



How to Develop and Operate a Sustainment System

Value Chain Competitiveness (VCC)

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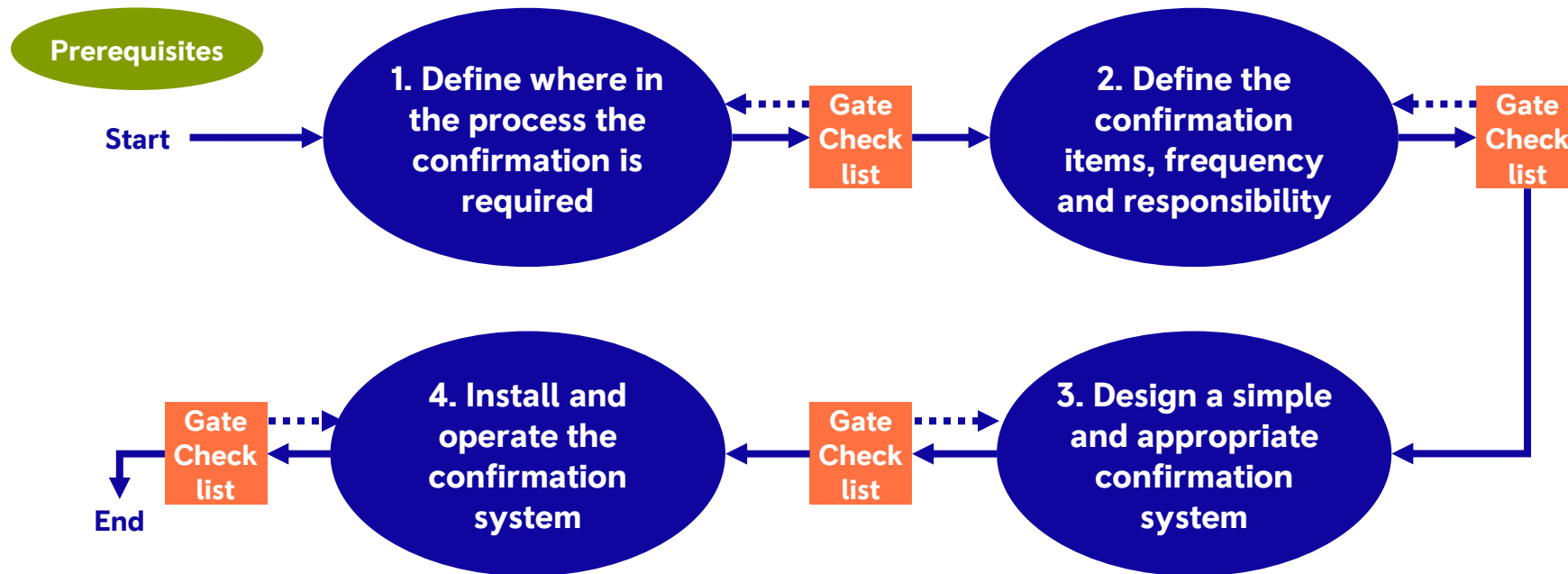
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How to Develop and Operate a Sustainment System



Scope

Objectives & Principles





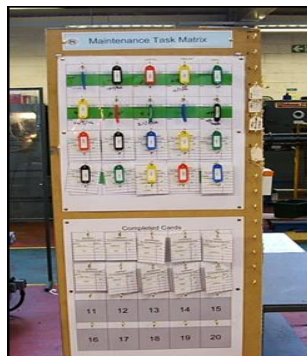
This 'How To' will enable you to:

- Define, install and operate a process confirmation system suitable to the process and environment

Objective and Principles



Sample Confirmation (Sustainment) Systems

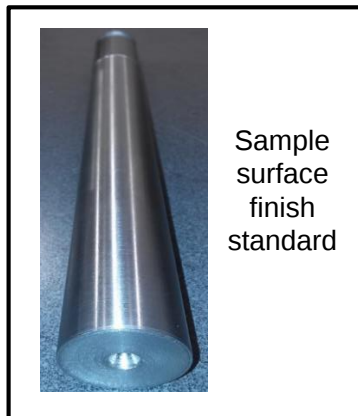


1. **Standards** define how a process should be followed, or what condition an area (or item of equipment) should be in.
2. To ensure customer satisfaction it is necessary to confirm that **standards** are being followed and there is no drift in behaviours.
3. Confirmation allows a **factual** understanding of the **actual status** in comparison to the agreed **defined standard**.
4. **Visual management** of this process gives an understanding of the “status at a glance”, allowing quick management of the abnormality.
5. Process Confirmation Systems should be prioritised where there is the greatest business need and benefit

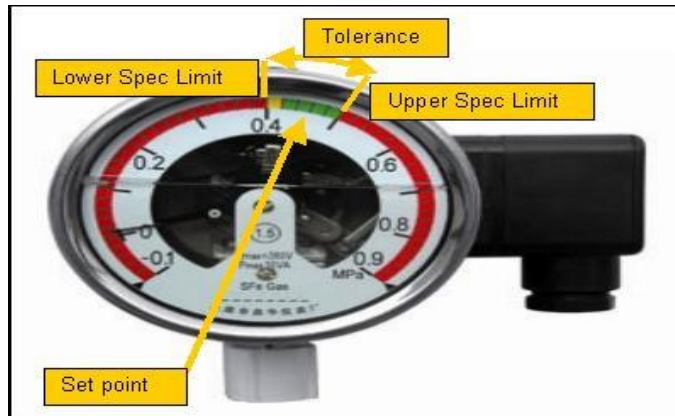
Prerequisites



- Good understanding of the problem or activity to be checked
- A clear visual **defined standard** showing the 'OK' condition – this allows a problem to be clearly identified without misinterpretation
- A clear understanding by all using the standard (including support functions) on what the standard exactly means
 - All users trained in the defined standard



Example: Boundary Samples can show acceptable levels for defects



Example: Standard and limits for pressure

Process Name				Process Objective
Rolls-Royce Core Team Office				To establish an effective process for conducting an office SI Audit
Ref	Operation/Description	Who	When	Key Points
1	Exist audit to be conducted and signed by the Core Team. The audit is to be conducted and signed by the Core Team. The audit is to be conducted and signed by the Core Team.	Rolls-Royce	Rolls-Royce	Exist audit to be conducted and signed by the Core Team. The audit is to be conducted and signed by the Core Team.
2	Rolls-Royce Core Team Office	Rolls-Royce	Rolls-Royce	Rolls-Royce Core Team Office
3	Rolls-Royce Core Team Office	Rolls-Royce	Rolls-Royce	Rolls-Royce Core Team Office
4	Rolls-Royce Core Team Office	Rolls-Royce	Rolls-Royce	Rolls-Royce Core Team Office
5	Rolls-Royce Core Team Office	Rolls-Royce	Rolls-Royce	Rolls-Royce Core Team Office
6	Rolls-Royce Core Team Office	Rolls-Royce	Rolls-Royce	Rolls-Royce Core Team Office
7	Rolls-Royce Core Team Office	Rolls-Royce	Rolls-Royce	Rolls-Royce Core Team Office
8	Rolls-Royce Core Team Office	Rolls-Royce	Rolls-Royce	Rolls-Royce Core Team Office
9	Rolls-Royce Core Team Office	Rolls-Royce	Rolls-Royce	Rolls-Royce Core Team Office
10	Rolls-Royce Core Team Office	Rolls-Royce	Rolls-Royce	Rolls-Royce Core Team Office

Example: Standard Operating Procedure



1. Define where in the process the confirmation is required



Countermeasure existing known non-compliance (reactive use of the confirmation system)

- Review the history of non-conformances (reactive)
- Whenever systems or processes have failed, or standards have not been followed, review them for opportunities to introduce a confirmation system
 - Understand the customer perception
 - Understand the facts / data of any issues that may have arisen
- Confirmation covers operational and transactional processes



Confirm adherence to a standard (pro-active use)

- Wherever there is a standard and there are factors that could affect the output, use of a confirmation to ensure delivery to the standard
 - Standard Operating Procedures (SOP) / Equipment asset care / Logistics processes
- Factors that could affect the output may include:
 - New employees under training
 - New or updated processes or standards
 - An ability to comply with a standard

Gate checklist 1: Define where in the process the confirmation is required



Opportunities for either a reactive or pro active usage of a process confirmation system have been confirmed



2. Define the confirmation items, frequency and responsibility



Define what the confirmation items are

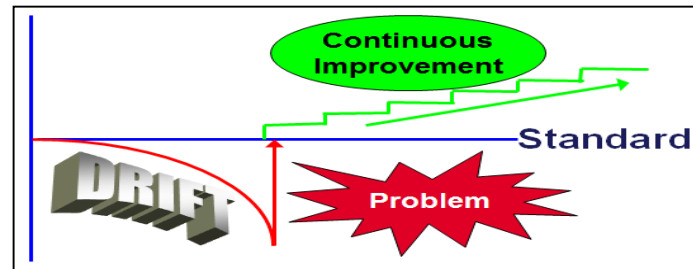
- Decide on the nature of the confirmation items, considering whether it is as a result of reactive or proactive thinking:
 - Reactive - customer concerns; supplier concerns; internal concerns
 - Proactive – as a result of a need to continuously improve our standards
- Typical confirmation items might include:
 - Implementation of countermeasures for quality issues and proactively where issues **could** occur in similar processes
 - Process confirmation
 - Adherence to the SOP, Manufacturing Instruction, or set-up method
 - Safety issues – confirmation of countermeasure implementation and sustainability
 - Workplace organisation (5S) status
 - Equipment status
 - Asset care activities have been completed
 - Gauge calibration within date, or machine parameters and key process variables
 - Visual Management – confirming that performance management information up to date and appropriate?

2. Define the confirmation items, frequency and responsibility



Define the standard

- For whatever is being checked, it is a requirement that a standard is available
 - Without a standard, you do not know if you have a problem !
 - Without a standard, you can not improve



5s Standard Document	
Document No. Q-S-1	Zone: ZONE 1
Prepared by: [Signature]	Checked by: [Signature]
Approved by: [Signature]	Valid to: 2020
A place for everything and everything in its place - Follow the Rule!	
Agreed Standard shown	
Key points: 1. Aisleways & working areas clear & free of obstructions 2. Hatched area 100% clear of parts, boxes or other obstructions (all items on red/white bench or designated overflow area) 3. In Zone areas not overhanging with items 4. Downway clear of obstructions - access for deliveries 5. Floor markings in good condition	
A PLACE FOR EVERYTHING - EVERYTHING IN ITS PLACE	
Responsibility / Frequency It is the responsibility of all operators who use this area to sustain this standard. Check and tidy at regular intervals - daily Remember - the STANDARD is a baseline for improvement Without a STANDARD, you can not see if there is a problem or not	

5S Standard

HOUSEKEEPING CLEANING SCHEDULE			
Cylinder Cell			
Photo	Item	Frequency	Responsible
	1. Clean floor	Daily	Operator
	2. Clean bench	Daily	Operator
	3. Clean work area	Daily	Operator
	4. Clean storage area	Weekly	Operator
	5. Clean overflow area	Weekly	Operator
	6. Clean downway	Weekly	Operator
	7. Clean floor markings	Monthly	Operator
	8. Clean storage containers	Monthly	Operator
	9. Clean work area clutter	Daily	Operator
	10. Clean storage area clutter	Weekly	Operator

Asset Care Standard

Detailed Work Step			
Step	Work Step	Symbol	Key Point
1	Get paper work and check P/O		Check all measurements in the work component
2	Get steel and position on bench P/O		Steel to be used will be found in the left side of the bench
3	Get L-shaped ring & place on steel - refer to P/O 2 & 3		Use L-shaped ring to be used
4	Put steel on P/O		Check steel is in place
5	Place steel on steel P/O		Check steel is in place
6	Place steel & place on steel P/O		Check steel is in place

Standard Operating Procedure

Quality Standard

WAX PATTERN QUALITY ACCEPTANCE STANDARD			
SENSITIVE PART SUBJECT TO JES 128 CONTROL			
PART No.	ENGINE	REASON FOR ISSUE	Corrections
Part No. 1	Engine 1	Issue No. 1	Corrections
Trapped Air Not Acceptable:- Trapped air in Zones 2, 3 and 4. Acceptable Trapped air in zones 1 and 5 Pin Holes Acceptable:- Pin holes repaired using hot CO310 in Zones 1, 2, 3, 4, 5 Not Acceptable:- Exposed Pin holes in any Zone			
Convex View			



2. Define the confirmation items, frequency and responsibility



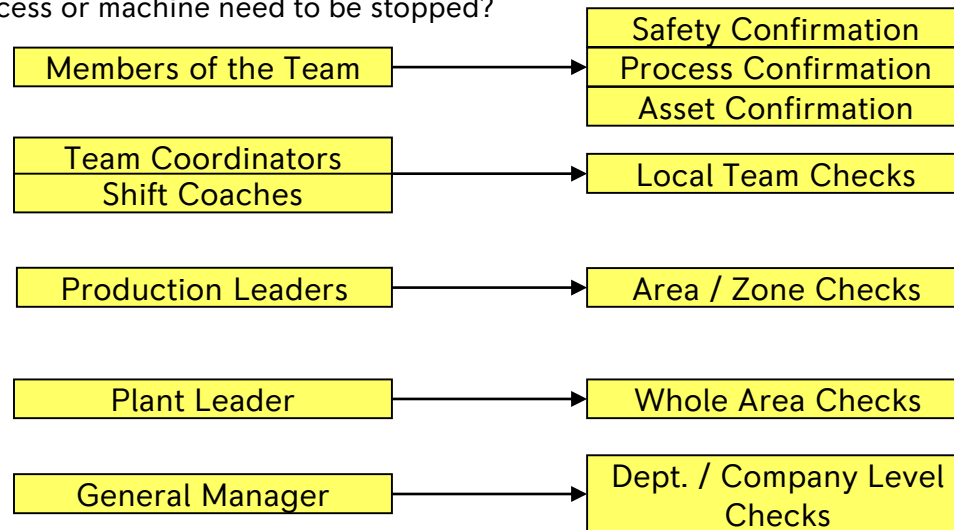
Frequency on the confirmation check

- Things to consider when defining the **frequency** of check:
 - What happens if there is a failure or escape? (the consequence)
 - Check frequency considering problem frequency to prevent escape
 - How easy is the checking activity to complete? - Checks should be quick and simple
 - Working patterns - Does it require confirmation every hour, shift, day or week?
 - Accessibility to carry out a check - Does a process or machine need to be stopped?

- Distribute the checks evenly across the shifts / days / weeks, processes and areas at different levels of owners, eg.

- Things to consider when defining **responsibility** for the check include:

- The ability to differentiate between Good and No Good conditions
- Escalation process and hierarchy of responsibility and accountability





2. Define the confirmation items, frequency and responsibility



Define the escalation process for non-conformance (when a problem is found)

- The following consideration points should be addressed:
 - What happens if a non-conformance is found?
 - What communication needs to occur, and in what manner (phone, e-mail, go-see)?
 - Who needs to communicate the issue or status of resolving the problem?
 - Who needs to be communicated to – who in the organisation needs to know?
 - In what period of time should the communication be made (e.g. within 10-minutes, etc.)
 - What should happen once the communication has occurred?
 - What feedback should be given to the person who raised the issue, etc.
 - What information is required before a process can be restarted if it has been stopped as a result of an issue
- Make a simple process flow chart to explain the steps in the escalation process, who is responsible and over what time period each action is required





Gate checklist 2: Define the confirmation items, frequency and responsibility



- ☒ The confirmation check items have been agreed, based on real **factual** data
- ☒ The **standards** have been defined for each confirmation check – they are clear and easily understood and are not open to interpretation
- ☒ The frequency of the check, along with responsibility for the check has been agreed
- ☒ A simple escalation process has been defined



3. Design a simple and appropriate confirmation system



- Any system should be:
 - Visual – understand the status of confirmation checks “at a glance”
 - Simple – quick to use - anyone should be able to understand how it operates
 - Owned – clear ownership and accountability is required
 - Maintainable – it must be easily self-maintained with minimum documentation, or reliance on outside personnel to make graphs and status reports, etc.
 - Manually updated paper systems are better than those generated on a PC requiring a printer and other person to generate documentation
 - Don’t over-complicate with too many forms to update
 - Flexible – quick to adjust to suit changing requirements (frequency, additional new check items, customer incidents, etc.)

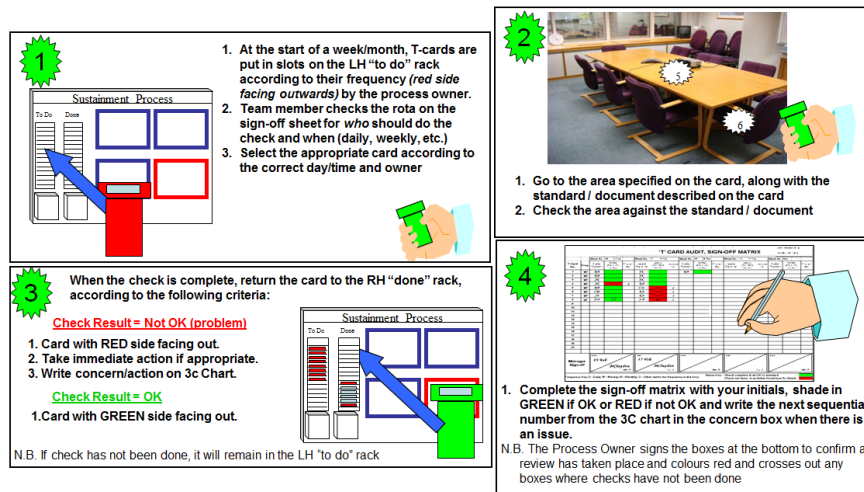


3. Design a simple and appropriate confirmation system



Generate a concept for the conformation system

- Make a basic conceptual system to see how it will operate – keep it dynamic / flexible
- Obtain buy-in from the users on the concept



Eg. Visually Management using 'T' cards



Eg. Visually Management using task cards



3. Design a simple and appropriate confirmation system



Make the confirmation system

- Ensure all charts and documents within the system show
 - Document owner
 - Document filename
 - Document location (on electronic system)
 - Frequency of update
- Check that the process has a primary and back-up owner (for absence cover)
- Incorporate time into standard diaries for checks to be completed





Gate checklist 3: Design a simple and appropriate confirmation system



- ☒ The principles of visibility, simplicity and flexibility have been understood
- ☒ A concept showing how the system will operate in a simple manner has been generated
- ☒ The system is simple, visible, and has defined ownership

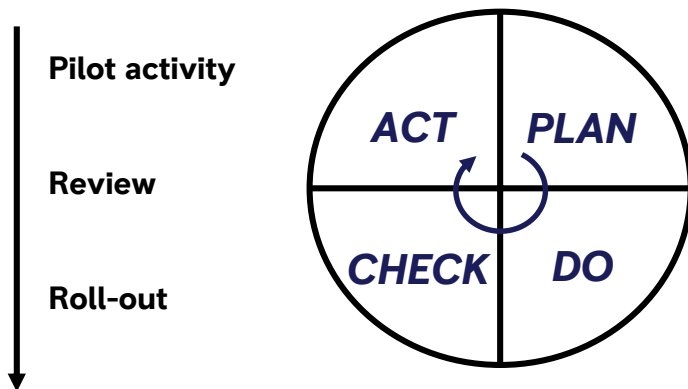


4. Install and operate the confirmation system



Make a plan for introducing the system

- Don't just go and put a system in place, plan carefully – follow Plan-Do-Check-Act



- Engage and involve the right people in setting up the system
 - Ensure they have a good awareness and understanding
 - Involve the end-users
 - Brief the teams in the progress of the project at each step
- Gain commitment from key stake holders



4. Install and operate the confirmation system



Put the confirmation system in place

- Train all the users and support people in the correct use of the system – the standard !
- Provide close support during start-up and support reviews. GO-LOOK-SEE.
- Have clear **roles and accountabilities**
 - System Owner:
 - Agrees responsibilities, adds / removes confirmation items, provides summary reports, chairs regular reviews of the system & countermeasure status
 - Checks that all confirmation activities completed, attends regular reviews, agrees addition / removal of items, ensures corrective action completed quickly (time-bound)
 - Confirmation Owner:
 - “Does” the checks, follows the “system” process, records the result
- Keep a **simple** record showing who has been trained in the use of the system



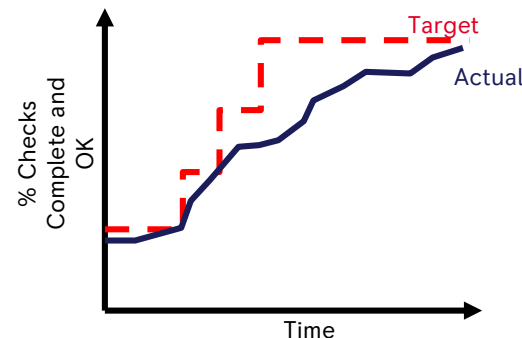


4. Install and operate the confirmation system



Operate the maintain the system

- Is the current situation what was expected?
 - Involve the whole team in a review and gather feedback on performance and issues to resolve
 - After a period of time operating the system to the agreed process, ask some simple questions:
 - Can the system be simplified for the user, without increasing the time needed to do the confirmation activities?
 - How can the process be made more robust?
 - Is it possible to make the process, or confirmation result even more visible?
 - How would improving the review of issues have a positive impact on the overall system?
 - Is the frequency of the review of issues suitable for the nature of the issues raised?
 - Are there new items to be added to / removed from the system?
-
- Check that the system is flexible enough to 'respond' to on-going non-conformance and customer satisfaction issues
 - Remember though, before implementing improvements, to follow the PDCA cycle





Gate checklist 4: Install and operate the confirmation system



- ☒ The purpose of the system has been clearly communicated with all users or involved support people
- ☒ A visible plan is available and has been communicated, showing the actions, timing, and ownership of key items for putting the system in place
- ☒ Key Performance Indicators have been agreed so that everyone is aware of how success (performance) will be measured
- ☒ The users have been trained to the same standard, and the system is fully in place
- ☒ Key Performance Indicators (KPIs) are reviewed to see actual status against a target condition – is the result what you expected?
- ☒ Team review session held to generate improvement ideas