Touch IoT with SAP Leonardo
Prototype Challenge – Public Toilet Maintenance Tracker
In India, public toilet system must be improved in terms of maintenance to ensure hygiene and awareness thus creating a need for automation. Public toilets are called units maintained by individually assigned personnel. A unit is classified into several sub-units (main door, hand wash section, closet, hand drier etc.). Each sub unit has one/more sensors that work together to automate the whole unit.

Here the protagonist is a health inspector in-charge of a set of units in a certain geography. His job is to ensure all the sub units function as expected. To achieve it he puts himself in a regular visitor’s shoes and try to use the public toilet. He uses a smart card (given to regular users) to enter a unit and then a closet.

SAP IoT helps him track sub-standard units, visit them, notify servicemen on the same to fix and move on to the next.
Persona Template

Mallaka
Public Health Inspector

“I want to make sure my ‘per public toilet’ inspection is as fast as it can get since I have a large geography to cover.”

About
• 43, married, 17 years of public service.
• Job description: Make sure public toilet maintenance is practiced promptly
• Very mobile, moving from unit to unit during the day
• I directly report to the commissioner, Ministry of Public Health

Responsibilities
• I am responsible for all the public toilets at railway stations (local, suburban), bus depots, market places, anywhere that attract public crowd
• I am responsible for multiple projects per quarter and each project is tied to a specific area.
• I spend most of my time in the field, but I also do work in my office, on the computer.

Needs
• Basically, the users (public) should not have to touch anything inside the public toilet. Just enter the toilet, get relieved and leave.
• To prioritize the routes public toilets are located at
• Have to know the amount of time spent on a public toilet. Currently I take notes on paper.
• Ability to keep the service and maintenance team be ready or at least we informed about the open items (maintenance works)

Main Goals
• Ensure cleanliness as highest priority with hygiene, amenities, power, water are in the order
• Better management of actual time spent in each public toilet.

Pain Points
• Can’t record time quickly on the go.
• Though the checklist is simple it is at times bit tricky (meticulousness perspective)
• Need to see the weekly view of complete and incomplete entries.
As a Public Health Inspector
I need a way to inspect the working condition of every unit (public toilet) by assuming myself as a regular user so that the public (especially women and physically challenged) enjoy a hassle-free experience.
## UX Journey

<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>MINDSET</th>
<th>FEELING</th>
<th>TOUCH POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wait in the queue</td>
<td>&quot;why does the door not slide opening fast?&quot;&lt;br&gt;&quot;Long queue? I have a train to catch&quot;</td>
<td>😞</td>
<td>Whole unit entrance door (Main door)</td>
</tr>
<tr>
<td>Closet Door open</td>
<td>&quot;why is commode paper not available?&quot;&lt;br&gt;Can I have tissue roll paper instead?&lt;br&gt;Tissue roll must be refilled</td>
<td>😞</td>
<td>Closet (sub unit) door from within the closet</td>
</tr>
<tr>
<td>Rush pipe is used for cleaning</td>
<td>&quot;Will it be long queue for hand wash?&quot;</td>
<td>😞</td>
<td></td>
</tr>
</tbody>
</table>
| Inside the Washroom | "Why is the water so hot? Is it because the water tank is directly exposed to sunlight?"
Drier air could be slightly warmer since it’s taking almost a minute to dry
Hand tissue dispenser is not pushing out the papers properly. I had to pull it myself. | 😞 | | | | | |
| Sensor controlled handwash gel and water dispenser | "Now I can rush to the railway station (or wherever my destination is)" | 😞 | | | | | |
Prototype Summary View

Select a marker in RED for details

Perungudi Units
- Total Units: 6
- Unit(s) that need attention: 2
- Total sub-units: 174
- Sub-Unit(s) that need attention: 10

Click for GPS assisted route

Close

Non functional unit(s)
Select a unit for details

<table>
<thead>
<tr>
<th>Perungudi</th>
<th>Sub units</th>
</tr>
</thead>
<tbody>
<tr>
<td>65478789 (Unit 5)</td>
<td>7</td>
</tr>
<tr>
<td>65478790 (Unit 6)</td>
<td>3</td>
</tr>
</tbody>
</table>

Sub unit(s) – Daily Trend
65478789 (Unit 5)

Select a sub unit for details

- Main Door – Slide open type – slow response
- Hand drier – Blower not working
- Hand wash 2 – Hot water dispensed
- Internal closet door – hydraulic shaft corroded

1 - Jun 2 - Jun 3 - Jun 4 - Jun 5 - Jun 6 - Jun 7 - Jun 8 - Jun
Prototype Detailed View

Unit – 65478789

Click the sensors/icons in RED for details

Main Door sensor
- Not responding / Late response
- Person in charge: John (+91 44 1234 5678)
- Sub-Unit: 9
- Address: 1, Perungudi, Ch-96
  - Click to mail

SUB UNIT 5
- Closet

SUB UNIT 6
- Closet

SUB UNIT 7
- Hand wash 1

SUB UNIT 8
- Hand wash 2

SUB UNIT 9
- Hand Drier