OCTAVE

BROCHURE

Digitalize your HACCP food safety management procedures

How does your company manage food hazards, critical control points and safety procedures?

"A big folder on a shelf is not a food safety management system! The aim should be to ensure control is maintained without generating excessive paperwork."

Food Safety Authority of Ireland (FSAI)

Introduction to HACCP procedures

Hazard Analysis Critical Control Points (HACCP) is a **globally recognized system** developed in the 1960s by the National Aeronautics and Space Administration (NASA) and food safety specialists at Pillsbury.

HACCP aims to ensure that food is safe from biological, chemical, physical and radiological food safety hazards. This covers the food chain from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product.

Government agencies such as the Australian Institute of Food Safety (AIFS), Canadian Institute of Food Safety (CIFS), Daehanminguk Sikpumuiyakpumanjeoncheo (MFDS), Food Safety and Standards Authority of India (FSSAI), Food Safety Authority of Ireland (FSAI), Food Standards Agency (FSA), Kōsei-rōdō-shō (MHLW), Programa Alimentos Seguros (PAS), U.S. Department of Agriculture (USDA) and U.S. Food and Drug Administration (FDA) all endorse HACCP to protect businesses, employees and their customers from the negative consequences of food safety incidents.

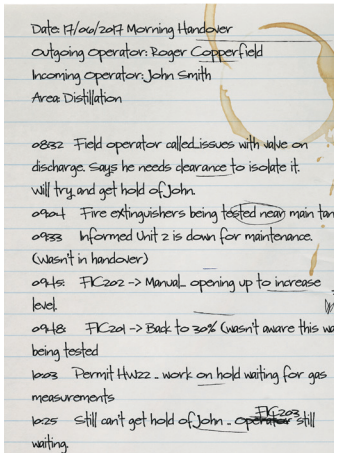
"The best way to make sure (and verify) that monitoring is being done regularly is by using checklists and other documentation to record results."

Canadian Institute of Food Safety (CIFS)

Achieving excellence in HACCP compliance

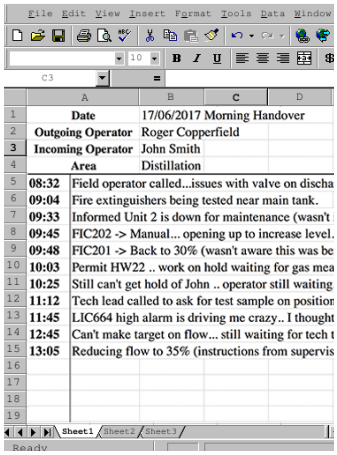
Unfortunately, many companies still use paper spreadsheets and word processor documents to record and manage HACCP food safety management documents and procedures, therefore **missing out on numerous modern-day benefits of digitalization**. Although portable on a clipboard, paper records are siloed and must be physically stored for compliance record-keeping purposes.

Paper records can also be illegible, tampered with and lost and important information is often not carried over to related documents and procedures in the HACCP system for future review. If archive paper records do need to be analyzed, this involves a cumbersome process of searching through archive boxes, filing cabinets and folders. Values recorded on paper are also often entered into spreadsheets and word processor documents to manage follow-up corrective actions and HACCP plan modifications, creating unnecessary double work.



The problem with paper logbooks

With paper logbooks, there is no pre-defined entry structure. Inconsistent data entries become the norm, leading to inefficient reporting. Paper encourages short-hand writing which can make information illegible and may not respect layout, categorization or hierarchies.



The problem with spreadsheet logbooks

Spreadsheet logbooks are usually stored across many digital folders as hundreds of different files, making the process of finding specific information a laborious task. Daily spreadsheet logbooks mount up quickly over the months and years.

Companies can accelerate from operational compliance – with outdated tools – to operational excellence by digitizing HACCP food safety management procedures with Octave Tempo Operations Management (formerly j5 Operations Management Solutions). Unlike other human procedure management solutions that require specialized skills and training to configure and result in a higher cost of ownership, Tempo Operations Management offers a **unique, straightforward digitalization approach with a patented spreadsheet-like configuration environment.**

The distinctive yet familiar low code approach of Tempo Operations Management IndustraForm Templates enables HACCP leaders to quickly manage procedural changes that affect the desktop browser and mobile user experience **without requiring expensive vendor services**. This flexibility allows customers to create, configure and easily adopt a digital solution that can be quickly built to be familiar to users of existing food and beverage procedures. This reduces training costs, vendor engagement and change management demands, resulting in minimal disruption to operations during implementation.

This ability to align with existing processes using simplified configuration allows Tempo Operations Management to be a **quick-time-to-value investment with high flexibility and a lower total cost of ownership.** This digital platform can be used to manage and record information across all seven principles of HACCP and can connect with data historians and industrial control systems. This enables companies to reduce safety risks, digitize HACCP procedures, decrease costs such as wasted time and quickly satisfy internal and external HACCP compliance requirements. The FDA states that:

"The seven principles of HACCP have been universally accepted by government agencies, trade associations and the food industry around the world."

Food and Drug Administration (FDA)

This is supported by regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs that states:

"When any modification is made in the product, process, or any step, food business operators shall review the procedure and make the necessary changes to it."

"Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles."

How digital procedures can enhance the management of HACCP principles

01

FDA definition: Conduct a hazard analysis.

EU definition: Identifying any hazards that must be prevented, eliminated or reduced to acceptable levels.**

High-level requirements

A HACCP team is formed and develops a list of potential biological, chemical, physical and radiological food safety hazards that may be introduced, increased or controlled at each step during food manufacturing and production.

Octave solution

A real-time risk and hazard management "living document" and procedure can be developed in Tempo Operations Management. This can be easily accessed and continuously improved by all of those involved in the formulation and execution of the HACCP plan.

02

FDA definition: Determine critical control points (CCPs).

EU definition: Identifying any hazards that must be prevented, eliminated or reduced to acceptable levels.**

High-level requirements

A CCP is an essential step at which control(s) can be applied to prevent a food safety hazard or reduce it to an acceptable level. The use of a CCP decision tree is common to identify, develop and document each CCP.

Octave solution

A digital CCP decision tree procedure can be developed in Tempo Operations Management with the required workflows to identify, develop and document each CCP.

03

FDA definition: Establish critical limits.

EU definition: Establishing critical limits at critical control points that separate acceptability from unacceptability for the prevention, elimination or reduction of identified hazards.**

High-level requirements

A critical limit is a maximum or minimum value to which a biological, chemical, physical or radiological parameter must be controlled to prevent or reduce the occurrence of a food safety hazard to an acceptable level. Critical limits differentiate between safe and unsafe operating conditions at a CCP. Typical parameters in the food industry include:

- Best before or use-by dates
- Chlorine availability
- Dimensions
- Human sensory information (such as aroma or visual appearance)
- Humidity
- Moisture level
- pH
- Preservatives
- Salt concentration
- Temperature
- Time
- Titratable acidity
- Viscosity
- Water activity (aw)
- Weight

Octave solution

Critical limits can be easily configured in Tempo Operations Management to alert personnel of unsafe operating conditions. Guidance can be provided during procedures when anomalies occur and the Tempo Operations Management event management functionalities can inform personnel when values begin to and move outside safe operating limits. Tempo Operations Management have established connectors to data historians and industrial control systems, enabling the connection of HACCP procedures to real-time and historical data from equipment. Octave Tempo Operator Rounds and Routine Duties (formerly j5 Operator Rounds and Routine Duties) can also be used to record and highlight concerning “human sensor” information such as product aroma and visual appearance and troubling process information such as equipment wear-and-tear, interruptions, mechanical failures and vibrations. This can be achieved by using manual test recording, connections with Laboratory Information Management System (LIMS) software, data historians and MES software using real-time quality monitoring data.

04

FDA definition: Establish monitoring procedures.

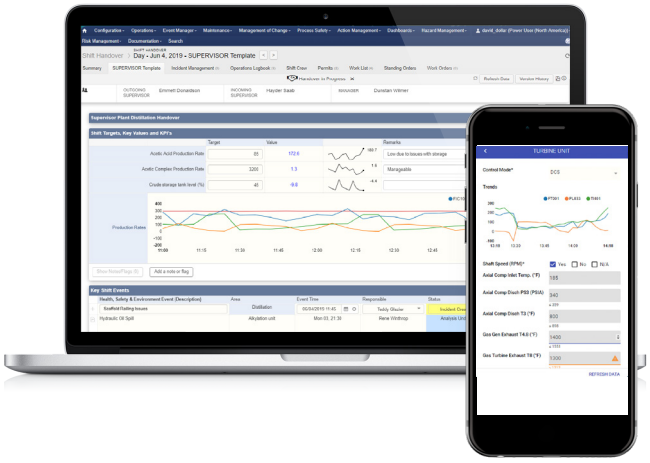
EU definition: Establishing and implementing effective monitoring procedures at critical control points.**

High-level requirements

Monitoring is a planned sequence of observations or measurements to assess whether a CCP is under control and to produce an accurate record for future use in verification. Because of the potentially serious consequences of a critical limit deviation, monitoring procedures must be effective.

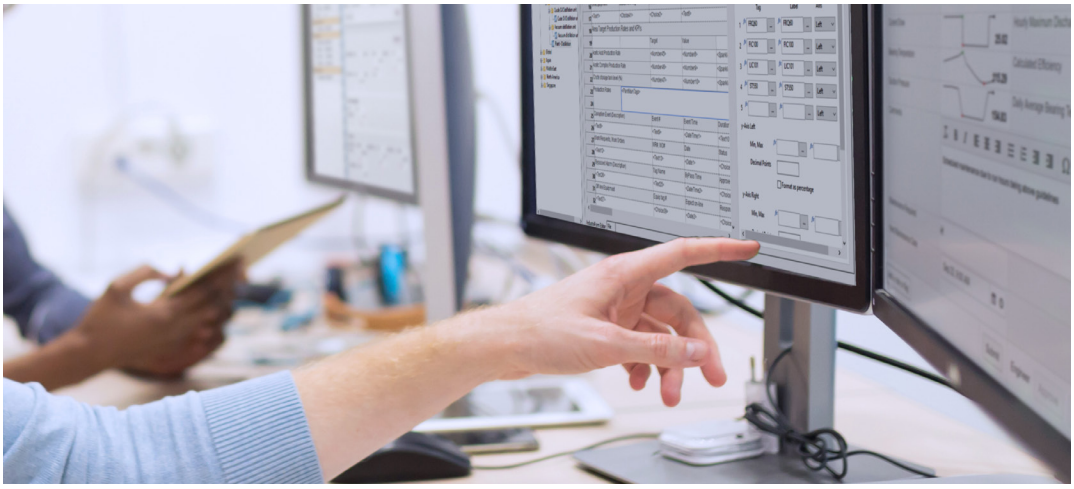
Octave solution

Monitoring procedures developed in Tempo Operations Management can describe how measurements will be taken, when the measurement is taken, who is responsible for the measurement and how frequently the measurement is required. Tempo Operator Rounds and Routine Duties can be planned in advance to assist continuous monitoring by connecting procedures to calibrated measurement devices and equipment sensor data. They can also be used for discontinuous inspections and random checks. Standard operating procedures with clear role definition and digital signatures – complying with FDA 21 CFR Part 11 – can be developed across a HACCP system developed in Tempo Operations Management.



Straightforward digitalization in operations management

Achieve quick-time-to-value with the digitalization of your operations management business processes and procedures.



05

FDA definition: Establish corrective actions.

EU definition: Establishing corrective actions when monitoring indicates that a critical control point is not under control.**

High-level requirements

Corrective actions are procedures that are followed when a deviation in a critical limit arises. Corrective actions identify and correct the cause of non-compliance, determine the disposition of non-compliant products and record follow-up actions.

Octave solution

Octave Tempo Incident Management (formerly j5 Incident Management) can be used to identify environmental, quality, process, safety incidents and other deviations from a HACCP plan. This allows personnel to perform root cause analysis, specify and manage the corrective actions required and assign who is responsible for executing these corrective actions. This ensures that an auditable record will be maintained when corrective actions are taken. When resolved, corrective actions can be easily highlighted for future development if required. Specific personnel or job roles can be automatically assigned to corrective actions and other procedures, increasing HACCP accountability and providing real-time HACCP compliance.

06

FDA definition: Establish verification procedures.

EU definition: Establishing procedures, which shall be carried out regularly, to verify that the measures outlined in principles one to five are working effectively.**

High-level requirements

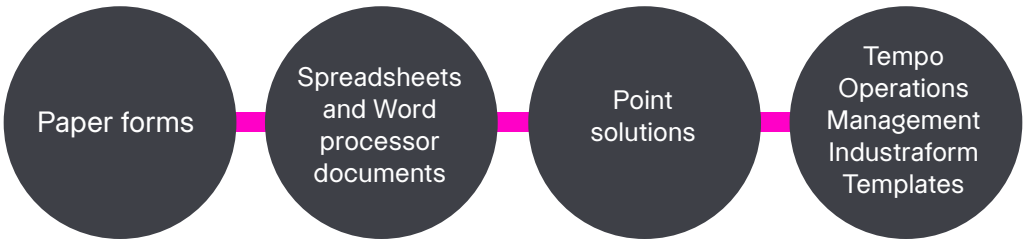
An HACCP system consists of several "living documents" that require ongoing testing and tweaking. Because of the safety-critical nature of an HACCP plan, frequent reviews and verification that it's being correctly followed are required. The continuous improvement of monitoring procedures and corrective actions is a vital part of this.

Octave solution

With spreadsheet-like form design – using the Tempo Operations Management IndustraForm Designer – customers can create and manage "living documents" with complete auditable actions and version control. This means Tempo Operations Management allowallows for straightforward digitalization without disruptions. Companies can efficiently update, test and implement monitoring procedures and corrective actions. Importantly, for auditing purposes, procedures completed before modifications will display and maintain the data as it was recorded.

The evolution of operations management procedures

By drawing a comparison with the evolution of lighting across the centuries, this infographic shows how the patented Tempo Operations Management IndustraForm Templates constitute an entire new era in operations management.



07

FDA definition: Tempo Operations Management Industraform Templates

EU definition: Establishing documents and records commensurate with the nature and size of the food business to demonstrate the effective application of the measures outlined in principles one to six.**

High-level requirements

To execute an HACCP plan effectively, it is essential to demonstrate regulatory compliance by providing evidence of the documentation and procedure records. These should be easily accessed and available in an audit-friendly format for inspection by government agencies and other internal and external compliance personnel.

Octave solution

Using Tempo Operations Management Dashboards, Reports and Views, monitoring procedures and corrective actions can be observed in real-time from start until completion by all personnel involved in the HACCP plan. The use of Tempo Operations Management ensures that personnel access the correct revisions of documents and, as a result, records data correctly, ensuring full traceability and transparency. This ensures that the HACCP documentation used by personnel meets compliance when completed and is continually updated in line with the ever-evolving internal reviews and government legislation. Compliance documents and reports that must be routinely sent to government agencies and regulators can now be completed and distributed in just a few minutes. This allows for compliance with HACCP record-keeping legislation like EU Regulation (EC) No 852/2004 and FDA 21 CFR Part 11.

The successful implementation of a HACCP plan is facilitated by a commitment from top management and according to the CIFS:

"All employees should know where the Food Safety Plan is located, what they are responsible for doing (e.g., updating cleaning schedules, filling out temperature logs), when they need to do it and who to report issues to. It's common for Health Inspectors to ask for these types of documentation during a health inspection, so be sure to store them in a safe place."

Canadian Institute of Food Safety (CIFS)

ISO 22000 – standard specifying the requirements for a food safety management system – also incorporates the principles of HACCP and good manufacturing practice (GMP). As a result, the HACCP plan does not stand alone in a food processing facility. GMP supports the HACCP plan and considers food safety and quality issues that are not critical in reducing hazards.

Tempo Operations Management can also be used to digitalize documents and procedures that are complimentary to the HACCP plan, such as:

- Batch management procedures
- Fumigants, pesticides and other non-food chemical segregation procedures
- Cleaning and sanitization procedures
- Quality assurance procedures
- Receiving, storage and shipping procedures
- Preventive maintenance and calibration schedules
- Standard operating procedures

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.