

## Asset Redirect/DNA Enhanced Page SOP

### Introduction

DNA Enhanced Page is a webpage designed to provide all the information related to an asset on a single page and accelerate the process of taking actions regarding the asset.

### Interface

The screenshot displays the DNA Enhanced Page interface. At the top, there is a navigation bar with links: Reliability, SharePoint Homepage, DNA Map, DNA Finder, Lockout and Tagout, and Technical Training Videos. Below this, a 'Document Navigation Accelerator' section is visible. The main content area features a table titled 'Asset & Failure Classes Report Links'. The table has five columns: Asset (Site Specific), Failure Class (Site Specific), Asset (All Sites), Failure Class (All Sites), and Description. The table lists various assets and their associated failure classes, with links to detailed reports. A 'Navigation links' sidebar on the left provides quick access to various tools and resources. A search bar at the top right allows users to filter results by site ID or asset number.

Asset (Site Specific)	Failure Class (Site Specific)	Asset (All Sites)	Failure Class (All Sites)	Description
S8594(GH)	FC0038(GH)	S8594(All Sites)	FC0038(All Sites)	Symptom Database
S8594(GH)	FC0038(GH)	S8594(All Sites)	FC0038(All Sites)	Spare Parts List
S8594(GH)	FC0038(GH)	S8594(All Sites)	FC0038(All Sites)	Failure Modes & Causes (In Progress)
S8594(GH)	FC0038(GH)	S8594(All Sites)	FC0038(All Sites)	PMs For The Asset (In Progress)
S8594(GH)	FC0038(GH)	S8594(All Sites)	FC0038(All Sites)	Work Orders (In Progress)
S8594(GH)	FC0038(GH)	S8594(All Sites)	FC0038(All Sites)	Downtime Report with MTBF (In Progress)
S8594(GH)	FC0038(GH)	S8594(All Sites)	FC0038(All Sites)	Reliability Alerts (Disabled if there are no alerts)

Figure 1: Main Interface

#### Asset Number:

The screenshot shows the 'Asset Number' selector. A dropdown menu is open, displaying a list of asset numbers and their descriptions. The selected asset is H2012: AFES #1 Fume Piping System (From Coater to Monsanto). The dropdown menu is styled with a blue header and white background for the list items.

Asset Number	Description
H2012	AFES #1 Fume Piping System (From Coater to Monsanto)
H2014	AFES #1 Booster Fan System
H2016	AFES #1 Anderson Cooler (Spray Chamber - Water/Oil Fume Extraction System)
H2019	AFES #1 Oil/Water Tank (Anderson)

Figure 2: Asset Number Selector

- A. **Site:** Select the name of the site you are searching for from a dropdown menu
- B. **Failure Class Description:** Description of the Failure Class associated with the asset will be displayed here if available

- C. **Asset Number:** Select the asset you are searching for from a dropdown menu, use the input box to filter for assets, see Figure 2
- D. **Asset Description:** Description of the asset will be shown here if available
- E. **Generate:** Once the Site ID and Asset Number have been selected, press this button to get descriptions and generate links to reports
- F. **Navigation Links:** Uses these links to access other resources
  - a. **Reliability SharePoint Homepage**
  - b. **DNA Map**
  - c. **DNA Finder**
  - d. **Lockout and Tagout**
  - e. **Technical Training Videos**
- G. **Symptom Database**
- H. **Spare Parts List:** Search for spare parts
  - a. Grey: Spare parts of the asset from a specific site
  - b. Orange: Spare parts for the failure class associated with the asset at the specific site (This will be assets similar to the one selected)
  - c. Blue: Spare parts of the asset from all sites that has that asset
  - d. Green: Spare parts for the failure class associated with the asset at all sites that has that asset (This will be assets similar to the one selected)
- I. **Failure Modes & Causes:** Failure Modes & Causes information
  - a. Grey: Failure Modes & Causes information of the asset from a specific site
  - b. Orange: Failure Modes & Causes information for the failure class associated with the asset at the specific site (This will be assets similar to the one selected)
  - c. Blue: Failure Modes & Causes information of the asset from all sites that has that asset
  - d. Green: Failure Modes & Causes information for the failure class associated with the asset at all sites that has that asset
- J. **PMs For The Asset:** Get Preventive Maintenance Report
  - a. Grey: PMs of the asset from a specific site
  - b. Orange: PMs for the failure class associated with the asset at the specific site (This will be assets similar to the one selected)
  - c. Blue: PMs of the asset from all sites that has that asset
- K. **Work Orders:** Work Order information
  - a. Grey: Work Order information of the asset from a specific site
  - b. Orange: Work Order information for the failure class associated with the asset at the specific site (This will be assets similar to the one selected)
  - c. Blue: Work Order information of the asset from all sites that has that asset
  - d. Green: Work Order information for the failure class associated with the asset at all sites that has that asset (This will be assets similar to the one selected)
- L. **Downtime Report with MTBF:** Downtime report with Mean Time Between Failure
  - a. Grey: Downtime report of the asset from a specific site
  - b. Orange: Downtime report for the failure class associated with the asset at the specific site (This will be assets similar to the one selected)

- c. Blue: Downtime report of the asset from all sites that has that asset
- d. Green: Downtime report for the failure class associated with the asset at all sites that has that asset (This will be assets similar to the one selected)

**M. Reliability Alerts:** Plant generated Reliability Alerts in the SharePoint

- a. Grey: Reliability Alerts of the asset from a specific site
- b. Orange: Reliability Alerts for the failure class associated with the asset at the specific site (This will be assets similar to the one selected)
- c. Blue: Reliability Alerts of the asset from all sites that has that asset
- d. Green: Reliability Alerts for the failure class associated with the asset at all sites that has that asset (This will be assets similar to the one selected)

**N. Report Links Categories:** There are up to 4 different types of links available for each row

- a. **Grey:** This column of links will show information that is specifically related to the **chosen asset** at the **chosen site**
- b. **Orange:** This column uses the failure code of the selected asset to show information about similar asset at the **chosen site**
- c. **Blue:** This column shows information specifically related to the **chosen asset** at all IKO sites that has assets with this Asset Number
- d. **Green:** This column uses the failure code of the selected asset to show information about similar asset at all IKO sites

## Maintenance

Remember to export a PDF version to the [Assets folder](#)

## Intro

Due to the lack of a proper webserver, this webpage is written in single HTML page style.<sup>1</sup> The HTML file is saved as 'AssetRedirect.aspx' at on the [SharePoint](#).<sup>2</sup>

The code can be edited with any text editor, though some kind of IDE like Visual Studio Code is recommended instead of Notepad.

The code has three main sections <html>, <script>, and <style> all IKO developed code for this website is contained within these three sections, <script> includes JavaScript, and <style> contains CSS.

Various CSV files are loaded by the website, since there is no webserver this is our readonly 'database', since there is no writing to csv from the website<sup>3</sup>

## Dependencies

This page has the following 3<sup>rd</sup> party dependencies

- [jQuery](#)
  - Required by select2, bootstrap 4
- [papaparse](#)
  - Used to quickly read csv files to memory
- [Bootstrap](#)
  - Popular front end toolkit with lots of documentation that supports ie11
- [Select2](#)
  - Adds an input box to filter dropdown menus, see Figure 2
- [Font Awesome 4](#)
  - Icon Library

## Data Resources

The following resources are saved on the SharePoint and used by this webpage. These files are stored under the [Assets folder here](#)<sup>4</sup>

- [siteid].csv
  - Various csv files that are named by siteid are used by this website to populate the dropdown menu for assets at a site
  - Required Information:
    - Asset ID [Column 0]

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<sup>1</sup> I don't think that's actually a thing, but it's what I'll be calling it

<sup>2</sup> Why aspx you might ask? For some reason .html caused an error, however it does not anymore, but the links to the page in PDFs are already .aspx so it is too much work to change it

<sup>3</sup> Writing to csv might actually be possible since SharePoint 2010 does have an API, however credentials and such would be complicated so it has not been implemented

<sup>4</sup> Other webpages expect the csv files to be stored in the root folder which is messy and now frowned upon

- Asset Description [Column 1]
  - Link to SOP (TODO)
- RotatingDNA.mp4
  - The animated DNA logo that plays on the right side
- FailureClasses.csv
  - Links assets and site id with failure classes
  - Required information:
    - Asset ID [Column 0]
    - Failure Class [Column 1]
    - Site ID [Column 2]
- FailureClassDescriptions.csv
  - Gives descriptions for each failure class
  - Required Information:
    - Failure Class [Column 0]
    - Failure Class Description [Column 1]
- ReliabilityAlerts.csv
  - Lists all reliability alerts on the sharepoint
  - No information about files are included, just that assets, failure code and their sites have alerts
  - Required information:
    - Siteid\_assetnumber [row 0]
    - Siteid\_failurecode [row 1]
    - Assetnumber [row 2]
    - Failurecode [row 3]

## HTML

HTML defines the content of a webpage. Since bootstrap is being used most elements have bootstrap class names such as <div class="table-responsive text-nowrap"> which means a responsive bootstrap table is being created, and the bootstrap text-nowrap setting is being applied.

2 Main sections, the navigation bar under the <nav> tag and the main body under <div class="container-fluid">

Since the view should be similar on desktop and mobile, tables are used so that components do not rearrange themselves. A nested table is used to place the different components; the structure has been replicated below

DNA	Site ID Failure Class Desc	Asset Number Asset Desc	Generate	RotatingDNA
Asset & Failure Classes Report Links				
Asset (Site Specific)	Failure Class (Site Specific)	Asset (All Sites)	Failure Class (All Sites)	Description

Link	Link	Link	Link	Description
Link	Link	Link	Link	Description
Link	Link	Link	Link	Description
Link	Link	Link	Link	Description
Link	Link	Link	Link	Description
Link	Link	Link	Link	Description
Link	Link	Link	Link	Description
Navigation Links				
Link		Description		
Link		Description		
Link		Description		
Link		Description		
Link		Description		

Since the links in the report section changes based on what site and asset the user selected it is generated via javascript

## CSS

To minimize the amount of styling within the HTML, styling is mostly kept in the CSS section of the code, similar to how class tags are used by bootstrap, css rules are also applied via class selection

Since bootstrap takes care of most of the styling, the custom css is mostly color and element width definitions

## JavaScript

Once the page finishes loading,

`document.addEventListener('DOMContentLoaded', function () {` runs which loads the csv files for FailureClasses and ReliabilityAlerts. In addition it reads the asset number and site id parameters from the URL if any and saves them to the `url_query` variable

`document.addEventListener('DOMContentLoaded', function () {`

Then `ChangeSite()` runs which will populate the Asset number dropdown field with assets from the site, if the url did not specify then the site is GH by default

The function to generate links to reports is called `genLinks(selected_data)` it first determines the failure class of the asset, then creates the links table using nested arrays: `urls`, `cellFormat`, `cellText`, and `descriptions`, finally the Reliability Alerts links are disabled if there are no related alerts

`readCSV(url, callback)`

Special notes about this function, papaparse loads remote csv files asynchronously, which means that js will not wait for the `readCSV` function to finish reading the csv file before continuing, this is why callbacks are used, the callback function executes when `readCSV` itself has finished. If special care is not taken for asynchronous functions a race condition will occur. In our case our code will try to read the variable where the csv data will be stored, but error out since the data has not been populated yet.

If you need to add sites just add the site Id in the siteName field of the search table and in global variables of the JavaScript.