enact® by InfinityQS®

Enact Deployment Guide

Plan, Deploy & Expand Your

Enact Proof of Concept Project

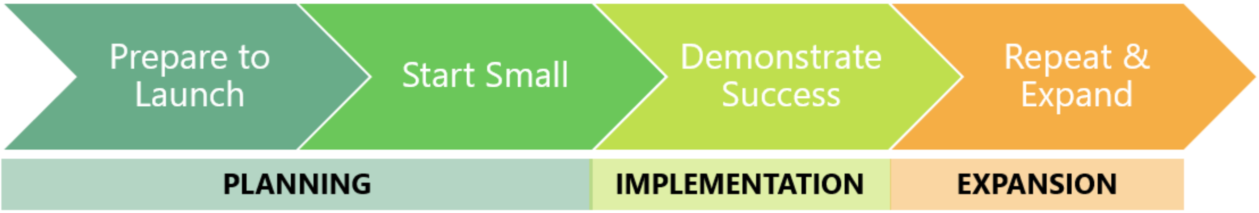
Introduction

“Where do I start?” It’s the most natural question to ask when embarking on the deployment of a new software platform. Fortunately, InfinityQS has assisted thousands of clients during this critical phase, and we have learned a thing or two about how to do it right.

The second question is usually “How long will it take?” That’s always a more open question that depends on availability and the amount of data to be collected in the initial round. For each task in this process, there is an approximate duration of the project champion’s time.

If you’re primarily concerned with how long it will take to actually configure Enact, you could—very easily—have a simple, fully functional Enact deployment in a few hours. But we strongly recommend also investing time in the other preparatory tasks as described in Section 1.

While every deployment is different, the following image and associated framework describe the InfinityQS recommended best practices when it comes to launching a successful Enact deployment. If your company's deployment goals require a vastly different approach, our engineering staff has probably already experienced that—and we would be happy to provide additional guidance.



Prepare to Launch

Start Small

Demonstrate Success

Repeat & Expand

PLANNING

IMPLEMENTATION

EXPANSION

Section 1: Preparing to Launch a Proof of Concept

The first steps don't involve any software configuration at all—they're all about preparing for success by assembling the right team, defining what success will look like, and starting down the Enact learning path. Having all those in place will make the subsequent steps much easier.

Assemble Your Team

Whether they have an active role or only provide support, guidance, and expertise, you need the right people involved in your deployment to help ensure its success.

Duration: 2-4 hours depending upon the number of people involved.

Management

It is essential that you have the support of your management team to help define impactful goals, ensure the project has the proper visibility, and to help generate buy-in from the rest of the team. They will also be instrumental in developing the plan for eventual expansion to the rest of the organization.

Subject Matter Experts

These members will vary depending upon your situation. Examples would be those involved with processing equipment, measurement tools, operational workflows, reporting needs, IT, and so on.

Operators

These are the people who will be directly interacting with Enact on a regular basis for entering data and responding to notifications, so their input and active involvement will be critical to the success of your proof of concept.

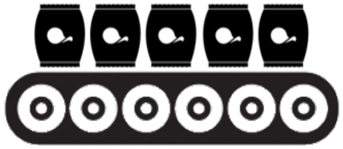
Choose Your Proof of Concept Specifics

Choosing an appropriate location, scope, timeframe, and objectives for your proof of concept has a substantial impact on its future success.

Duration: 1-2 hours

Limit Your Proof of Concept to a Single Line or Machine

- It's important to keep things simple in the beginning.
- Ideally, it should be limited to a handful of parts that are all subject to the same data collection routine, as it minimizes the amount of configuration overhead in this critical early phase.
- Focus less on configuring the software and more on generating impactful data.



Choose an Existing Data Collection Routine to Eliminate

- This would be a clear example for your operators of the value of migrating from the existing data collection procedure to Enact.
- Ideally, the routine should be fairly simple to help minimize the amount of system configuration required.
- The proof of concept should produce a measurable impact in order to gain acceptance and momentum within your organization.

Involve Multiple Operators Entering Data

- Feedback from your operators is critical in this phase. As such, we suggest conducting your proof of concept in an area where multiple operators will be required to enter and interact with data.

Begin Learning about Enact

There are lots of great learning resources, all freely available on our website; use the links below to get started. You don't need to have an active Enact tenant to access them.

Duration: 1-2 hours

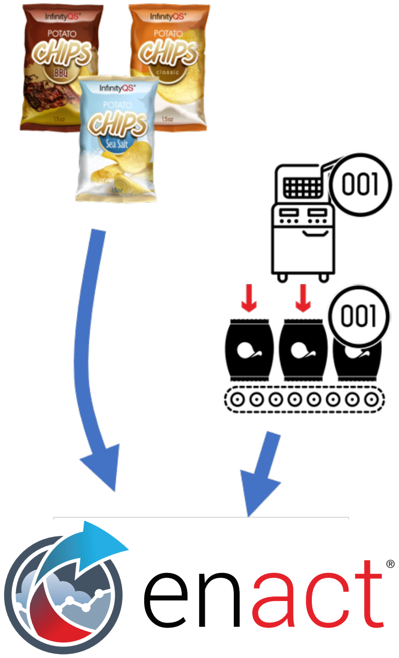
- Blog: The Ideal Enact Software Deployment
- eLearning: Phase 1 – Core Concepts, modules 1-4
  - Enact Interface Tour, Enact Data Model, Specification Limits, & Process Hierarchy

Section 2: Start Small

When you're implementing a new software platform, it's easy to start feeling overwhelmed if you try to tackle your entire scope from the onset. You need to give yourself and your team members time to get comfortable—to learn the ropes.

One thing that we've found happens quite frequently among new adopters is starting the implementation with a certain set of preconceptions. Often—after learning more about the platform, the kinds of analyses it enables, the way it can help you standardize and simplify your operations—they end up rethinking their approach.

By starting with a very small scale proof of concept implementation, you will have the freedom to re-evaluate your initial approach without feeling locked in by the sheer volume of work you've already undertaken.



Begin Assembling Proof of Concept Master Data

Where are your current parts list and specification limits stored? How are lot numbers generated? Setting up the processes needed to efficiently get this data into Enact will pay dividends as your deployment expands.

Duration: The time it takes to locate and gain access to those sources of information will depend upon your organization. With a sufficiently limited scope, this should be no more than a few hours.

Establish a Process for Adding Master Data into Enact

- While your proof of concept should only involve a small number of parts and specification limits, it is important to start setting up the processes needed to efficiently get that information into Enact. It is not uncommon for this data to reside in multiple locations.
- This will be critically important as your deployment expands, especially if new parts are a common occurrence in your organization. If that's the case, you may want to include Enact Automated Data Collection (ADC) on your deployment roadmap. Our engineering staff can assist you down this path.
- While lot data are usually not collected during a proof of concept, if it is intended to be included in your overall deployment you will need to determine how that information will be entered into Enact. As mentioned above, ADC can be of significant help here, as well.

Enhance Visual Impact by Adding Graphics

- Enact can use graphics to represent just about any piece of master data (parts, processes, features, etc.), which can greatly enhance the user experience. You can design and upload whatever graphics suit your needs, e.g. pictures of your products, test equipment, or indicators of where on a product to perform measurements. The recommended aspect ratio for graphics is 4:3, and the maximum size is 600 KB.

Create & Configure Your Proof of Concept Process Model

Enter all the configuration and master data required to conduct manual data collection.

Duration: 2-4 hours

Create Your Process Model

- Create the basic framework of output part family and operation

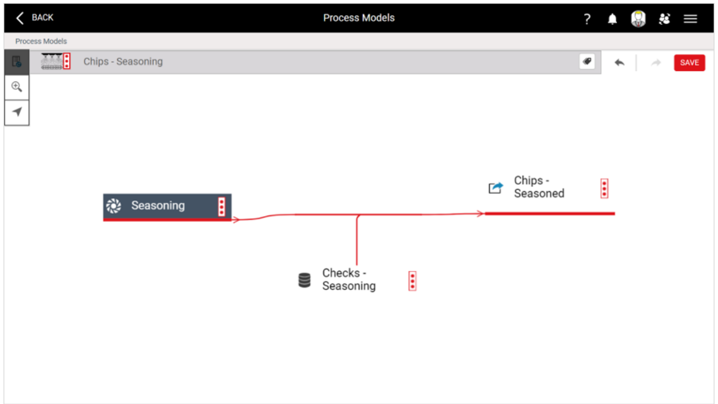
  NOTE: While Enact process models support multiple input and output part families, multiple operations, and linking between process models, we recommend limiting the process model for your proof of concept to a single operation and a single output part family. This simplifies the process model structure and allows you to get comfortable with the concept before expanding into more complex arrangements.
- eLearning: Process Model Basics
- Enact Help: Creating Process Models

Assign Parts to your Output Part Family

- Tell Enact what parts belong in your output part family.
  - All these parts should have identical data collection requirements.
- Enact Help: Creating Parts & Quick-Creating Parts (if adding parts directly from the process model)

Assign Features to Your Output Part Family for the Operation

- Tell Enact what features you will be measuring in this operation, whether or not they are performed in the same collection routine.
- Enact Help: Configuring Operation Details



Assign Process to Your Operation

- Determine and enter your corporate process hierarchy.
- eLearning: Process Hierarchy
- Assign the specific process you'll be using in the proof of concept to your operation.
  - A single process model can be used across multiple similar lines or sites.
- Enact Help: Configuring Operation Details

Establish Specification Limits

- If you want to be able to generate alarms and perform proper analysis, you need to enter specification limits for all your part/feature combinations.
- eLearning: Specification Limits
- Enact Help: Creating Specification Limits

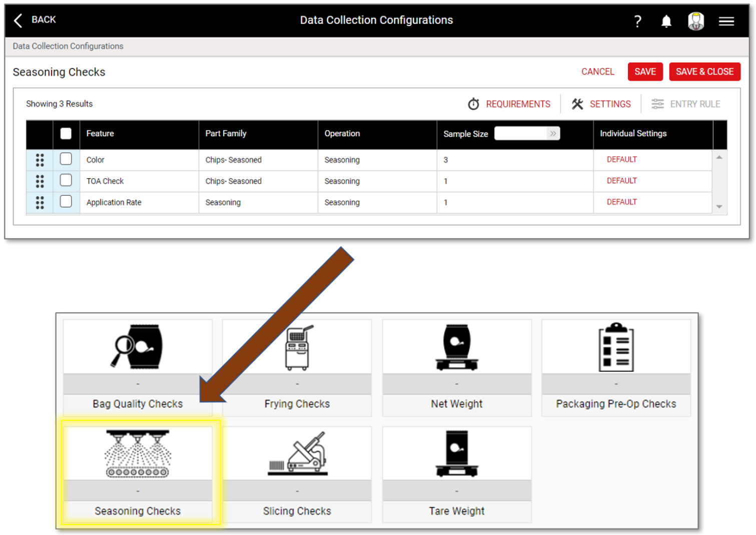
Enable Manual Data Collection

Create the actual data collection routines that will be used to capture quality data.

Duration: 1-2 hours

Create Data Collection(s)

- Tell Enact what features are measured on the part family in your operation.
  - You can split up the features to be measured across multiple data collections.
  - Some features may be collected on different workstations or at different times.
- eLearning: Data Collection Basics & Work Dashboard
- Enact Help: Creating Data Collections & Configuring Data Collection Parameters



Seasoning Checks

Showing 3 Results

	□	Feature	Part Family	Operation	Sample Size	Individual Settings
	□	Color	Chips- Seasoned	Seasoning	3	DEFAULT
	□	TOA Check	Chips- Seasoned	Seasoning	1	DEFAULT
	□	Application Rate	Seasoning	Seasoning	1	DEFAULT

Section 3: Demonstrate Your Success

Once a strong foundation for the proof of concept has been established, it's time to exercise it on the shop floor. This includes adding users with different roles and responsibilities, collecting and analyzing quality data, and soliciting user feedback for adjusting the initial configurations. The goals of this section are 1) to meet the definitions of success that were established at the start of the implementation, and 2) to be able to clearly demonstrate that to stakeholders.

Commence Proof of Concept

In this critical step you bring in additional users and workstations, begin collection of live quality data, and solicit feedback from users.

Duration: 2-4 hours. The length of time your operators perform data collection on the shop floor is up to you, but enough data must be collected to generate useful reports. This may take from one day to one week—whatever amount of data is required to determine whether your conditions for success have been met.

Add Users & Authenticate Workstations

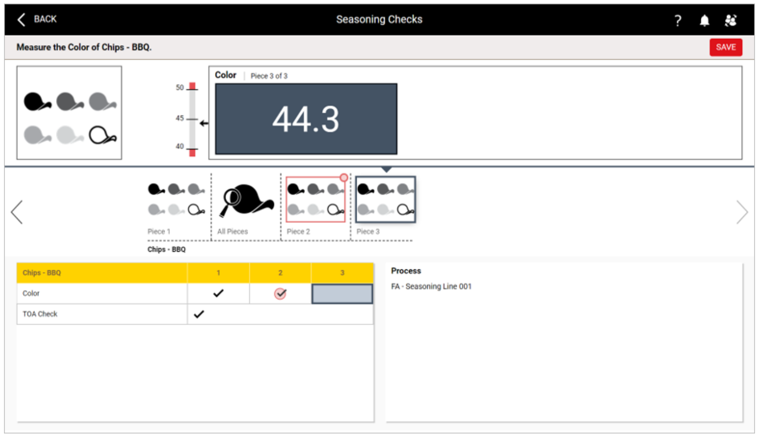
- This would be a good time to define the permissions for each of your user types (e.g. management, operators), as well as the data that are visible to them.
- Each additional workstation used to access Enact will need to be authenticated on a one-time basis.
- eLearning: Roles, Access Levels, & My Processes
- Enact Help: Creating Users & Authenticating Workstations

Begin Collecting Data

- Operators begin using Enact on the shop floor.

Solicit Feedback

- Operators provide valuable feedback to help fine-tune your implementation.
- Ensure that your data collections truly match what happens on the shop floor.
- This would be a great time to discuss standardization of data collection practices, and the establishment of consistent naming conventions for parts.



Seasoning Checks

Measure the Color of Chips - BBQ.

Color | Piece 3 of 3

44.3

Chips - BBQ

Chips - BBQ	1	2	3
Color	✓	✓	
TOA Check	✓		

Process

FA - Seasoning Line 001

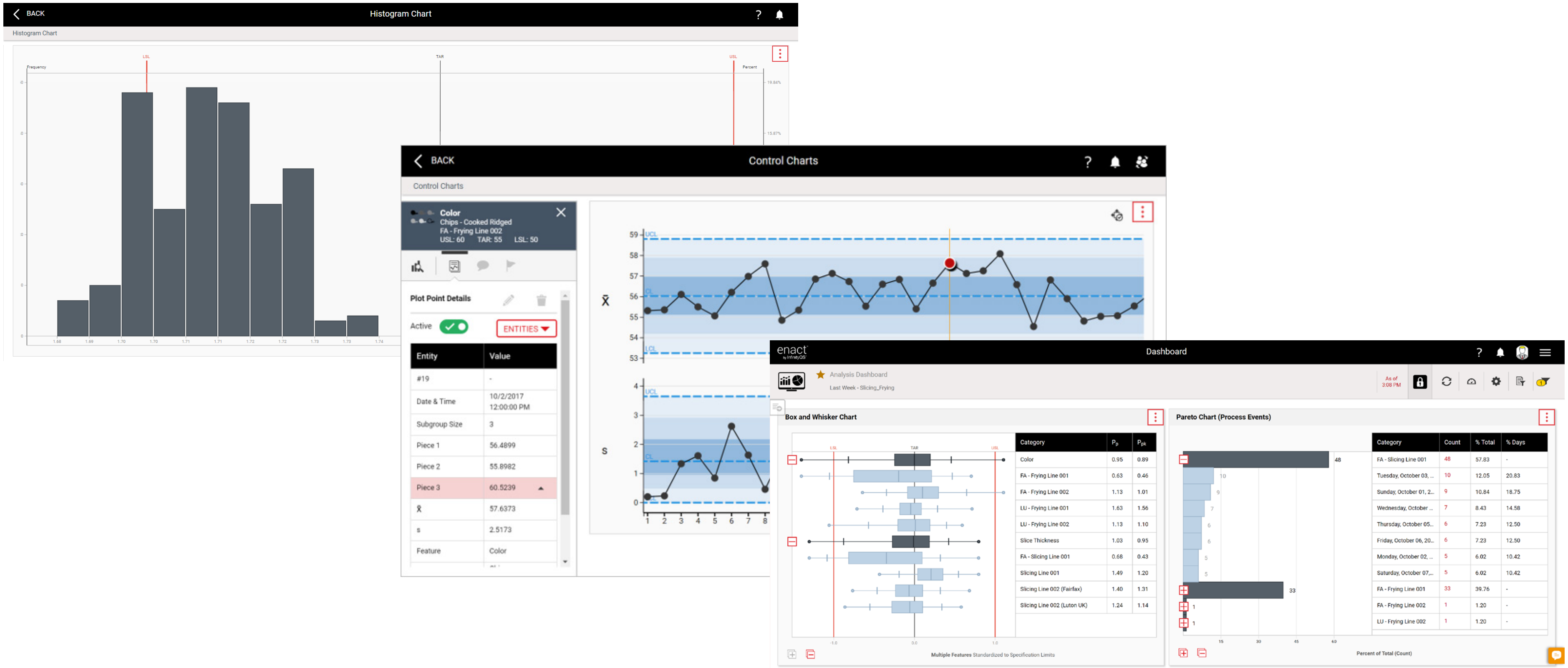
Review Data & Prepare Findings for Stakeholders

Add analysis and reporting dashboards to your implementation so the impact of your proof of concept can be demonstrated.

Duration: 2-4 hours

Add Dashboards for Analysis & Reporting

- There are a wide variety of options for selecting, displaying, and analyzing the data you've captured.
- eLearning: Parameter Sets, Introduction to Raw Data Tiles, & Dashboard Basics



Color
Chips - Cooked Ridged
FA - Frying Line 002
USL: 60 TAR: 55 LSL: 50

Plot Point Details

Active

ENTITIES

Entity	Value
#19	-
Date & Time	10/2/2017 12:00:00 PM
Subgroup Size	3
Piece 1	56.4899
Piece 2	55.8982
Piece 3	60.5239 ▲
X̄	57.6373
s	2.5173
Feature	Color

Category	P_p	P_{pk}
Color	0.95	0.89
FA - Frying Line 001	0.63	0.46
FA - Frying Line 002	1.13	1.01
LU - Frying Line 001	1.63	1.56
LU - Frying Line 002	1.13	1.10
Slice Thickness	1.03	0.95
FA - Slicing Line 001	0.68	0.43
Slicing Line 001	1.49	1.20
Slicing Line 002 (Fairfax)	1.40	1.31
Slicing Line 002 (Luton UK)	1.24	1.14

Category	Count	% Total	% Days
FA - Slicing Line 001	48	57.83	-
Tuesday, October 03, ...	10	12.05	20.83
Sunday, October 01, 2...	9	10.84	18.75
Wednesday, October ...	7	8.43	14.58
Thursday, October 05...	6	7.23	12.50
Friday, October 06, 20...	6	7.23	12.50
Monday, October 02, ...	5	6.02	10.42
Saturday, October 07,...	5	6.02	10.42
FA - Frying Line 001	33	39.76	-
FA - Frying Line 002	1	1.20	-
LU - Frying Line 002	1	1.20	-

Section 4: Repeat & Expand

After demonstrating success to stakeholders, the project should have some momentum—as well as buy-in from the user base. There will be a foundational comfort with the design and configuration of Enact, so this is where the implementation can expand and perhaps gain some complexity.

Any learnings from the proof of concept should be rolled into the solution, whether it be naming convention alignment, data collection standardizations, or dashboard layouts.

Decide on an Expansion Path

There are lots of options depending upon your organization's needs. You could expand to similar lines, go upstream or downstream, or somewhere else entirely.

- Expand to include additional similar lines or machines—even additional sites. This enables you to take maximum advantage of what you have already configured in your proof of concept. Simply add the new processes and any related parts and specification limits, and you're ready to go.
- Augment the existing process model to include products similar to those you piloted, e.g. if other products have different data collection requirements. Often a line will produce similar products but have different features that need to be collected.
- Go downstream (toward final product) or upstream (toward raw materials) in the same process flow. You can then link the process models together to form a continuous picture of your entire process flow.
- Go somewhere else entirely. You can follow the same basic steps from this proof of concept, but with the learning and comfort level gained from that experience.
- And as you begin this expansion, you may want to consider creating some materials to help prepare and educate the rest of your organization:
  - Value proposition for other stakeholders, so they can understand why Enact would benefit their operations.
  - Summary/training materials to show operators and analysts how you used Enact in your proof of concept.
  - Estimates of resource requirements (e.g. IT, time/staffing, etc.).

Determine Standardizations

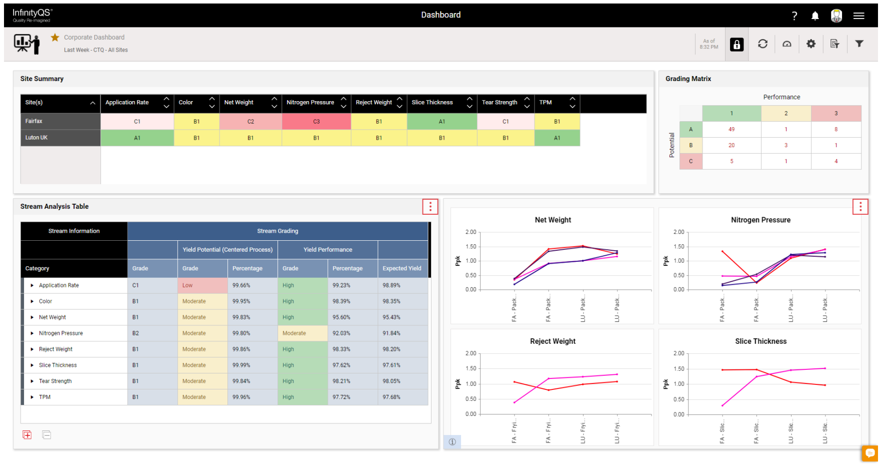
To take maximum advantage of a centralized quality system, you will want to explore all potential areas of standardization, e.g. metrics, analysis methods, naming conventions, and work practices.

- Many organizations need to focus efforts on planning for standardization—especially those with multiple sites.
- Metrics: Is everyone using the same quality metrics to know what success looks like? Is everyone calculating those metrics in the same way?
- Analysis methods: Is everyone looking at the data in the same way? It's hard to compare performance when different methods of analysis are used.
- Naming conventions: When using a centralized system, it's critical that everyone knows and accepts the proper naming conventions. If some sites have a feature called "Net Weight," but others call it "Net_Weight" that leads to difficulty in reporting and analysis.
- Work practices: For a given product or process, does everyone perform the same checks? Again, this is a concern especially for organizations running similar processes at multiple sites.
- Blog: The Importance of Standardization Part I - Benefits & The Importance of Standardization Part II - Challenges

Explore Advanced Features

Enact has many capabilities that you may be unlikely to employ during your proof of concept. Take time to explore these capabilities to see how they will fit into your overall quality plan going forward.

- Some examples:
  - Shifts
  - Tags
  - Production assignments
  - Timed & triggered data collection
  - Event workflows
  - Calculations
  - Language labels
  - Semi-automatic data collection using Gauge Agent
  - Aggregated dashboards
  - Stream grading
  - Automated Data Collection (ADC)
- eLearning: Enact eLearning Phase 3 & 4



Site Summary

Site(s)	Application Rate	Color	Net Weight	Nitrogen Pressure	Reject Weight	Slice Thickness	Tear Strength	TPM
Fairfax	C1	B1	C2	C3	B1	A1	C1	B1
Luton UK	A1	B1	B1	B1	B1	B1	B1	A1

Grading Matrix

Performance

Potential	1	2	3
A	49	1	8
B	20	3	1
C	5	1	4

Stream Analysis Table

Stream Information	Stream Grading					
		Yield Potential (Centered Process)		Yield Performance		
Category	Grade	Grade	Percentage	Grade	Percentage	Expected Yield
Application Rate	C1	Low	99.66%	High	99.23%	98.89%
Color	B1	Moderate	99.95%	High	98.39%	98.35%
Net Weight	B1	Moderate	99.83%	High	95.60%	95.43%
Nitrogen Pressure	B2	Moderate	99.80%	Moderate	92.03%	91.84%
Reject Weight	B1	Moderate	99.86%	High	98.33%	98.20%
Slice Thickness	B1	Moderate	99.99%	High	97.62%	97.61%
Tear Strength	B1	Moderate	99.84%	High	98.21%	98.05%
TPM	B1	Moderate	99.96%	High	97.72%	97.68%

Conclusion

Implementing a new software platform doesn't have to be an intimidating experience. It's important to lay the proper foundation, keep the initial scope simple and well defined, and clearly establish the definition of success. Providing some quick "wins" for your stakeholders—including management, supervisors, and operators—will generate the momentum and buy-in needed to enable subsequent expansion.

The above recommendations are the result of our collective experience with thousands of InfinityQS implementations around the world. But if you find that your implementation has some unique requirements that may suggest a different approach, our engineering services experts are ready and able to assist you.

So, to summarize the main steps in this deployment guide:

1. Lay the foundation. Get the right people involved and define success.
2. Start small. Your proof of concept should be limited to a small handful of products running on a single line, with a few key features to be measured.
3. Begin collecting data soon. It will provide invaluable operator feedback and results to analyze.
4. Review the results and present them to management/stakeholders.
5. Incorporate lessons learned and expand the solution.