



Scoring System Introduction

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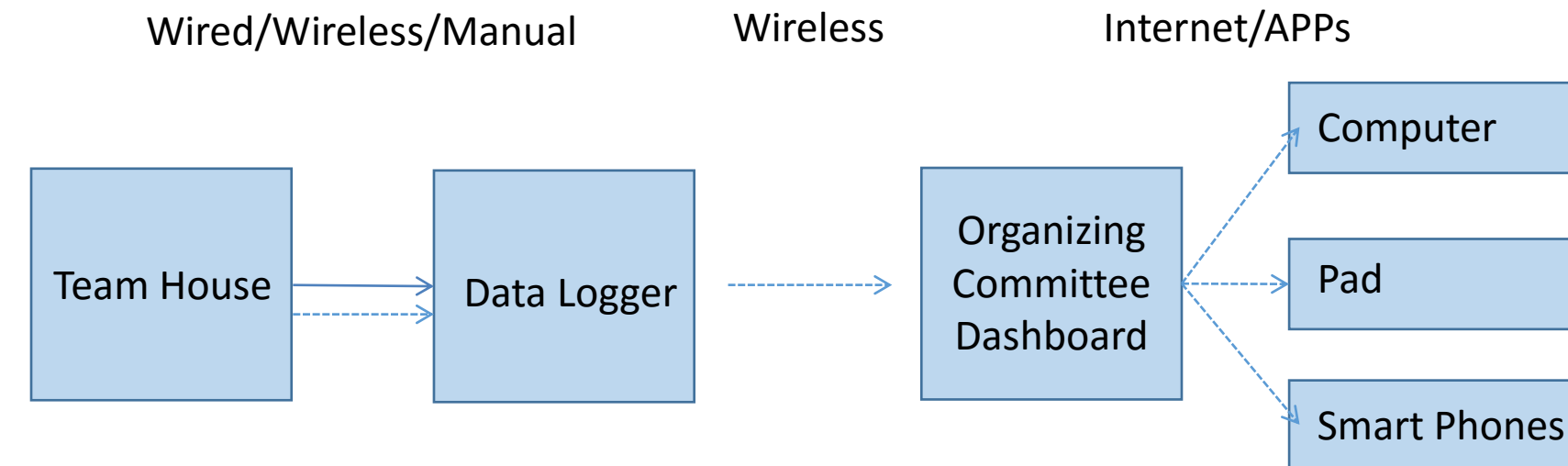
Content

Classifications of the measurement items

Monitoring System Equipment Specification

Software

Automated Scoring System Logic Diagram



Sensor and Instrumentation

- Data Logger
- Temperature and Humidity Sensors
- Flow Meter
- Power Meter
- Scales (Kitchen and Towel Scales)
- Irreversible Thermometric Paper

Dashboard

- Manual Scoring
- Table Scoring
- Monitoring Scoring

Classifications of the measurement items

| Monitored | Recorded Manually Task | Juried |
|-------------------------|--|-----------------------|
| Temperature,6-1 | Clothes Washer,7-3 | Architecture, 1 |
| Humidity ,6-2 | Clothes Drying,7-4 | Market Appeal, 2 |
| CO2 Level , 6-3 | Dishwasher With Irreversible Thermometric Paper, 7-5 | Engineering, 3 |
| PM2.5 Level , 6-4 | Cooking,7-6 | Communications,4 |
| Refrigerator,7-1 | Lighting, 8-1 | Innovation, 5 |
| Freezer,7-2 | Hot Water,8-2 | Home Electronics, 8-3 |
| Energy Production,10-1 | Commuting, 9 | Dinner Party, 8-4 |
| Energy Consumption,10-2 | | Movie Night, 8-5 |

Measured Sub-contests

6-1. Temperature

1~2 Sensors

Full-time monitoring

Data obtained every 15 minutes

Temperature sensor

Measurement range: 0-50°C

Measurement accuracy: 0.5%



6-2. Humidity

1~2 Sensors

Full-time monitoring

Data obtained every 15 minutes

Humidity Sensor

Measurement range: 0~99%RH

Measurement accuracy: 3%RH

6-3. CO₂ Level

1~2 Sensors

Full-time monitoring

Data obtained every 15 minutes

CO₂

Measurement range: 0-2.0mg/m³

Measurement accuracy: ±0.02mg/m³

6-4. PM_{2.5} Level

1~2 Sensors

Full-time monitoring

Data obtained every 15 minutes

PM_{2.5}

Measurement range: 0-400ug/m³

Measurement accuracy: 0-500ug/m³

Measured Sub-contests

7-1. Refrigerator:

Temperature sensors in Refrigerator

Measurement range: $-10\sim 20^{\circ}\text{C}$

Measurement accuracy: 0.1°C

7-2. Freezer:

Requirement of Temperature Sensors in Freezer

Measurement range: $-40\sim 0^{\circ}\text{C}$

Measurement accuracy : 0.1°C ($-30\sim 0^{\circ}\text{C}$)



Measured Sub-contests

7-4. Clothes Dryer:

Return 8 loads of laundry to their original weight (one load = six bath towels) during contest week

7-6. Cooking: Successfully perform four cooking tasks (one task = vaporizing 2kg of water in less than 2 hours) during contest week

Electronic Scale

Measurement range: 0-80kg

Measurement accuracy : 0.1kg



7-5. Dishwasher

Irreversible thermometric paper

Measurement range: 37-65°C



Measured Sub-contests

8-2. Hot Water

Available Points: 100

Introduction

Deliver 60 liters of water at an average temperature of at least 45° C within 10 minutes; 16 water draws during contest week

Equipment needed: temperature sensor + flow measurement

Temperature Sensor

Measurement range: 4-95°C

Measurement accuracy : 0.1°C (0~50°C)

Flow meter

Measurement range: 0.025m³ / h ~ 5m³/h

Max of Pressure: 1.6MPa

Diameter: DN20



Measured Sub-contests

9. Commuting

Available Points: 100

Teams shall complete 40 km driving in no more than 60 min.

**Charging meter:
Single phase, 50Hz**



Measured Sub-contests

10-1. Energy balance

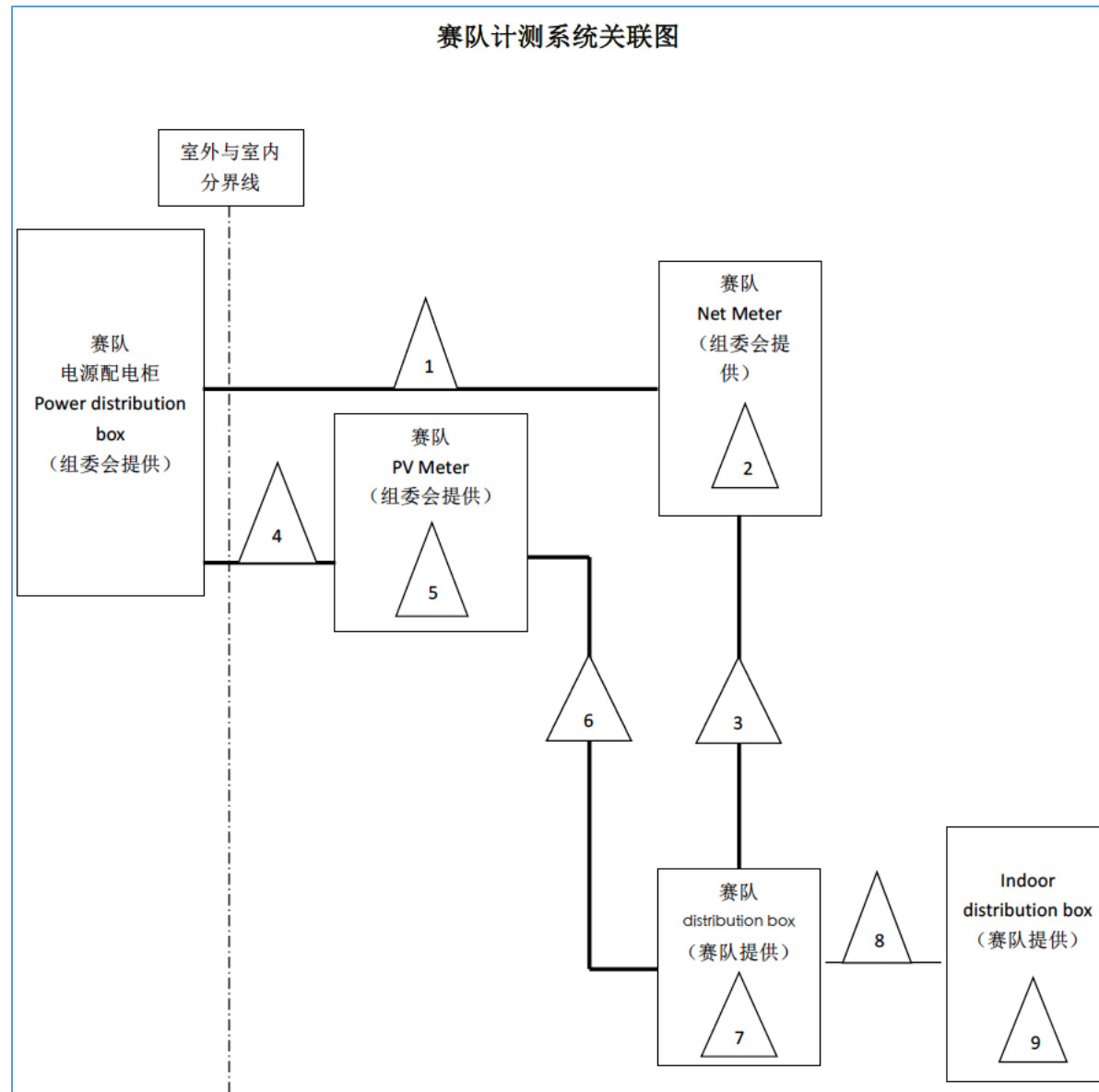
Available Points: 80

10-2. Generating Capacity

Available Points: 20

Introduction

1. 50 Hz:
2. 2 three phase meter for every house



Details for installation of monitoring equipment

1. Each team can suggest up to 5 locations for sensors installation in their drawings. The organizers will decide 1-4 locations for sensors, taking the team suggestion into consideration.
2. Sensors shall be placed away from locations where temperature or humidity is instable (e.g. air-conditioners and windows)

Software

- Right Level
 - Team (team)
 - Jury (judge)
 - Competition Manger(auditor)
- Function
 - Scoring
 - Weather information
 - Total score ranking



Manual Scoring

- Right
 - Jury can input the score, but can't revise the point
 - Auditor can revise the point.

Points Earned :
裁判 : 张三 张三 李四

Points Earned : Input point

Comment:
请输入评论内容 Input comment

Submit

历史数据 History data

| 日期 | 得分 | 评委 | 备注 |
|---------------------|------|---------|---|
| 2013-06-12 20:02:20 | 89.0 | judge | Test |
| 2013-06-14 11:30:51 | 55.0 | auditor | Is there a place that I can input comments? |
| 2013-06-14 23:03:42 | 33.0 | auditor | bad |

Table Scoring

- Right
 - Jury can input the score, but can't revise the point
 - Auditor can revise the point.

日期 : 2013-06-15 **Lighting**

Points Earned :
裁判 : 张三 张三 李四

| | |
|--------------------|--|
| % of Max: | |
| Start Time(HH:mm): | |
| Points Earned: | |

提交

| | |
|------------------------------------|------|
| Draw 2 of 16 : Hot Water | |
| Initial Flow Meter Reading (gal) : | 33.0 |
| Final Meter Reading (gal) | 22.0 |
| Average Temp (°C) | 45.0 |
| Elapsed Time (m:ss) | 9 |

Monitoring System

- Right
 - The point scored automatically by system self
 - Auditor can revise the point.



Penalize

| 违规记录 Penalize Record | | |
|-------------------------|------------------|-----------------------|
| Date | Points Earned | Penalize Detail |
| 2013-5-25 6:45 | -30 | XXXXXXXXXXXXXXXXXXXXX |
| 2013-5-25 6:45 | -8 | XXXXXXXXXXXXXXXXXXXXX |

Q & A