# Field Glass Data Masking - Alteryx Workflow Process & Design

## 1. Workflow Overview

The Field Glass Data Masking Workflow is designed to:  
✅ Read input files dynamically based on metadata.  
✅ Apply predefined masking rules to sensitive data.  
✅ Generate a masked output file while retaining the original structure.  
✅ Log process details for auditing and validation.

## 2. Workflow Design & Architecture

The Alteryx workflow follows a modular approach, ensuring scalability and flexibility.

🔹 Key Components of the Workflow:

1️⃣ User Input Configuration (Metadata-driven Execution)

2️⃣ File Selection & Processing

3️⃣ Masking Logic Application

4️⃣ Output File Generation

5️⃣ Logging & Validation

## 3. Detailed Workflow Process

### Step 1: Metadata Configuration (User Input)

The workflow reads a metadata file (Excel format) where the user defines masking logic. Metadata includes details like Workflow Type, Folder Name, File Name, Header Row, Column Name, Masking Pattern, and Masking Value.

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| --- | --- | --- | --- | --- | --- | --- |
| Workflow Type | Folder Name | File Name | Header Row | Column Name | Masking Pattern | Masking Value |
| Field Glass | /source/FG/ | fg\_data.xlsx | 1 | Name | Constant | MASKED |

### Step 2: File Selection & Processing

The workflow dynamically selects files from the source directory based on the metadata and processes them using Alteryx Directory and Input Data Tools.

### Step 3: Apply Masking Logic

Once the input data is loaded, the workflow applies masking rules based on the metadata.

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| --- | --- | --- | --- |
| Masking Type | Logic Applied | Example Input | Masked Output |
| Constant | Replace full value | John Doe | MASKED |
| Prefix | Mask first part of value | 1234567890 | MASKED-7890 |
| Suffix | Mask last part of value | 9876543210 | 98765-MASKED |
| Null | Replace value with NULL | Sensitive Data | (NULL) |
| Email | Mask part of email | john.doe@gmail.com | jo\*\*\*\*@gmail.com |

### Step 4: Output File Generation

The masked data is written to a new folder named 'Masked\_Files'. The output format matches the original file type (Excel/CSV).

### Step 5: Logging & Validation

To ensure traceability, the workflow generates a log file ('masking\_log.csv') with execution details such as processed file name, total records masked, masking patterns applied, and errors encountered.

## 4. User Workflow Execution Process

🔹 How Users Run the Workflow:

1. Navigate to UAT Gallery and go to Data Masking Collection Folder.

2. Run the Field Glass Data Masking Workflow by clicking the 'Run' button.

3. Monitor execution and review masked files in 'Masked\_Files'.

4. Validate output using 'masking\_log.csv'.

## 5. Limitations & Future Enhancements

🚨 Current Limitations:

✅ Only supports predefined masking rules (Constant, Prefix, Suffix, Null, Email).

✅ For new masking rules, the Alteryx workflow must be updated.

✅ Metadata configuration is manual (future versions will have UI-based configuration).

🚀 Future Enhancements:

✅ UI-based Metadata Configuration to eliminate manual Excel updates.

✅ Automated Scheduling for periodic execution.

✅ Integration with SharePoint/Shared Drive to automate file retrieval.

## 6. Summary

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| --- | --- |
| Component | Description |
| Metadata File | Defines workflow type, file details, masking logic |
| Input Data | Files from '/source/fieldglass/' |
| Masking Logic | Applied using metadata-driven rules |
| Output | Masked files saved in '/Masked\_Files/' |
| Logging | Logs execution details for auditing |