

Satellite-Based Precipitation Data Delivery System for Thailand

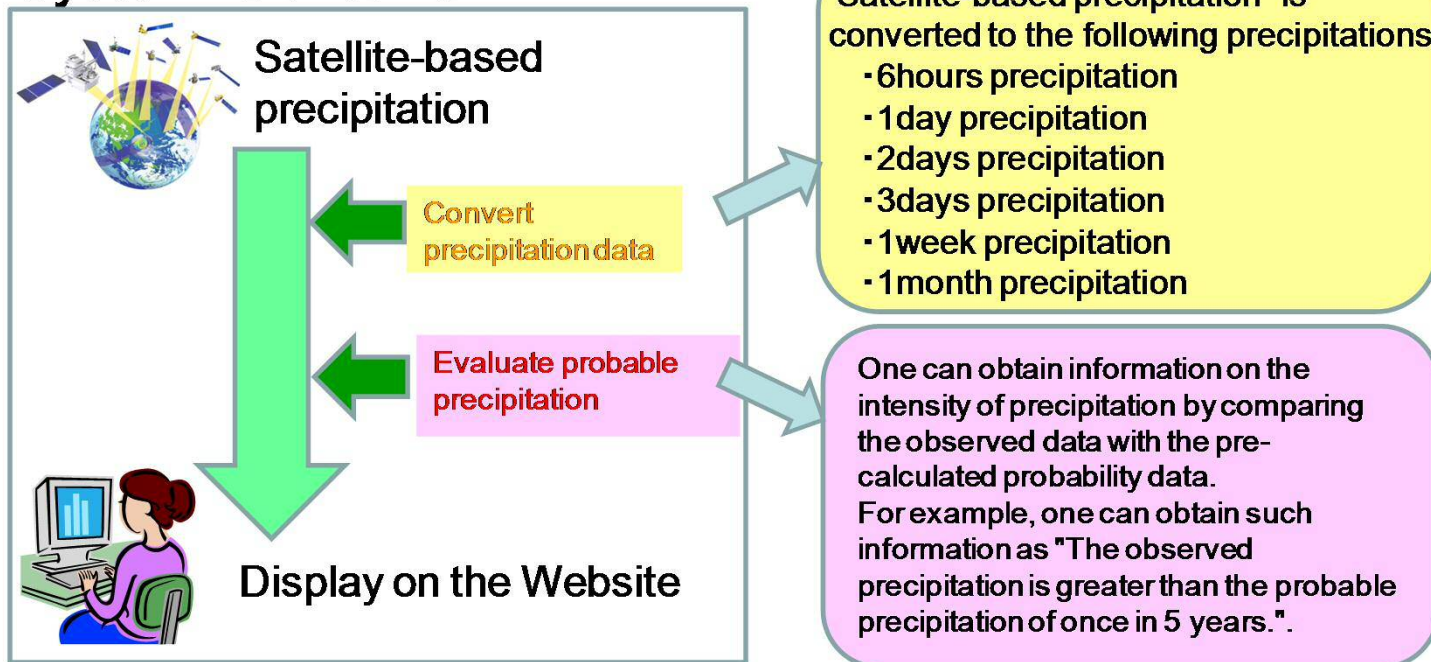
Infrastructure Development Institute-Japan

1. About the Satellite-Based Precipitation Data Delivery System

The Satellite-Based Precipitation Data Delivery System by using GSMP data provides river basin average precipitation and regional average precipitation.

The system also notify when the observed basin or regional average precipitation exceeds the pre-calculated probable precipitation with some return periods (for example, once in 5 years).

System Contents



2. Overview of GSMP

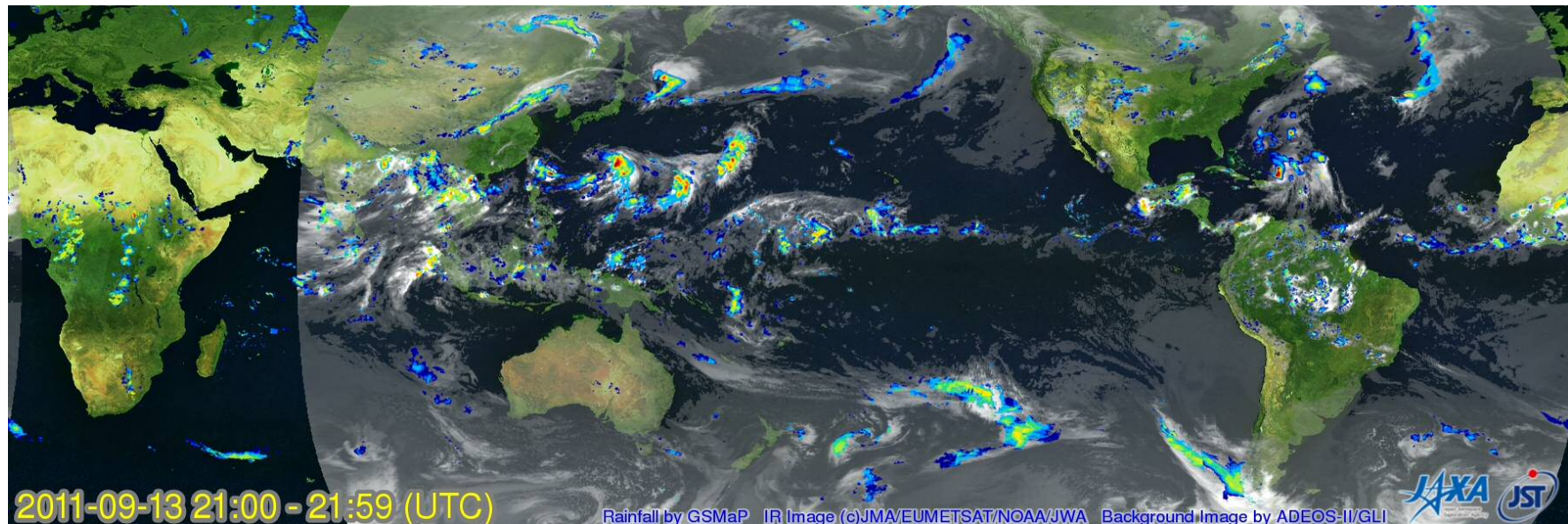
GSMP is a precipitation intensity distribution map developed by using the satellite observation data.

GSMP: **G**lobal **S**atellite **M**apping of **P**recipitation

Area : N60° ~ S60°

Spatial resolution : 0.1° (About 11km)

Time resolution : 1 hour



3. Calculation of probable precipitation with some return periods

The probable precipitation with some return periods is calculated by using the precipitation records.

Table Calculation conditions

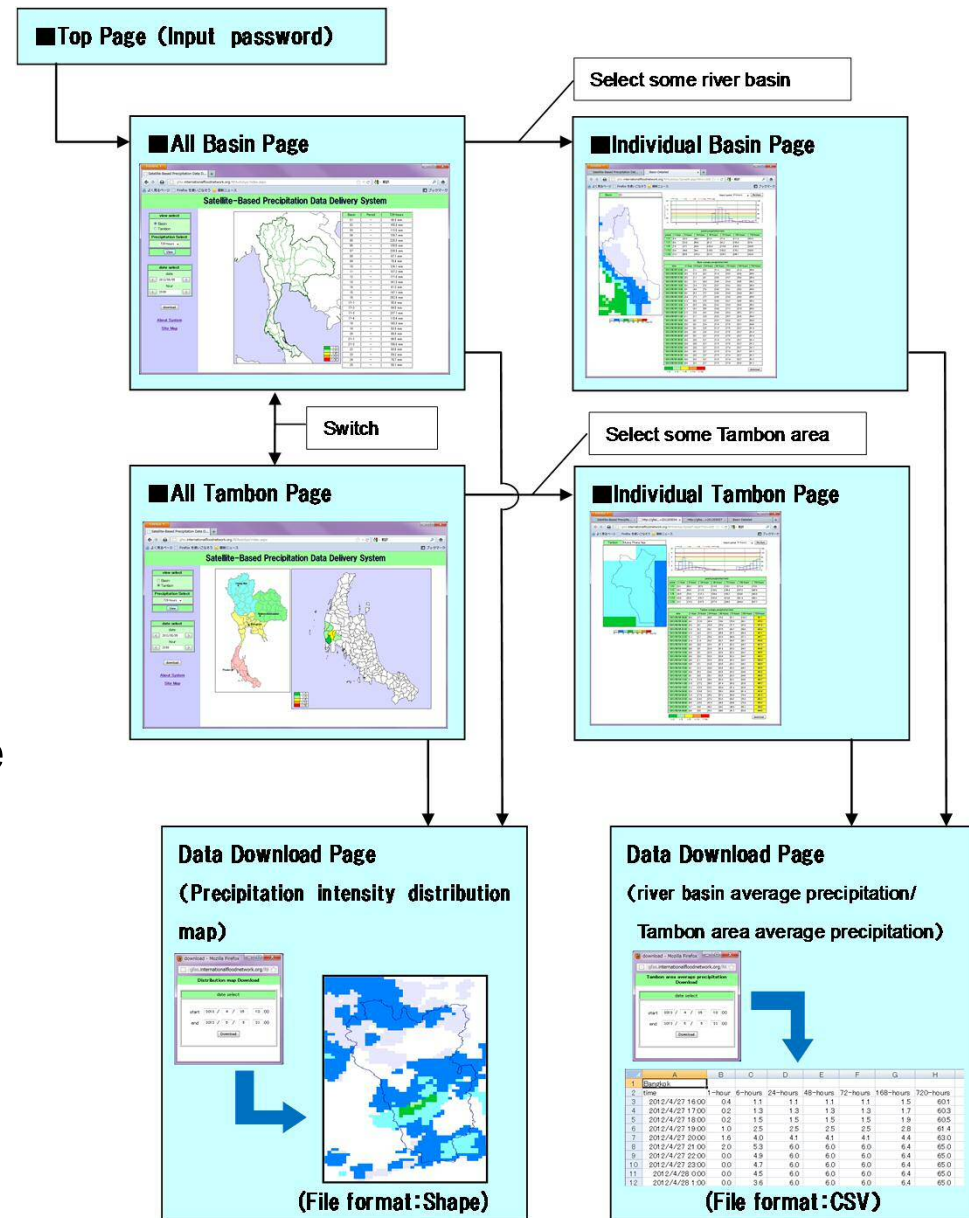
Unit	25basin、 all Amphoe、 0.1° mesh
Use data	Satellite-based precipitation (GSMP)
Data period	2003~2011
Probability scale	1/2、 1/3、 1/5、 1/10、 1/30
Cumulative period※	6-hours, 24-hours(1-day), 48-hours(2-days), 72-hours(3-days), 168-hours(1-week), 720-hours(1-month)

※To calculate the probable precipitation with some return periods , the annual maximum values of cumulative precipitation data is required.

Annual maximum value is the maximum precipitation observed in a year from January to December. For example, the annual maximum 6-hours precipitation is the maximum cumulative precipitation in some 6hr precipitation during a year.

4. System configuration

- ❑ All basin page will open to enter a password at the top page.
- ❑ Select the individual basin from all basin page.
- ❑ You can switch from all basin page to all Amphoe page.
- ❑ Select the individual Amphoe from all Amphoe page.
- ❑ You can download the distribution map at all basin page and all Amphoe page.
- ❑ You can download the average precipitation at individual basin page and individual Amphoe page .



5. System operation

■ All basin page

Select Basin or Amphoe.

Select satellite-based precipitation.

- 1 hour
- 6 hours
- 1 day
- 2 days
- 3 days
- week
- month

Select date and time(hour) to display.

Distribution map of cumulative precipitation is shown.

Precipitation information is shown for the selected date/time and cumulative precipitation.

Click on a basin!

Satellite-Based Precipitation Data Delivery System

view select

☒ Basin
☐ Amphoe

Precipitation Select

720-hours

View

date select

date: 2012/05/05

hour: 4:00

download

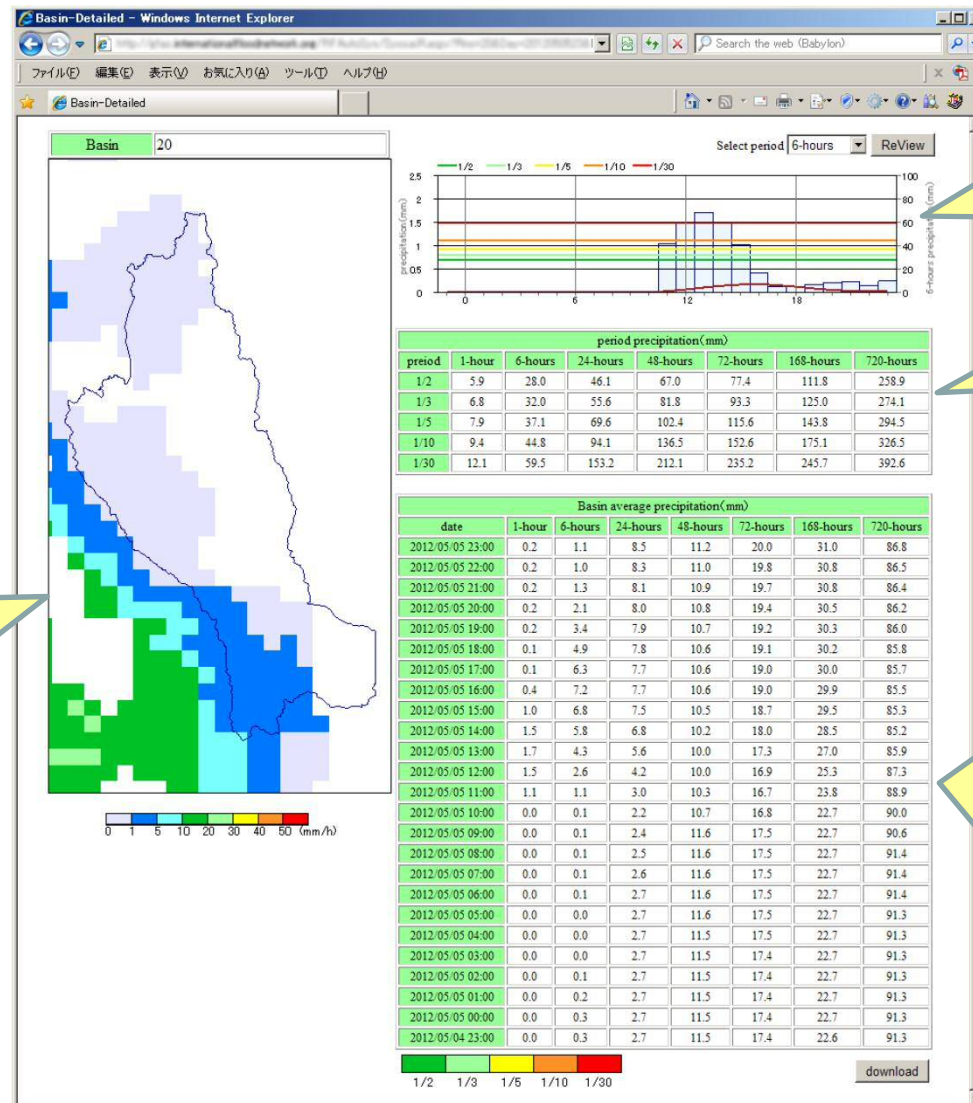
[About System](#)
[System configuration](#)

Basin	Period	720-hours
01	-	81.8 mm
02	-	127.3 mm
03	-	123.2 mm
04	-	142.3 mm
05	-	260.9 mm
06	-	123.4 mm
07	-	288.5 mm
08	-	86.0 mm
09	-	67.2 mm
10	-	104.4 mm
11	-	132.5 mm
12	-	210.8 mm
13	-	136.3 mm
14	-	33.1 mm
15	-	201.0 mm
16	-	286.8 mm
17-1	-	66.7 mm
17-2	-	92.3 mm
17-3	-	300.0 mm
17-4	-	156.5 mm
18	-	156.2 mm
19	-	38.7 mm
20	-	91.3 mm
21-1	-	52.0 mm
21-2	-	156.0 mm
22	-	57.0 mm
23	-	47.3 mm
24	-	67.3 mm
25	-	32.3 mm

5. System operation

■ Individual Basin Page

The screen displays the satellite-based hourly precipitation of the selected date.



Cumulative precipitation and hourly precipitation are shown on a graph.

Probable precipitation is shown in a table.

Cumulative precipitation is shown from the 24hr before the selected time/date. When the observed precipitation exceeds the probable precipitation, the cell becomes to be colored.

5. System operation

■ All Amphoe Page

Select Basin or Amphoe.

Select satellite-based precipitation.

- 1 hour
- 6 hours
- 1 day
- 2 days
- 3 days
- week
- month

Select date and time(hour) to display.

view select

☐ Basin
☒ Amphoe

Precipitation Select

720-hours

View

date select

date

< 2012/05/05 >

hour

< 4:00 >

download

[About System](#)

[System configuration](#)

Click on an area to which Amphoe belongs!

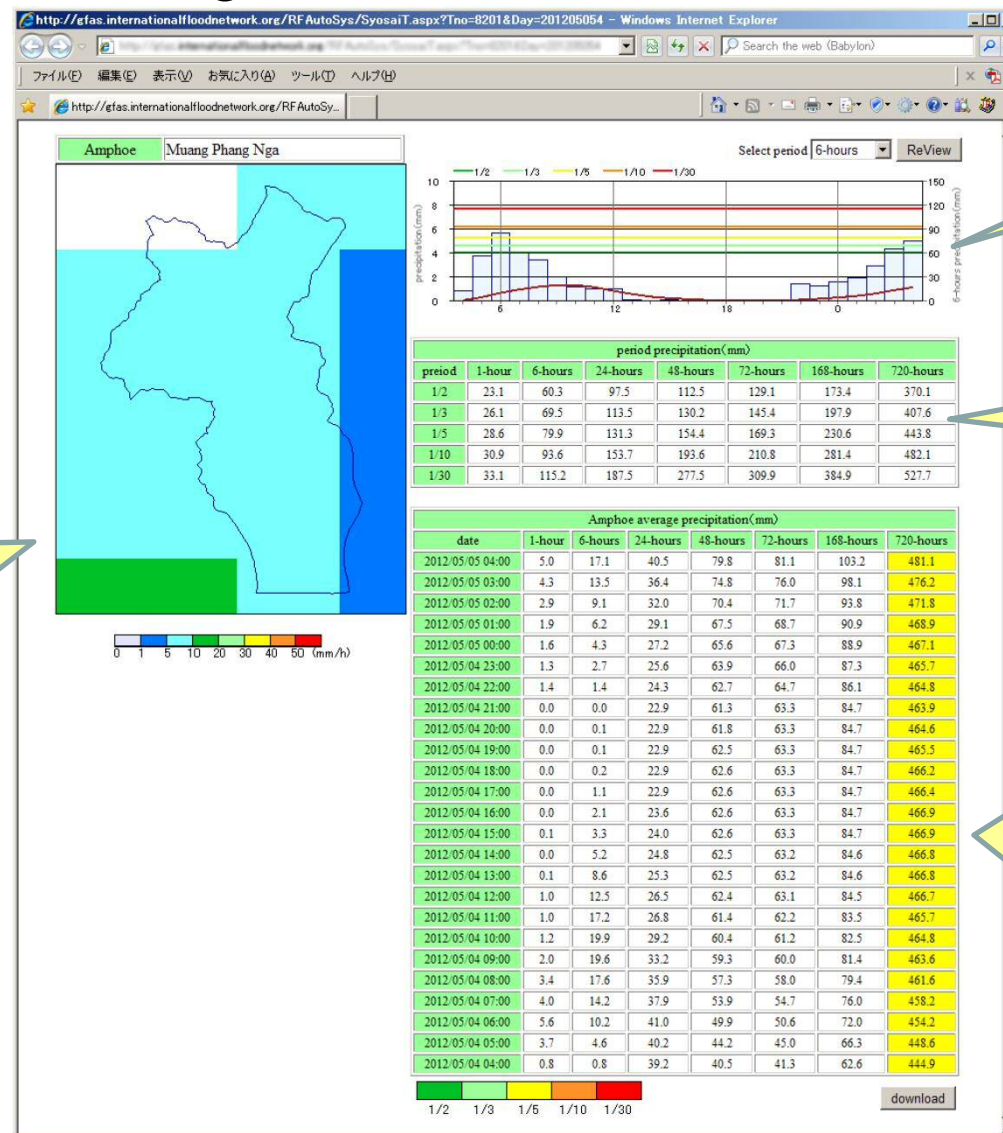
Click on a Amphoe!

The screenshot shows a web browser window titled "Satellite-Based Precipitation Data Delivery System - Windows Internet Explorer". The address bar shows the URL "http://geo.internationalflorida.com/100/AutoSys/index.aspx". The page has a green header with the title "Satellite-Based Precipitation Data Delivery System". The main content area is divided into a left sidebar and a right main area. The sidebar contains three sections: "view select" with radio buttons for "Basin" and "Amphoe" (the latter is selected), "Precipitation Select" with a dropdown menu set to "720-hours" and a "View" button, and "date select" with input fields for "date" (set to "2012/05/05") and "hour" (set to "4:00"), along with "download", "About System", and "System configuration" links. The main area contains two maps of Thailand. The left map shows the entire country with different regions highlighted in various colors (blue, green, yellow, orange, red). A red arrow points to a specific area in the southern part of the country. The right map is a more detailed view of a specific region, showing individual amphoe boundaries. A red arrow points to one of the amphoe areas. A legend in the bottom right corner of the right map shows color-coded boxes for precipitation levels: 1/2, 1/3, 1/5, 1/10, and 1/30. Yellow callout boxes with speech bubble tails provide instructions: "Select Basin or Amphoe." points to the "view select" section, "Select satellite-based precipitation." points to the "Precipitation Select" section, and "Select date and time(hour) to display." points to the "date select" section. Red text annotations with arrows point to the maps: "Click on an area to which Amphoe belongs!" points to the southern region on the left map, and "Click on a Amphoe!" points to a specific amphoe on the right map.

5. System operation

■ Individual Amphoe Page

The screen displays the satellite-based hourly precipitation of the selected date.



Cumulative precipitation and hourly precipitation are shown on a graph.

Probable precipitation is shown in a table.

Cumulative precipitation is shown from the 24hr before the selected time/date. When the observed precipitation exceeds the probable precipitation, the cell becomes to be colored.

5. System operation

■ Data Download Page (Precipitation intensity distribution map)

The screenshot displays the 'Satellite-Based Precipitation Data Delivery System' interface. On the left, a sidebar contains 'view select' (Basin, Amphoe), 'Precipitation Select' (720-hours), and 'date select' (2012/05/05, 4:00). A red arrow points to the 'download' button in the sidebar with the text 'Click !'. The main area shows a 'Distribution map Download' window with 'date select' (start: 2012/4/25 0:00, end: 2012/5/14 23:00) and a 'Download' button. A red arrow points to this button with the text 'Select start and end date to download. Click on the "Download" button!'. To the right, a map of Southeast Asia is shown with a red box highlighting a specific area. A red arrow points from the 'Download' button to this map area with the text 'Satellite-based precipitation data (shp file) is downloaded.'.

Click !

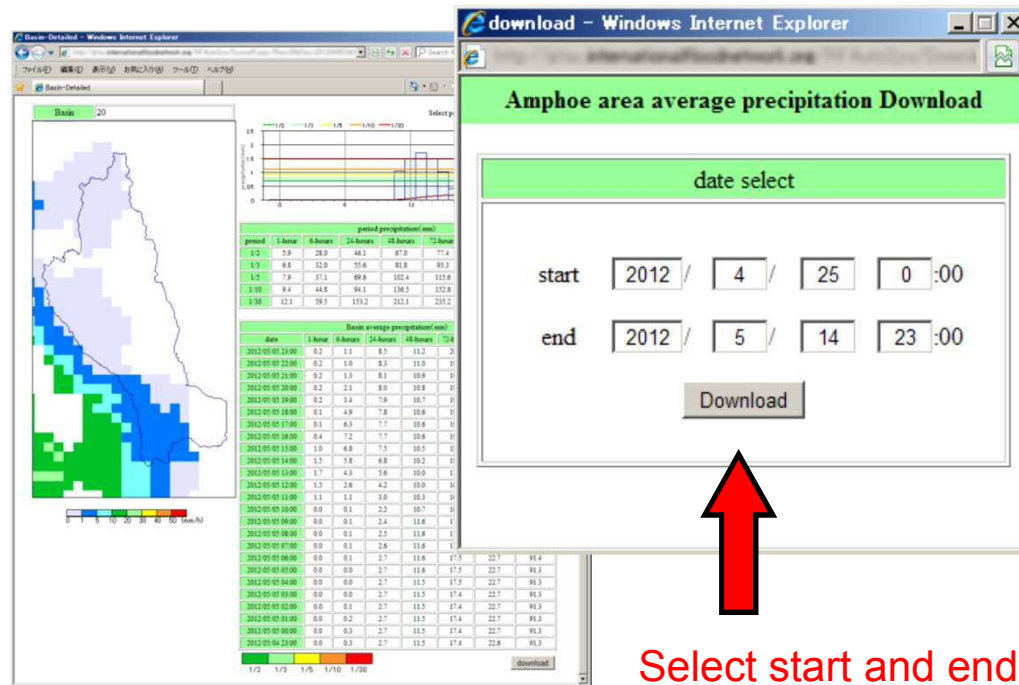
Select start and end date to download . Click on the "Download" button!

Satellite-based precipitation data (shp file) is downloaded.

5. System operation

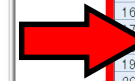
■Data Download Page

(river basin average precipitation/Amphoe area average precipitation)



Click !

Select start and end date to download .
Click on the "Download" button!

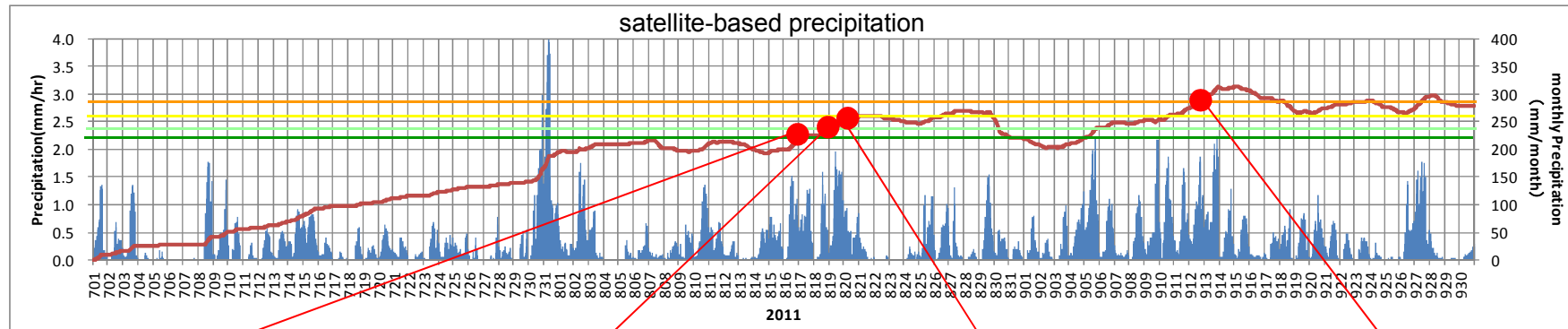


	A	B	C	D	E	F	G	H
1	Bangkok							
2	time	1-hour	6-hours	24-hours	48-hours	72-hours	168-hours	720-hours
3	2012/4/27 16:00	0.4	1.1	1.1	1.1	1.1	1.5	60.1
4	2012/4/27 17:00	0.2	1.3	1.3	1.3	1.3	1.7	60.3
5	2012/4/27 18:00	0.2	1.5	1.5	1.5	1.5	1.9	60.5
6	2012/4/27 19:00	1.0	2.5	2.5	2.5	2.5	2.8	61.4
7	2012/4/27 20:00	1.6	4.0	4.1	4.1	4.1	4.4	63.0
8	2012/4/27 21:00	2.0	5.3	6.0	6.0	6.0	6.4	65.0
9	2012/4/27 22:00	0.0	4.9	6.0	6.0	6.0	6.4	65.0
10	2012/4/27 23:00	0.0	4.7	6.0	6.0	6.0	6.4	65.0
11	2012/4/28 0:00	0.0	4.5	6.0	6.0	6.0	6.4	65.0
12	2012/4/28 1:00	0.0	3.6	6.0	6.0	6.0	6.4	65.0
13	2012/4/28 2:00	0.0	2.0	6.0	6.0	6.0	6.4	65.0
14	2012/4/28 3:00	0.0	0.0	6.1	6.1	6.1	6.4	65.0
15	2012/4/28 4:00	0.0	0.1	6.1	6.1	6.1	6.5	65.1
16	2012/4/28 5:00	0.0	0.1	6.1	6.1	6.1	6.5	65.1
17	2012/4/28 6:00	0.0	0.1	6.1	6.1	6.1	6.5	65.1
18	2012/4/28 7:00	0.0	0.1	6.1	6.1	6.1	6.4	65.1
19	2012/4/28 8:00	0.0	0.1	6.1	6.1	6.1	6.4	65.1
20	2012/4/28 9:00	0.0	0.1	6.1	6.1	6.1	6.4	65.1
21	2012/4/28 10:00	0.0	0.0	6.1	6.1	6.1	6.4	65.1
22	2012/4/28 11:00	0.0	0.0	6.1	6.1	6.1	6.4	65.1
23	2012/4/28 12:00	0.0	0.0	6.1	6.1	6.1	6.4	65.1
24	2012/4/28 13:00	0.0	0.0	6.1	6.1	6.1	6.4	65.1
25	2012/4/28 14:00	0.0	0.0	6.0	6.1	6.1	6.4	65.1
26	2012/4/28 15:00	0.0	0.0	5.4	6.1	6.1	6.4	65.1
27	2012/4/28 16:00	0.0	0.0	5.0	6.1	6.1	6.4	65.1
28	2012/4/28 17:00	0.0	0.0	4.8	6.1	6.1	6.4	65.1
29	2012/4/28 18:00	0.0	0.0	4.6	6.1	6.1	6.4	65.1
30	2012/4/28 19:00	0.0	0.0	3.7	6.1	6.1	6.4	65.1
31	2012/4/28 20:00	0.0	0.0	2.0	6.1	6.1	6.4	65.1
32	2012/4/28 21:00	0.0	0.0	0.1	6.1	6.1	6.4	65.1
33	2012/4/28 22:00	0.0	0.0	0.1	6.1	6.1	6.4	65.1
34	2012/4/28 23:00	0.0	0.0	0.1	6.1	6.1	6.4	65.1
35	2012/4/29 0:00	0.0	0.0	0.1	6.1	6.1	6.4	65.1
36	2012/4/29 1:00	0.0	0.0	0.1	6.1	6.1	6.4	65.1

Satellite-based precipitation data (csv file) is downloaded.

6. Grasp of a long-term rain tendency by the System

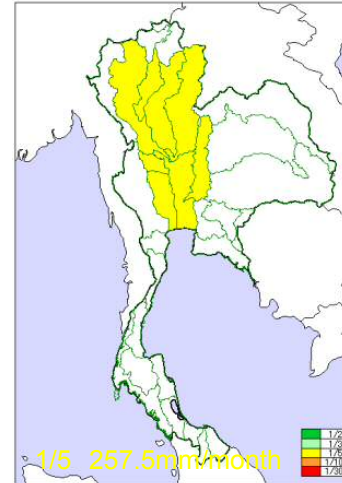
from July to September, 2011 monthly satellite-based precipitation



8/17 5:00
Monthly satellite-based
precipitation over 2-year
return period.



8/19 9:00
Monthly satellite-based
precipitation over 3-year
return period.



8/20 21:00
Monthly satellite-based
precipitation over 5-year
return period.



9/12 17:00
Monthly satellite-based
precipitation over 10-year
return period.

Satellite-based monthly precipitation exceeded 2-year return period in the middle of August and 10-year return period in the middle of September.