PUBLIC

How to Configure Change Analytics for Master Data in Change Requests

Applicable Releases:

SAP Master Data Governance (MDG) on SAP S/4HANA 2021 onwards. For more information, visit the SAP Master Data Management homepage (http://scn.sap.com/community/mdm/master-data-governance).

This document is designed for SAP MDG consultants, partners, and key users of SAP MDG solutions.

Version 1.1

September 2024

Document History

Document Version	Description
1.0	First official release of this guide
1.1	Format updates

Table of contents

1. Summary

In SAP MDG on SAP S/4HANA 2021, a new analytics function is available: change analytics for master data attributes. With it, you can provide analytics capability to your users, answering questions like:

- How many open change requests are changing bank accounts for business partners?
- How often were the critical attributes, for example, Product Description, changed in the past?
- How many change requests are in approval for payment data changes for which company codes on customer master?

This document guides you through configuring and using this function by using MDG material as an example. This guide contains two parts:

- Backend: Configure and Generate CDS views
- User Interface: Configure Smart Business Apps or SAP Analytics Cloud Story

2. Implementation

This chapter explains all necessary technical steps to implement the solution.

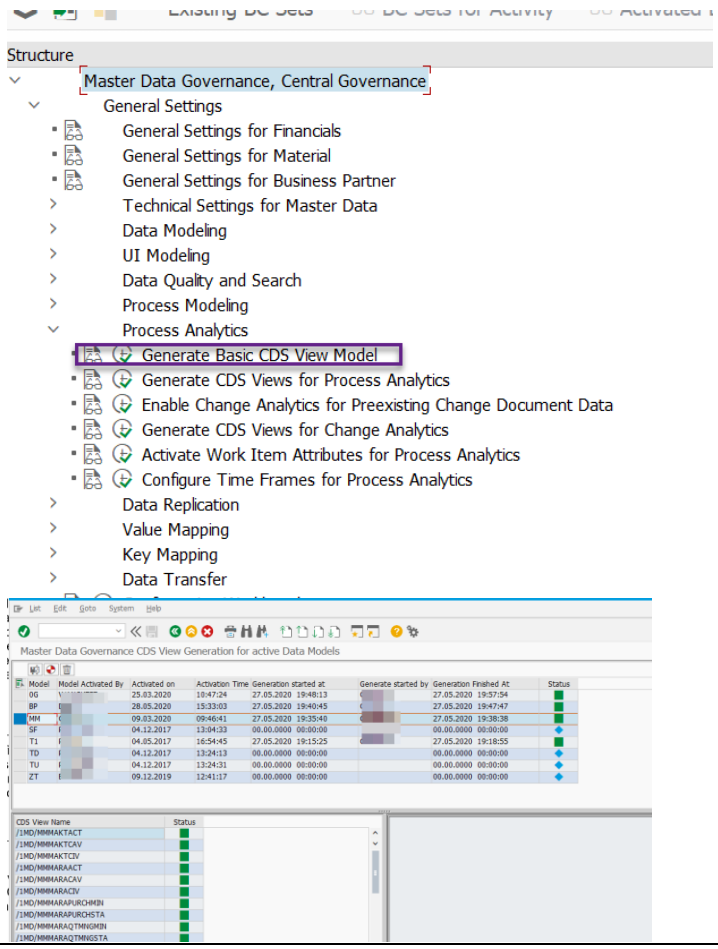
2.1. Backend: Configure and Generate CDS Views

We use Core Data Services (CDS) views as the main technology to provide data sources for the UI layer. We need to configure and generate the CDS views first, which will read the data from your MDG database and the active area database tables.

Before we create analytics CDS views, we need to generate basic CDS views for the data model.

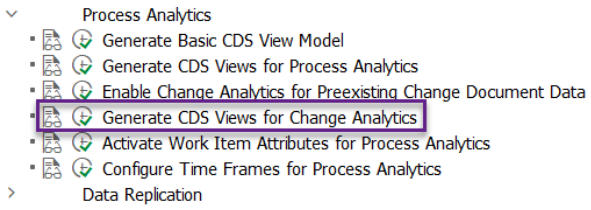
2.1.1. Generate Basic CDS Views

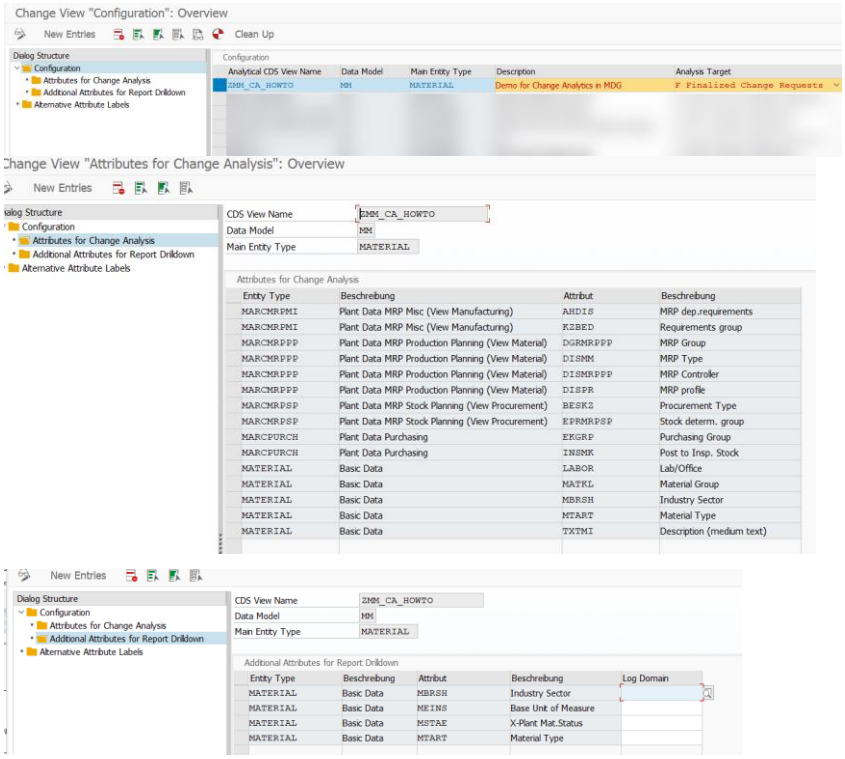
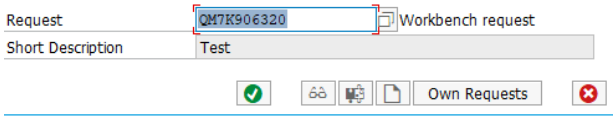
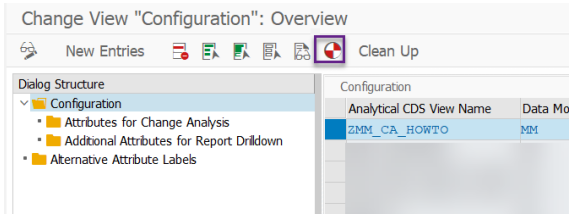
Go to transaction MDGIMG, *Process Analytics → Generate Basic CDS Views for Process Analytics*.

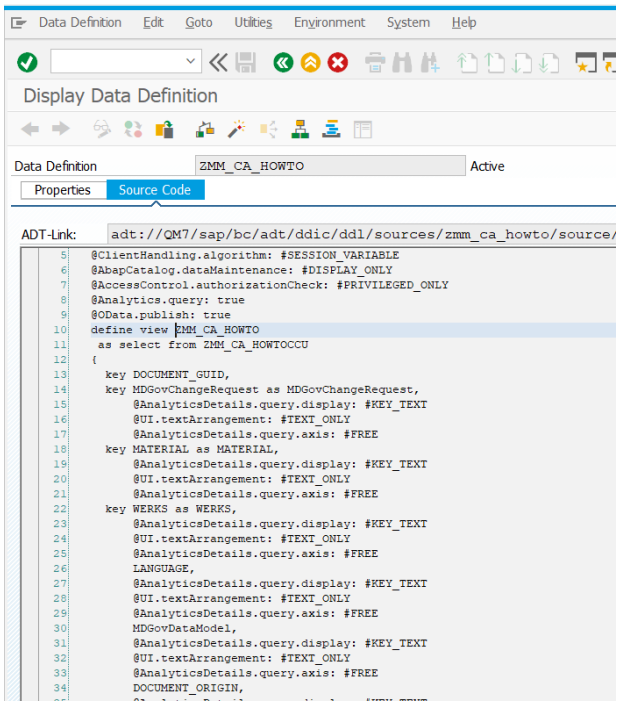
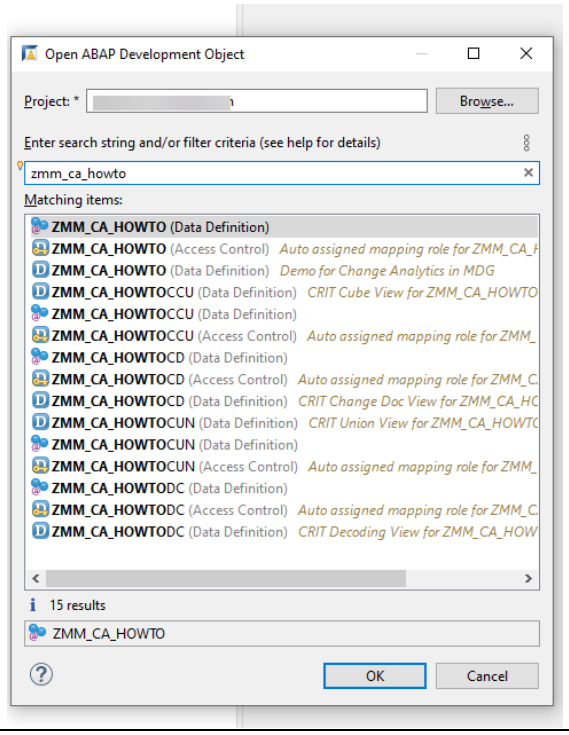
Select the data model which you need to provide the analytics and choose the **Generate** button. This may take several minutes. You can see the details by choosing the **Details** button. *Regardless of whether you're using a Development, Test or Production system, the MDG data model must be activated individually. Therefore, your configured CDS view also needs to be individually generated in each system.* !!! If you have added new attributes to the data model after basic CDS views generation, you need to regenerate the Basic CDS view again !!!	

2.1.2. Generate Analytics CDS Views

Go to transaction MDGIMG, *Process Analytics → Generate CDS Views for Change Analytics*

Choose a name, a data model, and main entity type for your data analytics query. Choose Analysis Target Enter a local package to store the generated CDS views. In case attributes you have selected are relevent for read access logging, you can define a read access logging domain. Choose Attribute for Change Analysis. Select the entity type and attributes using the value help	

which you want to analyze the changes. You can choose from any type 1 or type 4 entities belonging to the main entity type. In this example, we choose all plant MRP data and several important attributes in product basic data. Additionally, you can select more attributes to drill down the report (For example, material type). Choose Additional Attributes for Report Drilldown, which can be used to drill down the master data to further analyze the change request. You can choose from any type 1 or type 4 entities belonging to the main entity type.	
Save your configuration first, then select the transport request which you need to transport the Customizing into the downstream system (s).	
Select your created CDS view configuration and generate. *Regardless of whether you're using a Development, Test or Production system, the MDG data model must be activated individually. Therefore, your configured CDS view also needs to be individually generated in each system.*	

Once you get the success message, you should be able to check the CDS view in ABAP Development Tool or SE11. Here you can also see the Access Control DCL is generated, which will allow only the authorized user to access the data used in an analytics report.	 

```
@EndUserText.label: 'Auto assigned mapping role for ZMM_CA_HOWTOCCU'
@MappingRole: true
define role ZMM_CA_HOWTOCCU {
  grant select on ZMM_CA_HOWTOCCU
  where
     ( (  ) = aspect pfcg_auth( M_MATE_MAN, ACTVT = '03' ))
  and
     ( ( _MARA2T134_BEGRU.BEGRU ) ?= aspect pfcg_auth( M_MATE_MAR, BEGRU, ACTVT = '03' ))
  and
     ( ( BEGRU ) ?= aspect pfcg_auth( M_MATE_MAT, BEGRU, ACTVT = '03' ))
  and
     ( ( _MARA2T023_BEGRU.BEGRU ) ?= aspect pfcg_auth( M_MATE_WGR, BEGRU, ACTVT = '03' ))
  and
     ( (  ) = aspect pfcg_auth( USMD_PRANA, USMD_MODEL = 'MM' ))
  and
     ( ( MDGovChgReqType ) ?= aspect pfcg_auth( USMD_CREQ, CREQ_TYPE, ACTVT = '03' ));
}
```

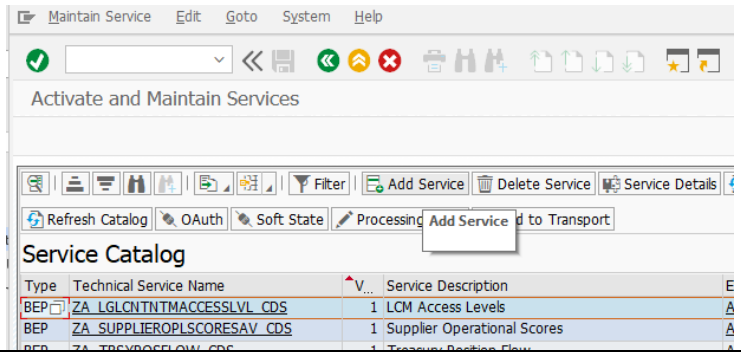
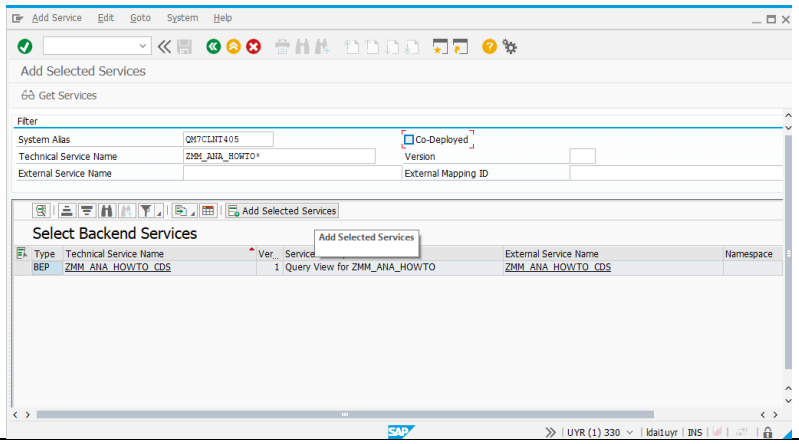
2.2. Frontend Option 1: Configure Embedded Analytics SAP Fiori Apps in SAP S/4HANA

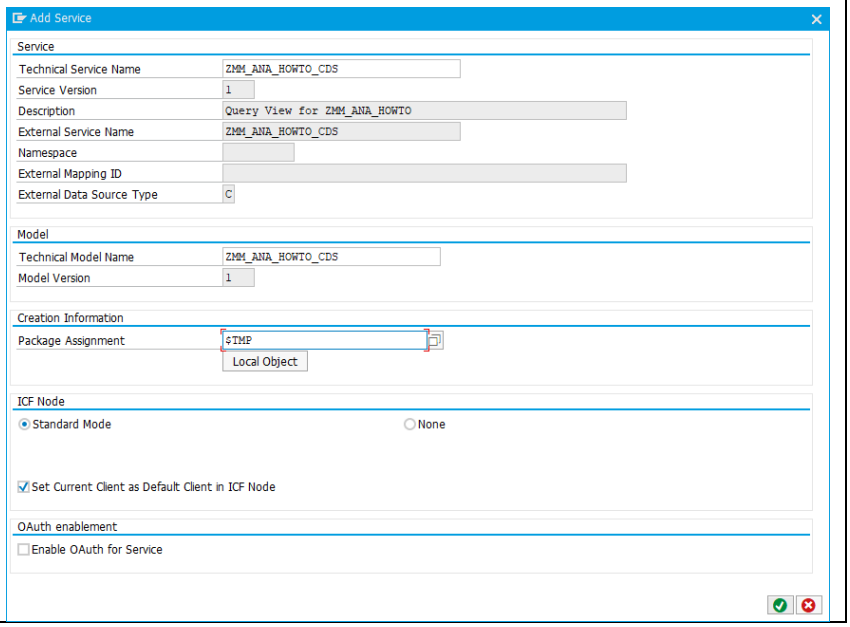
In your SAP S/4HANA system, you can create an analytics app for your end user with the analytics tool ***Manage KPIs and Reports*** (you need to assign the business ***role*** SAP_BR_ANALYTICS_SPECIALIST to use this).

If you have separated the Fiori Gateway system, you need to configure the following steps in your Fiori Gateway system.

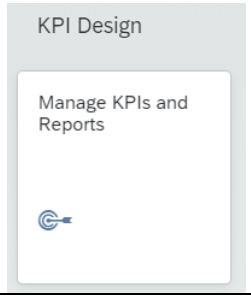
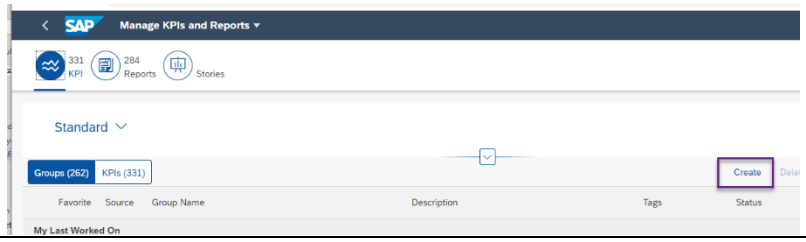
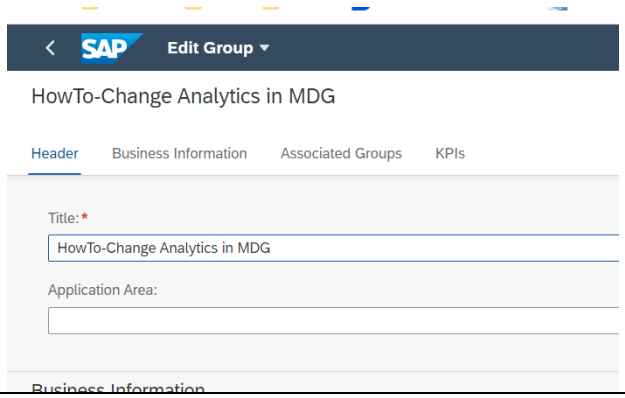
2.2.1. Preparation: Activate the CDS View oData Service

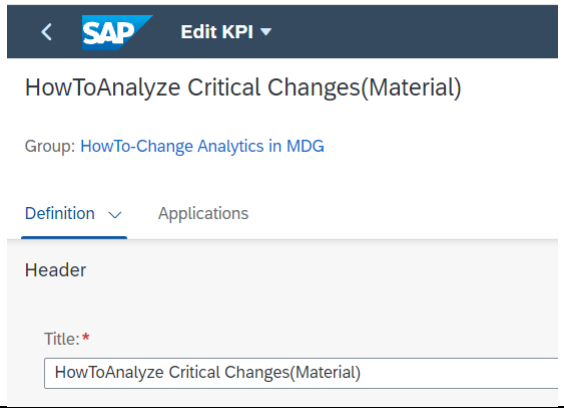
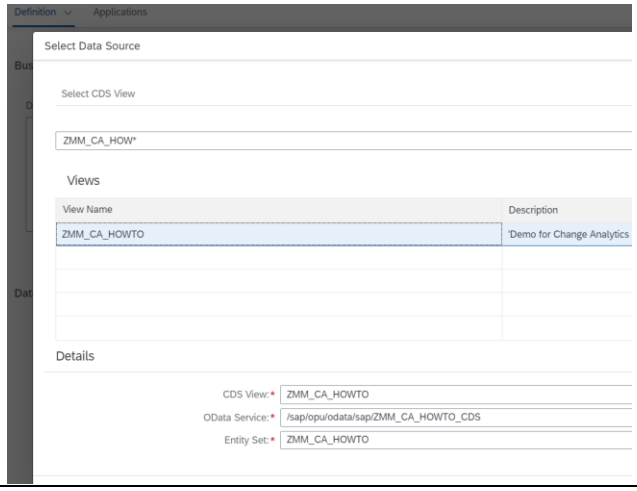
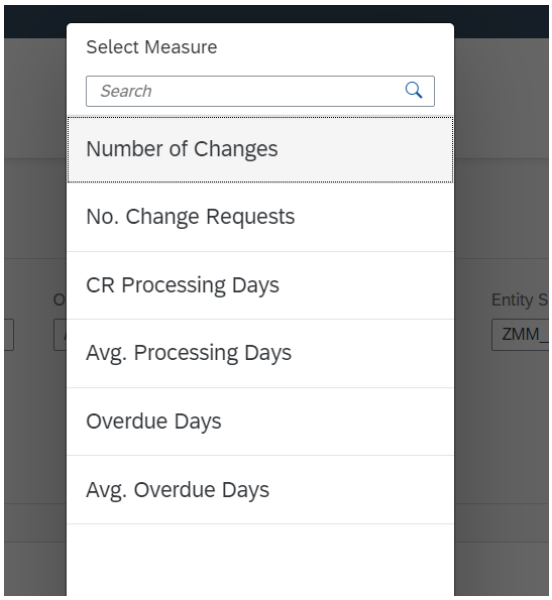
For Smart Business configuration, you first need to activate the oData service in the transaction /n/IWFND/MAINT_SERVICE.

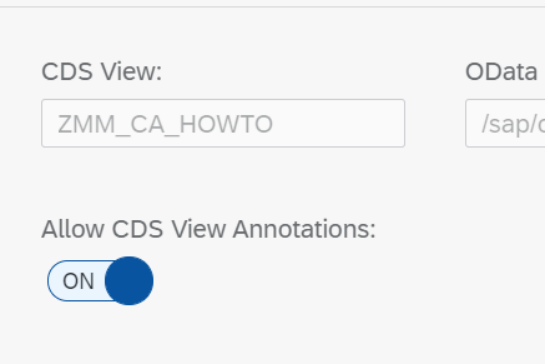
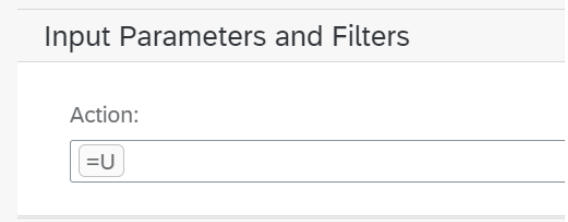
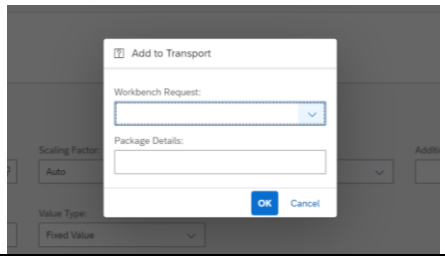
Select Add Service.	
Enter your system alias and your CDS view name (with the suffix *) to search your CDS view oData service.	

Add the service into your desired package.	

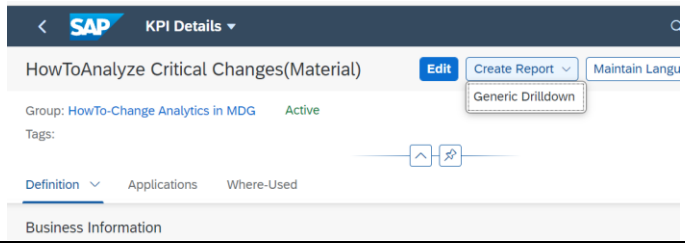
2.2.2. Step 1: Create KPI

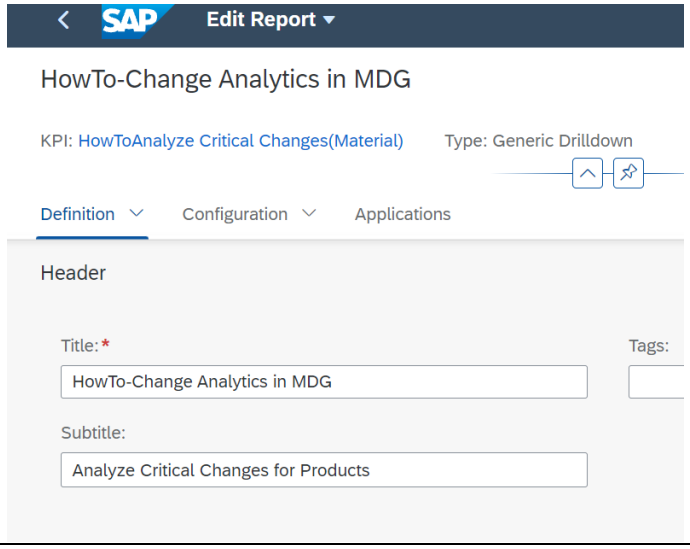
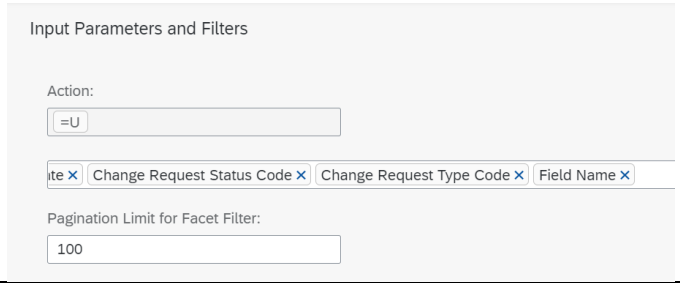
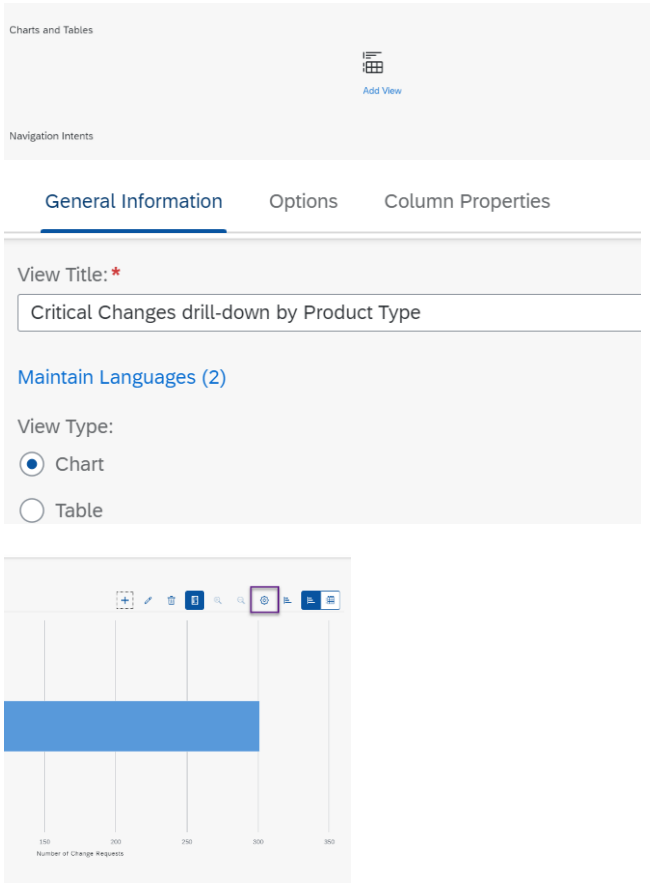
To get the KPI Design app in your Fiori launchpad, ensure you have assigned the PFCG role SAP_BR_ANALYTICS_SPEC in your SAP Fiori system.	
Create a new group or use an existing group if you have one already. Note: you can put different KPIs into one group.	
Enter a name, then choose Save and Activate.	

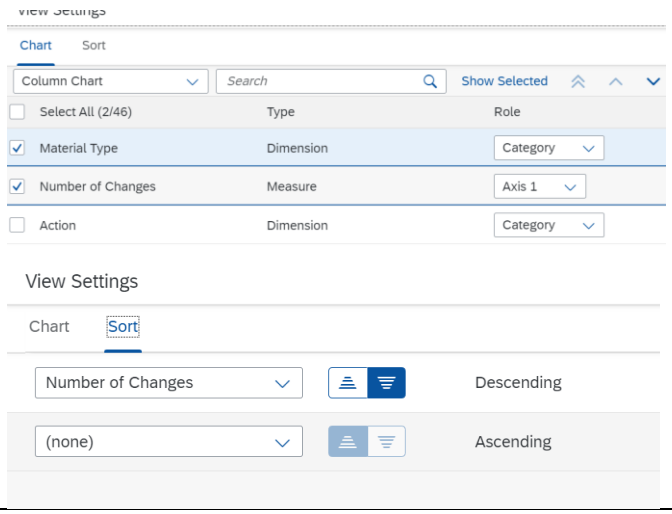
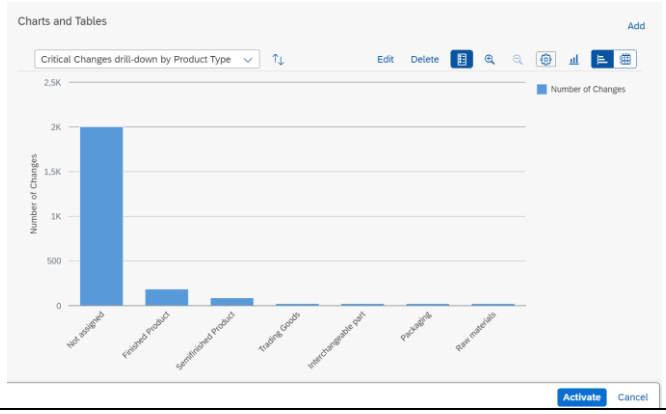
Add a new KPI. Provide a name, for example *Analyze Open CR by Mat. Attr.*	 
Define Data Source: Search for your CDS view and select it. The three mandatory fields are filled automatically.	
Select the default Measure: Number of Changes. The following three measures are provided: • Number of Changes • Number of Change Requests • Total Change Request Processing Days • Change Request Average Processing Days • Change Request Total Overdue Days • Change Request Average Overdue Days You need to select one for now, but you can use all three measures in your report (see Step 2).	

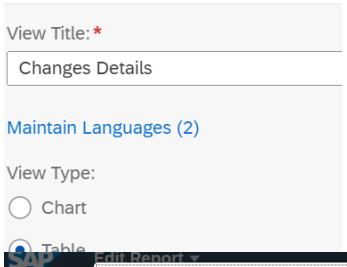
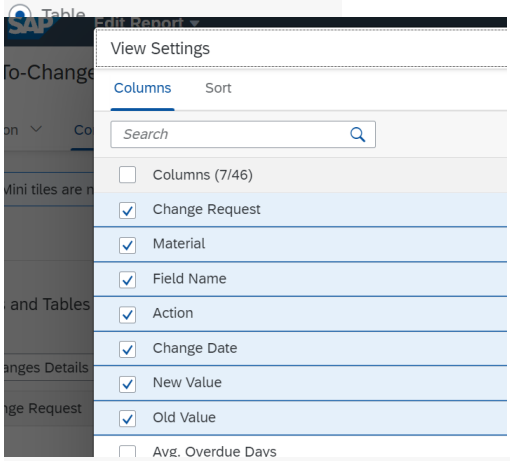
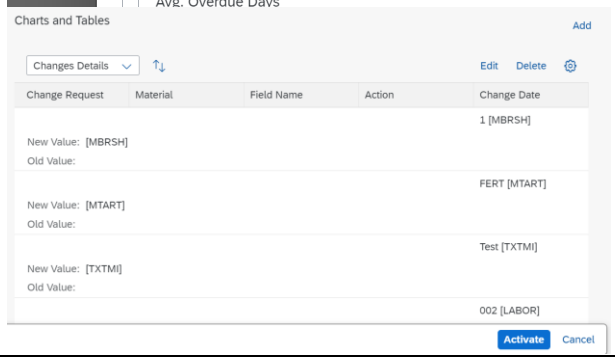
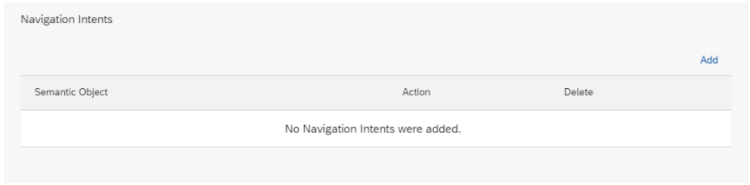
Set the Allow CDS View Annotation flag to on.	
You can define the default filter for the app, so that only certain data will be displayed. For example, if your report is used for analyzing changes only, the Action filter can be used with default value 'U(Update)'. Note: it is not only possible to analyze changes, but as well to new or deleted data entries	
Save the KPI. Select the transport and package which you want to use to transport to downstream systems.	

2.2.3. Step 2: Create Report

On the KPI, Select Create Report -> Generic Drilldown.	

Enter a Title.	
Select Configuration. Select additional default filters for the app, such as Fieldname, Change Request Status and Change Request Type.	
Add a view: For example, Change Requests for Product drill-down by Product Type	

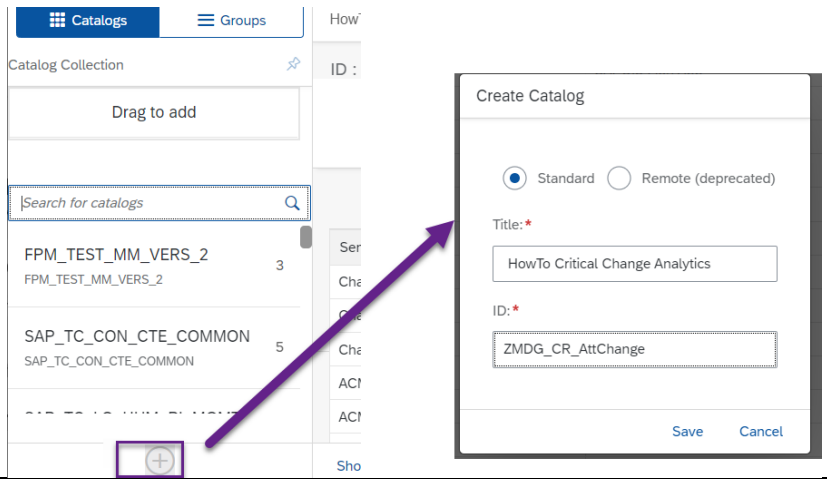
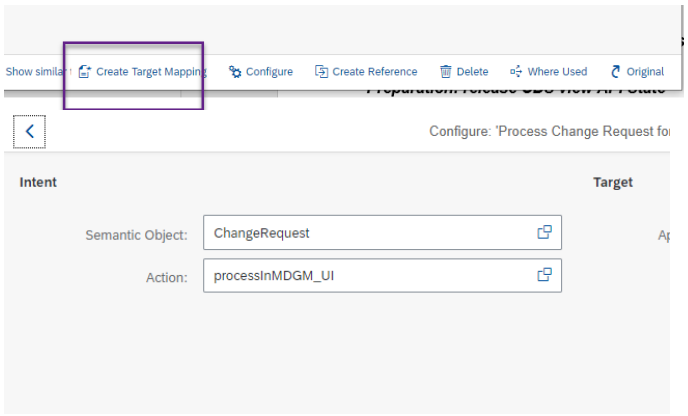
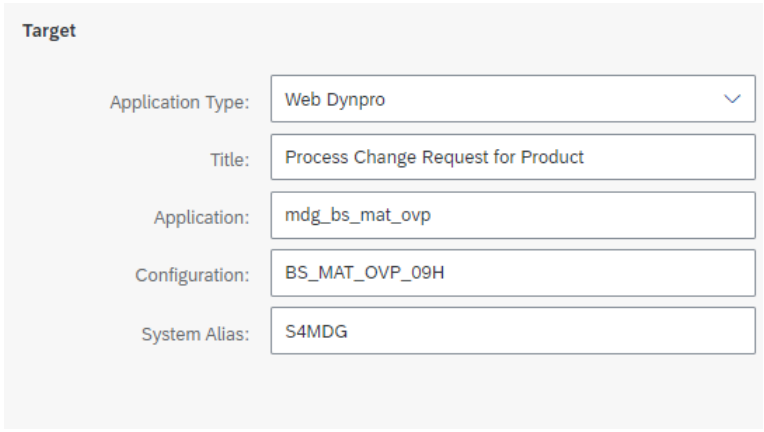
Configure the chart, for example, by selecting attributes and sorting.	
Activate the report.	

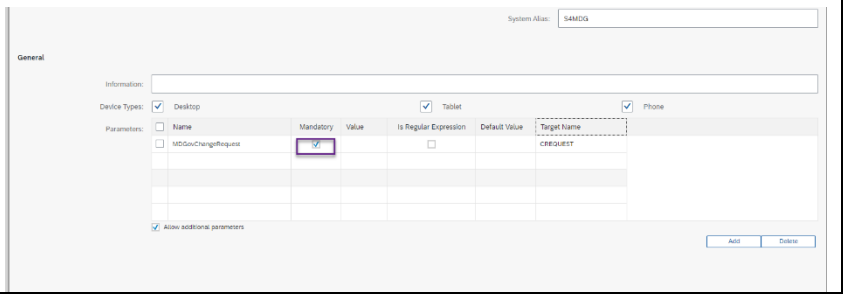
Add another view to list the selected change request, in this case View Type: Table. Configure the fields you want to display in the list	  
Add Navigation: Sematic Object: ChangeRequest Action: <your custom action> Note: the navigation needs to be created as target mapping in your catalog (see Step 3).	 

2.2.4. Step 3: Create Fiori Catalog

To be able to provide your apps to your end user, a catalog needs to be created if you don't have one yet.

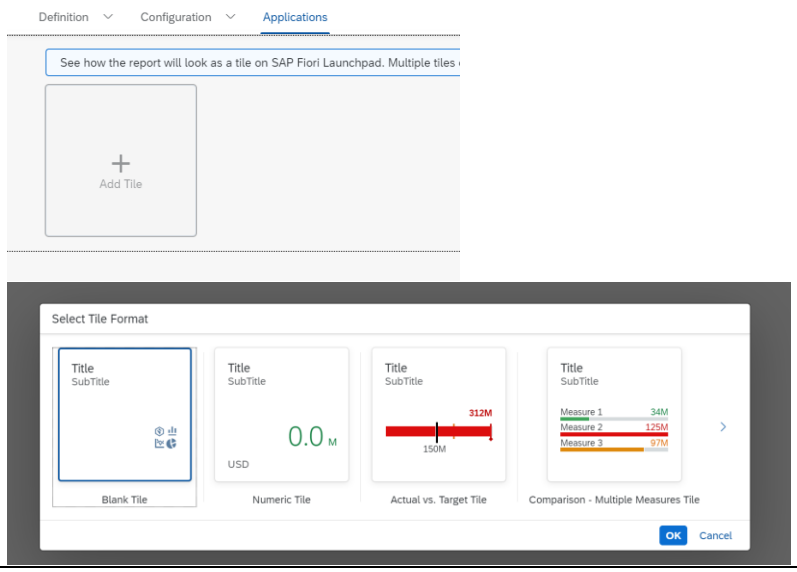
In your SAP Fiori system, open transaction /n/UI2/FLPD_CUST

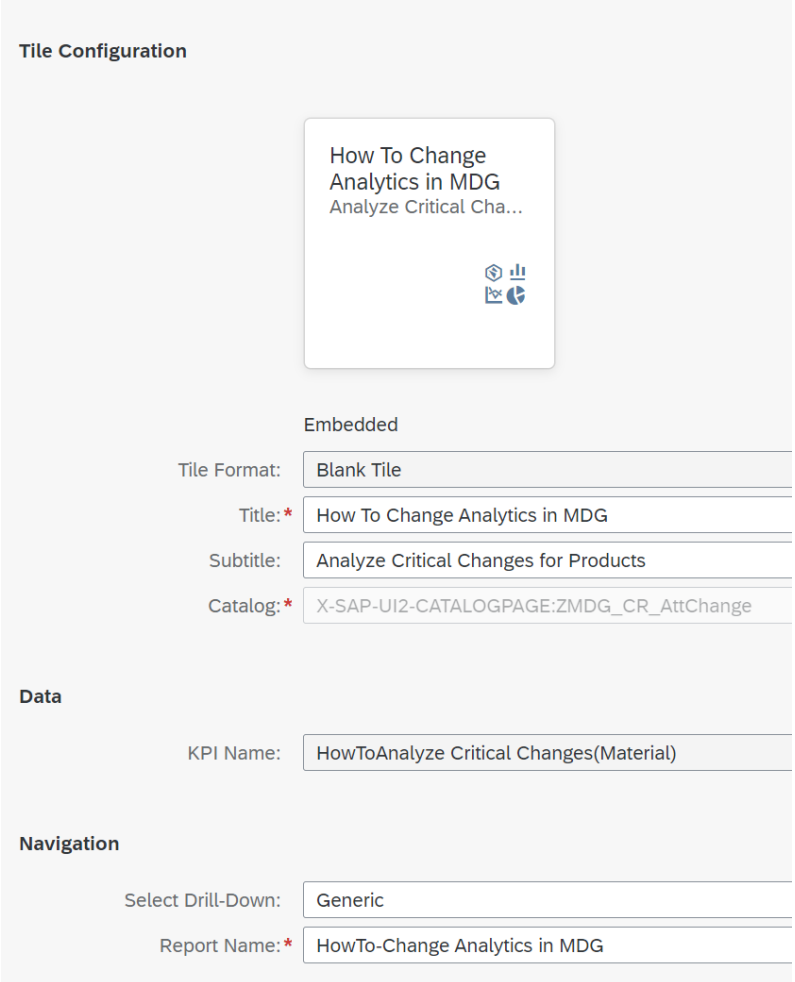
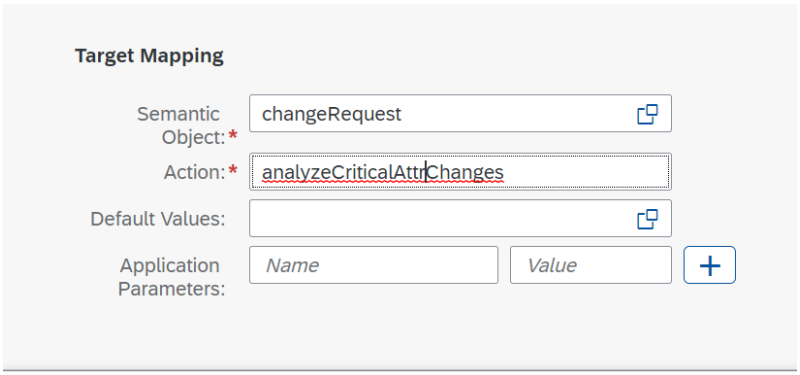
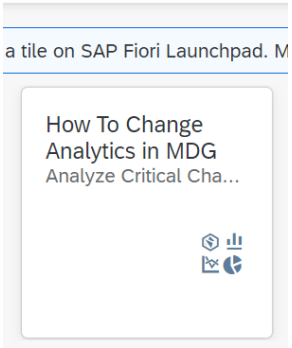
Create a new catalog. If you have one already, you can skip this step.	
Create Target Mapping: Sematic Object: ChangeRequest Action: <your custom action> (This should be the same one you defined in Report Navigation Intent in Step 2). Application Type: Webdynpro System Alias: S4MDG Application and Configuration: As MDG apps for different domains could be different, check your MDG UI configuration to get the right one.	 

Add the navigation parameter: MDGovChangeRequest (mandatory) Target name: CREQUEST	

2.2.5. Step 4: Create App and Assign it to the Catalog

You can use the report you created in Step 2 to create an application.

Open your report. Select Add Tile. Select a tile format and choose OK.	

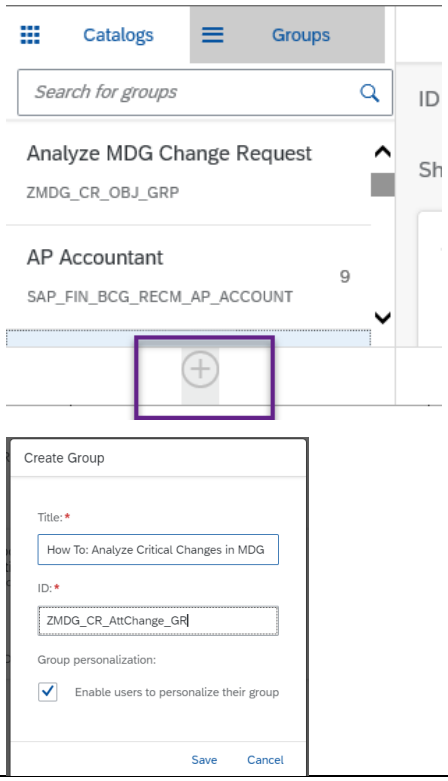
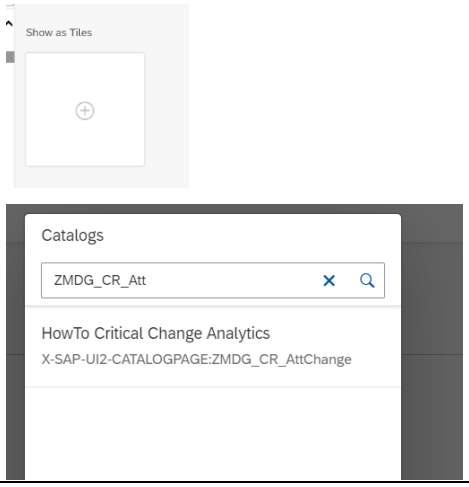
Select the catalog you created in Step 3.	
Choose semantic object: Change Request Action: <define your own one> Save the application.	 

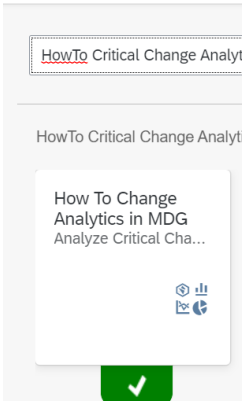
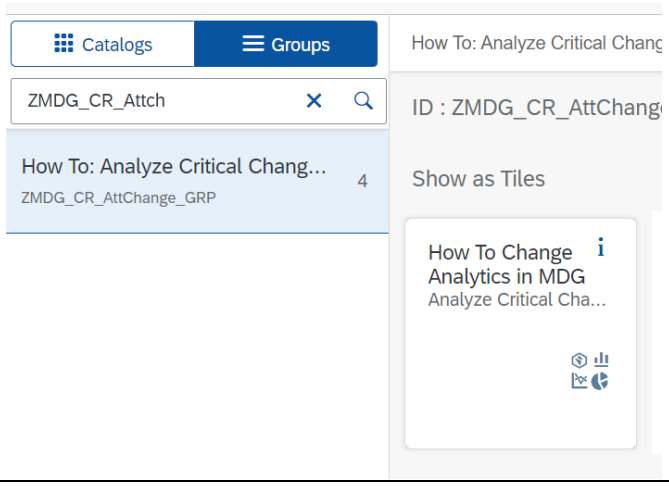
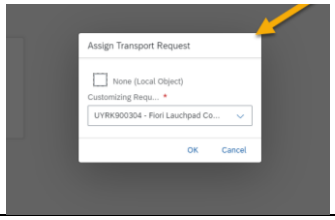
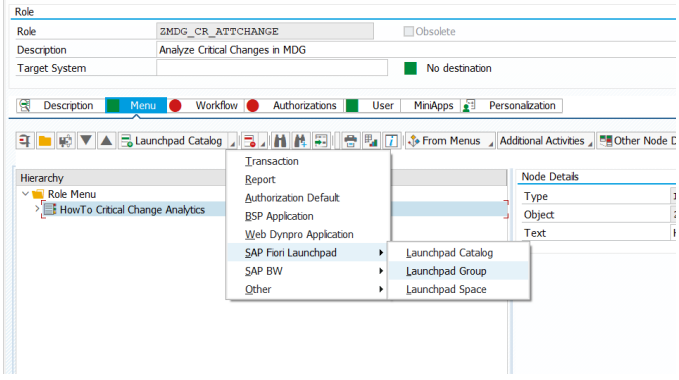
2.2.6. Step 5: Create Fiori Group, PFCG Role, and Assign it to End User

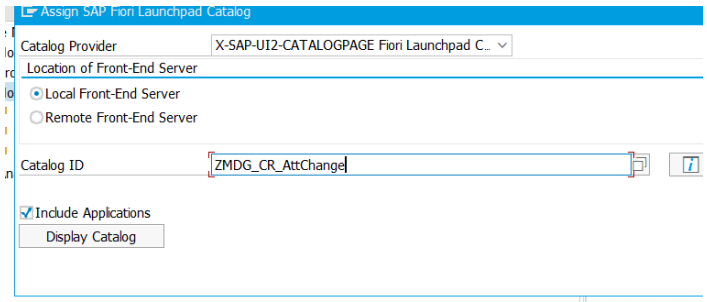
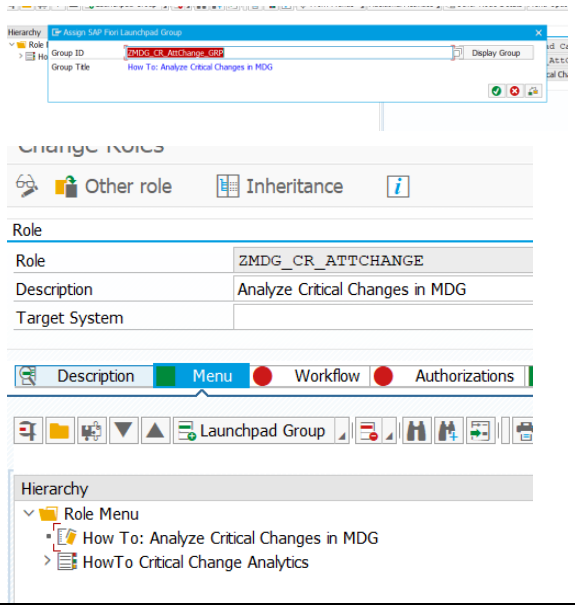
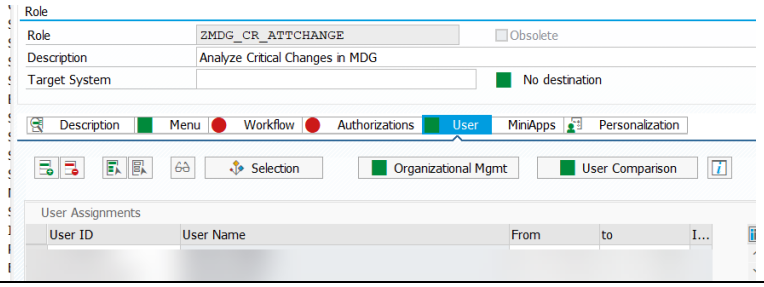
To be able to provide your apps to the end user, you must assign a catalog to a group and assign the catalog and group into a PFCG role.

The PFCG role can then be assigned to your end user, so that your end user will get the app in her/his Fiori launchpad.

In your SAP Fiori system, open transaction /n/UI2/FLPD_CUST.

Create a group. Enter a title and ID, enable or disable group personalization, and save.	
Add a new tile from the catalog.	

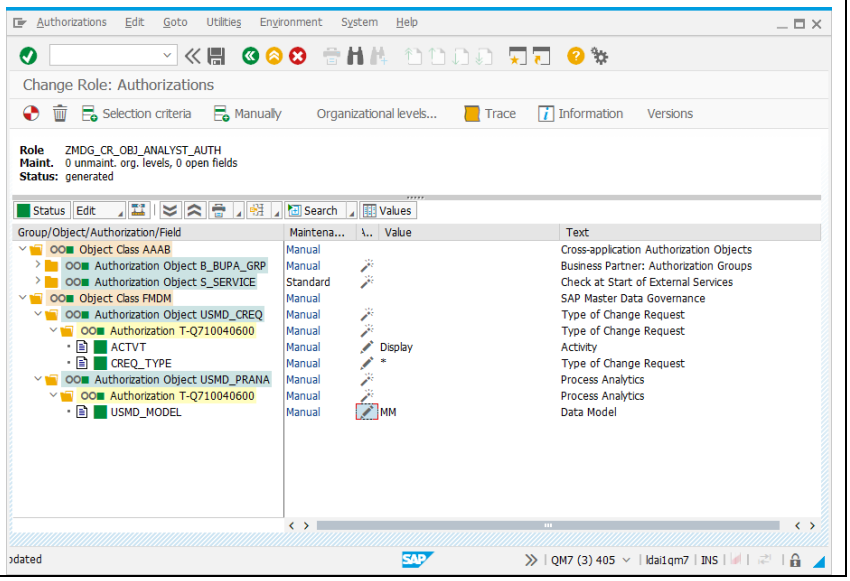
	 
You may need to enter the transport request in the SAP Fiori Launchpad designer, so that your catalog content can be transported to downstream systems.	
In your SAP Fiori system, go to the transaction's PFCG role or create a new PFCG role if you don't have one yet. Add your catalog into the menu.	

	
Add the group into the menu.	
Assign users to the PFCG role.	

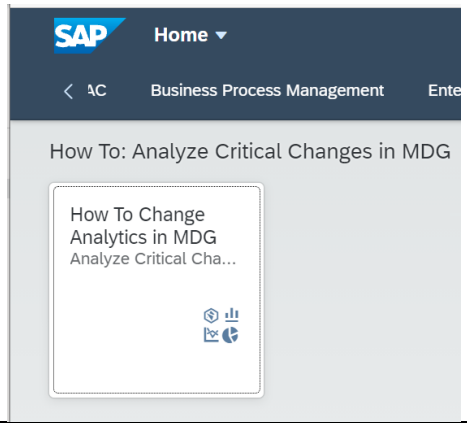
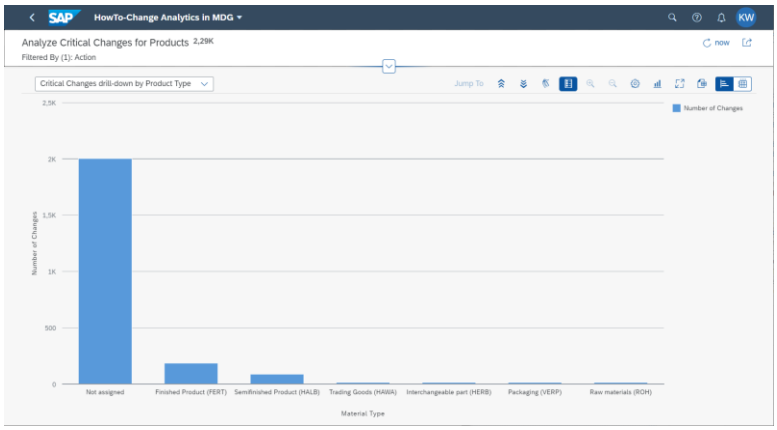
2.2.7. Step 6: Assign Authorization

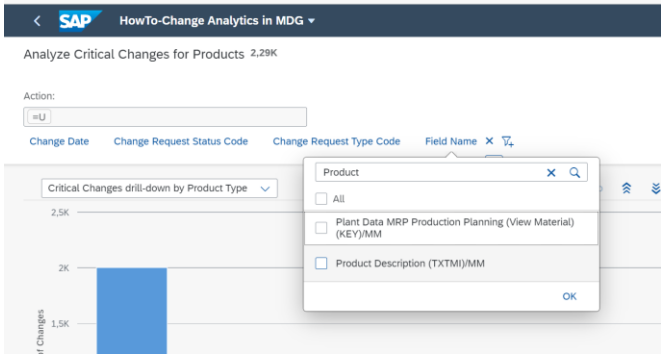
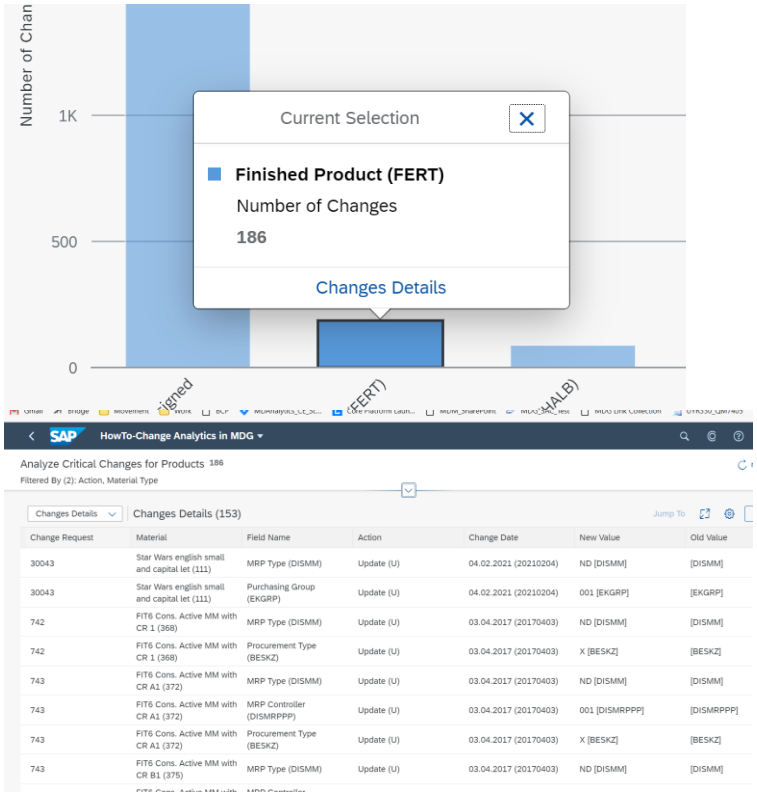
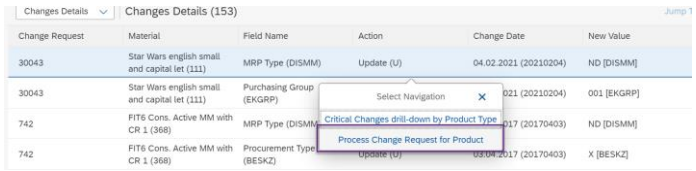
To allow you to see your data in SAP Smart Business, a new authorization object called USMD_PRANA has been created.

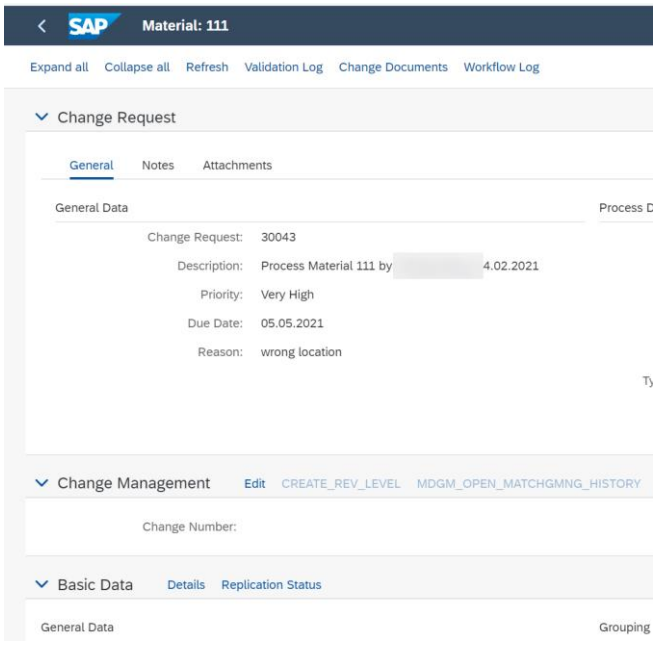
In the SAP S/4HANA backend system, beside the master data authority object, this new authority object also needs to be included in the authorization profile.

If a new role authorization profile is created, you can also enhance your existing authorization role to include USMD_PRANA with the right data models as parameters. Then, assign it to the end user.	

2.2.8. Step 7: Test the App

Log in with the user who has been assigned to your PFCG role, then open your SAP Fiori launchpad. The Open Change Request Analytics app should appear.	
Test the app. For example, try using different object attributes from your configuration for drill down.	

You can filter the changes using fieldname in the filter	
Try switching from chart view to list view.	
Try navigating to change the request UI.	



2.2.9. Important Note

When you add or change the CDS and regenerated the CDS view, your app in SAP Fiori homepage might show up the error: tile can't be loaded…

You need to open your created KPI, Report and Application, click Save or Activate button to reactivate all of them, then your Tile will be loaded again.

2.3. Frontend Option 2: Configure SAP Analytics Cloud

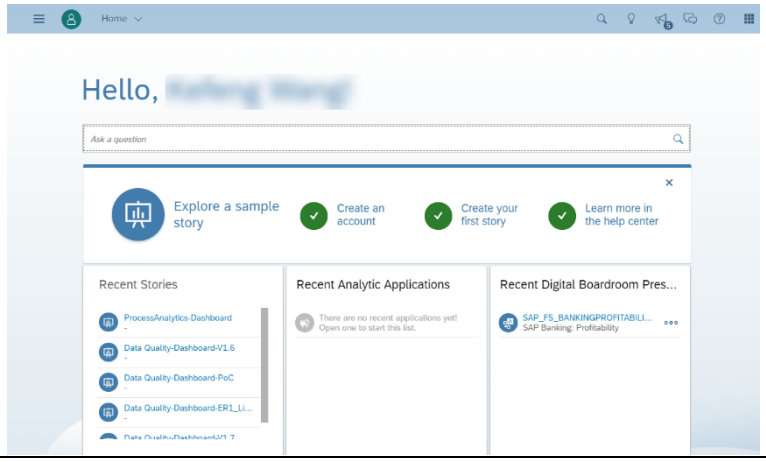
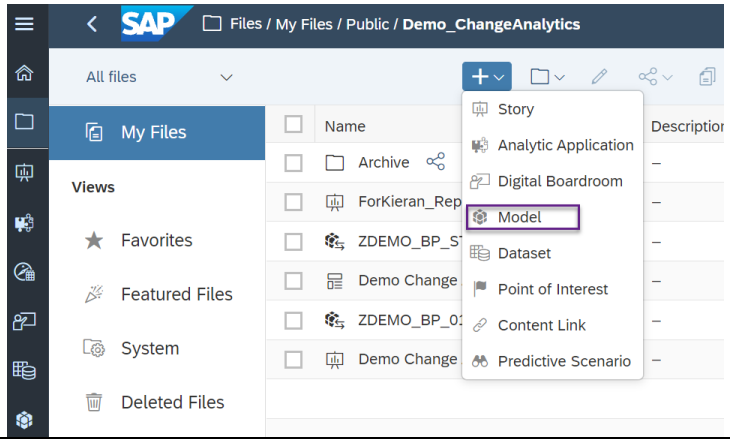
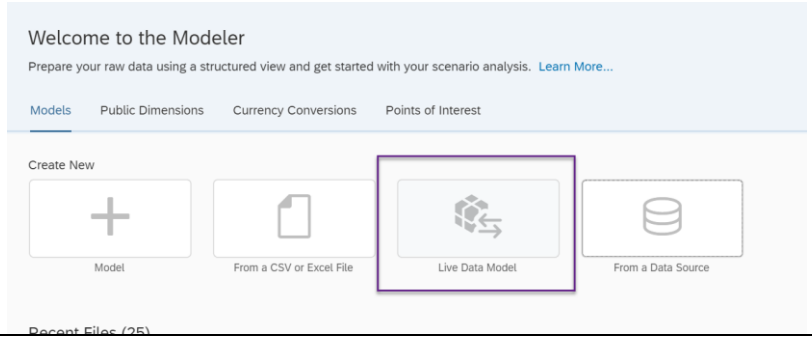
As an alternative to SAP Smart Business, you can use SAP Analytics Cloud (SAC) to configure the analytics app.

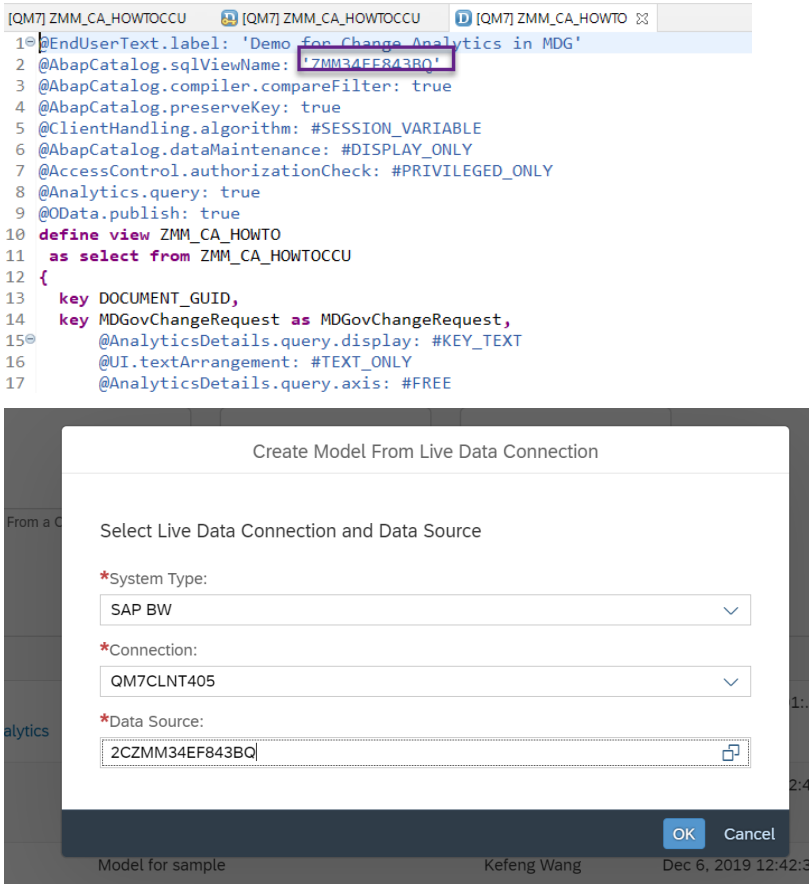
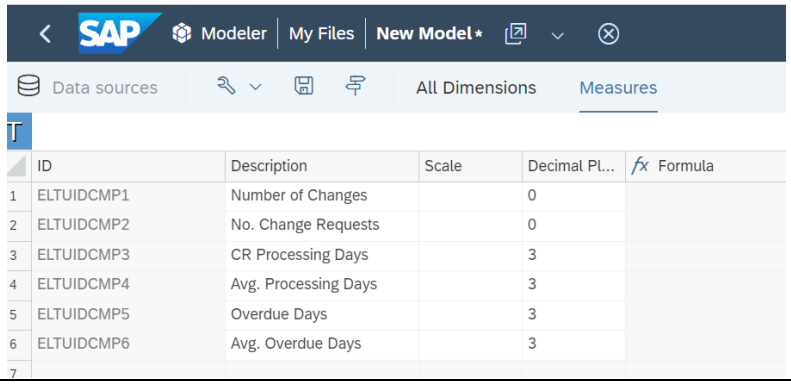
You can also create a report in your SAC tenant using the generated CDS view.

To use this guide, you must have SAC modelling knowledge and modelling authorization in the tenant. If you are new to SAC, you can find introductory materials on these topics at https://www.sapanalytics.cloud/

2.3.1. Log On to SAC Tenant and Create Model

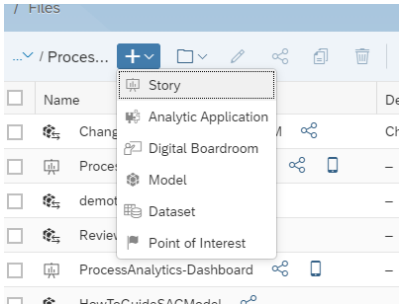
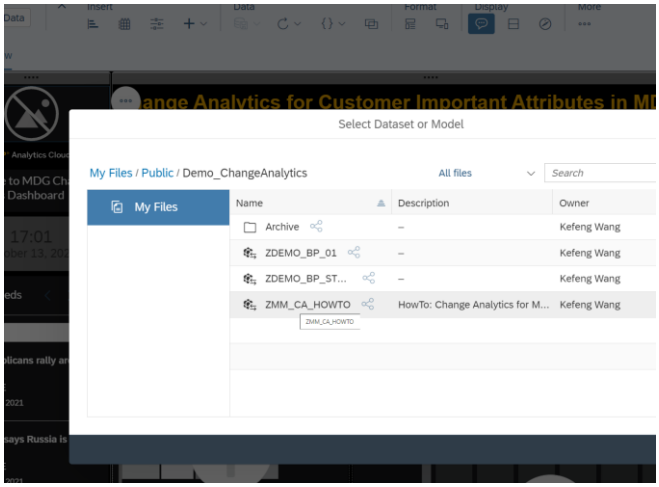
To connect your SAP S/4HANA system to your SAC tenant, you need to set up the Live Connection. To do this please refer to the SAP Help Portal article "Live Data Connections to SAP S/4HANA".

Log in as a user which has BI Modelling authorization.	
Open the file folder where you want to store the SAC report.	
Create a Live Data connection Model with the sqlname from your generated CDS view.	

	
Check all dimensions and measures, and then save the model.	

2.3.2. Build the SAC Story

Using the SAC Story app, we will build a chart to show the content that was provided from our CDS view.

Create a new story or use an existing story. In this guide, we have used a story template, so we will add a new chart to show the analytics which were created during backend implementation.	
Add a new chart. In the Designer panel, select your created model in Data Source. Select any of the following measures: • Number of Changes • Number of Change Requests • Total Change Request Processing Days • Change Request Average Processing Days	
Add the Dimensions you want to show. Add a filter to the content which you want to show in the chart. In this case, we show only the open Change Requests.	

After adding several charts, and we could go to the View mode.

You can then test the chart by adding different filters, comparing it to other charts, exporting it, and so on.