AloT in Smart Office Blueprint

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Motivations and Benefits of Smart Office

- Increase the efficiency of management and decrease the overall cost of managing the office.
- Make it easy for every one to reserve and use the meeting room.
- Diminish the waste of resource caused by forgetting to cancel the reservation when the meeting room is no longer needed.
- Enable the use of temporary working space for circulating employees (interns, traveling employees, etc.).
- Humanization of personal working space.
# Blueprint Proposal: AIoT in Smart Office Blueprint

<table>
<thead>
<tr>
<th>Case Attributes</th>
<th>Description</th>
<th>Informational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>New</td>
<td>Informational</td>
</tr>
<tr>
<td>Blueprint Family - Proposed Name</td>
<td>ELIOT</td>
<td>Informational</td>
</tr>
<tr>
<td>Use Case</td>
<td>Deployment of AIoT in office</td>
<td>Informational</td>
</tr>
<tr>
<td>Blueprint proposed Name</td>
<td>AIoT in Smart Office</td>
<td>Informational</td>
</tr>
<tr>
<td>Initial POD Cost (capex)</td>
<td>500’s USD or less per office room. Depending on the scale</td>
<td>Informational</td>
</tr>
<tr>
<td>Scale &amp; Type</td>
<td>ARM devices or servers X86 devices or servers</td>
<td>Informational</td>
</tr>
<tr>
<td>Applications</td>
<td>Include but not limited to: 1. Intelligent Meeting Room. 2. Sharing working space. 3. Security system without securities.</td>
<td>Informational</td>
</tr>
<tr>
<td>Power Restrictions</td>
<td>N/A</td>
<td>Informational</td>
</tr>
<tr>
<td>Infrastructure orchestration</td>
<td>Containers, Kubernetes, Service Mesh</td>
<td>Informational</td>
</tr>
<tr>
<td>Workload Type</td>
<td>Bare Metal, VM or Container</td>
<td>Informational</td>
</tr>
<tr>
<td>Additional Details</td>
<td>Realized using IoT gateway with edgeX integrated and sensors.</td>
<td>Informational</td>
</tr>
</tbody>
</table>
Architecture Overview

**Device**
- E-ink Display
- Infrared Thermal Sensor
- Motion Detector
- Thermal Image
- Camera
- Peripherals

**Edge**
- Smart Office Application
- Intelligent Meeting Room
- Share Workbench
- Function Compute
- Stream Compute
- AI Inference
- Runtime
- VM
- Container
- Ubuntu
- CentOS
- Thinos

**Services**
- EdgeX

**OS**
- Ubuntu
- CentOS
- Thinos

**Hardware**
- ARM
- x86

**Cloud**
- Services
  - Edge Management
  - Third-party Application
  - AI Training
  - RULES ENGINE

- Framework
  - Service Mesh
  - Kubernetes
  - Container
  - VM
  - Bare Metal
Intelligent Meeting Room Scenario

- **PC/Mobile Terminals**: Making Reservations
- **Data Base**: Update reservation Information
- **IoT Gateway**: Release the Meeting room
- **Peripherals**: Turn on the peripherals When meeting begins
- **E-ink Display**: Update reservation Information
- **Thermal Image**: Checking Occupation Status
- **Infrared Thermal Sensor**: Release the reserved Meeting room if it’s NOT in use

**Actions**:
- Making Reservations
- Return Status of Meeting rooms.
- Update reservation Information
- Release the Meeting room
- Release the reserved Meeting room if it’s NOT in use
- Turn on the peripherals When meeting begins
- Update reservation Information

**Keywords**:
- Intelligent Meeting Room Scenario
- PC/Mobile Terminals
- Data Base
- IoT Gateway
- Peripherals
- E-ink Display
- Thermal Image
- Infrared Thermal Sensor
- Making Reservations
- Return Status of Meeting rooms.
- Update reservation Information
- Release the Meeting room
- Release the reserved Meeting room if it’s NOT in use
- Turn on the peripherals When meeting begins
- Update reservation Information
AIoT in Smart Office and Other Applications

**AIoT in Smart Office**

- **Personal Workspace**
  - Humanize
    - Facial Recognition
    - Take Picture
    - IoT Gateway
    - Camera
    - Peripherals

- **Meeting Room**
  - Personalize
  - Improve accuracy
  - And decrease The cost
  - Recognize the worker

- **Security**
  - Turns on the peripherals
  - According to personal Preference (AC, Lighting, etc.)

**Humanization of personal working space**

- Facial Recognition
- Take Picture
- IoT Gateway
- Camera
- Peripherals
## Appendix: Assessment Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>AoT in Smart Office Blueprint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each initial blueprint is encouraged to take on at least two committers from different companies.</td>
<td>Tencent, Huawei</td>
</tr>
<tr>
<td>Complete all templates outlined in this document</td>
<td>Detailed in this slide</td>
</tr>
<tr>
<td>A lab with exact configuration required by the blueprint to connect with Akraino CI and demonstrate CD. User should demonstrate either an existing lab or the funding and commitment to build the needed configuration.</td>
<td>Test facility will be provided by TEG department in Tencent Beijing</td>
</tr>
<tr>
<td>Blueprint is aligned with the Akraino Edge Stack Charter</td>
<td>All opensource, Edge sue case, Aligned with the Akraino Charter</td>
</tr>
<tr>
<td>Blueprint is code that will be developed and used with Akraino repository should use only open source software components either from upstream or Akraino projects.</td>
<td>Yes, all open source.</td>
</tr>
<tr>
<td>For new blueprints submission, the submitter should review existing blueprints and ensure it is not a duplicate blueprint and explain how the submission differs. The functional fit of an existing blueprint for a use case does not prevent an additional blue print being submitted.</td>
<td>AoT in Smart Office blueprint does not exist in Akraino yet.</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Criteria</th>
<th>AoT in Smart Office Blueprint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of the project is appropriate (no trademark issues etc.); Proposed repository name is all lower-case without any special characters.</td>
<td>AoT in Smart Office Blueprint</td>
</tr>
<tr>
<td>Project contact name, company, and email are defined and documents</td>
<td>Qian Zhao, Tencent <a href="mailto:herbertzhao@tencent.com">herbertzhao@tencent.com</a></td>
</tr>
<tr>
<td>Description of the project goal and its purpose are defined</td>
<td>Make the management of the office more efficient and reduce the cost.</td>
</tr>
<tr>
<td>Scope and project plan are well defined</td>
<td>Targeted for R2 release</td>
</tr>
<tr>
<td>Resource committed and available</td>
<td>There is a team, resources and a lab in place.</td>
</tr>
<tr>
<td>Contributors identified</td>
<td>Tencent, Huawei</td>
</tr>
<tr>
<td>Initial list of committers identified (elected/proposed by initial contributors)</td>
<td>Tencent, Huawei</td>
</tr>
<tr>
<td>Meets Akraino TSC policies</td>
<td>The project will operate in a transparent, open, collaborative and ethical manner all the time.</td>
</tr>
<tr>
<td>Proposal has been socialized with potentially interested or affected projects and/or parties</td>
<td>Have already reached a consensus with sponsors.</td>
</tr>
<tr>
<td>Cross Project Dependencies</td>
<td>Containers, Kubernetes, Service Mesh</td>
</tr>
</tbody>
</table>