

Digital HACCP

**What it looks like,
how to do it,
and what do you get out of it?!**



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Foreword

As you're reading this digital HACCP guide, you're sure to have a pretty good picture of how very many different kinds of programs, standards and other schemes there are for ensuring food safety.

HACCP, ISO22000, FSMA, BRCGS, SQF... all very good in principle, but they can be also be laborious to put into practice and manage in everyday work.

Digital food safety solutions, or what we call digital HACCP, are fortunately gaining popularity in the food industry, all the way from the farm and up to the customer's fork. These can potentially simplify and significantly ease up the work needed to run an effective food safety program.

Of course, there have been digitalization attempts even before, for instance with excel (basically just a different form of paper), digital checklists (simple but limited) and so on.

But a complete digital food safety solution does much more than just put your checklists on a mobile app or a computer screen.

That's why we wanted to offer a better look into what a modern digital HACCP solution looks like, what using it is like in practice, and lastly how you can use it to really get to the benefits it offers.

Alongside that you'll also get a glimpse at Sensire's own digital HACCP system, which we'll be using to demonstrate the examples we've set up for the purposes of this guide.

So, let's get to it!

Digital HACCP in the Cloud

We'll start this section with a quick view of why we think a digital food safety solution should be built online and in a cloud platform.

After that we'll get to more practical matters and look at what a cloud platform looks like and how it can be used to manage HACCP and other food-related tasks.

If you're more of a practically-minded individual, do feel free to skip this next section and move straight to getting a look of the platform.

Central Command

Digital HACCP is from its very foundation an online experience.

It's possible to build a digital HACCP system which doesn't connected to the web in real time, but this loses something of the principle on which a digital system is built – simply that the value of data is how fast and easy it is to get relevant information.

It would make little sense to digitally monitor a task or a measurement just to have to manually upload the data in order to manage or analyze it.

This is particularly true in those cases where you want to manage several locations, like a group of restaurants or a remote catering operation. Managing all of them centrally helps gain a better view of how well they are doing, but if this isn't done automatically, it can be a drag to get all that info onto your screen.

There's plenty of emails that you'll get every day already
– no need to add any HACCP data attachments to the list.

But let's not get stuck on the philosophy of digital HACCP. We're here to look at what a digital HACCP system looks like and what you can do with it.

What it looks like?

So, with the digital HACCP cloud platform you can clearly see what is happening at any given moment and how well your business is managing to handle the tasks you have set for them.

This is done via dashboards that you can set up to show the most important data which you want to have a particular focus on.

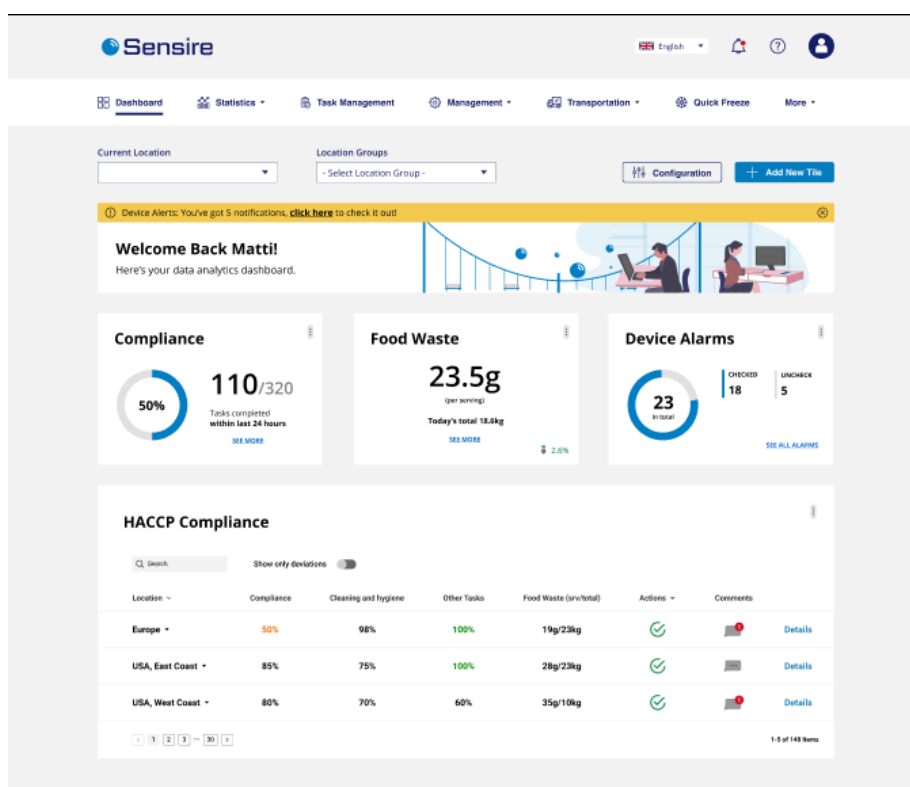
Typically, there is a standard dashboard view already available on set-up which includes compliance tasks, alarm notification tiles and any possible automatic monitoring graphs.

There is no need to settle for just this view, of course, and usually at least the management users personify the opening dashboard view for easy access to the most relevant data. You can see an example of such a personified view in the picture below.

Personifying your dashboard view is handy because, while there is a lot of data being processed in the background and compiled from all the tasks you have set up to be monitor through the system, the data is not the interesting thing – it's the insights you can get from it.

Compilations of certain data streams can in this way show you a condensed first view of the things you need to pay attention to if needed, or, in the best-case scenario, that everything is going well and you can lay back and take it easy.

But to get to this view, there needs to be some data coming in. So, next let's look at how you can get started with creating tasks that will turn into the data you want to see.



Personified cloud dashboard view in the Sensire Digital HACCP system

Making it work for you

So, the kind of dashboard you can see above is the result of setting up tasks and having your employees complete them, or drawing data from automatic monitoring systems.

Setting up a central task management hub in the cloud is particularly useful if the digital HACCP system is being implemented in more than a single business location. In such cases the cloud platform can be used to centrally direct all those locations, manage their HACCP plans and monitor their food safety, including any and all tasks from start to completion.

It's also possible to leave setting up tasks to the various locations and just gather the resulting data centrally.

If you don't want different restaurants reporting variously in Celsius, Fahrenheit or Kelvin, providing some kind of a standard template for task creation is, however, a very good practice.

In practice, setting up a task is as simple as transferring your HACCP plan (or cleaning, storage, or any other type of plan involving tasks) into the digital HACCP system.

And to take this into the realm of practice, setting up the task for measuring the temperature of a chicken fillet during cooking could look a little something like what you can see below.

The screenshot displays a digital HACCP system interface. On the left, a vertical timeline shows various tasks scheduled from 3:00 AM to 6:00 PM, including 'Receiving chilled food', 'First Control Check', 'Cooking temperature check', 'Turning temperature check', 'Food waste measurement', 'Daily Cleaning', and 'Food waste measurement'. The central focus is a 'TASK' creation modal window. This window contains the following fields and options: 'Task name' (Cooking temperature check), 'Task code' (empty), 'Task instructions' (a detailed procedure for using a measurement probe), 'All day task' (unchecked), 'Start' date and time (6/22/2020 9:30 AM), 'End' date and time (6/22/2020 10:00 AM), 'Repeat' frequency (Daily), 'Repeat every' (1 day(s)), 'End' condition (Never), and 'Actions' (Cooking temperature check). The background is slightly dimmed to highlight the task creation form.

Setting up a task in the Sensire Digital HACCP system

What's in a Task?

So, let's see how such a task would be created in the Sensire system.

Simply it's just a matter of entering a descriptive name for the task ("cooking temperature check") and setting up some task instructions to ensure correct and standard way of completing them, such as you can see in the picture above.

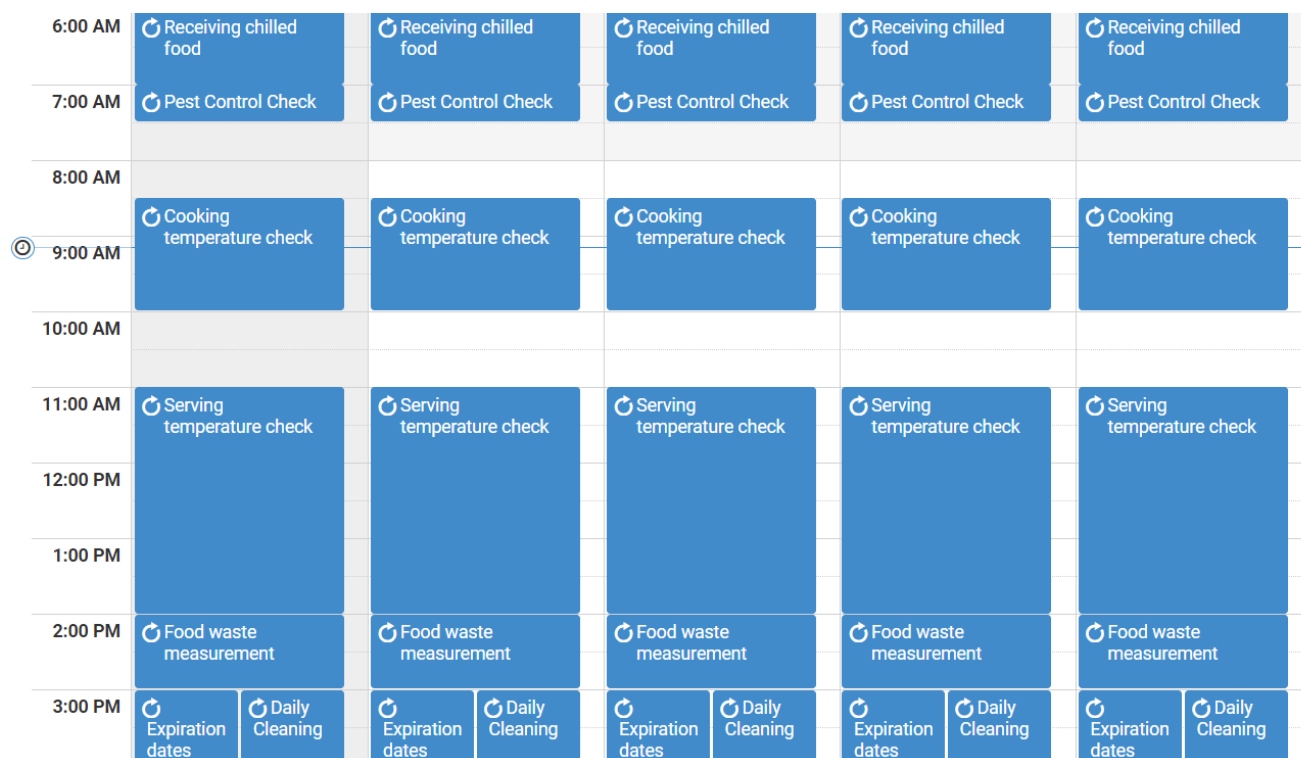
You can also see how the task can be scheduled by date and time, to be repeated daily and so on. Further down the task also includes critical limits which determine whether the result of the task is acceptable or not.

The task creation will also give you options for different types of menu items which come with their own critical limits, such as poultry, beef, dairy etc. There will also be a standard selection of pre-made task types to choose from, so these doesn't need to be set up individually each time.

This will save a lot of time by making it easier to set up tasks from standard templates that can later be edited if necessary.

So, in the case of wanting to create task that allows us to measure the temperature of a chicken fillet, we'd choose the task type to be a cooking temperature check and simply add the types of menu item that can come up in our cooking temperature check.

After this simple set-up, you can then see the task appear on the daily calendar, as shown in the next picture.



Full week of tasks in the Sensire Digital HACCP system

You can of course separate task types depending on location, but also assign different task to different staff roles, such as chefs, cleaning staff or the serving staff.

This especially benefits the temps you'll inevitably have to use every now and then, because the tasks include clear instructions tied to the temp's role in the kitchen.

This makes it much easier and faster for them to get up to speed on how your business want's things to be done.

Of course, not all food businesses are large enough to be able to manage such a separation of different roles, and in the next picture you can see the daily agenda for a staff member in a smaller business.

Search	Tasks	Settings	Measurements
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Filter by user group:	Chefs
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Today	Monday, June 22, 2020-Monda...	+ Add task	Day	Work Week	Week	Agenda
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Date	Time	Task
22 Monday June 2020	6:00 AM-7:00 AM	🕒 Receiving chilled food
	7:00 AM-7:30 AM	🕒 Pest Control Check
	8:30 AM-10:00 AM	🕒 Cooking temperature check
	11:00 AM-2:00 PM	🕒 Serving temperature check
	2:00 PM-3:00 PM	🕒 Food waste measurement
	3:00 PM-4:00 PM	🕒 Expiration dates check
	3:00 PM-4:00 PM	🕒 Daily Cleaning
23 Tuesday June 2020	6:00 AM-7:00 AM	🕒 Receiving chilled food
	7:00 AM-7:30 AM	🕒 Pest Control Check
	8:30 AM-10:00 AM	🕒 Cooking temperature check
	11:00 AM-2:00 PM	🕒 Serving temperature check
	2:00 PM-3:00 PM	🕒 Food waste measurement
	3:00 PM-4:00 PM	🕒 Expiration dates check
	3:00 PM-4:00 PM	🕒 Daily Cleaning
24 Wednesday June 2020	6:00 AM-7:00 AM	🕒 Receiving chilled food
	7:00 AM-7:30 AM	🕒 Pest Control Check
	8:30 AM-10:00 AM	🕒 Cooking temperature check
	11:00 AM-2:00 PM	🕒 Serving temperature check
	2:00 PM-3:00 PM	🕒 Food waste measurement
	3:00 PM-4:00 PM	🕒 Expiration dates check
	3:00 PM-4:00 PM	🕒 Daily Cleaning

Tasks can be set to different staff member roles

In this case we're looking at a restaurant where there are not that many employees, so the kitchen staff are completing different kinds of tasks pretty flexibly, from food prep tasks to sanitation.

In a bigger business the Chef's task list might just be measuring temperatures and other such activities related to cooking. Expiration date, cleaning, and pest control tasks would then be scheduled to other members of the staff.

Editable tasks which can be set to staff roles or just locations offer such adaptability in a digital HACCP system that it can serve any kind of food business, regardless of size or the number of employees.

Digital HACCP Part Two: The Smart App

But clearly just having a cloud for setting up tasks isn't enough when these tasks also need to be viewable by your staff. For that, let's next take a look at the second part of digital HACCP system: the smart app.

Digital HACCP in Action 1: Food Preparation

So, how would all this look like from the staff's point of view?

In the first picture you can see the task we created in the cloud previously, only now it's coming up in the mobile app that your staff members use to record data on the tasks you set them.

This is a type of task your chef would be performing multiple times during the day, so we scheduled it to continue throughout the lunch shift. The chef can then perform measurements at any time within the time frame.

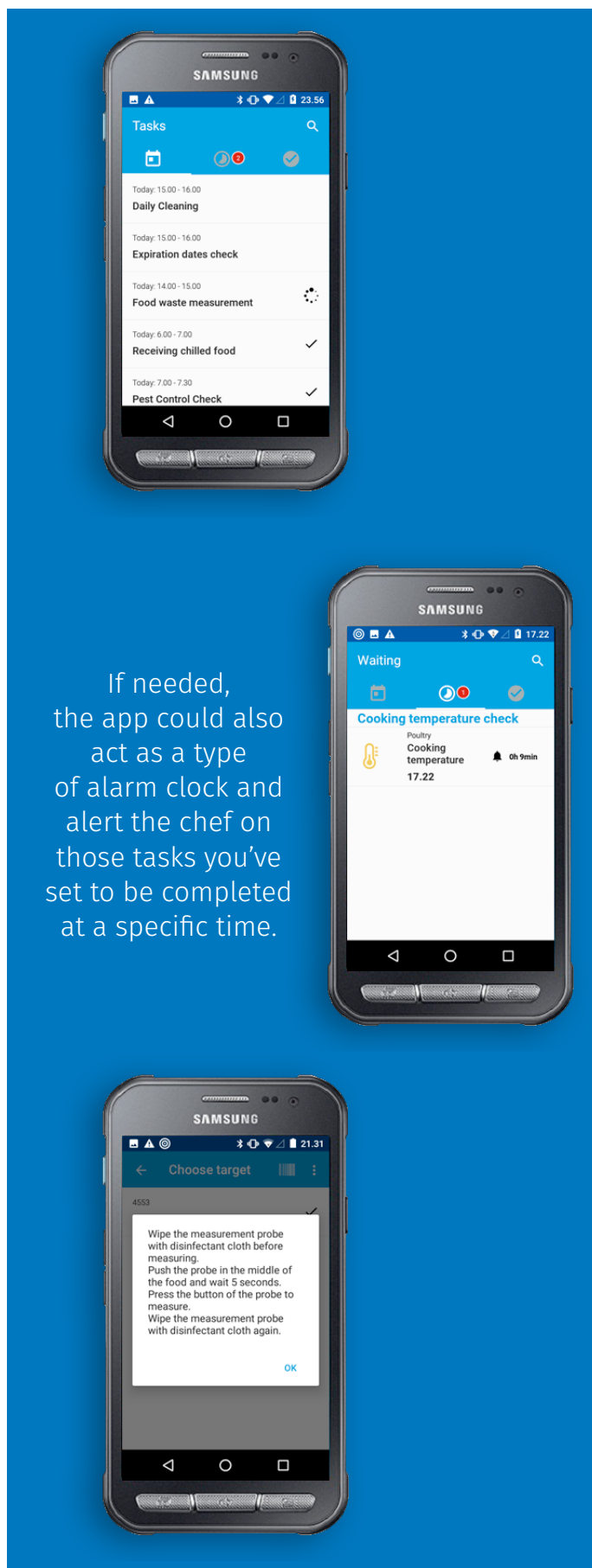
When the chef wants to perform the measurement, the digital HACCP system will also offer up the guidance you set for the task in set-up-stage.

This helps you make sure there is no uncertainty on how the task should be performed correctly.

Of course, we'd be safe in assuming your chef already knows how to do this, but let's say we're giving this task to someone just coming off school, or who's temping and doesn't have much experience yet.

For these kinds of situations, it's nice to have the directions available in the app, even if your more long-time staff don't really need them.

So, as per the instructions, the chef would now disinfect the probe, choose the menu item they wish to measure the temperature of, perform the measurement and finish by disinfecting the probe again.



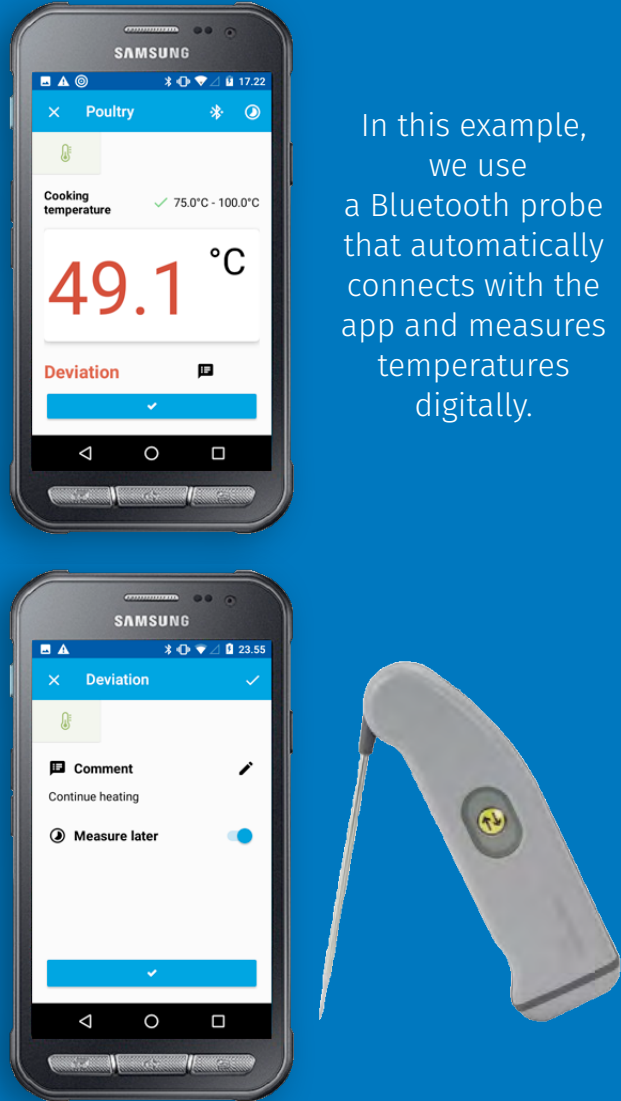
But something is wrong: the fillet isn't hot enough to serve.

Because the result isn't within the safety limits for this type of menu item, the app instructs the chef to complete a corrective action – in this case just to reheat until hot enough – and then redo the task.

This helps make sure your staff knows what they are doing any time they need to complete a scheduled task. Ultimately this is to ensure there is no way unsafe food would reach your customer.

In this way a digital HACCP can include and take care of the whole food safety program from performing the necessary checks and measurement to instruction on how to maintain high quality and safety in the process.

And at least to our customers, moving to a digital HACCP system has been a relatively easy but a big change.



In this example, we use a Bluetooth probe that automatically connects with the app and measures temperatures digitally.

Alternatively, the chef could also use an analog thermometer and just tap in the numbers.

“It’s plays a big part in our staff’s day. For instance, when our chef prepares several batches of a certain dish, they will measure the temperature of each batch and records the results using the mobile application. We also record hygiene samples and cleaning tasks the same way.

So, every staff member finds their perso-nalized daily task checklists in the app when they log into the system – It’s a lot more sensible and easily monitored way of doing things than any of the ones we’ve used previously. So yes, I’d say this does just what we wanted it to help us do.”

Eija Heinonen
| City of Varkaus
Catering and cleaning services

And we can even leave aside the fact that digital monitoring for most HACCP tasks will be a lot less burdensome on your staff (no filling in papers for things done and measurements taken), a digital HACCP system can offer you the ability to see in real time how things get done, problems get corrected and compliance is upheld.

This makes sure you're in control of your business at all times, without exception.

But before going too deep into all the reasons for setting up a digital HACCP system, let's look at some other examples of how a digital HACCP system performs in typical food business use.

Digital HACCP in Action 2: Storage & Receiving

Despite the fact that a digital HACCP system may feel like something only applicable to direct food safety tasks, an effective digital HACCP solution goes a long way beyond the scope of pure HACCP. It will also involve all the other programs you need to maintain your food business's safety and quality at a high level.

In HACCP terms this would mean including in your digital HACCP system those tasks that would normally be considered as part of the pre-requisite programs such as good sanitation or storage practices.

For example, good storage practice expects you to be performing inspections of your incoming goods or checking best-before dates to ensure a proper first-expired-first-out system in your storage.

Usually the first one is done as a checklist type of task – that is, looking at the goods to determine if the packaging is intact and the products in good condition. With particularly cold-stored foodstuffs, you might need to measure the temperature at this point as well, such as in the picture below.

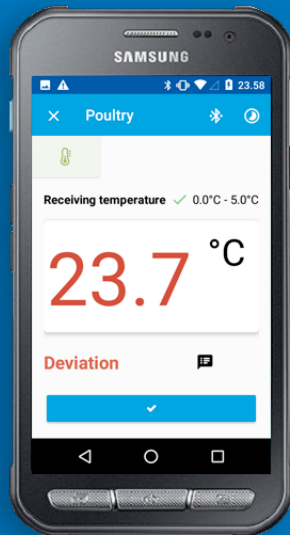
Again, the task itself is created in the cloud and includes the critical limits for menu item targets. However, your staff only sees what is shown in the picture below.

And in this case, that would mean rejecting the delivery, because you really don't want to accept some room-temperature poultry into your larder.

But in addition to just marking a shipment as accepted or rejected, with the digital HACCP system you can also include more information.

You might, for example, make it mandatory to take a picture of rejected shipments so you'd have proof for the reason of rejection. You could also instruct the staff member in charge of inspection to write down why a particular decision was made, who delivered the affected shipment and which distributor sent it to you.

This makes it pretty easy to see if there are repeating problems with a particular operator, allowing you to then make decisions for procurement based on relevant data.



You can catch and comment on deviations easily with the app.

The main benefit for the digital HACCP system in these situations is, we think, the ability to provide much more detailed information on specific aspects of your operation, which can then help you save money and prevent fruitless squabbling over who is at fault.

Our Feature Presentation: Automatic Temperature Monitoring

There's another thing we can talk about here in particular, which is related to good storage practices and digital HACCP. That is automatic temperature monitoring.

Typically, good storage practices include measuring the temperature of your cold storages daily or even multiple times a day. It's also important from a food safety point of view that your cold rooms stay cold.

But besides being important, it can also get tedious and thus easy to forget.

It's of course possible to just include a temperature measurement task into your digital HACCP, which can then alert staff so the task gets done.

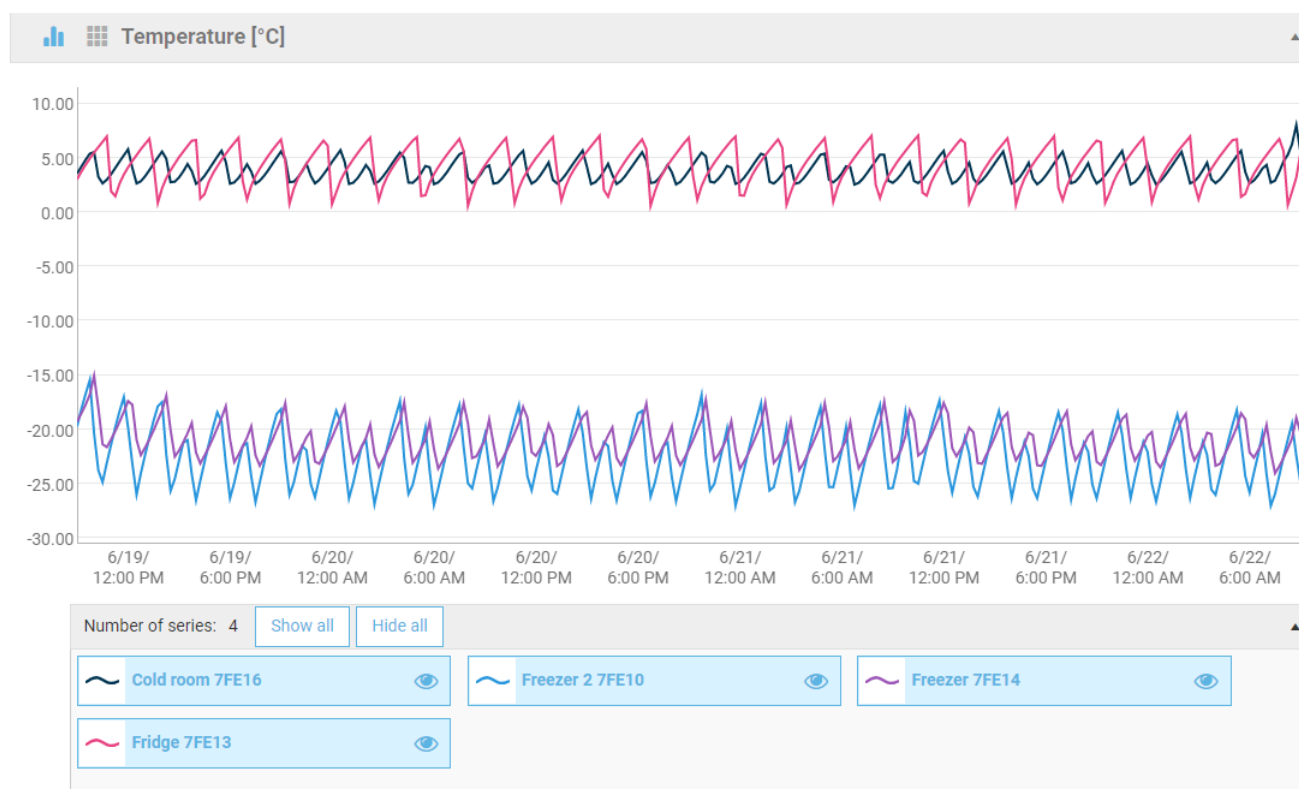
Another (and easier) way is to connect all cold rooms, hot holding equipment and suchlike to an automatic temperature monitoring system which would then automatically create a compliant temperature record and alert on potentially hazardous changes.

You'd eliminate one (or usually several) tiny but ultimately pretty rote tasks, freeing up that time for something more productive.

Automatic monitoring also helps prevent possible threats to food safety, when any temperature problems would set off an alarm before it's too late to prevent a catastrophic failure.

Such systems are available on their own as well, but connecting one directly with a digital HACCP system has the added benefit of eliminating one extra system.

This will then collect all that data to the same interface where you're handling all your other HACCP, food safety and quality tasks anyway.



Detailed temperature monitoring data lets you see what's happening

For our customers this kind of combination of automatic monitoring and digital HACCP has proven useful, as pointed out by this happy customer:

“We’re saving time by using automatic temperature monitoring, because we don’t need to separately go and measure the temperatures in our cold rooms or actually pay any attention to their temperatures apart from if we receive an alert.

And Sensire’s system is so handy it alerts us directly and immediately on our cell phone, so we can act before the food product has had a chance to deteriorate.”

Elsi Lääveri
City of Heinola | Service Manager,
Catering and cleaning services

So, as you can see, the overwhelming benefit from a digital HACCP comes with being able to enrich the data you would normally receive from your HACCP plan with much more additional information that can help to get to root causes more easily and save time and trouble on useless bickering over who's to blame in conflict situations.

Adding automatic monitoring also helps save time and gives peace of mind when you'll know there's not going to be any problems with your storage areas that you'd be able to miss.

Digital HACCP in Action 3: Food Waste

Another nice thing about a digital HACCP system is that, along with safety and quality, it can also support your sustainability efforts.

A good way to look at this is in the context of food waste.

Better information on the amounts of waste you're producing per location, per ingredient, or per day or meal can really help you see where the waste comes from.

So, let's see how digital HACCP could be used for this purpose on a practical level.

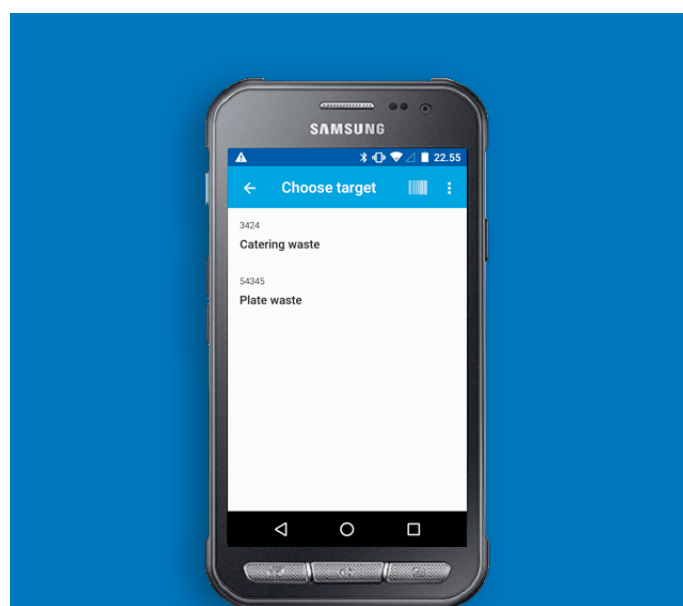
Now, using a digital HACCP system to monitor food waste in your business is at most a nice to have add-on if you just want to know the rough amount of waste you produce on a daily or weekly basis.

But when you start to get information on where that waste is accumulating, you get to the actual value of digital HACCP for food waste prevention.

For instance, in the picture next to, you can see how the target for waste measurement is divided into plate and catering waste. And this measurement is naturally already specified as happening on a particular meal like lunch or breakfast already.

And you can go even further by taking into account the menu items you're offering and how much of those get wasted.

In practice, waste measurement tasks appear just as any others in the digital HACCP app, so adopting them only requires logging some more data, whether visual estimates or actual weighing results.



For example,
you could easily identify,
if your waste is due to
overproduction (catering waste)
or portion sizes (plate waste).
You could then better focus
your waste prevention efforts
on the more effective target.

So, at certain times your catering staff could log waste amounts – mainly when changing dishes or emptying food waste bins in customer spaces.

Additionally, you could also measure cooking waste from kitchen premises, which would help you also compare how much basically inedible waste is created during the preparation process.

Ultimately all this data would be gathered in the cloud platform, where you can then then compare and analyze the amounts of waste for various meals and where they accumulate. This can then offer insights into how that amount can be minimized.

So, for example,
if there is a lot of catering waste occurring in your buffet-style lunch,
as in there's a lot of food left in the serving dishes, it might be better to change
into smaller dishes and change them when the previous is empty.

This is a handy way to make sure there's less surplus food left when the buffet
closes.

Knowing where and how much waste your business is producing is an easy way to get to such insights without excess trouble. This will then help you improve processes, prevent waste and ultimately save money on not having to buy ingredients which will end up in the landfill or compost.

Digital HACCP in Action 4: Cleaning and Sanitation

One thing that's been coming up a lot lately is cleaning and sanitation in food business, for obvious reasons (i.e. COVID-19).

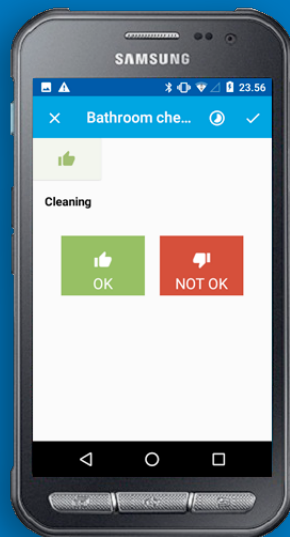
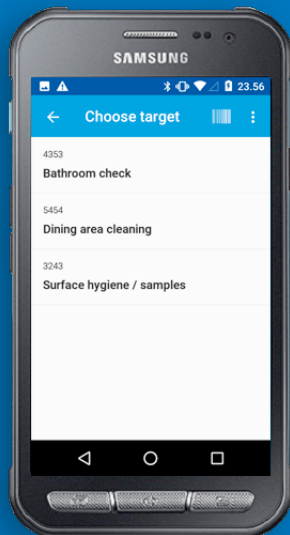
But these activities have always been vitally important in ensuring food safety, customer comfort and workplace satisfaction. It's even a studied fact that food businesses that make sanitation a priority typically see much better customer retention.

With a digital HACCP system your cleaning and sanitation programs are easy to monitor and make visible to everyone, including you.

Again, this is just a typical extension of the common digital HACCP system, where you've built tasks for the staff to complete.

However, just as with the other examples we've seen, the true value comes from enriching the very simple recording of when certain cleaning tasks are done.

And even this is not a given when you're recording on paper
– sometimes cleaning tasks are just assumed to be completed and
there's no real way to know if this is actually so.



All cleaning and sanitation tasks can include written work instruction and reference pictures to ensure correct procedures are followed.

It is also possible to have more than one cleaning schedule set up, so you can have, for instance, seasonal pre-made set-ups if needed. Exchange between them is then as simple as just pressing of a button.

So, for example, when we have a task list for bathroom checks, dining area cleaning and surface hygiene samples, we don't need to just have the data sit in the cloud: we could also mirror it to an info screen showing when your premises have last been cleaned.

This would be a good way to use enriched digital HACCP data on sanitation activities to influence customer satisfaction with your business.

For the staff, using a digital HACCP app for sanitation and cleaning tasks could still be as simple as checking things either done or not done, such as in the second picture.

But enriching sanitation program data with digital means could also mean offering work instructions and reference pictures for an acceptable cleanliness level in the premises they're cleaning.

It could also include taking photos for task completion proof, so that you could see how well the result matches the reference.

With better visual instructions and the ability to show the actual outcome of the cleaning in some form to everyone there's a lot more possibilities in making the cleaning and sanitation tasks an integral part of the day.

This also helps you turn your extra effort in cleanliness into an actual competitive differentiator instead of just another thing you do because you need to.

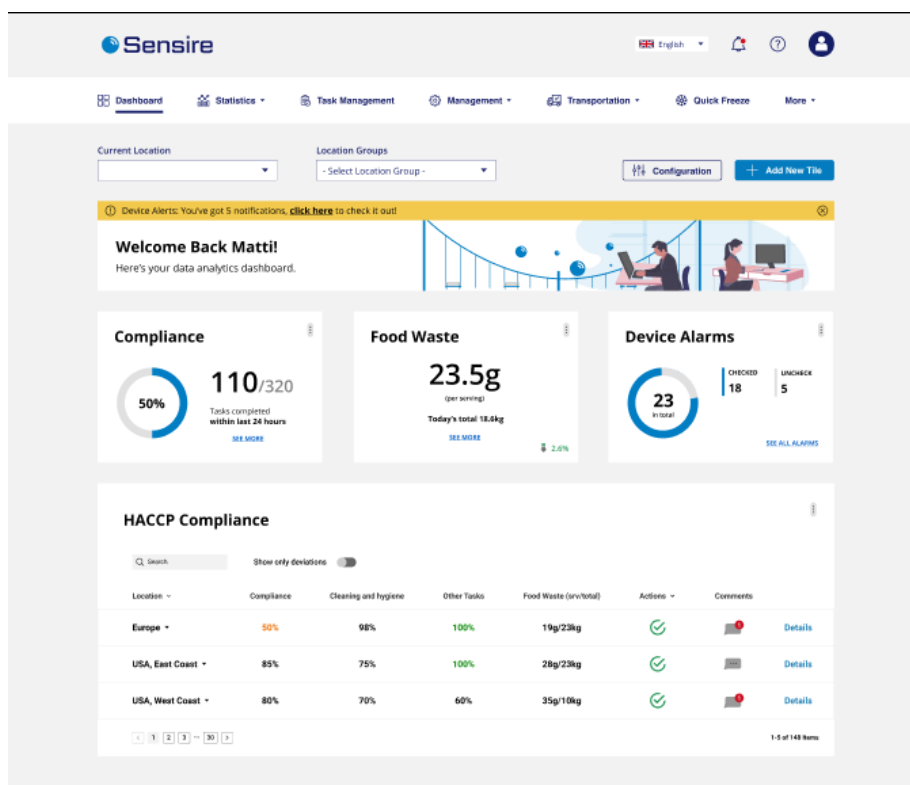
Gathering it All Together

So, now we've had all these tasks performed by your staff, we can return back to the cloud interface and see what that means on our dashboard.

Below we have the same screen we showed you in the beginning of this guide, but now it makes more sense, as you've actually seen the things that go into gathering the data shown here. We call this view simply the compliance dashboard, but of course it also gives a lot more information than just whether you're complying with HACCP best practices and regulation.

For example, the food waste amount we see here isn't as per se a part of the standard HACCP program, but for your business it may be one of the more interesting meters to monitor from a sustainability point of view.

And if you were to click on the waste tile on the dashboard, it would let you drill down to more information on where, when and even from which ingredients the waste comes from.



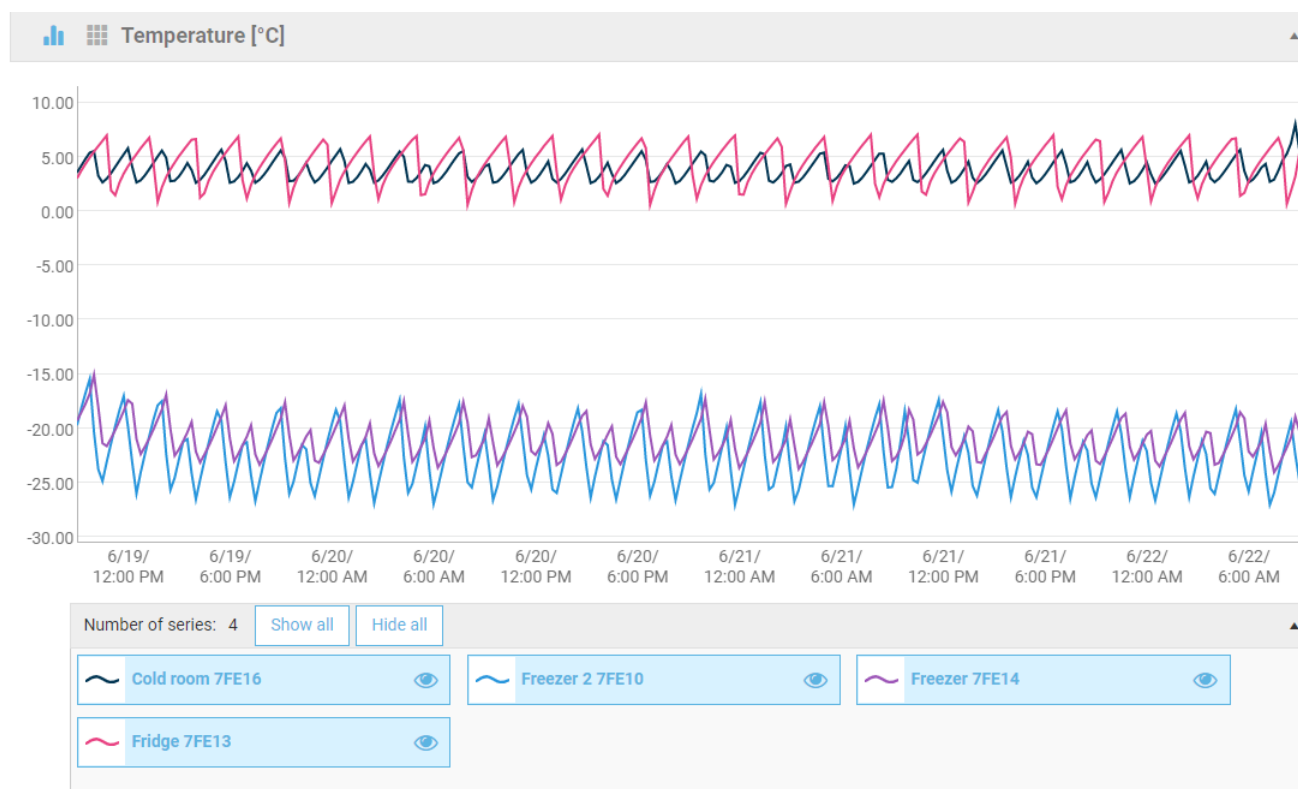
Standard compliance dashboard in the Sensire Digital HACCP system

In a similar way you could click on any other interesting parts of the dashboard and get taken to more detailed data on how those numbers come to be.

So, for instance, you could click on your compliance task monitoring tile and check which tasks have been done at any given moment, and which are yet to be completed.

Similarly, you can see a device alarms tile which tells you if there are any problems with your automatically monitored premises.

This is of course a lot easier and also faster than what you could do with paper records and work instructions. It's also easier to react if something seems to be amiss.



Detailed temperature monitoring data lets you see what's happening

Of course, now that you can access all this data, you may come upon something that you can clearly see should be changed up to yield better results.

Maybe there should be increased cleaning at one of the locations you monitor. Or perhaps one cold room seems to be running a little warm (maybe due to people opening the door too much).

With the digital HACCP system, you can easily interact with your staff immediately to correct those things.

More cleaning needed? Just add a task to that location and your staff will see it in their schedule.

For the freezer situation you could either add a one-time task to lower the temperature in the freezer a bit. You could also call the location and give the instructions yourself if that's more your style.

In any case, you can then see how that affects the situation once the staff enact the new directions you've given them.

In this way you can use your digital HACCP system in a very practical way to analyze and test different kinds of approaches to improving your processes.

To finish discussing the cloud platform and its benefits, there is one other thing that can be made easier with the adoption of digital HACCP and which has come up a lot recently.

This is remote auditing (internal and external) of your food safety compliance processes.

Now, with a remote data gathering solution such as a digital HACCP system, it's easy to audit almost any targets in your business.

That is because it's easy to add audit task to the digital schedule and have them performed by the staff at the selected location. And because this is done the exact same way you'd normally add some new tasks or processes into your staff's schedule, it's not going to create much extra work.

And if there are similar audits at all your business locations, it's as simple as copying the audit tasks to the relevant locations whenever you wish to audit their operations.

Exemplary Food Safety and Quality with Sensire's Digital HACCP

So that's our bit about what a digital HACCP system is good for and how it's used in practice to make work easier and more efficient.

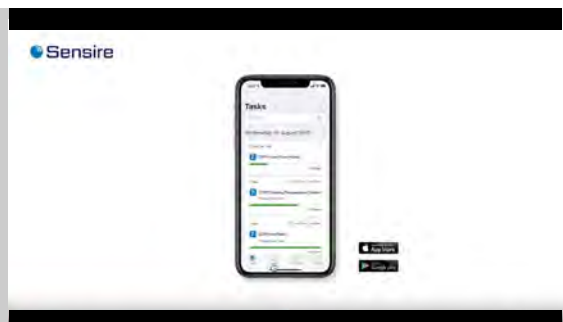
As we wanted to keep the guide manageable and practical, we didn't go very deeply into the various possibilities a digital HACCP system offers food businesses.

But if you'd like to know more about those, we're very happy to help you any time.

For instance you can book an online demo where we can show you our solution in action.

Book now!

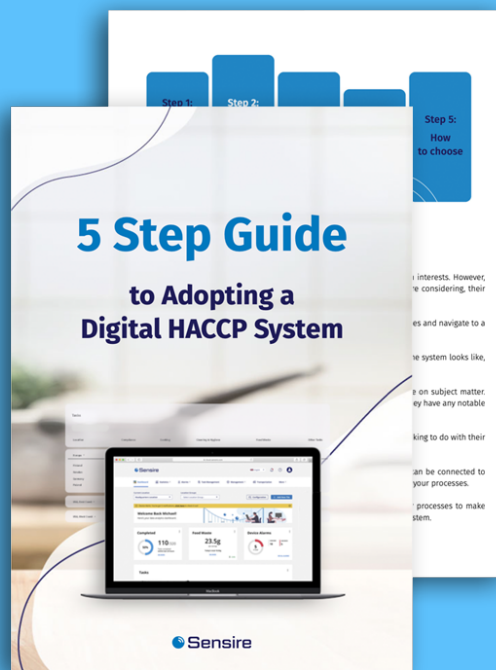
Or watch
a short video
about our solution



*If you have any questions regarding digital HACCP, please contact us
– if there's anything we can do to help you, we'd be happy to assist!*

www.sensire.com

Take also a look at our 5 Step Guide!



Download!



Sensire Ltd. is the leading expert in offering food industry improved methods for essential food safety and quality management with simple and effective digital solutions. The solutions are used daily by hundreds of customers in restaurants, catering, hospitality, assisted living and many other fields where food safety is essential. We also offer digital monitoring solutions for food logistics operators to safeguard food quality in storage and transit.

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