**E2E Scenarios Template**

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| Primary Persona: | Customer Service Agent |
| Configuration Settings | Client: Web Client (Browsers: Chrome, Edge) |
| Problem / Opportunity Statement: | To have a system that can manage the IoT device assets. Track and maintain various metadata related to the IoT devices. Manage associated hardware and the services related to that. Also have a place to see the alerts generated by the IoT device so that it becomes easy to take action on the alerts  |
| Pain Points: | * Integration between IoT systems and CRM is difficult.
* No way to directly manage the IoT assets from within a CRM.
* No way to know where an IoT asset is deployed.
* No way to manage the metadata in datapoint level for the IoT devices.
* No way to integrate a sales process and services process via IoT directly into CRM.
* No way to configure custom alert rules directly within CRM
* Alerts generated by IoT systems does not generally flow inside CRM.
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| User Goals: | * A user should be able to assign the IoT device to a particular product sold to a customer.
* A user should also be able to assign the various datapoints to be collected from the product.
* The user should be able to configure a custom alert rule.
* The user should be able to see all the alerts generated by a single device both in real time and historical.
* The user should be able to take action/run a custom workflow based on the generated alerts
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| Business Goals: | * To provide a simplified integrated platform to manage all the IoT assets of the organization from a single control panel.
* To able to integrate the sales and services process via IoT, where the service request can be auto generated from the alerts generated by the IoT system. Thus provide a proactive service to the customer.
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| Triggers: | * There is no direct way to auto generate the alerts about a product failing without the customer directly complaining about it.
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| Narrative Description (e.g., plans, evaluation, actions, objects, context, events): | Through IoT devices and CRM, customer and dealer users can monitor and manage their machines through access to all machine information and custom alerts. Manage machines, including device setup, assignment to customers, and equipment maintenance. Access an omnicient view of machine health and status, and take immediate action to resolve any issues. Set up gateways and devices to provide two-way communication between devices and web browser for remote patching and remote configuration. Instead of physically traveling to the machine site to download data via USB, update virtually. Configure parameter-based and service-based alerts. Detect anomalies in sensor data and send automatic alerts to required recipients. Stream machine display replicas into the web browser or mobile app in realtime. Report on machine monitoring data. Workers can monitor machine from outside driver's seat as they load the machine. Run remote commands to IoT devices to Auto Patch, set custom configuration, or change data collection rates. Onboard service and maintenance schedules to receive alerts and notifications. Store and archive historical data. Perform AI-based predictive analytics on Big Data in realtime with custom dashboards. |
| Detailed functional steps | 1. MazikThings is a WebApp, for which CRM is being used as a backend. We would be using CRM for various metadata storage
2. Device Type (Gateway Device Type): Device type is a general category of physical IoT device. When a new device type is created it should be available in the device type list.
3. Device (MIQ Gateway Devices): Device is an actual IoT device which would be used by different equipments for telematics and send different equipment alerts to CRM. Users can use a device which is present in CRM or can create a new one.
4. Equipment: Equipments are the physical machine, to which IoT devices are attached and they send in the equipment status to CRM.
5. Device PGN: Device PGN are the different kind of PGN values available for a particular device model. When a new Device PGN is created and different devices are assigned to the PGN code.
6. PGN Details: PGN detail are the different datapoints related to a particular PGN and its PGN Device.
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| Detailed Steps to to perform testing | Pre-requisites: 1. Import Microsoft Dynamics Lab solution for UiiForMicrosoftDynamicsCRM2011
2. Import Microsoft Dynamics Lab solution for DynamicsUnifiedServiceDesk

Then follow the rest of the steps as below.There are multiple processes that need to be performed for this app. They are given below1. Device Type Creation – A device type is the general category of a physical IoT device. To create a new device type follow these steps
	1. Go to Menu -> Service -> Gateway Device Type
	2. Click on New (+)
	3. Enter Name, Device Model Name (make), OEM (The device Manufacturor), Type Name (device type, in general it is a gateway)
	4. Click on save to save the device type.
	5. The new device type should appear in the device type list.
2. Device Creation – A device is an actual physical gateway device, that is attached to the equipment for data collection. To create a new device follow these steps
	1. Go to Menu -> Service -> MIQ Gateway Devices
	2. Click on New (+)
	3. Enter Name, Friendly name (which it would be refered), MAC address, select device type and special notes if any.
	4. Click on save to save the device type.
	5. The new MIQ Gateway device should appear on the MIQ Gateway device list.
3. Equipment Creation – An equipment is a actual physical machine. To create a new equipment follow these steps.
4. Go to Menu -> Service -> Equipments
5. Click on New (+)
6. Enter equipment details like, Serial Number, Model Number, Select the manufacturer, type of the equipment, other warranty related information if applicable and select Customer to whom the machine is being assigned to.
7. Click on save to save the equipment
8. This save would trigger a plugin, and insert a record into Equipment Customer where in the equipment assignments and their history would be tracked.
9. The equipment created would now be visible in the Equipment list.
10. Device PGN Import – Device PGN are the different type of PGN available for a particular device.
	1. Go to Menu -> Service -> Device PGN
	2. Click on Click on Import data drop down, select Import Data.
	3. It would open a pop up and would ask to select a file to import data.
	4. Select the attached file called ‘Device PGN 3310.xml’
	5. After selecting a file click Next.
	6. On clicking next it would ask let you reverify the file. After verifying click on Next.
	7. On clicking next it would let you select data map.
	8. Select the default Map, and click Next.
	9. CRM would now let you select an entity to which the excel needs to be imported.
	10. Select Device PGN, click Next.
	11. Now CRM would let you map the fields in your XML file to the fields of CRM.
	12. Besure you map the fields of same datatypes, click Next.
	13. It would let you review the data import, if sure, click Next and it would import the data into the system.
	14. All the imported records of the XML file would be visible in the Device PGN list.
11. PGN Details Import – PGN details is an entity is being used to store the various datapoints of a PGN device.
	1. Go to Menu -> Service -> PGN Detail
	2. Click on Click on Import data drop down, select Import Data.
	3. It would open a pop up and would ask to select a file to import data.
	4. Select the attached file called ‘PGN Detail.xml’
	5. After selecting a file click Next.
	6. On clicking next it would ask let you reverify the file. After verifying click on Next.
	7. On clicking next it would let you select data map.
	8. Select the default Map, and click Next.
	9. CRM would now let you select an entity to which the excel needs to be imported.
	10. Select PGN Detail, click Next.
	11. Now CRM would let you map the fields in your XML file to the fields of CRM.
	12. Besure you map the fields of same datatypes, click Next.
	13. It would let you review the data import, if sure, click Next and it would import the data into the system.
	14. All the imported records of the XML file would be visible in the PGN Details list.
12. Device Profile Creation – A device profile would be used to store various devices and their profiles.
	1. Go to Menu -> Service -> Device Profile
	2. Click on New (+)
	3. Enter Name and special notes if any.
	4. Click on save to save the device type.
	5. The new Device Profile should appear on the Device Profile list.
13. PGN Profile Creation – A Profile profile, would keep a track of the profile and their respective PGN.
	1. Go to Menu -> Service -> PGN Profile
	2. Click on New (+)
	3. Enter Name, select the PGN and its respective device profile.
	4. Click on save to save the device type.
	5. The new PGN Profile should appear on the PGN Profile list.
14. Assign Equipment – Now that we have different equipments, we would be assigning them to the our customer in CRM they would be accounts.
	1. Go to Menu -> Service -> Equipment
	2. Select an Equipment from the Equipment list, double click on the equipment it would let navigate to the equipment details page
	3. In the equipment details we have a customer field, to assign this machine select a customer which from the customer look up field in the details page.
	4. On clicking of save, a background plugin would run behind and insert a record on Equipment Customer based on the selection of cutomer and the equipment.
	5. The Equipment Customer would help you keep a track of equipment assignments.
15. Configure a new custom warning – A custom warning is the general warnings of a physical IoT device. To create a new custom warning follow these steps
	1. Go to Menu -> Service -> Custom Warning
	2. Click on New (+)
	3. Enter Name, select the PGN detail for which the warning is being added, select the type of condition and enter the warning level which will be used to trigger this warning and a custom message if any.
	4. Click on save to save the custom warning.
	5. The new Custom Warning should appear on the Custom Warning list.
16. Warning Flow to CRM – Warnings of devices are triggered from the device and they are being inserted into the CRM.
	1. Go to Menu -> Service -> Warning
	2. Click on New (+)
	3. Enter Name, select the custom warning, select the gateway device, enter the warning value and its entry time
	4. Click on save to save the warning.
	5. The new Warning should appear on the Warning list.
17. Running workflow on Warnings – Workflow “New Warning Created” a workflow is in place to trigger alerts in the form of mails to different stake holders about the warning creation and the email would help you navigate to the warning.
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| Success Metrics: | A new equipment can be created in CRM and can be used for telematics and alerts in MazikThings.When a equipment has been reassigned or has been sold then the customer for that particular machine needs to be changed. Search for the machine to be reassigned, change the customer of that particular machine and on the Equipment customers grid, gets updated with an end date to all the previous assignments and for a new customer the machine is added. |