

October 31, 2012

# Introduction to Field Monitoring System

**Prof. Masaru Mizoguchi**

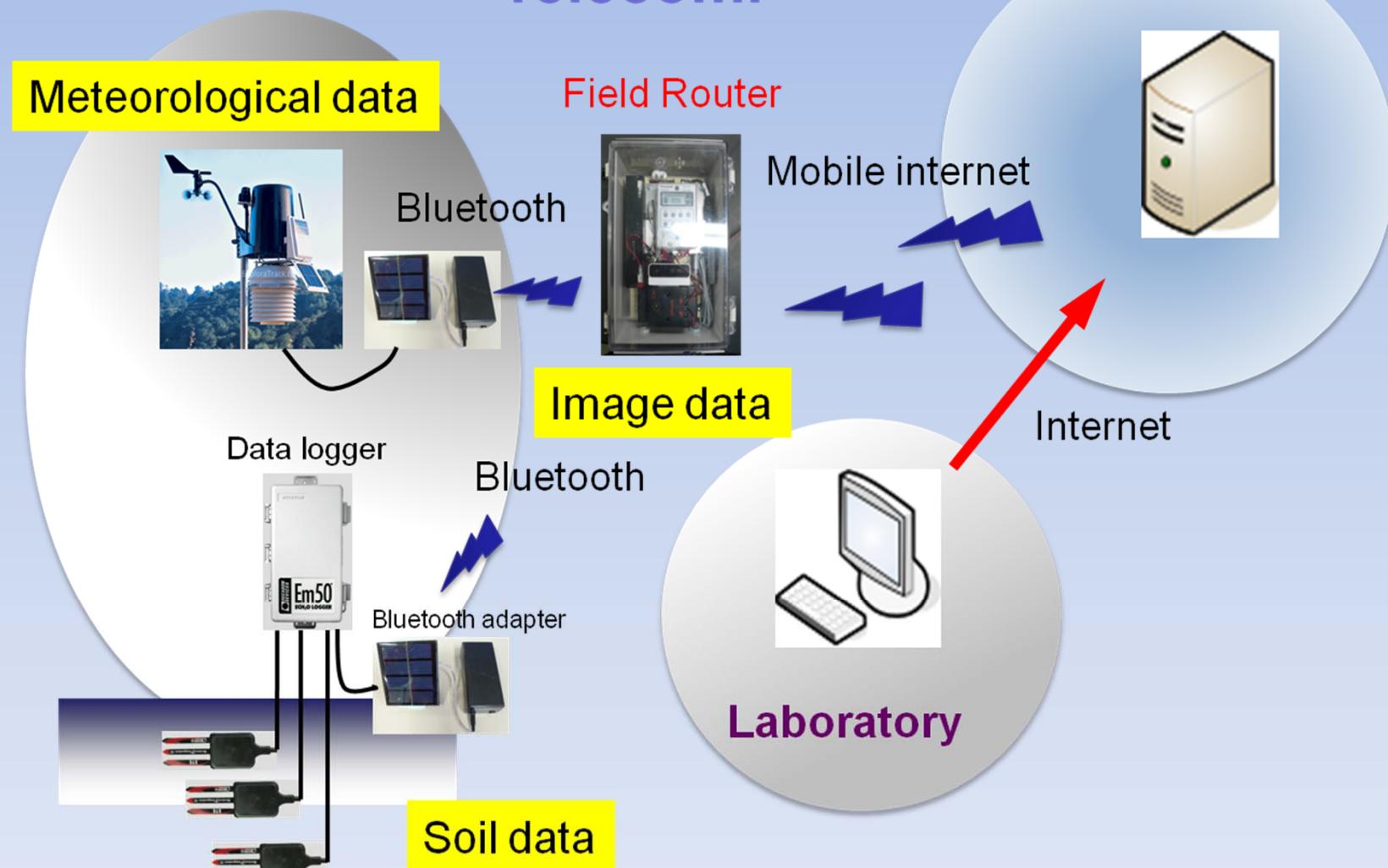
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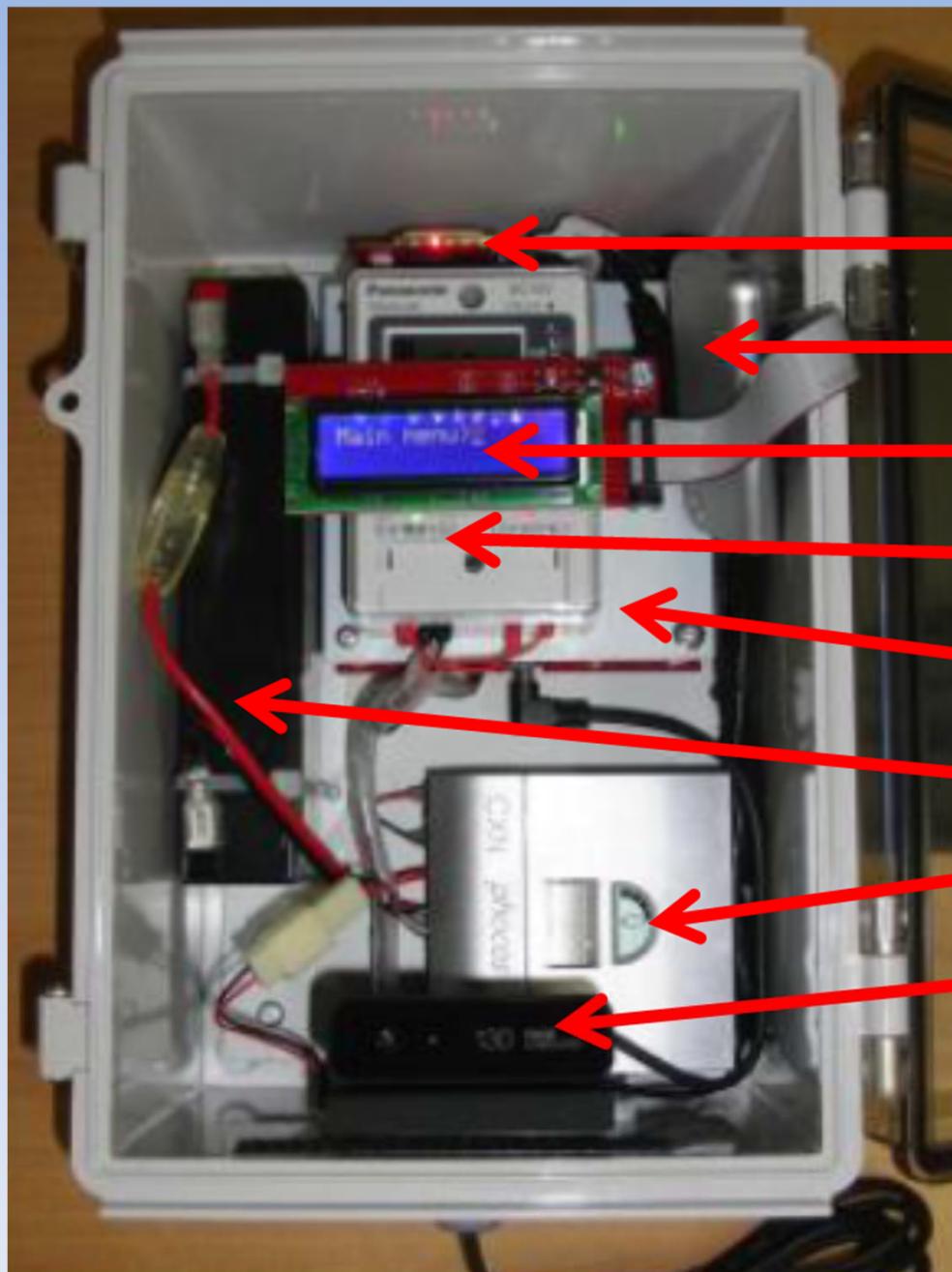
# Field Monitoring System (FMS)

In-situ data → Telecom. → Data Server



(Soil sensor : Soil moisture, temperature, electrical conductivity...)

# FieldRouter



- Status lamp
- USB modem
- Status display
- Timer
- Micro-PC
- Battery
- Charge controller
- Web camera

(38 cm x 25 cm x 10 cm)

# Comparison of Field Server and FieldRouter

No	Item	Field Server	Field Router
1	Monitoring	Real time and continuous	Daily monitoring/ quasi real time
2	Operation	All day	A half hour/day
3	Power	High power consumption by using big solar panel (100 W size: 1m x 2m)	Lower power consumption by using 6 W solar panel
4	Internet line	Internet with static IP address	Mobile phone internet (3G/GSM)
5	Internet cost	More expensive	Cheaper
6	Data logger	No data logger function, data are directly and continuously sent to the server	Any data loggers can be connected

7	Set up process	Difficult system set up: Phone setting, internet modem setting, IP cam, WiFi AP and sensors	<b>Easy set up:</b> -Device name, mobile name company -Automatic data logger detection
8	Collecting data	Data lost when power or internet fail	Data secured in each data logger. However, the data will be lost immediately if the sensor cable unplug and the battery depleted.

## Comparison of Field Server and Field Router

# Setup images of FMS



Ina, Nagano Prefecture in Japan

eQuasi real-time Monitoring of Farmland using Field Router (Lab. of Soil-Informatics, Dept. of G – Windows Internet Explorer)

http://www.x-ability.jp/~swamped/index.php?dfw=fns2

Mizo. lab Quasi r... Qua... HootSu... Google ...

ファイル(E) 編集(D) 表示(V) お気に入り(A) ツール(T) ヘルプ(H)

# Quasi real-time Monitoring of Farmland using Field Router

Masaru Mizoguchi

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MizoLab. Current Time (JST)=2012/04/01 20:28:10

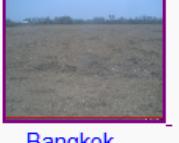
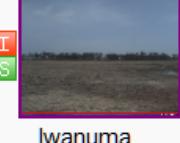
**Projects**

- GRENE
- EDR
- EDR-Tsunami
- EDR-litate
- Tunisia
- Thailand
- Indonesia
- Hokuriku
- Hirosaki
- Dr.Doroemon
- misc

**Select**

- All
- Del
- Show
- NVSU, Philippines
- Pattaya, Thailand
- Tunisia-1
- Tunisia-2
- Tunisia-3
- Tunisia-4
- Tunisia-5
- KhonKaen-cassava1
- KhonKaen-cassava2
- Bangkok

Method Sites overview Login

 Tunisia-2 (Map) 2011.6.17 <small>I M S</small>	 KhonKaen-cassava2 2011.6.17 <small>T M S</small>	 Bangkok 2011.6.14 <small>T M S</small>	 Bogor-1, Indonesia <small>T M S</small>
 Bali, Indonesia <small>I M S</small>	 Tsumagoi <small>I M I M</small>	 Ishikawa 2010.11.29- <small>I I M</small>	 Rikuzen-takada 2011.9.29 <small>I I</small>
 Natori 2011.9.22 <small>I S I S</small>	 Iwanuma 2011.10.19 <small>I S I S</small>	 Ilitate-Sasu 2011.10.2 <small>I S I S</small>	 Ilitate-Myojin-2 2011.12.4 <small>I S I S</small>

I =image, M =meteorologic, S =soil (Left side icons for yesterday, right side today)

Mizo Lab.

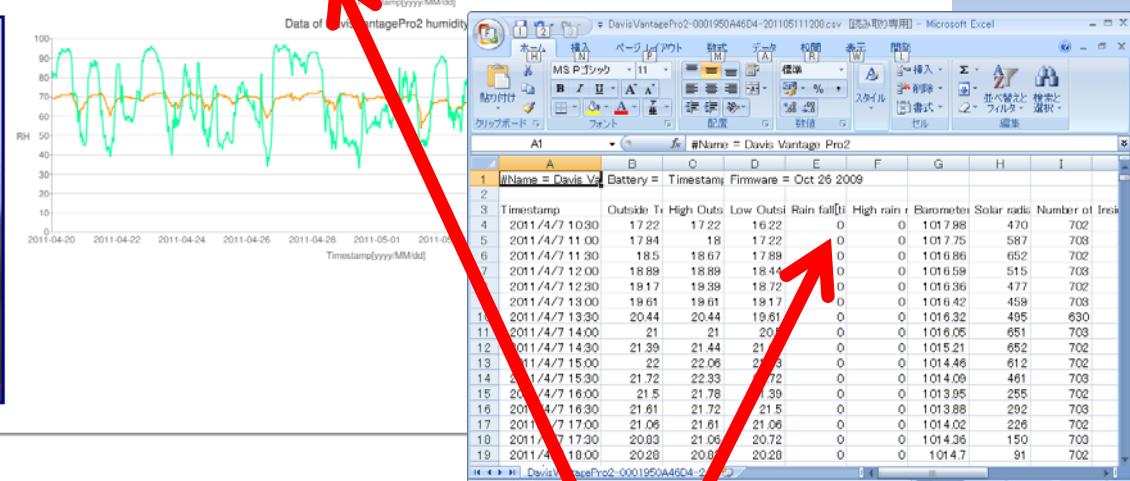
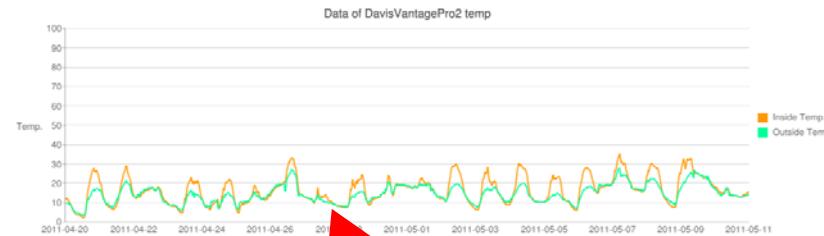
<http://www.iai.ga.a.u-tokyo.ac.jp/mizo/>

# View of individual site

[Toyama01](#) last seen: 2011/05/11 12:30 (JST GMT+9)



## Images



## Data

DavisVantagePro2 2011/05/11 12:08 battery:[4.29\(0\)](#) logger time:2011-05-11 12:07:36 [A](#) [B](#) [\(292.2K\)](#)

Toyama01 2011/05/11 12:12 battery:[82](#) logger time:2011-05-11 12:5:36 +36 [A](#) [B](#) [\(301.2K\)](#)

スタート ウィンドウ フォルダ mizo... Wind... ito te... sp10... ai110... 無題... Toy... 2011... 農業... IPカメ... Re:

- Weather and soil data can be downloaded in CSV format
  - The data can be processed freely using EXCEL

# Calendar view function

2012 / 8						
Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Sun.
 <a href="#">8/27</a>	 <a href="#">8/28</a>	 <a href="#">8/29</a>	 <a href="#">8/30</a>	 <a href="#">8/31</a>		
 <a href="#">8/20</a>	 <a href="#">8/21</a>	 <a href="#">8/22</a>	 <a href="#">8/23</a>	 <a href="#">8/24</a>	 <a href="#">8/25</a>	 <a href="#">8/26</a>
 <a href="#">8/13</a>	 <a href="#">8/14</a>	 <a href="#">8/15</a>	 <a href="#">8/16</a>	 <a href="#">8/17</a>	 <a href="#">8/18</a>	 <a href="#">8/19</a>
 <a href="#">8/6</a>	 <a href="#">8/7</a>	 <a href="#">8/8</a>	 <a href="#">8/9</a>	 <a href="#">8/10</a>	 <a href="#">8/11</a>	 <a href="#">8/12</a>
		 <a href="#">8/1</a>	 <a href="#">8/2</a>	 <a href="#">8/3</a>	 <a href="#">8/4</a>	 <a href="#">8/5</a>

# References

- Field Monitoring System manual
  - [http://info.ga.a.u-tokyo.ac.jp/fns/Main\\_Page](http://info.ga.a.u-tokyo.ac.jp/fns/Main_Page)



- FieldRouter installation manual
  - <http://www.iai.ga.a.u-tokyo.ac.jp/mizo/ab/fns-set-manual.pdf>

