo"	"Drawin g" ...
A11	Time Constraint	Legal or organisational restriktion to limit editing and idle periods	Must be longer than A6.	PBB	Days/We eks				

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A12	Mandatory	Describes the necessity of the PBB	If the PBB does not need to be obligatorily performed A13 becomes relevant to specify the conditions.	PBB	"yes"	"no"				
A13	Mandatory if	When is the PBB obligatory?	Relevant if A12 = "no"	PBB	Text					
A14	Need for Validation	Describes that a document (e.g. an application form) or any declaration of intent needs to be validated by the receiver.		PO	"yes"	"no"				
A15	Confidentiality	Describes that a document (e.g. an application form) or any declaration of intent has to meet specific requirements of data privacy and data safety.		PO	"yes"	"no"				
A16	Source	Describes the (storage) location or origin of a document or information; there can be an overlapping with A2		PO	Text / Link / ID					
A17	Template-Based	Describes whether the execution of a PBB is formalised (e.g. by templates) or not		PBB	"Templat e-Based"	"Non- Templat e-Based"				

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A18	Target Device	Describes the information system that gathers the information or documents; the values may contain simple text or refer to the ID of a supporting element (analogue A2); there might be overlapping with A2		PO	Text / Link / ID					
A19	Predecessor	Contains the ID(s) of immediately preceded PBB(s); may be useful to technically support the modelling process; should be automatically filled		PBB	Link / ID					
A20	Successor	Contains the ID(s) of immediately succeeding PBB(s); may be useful to technically support the modelling process; should be automatically filled		PBB	Link / ID					
A21	Adressed Issue	Describes the issue addressed by a PBB; might be used in P18, P19, P27, P28 and P29		PBB	"Completeness"	"Compliance"	"Legal Regulations"	"Responsibility"	"Correctness"	...
A22	Number of Copies	Contains the assumed number (average) of PO* related to a PBB (e.g. number of printouts or copies of a document or dataset)	relevant for Objects processed by P5, P13, P14 and P15	PO	Number (Integer)					
A23	Sender	Describes from whom	relevant for P1; P8	PBB	Text /					

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A24	Receiver	a PO* is received. Describes the organisation or person a PO* is sent to; the values may contain simple text or refer to the ID of an organisational unit (analogue A1)	relevant for P2; P7	PBB	Link / ID Text / Link / ID
A25	Number of Pages	Describes how many pages of a document are proceeded (e.g. created or printed); it might be difficult to fill this attribute correctly because the number of pages often depends on the content of the document (varying number)	relevant for Objects processed by P5, P13, P14 and P15	PO	Number (Integer)

Tab. 39: Catalogue of Attributes (Appendix A)

* PO = *Processed Object*