

SAP Fiori 2016 – Develop Challenge - App to record counter readings and work/travel hours

1. Story

This app shall be used by industries which rent or lease devices with counters for usage based billing.

It shall support service technicians who have to visit customers to record counter readings.

Typically a service technician has to pickup his orders at the back office and return the recorded counter readings together with the corresponding travel and work time back to the office.

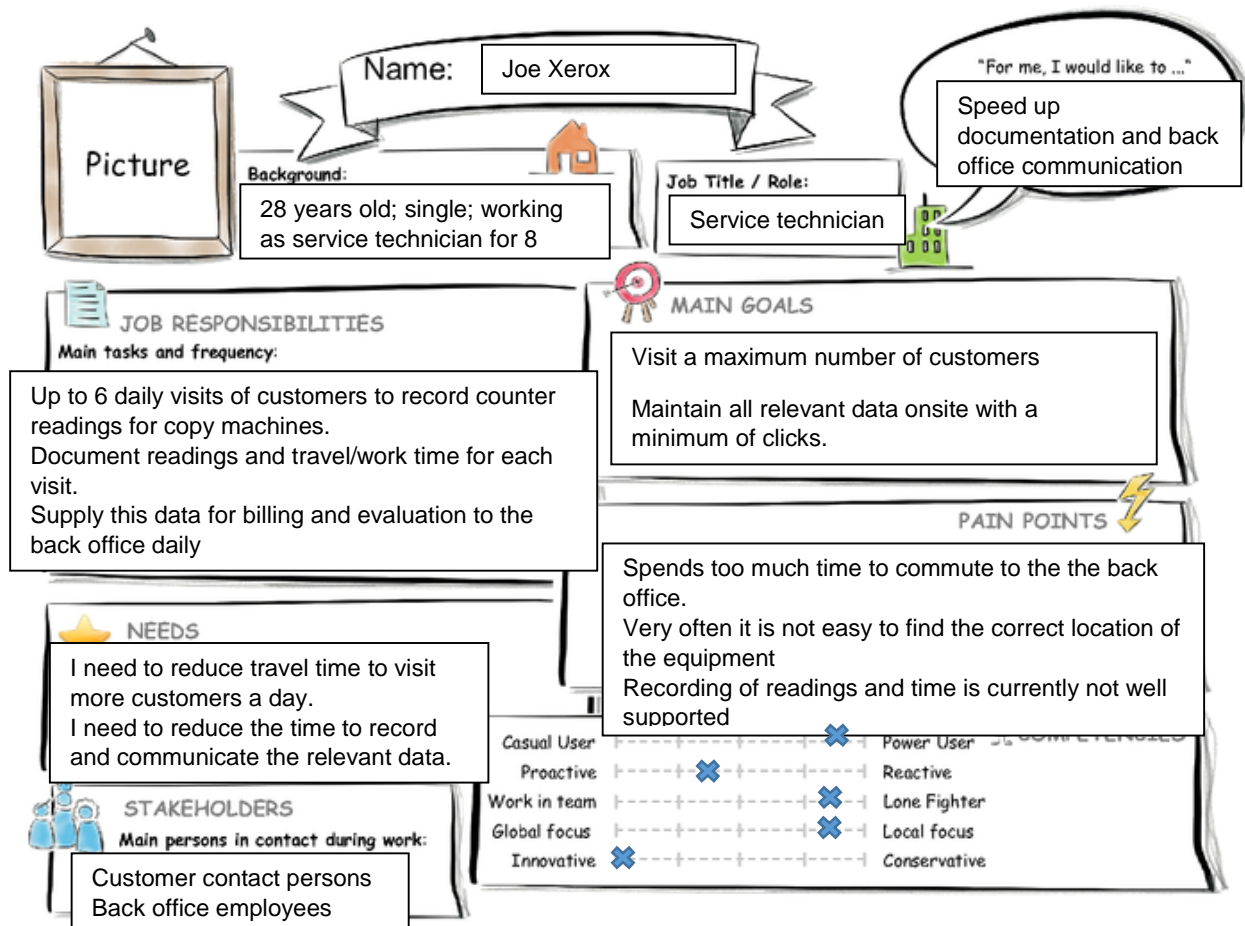
The app shall offer a convenient solution to record and submit readings and time recordings without spending time to commute to the back office. The navigation to customer site is supported by a Google Maps view which shows the customer location based on the address.

The Service Order Data is automatically replicated to the mobile device of the service technician.

The app provides a master detail layout with tiles which easily allows to select the order, identify the device and its location, record counter readings and maintain travel and work time for customer billing and HR travel time recording.

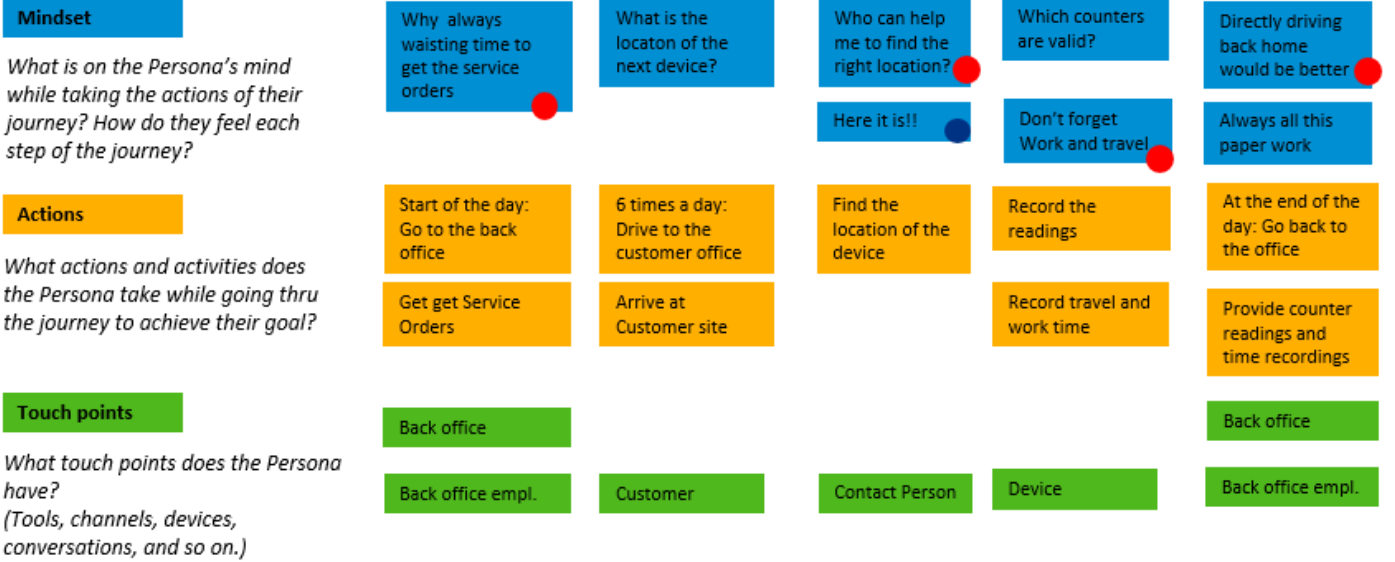
The technician can either just save his recorded data for further maintenance on the mobile device or directly submit the data to the back office.

2. Persona



3. User Experience Journey

Duration of the Journey: 60 min









4. Point of view:

Jo Xerox needs a tool to quickly enter and submit counter readings and time recordings without getting in direct contact with his back office.







5. Mock-Up

Service Orders (8)	Service Order Details
<p>Search <input type="text"/></p> <p>First Customer Street 100 12345 City_1 Xerox 4367 800004522 30.03.2016</p> <p>Current Customer Street 200 12345 City_1 Xerox 3245 800004523 30.03.2016</p> <p>Next Customer Street 300 12345 City_1 Xerox 3452 800004524 30.03.2016</p> <p>Another Customer Street 400 12346 City_2 Xerox 534r 80000455 30.03.2016</p> <p>Last Customer Street 500 12346 City_2 Xerox 8943 800004526 30.03.2016</p>	<p>Current Customer 800004523 Service Order</p> <p>30.03.2016</p> <p><i>(Info, Calendar, Clock, Globe icons)</i></p> <p>Customer ID: 500003333 Customer Name: Current Customer Street: Street 200 City: 12345 City_1 Phone: 0123 45678-0</p> <p>Contact Person: Mr. Smith Phone Extension: 327</p> <p>Location of Device: 3rd Floor, Room 325 Device Type: Xerox 3245 Equipment Number: E483392001</p>
<p>Submit Save Cancel</p>	

5. Mock-Up

Service Orders (8)	Service Order Details															
<p><i>Search</i> <input type="text"/>  </p> <p>First Customer Street 100 12345 City_1 Xerox 4367 800004522 30.03.2016</p> <p>Current Customer Street 200 12345 City_1 Xerox 3245 800004523 30.03.2016</p> <p>Next Customer Street 300 12345 City_1 Xerox 3452 800004524 30.03.2016</p> <p>Another Customer Street 400 12346 City_2 Xerox 534r 80000455 30.03.2016</p> <p>Last Customer Street 500 12346 City_2 Xerox 8943 800004526 30.03.2016</p>	<p>Current Customer 30.03.2016</p> <p>   </p> <div style="border: 1px solid black; padding: 5px; background-color: #f9f9f9;"> <p>Behaviour of the tables (readings and time recordings): Because all relevant data is provided by the replication there is no need to add or remove any table entries.</p> </div> <table border="1"> <thead> <tr> <th>Counter</th> <th>Previous Reading</th> <th>Current Reading</th> </tr> </thead> <tbody> <tr> <td>BW – A4</td> <td>10356</td> <td><input type="text" value="12334"/></td> </tr> <tr> <td>BW – A3</td> <td>2678</td> <td><input type="text" value="2854"/></td> </tr> <tr> <td>Color – A4</td> <td>6876</td> <td><input type="text" value="7341"/></td> </tr> <tr> <td>Color – A3</td> <td>893</td> <td><input type="text" value="1154"/></td> </tr> </tbody> </table> <p style="text-align: right;"> <input checked="" type="checkbox"/> Submit <input type="button" value="Save"/> <input type="button" value="Cancel"/> </p>	Counter	Previous Reading	Current Reading	BW – A4	10356	<input type="text" value="12334"/>	BW – A3	2678	<input type="text" value="2854"/>	Color – A4	6876	<input type="text" value="7341"/>	Color – A3	893	<input type="text" value="1154"/>
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5. Mock-Up

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5. Mock-Up

Service Orders (8)

Search 🔍 ↻

First Customer	800004522	30.03.2016
Street 100 12345 City_1		
Xerox 4367		
Current Customer	800004523	30.03.2016
Street 200 12345 City_1		
Xerox 3245		
Next Customer	800004524	30.03.2016
Street 300 12345 City_1		
Xerox 3452		
Another Customer	80000455	30.03.2016
Street 400 12346 City_2		
Xerox 534r		
Last Customer	800004526	30.03.2016
Street 500 12346 City_2		
Xerox 8943		

Service Order Details

Current Customer

30.03.2016

800004523

Service Order

📄
🕒
📄
🌐

Integration of Google Maps:
This is new compared to my initial design provide for the Design Challenge

✓ Submit
Save
Cancel

6. The real App – Screen 1

Service Orders (4)

Search 🔍 ↻

BMW AG	100000003	Apr 20, 2016
Petuelring 130 80809 München		
Xerox C189-40		
Mercedes-Benz	100000004	Apr 17, 2016
Görlitzer Straße 1 71229 Leonberg		
Xerox C189-40		
SAP Deutschland SE & Co. KG	100000002	Apr 19, 2016
Hasso-Plattner-Ring 7 69190 Walldorf		
Xerox C527-20		
SAP SE	100000001	Apr 18, 2016
Dietmar-Hopp-Allee ... 69190 Walldorf		
Xerox C345-76		

Service Order Details

SAP Deutschland SE & Co. KG

Apr 19, 2016

100000002

Service Order

📄
🕒
📄
🌐

Customer ID: C00000002
Customer Name: SAP Deutschland SE & Co. KG

Street: Hasso-Plattner-Ring 7
City: 69190 Walldorf
Phone: +49 (0)6227 7-47474

Contact Person: Markus Germer
Phone Extension: 37961

Location of Device: WDF21, 03.F.12
Device Type: Xerox C527-20
Equipment Number: 73897219

General information regarding the navigation between the tiles:
The user has to select one Service Order from the master list.
The user then just has to click on the respective icons to switch from one tile to the other.

✓ Submit
Save
Cancel

6. The real App – Screen 2

Service Orders (4) Service Order Details

Search

BMW AG
 Petuelring 130 1000000003
 80809 München Apr 20, 2016
 Xerox C189-40

Mercedes-Benz
 Görlitzer straÙe 1 1000000004
 71229 Leonberg Apr 17, 2016
 Xerox C189-40

SAP Deutschland SE & Co. KG
 Hasso-Plattner-Ring 7 1000000002
 69190 Walldorf Apr 19, 2016
 Xerox C527-20

SAP SE
 Dietmar-Hopp-Allee ... 1000000001
 69190 Walldorf Apr 18, 2016
 Xerox C345-76

SAP Deutschland SE & Co. KG 1000000002
 Service Order

Apr 19, 2016

General Info Readings Time Rec Google Maps

Counter	Previous Reading	Current Reading
BW-A4	980	1500
BW-A3	2679	6794
CO-A4	435	499
CO-A3	3156	9922

Submit Save Cancel

6. The real App – Screen 3

Service Orders (4) Service Order Details

Search

BMW AG
 Petuelring 130 1000000003
 80809 München Apr 20, 2016
 Xerox C189-40

Mercedes-Benz
 Görlitzer straÙe 1 1000000004
 71229 Leonberg Apr 17, 2016
 Xerox C189-40

SAP Deutschland SE & Co. KG
 Hasso-Plattner-Ring 7 1000000002
 69190 Walldorf Apr 19, 2016
 Xerox C527-20

SAP SE
 Dietmar-Hopp-Allee ... 1000000001
 69190 Walldorf Apr 18, 2016
 Xerox C345-76

SAP Deutschland SE & Co. KG 1000000002
 Service Order

Apr 19, 2016

General Info Readings Time Rec Google Maps

Input Help:
 The user can click on the F4-Help icons for date or time to get the respective input help.

Type	Date from	Time from	Date to	Time to
Travel	Apr 19, 2016	12:00:00 AM	Apr 20, 2016	12:00:00 AM
Work	Apr 20, 2016	12:00:00 AM		

April 2016

14	27	28	29	30	31	1	2
15	3	4	5	6	7	8	9
16	10	11	12	13	14	15	16
17	17	18	19	20	21	22	23
18	24	25	26	27	28	29	30

Hours

10
11
12
00
13
14
15

OK Cancel

Submit Save Cancel

6. The real App – Screen 4

Default User

Service Orders (4) Service Order Details

Search

SAP Deutschland SE & Co. KG 1000000002
Service Order

Apr 19, 2016

Display of customer site:
Google Maps is dynamically called by URL. Customer address data are automatically provided.

General Info Readings Time Rec Google Maps

BMW AG
Petuelring 130 1000000003
80809 München Apr 20, 2016
Xerox C189-40

Mercedes-Benz
Görlitzer straÙe 1 1000000004
71229 Leonberg Apr 17, 2016
Xerox C189-40

SAP Deutschland SE & Co. KG
Hasso-Plattner-Ring 7 1000000002
69190 Walldorf Apr 19, 2016
Xerox C527-20

SAP SE
Dietmar-Hopp-Allee ... 1000000001
69190 Walldorf Apr 18, 2016
Xerox C345-76

Map data ©2016 GeoBasis-DE/BKG (©2009), Google

Submit Save Cancel

How-To call Google Maps – Coding:

Detail.view.xml:

```
<IconTabFilter id="iconTabBarFilter4" icon="sap-icon://world" tooltip="{i18n>detailIconTabBarGoogleMaps}"
iconDensityAware="false" text="Google Maps">
```

```
<content>
```

```
<Image class="sapUiSmallMargin" width="700px" height="400px"
```

```
src="{ parts: [ 'CustomerSt', 'CustomerZip', 'CustomerCity', ' ' ], formatter: '.formatMapUrl' }"/>
```

```
</content>
```

```
</IconTabFilter>
```

Detail.controller.js:

```
formatMapUrl: function(sStreet, sZip, sCity, sCountry) {return
    "https://maps.googleapis.com/maps/api/staticmap?zoom=13&size=500x300&markers=" +
    jQuery.sap.encodeURL(sStreet + ", " + sZip + " " + sCity + ", " + sCountry);
},
```

Detail.view.xml:

```
<mvc:View xmlns="sap.m" xmlns:mvc="sap.ui.core.mvc" xmlns:semantic="sap.m.semantic" xmlns:form="sap.ui.layout.form"
  xmlns:footerbar="sap.ushell.ui.footerbar" controllerName="ServiceOrder.controller.Detail">
  <semantic:DetailPage id="page" navButtonPress="onNavBack" showNavButton="{device}/system/phone" title="{i18n>detailTitle}"
    busy="{detailView}/busy" busyIndicatorDelay="{detailView}/delay">
    <semantic:content>
      <!-- Header Infos -->
      <ObjectHeader id="objectHeader" responsive="true" title="{CustomerNa}" number="{ServiceOrderID}"
        numberUnit="{/#ServiceOrder/ServiceOrderID/@sap:label}">
        <statuses>
          <!-- ObjectStatus id="DueDate" text="{path: 'DueDate', formatter: '.formatDate' }">-->
          <ObjectStatus id="DueDate" text="{path: 'DueDate', type:'sap.ui.model.type.Date', formatOptions: { style:
'medium', strictParsing: true}}"></ObjectStatus>
        </statuses>
      </ObjectHeader>
      <!-- Icon Tab Bar -->
      <IconTabBar id="iconTabBar" class="sapUiResponsiveContentPadding">
        <items>
          <!-- Info Page -->
          <IconTabFilter id="iconTabBarFilter1" icon="sap-icon://hint"
tooltip="{i18n>detailIconTabBarGeneralInformation}" text="General Info">
            <content>
              <!-- Service Order Details title="{i18n>xtit.formTitle}" -->
              <form:SimpleForm id="ServiceOrderDetailsForm" layout="ResponsiveGridLayout"
minWidth="1024" maxContainerCols="2"
class="sapUiForceWidthAuto sapUiResponsiveMargin" labelSpanL="3"
labelSpanM="3" emptySpanL="5" emptySpanM="5" columnsL="1" columnsM="1">
                <Label id="customerIDFormLabel"
text="{/#ServiceOrder/CustomerID/@sap:label}"/>
                <Text id="customerIDForm" text="{CustomerID}"/>
                <Label id="customerNaFormLabel"
text="{/#ServiceOrder/CustomerNa/@sap:label}"/>
                <Text id="customerNaForm" text="{CustomerNa}"/>
                <Label id="emptyLine1Label" text=""/>
                <Text id="emptyLine1" text=" "/>
                <Label id="customerStFormLabel"
text="{/#ServiceOrder/CustomerSt/@sap:label}"/>
                <Text id="customerStForm" text="{CustomerSt}"/>
                <Label id="customerCityFormLabel"
text="{/#ServiceOrder/CustomerCity/@sap:label}"/>
                <Text id="customerCityForm" text="{CustomerZip} {CustomerCity}"/>
                <Label id="customerTelFormLabel"
text="{/#ServiceOrder/CustomerTel/@sap:label}"/>
                <Text id="customerTelForm" text="{CustomerTel}"/>
                <Label id="emptyLine2Label" text=""/>
                <Text id="emptyLine2" text=" "/>
                <Label id="customerContFormLabel"
text="{/#ServiceOrder/CustomerCont/@sap:label}"/>
                <Text id="customerContForm" text="{CustomerCont}"/>
                <Label id="customerContTelFormLabel"
text="{/#ServiceOrder/CustomerContTel/@sap:label}"/>
                <Text id="customerContTelForm" text="{CustomerContTel}"/>
                <Label id="emptyLine3Label" text=""/>
                <Text id="emptyLine3" text=" "/>
                <Label id="deviceLocationFormLabel"
text="{/#ServiceOrder/DeviceLocation/@sap:label}"/>
                <Text id="deviceLocationForm" text="{DeviceLocation}"/>
                <Label id="deviceTypeFormLabel"
text="{/#ServiceOrder/DeviceType/@sap:label}"/>
                <Text id="deviceTypeForm" text="{DeviceType}"/>
                <Label id="deviceEquiNoFormLabel"
text="{/#ServiceOrder/DeviceEquiNo/@sap:label}"/>
                <Text id="deviceEquiNoForm" text="{DeviceEquiNo}"/>
            </form:SimpleForm>
            </content>
          </IconTabFilter>
          <!-- Readings -->
          <IconTabFilter id="iconTabBarFilter2" icon="sap-icon://activity-items"
tooltip="{i18n>detailIconTabBarCounterReadings}"
iconDensityAware="false" text="Readings">
            <content>
              <Table id="ReadingCountersTable" width="auto" updateFinished="onListUpdateFinished"
noDataText="{i18n>detailLineItemTableNoDataText}"
class="sapUiResponsiveMargin"
busyIndicatorDelay="{detailView}/lineItemTableDelay">
                items="{path: 'ServiceReadings', parameters: {select:
'ServiceOrderID,ServiceReadingCounter,ServiceReadingPrevious,ServiceReadingCurrent'}}">
                <!-- Line Items Header -->
                <columns>
                  <Column width="20%">
                    <Text
text="{/#ServiceReading/ServiceReadingCounter/@sap:label}"/>
                  </Column>
                  <Column width="20%">
                    <Text
text="{/#ServiceReading/ServiceReadingPrevious/@sap:label}"/>
                  </Column>
                </columns>
            </content>
          </IconTabFilter>
        </items>
      </IconTabBar>
    </semantic:content>
  </semantic:DetailPage>
</mvc:View>
```

```

                                <Column width="20%">
                                    <Text
text="{/#ServiceReading/ServiceReadingCurrent/@sap:label}"/>
                                </Column>
                                </columns>
                                <!-- Line Items Content -->
                                <items>
                                    <ColumnListItem>
                                        <cells>
                                            <ObjectIdentifier
title="{ServiceReadingCounter}"/>
                                            <ObjectIdentifier
title="{ServiceReadingPrevious}"/>
                                            <Input id="readingInput" value="{path:
'ServiceReadingCurrent', type: 'sap.ui.model.type.Integer'}" type="Number" maxLength="6"
                                            textAlign="Begin"
valueStateText="{i18n>ymsg.errorInvalidNumber}" change="onQuantityChanged"/>
                                            <ObjectNumber/>
                                        </cells>
                                    </ColumnListItem>
                                </items>
                                </Table>
                                </content>
                                </IconTabFilter>
                                <!-- Time Recordings -->
                                <IconTabFilter id="iconTabBarFilter3" icon="sap-icon://timesheet"
tooltip="{i18n>detailIconTabBarTimeRecordings}" iconDensityAware="false"
                                text="Time Rec">
                                    <content>
                                        <Table id="TimeRecordingsTable" noDataText="{i18n>detailLineItemTableNoDataText}"
'ServiceOrderID,ServiceTRecordingType, ServiceTRecordingFromD,ServiceTRecordingFromT,ServiceTRecordingToD,ServiceTRecordingToT'})">
                                            <!-- Line Items Header -->
                                            <columns>
                                                <Column width="20%">
                                                    <Text
text="{/#ServiceTRecording/ServiceTRecordingType/@sap:label}"/>
                                                </Column>
                                                <Column width="20%">
                                                    <Text
text="{/#ServiceTRecording/ServiceTRecordingFromD/@sap:label}"/>
                                                </Column>
                                                <Column width="20%">
                                                    <Text
text="{/#ServiceTRecording/ServiceTRecordingFromT/@sap:label}"/>
                                                </Column>
                                                <Column width="20%">
                                                    <Text
text="{/#ServiceTRecording/ServiceTRecordingToD/@sap:label}"/>
                                                </Column>
                                                <Column width="20%">
                                                    <Text
text="{/#ServiceTRecording/ServiceTRecordingToT/@sap:label}"/>
                                                </Column>
                                            </columns>
                                            <!-- Line Items Content -->
                                            <items>
                                                <ColumnListItem>
                                                    <cells>
                                                        <ObjectIdentifier
title="{ServiceTRecordingType}"/>
                                                        <DatePicker id="TRecordingFromDInput"
'ServiceTRecordingFromD', type:'sap.ui.model.type.Date', formatOptions: { style: 'medium', strictParsing: true}}"/>
                                                        value="{path: 'ServiceTRecordingFromD', type: 'sap.ui.model.type.Time'}" valueFormat="HH:mm:ss"
change="handleChange" placeholder="Enter start time"/>
                                                        <DatePicker id="TRecordingToDInput"
type:'sap.ui.model.type.Date', formatOptions: { style: 'medium', strictParsing: true}}"/>
                                                        value="{path: 'ServiceTRecordingToD', type: 'sap.ui.model.type.Time'}" valueFormat="HH:mm:ss"
change="handleChange" placeholder="Enter start time"/>
                                                    </cells>
                                                </ColumnListItem>
                                            </items>
                                        </Table>
                                    </content>
                                </IconTabFilter>
                                <!-- Google Maps -->
                                <IconTabFilter id="iconTabBarFilter4" icon="sap-icon://world" tooltip="{i18n>detailIconTabBarGoogleMaps}"
iconDensityAware="false" text="Google Maps">
                                    <content>
                                        <Image class="sapUiSmallMargin" width="700px" height="400px"
'.formatMapUrl' }"/>
                                        src="{ parts: [ 'CustomerSt', 'CustomerZip', 'CustomerCity', '' ], formatter:

```



```
                </content>
            </IconTabFilter>
            <!-- -->
        </items>
        <!-- -->
    </IconTabBar>
    <!-- -->
</semantic:content>
<semantic:customFooterContent>
    <Button text="Submit" width="100px" id="Submit" activeIcon="sap-icon://accept" icon="sap-icon://accept"
press="onSubmitPressed"/>
    <Button text="Save" width="100px" id="Save" type="Accept" press="onSavePressed"/>
    <Button text="Cancel" width="100px" id="Cancel" type="Reject" press="onCancelPressed"/>
</semantic:customFooterContent>
</semantic:DetailPage>

</mvc:View>
```