Short Interval Control (SIC)

Driving Real-Time Operational Excellence

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Content

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1. Introduction: Why Short Interval Control (SIC) Is Important

Short Interval Control (SIC) is a simple yet powerful approach to monitor and improve production performance in real time. It helps teams quickly identify and solve problems during the shift, instead of waiting until later. The guiding idea is: "We can't change the past, but we can improve what happens next."
SIC supports AMANN Group's strategy of continuous improvement by involving employees on the shop floor, making performance more visible, and encouraging fast action.

2. Learning Goals

After completing this learning unit, you will be able to:

- Understand what SIC is and why it is important
- Explain how SIC meetings are structured and how often they take place
- Use SIC tools in your area of work
- Know the responsibilities of each team member in the SIC process
- Describe the benefits of using SIC for both employees and the company

3. What Is Short Interval Control (SIC)?

3.1 Definition

Short Interval Control (SIC) means holding short, scheduled check-ins every few hours during the shift—usually every 2 to 3 hours. These meetings are quick (5–10 minutes) and happen directly on the shop floor.

3.2 Purpose

SIC meetings help find problems early and fix them right away. This keeps small issues from becoming big problems and builds a habit of taking quick, focused action.

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4. Structure of a SIC Meeting

Each SIC meeting follows these five steps:

1. **Measure** what happened in the last interval
2. **Compare** it to the target or plan
3. **Identify** what went wrong and why
4. **Act** by fixing the issue immediately
5. **Document** what was done and what was learned

The Meeting Covers:

- **Look Back:** What went wrong in the last few hours?
- **Look Forward:** What challenges might come next?
- **Prioritize:** What needs to be done now, and who will do it?

5. Tools and Inputs

- **SIC Boards:** Boards on the shop floor to track data and issues
- **Digital Dashboards:** Tools like Power BI, Tulip, or Excel
- **Key Metrics:** Output vs. Plan, Downtime, Right First Time (RFT), Planned Time Performance (PTP)
- **Andon System:** A signal system to alert and escalate problems when needed

6. Who Does What in SIC?

- **Operators:** Share real-time performance and problems
- **Team Leaders:** Lead the meetings and document actions
- **Supervisors and Support Teams:** Help solve issues and follow up

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7. Practical Example – SIC in the Dye House

- **How Often:** Every 3 hours
- **How Long:** 10 minutes
- **Who Attends:** Staff from production, quality, engineering, and supply chain
- **Data Used:** Performance reports, downtime logs, RFT and PTP metrics
- **Results:** Actions are assigned, and any serious issue is escalated

Best Practices:

- Prepare the data before the meeting
- Start on time and keep it short
- Use the same format for recording issues
- Make sure everyone contributes and is respected
- Escalate issues that can't be solved right away

8. Benefits of Using SIC

For You:

- Helps you take more responsibility and solve problems faster
- Gives you feedback regularly so you can improve
- Builds teamwork and clear communication

For AMANN Group:

- Increases machine effectiveness (OEE)
- Reduces waste, downtime, and quality issues
- Makes leadership more visible and active on the floor
- Supports a culture of continuous improvement without big investments

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9. Where Did SIC Come From?

History:
SIC was developed as part of Lean Manufacturing and the Toyota Production System (TPS). It started in Japan and became popular worldwide because it helps companies respond quickly to problems on the shop floor.

Early Adopters:
Toyota was first. Later, companies like General Motors, Bosch, and GE used SIC in their lean and Six Sigma programs.

Today:
SIC is now used in many industries:

- Automotive (e.g., BMW, VW, Magna)
- Electronics and machinery
- Food and pharmaceutical production
- Warehouses and logistics

10. Summary

- SIC helps teams fix problems in real time by reviewing performance every few hours
- Meetings are short, focused, and based on facts and data
- Everyone plays a role—from operator to supervisor
- SIC is a key tool in AMANN's path to operational excellence

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AMANN Education Hub – Reflection Questions

Think About It

1. **How can you make SIC part of your team's daily routine to create real improvements?**
2. **How can I, as an Operational Leader, effectively leverage the SIC tool together with my team to sustainably improve efficiency and productivity within our area of responsibility at the AMANN Group?**

By reflecting on these questions, consider not only how SIC can support structured communication and problem-solving, but also how involving your team fosters ownership, continuous improvement, and shared responsibility for operational excellence.

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Helpful Resources and Links

- LeanProduction.com – What is SIC?
  https://www.leanproduction.com/short-interval-control/
- Vorne Industries – Complete Guide to SIC
  https://www.vorne.com/learn/silver-bullets/short-interval-control/
- LearnLeanSigma – How to Start with SIC (6 steps)
  https://www.learnleansigma.com/control/short-interval-control-in-6-steps/#google_vignette
- Tervene – SIC in Modern Manufacturing
  https://tervene.com/blog/sic-manufacturing/
- Toyota Global – The Toyota Production System (TPS) https://global.toyota/en/company/vision-and-philosophy/production-system/index.html
- AllAboutLean – Introduction to Lean Thinking https://www.allaboutlean.com/firstlecture_hom_4/
- Wikipedia – Lean Manufacturing Overview https://en.wikipedia.org/wiki/Lean_manufacturing

Glossary of Terms & Abbreviations

Lean & Flow Fundamentals

- **Cell / U-Cell** — Compact, process-oriented layout (often U-shaped) enabling one-piece flow, visual control, and multi-skilled operation.
- **One-Piece Flow** — Movement of units one at a time (or one small lot) through consecutive steps with minimal buffers.
- **Takt Time (TT)** — Available production time per period ÷ customer demand; the pace at which the cell must produce.
- **Cycle Time (CT)** — Time to complete one unit or cycle at a workstation/process.
- **Lead Time (LT)** — Elapsed time from order to delivery; includes processing and waiting.
- **Work in Process (WIP)** — Inventory between start and finish of a value stream.
- **Bottleneck / Constraint** — Process with the least capacity that limits overall throughput.

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- **Value Stream Mapping (VSM)** — End-to-end visualization of material and information flow to identify waste.
- **Yamazumi (Balance Chart)** — Stacked bar chart used to balance workload across operators or steps.
- **Heijunka (Leveling)** — Smoothing of volume and mix to stabilize flow and resources.
- **Pitch** — Fixed time interval that links planning to the shop floor (often TT × pack size).
- **Gemba** — "The real place" where value is created; go-and-see management practice.

Methods, Systems & Visual Control

- **SMED (Single-Minute Exchange of Dies)** — Reducing changeovers by shifting internal to external tasks and simplifying setup.
- **Kanban** — Pull signal (card/bin/electronic) to replenish only what is consumed.
- **Supermarket** — Controlled buffer with set min/max to decouple processes.
- **FIFO Lane** — First-in-first-out queue to preserve sequence and lead-time predictability.
- **Andon** — Visual/audible alert for status and abnormalities; empowers stop-to-fix.
- **Poka-Yoke** — Error-proofing devices or methods preventing defects at the source.
- **Jidoka** — Built-in quality and autonomous stop upon abnormality.
- **Standard Work (SW)** — Best-known method combining standard sequence, time, and WIP for stability.
- **Skill Matrix** — Visual grid of operator capabilities vs. tasks to plan cross-training and coverage.
- **PFEP (Plan for Every Part)** — Structured data set for each item: supplier, pack, storage, delivery, usage.

Quality & Industrial Engineering

- **FPY (First-Pass Yield)** — % of units passing a process without rework.
- **OEE (Overall Equipment Effectiveness)** — Availability × Performance × Quality.
- **CTQ (Critical to Quality)** — Product/process attributes vital to the customer (e.g., shade, tensile).
- **SPC (Statistical Process Control)** — Control charts to monitor stability and variation.
- **Cp / Cpk** — Process capability indices vs. specification limits (centering accounted in Cpk).
- **FMEA / RPN** — Failure Mode & Effects Analysis; Risk Priority Number ranks failure risk.

- **MSA (Measurement System Analysis)** — Studies (e.g., Gage R&R) to validate measurement reliability.
- **SOP (Standard Operating Procedure)** — Controlled instruction document for consistent execution.
- **PPAP (Production Part Approval Process)** — Formal approval package for customer/launch readiness (if required by sector).

Planning, Logistics & Business KPIs

- **MRP / ERP** — Material Requirements Planning; Enterprise Resource Planning systems for planning/integration.
- **MES** — Manufacturing Execution System (dispatching, tracking, parameters, traceability).
- **BOM** — Bill of Materials; structured list of components/consumables (e.g., yarn, dyestuff, lubricant).
- **SKU** — Stock Keeping Unit; unique item code.
- **MOQ** — Minimum Order Quantity set by supplier or economics.
- **VMI** — Vendor Managed Inventory; supplier monitors and replenishes stock.
- **OTIF (On-Time In-Full)** — Delivery reliability metric.
- **EPEI (Every Part Every Interval)** — Time to cycle through the full product family at leveled conditions.
- **COGS / CoO** — Cost of Goods Sold / Cost of Ownership; key financial metrics for decisions.
- **Postponement** — Delaying final differentiation (e.g., dyeing/color) to reduce inventory and improve responsiveness.

Sewing Thread – Process & Product Terms

- **Winding** — Forming yarn packages (cones/bobbins) suitable for downstream processes.
- **Twisting** — Combining filaments/plies to achieve target structure, strength, and handle.
- **Heat-Setting** — Thermal stabilization to lock twist and dimensional stability.
- **Dyeing** — Applying dyestuffs to achieve target shade; batch or continuous methods.
- **Lubrication / Finishing** — Applying finishes (e.g., silicone, wax) to control friction, heat, and sewability.
- **Spooling / Rewinding** — Transferring thread onto final delivery package (e.g., king spool, cone) to spec.
- **Shade** — Perceived color of dyed thread vs. standard.
- **ΔE (Delta E)** — Numeric color difference vs. standard (instrumental colorimetry).

- **Package Density** — Mass per unit volume on the package; impacts dye penetration and drying.
- **Lot / Dye Lot** — Traceable batch with homogeneous parameters and history.
- **Tex / dtex / Denier** — Linear density units (Tex=g/1000 m; dtex=g/10,000 m; Denier=g/9000 m).
- **Count (Ne / Nm)** — Cotton metric (Ne) or metric count (Nm) indicating fineness in indirect systems.
- **TPI / TPM (Twist per Inch / Meter)** — Twist level applied to the yarn/thread.
- **Tenacity / Tensile Strength** — Load at break normalized by linear density / absolute; key performance measure.
- **Elongation at Break** — % extension at failure; critical for seam performance.
- **Coefficient of Friction (CoF)** — Sliding resistance; strong driver of needle heat and sewability.
- **Lube Pickup (%)** — Mass of finish taken up by the thread; affects CoF and handling.
- **Hairiness** — Surface fibers protrusion; impacts appearance, friction, and linting.
- **Moisture Regain** — % moisture absorbed under standard conditions; affects weight and dyeing.
- **Core-Spun** — Filament core (e.g., polyester) wrapped by staple fibers (e.g., cotton) for strength/handle.
- **Ply** — Number of combined ends (e.g., 2-ply, 3-ply).
- **Package Types** — Cones, tubes, king spools, cops; defined by geometry and capacity.

Compliance, Safety & Sustainability

- **REACH / RoHS** — EU regulations controlling chemicals and hazardous substances.
- **ZDHC** — Zero Discharge of Hazardous Chemicals program/guidelines.
- **MSDS / SDS** — (Material) Safety Data Sheet for chemicals used in production.
- **Higg Index** — Tools to measure sustainability performance (facilities/materials).
- **EHS** — Environment, Health & Safety; regulatory and internal standards.
- **Traceability** — Ability to track materials, parameters, and lots through the value stream.

Cross-Site & Global Operations

- **Master Recipe / Golden Batch** — Harmonized, validated process parameters used as cross-plant standard.
- **Process Window** — Approved parameter ranges guaranteeing capability (e.g., temp, time, tension).
- **Tech Transfer** — Structured replication of a process/cell to another site (documents, training, run-at-rate).

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- **Run at Rate (R@R)** — Verified production at the required volume and quality before release.
- **Obeya** — Large visual management room for cross-functional coordination and problem-solving.
- **A3** — Structured problem-solving/reporting method on a single A3 page.

Contact for Support

For any feedback, questions, or suggestions, please contact:

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