參與 AIST 合作案 - PartII
技術之我見

By John

技術突破

- Import Table Schema Change
- 單一檔案匯入，亦支援多檔一次匯入
- CSV Importer 效率、穩定度提升
- 更多格式的解晰方法
- XML→CSV 萬能解晰器
- CSV→Normalize Data→ GPX 、 Shpfile 、 GeoJSON 、 KML 、 WMS→SOS
- API Tester

Table Schema Change

Rad_sos
(observation)

id
foi
Lat/lon
Datetime
Rad Value

115441250

Data

DATA_PROCEDURE_

DATA_PROCEDURE_
{FOI}

DATA_PROCEDURE
{FOI}

DATA_PROC
{FOI

DA
{F

id
percision
Lat/lon
Datetime
{Rad

五分鐘的會議，大家達成共識，資料表結果重新調整

要一個工程師去死，就是調調資料結構

利用經緯度的小數點來決定資料呈現範圍

DATA_PROCEDURE_

{FOI}

id
percision
Lat/lon
{Modify}
S/E
Datetime
Rad Value

DATA_PROCEDURE_M160 @rad_sos.public (aist_test) - Table

File Edit View Window Help

Import Wizard | Export Wizard | Filter Wizard | Grid View | Form View | Memo | Hex

id	lat	lon	pecision	sdate	edate	value
1	37.4	140.7	1	2013-03-01 00:00:00+09	2013-03-15 00:00:00+09	0.99
2	37.4	140.6	1	2013-03-01 00:00:00+09	2013-03-15 00:00:00+09	0.65
3	37.6	140.9	1	2013-03-01 00:00:00+09	2013-03-15 00:00:00+09	1.15
4	37.3	140.7	1	2013-03-01 00:00:00+09	2013-03-15 00:00:00+09	0.4
5	37.5	140.8	1	2013-03-01 00:00:00+09	2013-03-15 00:00:00+09	10.41
6	37.7	140.6	1	2013-03-01 00:00:00+09	2013-03-15 00:00:00+09	1.82
7	37.6	140.7	1	2013-03-01 00:00:00+09	2013-03-15 00:00:00+09	3.76
8	37.6	140.8	1	2013-03-01 00:00:00+09	2013-03-15 00:00:00+09	3.2
9	37.2	140.8	1	2013-03-01 00:00:00+09	2013-03-15 00:00:00+09	0.81
10	37.4	140.8	1	2013-03-01 00:00:00+09	2013-03-15 00:00:00+09	2.82
11	37.6	141	1	2013-03-01 00:00:00+09	2013-03-15 00:00:00+09	0.26
12	37.7	140.7	1	2013-03-01 00:00:00+09	2013-03-15 00:00:00+09	1.76
13	37.2	140.9	1	2013-03-01 00:00:00+09		0.68
14	37.3	140.9	1	2013-03-01 00:00:00+09		2.46
15	37.4	140.9	1	2013-03-01 00:00:00+		8.89
16	37.5	140.6	1	2013-03-01 00:00:0		0.84
17	37.3	141	1	2013-03-01 00:00		6.05
18	37.5	140.7	1	2013-03-01 00:0		4.34
19	37.5	141	1	2013-03-01 00		0.33
20	37.6	140.6	1	2013-03-01 00		.51
21	37.3	140.8	1	2013-03-01 00		.87
22	37.2	141	1	2013-03-01 00		0.6
23	37.7	140.8	1	2013-03-01 00		1.14
24	37.4	141	1	2013-03-01 00:		3
25	37.5	140.9	1	2013-03-01 00:0		2.51
26	37.25	140.83	2	2013-03-01 00:00:		0.81
27	37.79	140.88	2	2013-03-01 00:00:00-		1.1175
28	37.58	140.96	2	2013-03-01 00:00:00+09		3.083
29	37.38	140.98	2	2013-03-01 00:00:00+09		2.43
30	37.67	141.08	2	2013-03-01 00:00:00+09	2013-03-15	
31	37.72	140.62	2	2013-03-01 00:00:00+09	2013-03-15	
32	37.46	140.84	2	2013-03-01 00:00:00+09	2013-03-15	
33	37.54	140.93	2	2013-03-01 00:00:00+09	2013-03-15	
34	37.75	140.85	2	2013-03-01 00:00:00+09	2013-03-15	
35	37.64	140.68	2	2013-03-01 00:00:00+09	2013-03-15	
36	37.54	140.95	2	2013-03-01 00:00:00+09	2013-03-15	
37	37.22	140.96	2	2013-03-01 00:00:00+09	2013-03-15	
38	37.77	140.87	2	2013-03-01 00:00:00+09	2013-03-15	
39	37.34	140.83	2	2013-03-01 00:00:00+09	2013-03-15	
40	37.51	140.61	2	2013-03-01 00:00:00+09	2013-03-15	
41	37.43	140.88	2	2013-03-01 00:00:00+09	2013-03-15	
42	37.42	141.09	2	2013-03-01 00:00:00+09	2013-03-15	
43	37.77	140.73	2	2013-03-01 00:00:00+09	2013-03-15	

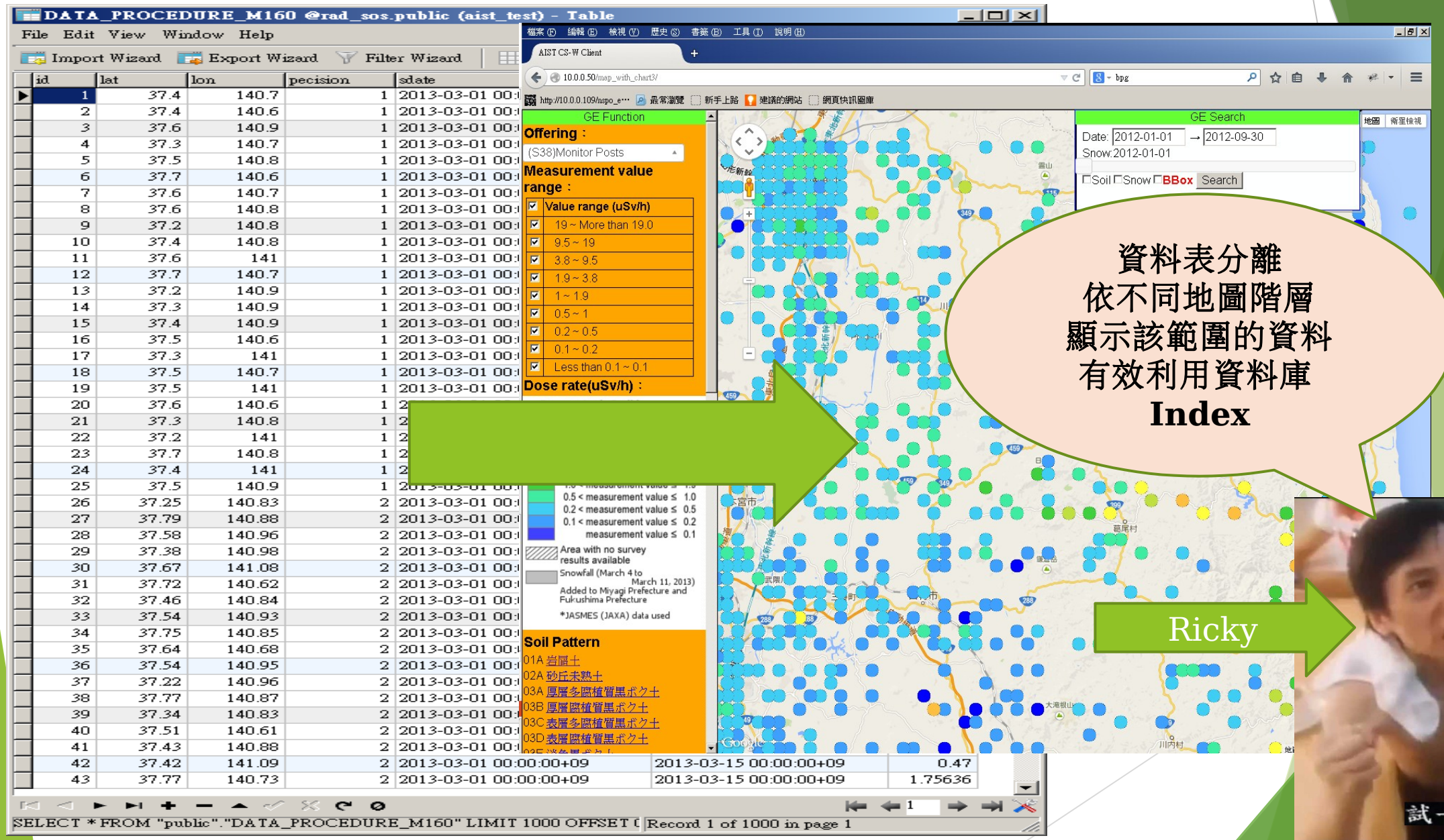
SELECT * FROM "public"."DATA_PROCEDURE_M160" LIMIT 1000 OFFSET 0

Record 1 of 1

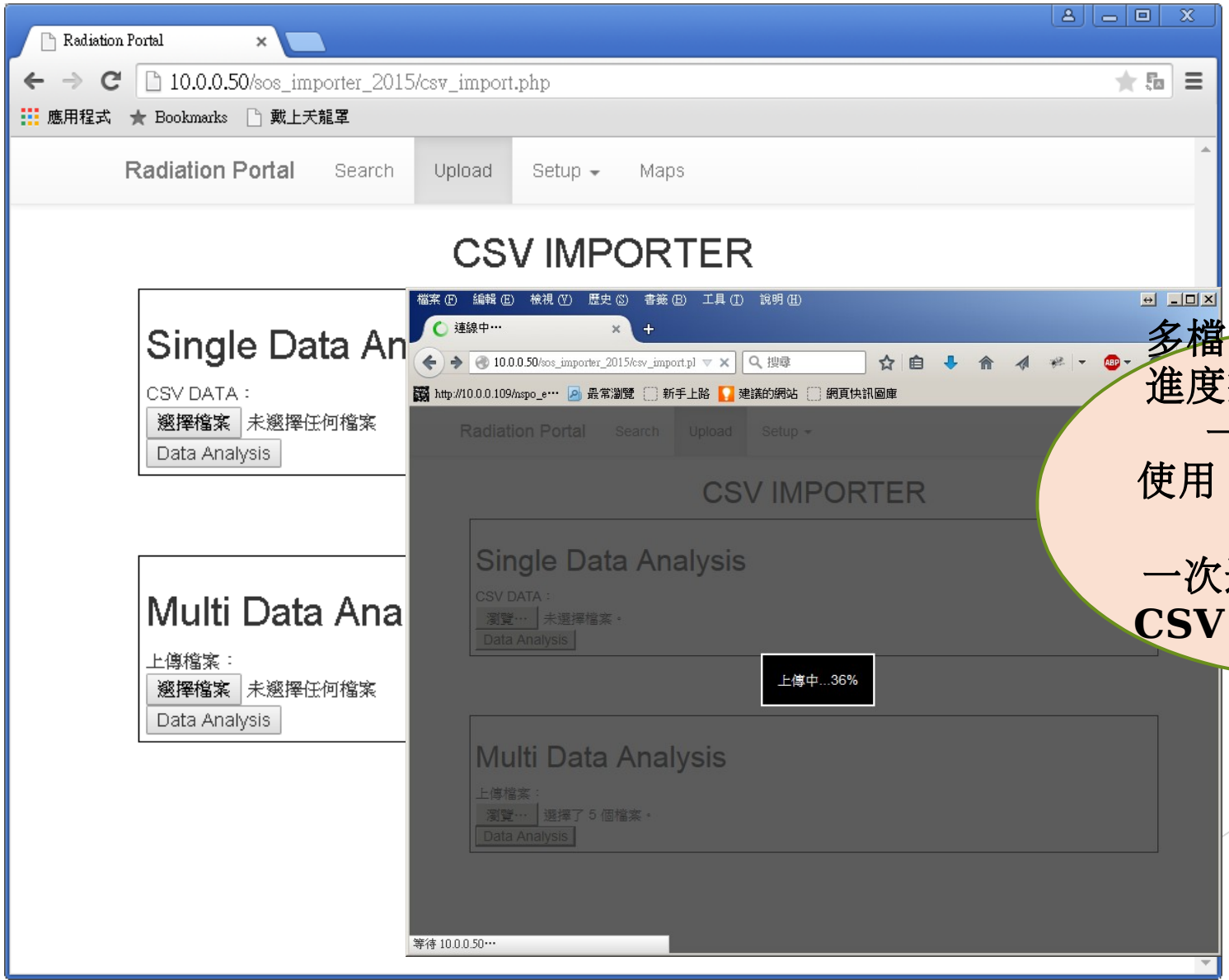
噗…哈哈哈哈哈哈

調阿吶せ緊
恁爸丟呷哩姓

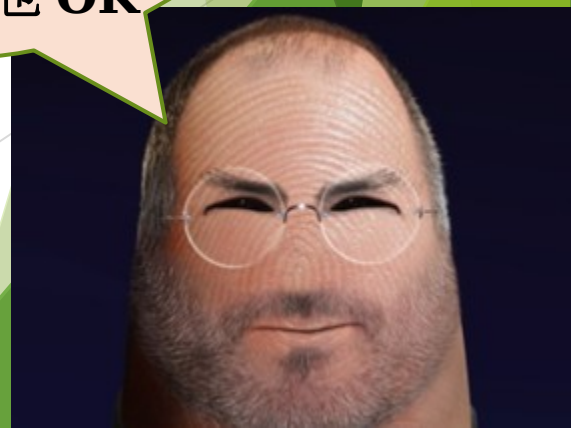
實作後效果還不錯呢…..


DATA_PROCEDURE_M160 @rad_sos.public (aist_test) - Table
File Edit View Window Help
Import Wizard
Export Wizard
Filter Wizard
id | lat | lon | pecision | sdate
GE Function
Offering :
(S38)Monitor Posts
Measurement value range :
Value range (uSv/h)
19 ~ More than 19.0
9.5 ~ 19
3.8 ~ 9.5
1.9 ~ 3.8
1 ~ 1.9
0.5 ~ 1
0.2 ~ 0.5
0.1 ~ 0.2
Less than 0.1 ~ 0.1
Dose rate(uSv/h) :
GE Search
Date: 2012-01-01 → 2012-09-30
Snow:2012-01-01
Soil Snow BBox Search
0.5 < measurement value ≤ 1.0
0.2 < measurement value ≤ 0.5
0.1 < measurement value ≤ 0.2
measurement value ≤ 0.1
Area with no survey results available
Snowfall (March 4 to March 11, 2013) Added to Miyagi Prefecture and Fukushima Prefecture
*JASMES (JAXA) data used
Soil Pattern
01A 岩屑土
02A 砂丘未熟土
03A 厚層多腐植質黒ボク土
03B 厚層腐植質黒ボク土
03C 表層多腐植質黒ボク土
03D 表層腐植質黒ボク土
SELECT * FROM "public"."DATA_PROCEDURE_M160" LIMIT 1000 OFFSET
Record 1 of 1000 in page 1
資料表分離
依不同地圖階層
顯示該範圍的資料
有效利用資料庫
Index
Ricky
試一試呀

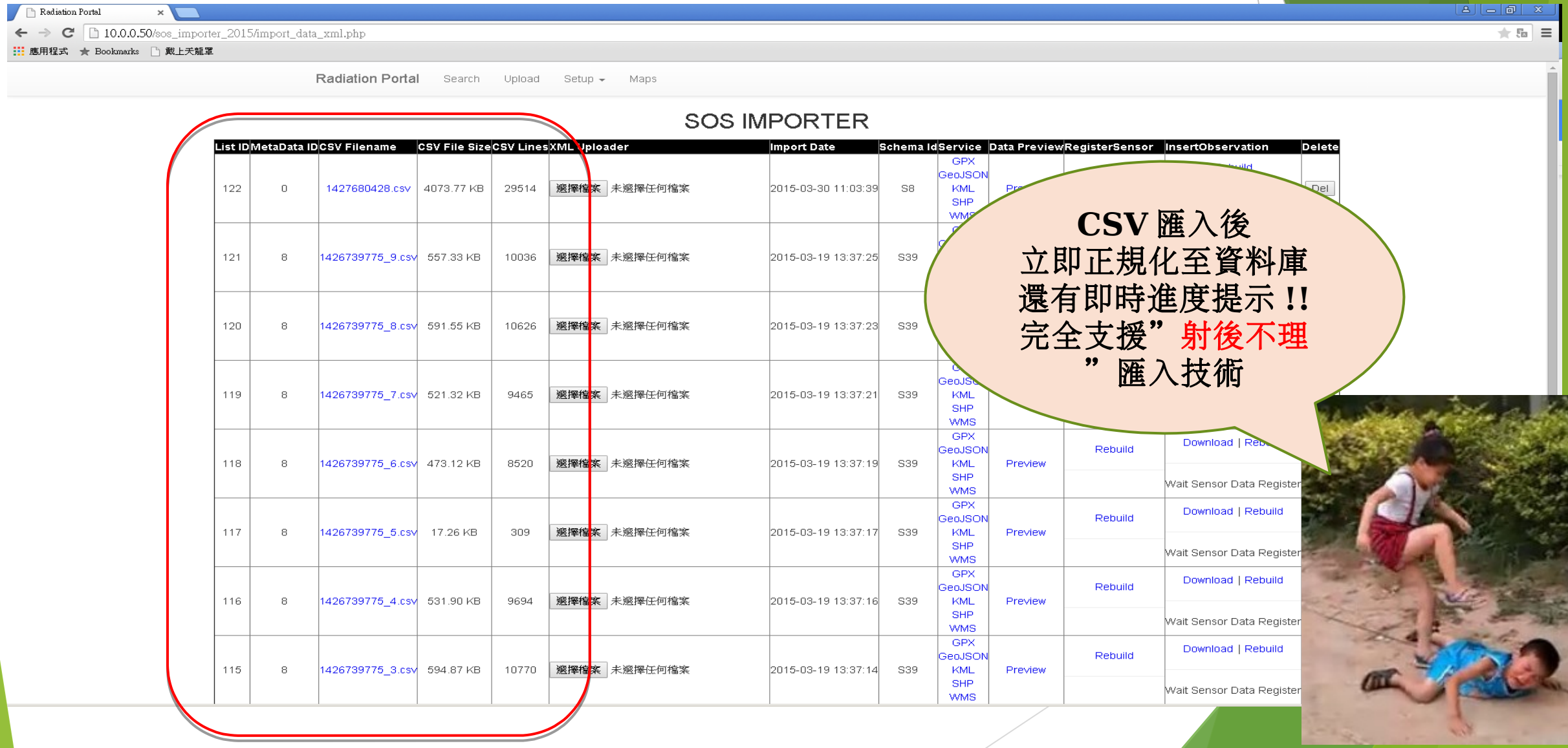
單一檔案匯入、亦支援多檔匯入



多檔同時上傳也有進度提示，使用者一目瞭然 !!
使用 **ajaxForm** 技術
一次選 **2** 、 **30** 個 **CSV** 一起匯也 **OK** 呦



CSV Importer 效率、穩定度提升



List ID	MetaData ID	CSV Filename	CSV File Size	CSV Lines	XML Uploader	Import Date	Schema Id	Service	Data Preview	RegisterSensor	InsertObservation	Delete
122	0	1427680428.csv	4073.77 KB	29514	選擇檔案 未選擇任何檔案	2015-03-30 11:03:39	S8	GPX GeoJSON KML SHP WMS				Del
121	8	1426739775_9.csv	557.33 KB	10036	選擇檔案 未選擇任何檔案	2015-03-19 13:37:25	S39					
120	8	1426739775_8.csv	591.55 KB	10626	選擇檔案 未選擇任何檔案	2015-03-19 13:37:23	S39					
119	8	1426739775_7.csv	521.32 KB	9465	選擇檔案 未選擇任何檔案	2015-03-19 13:37:21	S39	GeoJSON KML SHP WMS				
118	8	1426739775_6.csv	473.12 KB	8520	選擇檔案 未選擇任何檔案	2015-03-19 13:37:19	S39	GPX GeoJSON KML SHP WMS	Preview	Rebuild	Download | Reb Wait Sensor Data Register	
117	8	1426739775_5.csv	17.26 KB	309	選擇檔案 未選擇任何檔案	2015-03-19 13:37:17	S39	GPX GeoJSON KML SHP WMS	Preview	Rebuild	Download | Rebuild Wait Sensor Data Register	
116	8	1426739775_4.csv	531.90 KB	9694	選擇檔案 未選擇任何檔案	2015-03-19 13:37:16	S39	GPX GeoJSON KML SHP WMS	Preview	Rebuild	Download | Rebuild Wait Sensor Data Register	
115	8	1426739775_3.csv	594.87 KB	10770	選擇檔案 未選擇任何檔案	2015-03-19 13:37:14	S39	GPX GeoJSON KML SHP WMS	Preview	Rebuild	Download | Rebuild Wait Sensor Data Register	

CSV Importer 更多的匯入格式解晰

PSPad - [aist_test:/data/git_aist/aist/wwwroot/sos_importer_2015/sos_importer_cli/sos_importer.php]

檔案(F) 專案(P) 編輯(E) 搜尋(S) 檢視(V) 格式(R) 工具(T) HTML 設定(N) 視窗(W) 幫助(H)

1.. sos_importer.php

FTP: aist_test

/data/git_aist/aist/wwwroot/sos_importer_2

File	Size	Modi
..		
config.py	1913 B	2015
config.pyc	3 kB	2015
csvraw_to_rawdat...	7 kB	2015
csw_post.php	6 kB	2015
csw_post_echo.php	249 B	2015
nohup.out	833 B	2015
rawdata_to_precis...	12 kB	2015
sos_data_post.php	7 kB	2015
sos_data_post_ol...	7 kB	2015
sos_data_xml.php	7 kB	2015
sos_data_xml_by_...	7 kB	2015
sos_data_xml_old....	13 kB	2015
sos_gpx.php	6 kB	2015
sos_importer.php	15 kB	2015
sos_sensor_post....	3 kB	2015
sos_sensor_post_...	3 kB	2015
sos_sensor_xml.php	8 kB	2015
sos_sensor_xml_o...	4 kB	2015
sos_xml_to_csv.php	1846 B	2015

```
303         if(in_array($k,$MD_DATE))
304         {
305           if(strlen($v)==0)
306           {
307             $output[0]["CAN_SAVE"] = FALSE;
308             continue;
309           }
310           else if(strlen($v)==10)
311           {
312             //format 2011-03-11
313             $v=str_replace("/","-",$v);
314             $output[0]["DATE"]=$v;
315             continue;
316           }
317           else if(strlen($v)<10)
318           {
319             $v=str_replace("/","-",$v);
320             $date_temp=explode("-",$v);
321             $output[0]["DATE"]=sprintf("%d-%02d-%02d",$date_temp[0],$date_temp
322             $output[0]["TIME"]="00:00:00";
323           }
324           else if(strlen($v) == 16)
325           {
326             $output[0]["DATE"]=date('Y-m-d',strtotime($v));
327             $output[0]["TIME"]=date('H:i:s',strtotime($v.":00"));
328             //echo $output[0]["DATE"]."\n";
329             continue;
330           }
331           else if(strlen($v) == 19)
332           {
```

1 : 1 / 508 [15766] | < 60 $003C | HTML multihighlighter | UNIX | 代碼頁：UTF-8

更多的匯入格式解晰，讓資料內容更加完整，全自動判斷內容格式 !!

XML to CSV 萬能解晰器

root@localhost:/var/www/html/sos_importer_2015/sos_importer_cli

```php
<?php
  $program_name=basename(__FILE__);
  $HELP_MESSAGE="
XML to CSV.

Example:

  php {$program_name} [input xml file] [output csv file]

";
  if($argc!=3){
    echo $HELP_MESSAGE;
    exit();
  }
  $data = file_get_contents($argv[1]);
  $csv_output=$argv[2];
  $data = str_replace('"','″',$data);
  $data = str_replace(',',' ، ',$data);
  preg_match_all('/<(.*)>(.*)<\/(.*)>/',$data,$all);
  //print_r($all[1]);
  $all_tags_counter = array_count_values ( $all[1] );
  //取得重覆最多次的數組，代表 csv 欄位
  $csv_columns_counter = array_count_values($all_tags_counter);
  arsort($csv_columns_counter);
  $base_c = key($csv_columns_counter);
  $header=ARRAY();
  $headers=ARRAY();
  foreach($all_tags_counter as $k=>$c){
    if($c == $base_c){
      //標題
      $title = str_replace(ARRAY('"',"'"),'',$k);
```

1,1 頂端

解晰 XML 太辛苦了
格式太多種了

一定要想辦法偷懶
然後又很利害

Radiation XML data convet

解晰 **XML** 太辛苦了
格式太多種了

一定要想辦法偷懶
然後又很利害
(很重要，所以要說二次)

- Parsing without XML template
- ***php sos_xml_to_csv.php***
- *This XML convert need 2 parameters :*
- ***php sos_xml_to_csv.php [source] [target] [source.xml] Source of XML [target.csv] Output of CSV***
- Convert XML to CSV
- Then use CSV impoter

Radiation XML data conveter

- Parsing without XML template

- ***Air Dose Rate Measurement R***
  from the 1st Vehicle-borne Su
- ***File Size： 69MB***
- ***Record ： 45273***
- ***Convert Time： 2m24.846s***

```
root@localhost:/data/git_aist/aist/wwwroot/sos_importer_2015/test_case
Process... 31000 / 45273
Process... 32000 / 45273
Process... 33000 / 45273
Process... 34000 / 45273
Process... 35000 / 45273
Process... 36000 / 45273
Process... 37000 / 45273
Process... 38000 / 45273
Process... 39000 / 45273
Process... 40000 / 4527
Process... 41000 / 4527
Process... 42000 / 45273
Process... 43000 / 45273
Process... 44000 / 45273
Process... 45000 / 45273
Process... 45273 / 45273
Done...

real    2m24.846s
user    0m53.427s
sys     1m16.405s
[root@localhost test_case]#
```

萬能 XML 解晰器
開發時間： 16 分鐘
程式碼量： 61 行

Radiation XML data conveter

root@localhost:/data/git_aist/aist/wwwroot/sos_importer_2015/test_case

```
meshID,coordinates,latitude,longitude,latitude_60,longitude_60,distance unit="km",cityCode,prefecture,cityName,date,timeZone,unit,n,mean,isEffecti
veDose,isEquivalentDose
5539_3274_69,139.311250 , 36.980833 139.312500 , 36.980833 139.312500 , 36.980000 139.311250 , 36.980000 139.311250 , 36.980833,36.980416,139.311875,36
°58'49.5",139°18'42.8",160.1,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,2,1.0E-01,false,false
5539_3274_77,139.308750 , 36.981667 139.310000 , 36.981667 139.310000 , 36.980833 139.308750 , 36.980833 139.308750 , 36.981667,36.981250,139.309375,36
°58'52.5",139°18'33.8",160.3,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,2,1.0E-01,false,false
5539_3274_78,139.310000 , 36.981667 139.311250 , 36.981667 139.311250 , 36.980833 139.310000 , 36.980833 139.310000 , 36.981667,36.981250,139.310625,36
°58'52.5",139°18'38.3",160.1,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,2,1.1E-01,false,false
5539_3274_87,139.308750 , 36.982500 139.310000 , 36.982500 139.310000 , 36.981667 139.308750 , 36.981667 139.308750 , 36.982500,36.982084,139.309375,36
°58'55.5",139°18'33.8",160.2,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,2,9.9E-02,false,false
5539_3274_96,139.307500 , 36.983333 139.308750 , 36.983333 139.308750 , 36.982500 139.307500 , 36.982500 139.307500 , 36.983333,36.982917,139.308125,36
°58'58.5",139°18'29.3",160.3,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,1,1.2E-01,false,false
5539_3274_97,139.308750 , 36.983333 139.310000 , 36.983333 139.310000 , 36.982500 139.308750 , 36.982500 139.308750 , 36.983333,36.982917,139.309375,36
°58'58.5",139°18'33.8",160.2,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,1,9.6E-02,false,false
5539_3275_60,139.312500 , 36.980833 139.313750 , 36.980833 139.313750 , 36.980000 139.312500 , 36.980000 139.312500 , 36.980833,36.980416,139.313125,36
°58'49.5",139°18'47.3",160.0,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,2,9.9E-02,false,false
5539_3275_61,139.313750 , 36.980833 139.315000 , 36.980833 139.315000 , 36.980000 139.313750 , 36.980000 139
°58'49.5",139°18'51.8",159.9,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,1,9.6E-02,false,fal
5539_3275_62,139.315000 , 36.980833 139.316250 , 36.980833 139.316250 , 36.980000 139.315000 , 36.98000
°58'49.5",139°18'56.3",159.8,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,2,9.2E-02,false
5539_3275_63,139.316250 , 36.980833 139.317500 , 36.980833 139.317500 , 36.980000 139.316250 , 36.980
°58'49.5",139°19'00.8",159.6,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,2,8.3E-02,fal
5539_3275_64,139.317500 , 36.980833 139.318750 , 36.980833 139.318750 , 36.980000 139.317500 , 36.9
°58'49.5",139°19'05.3",159.5,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,2,1.0E-01,fa
5539_3275_65,139.318750 , 36.980833 139.320000 , 36.980833 139.320000 , 36.980000 139.318750 , 36.9
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5539_3275_66,139.320000 , 36.980833 139.321250 , 36.980833 139.321250 , 36.980000 139.320000 , 36.9
°58'49.5",139°19'14.3",159.3,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,2,9.6E-02,fal
5539_3275_67,139.321250 , 36.980833 139.322500 , 36.980833 139.322500 , 36.980000 139.321250 , 36.980
°58'49.5",139°19'18.8",159.2,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,2,1.1E-01,false
5539_3275_78,139.322500 , 36.981667 139.323750 , 36.981667 139.323750 , 36.980833 139.322500 , 36.980833
°58'52.5",139°19'23.3",159.1,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,3,9.8E-02,false,fal
5539_3275_79,139.323750 , 36.981667 139.325000 , 36.981667 139.325000 , 36.980833 139.323750 , 36.980833 139.
°58'52.5",139°19'27.8",159.0,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,2,1.2E-01,false,false
5539_3276_80,139.325000 , 36.982500 139.326250 , 36.982500 139.326250 , 36.981667 139.325000 , 36.981667 139.325000 , 36.98250
°58'55.5",139°19'32.3",158.9,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,1,1.1E-01,false,false
5539_3276_81,139.326250 , 36.982500 139.327500 , 36.982500 139.327500 , 36.981667 139.326250 , 36.981667 139.326250 , 36.98250(
°58'55.5",139°19'36.8",158.7,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,1,1.2E-01,false,false
5539_3276_82,139.327500 , 36.982500 139.328750 , 36.982500 139.328750 , 36.981667 139.327500 , 36.981667 139.327500 , 36.98250(
°58'55.5",139°19'41.3",158.6,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,2,9.6E-02,false,false
5539_3276_83,139.328750 , 36.982500 139.330000 , 36.982500 139.330000 , 36.981667 139.328750 , 36.981667 139.328750 , 36.98250(
°58'55.5",139°19'45.8",158.5,07364,福島県,南会津郡桧枝岐村,2011-06-06,+09:00,μSv/h,2,9.9E-02,false,false
--更多--
```
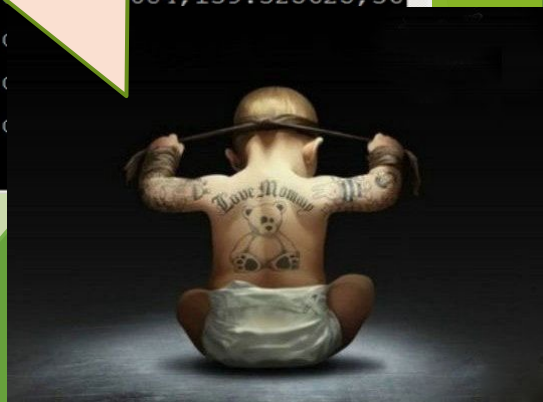
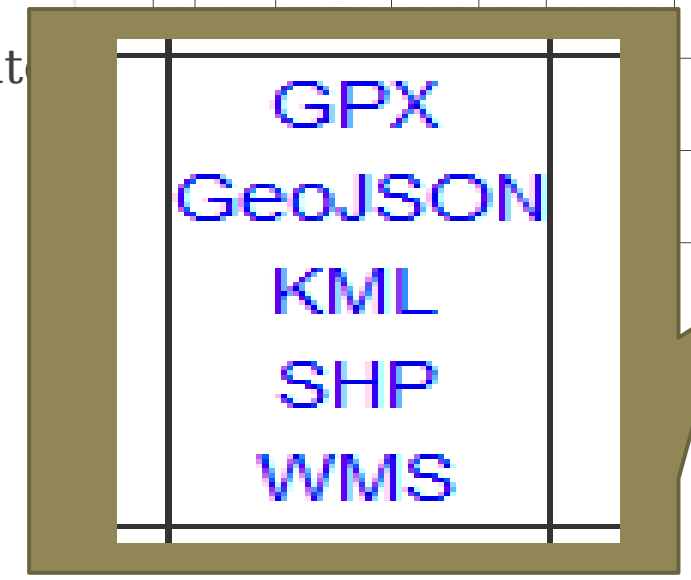

萬能 XML 解晰器

解不出來再來用 **Ricky** 的 **XML Template** 解晰器就好了



CSV→Normalize Data→ GPX 、Shpfile 、 GeoJSON 、 KML 、 WMS→SOS

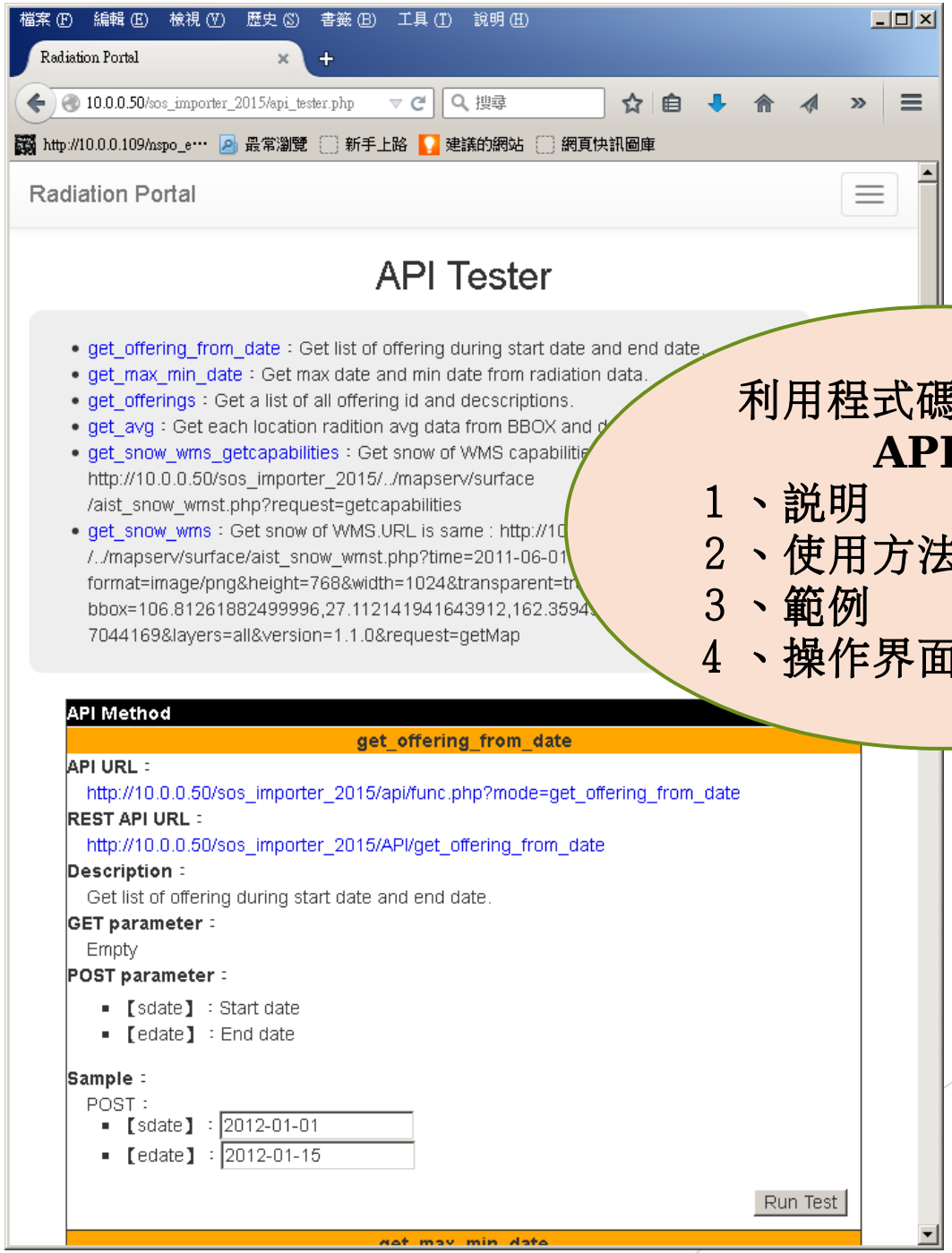
- GPX Generator
- GeoJSON Generator
- KML Generator
- SHP Generator (For GeoServ
- (Mapserver) WMS Generat
- 使用合適的工具幫助快速轉檔



讓操作便利
流程自動化
讓小齒輪相互組合
從作自動化的過程找到
合適的方法、工具、零件

API Tester

- 快速取得資料庫內容
- 服務、條件
- **WMS** 資料、積雪狀況
- 輻射平均值
- 可擴充式 **API** 測試發佈機
- 測試樣版、範例內容

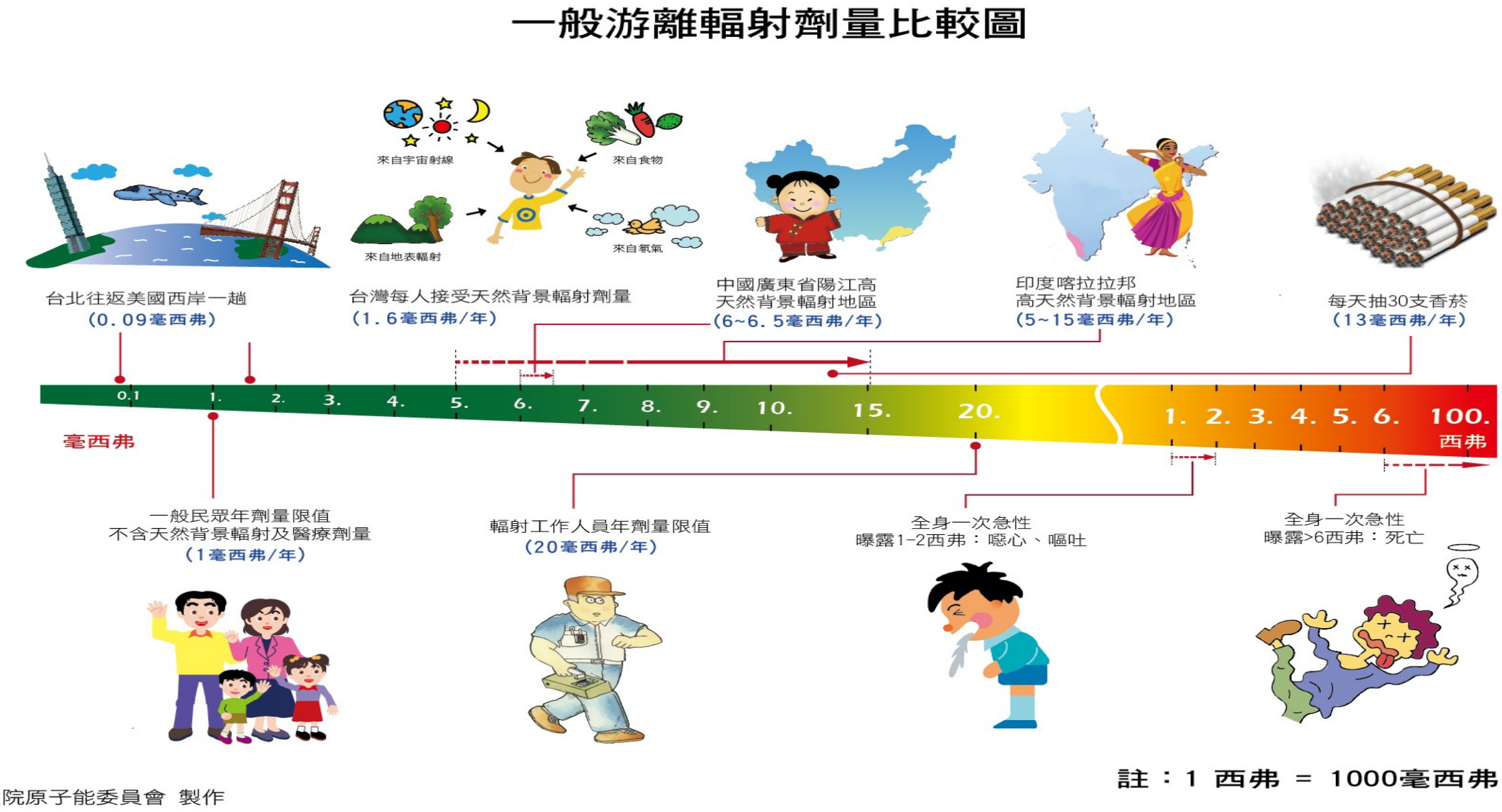


利用程式碼自動產生
API：
1、說明
2、使用方法
3、範例
4、操作界面

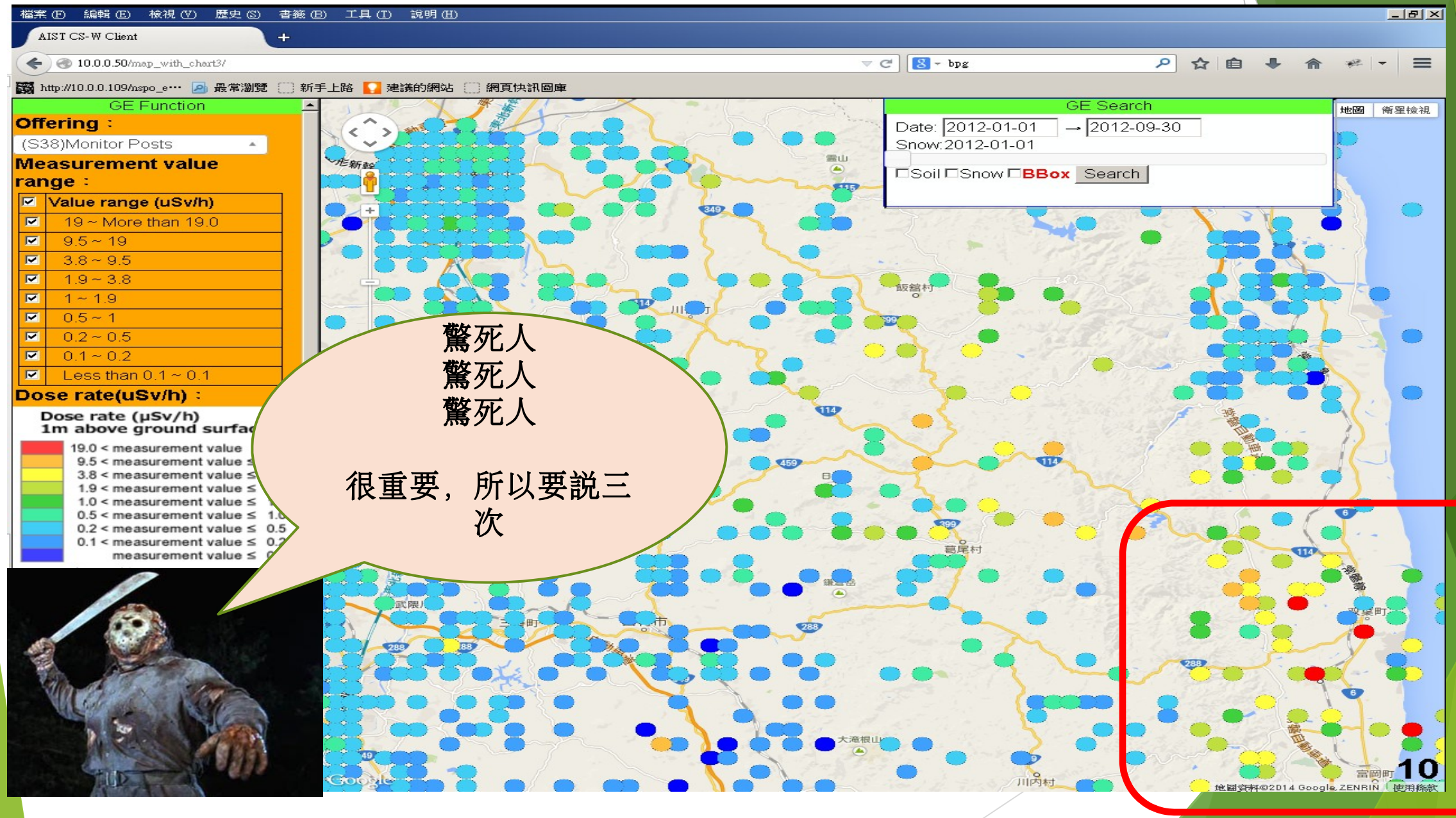
心得

核災輻射很可怕，都4年多了，數值還很高

心得


一般游離輻射劑量比較圖
來自宇宙射線
來自食物
來自地表輻射
來自氡氣
台北往返美國西岸一趟
(0.09毫西弗)
台灣每人接受天然背景輻射劑量
(1.6毫西弗/年)
中國廣東省陽江高
天然背景輻射地區
(6~6.5毫西弗/年)
印度喀拉拉邦
高天然背景輻射地區
(5~15毫西弗/年)
每天抽30支香菸
(13毫西弗/年)
0.1
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
15.
20.
1.
2.
3.
4.
5.
6.
100.
毫西弗
西弗
一般民眾年劑量限值
不含天然背景輻射及醫療劑量
(1毫西弗/年)
輻射工作人員年劑量限值
(20毫西弗/年)
全身一次急性
曝露1–2西弗：噁心、嘔吐
全身一次急性
曝露>6西弗：死亡
註：1 西弗 = 1000毫西弗
行政院原子能委員會 製作

心得

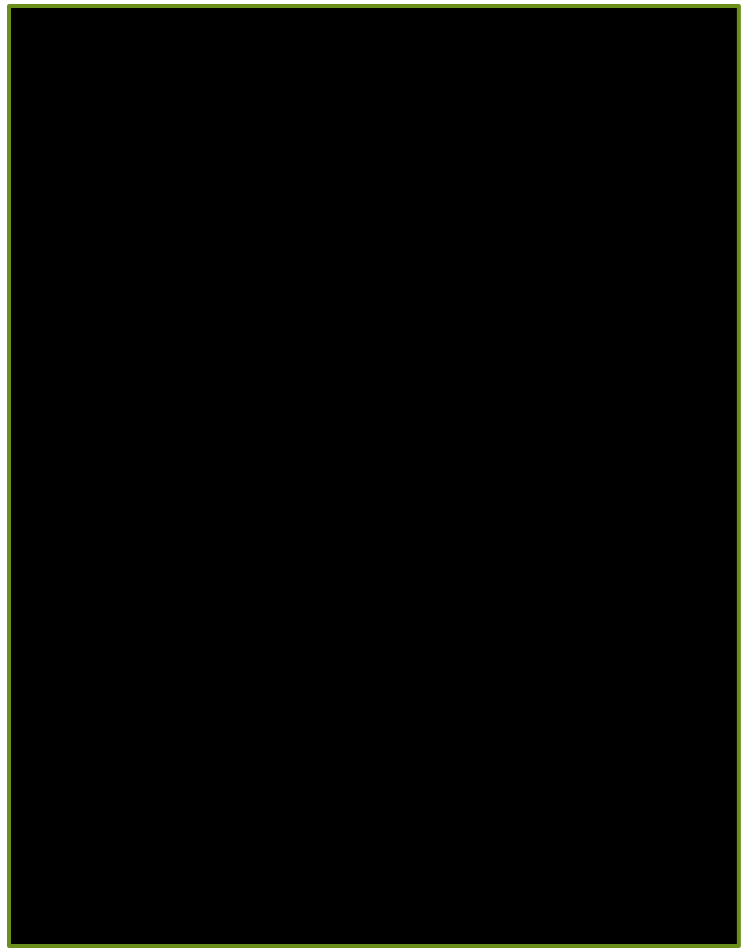

AIST CS-W Client
GE Function
Offering :
(S38)Monitor Posts
Measurement value range :
Value range (uSv/h)
19 ~ More than 19.0
9.5 ~ 19
3.8 ~ 9.5
1.9 ~ 3.8
1 ~ 1.9
0.5 ~ 1
0.2 ~ 0.5
0.1 ~ 0.2
Less than 0.1 ~ 0.1
Dose rate(uSv/h) :
GE Search
Date: 2012-01-01 → 2012-09-30
Snow:2012-01-01
Soil Snow BBox Search
驚死人
驚死人
驚死人
很重要，所以要說三次
10

心得

如果你家附近都是輻射，有人跟你說冬天可以回家，夏天不能，你該怎麼做?

可以回家了嗎，還有沒有輻射?

心得



這些資料會不會造成恐慌?
大概也不能黑白亂講

所以做出來的東西，要給什麼人用，有沒有搞清楚?

以後還有機會，要不要繼續參與！？

廢話，當然要啊！

心得

一邊滿足甲方需求！
一邊利用機會練功！

大家好，我是假伯斯
又來跟大家分享今年
新版作了什麼了…

套一句 **Aben** 說的：

看到東西做出來，超開心

おわり