Scrap Reduction Options

Updated: 8/01/2022

Introduction

By using the Vorne XLv1 hardware and the OEE Suite software, you have several methods of capturing scrap/defect information.

- **Standard** – hard-wired inputs (Vorne XLv1), no reasons
- **Standard Plus** - hard-wired inputs with program execution (specific reasons – up to 6) (Vorne XLv1)
- **Premium** – Up to 8 User Numbers to define specific scrap/defect reasons per board (Vorne XLv1)
- **Advanced** – Unlimited. Either Batch reject or scrap reasons by part type. (OEE Alert Inspection Module)

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***complexity indicator**:*

Green – simple
Blue – relatively simple
Yellow – complex
Red – very complex

Standard (XLv1)

- You can connect 2 or 3 inputs to the Vorne board.
- Input 1 = Total Count
- Input 2 = Reject Count or it could be Good Count and then you can specify which count should be calculated.
- Input 3 = Good Count if you have a 3rd sensor on the line.
- Does not provide ability to identify scrap reasons.

Standard Inputs are discrete (digital) inputs that are included with every XL device. They can be used to drive production counters or to trigger programs for execution. Programs are created in the **Administer** | **Configure Device** | **Programs** | **Programs** page and enable you to tailor the operation of XL to your specific application. The primary function of each input can be configured as desired; however for correct OEE Performance calculations, Input 1 must be configured as 'Count Up (Total)'.

Input	Logic Level	Primary Function	Execute on Active	Execute on Inactive	Debounce	Inhibit
1	Standard	Count Up (Total)	None	None	Low Speed (up to 50 inputs/sec.)	8.50
2	Standard	Count Up (Good)	None	None	Low Speed (up to 50 inputs/sec.)	0.00
3	Standard	Execute Program	Otros	None	Low Speed (up to 50 inputs/sec.)	0.00

The Counts module tracks production output in terms of total, good and reject counts. Production counters are typically driven by digital inputs, which are configured in the **Administer** | **Configure Device** | **Inputs and Outputs** | **Standard Inputs** page.

Calculated Counter
Reject Count

Standard Plus (XLv1)

- If you want to use inputs to identify scrap reason, you have up to 6, maybe 7 inputs that you could configure.
- Requires maintenance or electricians to hook up sensors or stop buttons.
- You would have to create a program for each specific reason and associate it with each input.

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1	Standard	Count Up (Total)	None	None	Low Speed (up to 50 inputs/sec.)	8.50
2	Standard	Count Up (Good)	None	None	Low Speed (up to 50 inputs/sec.)	0.00
3	Standard	Execute Program	Otros	None	Low Speed (up to 50 inputs/sec.)	0.00
4	Standard	Execute Program	Falta componentes	None	Low Speed (up to 50 inputs/sec.)	0.00
5	Standard	Execute Program	Contaminacion	None	Low Speed (up to 50 inputs/sec.)	0.00
6	Standard	Execute Program	Falla Puertos	None	Low Speed (up to 50 inputs/sec.)	0.00
7	Standard	Input Not Used	None	None	Low Speed (up to 50 inputs/sec.)	0.00
8	Standard	Input Not Used	None	None	Low Speed (up to 50 inputs/sec.)	0.00

Premium – Bar Code Scan (XLv1)

Each Vorne XLv1 board has 8 User Numbers that get saved with each Shift and 8 User Numbers that get saved with each Job/Part.

- You can assign a unique reason for each of these 8 numbers. They must be the same reason for the Shift and the Job.
- The operator would have to scan the respective bar code each time there is a defect for that reason. It would be a count of 1 each time.
- It starts to get complex if you need to count more than one at a time.
- Requires expert level Vorne XLv1 configuration skills
- Requires the 'Collect Register Properties' to be enabled in the XL Bolt-On Data Collector so that this data is available in OEE Studio.

Premium (BarCode)
Reject Reason UN Mapping

Reject Reason	User Number – Shift	User Number – Job	Unique Bar Code Needed
Reject Reason A	1	11	Y
Reject Reason B	2	12	Y
Reject Reason C	3	13	Y
Reject Reason D	4	14	Y
Reject Reason E	5	15	Y
Reject Reason F	6	16	Y
Reject Reason G	7	17	Y
Reject Reason H	8	18	Y

Total Time	Tiempo Total	Time Span (HH:MM:SS)
User Number 1	Contaminacion	Number (#,###)
User Number 11	Contaminacion (Job)	Number (#,###)
User Number 12	Falla de impresion Markem (Job)	Number (#,###)
User Number 13	Falla de impresion WaxAuto (Job)	Number (#,###)
User Number 14	Falta de componentes (Job)	Number (#,###)
User Number 15	Problemas de sellado (Job)	Number (#,###)
User Number 16	Problemas de corte (Job)	Number (#,###)
User Number 17	Falla Puertos (Job)	Number (#,###)
User Number 18	Otros (Job)	Number (#,###)
User Number 2	Falla de impresion Markem	Number (#,###)

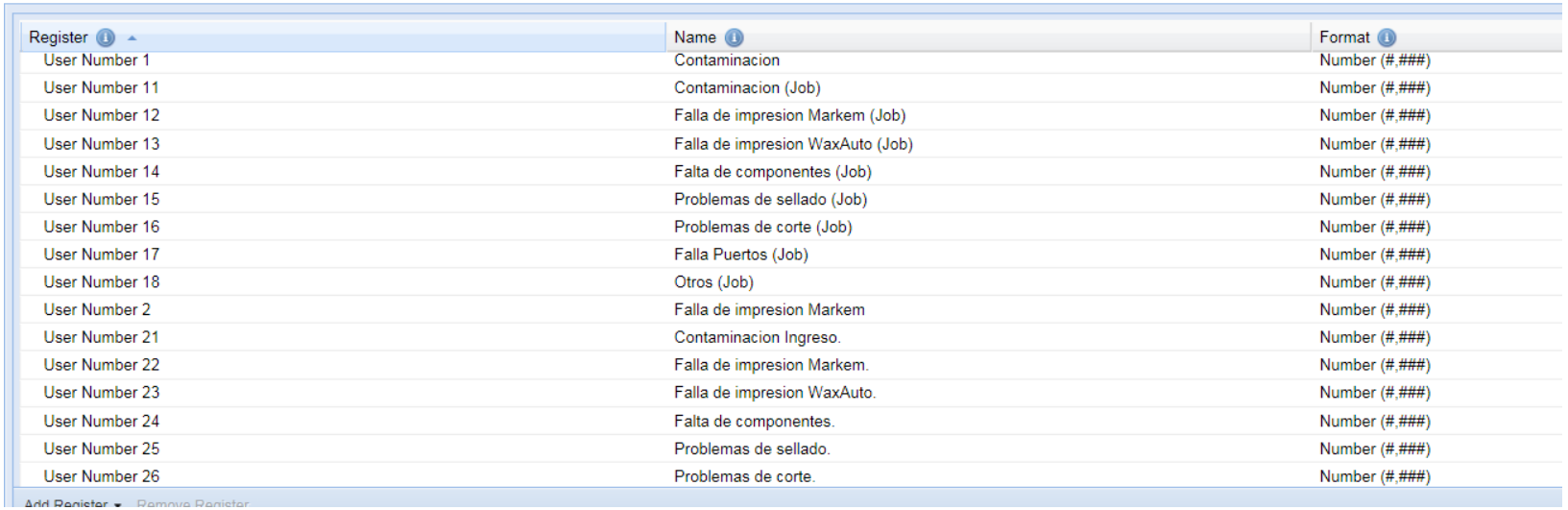
Premium – Dashboard (XLv1)

Each Vorne XLv1 board has 8 User Numbers that get saved with each Shift and 8 User Numbers that get saved with each Job/Part.

- You assign a unique reason for each of the 8 numbers. They must be the same reason for the Shift and Job.
- Someone would need to enter the totals for each defect type before the current Job/Part ends and before the Current Shift ends.
- Requires expert level Vorne XLv1 configuration skills

Premium (Dashboard)
Reject Reason UN Mapping

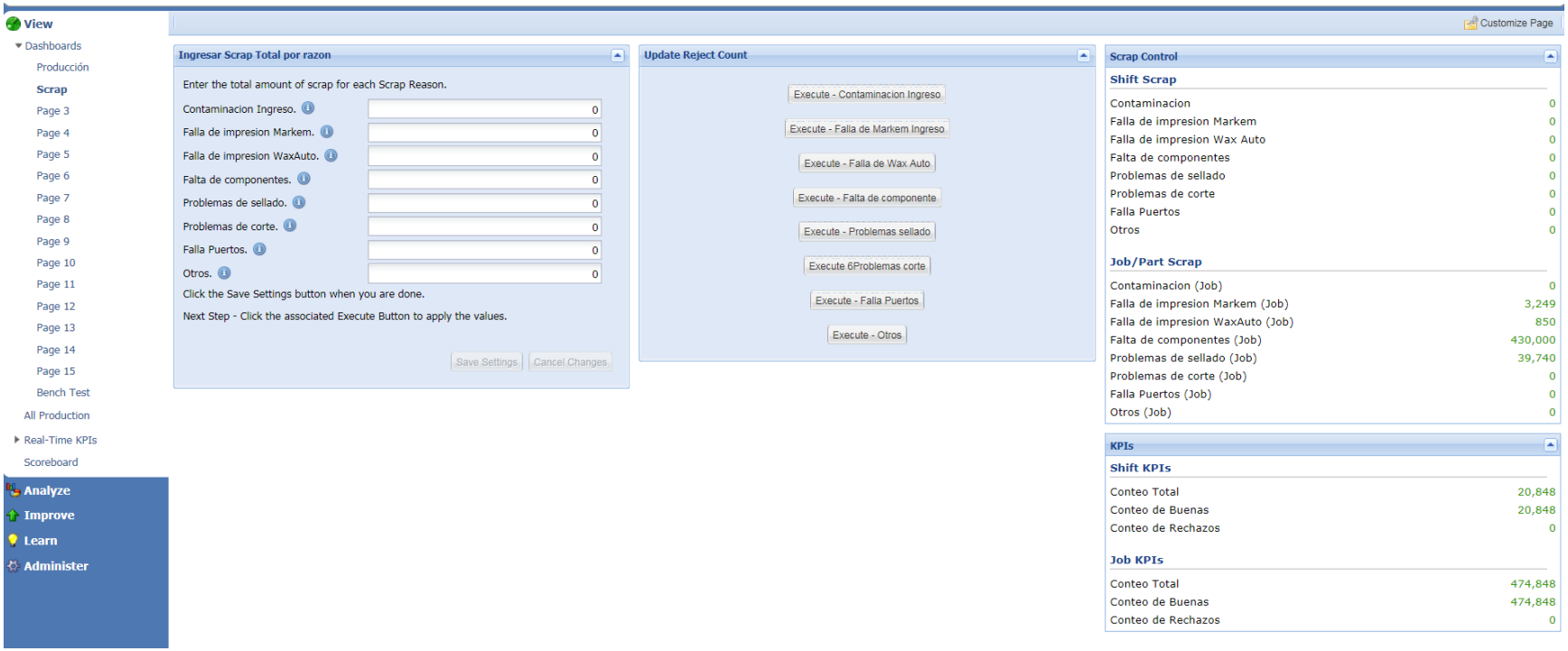
Reject Reason	User Number – Shift	User Number – Job	User Number – Value Entry
Reject Reason A	1	11	21
Reject Reason B	2	12	22
Reject Reason C	3	13	23
Reject Reason D	4	14	24
Reject Reason E	5	15	25
Reject Reason F	6	16	26
Reject Reason G	7	17	27
Reject Reason H	8	18	28



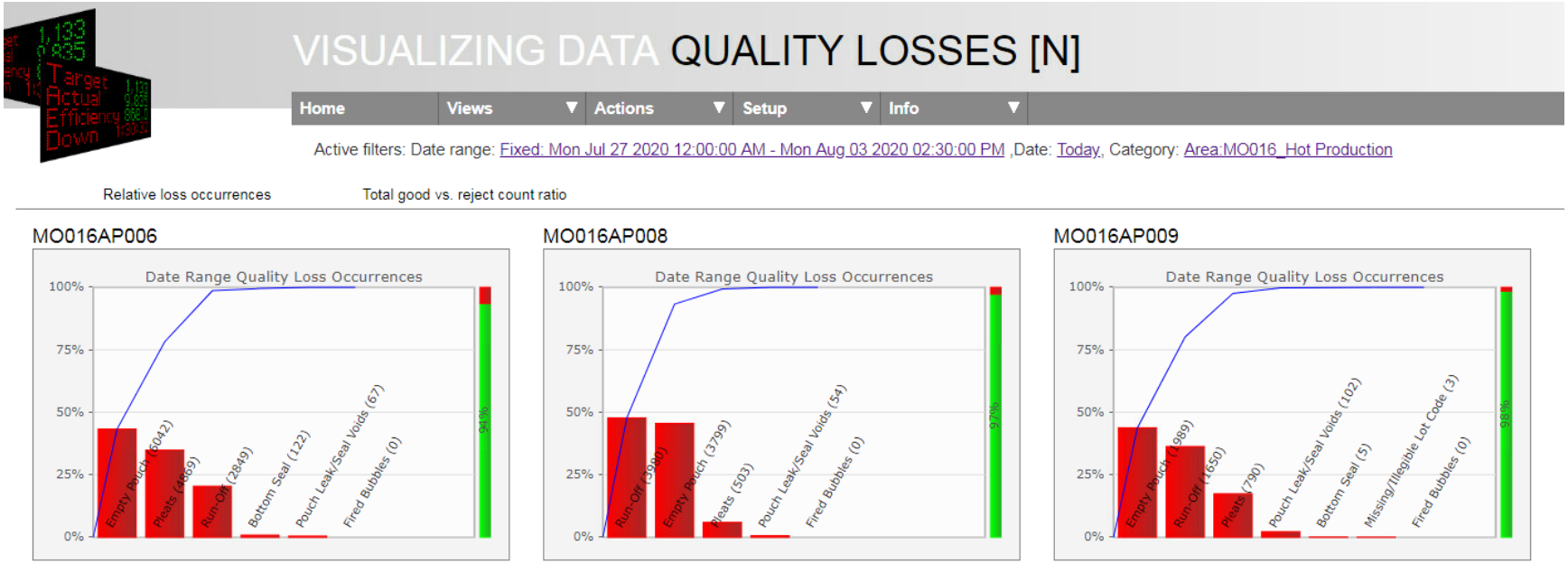
Register	Name	Format
User Number 1	Contaminacion	Number (#,###)
User Number 11	Contaminacion (Job)	Number (#,###)
User Number 12	Falla de impresion Markem (Job)	Number (#,###)
User Number 13	Falla de impresion WaxAuto (Job)	Number (#,###)
User Number 14	Falta de componentes (Job)	Number (#,###)
User Number 15	Problemas de sellado (Job)	Number (#,###)
User Number 16	Problemas de corte (Job)	Number (#,###)
User Number 17	Falla Puertos (Job)	Number (#,###)
User Number 18	Otros (Job)	Number (#,###)
User Number 2	Falla de impresion Markem	Number (#,###)
User Number 21	Contaminacion Ingreso.	Number (#,###)
User Number 22	Falla de impresion Markem.	Number (#,###)
User Number 23	Falla de impresion WaxAuto.	Number (#,###)
User Number 24	Falta de componentes.	Number (#,###)
User Number 25	Problemas de sellado.	Number (#,###)
User Number 26	Problemas de corte.	Number (#,###)

Add Register Remove Register

Premium – Dashboard (XLv1)



OEE Alert – Pareto View



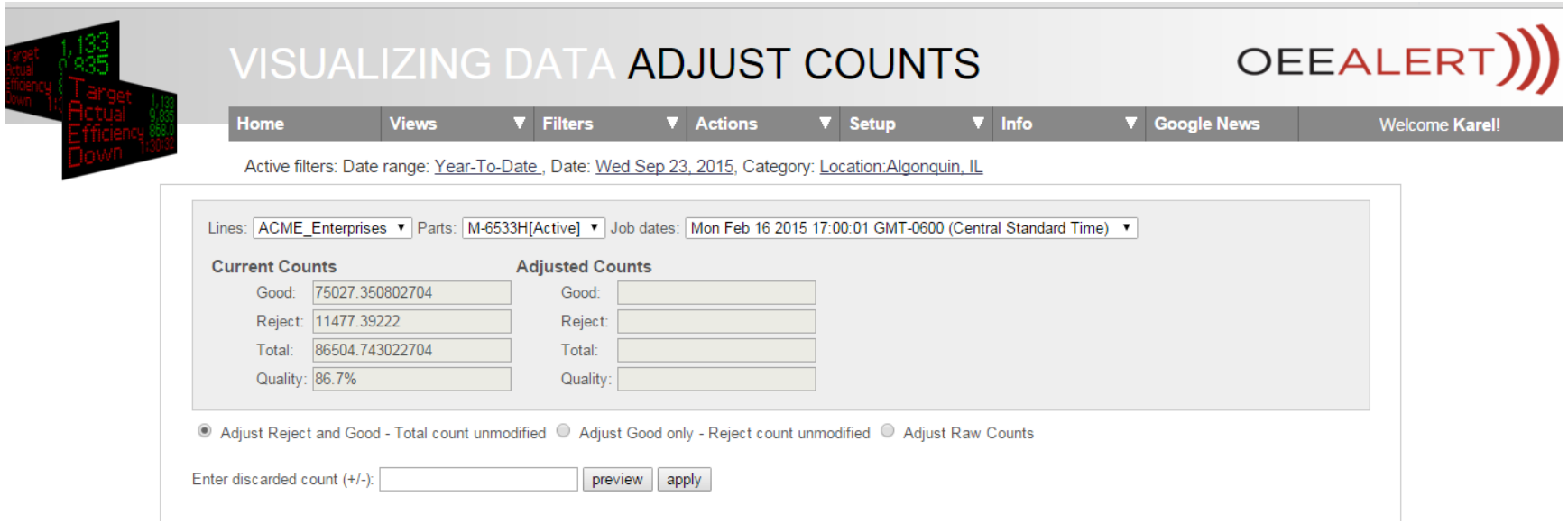
Inspection Module

The Non-Conforming Parts (NCP) module provides 3 modes to help with accounting for Rejects/Defects:

- ***Adjust Counts***. This allows for adjusting interval counts after the fact, for instance to account for a missed job reset, needing to transfer counts to next job. This is not technically NCP, but was added at customer's request.
- ***Batch Reject***. An assessment is made that part or all of the parts produced must be rejected and a reason assigned. I.e. parts are produced and monitored by the Vorne, followed by a post-production step, an acid bath, where something goes wrong.
- ***Inspection***. Every part is inspected and assigned a Pass or a Fail, and reject reasons can be assigned. This allows for complex parts (multiple components) each of which can have their own reject reasons.
  Note that an inspection happens post-production and inspection might still continue after the Vorne on the line has started monitoring the next job.
- This module is an add-on to OEE Alert and is licensed. Reporting is done through OEE Alert and is not available in OEE Studio.
- This is NOT a Quality Management System (QMS).

Advanced – Adjust Counts

OEE Alert

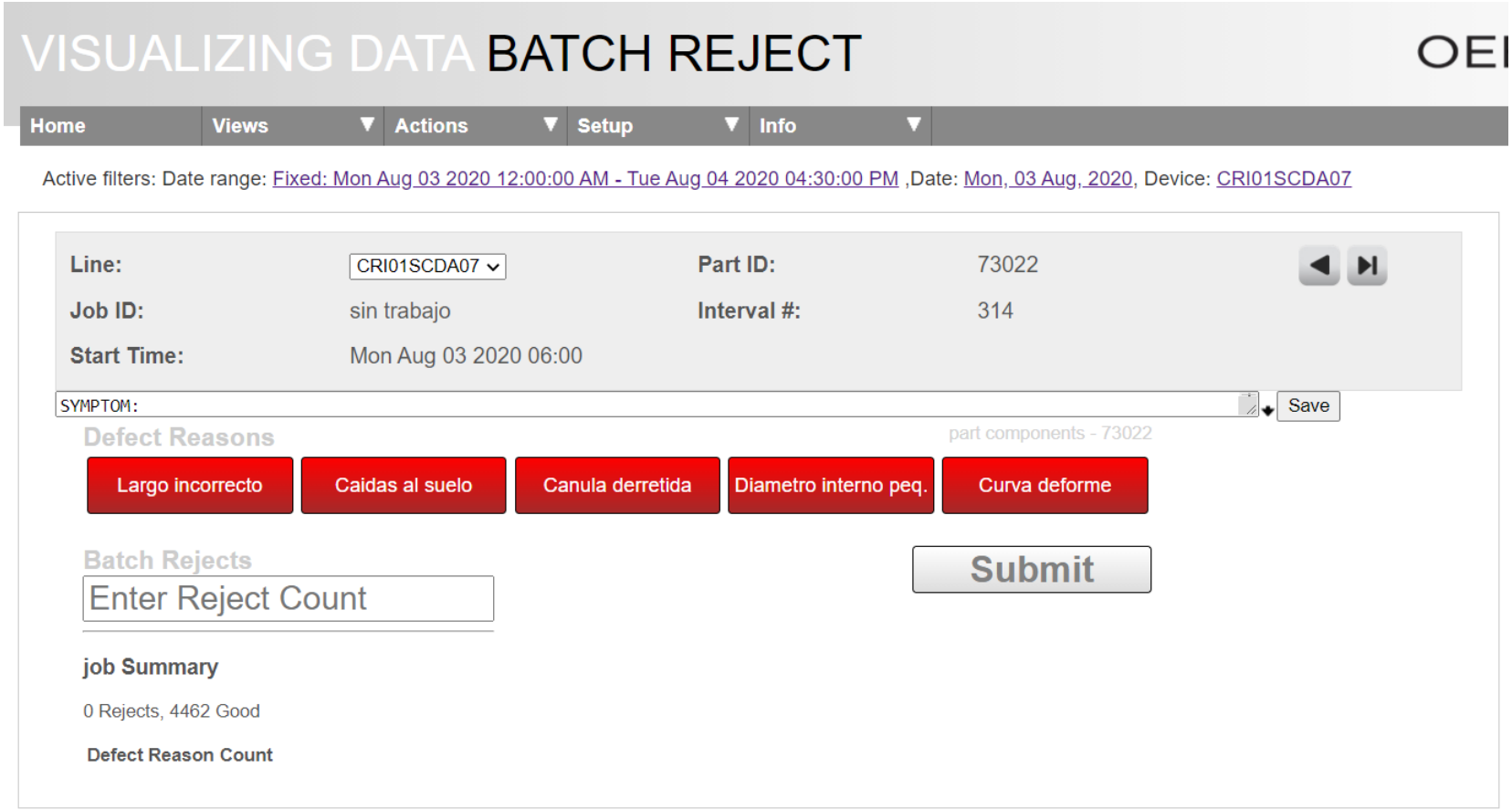


If reject reasons are not critical, but job counts need to be updated (for instance, a job reset was issued too late and parts are assigned to the wrong job), this screen allows adjusting counts.

For jobs still active in the Vorne, the Vorne counts are updated as well.

Advanced – Batch Reject

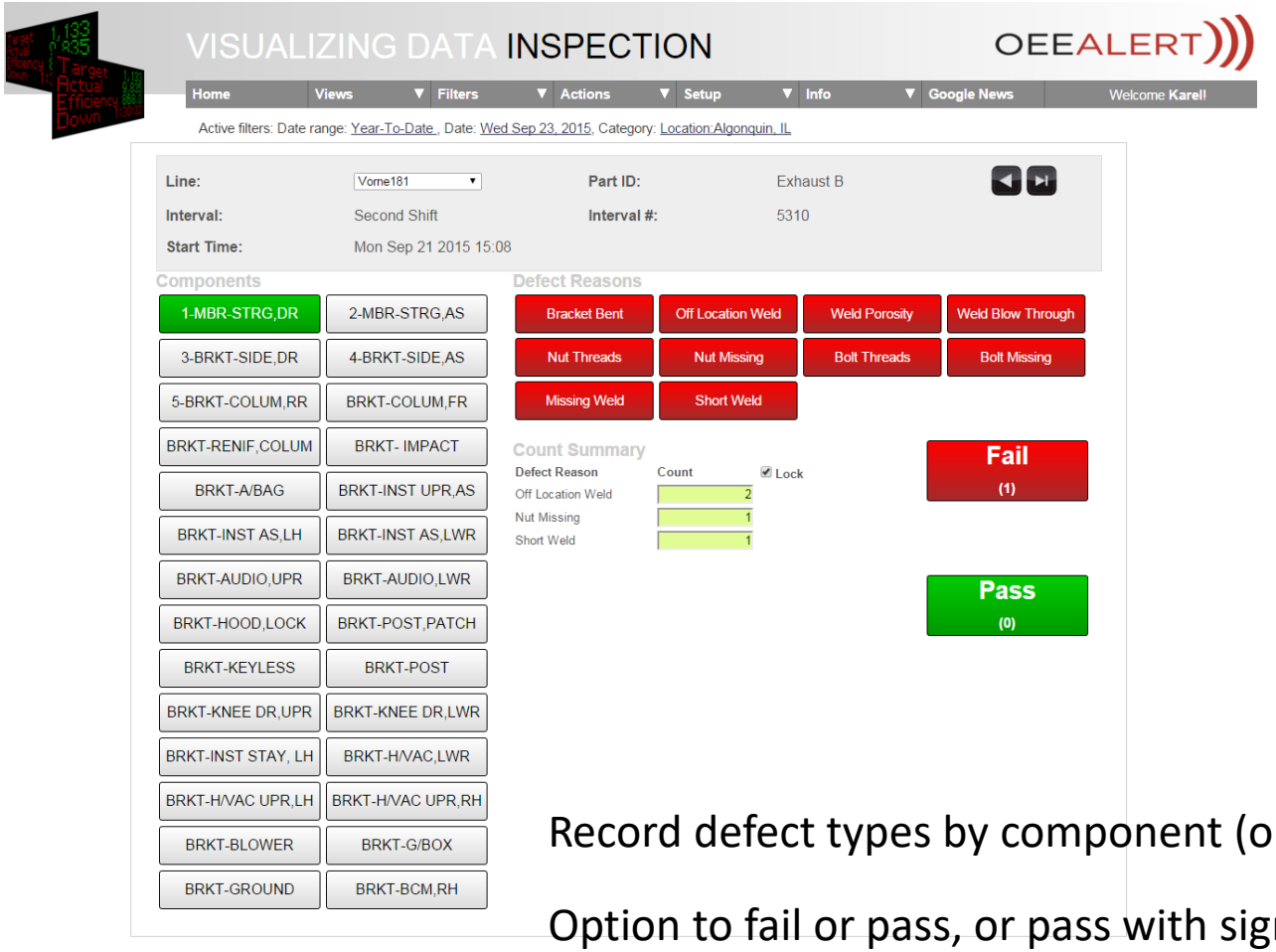
OEE Alert



The batch reject screen allows rejecting groups of parts, with specific reasons. It can be configured to adjust counts or only record defects.

Advanced – By Component or Part Type

OEE Alert



Record defect types by component (or inspection points)

Option to fail or pass, or pass with signaled (non-critical) defects.