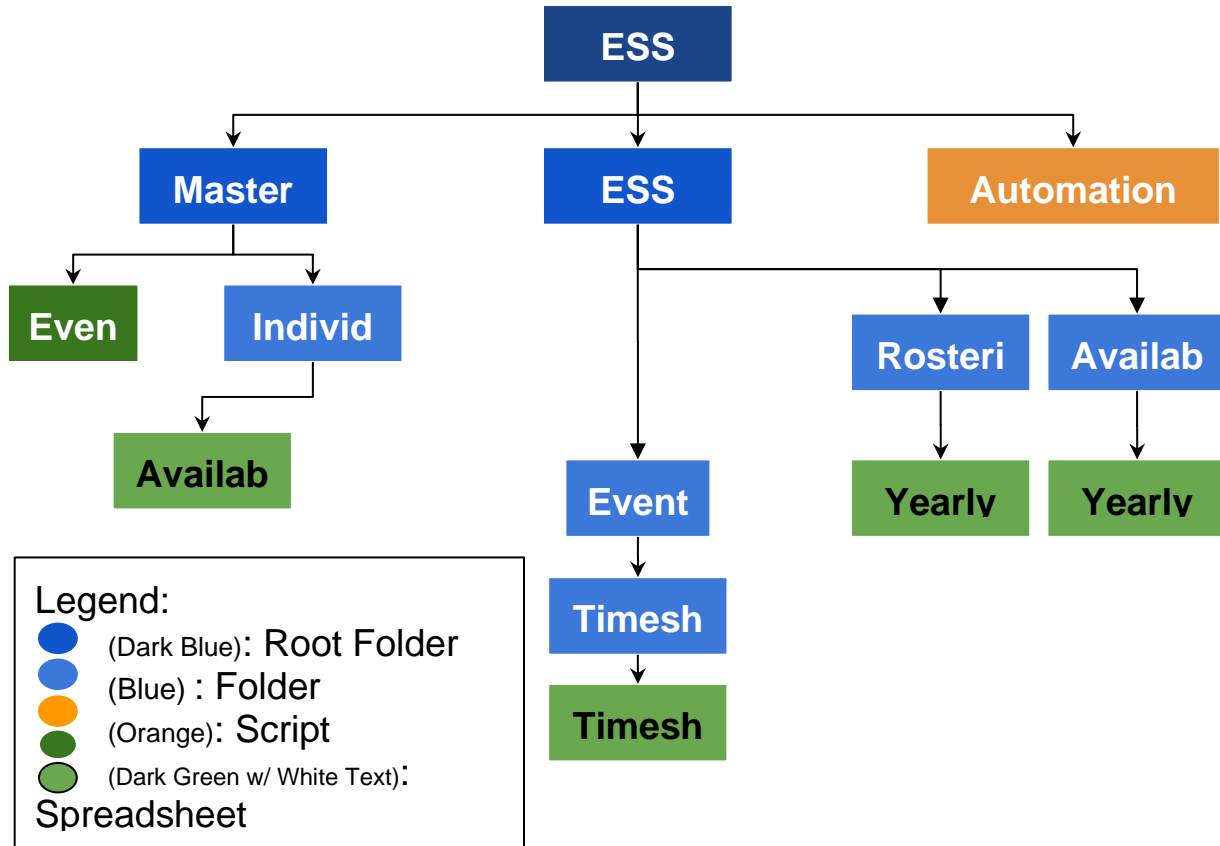# Introduction to the System

Layout/File Hierarchy


Folder/File Name	Description	Additional Details	Sub Folders & Files
Root Folder			
ESS Main Folder	Root Directory for the project	1. For convenience purposes a. Easier to share with people **2. REQUIRED ROOT FOLDER**	- ESS 2023 - Master Folder - Automation
Main Folder			
ESS 2023	Contains files and folders that require to be created	1. Yearly Creation 2. Automated 3. Fixed Naming	- 1. Event (OTH) - Availability

	based on **THE YEAR**.	Convention will be ESS + Year I.e.: (ESS 2024)	- Rostering
Master Folder	Contains Master Spreadsheet (All details) & Individual Spreadsheet for Availability	1. Folder should not be edited **AT ALL** 2. A backup copy will be generated every month	- Event Crew - Individuals
Script			
Automation	Script used to automated all most of the files and folders. Used to generate files and populate data.	1. **CODING SKILLS REQUIRED** 2. Controls all the automation, creation of specific folders and files 3. Prone to error if edited	
ESS 2023 Sub Folders			
1. Event (OTH)	Contains all details of events.	1. *Replicated Folder Hierarchy from ESS* 2. Hierarchy might change based on **REQUIREMENT** 3. **Only Timesheet is being replicated into this environment.**	- Timesheet Folder
Availability	Contains the spreadsheet for monthly availability	1. Automated 2. Fixed Naming Convention	- Yearly Availability
Rostering	Contains the spreadsheet for monthly rostering	1. Automated 2. Fixed Naming Convention	- Yearly Rostering
Master Folder Sub Folders			
Individuals	Contains all the availability spreadsheet of the event crews	1. Template Generated from Event Crew	- Individual Availability Spreadsheet - Portofolio

Event Crew	Master sheet containing all details of personnel.	1. **Should not be AUTOMATED** 2. Only will be pulling data from this spreadsheet 3. Treated as the database with **READ** access only	
Event (OTH)			
Timesheet Folder	Contains timesheet spreadsheet	1. *Replicated Folder Hierarchy from ESS* 2. Hierarchy might change based on **REQUIREMENT**	- Timesheet Spreadsheet
Availability			
Yearly Availability	Contains details for all availability on a monthly basis (Up to 1 year)	1. Fast and Easy tracker of availability 2. Pulls all data from **Individuals** Folder and populate the spreadsheet	
Rostering			
Yearly Rostering	Contains details for rostering on a monthly basis. (Up to 1 year)	1. Easy tracker for availability, role and event 2. Pulls all the data from Availability 3. Require User Inputs 4. Should not interrupt or remove any user input when updating	
Individuals			
Availability	Contains all availability of users	1. Contains Huge amount of user input data 2. Template will be generated based on monthly basis 3. Naming Convention must be **FIXED**	

		(ESSID_Name)	
Timesheet Folder			
Timesheet	Contains the details of the timesheet for a specific event	1. Table is arranged based on Date, Group, Roles 2. User will input data 3. Specification will change accordingly based on requirement 4. Will pull data from Yearly Rostering	

Data Structure/Linkage
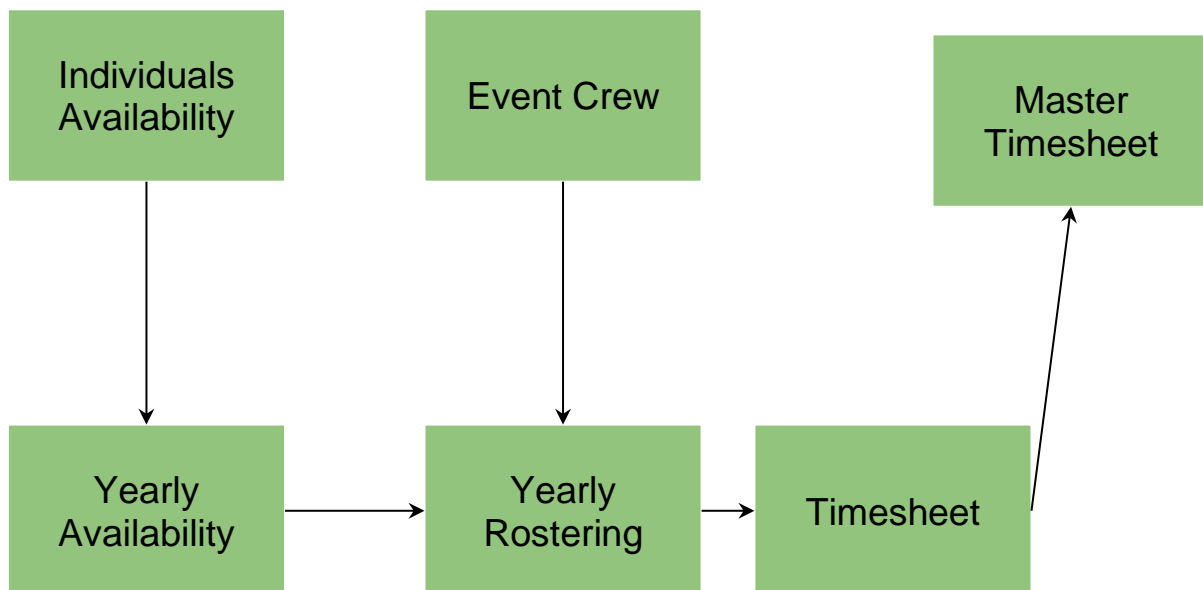
Spreadsheet Attributes

Yearly Availability

Attributes			
ESS ID	Name	Date	
Example Row			
20230102	David	Available	Not Available

Yearly Roster MasterSheet

Attributes								
Empty Row				**Date**				
ESS ID	Name	Mobile	Location	Availability	Partially Available (e.g. Free Till 3pm OR Free AFTER 3pm.)	Rostered Role	Rostered For (Event Name)	Event ID
Example Row								
20230102	David	84123214	Sengkang	Available		IC	iLight	OTH #2023-001

Timesheet

Attributes					
Event Code	**Approval Status**	**Invoice Status**	**Empty Row**		
Valuation Date (Header)	**Valuation Date**	**Empty Row**			
Timesheet Done By (Header)	**Employee Name**	**Empty Row**			
Example Row					
Event Title	No	ESS Serial No.	Name	Role	Date
	1	20230102	David	IC	1 Jun

Individuals

Attributes	
Date	Availability
Example Row	
1 June 23	Available

Attributes

Attribute	Details

Availability	<u>Fixed Dropdown List</u>
	  1. Available
	  2. till 3pm
	  3. after 3pm
	  4. Not Available

ESS ID	Must be in **digits** (Cannot be **alphanumeric**)
Name	Can have **alphanumeric & special characters**
Role	Can have **alphanumeric & special characters**

Date	**Do NOT EDITED ON**
	  - **Yearly Availability**
	  - **Yearly Roster Mastersheet**
	  - **Individuals**

Mobile	Must be in **digits** (Cannot be **alphanumeric**)
Location	Can have **alphanumeric & special characters**
Event Name	Can have **alphanumeric & special characters**
Event ID	Can have **alphanumeric & special characters**

Features

This section indicates all the features required to create the system. Any features not included within this section are considered additional features and will be discussed based on the discretion of the client and the contractor.

1. Individual

This Folder contains the availability of all personnel using spreadsheets. Alterations to it may cause the system to break down.

1.1. Template Creation of Availability

This feature represents the creation of a Spreadsheet and the respective Template used. New Spreadsheet is created only when the personnel is not found within the Individual **Folder**.

This feature will require details from Event Crew Spreadsheet – such as **ESS ID** and **Name**. The file name will follow the naming convention of **ESSID_Name** as shown below in 1.1.a.

1.1.a. Spreadsheet Details converted to File Name.

Within the file, it will follow the template as shown in the illustration of 1.1.b.

1.1.b. Template for Individual Availability

This feature will be limited to only the creation of a Spreadsheet. Any misentry of the Event Crew Spreadsheet will lead to weird outputs during the template creation. Users are to ensure that inputs are correct before any generation of templates.

This feature can be found in Event Crew Spreadsheet as shown below:
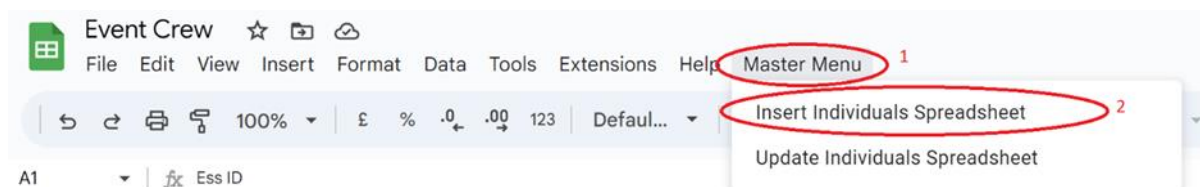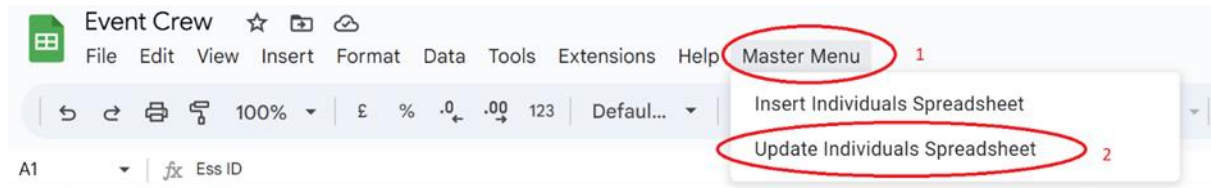

1.1.c. Event Crew Spreadsheet Menu

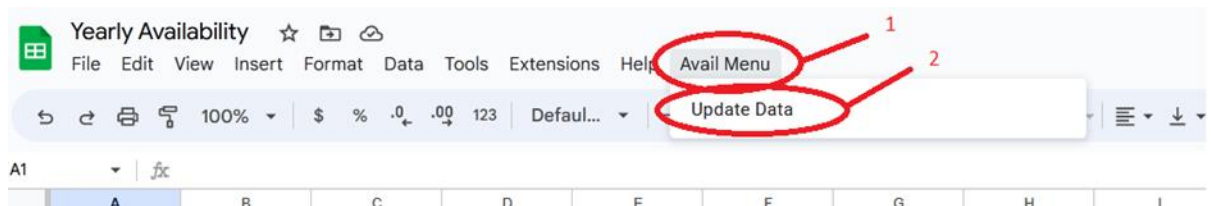This feature is limited to *twice per day*. This constraint is due to the **limitation of Google App Script.**

1.2. Generating Monthly Individual Spreadsheet Template

This feature functions similarly to 1.1. It will produce a template for an event crew found in **Individual Folder**. However, it will not create new spreadsheet files for anyone not found.

This feature can be found in Event Crew Spreadsheet as shown below:

<p align="center">1.2.a. Event Crew Spreadsheet Menu</p>

This feature is limited to *twice per day*. This constraint is due to the **limitation of Google App Script.**

2. Availability

This Folder contains the master sheet for availability. Alterations to it may cause the system to break down.

2.1. Update All Availability

This feature updates the Yearly Availability Spreadsheet from the **Individual Folder**. It pulls all the data from every spreadsheet found in **Individual Folder**. Alterations to this spreadsheet might affect linked spreadsheets. **Update Data** will overwrite any changes made to the spreadsheet.

This feature can be found in Yearly Availability Spreadsheet as shown below:

<p align="center">2.1.a. Yearly Availability Spreadsheet Menu</p>

This feature is limited to *twice per day*. This constraint is due to the **limitation of Google App Script.**

3. Roster

This Folder contains the master sheet for rostering. Alterations to it may cause the system to break down.

3.1. Update All Roster Data

This feature updates the Yearly Roster Mastersheet Spreadsheet from **Yearly Availability Spreadsheet**. **Update Data** will not overwrite any changes made to the spreadsheet. This feature has no constraints on the number of times it can execute.

This feature can be found in Yearly Roster Mastersheet Spreadsheet as shown below:
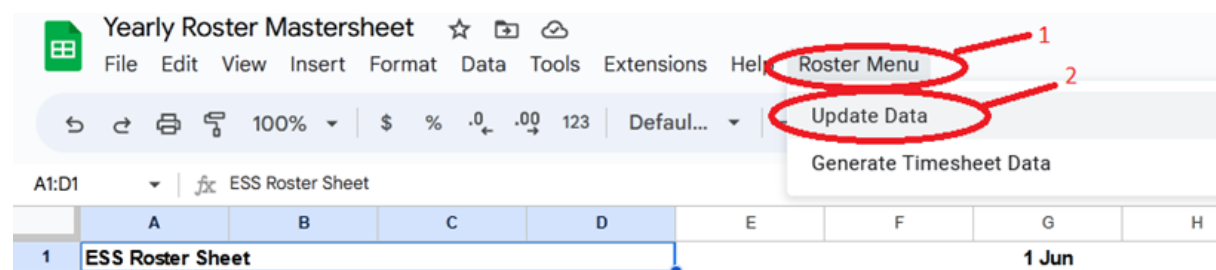
3.1.a. Yearly Roster Mastersheet Spreadsheet Menu

3.2. Generate Timesheet Data

This feature will either generate a new timesheet spreadsheet when no valid folder and spreadsheets are found or populate data into the specific timesheet.

This feature will require details based on **Yearly Roster Mastersheet Spreadsheet** – such as the **Availability of the Crew** and **Event ID**. The file name will follow the naming convention of **EventID** as shown below in 3.2.a.
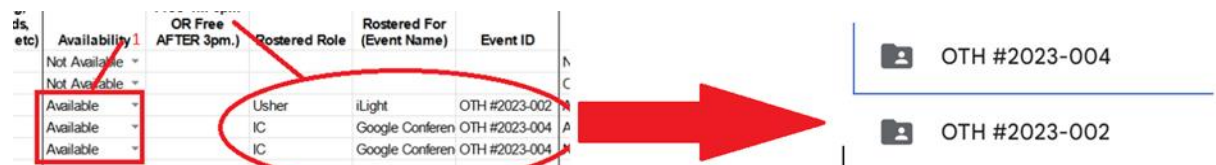
3.2.a. Yearly Roster Mastersheet Details converts to Folder Name

Within the file, it will follow the template as shown in the illustration of 3.2.b.

3.2.b. Template for Timesheet

Once a timesheet spreadsheet is found, it will automatically populate all data based on the following:

No.	ESS Serial No.	Name	Role	Date
1	4	David	IC,Usher	1 Jun, 2 Ju
2	5	Aaron	IC	1

<div align="center">3.2.c. Data Structure of Populated Columns</div>

Any misentry of the Yearly Roster Mastersheet Spreadsheet will lead to weird outputs during the template creation. Users are to ensure that inputs are correct before any generation of templates.

This feature can be found in Yearly Roster Mastersheet Spreadsheet as shown below:
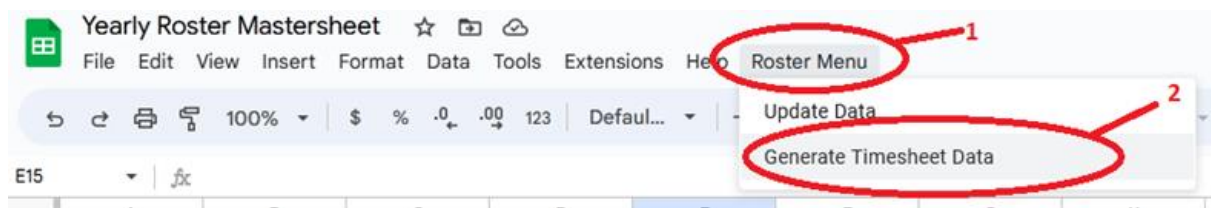
<div align="center">3.2.d. Yearly Roster Mastersheet Spreadsheet Menu</div>

4. Yearly Creation of Folder Hierarchy

All folders and relevant spreadsheets will be created based every year.

The following Folders and Spreadsheets will be created.

1. ESS 2023
    a. Rostering
        i. Yearly Roster Mastersheet
    b. Availability
        i. Yearly Availability
    c. 1. Events (OTH) …
        i. OTH #2023-998 Cancelled Project 2023
        ii. OTH #2023-999 Completed Project 2023

5. Monthly Creation of Spreadsheet Template
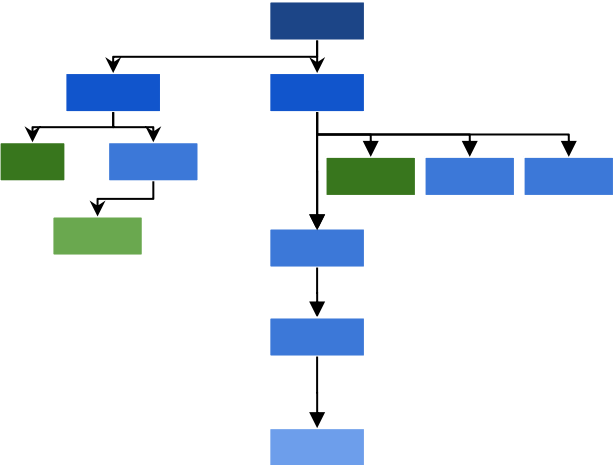
Both Yearly Availability and Yearly Roster Mastersheet spreadsheets will generate templates automatically whenever it is passed the 10th of the month.

Constraints

Automation

Constraints	Documentation
Spreadsheet Creation	https://developers.google.com/apps-script/guides/services/quotas
Details	
Maximum Amount of Spreadsheet can only be **250 Sheets per day**	
Maximum Amount Script Run Time can only be **90 minutes MAXIMUM**	

Folder

Constraints	
Folder Hierarchy	
Details	**Example**

Cannot be **EDITED**	
	
	ESS Main Folder
	    1. ESS (Current Year)
	        a. Rostering
	        b. Availability
	        c. 1. Events (...)
	             i. Event ID
	                   1. Timesheet
	    2. Master Folder
	        a. Individuals

Folder Name	
Details	**Example**
Folder Name Cannot be **EDITED**	Original Template

```
Availability

1. Events
   (...)
                    OTH
                    #2023-001
                                      Timesheet

        Master
        Folder

              Individuals
```

1. ESS Main Folder ⇒ Master Folder
   1. ESS Year ⇒ Recurring Folder
      i. Rostering ⇒ Contain Roster Sheet
      ii. Availability ⇒ Contain Availability Sheet
      iii. 1. Events (...)
         1. Event ID ⇒ Auto Created
            a. Timesheet ⇒ Auto Created
   2. Master Folder ⇒ Non-recurring Folder
      i. Individuals ⇒ Non-recurring Folder

Wrong Format : ✖

```
ESS
Folder

      ESS
      2023

            Rostering

            Availability

      1. Events
         (...)
```

	OTH #2023-001 Timesheet Master Folder Individuals

Name of Folder Must be <mark>**UNIQUE WITHIN RECURRING FOLDERS**</mark>	<u>Original Template</u>
	
	ESS Main Folder
	
	ESS 2023
	
	Rostering
	
	Availability
	
	2. Events (...)
	
	OTH #2023-001
	
	Timesheet
	
	1. ESS Main Folder ⇒ Master Folder
	   a. ESS Year ⇒ Recurring Folder
	      i. Rostering ⇒ Contain Roster Sheet
	      ii. Availability ⇒ Contain Availability Sheet
	      iii. 1. Events (...)
	         1. Event ID ⇒ Auto Created
	            a. Timesheet ⇒ Auto Created
	   b. Master Folder ⇒ Non-recurring Folder

i. Individuals ⇒ Non-recurring Folder

Wrong Format : ❌

ESS
Main
Folder

ESS
2023

Rostering

Rostering

Availability

2. Events
(...)

OTH
#2023-001

Timesheet
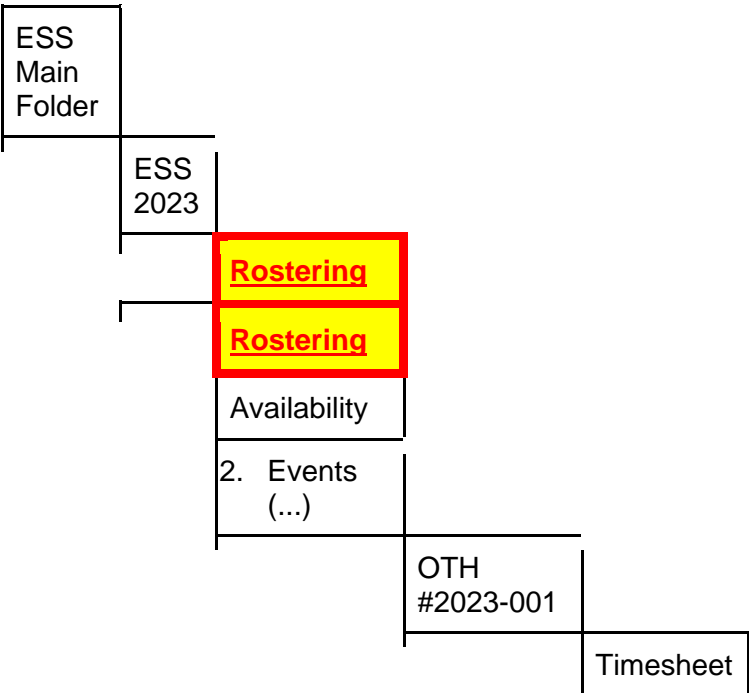
Spreadsheet

Constraints
All Spreadsheets

Details	Example

Spreadsheet Naming Convention
 CANNOT BE EDITED
	<u>Original Template</u>
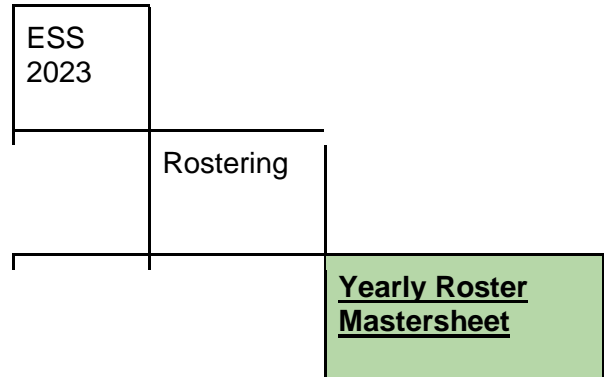	
	 ESS 2023
	
	 Rostering
	
	 Yearly Roster Mastersheet
	
	 1. ESS Main Folder ⇒ Master Folder
	    a. ESS Year ⇒ Recurring Folder
	        i. Rostering ⇒ Contain Roster Sheet
	            1. Yearly Roster Mastersheet
	
	 Wrong Format : ✘
	
	 ESS 2023
	
	 Rostering
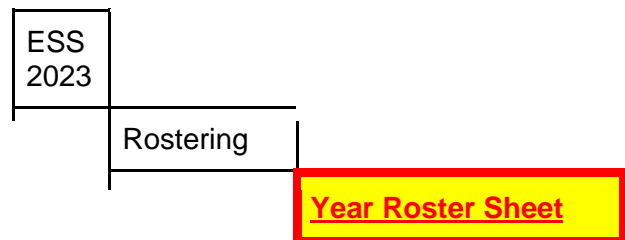	
	 Year Roster Sheet

Spreadsheet File Name **MUST BE UNIQUE IN RECURRING FOLDER**	Original Template
	ESS 2023
	Rostering
	Yearly Roster Mastersheet
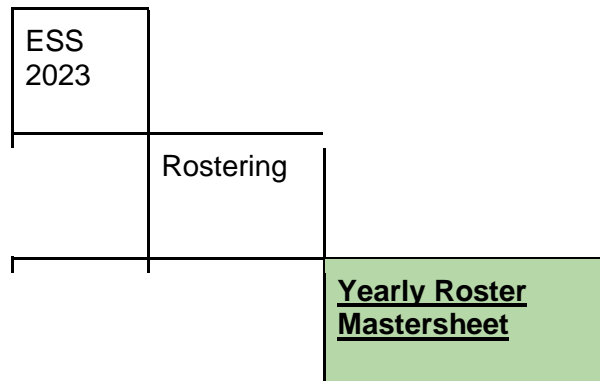
	2. ESS Main Folder ⇒ Master Folder
	    a. ESS Year ⇒ Recurring Folder
	      ii. Rostering ⇒ Contain Roster Sheet
	        1. Yearly Roster Mastersheet

	Wrong Format : ✖
	ESS 2023
	Rostering
	Yearly Roster Mastersheet
	Yearly Roster Mastersheet
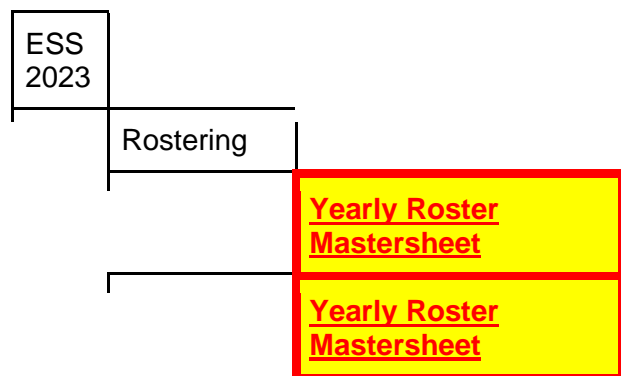
Individual Spreadsheet	

Details	Example
File Naming Convention Should Follow: 1. **ESSID_Name** (**SPLIT_BY_UNDERSCORE**) 2. **ESSID Must be only numeric**	Correct Format : ✅ **20230103_David** Wrong Format : ✖

Row of Header **CANNOT BE CHANGED**	Correct Format : ✅

Header	Header
Data	Data

Header – **Header Row must stay at the top**

Wrong Format : ❌

Header	Header
Header	Header
Data	Data

Availability **MUST CHOOSE** from the Dropdown List	Correct Format : ✅ **Available** **User cannot manual type into dropdown**

Yearly Availability Spreadsheet	
Details	**Example**

Headers **CANNOT CHANGE NAMING CONVENTION**	Original Format:

ESS ID	Name
Data	Data

Correct Format : ✅

ESS ID	**Name**
Data	Data

Header - **Cannot Change Name**

Wrong Format : ❌

ID	Member Name
Data	Data

Details	Example
Name of the Date **CANNOT BE CHANGED**	Original Format: 	ESS ID	Name	1 Jun	2 Jun	3 Jun	 Correct Format : ✅ 	**ESS ID**	**Name**	**1 Jun**	**2 Jun**	**3 Jun**	 Wrong Format : ❌ 	ESS ID	Name	**1 June**	**2 June**	**3 June**	
Name of the Sheet **CANNOT BE CHANGED**	Original Format: Jun | Jul Correct Format : ✅ **Jun** | **Jul** Wrong Format : ❌ **Jun 23** | **Jul 23**
Insertion of Data is **Based ON ESS ID (First Column)** - **Any Data** written on **Empty ESS ID** Row will be **overwritten**	Correct Format : ✅ 	**ESS ID**	**Name**	**1 Jun**	**2 Jun**	**3 Jun**	 	**2023001**					 Wrong Format : ❌ 	**ESS ID**	**Name**	**1 Jun**	**2 Jun**	**3 Jun**	 	(red)	David				

Yearly Roster Mastersheet Spreadsheet

Details	Example

Headers **CANNOT CHANGE NAMING CONVENTION**	Original Format:

Original Format:

ESS ID	Name
Data	Data

Correct Format : ✅

ESS ID	Name
Data	Data

Header - **Cannot Change Name**

Wrong Format : ❌

ID	Member Name
Data	Data

Name of the Date CANNOT BE CHANGED

Original Format:

ESS ID	Name	1 Jun	2 Jun	3 Jun

Correct Format : ✅

ESS ID	Name	1 Jun	2 Jun	3 Jun

Wrong Format : ❌

ESS ID	Name	1 June	2 June	3 June

Name of the Sheet CANNOT BE CHANGED

Original Format:

Jun	Jul

Correct Format : ✅

Jun	Jul

Wrong Format : ❌

Jun 23	Jul 23

Insertion of Data is **Based ON ESS ID (First Column)** - **Any Data** written on **Empty ESS ID** Row will be <mark>**overwritten**</mark>	Correct Format : ✅

ESS ID	Name	1 Jun	2 Jun	3 Jun
2023001				

Wrong Format : ❌

ESS ID	Name	1 Jun	2 Jun	3 Jun
	David			

Timesheet Spreadsheet

Details	Example
Headers **CANNOT CHANGE NAMING CONVENTION**	Original Format:

ESS ID	Name
Data	Data

Correct Format : ✅

ESS ID	Name
Data	Data

Header - **Cannot Change Name**

Wrong Format : ❌

ID	Member Name
Data	Data

<mark>**ALL HEADER NAME MUST BE UNIQUE**</mark>

Correct Format : ✅

No.	ESS Serial No.	Name	Role
1	20231012	David	IC

Wrong Format : ❌

No.	ESS Serial	Name	Role

	No.		
1	20231012	Name	IC

Data cannot have the same name as Header

Insertion of Data is **Based ON No. (First Column)** - **Any Data** written on **Empty No.** Row will be <mark>**overwritten**</mark>	Correct Format : ✅

Correct Format : ✅

No.	ESS Serial No.	Name	Role	Date
1				

Wrong Format : ❌

No.	ESS Serial No.	Name	Role	Date
	David			

Menu

Constraints	Details
Adding Entries into Spreadsheet	**NO ENTRIES** of Spreadsheet **DURING RUNNING OF SCRIPTS**
Running of Multiple Menu	**NO RUNNING OF MULTIPLE SCRIPT AT THE SAME TIME**
Switching into Multiple Spreadsheet	**No Switching between Spreadsheet**
Event Crew (Master Sheet)	
Insert Individual Template	Can **only be Run Twice Per Day**
Update Individual Template	
Yearly Availability	
Update Data	Can only be **Run Twice Per Day**
Clear Cache	NIL
Yearly Roster	
Update Data	NIL
Generate Timesheet Data	Can only be **Run Twice Per Day** - Limited to **Spreadsheet Creation**

Automation Process

1. Automatic Creation of Folder on every 10 December

📇 ESS 2023	🙂 me	15 Jun 2023 me	—	👤⁺ ⬇ ✎ ☆	⋮

   a. ESS Year

   i.   Availability

📇 Availability	🙂 me	01:49 me	—		⋮

   ii. Rostering

📇 Rostering	🙂 me	01:49 me	—		⋮

   iii. 1. Events

📇 1. Events (OTH) - Quotations x Timesheet x Invoice x Payout	🙂 me	15 Jun 2023 me	—	👤⁺ ⬇ ✎ ☆	⋮

   1. Cancelled Project
   2. Completed Project

2. Automatic Creation of Spreadsheet on every 10 December

   a. Yearly Availability

📗 Yearly Availability 👥	🙂 me	12:28 me	1 KB		⋮

   b. Yearly Roster Mastersheet

📗 Yearly Roster Mastersheet 👥	🙂 me	12:31 me	3 KB		⋮

3. Generate Individual Availability from Event Crew

   a. Generates Based on **ESS ID & Name**

      b. Generate Individual **<u>Monthly Availability</u>**

4. Refresh Yearly Availability Based on Individual Folder
    a. Pulls Data from Individual Folder
    b. Updates Specific Sheet which is selected
5. Refresh Yearly Roster Mastersheet Based on Yearly Availability
    a. Pull Data from Yearly Availability
    b. Updates Specific Sheet which is selected
6. Generate Timesheet From Yearly Roster Mastersheet
    a. Generates Timesheet from the Specific Sheet selected

User Guide

Notes: Steps must be done sequentially as creation of data and template are not <mark>**LINKED AUTOMATICALLY**</mark>

Step 1: Go To Event Crew Spreadsheet & Click **Master Menu→Update Individual Spreadsheet** (ESS Main Folder ⇒ Master Folder ⇒ Event Crew)
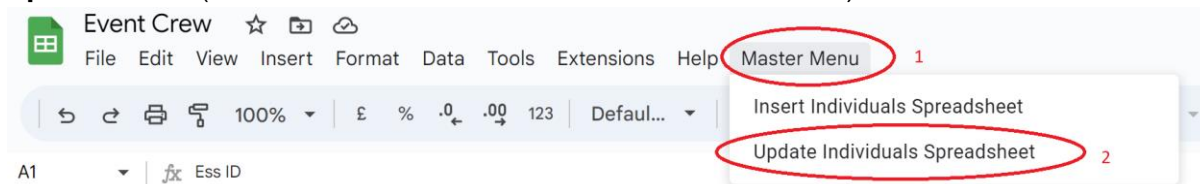
   a. This will generate
       i.   Next Month's Template
   b. Ensure that Running Script is seen
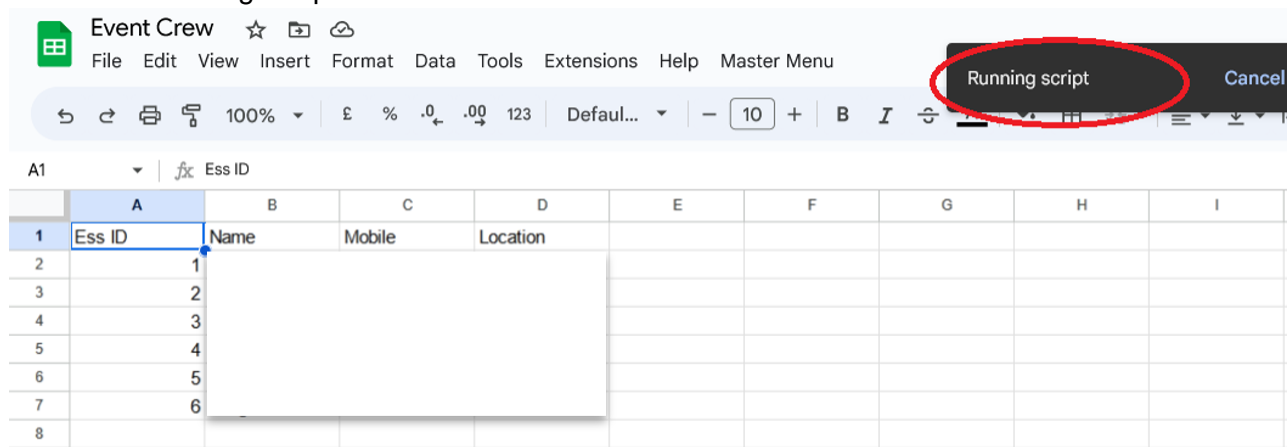
       i.   Wait for Finished Script to appear
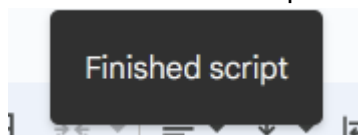
Step 2: Ask Member to fill up their Availability

	Date	Availability
1	**Date**	**Availability**
2	1 June 2023	Not Available ▼
3	2 June 2023	Not Available ▼
4	3 June 2023	Not Available ▼
5	4 June 2023	Not Available ▼
6	5 June 2023	Not Available ▼
7	6 June 2023	till 3pm ▼
8	7 June 2023	Available ▼
9	8 June 2023	after 3pm ▼
10	9 June 2023	Not Available ▼
11	10 June 2023	till 3pm ▼
12	11 June 2023	after 3pm ▼
13	12 June 2023	Available ▼
14	13 June 2023	Not Available ▼
15	14 June 2023	Available ▼
16	15 June 2023	till 3pm ▼
17	16 June 2023	Available ▼
18	17 June 2023	Available ▼
19	18 June 2023	Not Available ▼
20	19 June 2023	Not Available ▼
21	20 June 2023	Available ▼
22	21 June 2023	till 3pm ▼
23	22 June 2023	till 3pm ▼
24	23 June 2023	after 3pm ▼
25	24 June 2023	after 3pm ▼
26	25 June 2023	Not Available ▼
27	26 June 2023	Available ▼
28	27 June 2023	Available ▼
29	28 June 2023	Not Available ▼
30	29 June 2023	after 3pm ▼
31	30 June 2023	Available ▼

Step 3: Go to **Yearly Availability** & Click **Avail Menu**
(ESS Main Folder ⇒ ESS [Current Year] ⇒ Availability)

a. This will update the current Yearly Availability on the specific Sheet (Based on Month)

b. Ensure that Running Script is seen

c. Wait for Finished Script to appear

Step 4: Go to **Yearly Roster Mastersheet** & Click **Roster Menu** → **Update Data**
(ESS Main Folder ⇒ ESS [Current Year] ⇒ Rostering)

a. This will update the current Yearly Availability on the specific Sheet (Based on Month)
b. Ensure that Running Script is seen

c. Wait for Finished Script to appear

Step 5: Fill In All the Details for Particular Member
Ensure that:
1. **The user is Available**

2. **Rostered Role & Event ID is Correct**

Step 6: Click **Roster Menu → Generate Timesheet**
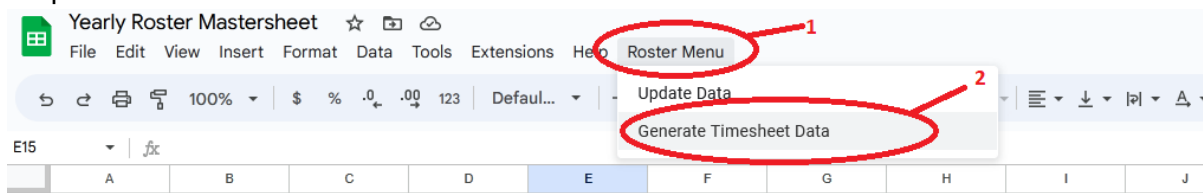
a. Timesheet will generate <mark>Based</mark> on **Event ID**
b. This will generate
   i. Timesheet
c. Ensure that Running Script is seen
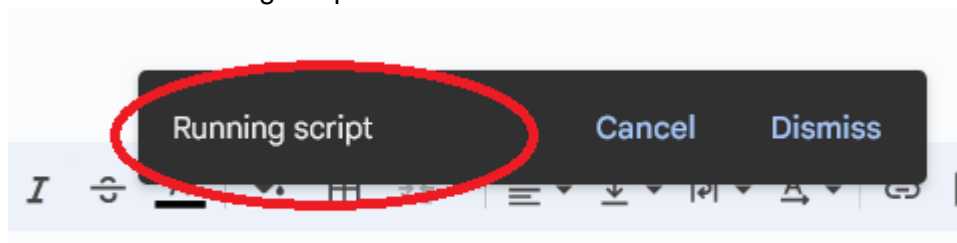
   i. Wait for Finished Script to appear
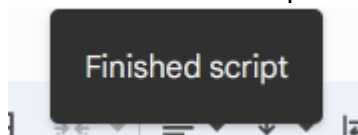
d. Folders will be auto generated

e. Timesheet will be auto generated with inserted Data