Privacy Data Management for IoT

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Today’s Contents :

- IoT Security Overview
- Privacy Data Management
  Privacy Policy Manager (PPM) by KDDI
- “Life Platform” from the mobile industry
IoT Security Overview

Privacy Data Management

Privacy Policy Manager (PPM) by KDDI

“Life Platform” from the mobile industry
IoT Security Overview

Privacy Data Management
Privacy Policy Manager (PPM) by KDDI

“Life Platform” from the mobile industry
How to handle privacy information from connected cars

Use cases

- Stolen car tracing
- Driver Assistance depending on traffic condition & congestion
- Vehicle Diagnosis
- Automobile insurance based on driving history
- Advanced Navigation System
- Car sharing management
- 10 restaurants you must go!
- Music

Driving Data Location Data

Mobile Network

Data center

Navigation

Entertainment

Internet

Parking

Insurance

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Privacy related issues and Requirements

Issues

- Unclear property right of IoT data
- Unpleasant consent due to service use
- Unclear data sharing & distribution

Requirements

- Designate data owners (Especially in case for car sharing)
- Customise personal data sharing
- Visible history of data sharing

KDDI automobile insurance (Example)

<table>
<thead>
<tr>
<th>Special services:</th>
<th>Discount your insurance fee depending on your driving!</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your information to be sent:</td>
<td>Running distance☑、Location information☐、Velocity☑、Accelerated velocity☑、Accelerator operation☐、Stoppage operation☐</td>
</tr>
<tr>
<td>Contacts:</td>
<td><a href="mailto:au@kddi.com">au@kddi.com</a></td>
</tr>
</tbody>
</table>

Users can select information to be shared
1. Personal Data Gateway
   - Control access to your personal data

2. User-assist functions
   - Setting your own privacy preference
   - Visibility of transaction

3. Service-Provider-assist functions
   - Getting consents from users on be half of service providers
PPM @ IoT Business model

Service Provider A
- Collect Data
- Store Data
- PPM

Service Provider B
- Collect Data
- Store Data

Service Provider C
- Collect Data
- Store Data

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PPM : Setting data sharing policy depending on user’s preference
HEMS Trial in Japan

- A project of large-scale HEMS (Home Energy Management System) information platform by the Ministry of Economy, Trade and Industry, Japan (September 2014 to March 2016)

- Enhance effective electricity data use to protect privacy
- Value added services by about 30 value added service providers

14,000 households

PPM is implemented

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Lesson learned from the trial: how to get consent #1

A : Default setting

- You don’t need to check each information item
- Caution pops up if you skip the check box

B : Selectable

- Based on PPM preference table, some boxes are already checked, but you can select some more or less.

More than 50 % prefer B because…
Lesson learned from the trial: how to get consent #2

Because

- Users are conscious about items to be shared
- Users are able to refer the T&Cs and privacy policy easily
- Users are able to understand the purpose of data-sharing clearly

Why do you prefer B?

- I can select items to be shared for the service
- I can refer the T&Cs and privacy policy easily
- I can select the service after selecting items to be shared
- I can clearly understand the purpose of the sharing with the third parties
Define PPM as an external function for authorization

Expand access control of oneM2M with PPM

- PPM has been included in the architecture of oneM2M Release 2

### oneM2M
- Founder: Seven SDOs ARIB, TTC (JP), CCSA (CN), TTA (KR), ATIS, TIA (US), ETSI (EU)
- Objective: M2M service layer standardization
- Participants: telecom carriers & vendors
Under proposal:
Create GSMA framework on personal data management
1. T&Cs format and UI Guidelines
2. Common interface specifications
PPM: Electric receipt Trial (March 2017)

Electric receipt data center

Shops

Electric Receipt DB

【Provider A】
Recipe for your food shopping

【Provider B】
Q&A and get your points!

【Users】
Request Data

Data distribution (based on user’s policy)

Managed by smart phone app

Configure privacy policy through PPM

Configure privacy policy through PPM
- IoT Security Overview

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- “Life Platform” from the mobile industry
MNO’s Vision

Differentiated Network

Weak Customer Relationship

“The Premium Wholesaler”

“Fragmented Commodity”

Commoditized Network

Strong Customer Relationship

“Beyond Connectivity”

“The Life Platform”

MNO’s Goal

Source: GSMA
Thank you