Automatic Analysis/Flood Forecasting System Operation Manual

AutoIFAS

Contents

1. Hardware Requirements

The hardware requirements to run the automatic analysis/flood forecastingsystem are the same as IFAS.

IFAS must be installed and the following points are required in your project.

- Basin data, drainage course and pseudo river are created.
  Import elevation data to create these data. Although land use data and geology data are necessary when setting parameter, these data are able to create by using parameter setting for each tributary.
- Parameter for each tank is set.
- Rainfall data are created. (Rainfall data is for referring the folder name, not the period. Therefore, only short period is necessary.)
- Simulation is conducted.

Hardware requirements for AutoIFAS

- OS：Window7, WindowsVista(SP1 or higher), WindowsXP or Windows2000(SP3 or higher)
- Memory：512MB or more（1GB or more recommended）
- Free hard disk space: 10GB or more (minimum).

- .NET Framework2.0 must be installed.
- Microsoft Visual J# redistributable package 2.0 is installed.
- Install NetFx64.exe and vjredist.exe when your OS is 64bit.

2. Software Structure and Operation

2.1 Software Structure

The automatic analysis/flood forecastingsystem is composed of the following three functions.

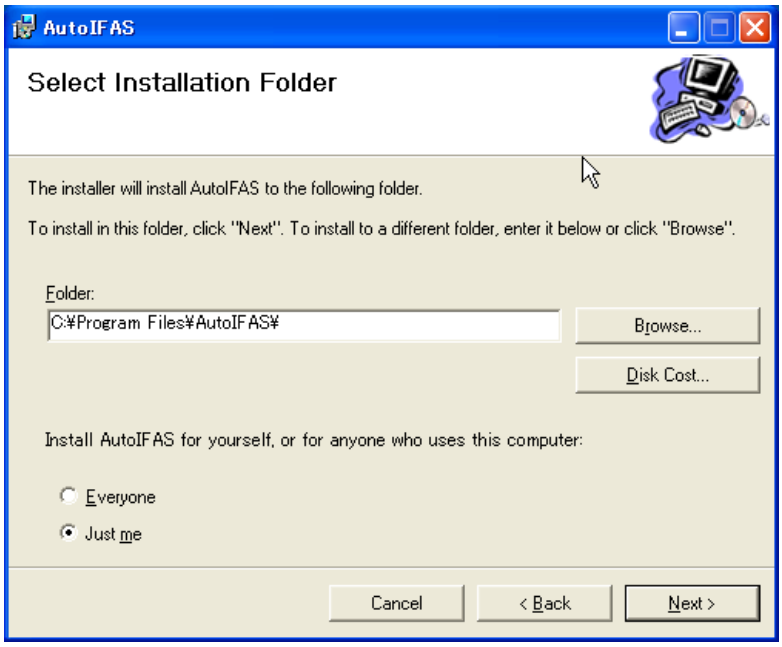
- Automatically Download: Downloading satellite rainfall data automatically
  [File name] AutoRainDownload.exe
- ManuallyDownload:Downloading satellite rainfall data manually
  [File name] RainDownload.exe
- Automatic Analysis/Flood Forecasting Alarm: Conducts runoff analysis automatically.
  Alarm will beep when the calculation result exceeds the threshold value.
  [File name] AutoIFAS.exe

2.2 Installation

Run the setup file to install the system.

Click [Next].

Figure-2.2.1 Setup start screen

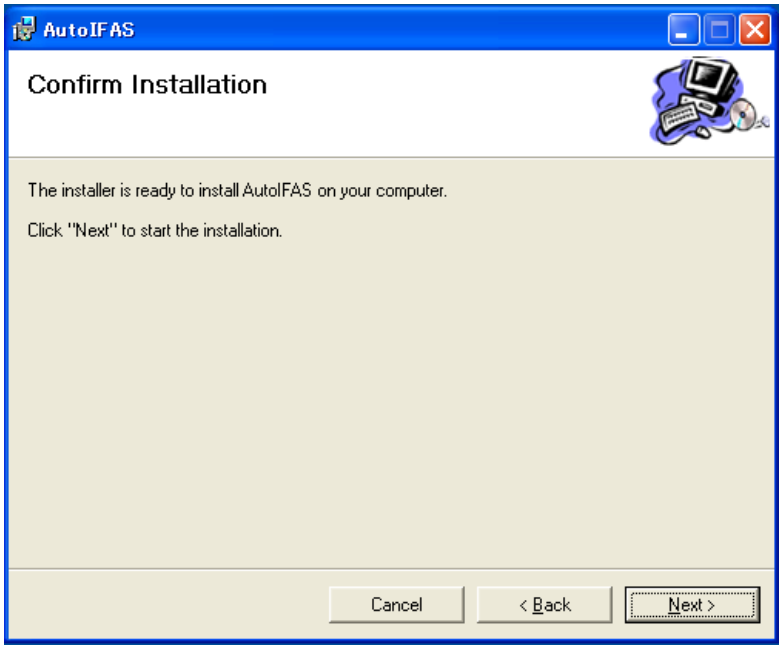


Check the destination folder to install AutoIFAS. (Alterable)

Click [Next].

Figure-2.2.2 Install folder setting window

The following window will appear when it is ready to install AutoIFAS.



Click [Next] to start the installation.

Figure-2.2.3 Installation starting window

The following window will appear when installing AutoIFAS.

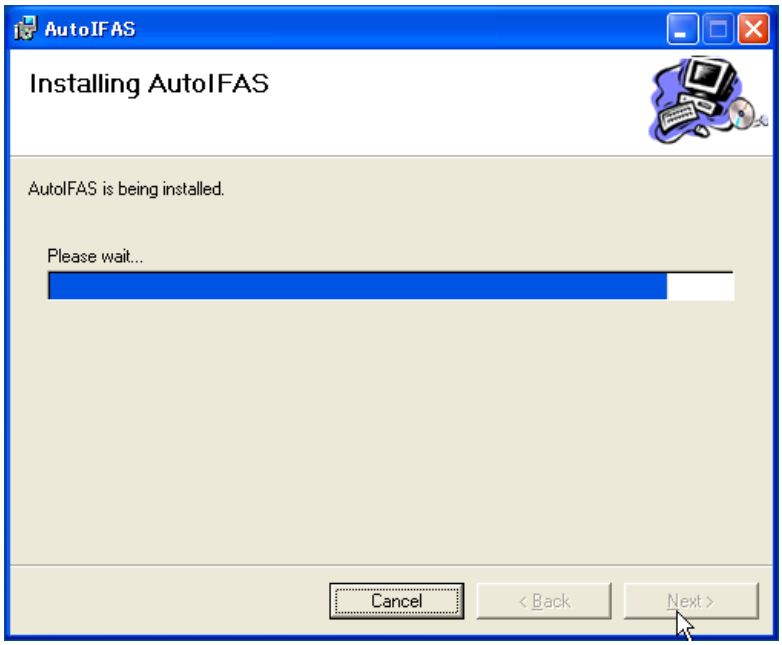
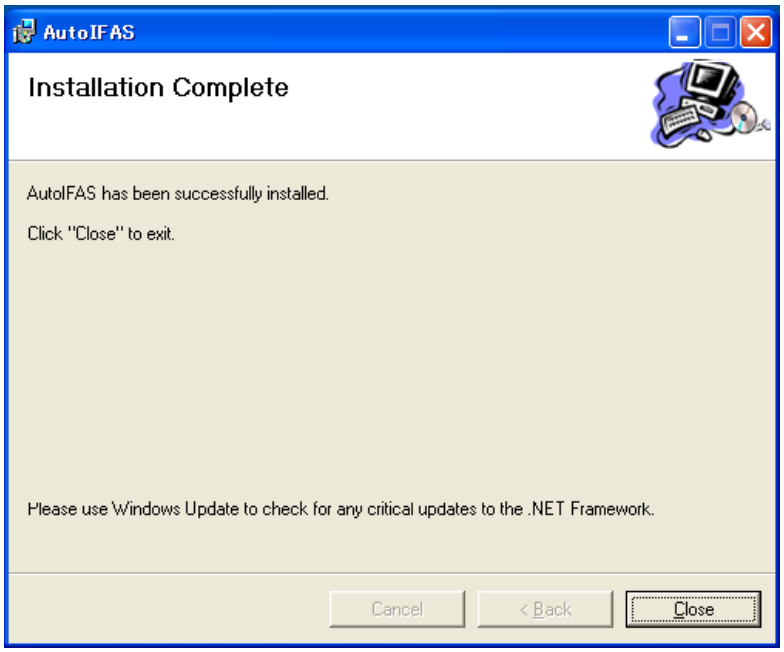


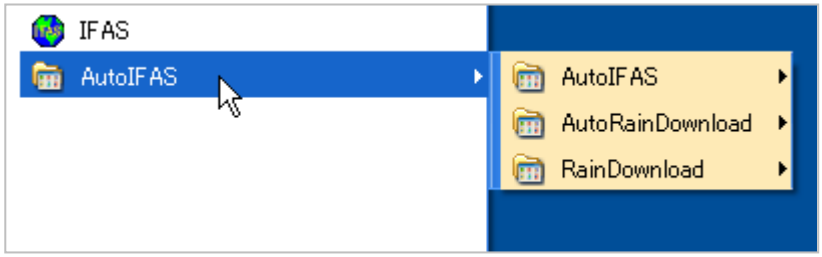
Figure-2.2.4　Installation conducting window

Installation completion screen will appear.



Click [Close] to complete installation.

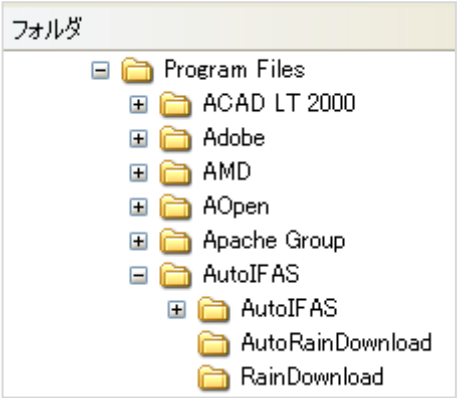
After installation, Three icons（AutoIFAS、AutoRainDownload、RainDownload）will appear on the desktop and will also appear in the start menu.



Start menu

Desktop icon

Example of folder structure



Example when the system is installed to C:¥Program Files.

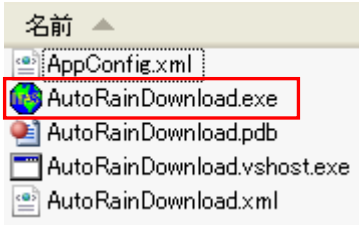
2.3 Starting the System

You can launch the system either from the desktop icon or the execute file.

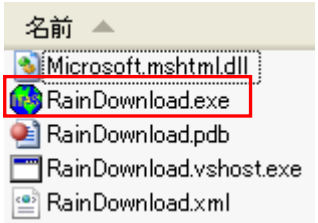
File structure in the system

Automatically DownloadManually DownloadAutomatic Analysis/Flood Forecasting Alarm

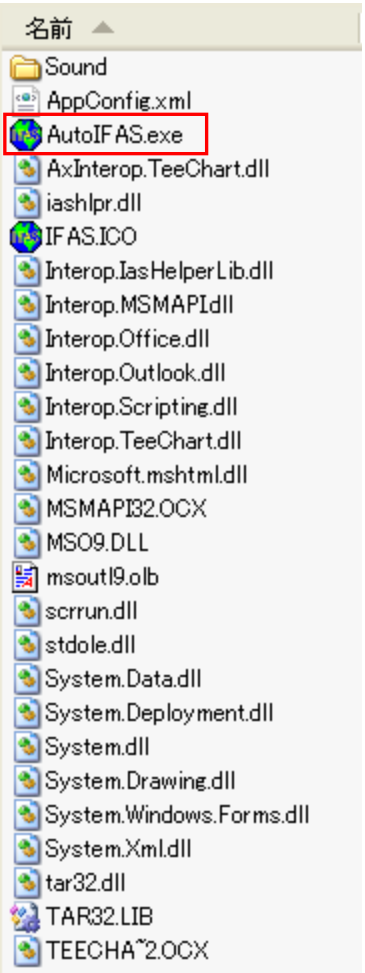
【AutoRainDownload】



【RainDownload】



【AutoIFAS】



Execute file

Figure-2.3.1 File structure

2.3.1 Automatically Download

Automatically downloadprogram is able to run by the desktop icon, start menu or the "AutoRainDownload.exe".

Desktop icon

2.3.2 Manually Download

Manually downloadprogram is able to run by the desktop icon, start menu or the"RainDownload.exe".

Desktop icon

2.3.3 Automatic Analysis/Flood Forecasting Alarm

Automatic Analysis/Flood Forecasting Alarmprogram is able to run by the desktop icon, start menu or the"AutoIFAS.exe".

Desktop icon

2.4 Operating the System

2.4.1 Automatically Download

The following window will appear when you run the Automatically Download function. Downloaded data files are automatically sorted to the folders set by IFAS. （User is able to set the folder arbitrarily）

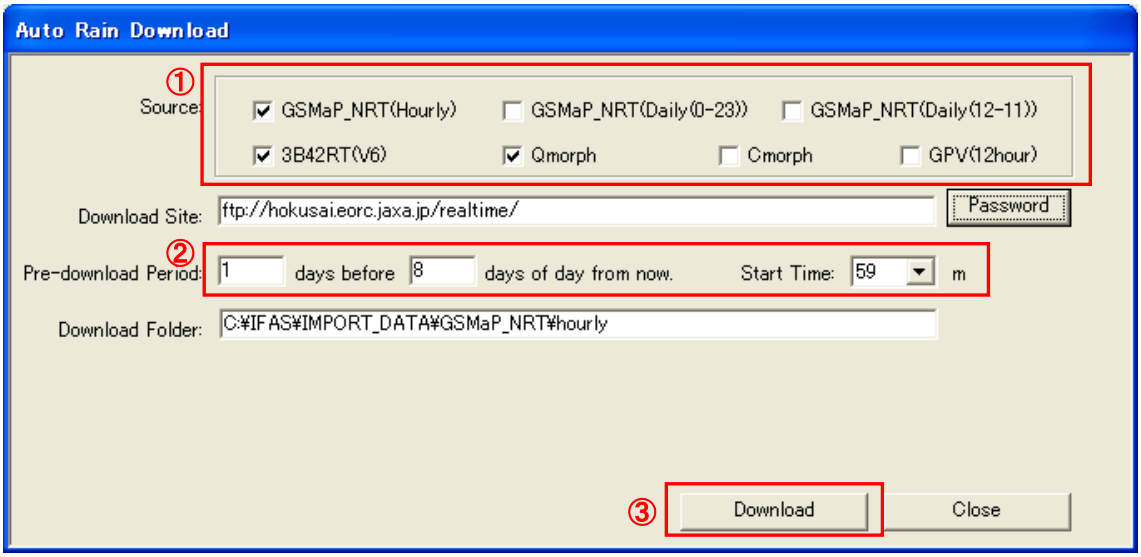


Figure-2.4.1 Automatically download window

① Choose the type of the satellite rainfall data you are going to download. （Multiple selection is possible）

② Set the download period.

③ Click “Download”.

Data will be downloaded every hour according to the set condition. (Every minute you chose each hour)

Item in the window	Description
Source	Type of the satellite rainfall data to be downloaded. (Refer to AppConfig.xml for default.)
Download Site	Download site(Default is IFAS.iniset value)
Pre-download Period	Setting download period (Refer to AppConfig.xml for default.)
Start Time	Setting download time (Refer to AppConfig.xml for default.)
Download Folder	Download folder(Default is IFAS.iniset value)
[Password] button	Re-set registration ID and password of the GSMap_NRT server.
[Download] button / 「Discontinuance」 button	Start download (Figure-2.1)(Update the setting of the window to AppConfig.xml) /Stop download (Figure -2.2)
[Close] button	Close the window.

④ Click “Discontinuance” to stop download.

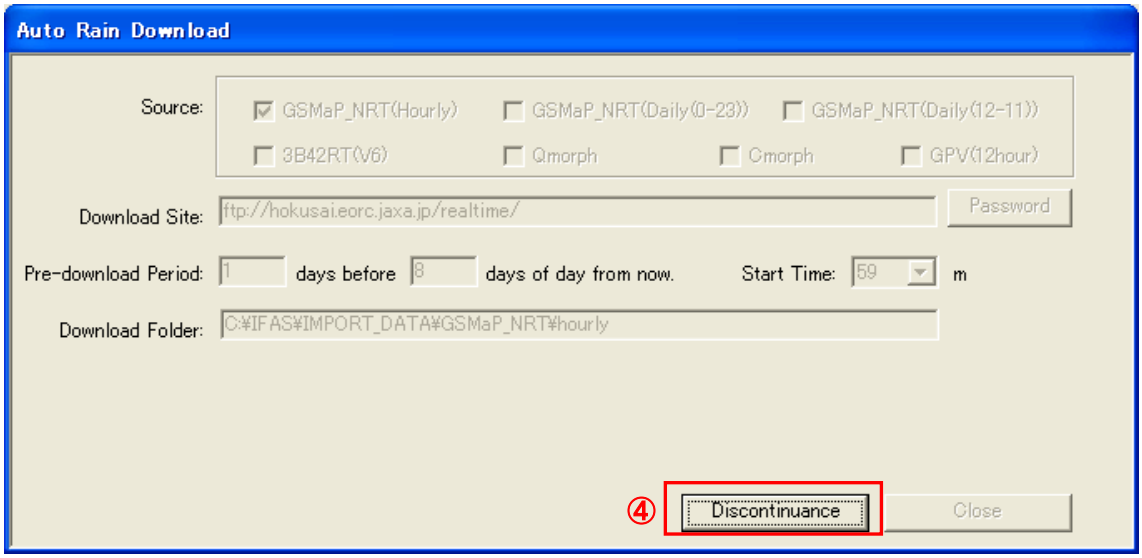


Figure -2.4.2Automatically Downloadwindow(Downloading)

⑤ Setting password

ID and password are required to download GSMaP_NRT.

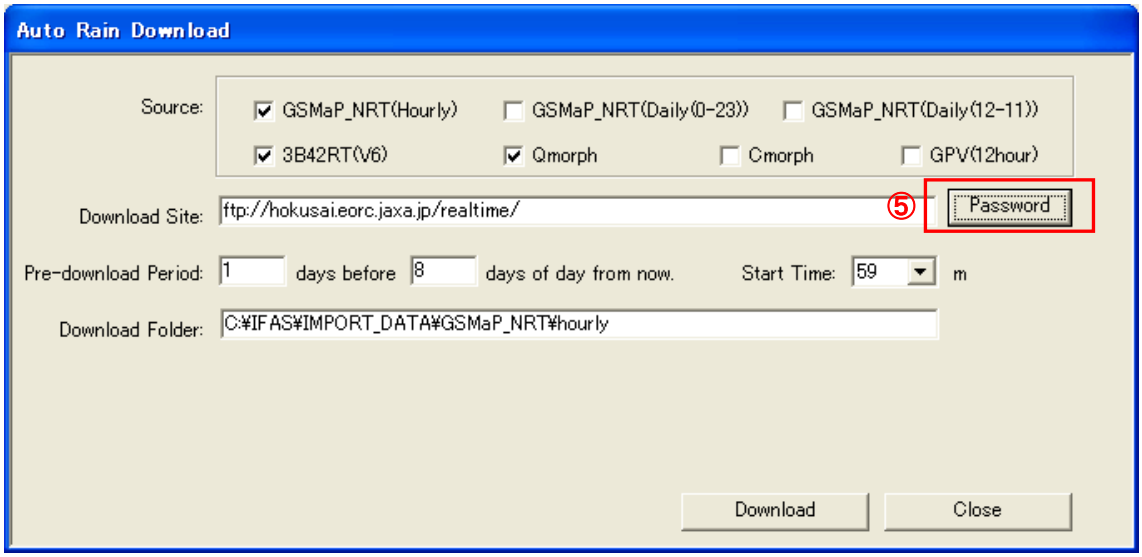


Figure-2.4.3 Automatically Download window (Setting password)

Please contact JAXA for ID and password.

URL : http://sharaku.eorc.jaxa.jp/GSMaP/index_j.htm

Click “Password” and the following window will appear.

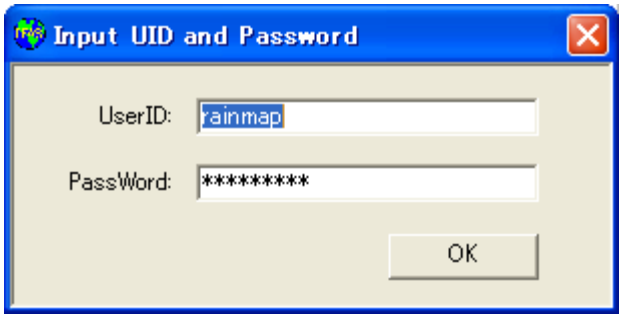


Figure-2.4.4　Password setting window

Input your ID and password and click “OK” to register.
You are now ready to download GSMaP_NRT data.

Set information are registered to “AppConfig.xml”.
The contents of the file are described below.

“AppConfig.xml”File sample

```
<?xml version="1.0" encoding="utf-8"?><Setting>
<DateTimeOption>
  <DaysAgo>8</DaysAgo>
  <Days>1</Days>
  <StartTime>59</StartTime>
</DateTimeOption>
<CheckState>
  <GsMapNRTH>True</GsMapNRTH>
  <GsMapNRTD23>False</GsMapNRTD23>
  <GsMapNRTD11>False</GsMapNRTD11>
  <V63B42RT>False</V63B42RT>
  <Qmorph>False</Qmorph>
  <Cmorph>False</Cmorph>
  <GPV>False</GPV>
</CheckState>
</Setting>
```

“AppConfig.xml”File contents

Layer	Item	Description
1	DateTimeOption	Setting of download period
2	DaysAgo	Number of the days since started downloading.
2	Days	Download period (days)
2	StartTime	Download start time every hour (minute)
1	CheckState	Setting of download product
2	GsMapNRTH	GsMap_NRT(Hourly) Download setting （Set value：True/ False）
2	GsMapNRTD23	GsMap_NRT(Daily0-23) Download setting （Set value：True/ False）
2	GsMapNRTD11	GsMap_NRT(Daily12-11) Download setting （Set value：True/ False）
2	V63B42RT	3B42RT(V6) Download setting （Set value：True/ False）
2	Qmorph	Qmorph Download setting （Set value：True/ False）
2	Cmorph	CmorphDownload setting （Set value：True/ False）
2	GPV	GPV (12hour) Download setting （Set value：True/ False）

“True” shows the set value when it is checked, and “False” shows the value when it is not checked.

2.4.2 Manually Download

The following window will appear when running theManually Download function. Downloaded data files are automatically sorted to the folders set by IFAS. （User is able to set the folder arbitrarily）

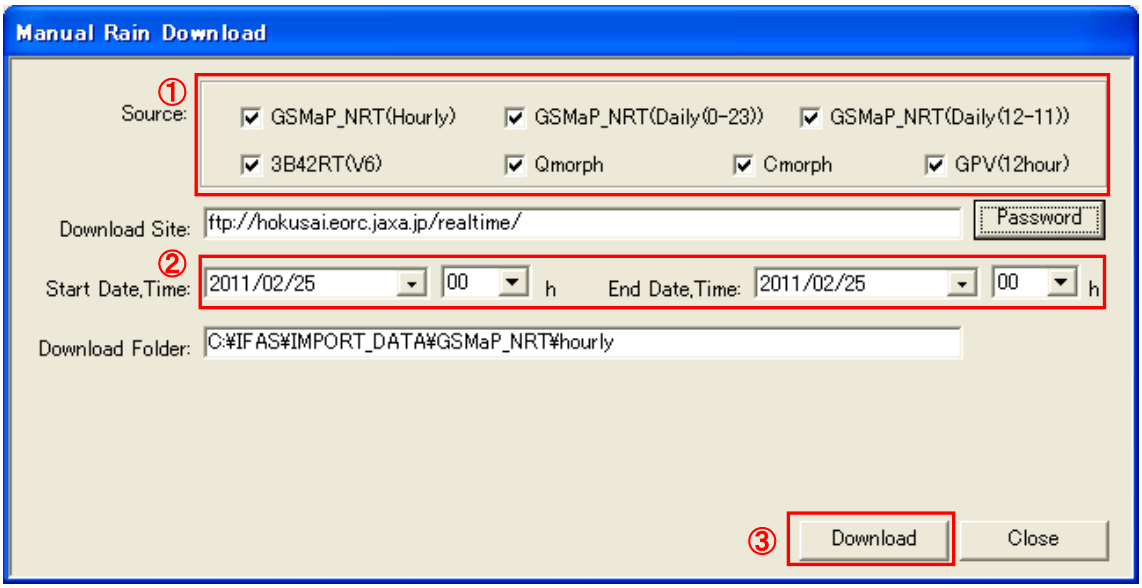


Figure-2.4.5 Manually Downloadwindow

① Choose the type of the satellite rainfall data you are going to download. （Multiple selection is possible）

② Set the download period. （Start date/time, Finish date/time）

③ Click “Download”.

Unlike the Automatically Download function, Manually Download will download only once on the set condition

Item	Description
Source	Type of the satellite rainfall data to be downloaded.
Download Site	Download site(Default is IFAS.ini set value)
Start Date.Time	Setting download start date/time
End Date.Time	Setting download finish date/time
Download Folder	Download folder(Default is IFAS.ini set value)
[Password] button	Re-set registration ID and password of the GSMap_NRT server.
[Download] button	Start download (Figure-2.3)(Figure-2.4)
[Close] button	Close the window.

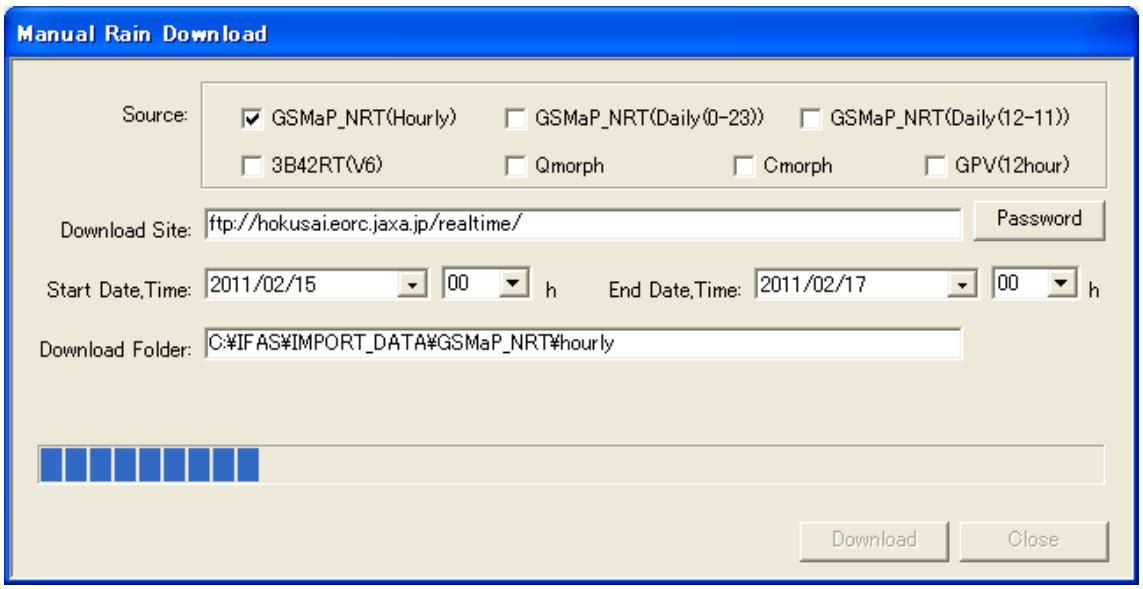


Figure-2.4.6 Manually Download window (Downloading)

Setting ID and password are required to download GSMaP_NRT.

Refer to 2.3.1 Automatically Download ⑤Setting password

2.4.3 Automatic Analysis/Flood Forecasting Alarm

Set the project when calculating automatically by "AppConfig.xml" file. See 2.4 AppConfig.xml.

(1) Operation

Three menu buttons (File, Auto Alert Setting and Status View of basin)are able to choose from the main menu of Automatic Analysis/Flood Forecasting Alarm program. (Auto Alert Setting will appear in another window.)

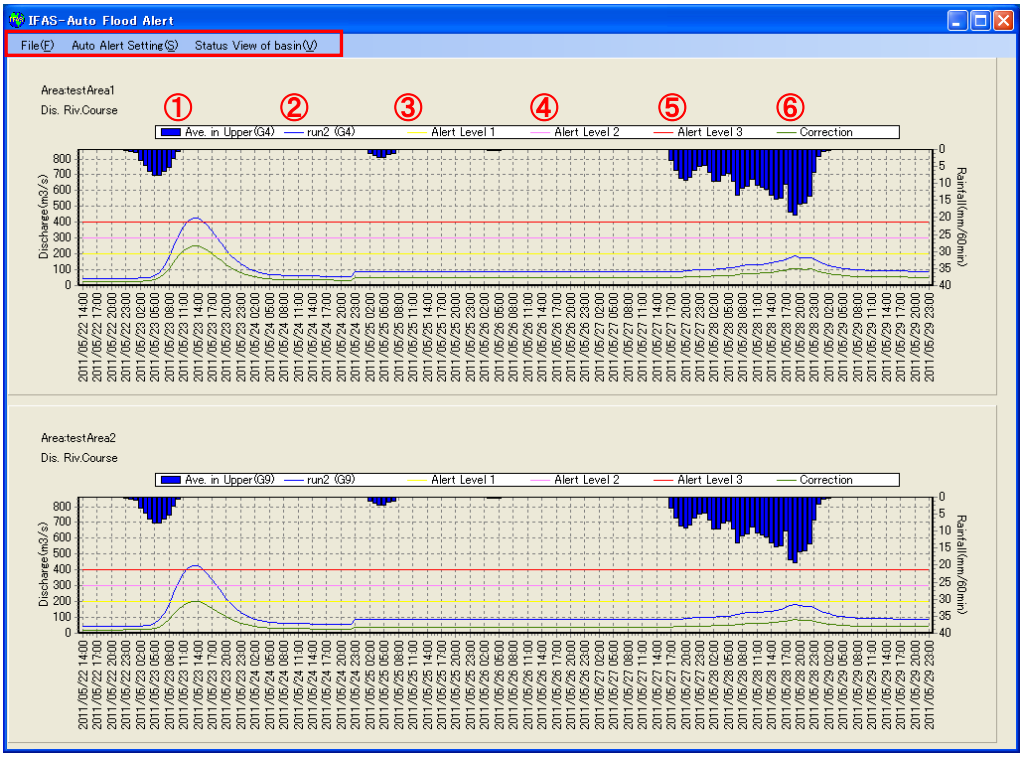


Figure-2.4.7 Main window of Automatic Analysis/Flood Forecasting Alarm

Always when running the Automatic Analysis/Flood Forecasting Alarm program, this window will appear. A time series graph will appear for each set location.
The items set in the graph are as follows.

① Rainfall data — Ave. in Upper(G1051)

② Calculated discharge — run2 (G4)

③ Threshold value 1 — Alert Level 1

④ Threshold value 2 — Alert Level 2

⑤ Threshold value 3 — Alert Level 3

⑥ Modified discharge — Correction

When the runoff calculation vlaue exceeds any of the threshold value, the set alert will be issued.See (2) Auto Alert Setting.

（ｉ） File

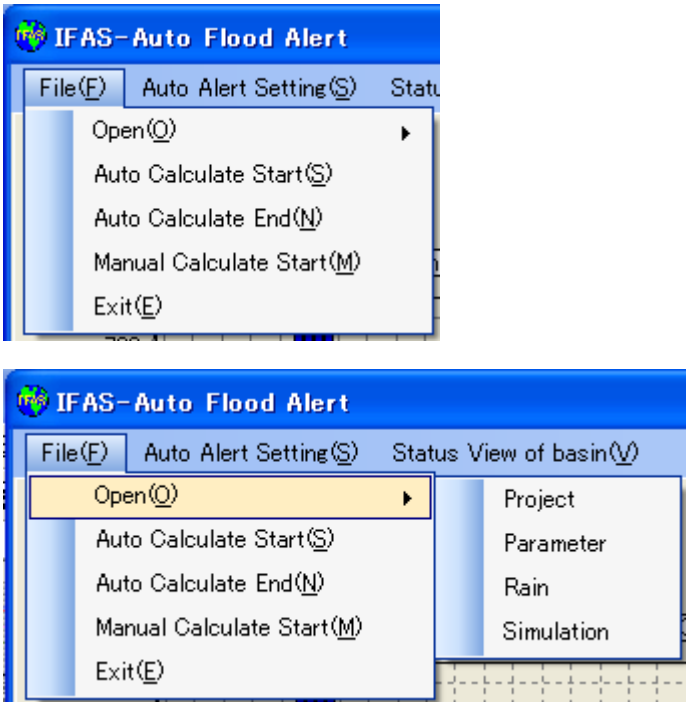


Figure-2.4.8 Automatic Analysis/Flood Forecasting Alarm menu（File）

Main Menu	Sub Menu		Description
File	Open	Project	Specify the project
		Parameter	Specify the parameter
		Rain	Specify the rainfall data
		Simulation	Specify the simulation
	Auto Calculate Start		Start automatic analysis（Calculate every hour）
	Auto Calculate End		Finish automatic analysis
	Manual Calculate Start		Start manual calculate
	Exit		Close the program
Auto Alert Setting			Open the setting window (See (3))

“Project”, “Parameter”, “Rain” and “Simulation” which you set at “Open” will be save at “AAppConfig.xml”.

（ii） File

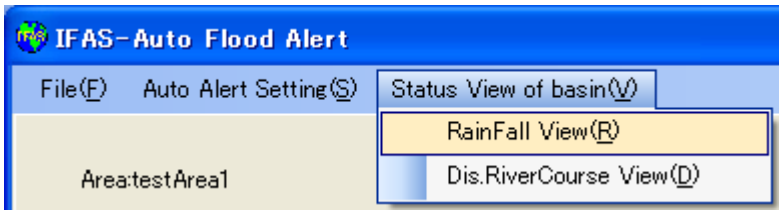
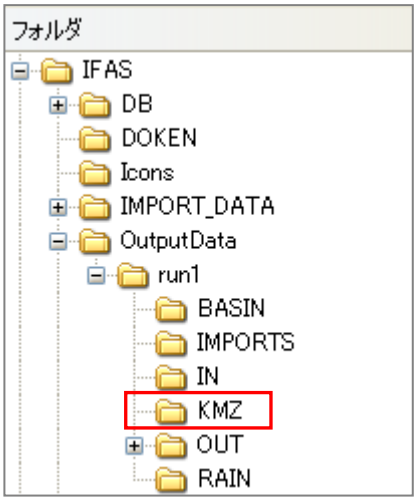


Figure-2.4.9 Automatic Analysis/Flood Forecasting Alarm menu (Status View of basin)

Main Menu	Sub Menu	Description
Status View of basin	RainFall View	Display planar distribution (KMZ file) of rainfall data within the calculation period.
	Dis.RiverCourse View	Display planar distribution (KMZ file) of river channel discharge data within the calculation period.

KMZ file is saved to the ¥outputdata¥run1(simname)¥kmz in the IFAS folder.



Example of the KMZ file by GoogleEarth

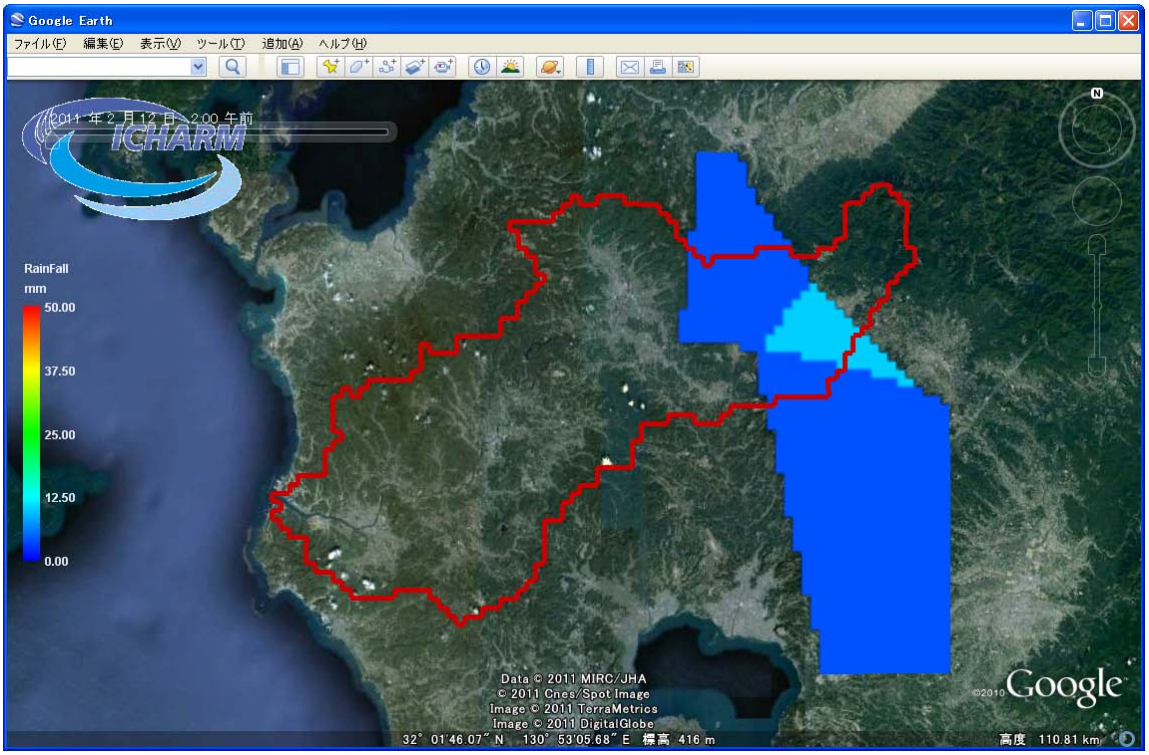


Figure-2.4.10 Example of rainfall data in planar distribution(KMZ file)

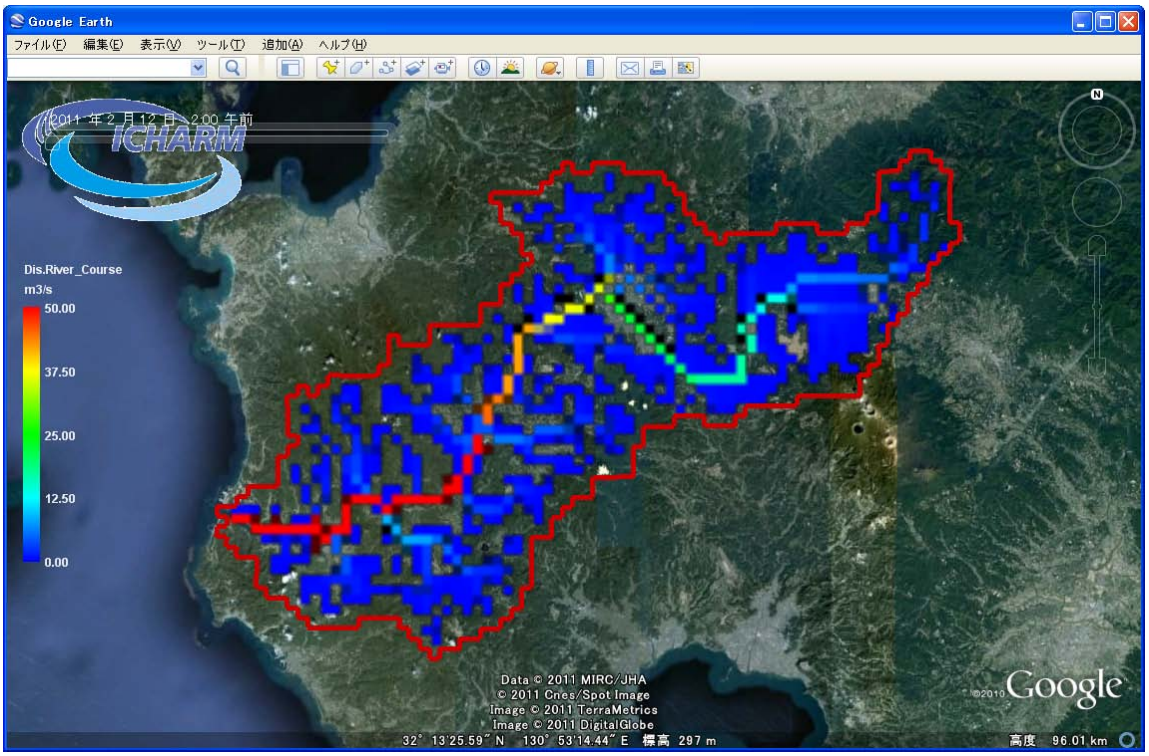


Figure-2.4.11 Example of river channel data in planar distribution(KMZ file)

(2)Auto Alert Setting Window

The screen below is a coefficient setting window for calculation and display. Read out the value for display from “AppConfig.xml” file.

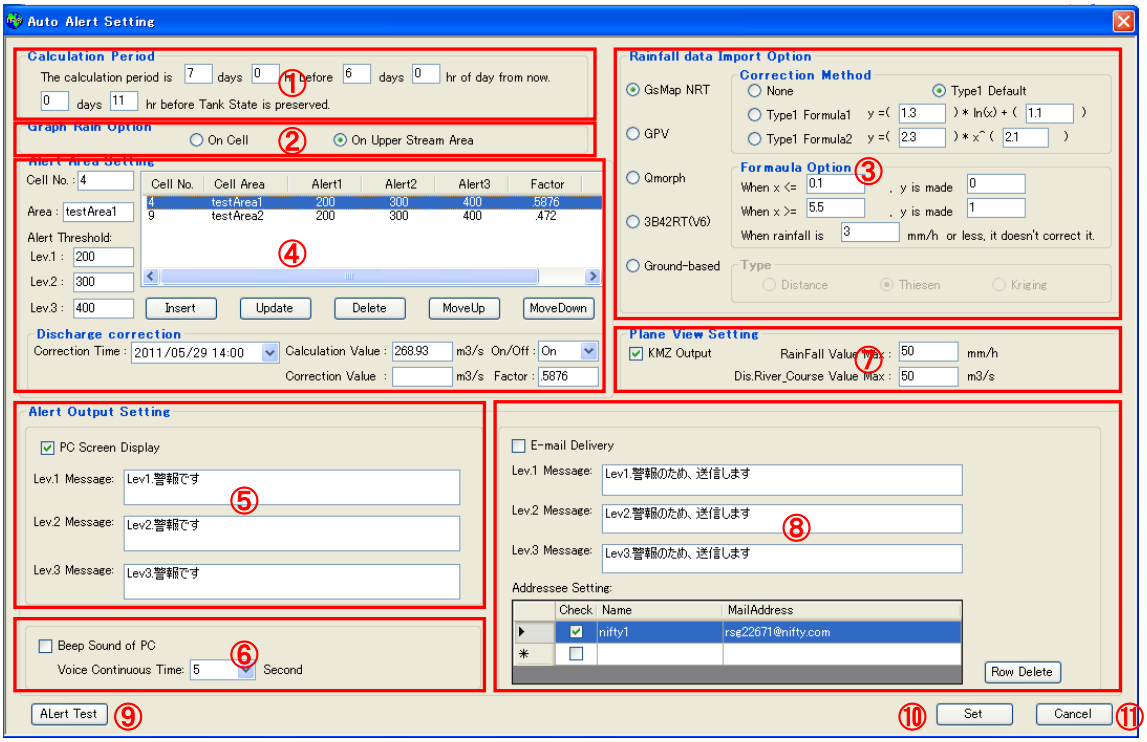


Figure-2.4.12　Auto Alert Setting window

① Set the calculation period (display period)

② Select the rainfall data display item

③ Select the rainfall data

④ Set the alert location and the discharge correction

⑤ Set the alert on the computer screen

⑥ Set the alert beep sound

⑦ Set the KMZ output

⑧ Set the email alert

⑨ Alert test

Click “Alert Test”in the “Auto Alert Setting” window to test the alert.

⑩ Register the set information（Register and close the window）

⑪ Cancel the set information(Cancel and close the window)

a　Setting the calculation period (display period)

Set the calculation period (display period: time axis of the graph), Calculation start date and time (--days-- hours before).

Start the calculation from the date when the tank state waspreserved last time.

However,the point when rainfall data was imported last time is set as a default and the actual calculation is conducted the period that follows.

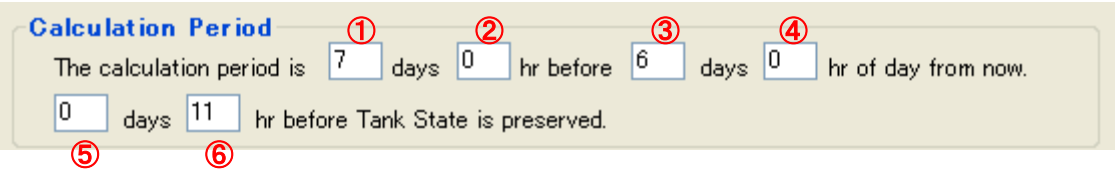


Figure-2.4.13　Setting the calculation period

In the example above, calculation is conducted for 7days since 6days ago.

When using the ground based rainfall data, calculation is conducted from the tank state 11hours before.

Calculation Period

No.	Item	「AppConfig.xml」Corresponding item
①	Set calculation period (day +hour)	DateTimeOption⇒Days
②		DateTimeOption⇒Hr
③	Set calculation start date and time (day +hour before)	DateTimeOption⇒DaysAgo
④		DateTimeOption⇒HrAgo
⑤	Setthe date and time when the tank state was preserved(day+hour before). It is valid when ground based rainfall data is selected.	DateTimeOption⇒TankDaysAgo
⑥		DateTimeOption⇒TankhrAgo

b　Setting rainfall data display item

Select the rainfall data item to be displayed in the hydrograph from “On Cell” (Rainfall of the cell) and “On Upper Cell” (Rainfall of the upper basin of the cell)

Figure-2.4.14　Setting the rainfall data display item

Graph Rain Option

No.	Item	「AppConfig.xml」 Corresponding item
①	OnCell（Precipitation of the cell）	GraphRainOption = 1
②	On Upper Stream Area（Precipitation of the upper cell）	GraphRainOption = 2

c　Selecting the rainfall data

Select the rainfall data from GSMaP_NRT, GPV,Qmorph, 3B42RT(V6) and Ground-based.

i ）When ground based rainfall data is selected

When “Ground-based” is selected, the “Type” will be valid and you can select the interpolating method when importing ground-based rainfall.

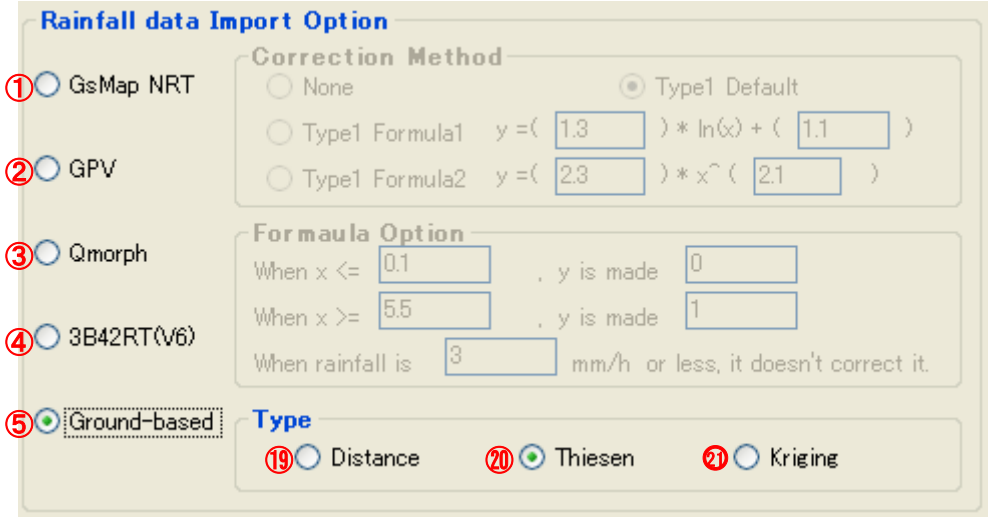


Figure-2.4.15　Setting rainfall data (Ground-based rainfall data)

When importing ground-based rainfall data, ground-based rainfall data file set in “AppConfig.xml”file is referred to create.

After reading the set file and extracting necessary data of the period, calculation is conducted by creating rainfall data file by using the interpolation method specified in “Type”.

If there is no data available within the period, rainfall data is created as 0mm.

(Example of setting ground-based rainfall file of AppConfig.xml)

The red part is the ground-based data file name (in full path)

<GroundbasedRainName>C:¥IFAS¥IMPORT_DATA¥CSV(rainfall)¥XXX.csv</GroundbasedRainName>

File format is based on ground-based rainfall data file in IFAS.

ⅱ） When satellite rainfalldata and GPV data is selected (Except ground-based rainfall data)

When GSMaP_NRT is selected, Correction Method will become valid. Besides, modification, modification formula and coefficient are able to set.

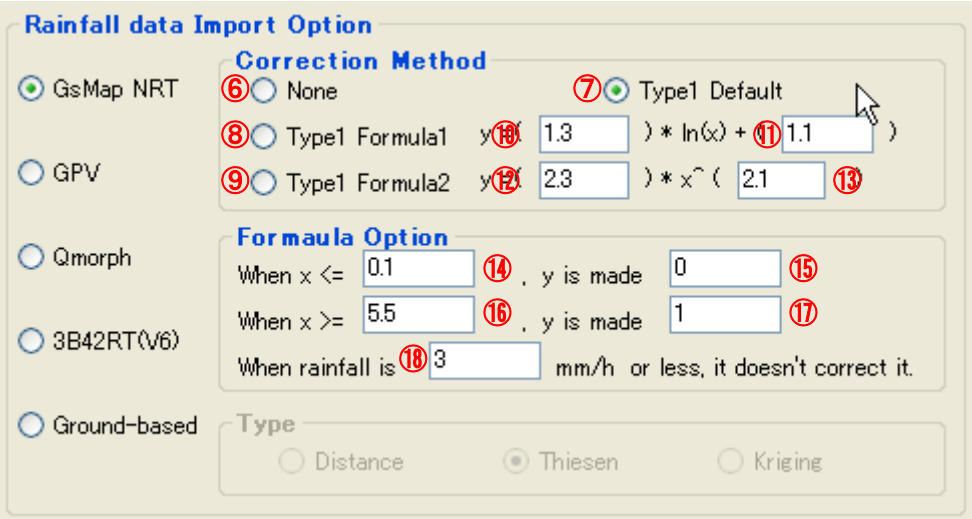


Figure-2.4.16 Setting rainfall data(Satellite rainfall, GPV data)

Creating satellite rainfall and rainfall data of GPV data follows the same procedure as IFAS. GSMaP_NRT is the only data which is able to modify.

Rain Import Option

No.	Item	「AppConfig.xml」Corresponding item
①	Set the rainfall data to GsMap_NRT	CalOption⇒RainImport = 1
②	Set the rainfall data to GPV	CalOption⇒RainImport = 2
③	Set the rainfall data to Qmorp	CalOption⇒RainImport = 4
④	Set the rainfall data to 3B42RT(V6)	CalOption⇒RainImport = 5
⑤	Set the rainfall data to Ground-Based	CalOption⇒RainImport = 3
⑥	Set the GSMaP to no correction	CalOption⇒RainCorrection = 1
⑦	Set the GSMaP to correction 1 default	CalOption⇒RainCorrection = 2
⑧	Set the GSMaP to correction 1 Formula1	CalOption⇒RainCorrection = 3
⑨	Set the GSMaP to correction 1 Formula2	CalOption⇒RainCorrection = 4
⑩	Set the correction 1 coefficient a	CalOption⇒CorrectionA1
⑪	Set the correction 1 coefficient b	CalOption⇒CorrectionB1
⑫	Set the correction 2 coefficient a	CalOption⇒CorrectionA2
⑬	Set the correction 2 coefficient b	CalOption⇒CorrectionB2
⑭	Set the threshold value when x is small in correction formula1	CalOption⇒CorrectionXMin
⑮	Set the threshold value when y is small in correction formula1	CalOption⇒CorrectionXMinＹ
⑯	Set the threshold value when x is large in correction formula 2	CalOption⇒CorrectionXMax
⑰	Set the threshold value when y is small in correction formula1	CalOption⇒CorrectionXMaxＹ
⑱	Set the threshold when no correction	CalOption⇒CorrectionRainMinH
⑲	Set the ground-based rainfall correction method to distance weighted method	CalOption⇒CSVCalcType = 1
⑳	Set the ground-based rainfall correction method to Thiessen method	CalOption⇒CSVCalcType = 2
㉑	Set the ground-based rainfall correction method to Kriging method	CalOption⇒CSVCalcType = 3

d　Set the alert location and the discharge correction

Set the alert location and alert information (cell number, name, threshold value (3 phase) and discharge correction coefficient)

After runoff calculation, the alert is issued when the last phase of runoff calculation exceeds the threshold value.

When the alert is unnecessary, set the threshold value to a large value.

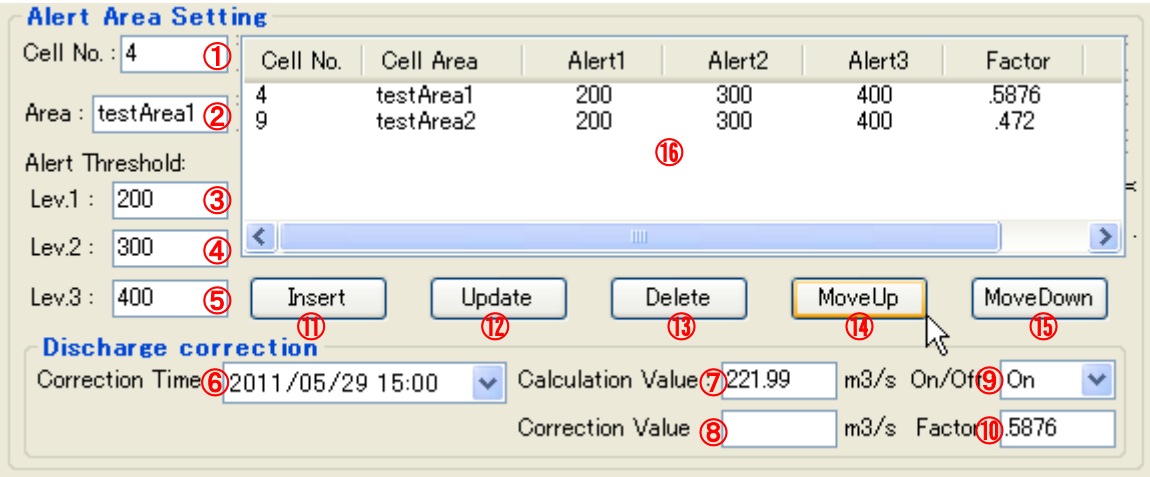


Figure-2.4.17　Alert and modification setting

<u>Input procedure</u>

i) ①Input the cell number you would like to set an alert.

ii) ②Input the area name (It will show in the alert message)

iii) ③Input the discharge of threshold value 1.

iv) ④Input the discharge of threshold value 2.

v) ⑤Input the discharge of threshold value 3.

vi) Click ⑪"Insert" to add to the list⑯.

vii) Edit the information by selecting the cell in the list ⑯. Click ⑫ "Update" after editing.

viii) Delete the information by selecting the cell in the same list and click ⑬ "Delete".

Hydrograph is displayed in the order of the list ⑯ from the top. To change the order, click ⑭ "MoveUp" and ⑮"MoveDown".

To update the setting above, click "Set". Note that just entering and editing is not officially set.

Setting the discharge correction value

i) Select the cell from the list⑯

ii) Select the date and time to correct from the ⑥Correction Time pull down menu.(Calculation period will be displayed. Target discharge will be displayed in ⑦"Calculation Value" when selecting.

iii) Input the corrected discharge (observation data) to ⑧Correction Value

iv) Modifiedcoefficient is displayed in ⑩Factor.

v) Select ⑨On/Off to switch display/non display of corrected discharge to the hydrograph. Correction coefficient is able to enter to ⑩Factor even if there is no observation data.

Alert Area Setting

No.	Item	「AppConfig.xml」 Corresponding item
①	Set the cell no. of the alert location	AreaOption⇒cell Num
②	Set the alert location name	AreaOption⇒cell Area
③	Set the alert threshold value 1	AreaOption⇒cell Alert1
④	Set the alert threshold value 2	AreaOption⇒cell Alert2
⑤	Set the alert threshold value 3	AreaOption⇒cell Alert3
⑥	Correction target date and time	AreaOption⇒Correction Time
⑦	Runoff calculation（Correction target flow）	Calculation result of the target date/time.
⑧	Correction flow	AreaOption⇒Correction Value
⑨	Set valid/invalid of Flow correction	AreaOption⇒cell Enable
⑩	Set the Flow correction coefficient value	AreaOption⇒cell Factor
⑪	Set an additional alert location	[Insert] button
⑫	Update setting information	[Update] button
⑬	Delete alert location	[Delete] button
⑭	Move the select information one row above	[MoveUp] button
⑮	Move the select information one row below	[MoveDown] button
⑯	Information list	Display, select of alert setting location

e　Setting the alert screen

Set the additional message to be displayed on the screen when the system alerts. Threshold level is able to set in three phases, and you can also choose not to show the message including the default message.

Figure-2.4.18　Alert message setting screen

PC Screen Display

No.	Item	「AppConfig.xml」Corresponding item
①	Set display/non display of alert.	PCScreen⇒Do　（True/False）
②	Set message of level 1	PCScreen⇒Msg1
③	Set message of level 2	PCScreen⇒Msg2
④	Set message of level 3	PCScreen⇒Msg3

Default message is as follows.

「Warning ! Calculated discharge exceed the alert level "X" in "Y","Z(UTC)". 」

X : Alert level　1, 2or3

Y : Area name or location name（Setting text）

Z : Time

Alert display

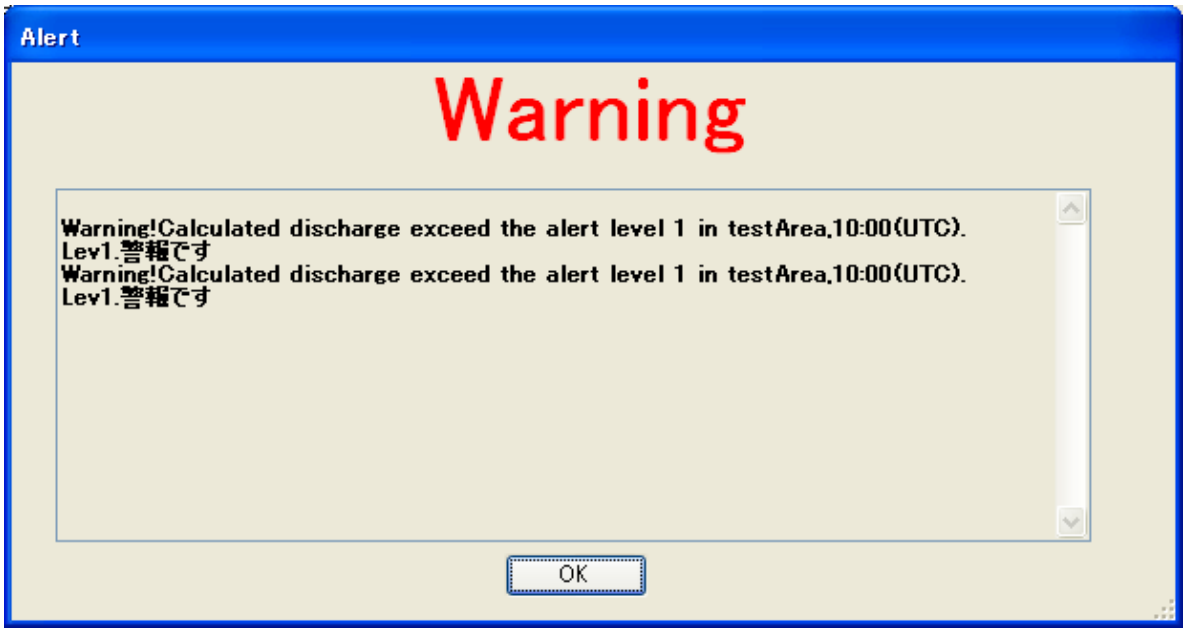


Figure-2.4.19　Alert display

f　Setting beep sound

Set on/off of the alert sound and the duration of the beep.

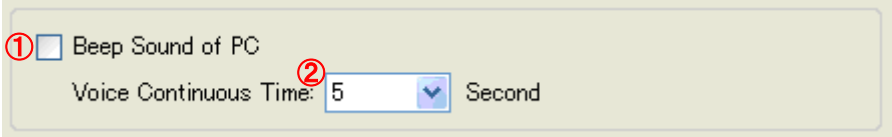


Figure-2.4.20　Beep sound setting

Beep Sound of PC

No.	Item	「AppConfig.xml」Corresponding item
①	Set on/off of the alert sound	BeepSound⇒Do　（True/False）
②	Set duration of the beep	BeepSound⇒Time

The beep will be “Sound¥level1.wav”.

Select the duration of the beep from 5,10,15,20,25,30,35,40,45,50,55,60 seconds.

g　Setting mail alert

Click the checkbox and enter an email address if you would like to send an email when the system alerts.

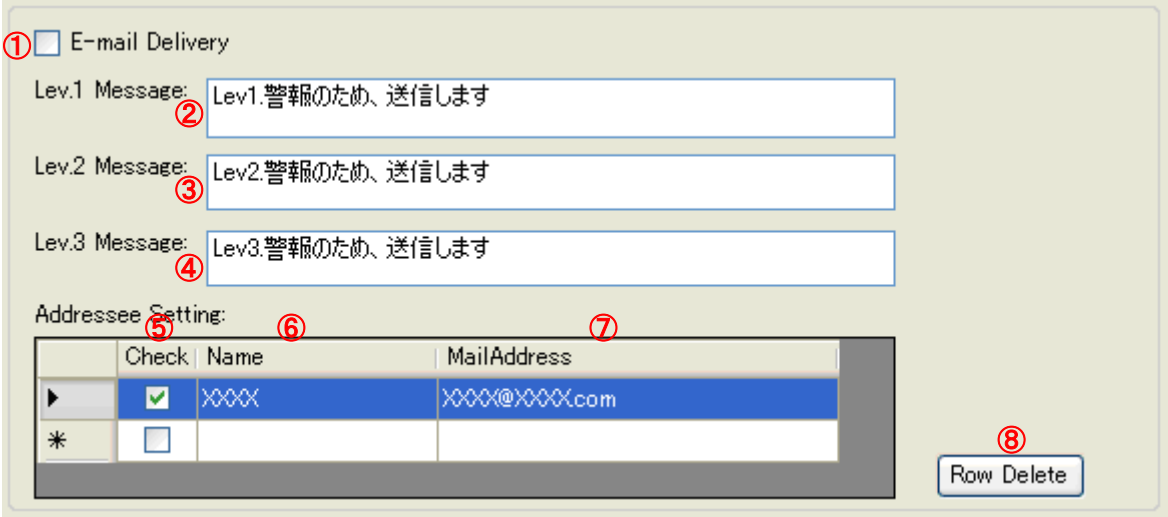


Figure-2.4.21　Email alert setting

E-mail Delivery

No.	Item	「AppConfig.xml」Corresponding item
①	Set an alert location cell number.	Email⇒ Do
②	Set the email message of level 1	Email⇒ Msg1
③	Set the email message of level 2	Email⇒ Msg2
④	Set the email message of level 3	Email⇒ Msg3
⑤	Set on/off of email delivery	Email⇒ Check（True/False）
⑥	Enter destination information	Email⇒ Name
⑦	Enter email address	Email⇒ Do
⑧	Delete information	[Row Delete] button

h　Setting KMZ file

Click the checkbox if you would like to output the KMZ file. Set the maximum value of the rainfall and discharge.

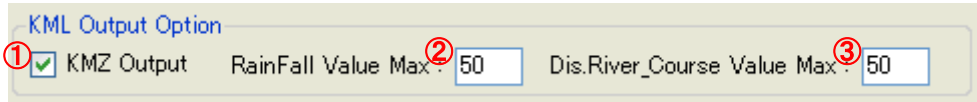


Figure-2.4.22　KMZ file setting

KML Output Option

No.	Item	「AppConfig.xml」Corresponding item
①	KMZ file output selection	KMZOption⇒Do　(True/False)
②	Set maximum rainfall	KMZOptio⇒RainMax
③	Set maximum discharge	KMZOptio⇒RiverCourceMax

(3) Operation environment and data check before calculating

Check the points below before calculating.

①Check if the project you specify exists in "Projectinfo"⇒"ProjectName"of "AppConfig.xml".
Also check if all the points necessary for the project (creating basin model, pseudo river and set parameters) are done.

②Check if the parameter you specify exists in "Projectinfo"⇒"ProjectName" of "AppConfig.xml".

③Check if the CSV file exists in "Projectinfo"⇒ "GroundbasedRainName" of "AppConfig.xml" when calculating by ground-based rainfall data.

④Check if the data folder you choose for creating hydrograph and the data under the folder exists in "Projectinfo"⇒ "HydroGraphPath" of "AppConfig.xml".
When the data exists, system will read out the data under the appropriate folder and create a hydrograph.
When the data does not exist, it will start calculating automatically after starting the system, copy the result under the folder and create a hydrograph.

2.5 Setting AppConfig.xml file

"AppConfig.xml" file format sample:

Letter color: Setting item, Setting content, Description

```
<?xml version="1.0"encoding="utf-8"?><Setting>
<Projectinfo>                                          <!—Project information-->
<ProjectName>Autosendai20101203</ProjectName>          <!—Project name-->
<ParameterName>para1</ParameterName>                   <!—Parameter data name which you create by IFAS-->
<RainName>Rain</RainName>                              <!-Rainfalldata name which you create by IFAS-->
<SimulationName>run1</SimulationName>                  <!—Calculation result-->
<GroundbasedRainName>C:¥IFAS¥IMPORT_DATA¥CSV(rainfall)¥XXX.csv</GroundbasedRainName>
                                                       <!—Full path of read ground-based rainfall file-->
<HydroGraphPath>C:¥IFAS¥OutputData</HydroGraphPath>    <!—Data folder to create hydrograph-->
</Projectinfo>
<Option>
<DateTimeOption>                                       <!—Date/Time-->
<DaysAgo>2</DaysAgo>                                   <!—Days and hours since it start calculating-->
<hrAgo>0</hrAgo>
<Days>1</Days>                                         <!—Calculation period-->
<hr>1</hr>
<TankDaysAgo>1</TankDaysAgo>                           <!—Last tank state-->
<TankhrAgo>1</TankhrAgo>
</DateTimeOption>
<GraphRainOption>2</GraphRainOption>                   <!—Hyetograph
                                                         (On Cell:1;On Upper Stream Area:2)-->
<AreaOption>                                           <!—Threshold value for alert-->
<!--num: Observation CellNo.; Area:ObservationCell name; Alert1: Threshold value 1 ; Alert2:Threshold;
Alert3:Threshold3; Factor: Coefficient for modification; Enable: Modified discharge display flag on/off;-->
<cell num="860" Area="Area860" Alert1="50" Alert2="70" Alert3="90" Factor="0.1" Enable="Off" />
<cell num="790" Area="Area790" Alert1="50" Alert2="70" Alert3="90" Factor="0.1" Enable="Off" />
<cell num="826" Area="Area826" Alert1="50" Alert2="70" Alert3="90" Factor="0.1" Enable="Off" />
<cell num="1051" Area="A2" Alert1="55" Alert2="75" Alert3="95" Factor="0.1" Enable="Off" />
<cell num="1161" Area="A3" Alert1="45" Alert2="65" Alert3="85" Factor="0.1" Enable="Off" />
</AreaOption>
<CalOption>                          <!—Calculation information-->
<RainImport>1</RainImport>           <!—Rainfall import type
                                       (1:GsMapNRT 2:GPV 3:CSV 4:Qmorph 5:3B42RT(V6) )-->
<RainCorrection>0</RainCorrection>   <!-GsMap Rainfall Modification: 0: Unmodified; 1:Type1 Default; 2:Type1
```

Formula1; 3:Type1 Formula2-->
<CorrectionA1>1.3</CorrectionA1> <!--GsMapRainfall Modification:a in the modification formula 1 of rainfall modification Type1-->
<CorrectionB1>1.1</CorrectionB1> <!--GsMapRainfall Modification:b in the modification formula 1 of rainfall modification Type1-->
-->
<CorrectionA2>2.3</CorrectionA2> <!--GsMapRainfall Modification:a in the modification formula 2 of rainfall modification Type1-->
-->
<CorrectionB2>2.1</CorrectionB2> <!--GsMapRainfall Modification:b in the modification formula 2 of rainfall modification Type1-->
-->
<CorrectionXMin>0.1</CorrectionXMin> <!--GsMapRainfall Modification: Option setting: The lower side of the threshold value x when you would like to fix the modified coefficient y)
<CorrectionXMinY>0</CorrectionXMinY> <!--GsMapRainfall Modification: Option setting:The value of the modified coefficient y when x is smaller than threshold value x-->
<CorrectionXMax>5.5</CorrectionXMax> <!--GsMapRainfall Modification: Option setting: The larger side of the threshold value x when you would like to fix the modified coefficient y-->
<CorrectionXMaxY>1</CorrectionXMaxY> <!--GsMapRainfall Modification: Option setting: The value of the modified coefficient y when x is larger than threshold value x-->
<CorrectionRainMinH>3</CorrectionRainMinH> <!--GsMapRainfall Modification: No modification when the rainfall is less than the set value-->
<CSVCalcType>2</CSVCalcType> <!—Ground-based rainfall interpolating method: 1: Distance weighted; 2: Thiessen method; 3: Kriging method-->
</CalOption>
<AlertOutput> <!—Alert setting-->
<PCScreen> <!--Alert settingon a screen-->
<Do>True</Do> <!--Alert on screen :True;No alert on screen:False-->
<Msg1>Lev1.警報です</Msg1> <!—Alert message on screen-->
<Msg2>Lev2.警報です</Msg2>
<Msg3>Lev3.警報です</Msg3>
</PCScreen>
<BeepSound> <!—Alert beep setting-->
<Do>False</Do> <!--Beep:True;No beep:False-->
<Time>5</Time> <!—Duration of the beep-->
</BeepSound>

```
<EMail>                                          <!—Email alert-->
<Do>True</Do>                                    <!—Alert by Email:True;No alert by Email:False-->
<Msg1>Lev1.警報のため、送信します</Msg1>          <!—Email alert message-->
<Msg2>Lev2.警報のため、送信します</Msg2>
<Msg3>Lev3.警報のため、送信します</Msg3>
<Recipient Check="true" Name="XX" address="XXXX@XXXX.com" />
                                <!—Email destination information:  Check:Send:true;Do not send:false;
                                  Name:Name of the sender;address:Address of the sender-->
</EMail>
</AlertOutput>
</Option>
</Setting>
```

2.6 Sample Data Folder Structure for Automatic Calculation