

Flow Accumulation Report Tool

The present guidebook represents a basic tutorial that explains how to best use the Flow Accumulation Report web application.

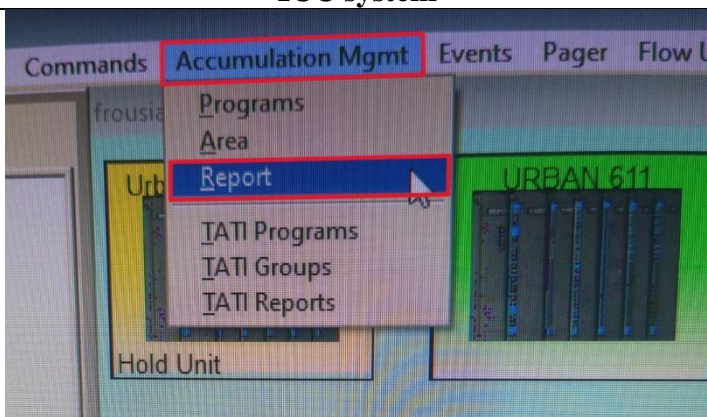
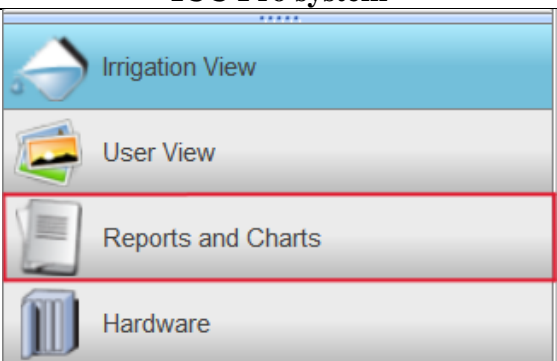
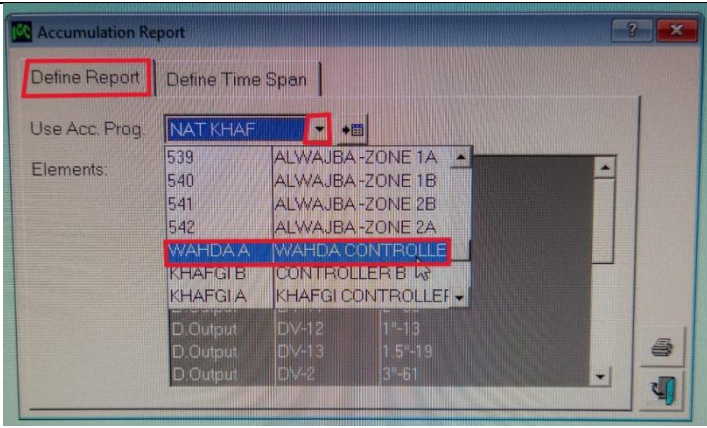
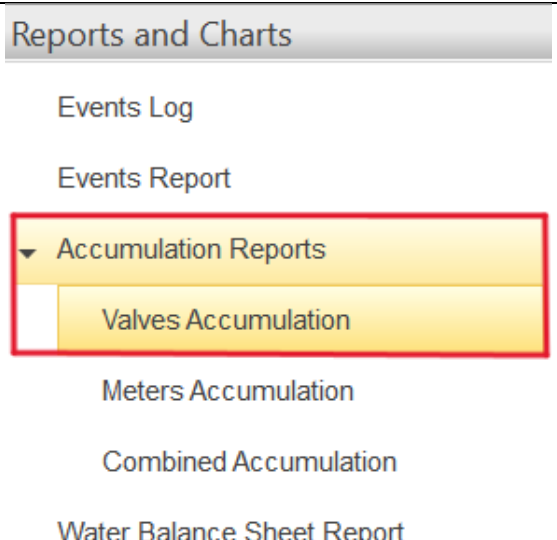
Step1: Preparing input data

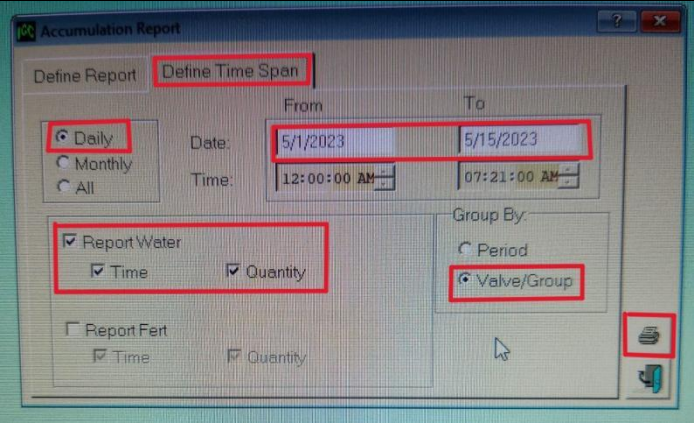
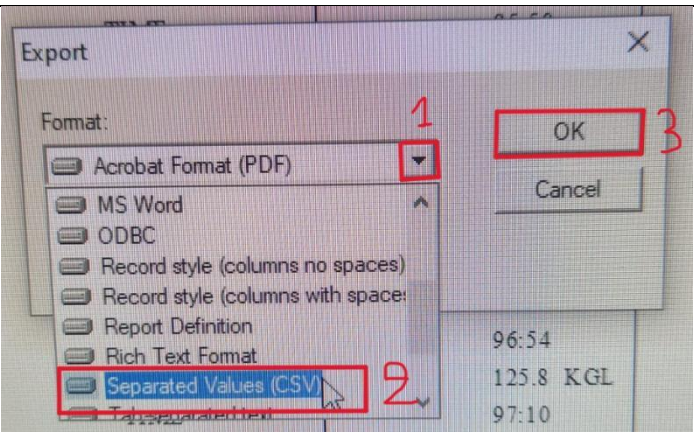
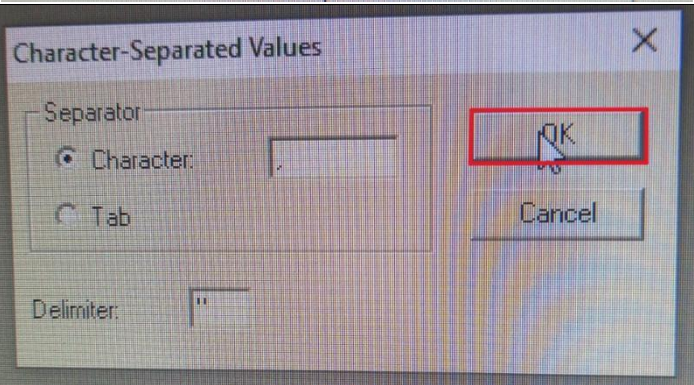
To use this web application, the user will need to prepare two files:

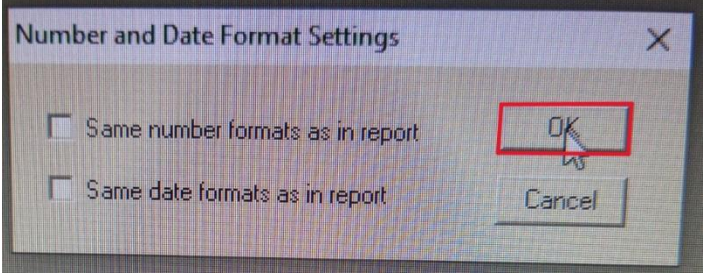
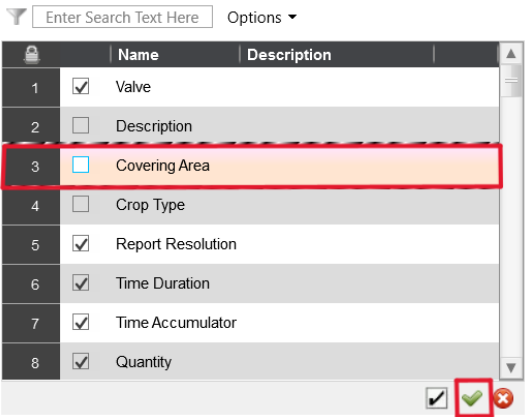

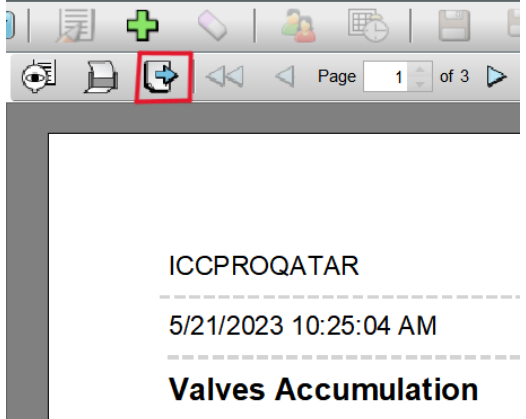
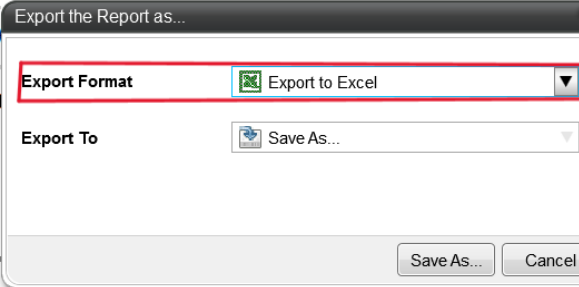
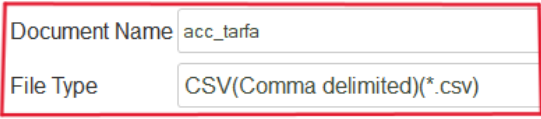
1. One containing the flow accumulation of an area of interest (See Table1), where the file name should be in this format “*acc_SiteName*” (e.g., “acc_wehda”); **[file generated by ICC/ICCpro system]**
2. One containing the designed flow calculations and other info (See Figure1), where the file name should be in this format “*designedFlow_SiteName*” (e.g., “designedFlow_wehda”). **[file prepared manually]**

Both files need to be prepared in the “.csv” extension. The web application was coded based on the current available versions of ICC and ICC pro systems (21/5/2023).

The user should ensure that the column names in the second file are retained as they are. The column “Group” indicate irrigation valves that run in groups of two or more. For example, Figure1 shows that DV1 and DV2 run at the same time (group id = 8).

	ICC system	ICC Pro system
1		
2		

3		<p>Date Scope</p> <p>Time Period Last 7 days</p> <p>From 5/14/2023 12:00 AM To</p> <p>Report Valves</p> <p>Sections</p> <p>Field Unit US-TARFA-A1_758</p> <p>✕ + ✎</p>
4		<p>Report Grouping</p> <p>Report Resolution Daily</p> <p>Report Grouping Time Period</p> <p>Volume Unit gal</p> <p>Depth Unit mm</p> <p>Fert Unit L</p> <p>Fert Depth Units Ltr/Dnm</p> <p>Show Fert Type as Fert Volume</p> <p>Fert area density measurement unit Kg/Dm</p>
5		<p>Report Columns</p> <p>Valve</p> <p>Report Resolution</p> <p>Covering Area</p> <p>Quantity</p> <p>Quantity Accumulator</p> <p>Time Duration</p> <p>✕ ✎</p>

6		
7		
8		
9		
10		<p>The exported file is in “.xls” >> Open the file in Excel and save it again as a “.csv” file</p> 

	A	B	C	D	E	F
1	valve	GPM	lat	lon	Group	
2	BV1	13.5	25.363465	51.495083	13	
3	BV1A	10	25.363365	51.494983	6	
4	BV1B	17	25.363265	51.494883	14	
5	BV2	3	25.363165	51.494783	13	
6	BV2A	3	25.363065	51.494683	6	
7	BV3	2.5	25.362965	51.494583	14	
8	BV4A	14	25.362865	51.494483	7	
9	BV5A	7	25.362765	51.494383	7	
10	DV1	6.37	25.362665	51.494283	8	
11	DV10	16.78	25.362565	51.494183	12	
12	DV11	20.68	25.362465	51.494083	19	
13	DV1B	29.43	25.362365	51.493983	17	
14	DV2	29.43	25.362265	51.493883	8	
15	DV2B	29.43	25.362165	51.493783	17	
16	DV3	18.62	25.362065	51.493683	9	
17	DV4	36.39	25.361965	51.493583	9	
18	DV5	9.4	25.361865	51.493483	10	

Figure 1

Step2: Running the analysis in the cloud.

Direct link to the web application:

https://farhatlokmen-flowaccanalysis-home-lwtdze.streamlit.app/Flow_Accumulation_Report

<h2>Flow Accumulation</h2> <p>This tool compares the designed flow calculations against the observed flow readings for selected irrigation valves corresponding to a user-specified period of time.</p> <div> <input type="password"/> Password </div> <div>Please enter correct password!</div>	<p>Password: 2023</p>
<div> Drag and drop files here Limit 200MB per file </div> <div>Browse files</div> <div>Upload only the two files corresponding to designed and observed flow.</div>	<p>Select the aforementioned two files from your computer.</p>
<p>Automatic Irrigation Mode</p> <p> <input type="radio"/> Sequence <input checked="" type="radio"/> Parallel </p> <p>ICC System</p> <p> <input checked="" type="radio"/> ICC <input type="radio"/> ICCpro </p> <p>Exclude days when flow sensor was not active</p> <p> <input checked="" type="radio"/> yes <input type="radio"/> no </p> <p>Choose Irrigation Valve(s)</p> <div>Choose an option</div> <div>Please select at least one irrigation valve.</div>	<p>Specify whether:</p> <ul style="list-style-type: none"> ◆ Valves were run in parallel or in sequence; ◆ The used system is ICC or ICCpro; ◆ To ignore days when the flow sensor was inactive or not.

Choose Irrigation Valve(s)

RV1 x RV3 x RV5 x

Start Date

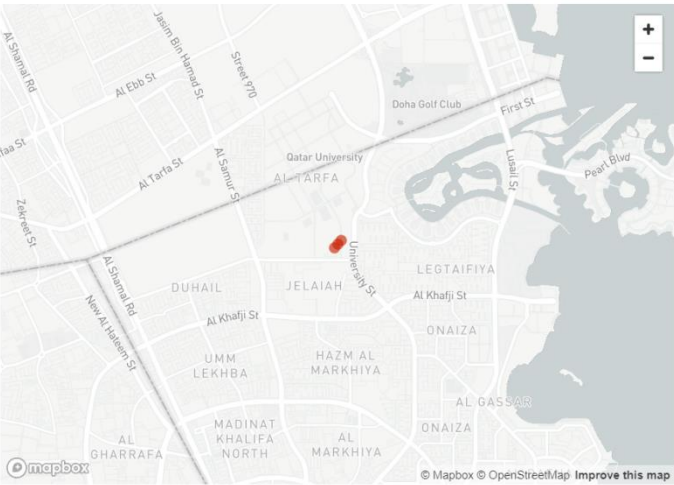
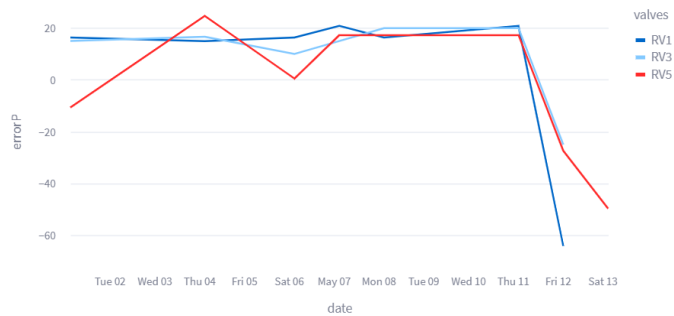
2023/05/01

End Date

2023/05/14

	valve	avgErrorP	nb days
0	RV1	5.87	7
1	RV3	10.16	7
2	RV5	-1.45	8

Average error of all selected valves (%): 4.86



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Settings

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About

Select valves to investigate and the study period.

Error equation = $100 * ((\text{obs} - \text{des}) / \text{des})$
Where:
obs: refers to observed data
des: refers to calculated data

Note: the endDate is always excluded.
That means that in case of this image, the study period will be between 1-13th May 2023. I have made it this way so as to allow the user to select 1 day (if he chooses to).

Display the variability of error values over time for selected valves.

Display location in interactive maps based on (lat,lon) coordinates.

Printing report.