Title
Campaignr: a participatory sensing software architecture for cellphones

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Authors
Joki, August
Estrin, D
Burke, Jeffrey A

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Campaignr: A Participatory Sensing Software Architecture for Cellphones

August Joki*, Jeff Burke*, Deborah Estrin*
CENS Urban Sensing*, REMAP* - http://campaignr.com

**Introduction:** A flexible software application for tasking cellphones to collect data.

<table>
<thead>
<tr>
<th>Smartphone Sensing Technology</th>
<th>Works for any Symbian S60 3rd Ed. Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image</td>
<td>Bluetooth</td>
</tr>
<tr>
<td>Video</td>
<td>Text (constant, multiple choice, user input)</td>
</tr>
<tr>
<td>Audio</td>
<td>IMEI</td>
</tr>
<tr>
<td>GPS</td>
<td>Battery Level</td>
</tr>
<tr>
<td>Cell ID</td>
<td>Time</td>
</tr>
<tr>
<td>Motion Band</td>
<td></td>
</tr>
</tbody>
</table>

**Campaigns:** Reusable and Configurable Platform for Participatory Sensing for Embedded Mobile Devices.

- PEIR
  - GPS
  - Time
  - Upload

- Diet Sense
  - Image
  - User
  - Time
  - Upload

- Remapping LA
  - Image
  - User
  - GPS
  - Video
  - Text
  - Audio
  - Time
  - Upload

**Exposition:** An application that is robust and flexible enough to be used in many situations.

**Sample XML file**

```xml
<campaign name="Raccoon">
  <automatic>
    <sensor type="image"/>
    <sensor type="timestamp"/>
    <sensor type="text" name="username">
      <text>test</text>
    </sensor>
    <upload type="sensorbase.org">
      <project id="48">
        <table name="Images">
          <field name="image" sensor="image"/>
          <field name="time_stamp" sensor="timestamp"/>
          <field name="user_name" sensor="username"/>
        </table>
      </project>
    </upload>
    <interval>60</interval>
  </automatic>
</campaign>
```

This campaign collects an image every 60 seconds, attaches the time it was captured, and an username of who took the picture. Then uploads the data to SensorBase.

**Current and Future Work:** Improvements and Enabled Areas of Research.

- Power Management
- Trusted Platform
- Robust Disconnection Handling
- Adaptive Sampling
- Plugable Architecture
  - Sensors
  - Uploaders
  - Filters
  - Triggers