



TickIT^{plus} Implementation Note

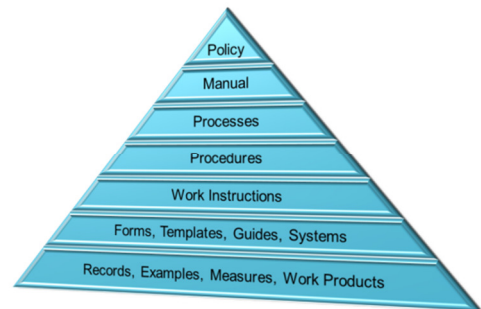
Title	Creating and Using the PRM		
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One of the most important components of the TickITplus scheme is the Process Reference Model (PRM). Its primary purpose is to ensure that all the requirements of the selected scope have been addressed by the organisation's management system. It does, however, have a couple of other uses which bring added benefit from using the TickITplus scheme.

Two of these PRM benefits are addressed in this TickITplus Implementation Note. The first benefit provided by the PRM is its ability to help streamline and reduce the complexity of the management system documentation. The second potential benefit is in providing a better, more focused, approach to conducting assessments.

The PRM encourages organisations to think in terms of business processes when creating their management system rather than concentrating on the lower-level details in procedures and work instructions; a top down rather than bottom up approach. This is typically expected with ISO 9001 through definition of the quality policy leading to quality objectives that the management system is expected to satisfy.

It is not uncommon to hear about organisations having significant numbers of 'processes', sometimes even into the many hundreds. Often, however, on further investigation, it is seen that these are not actually processes, but just procedures or even just work instructions that have been called processes. No organisation really has hundreds of business processes, more often in reality it is a mere handful of key processes, such as the sales order process, the development process, the purchasing process, the manufacturing process, the finance process, etc.

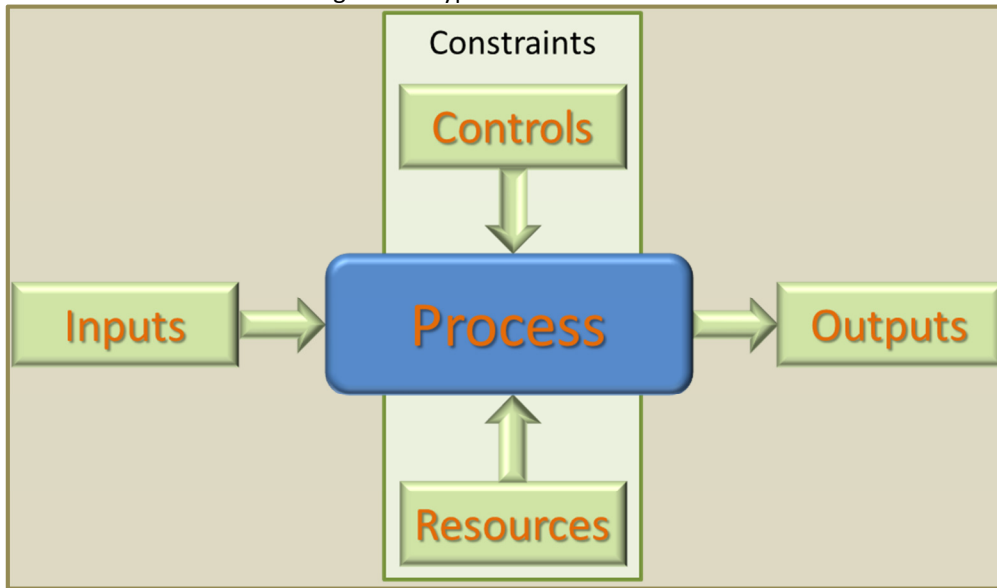


In-line with recognised definitions of a process, including that given in ISO/IEC 15504 part 2, a process typically has three characteristic:

1. It involves a significant change of state
2. It generates an output
3. It works within known constraints

Here the process transforms the input into the output using the identified resources and complying with the defined controls. The latter two aspects are usually acting as the constraints on the process.

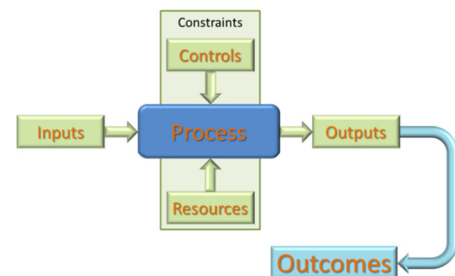
Figure 1 A Typical Process Structure



This is a fairly well recognised process model, but it tends to miss one important aspect. In the TickITplus scheme, we have formally recognised the concept of process outcomes. This is not particularly the subject of this TIN, but is covered in TIN0007, TickITplus Process Outcomes.

The process box typically consists of procedures, work instructions, forms, templates, tools and everything needed to perform the change of state of the input to the output.

Working at the process level can allow organisations to create a management system that 1) is more aligned to the actual business needs, approach and activities, 2) is more simply described in the required documentation and 3) is easier to manage, deploy, maintain and improve.



The approach defined through using the TickITplus scheme's Process Reference Model encourages organisations to look at their management system from the process perspective. This can often lead to a significant reduction in management system paperwork, and the streamlining of multiple procedures that are not actually needed if viewed from the higher-level process perspective.

The second important aspect realised through using the PRM is less obvious, but potentially even more beneficial. The PRM act as a language or, more appropriately put, a terminology translator between the organisation's language and terms to those in the Base Process Library. Whilst this isn't directly beneficial to the organisation, mainly because the organisation already knows its own language and terms, it could be essential to new starters and particularly people with previous experience of working within a management system.

Apart from maybe new graduates, although even they will have some preconceived ideas of business language and terminology, experienced new staff will invariably come into an organisation with significant knowledge of their previous organisation's language and terminology.

The PRM is a highly effective yet simple mechanism for introducing new starters into the way an organisation works. Similarly, the PRM provides the external assessor with a complete picture of how the organisation's processes operate and, importantly, the language and terminology used throughout the organisation.

It is not uncommon to hear examples where misunderstanding has resulted between the assessor and the organisation due to confusion over what they asking for or expecting. This can sometimes even lead to



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nonconformities being incorrectly raised.

In the TickITplus scheme, the assessor is ultimately required to confirm the effectiveness of the management system against the benchmark requirements of the Base Process Library (BPL), although they will actually be using the PRM to do this. By using the PRM, they should therefore be using the language and terminology used by the organisation. There is, if this is to be achieved, one important element that needs to be in place. The PRM needs to be written in a clear, accurate and, most importantly, concise manner. Being written clearly and accurately should go without saying, but sometimes writing things in a concise way is often overlooked for numerous reasons.

Having reviewed a number of PRMs over the last 12 to 18 months, the one thing that has stood out is how verbose they can be. This is not usually deliberately done, but more often it results from an attempt to fully demonstrate how the organisation satisfies the BPL requirements. It is not uncommon for the Base Practices mapping to consist of a few, or even many, paragraphs of text and the work product references to include lengthy explanations. While there are no specific rules preventing the use of detailed and lengthy explanations, there are some practical reasons for not doing it.

The TickITplus scheme only requires the PRM to reference where in the organisation's management system the BPL requirements have been addressed and what work products the organisation uses. As a minimum, each Base Practice should therefore consist of a single process, or procedural, reference and input and output work product names.

It is recognised that sometimes a short explanation is needed to help understand a particularly unusual situation or to provide new starters with a simplified introduction to the management system, but using large quantities of textual explanation should be avoided. If the work products require some explanation, this should ideally be included against the Base Practice reference rather than in the work product references.

Apart from making the PRM harder to use, see example 1, two other particular reasons exist for keeping the PRM concise. Firstly, there would be a large overhead in maintaining both the management system documentation and an extensively over-described PRM. This would actually go against one of the aims of TickITplus of trying to reduce and simplify the organisation's documentation.

Of course, the second reason why there might be extensive descriptions being included in the PRM is that the management system doesn't actually address a particular BPL requirement. The organisation, therefore, has found itself having to explain and document in the actual PRM what it thinks are the practices that might be undertaken in order to satisfy the requirement.

The PRM was never designed to be a management system or to fill gaps in an existing management system. If the organisation's management system doesn't address a particular BPL requirement then a process improvement should be put in place to address the shortfall. Once this has been done the management system will have been updated and the PRM can then include the reference to the new component.

Now, while not everything done in an organisation is always fully documented for some good reasons, the PRM should also be used to document these aspects. If it needs to be documented in the PRM it should really be documented somewhere in the management system. However, there will be certain undocumented activities, but it is important that irrespective of them being documented they must be defined; or what is to stop them from just disappearing over time. The important aspect is to ensure that the management system ensures that all required activities are undertaken, and this doesn't necessarily mean through documented procedures. For example, an activity can be defined through policies, required by systems and tools or implemented through training. These are the things that would be documented somewhere in the management system and these are the things that the PRM should refer to when mapping a Base Practice. Clearly, there may need to be some small amount of explanatory text, but by no means large amounts of descriptive instructions; if that was needed then it should be in the management system documentation anyway.

Example 1

BPL Requirement		
<p>BP.3 Identify and Analyse Risks</p> <p>Risks, both internal and external, are identified, analysed and documented to determine the priority for action when thresholds are met.</p> <p>Actions identify activities to reduce, avoid, transfer or communicate acceptance, responsibilities and timescales, including expected risk occurrence event.</p> <p>Risk assessments are reconsidered on a periodic and event driven basis.</p>	<p>Business Needs</p> <p>Business Objectives</p> <p>Risk Management Plan</p>	<p>Risks</p> <p>Risk Mitigation Actions</p>
PRM Mapping		
<p>The organisation usually identifies risks as part of the project planning processes, although this is not always necessary, especially when the project is deemed to be small. When risks management is to be used on a project, as selected through the project's process selection criteria and documented in the project quality plan, or the generic quality plan for a programme of work, risks will be identified by the project manager and, if already identified, by the project team at the project kick-off meeting.</p> <p>Initial project risks can be from any source and it is up to the project manager to judge whether the risks have any significance or not to the project. However, whatever the decision is all risks considered should be documented in a project risks log along with their identified significance.</p> <p>For those risks that are considered important, appropriate actions will be put in place to mitigate the risk from having a significant effect on the success of the project.</p> <p>The significance of the risks will be reconsidered on a periodic and event driven basis by the project manager.</p> <p>Additional risks can be identified at any time and when necessary these will be added to the project risk log along with mitigating actions.</p>	<ul style="list-style-type: none"> • Company mission statement which includes the top level business needs along with other aspects that project managers should be aware of • Annual business plan that includes the objectives identified from the budget cycle • Corporate objectives taken from the business plan and cascaded down through the organisation • Individual objectives cascaded from the corporate objectives • Project plans which may include a brief section on risk management 	<ul style="list-style-type: none"> • Project risks logs in Excel or the corporate risk management tool on some projects. Risks can also be listed in project status reports when needed, although this will be documented on the project quality statement form
<p><i>This example shows a situation where there is too much detail, no clear indication of the work products and almost suggests that the actual management system doesn't really cover the proper identification and analysis of risks.</i></p> <p><i>The grey row represents the requirements from the BPL and the light yellow row is the organisations PRM mapping for one particular Base Practice.</i></p>		

Example 2

BPL Requirement		
BP.3 Identify and Analyse Risks Risks, both internal and external, are identified, analysed and documented to determine the priority for action when thresholds are met. Actions identify activities to reduce, avoid, transfer or communicate acceptance, responsibilities and timescales, including expected risk occurrence event. Risk assessments are reconsidered on a periodic and event driven basis.	Business Needs Business Objectives Risk Management Plan	Risks Risk Mitigation Actions
PRM Mapping		
Risk management process (QMS-P-RISK, section 3) Business needs and objects are set hierarchically from the company mission statement through annual business plan to corporate objectives and then to individual objectives. Project plans include a section on risk management Project risks logs can vary, but the approach is defined on the project quality statement form	<ul style="list-style-type: none"> • Company mission statement • Annual business plan • Corporate objectives • Individual objectives • Project plans 	<ul style="list-style-type: none"> • Project risks logs
<p><i>This example moves the explanation of the work products to the Base Practice field as additional guidance and therefore provides a cleaner view of the work products used.</i></p>		

Example 3

BPL Requirement		
BP.3 Identify and Analyse Risks Risks, both internal and external, are identified, analysed and documented to determine the priority for action when thresholds are met. Actions identify activities to reduce, avoid, transfer or communicate acceptance, responsibilities and timescales, including expected risk occurrence event. Risk assessments are reconsidered on a periodic and event driven basis.	Business Needs Business Objectives Risk Management Plan	Risks Risk Mitigation Actions
PRM Mapping		
Risk management process (QMS-P-RISK, section 3)	<ul style="list-style-type: none"> • Annual business plan • Project plans 	<ul style="list-style-type: none"> • Project risks logs
<p><i>Ideally, if the risk management process is complete it should fully show how risk management works and therefore, ideally, it is the only thing that needs to be referenced. Also, there probably isn't a need to include the company mission statement, corporate objectives and individual objectives on the basis that the annual business plan is the glue between these elements and its creation would probably be covered by another defined process against the BPL Corporate Management and Legal process.</i></p>		

The TickITplus scheme doesn't stipulate how the PRM should be created; it just states its purpose and what it should contain; see Core Scheme Requirements (CSR) section 3.2. However, experience has shown that certain approaches are better than others and can result in a much more useable PRM.

One approach which has been seen to work well is to intersperse the organisation's PRM references into a copy of the BPL, see worked example later. This provides a very clear mapping of the PRM back to the BPL requirements, whilst easily identifying any gaps that need to be addressed. It also provides the users of the PRM, particularly the practitioners and assessors, with quick cross-references between the management system and the BPL.

The TickITplus scheme includes the concept of defined processes that satisfy the base processes in the BPL. It is



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possible that an organisation needs different processes to satisfy the same base process and this can be accommodated by the PRM through defined processes. For example, if risk management is undertaken in a number of different ways within an organisation, say to manage corporate risks, project risks, security risks, etc., there could well be a need to have multiple defined processes identified in the PRM. By using the interspersed approach, the similarities of these defined processes becomes clearly visible and it may then be possible to reduce the number of separate defined processes by replacing them with one more general process which includes, if necessary, specific tailoring for each situation.

Omniprove has developed a simple application called PRMate which greatly assists organisations in preparing and maintaining their PRM. For more information please visit our website at www.omniprove.co.uk.

Example of multiple defined processes

In the example on the following page, an organisation has identified that it has two distinct processes for handling the BPL Stakeholder Requirements Definition process. One process is applicable to their core product development team and the other is applicable to their client configuration teams. There are a few similarities, but because the organisation has clear processes for each it is appropriate to create two defined processes, represented by the light yellow and light green rows. The rules of the scheme require that for each defined process all base practices are addressed.

For BP.1, the core development team has only one stakeholder represented by the Marketing group. The group takes input (needs) from customers, management, the client configuration teams, the support department, industry and other stakeholders and creates development needs in User Needs Analysis Specifications. As this is always the same, the process description actually acts as the stakeholder management plan, hence the reference to Core Development process (QMS-P-SWDEV, section 1.1) as the output work product.

BP.2 work product inputs are therefore automatically defined from the BP.1 output work product. If there are any specific aspects about taking the output directly to the input, these can be explained briefly in the BP field, but not in this case.

BP.4 shows how in some cases the input and output work products can be the same thing even though the BPL suggests that they might be different. This illustrates the difference between the conceptual identification of distinct work products and the actual mechanisms of implementing a management system in an organisation, i.e. the difference between the 'what' and the 'how'. The Change Request & Report form acts as both the request and the record.

For BP.4, the CLIENTAPP defined process (light orange) suggests that there is a very similar process to the CORAPP defined process (light yellow) and although, ideally, the two defined processes should be capable of standing alone, practicality and simplicity is always desirable. Here the Base Practice text briefly explains why there is also the Client Change Request Form as an input work product, although as an improvement maybe the Change Management process (QMS-P-CCM) could be updated to include this aspect and therefore reduce the need for additional explanation in the BP reference section.



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Example 4 Multiple Defined Processes							
Process ID	TEC.10	Process Name	Stakeholder Requirements Definition	Category	Technical Processes	Type	B/C
Process Purpose		To define the requirements of the products and services expected by the customer.				Version	v1r0
Process Outcome		Process Base Practices			Input Work Products	Output Work Products	
OU.1 Customers and other stakeholders are actively engaged throughout the development of the product, and the requirements are agreed.	<u>BP.1 Engage Stakeholders</u> The organization identifies and engages with stakeholders throughout the development of the product to gain a clear understanding of the needs and objectives of the customer.			[Identified Stakeholders]		Stakeholder Management Plan	
	COREAPP: The Core Development process (QMS-P-CODEV, section 2.1) along with the Lifecycle Model guide (QMS-G-LM, section 1.0)			Marketing		Core Development process (QMS-P-SWDEV, section 1.1)	
	CLIENTAPP: The Client Development process (QMS-P-CLDEV, section 1.1) along with the Lifecycle Model guide (QMS-G-LM, section 1.0)			Client Representatives Chief Design Engineer Sales and Marketing Director		Work Task Plan	
	<u>BP.2 Develop Stakeholder Requirements</u> Stakeholder requirements are identified, reviewed and documented in a way that provides clear understanding and visibility to all stakeholders. The stakeholder requirements are maintained under configuration management. Stakeholder requirements are traceable throughout development, integration and release.			Stakeholder Management Plan		Stakeholder Requirements	
	CORAPP: Core Development process (section 3.2) for User Needs Analysis Specification (UNAS).			Software Development procedure (QMS-P-SWDEV, section 1.1)		User Needs Analysis Specifications (UNAP)	
	CLIENTAPP: Client Development procedure (section 2.3) for the Client Needs Analysis Specification (CNAS)			Work Task Plan		Client Needs Analysis Specifications (CNAP)	
	<u>BP.3 Validate Stakeholder Requirements</u> Stakeholder requirements are validated, issues are addressed and agreement that their requirements have been correctly defined is gained from the customer.			Stakeholder Requirements		Stakeholder Approval	
	CORAPP: Standard Verification procedure (QMS-P-STVER) for UNAS.			User Needs Analysis Specifications		User Needs Analysis Specifications Verification Records	
	CLIENTAPP: (QMS-CLVAL) for CNAP validation.			Client Needs Analysis Specifications		Client Needs Analysis Specifications Validation Records	
	<u>BP.4 Manage changes to Stakeholder Requirements</u> Changes to the stakeholder requirements are formally controlled through the change control process. Changes to the stakeholder requirements are reviewed by stakeholders for their impact on cost, schedule and customer needs. The results of the review are communicated to stakeholders, and records maintained.			Change Request		Change Record	
CORAPP: The standard company Configuration and Change Management process (QMS-P-CCM) for changes to all development configurable items, including UNASSs and CNASSs, using the Change Request & Report form (CRRF) (QMS-F-CRR)			CRRFs		CRRFs		
CLIENTAPP: See CORAPP as a default approach although if the client raises a change request on their form this will be reviewed to ensure that it contains all necessary information and then can be attached to the company form and replace part 1, change request details, see Configuration and Change Management procedure (section 9.2).			CRRFs Client Change Request Form		CRRFs		
Resource Required	Senior Software Engineer, Managers, Team Leads		Owner	Senior Software Engineer		Version	V1r0
Creation Date	1/1/2012	Review Date	1/1/2013	Notes	This process can be updated following the review by the Process Improvement Team and approval by the Owner		