TOUCH IOT WITH SAP LEONARDO
PROTOTYPE CHALLENGE

POWER TRANSFORMERS
Story

Power transformers are medium through which the high voltage is step-down the power voltage from high transmission lines to equipment required voltage.

Transformers are continuous working machines and sometimes gets overloaded with multiple high power machines working due to extreme weather, transformer gets heat-up and many times gets burn which results power failure for the area transformer is installed to fulfill the power requirement.

Transformers need periodic maintenance and checkup for certain parameters to fulfill the power requirement and to avoid failure. Normally this is manual task assigned to line operators.

Sometimes manual negligence or missed periodic checkup causes transformer failure which impacts to user and overhead for company to replace transformer in a short span of time.

Connecting all transformers with IOT, they would be easily managed and observed at any time from any remote location and notifications would be received at regular intervals which avoids power failures and saves lots of energy loss & maintenance cost to rectify failure.
Persona

Sutikshn
Area Supervisor

“My task is to energize the society without any disruption resulting human life easy with running machines”.

About
• I am an engineer and love to watch working electrical appliances.
• Responsible for providing undisrupted power supply, keep moving all the time to check transformers and resolve their issues.
• Work with Line operators on ground and reports to General Manager for providing transformer reports.

Responsibilities
• I am responsible for generating reports of transformers.
• I am responsible to make strategy for transformer maintenance.
• I take decisions when to replace a transformer based on power consumption on specific area.
• I am responsible to take precautionary actions during adverse environmental conditions.

Main Goals
• I strategize transformers by analyze transformer various characteristics and considering future aspects.
• Minimum power failure and maximum productivity from transformers by monitoring transformers on regular basis.
• Coordinate with line operators for periodic transformers characteristic reading and maintenance as and when required to avoid failures.

Needs
• I need to keep track of transformer loads and running conditions.
• I need to take precautionary steps during peak summer seasons to avoid power failures.
• I need to replace/fix issues for transformers within a short time.

Pain Points
• Difficult to observe peak consumption hours to strategize for that short period.
• Sometimes line operator misses record periodic characteristics which sometime results transformer failure.
• During lightning strikes inbuilt safeguard need to monitor closely.
• Measure area power requirement and if required propose additional transformer to fulfill the area need.
Point of View

As an __Area supervisor__

I need a way to __regularly monitor all the transformers installed in my area for performance and working conditions__

so that __I can take necessary precautionary actions and can avoid big power failures__.
### User Experience Journey Template –

<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>MINDSET</th>
<th>FEELING</th>
<th>TOUCH POINTS</th>
</tr>
</thead>
</table>
| Received call for transformer failure. | Ohh! One more failure.  
This one is 3rd in the current week  
Hope transformer needs minor fixture | 😞 | Phone  
Transport  
Transport different equipment for power checkup |
| Starting for site visit. | Look like its due to overheating.  
People must wait a long for power. | 😞 | Phone  
Tab |
| Reached site.  
Analysed and found transformer needs replacement. | Thank God!! Store is having repaired transformer available.  
God! No more surprises this week. | 😞 | Transformer  
Different equipment for transformer checkup  
Tab  
History reports |
| Arranged transformer from store.  
Transformer dispatched to site. | Finally done!!!  
Load should not be higher due to summer season.  
This one is repaired one, must replace again in near future | 😞 | Transport  
Faulty machine  
Camera  
Tab  
Laptop |
| Transformer replaced.  
Analysed for load and other parameters. | Let’s analyze the failed machine at workshop.  
Failed due to low oil!! Wasn’t it tested properly | 😞 |  |
| Sent failed transformer to workshop.  
Transformer was faulted due to low oil level. | Let’s management be aware of this big power failure.  
Need to reduce recording time for transformer parameters. | 😞 |  |
Mockup: Power Transformer