TEAMCENTER

Capital Asset Lifecycle Management — Deployment

Teamcenter 2412

SIEMENS

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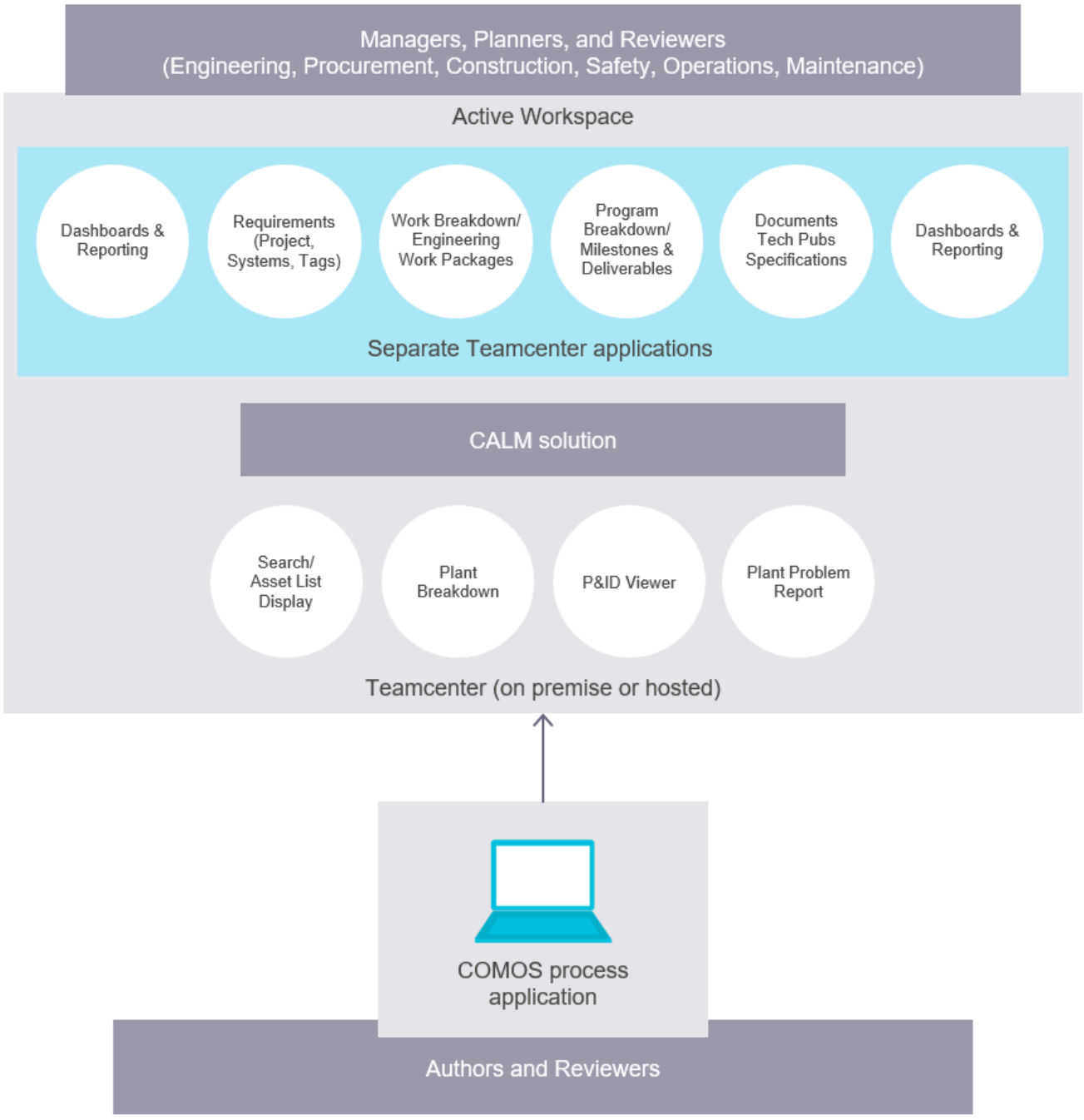
1. Overview of CALM installation process

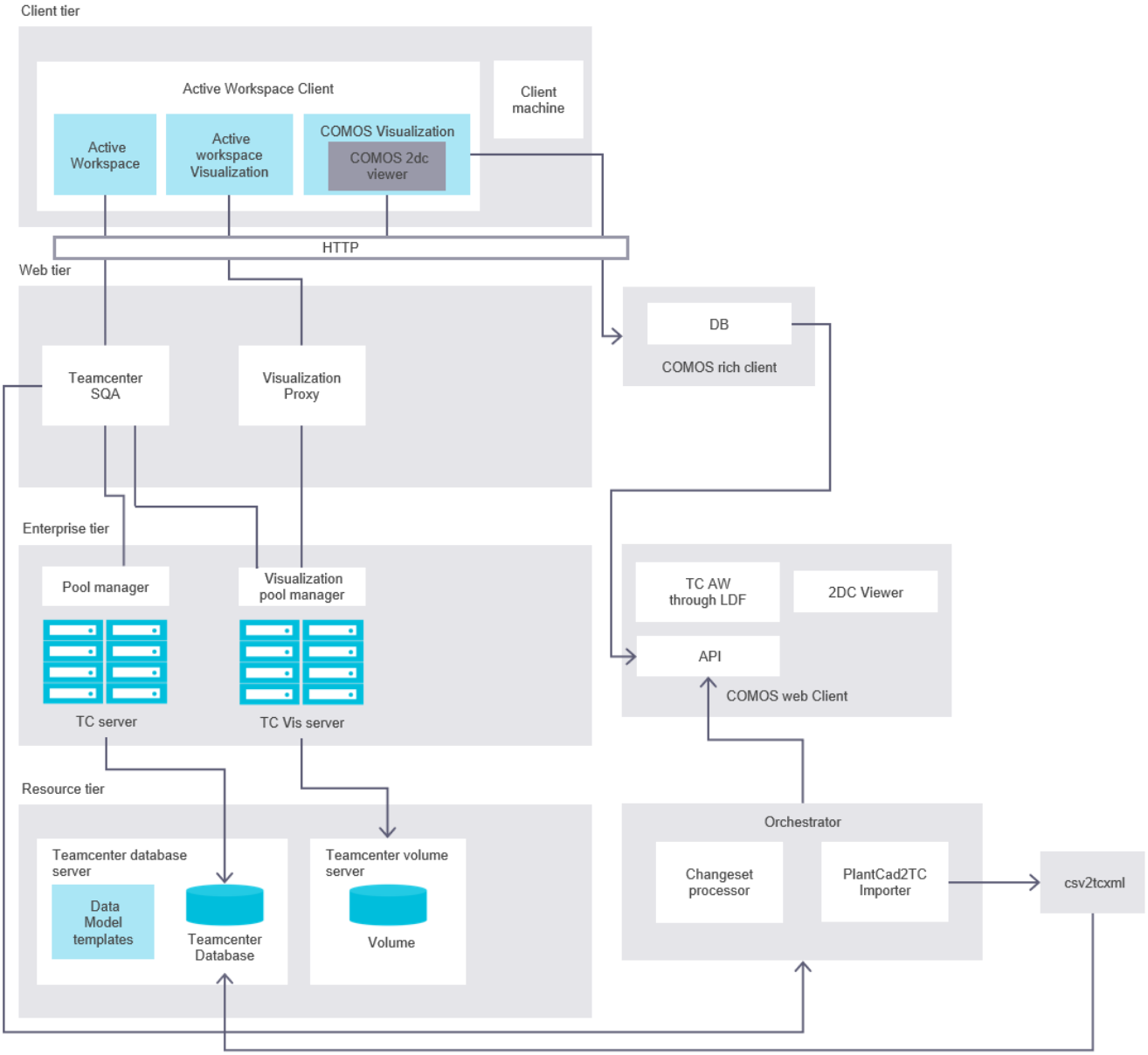
The following diagram provides a high level overview of the major components of the CALM solution.

To install COMOS, refer the COMOS installation process guide.



CALM solution connects with COMOS authoring tool to import the plant breakdown structure and 2d interactive diagrams in Teamcenter.

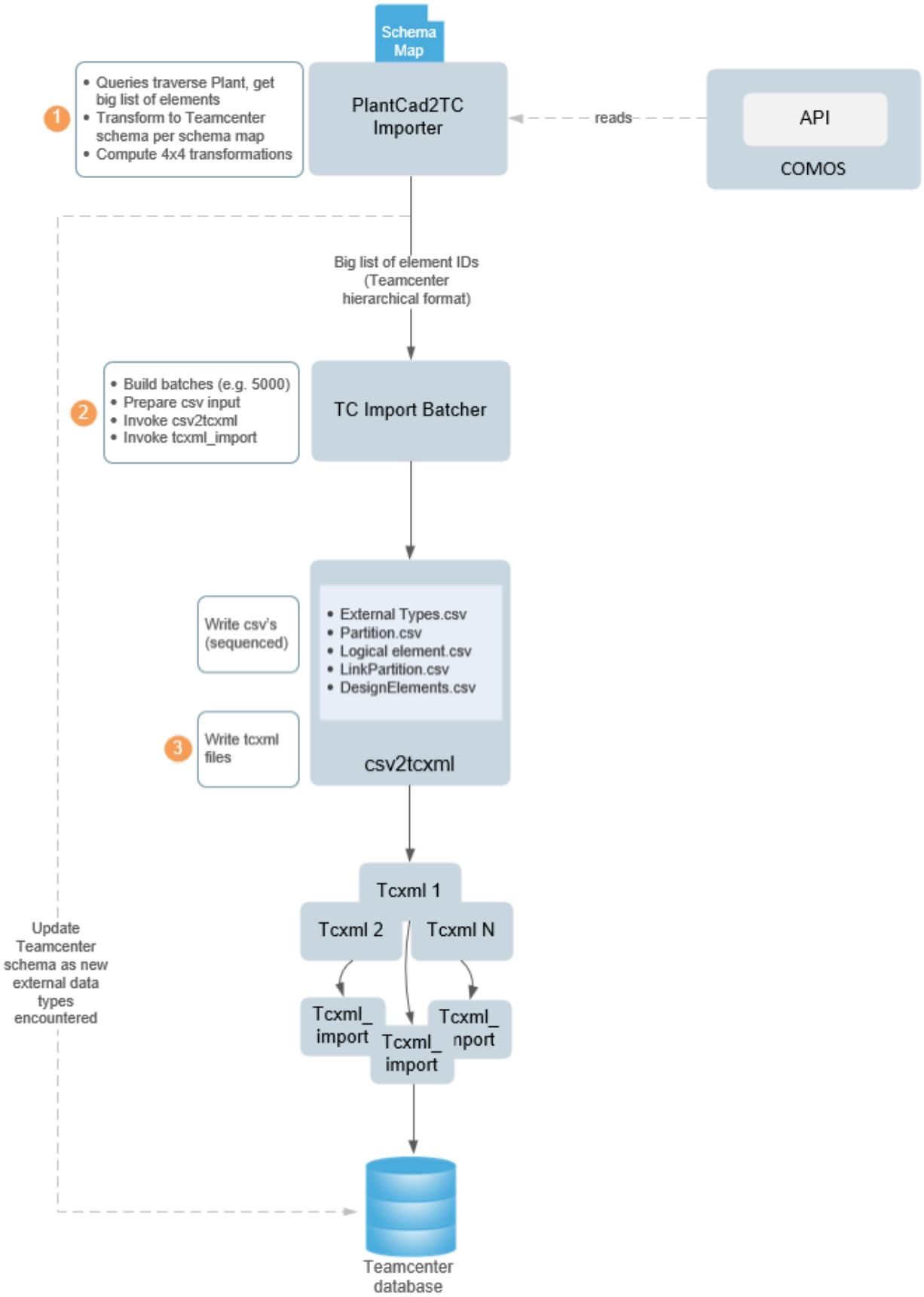
The following diagram shows a more detailed view of the deployment architecture:



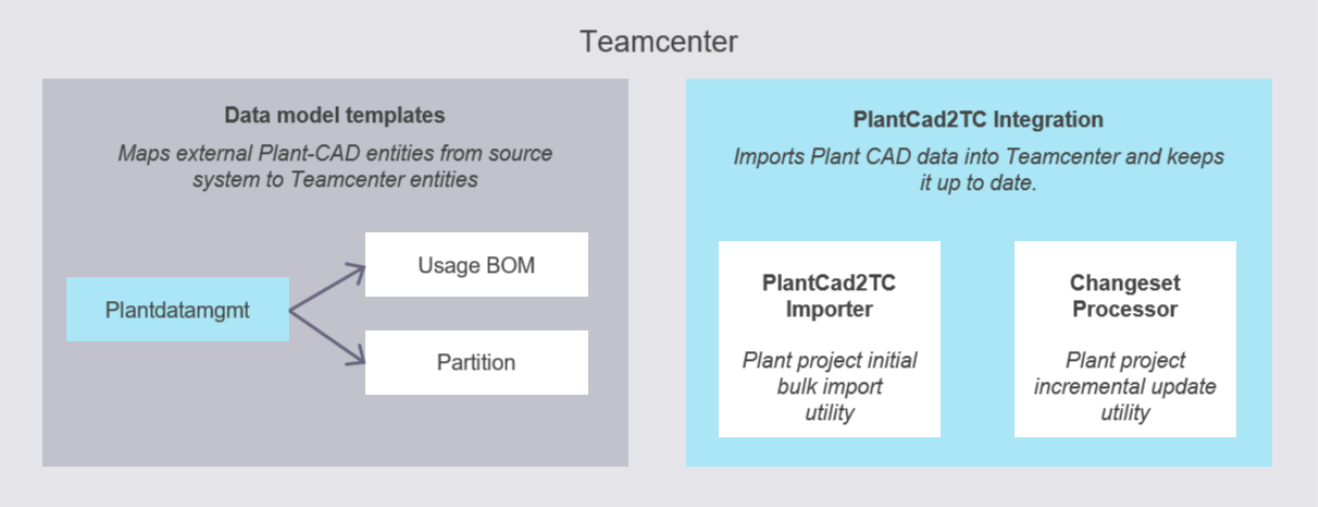
Note the following aspects of the deployment architecture:

- The PlantCad2TC integration orchestrates data transfers with the COMOS integration.
- The COMOS viewer allows P&ID and Teamcenter object cross probing.

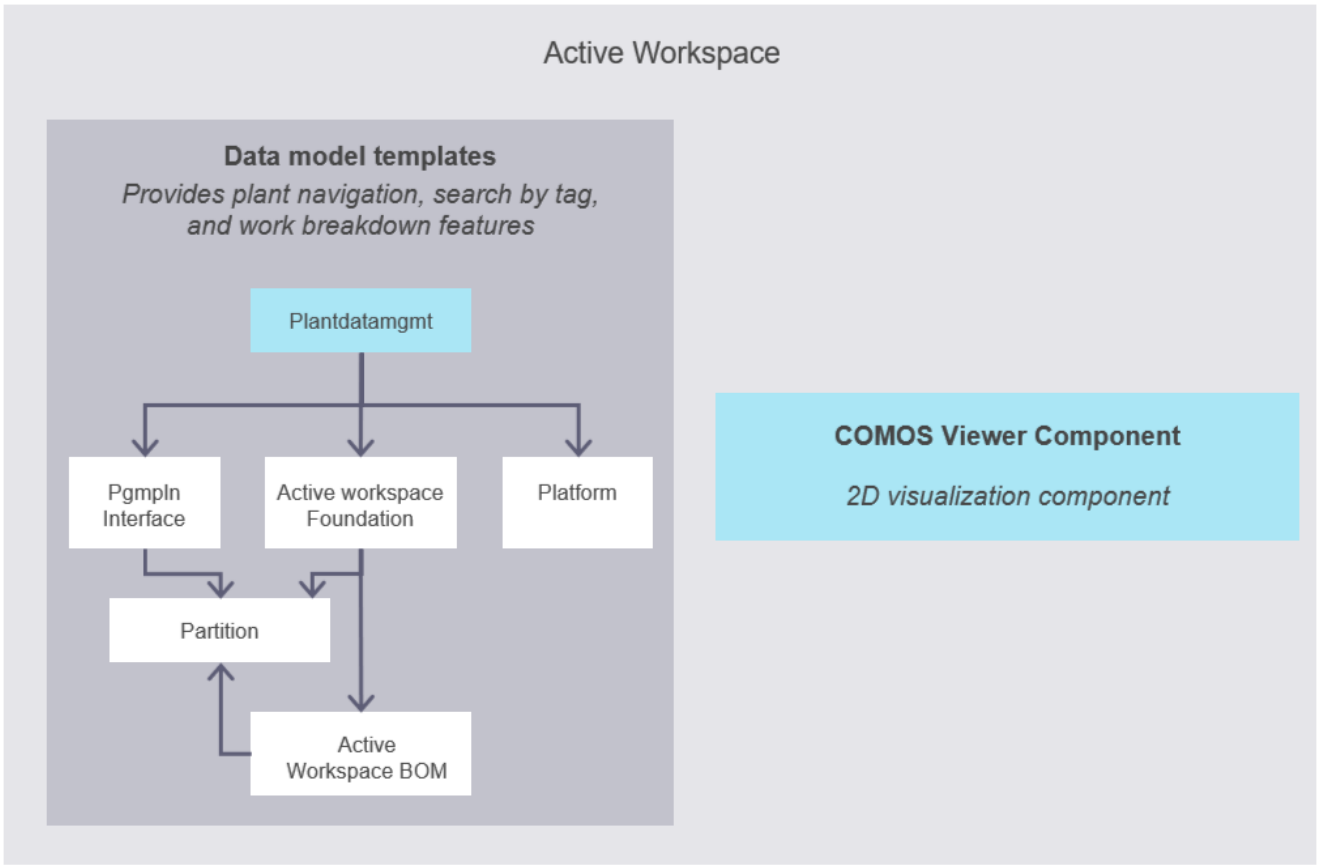
The initial import data flow looks like this:



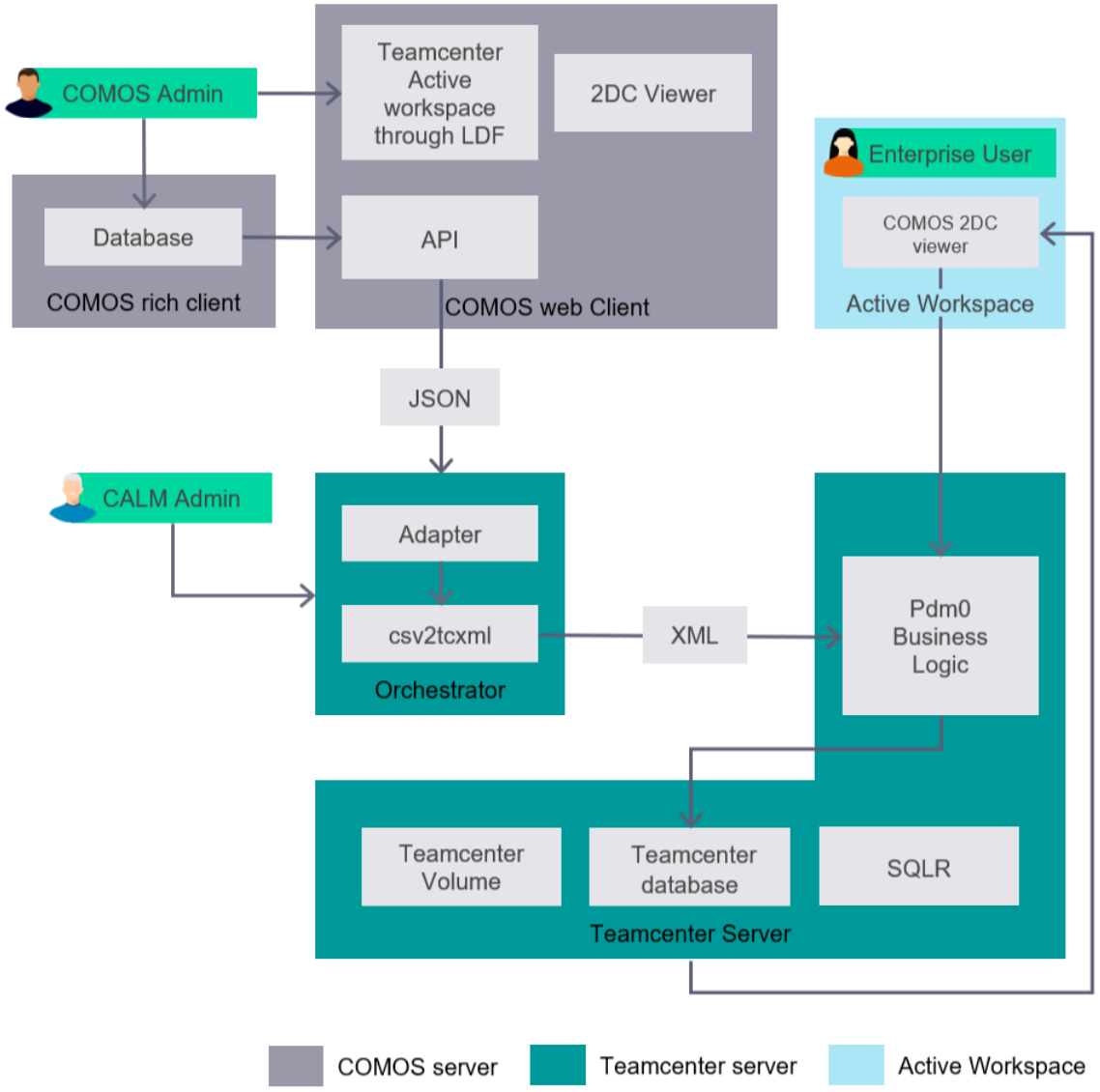
The conversion and integration components are packaged within Teamcenter:



The data model and viewer components are packaged within Active Workspace:



2. Architecture



- You can author plant process information such as process flow diagrams, process and instrumentation diagrams, equipment data sheets, design calculations, and design basis in the COMOS process application.

- Using the CALM solution, you can retrieve this plant process information and 2D interactive diagrams from COMOS and manage their lifecycle in Teamcenter. The system creates an integrated plant model in Teamcenter from the COMOS plant data import and synchronizes this model for incremental changes.

- You can import COMOS plant data into Teamcenter and synchronize incremental updates as they occur. Additionally, you can navigate, visualize, and search the plant data. You can also perform

enterprise business processes such as managing changes, history, and plant breakdown, and associate them with the program plan and work breakdown.

- Based on the Teamcenter Unified BOM and the Active Workspace user interface, the system allows plant data to be organized and managed with partitions, design elements, and sessions. Teamcenter acts as the system of record for plant data.

3. Install Teamcenter Capital Asset Lifecycle Management using Deployment Center

Add the Capital Asset Lifecycle Management application to your existing Teamcenter environment.

Prerequisites

- Teamcenter is already setup. If not, follow the instructions in *Teamcenter Installation Using Deployment Center* to deploy Teamcenter.
- If Teamcenter is already set up, verify if **Visualization Server** is installed. If it is not installed, first ensure that the hardware and software requirements for **Visualization Server Manager** are met. For this, refer to *Visualization Server Manager prerequisites* section in the *Teamcenter Installation Using Deployment Center* documentation help. Next, Next, read the *Visualization Server overview* to setup **Visualization Server**.
- Deployment Center is setup. If not, plan its deployment.

Procedure

1. Log on to Deployment Center and select the environment to which you want to add Capital Asset Lifecycle Management.
2. Go to the **Applications** task. Click **Add or Remove Selected Applications**.
3. In the **Available Applications** panel, use the web browser search to find the **Capital Asset Lifecycle Management** application. Select the application, and then click **Update Selected Applications**.

   Deployment Center automatically selects any additional dependent applications.
4. Go to the **Components** task. In the **Selected Components** list, select the **Capital Asset Lifecycle Management Integration** component.
5. In the **Capital Asset Lifecycle Management Integration** panel, enter values for the following configuration parameters:

Parameter	Description
COMOS	Only if you use COMOS
COMOS Base URL	Enter the COMOS Base URL in the following format:

Parameter	Description
	http://<*hostname*>**.**<*network*>**:**<*port_number*>

6. When you finish entering values, click **Save Component Settings**.

7. If you have not previously configured **Visualization Server** components in your Teamcenter environment, enter parameters for the **Visualization Pool Assigner** and **Visualization Server Manager components**.

8. In the **Selected Components** list, note any remaining components whose configuration status is not **100%**. Select each incomplete component, enter required parameters, and save component settings until all components in the environment show a configuration status of **100%**.

   When all components are fully configured, the **Deploy** task is enabled.

9. Go to the **Deploy** task. Click **Generate Install Scripts** to generate deployment scripts you will use to update affected machines.

   When script generation is complete, note any special instructions in the **Deploy Instructions** panel.

10. Locate deployment scripts, copy each script to its target machine, and then run each script on its target machine.

    For more information about running deployment scripts, see *Deployment Center — Usage*.

Postrequisites

To organize the content in partitions, deploy Partitions for Structure.

4. Install Teamcenter Capital Asset Lifecycle Management using TEM

Install CALM with Teamcenter Environment Manager

Install the necessary server solutions with Teamcenter Environment Manager (TEM):

1. Start TEM and follow *Teamcenter Installation on Windows Using TEM* or *Teamcenter Installation on Linux Using TEM*, as appropriate, until you are prompted to install the solutions.

2. Before installing ensure that **Visualization Server** is installed in your Teamcenter setup.

3. In the **Features** panel, select the following features:

    Extensions

    - Capital Asset Lifecycle Management
    - Enterprise Knowledge Foundation
        - Change Management

    Base Install

        Active Workspace

        - Client
            - Capital Asset Lifecycle Management AW
            - Change Management
            - Workflow
        - Server Extensions
            - Visualization Extension
            - Workflow
            - Capital Asset Lifecycle Management AW

4. Continue through the panels, filling in the necessary details. For help with any panel in TEM, click the help button.

   - For the **CALM Settings for Utility Installation** panel, select **COMOS**.

     Contact your Siemens Digital Industries Software representative to obtain values for **Client ID**, **Client Secret**, and **Client Scope**.

     Enter the **COMOS Base URL** in the following format:

     http://<hostname>.<network>:<port_number>

5. When TEM displays a list of templates to be applied to the database, verify that it reflects your selections accurately. Ensure that the list of installable features contains **Plantcad2Tc** and **Data Mapping**.

6. When installation is complete, close TEM.

(Optional) To organize the content in partitions, deploy Partitions for Structure.

5. Configure the CALM solution

1. Set the **Pdm0ChangeSetProcessRecord** property to filter out revision rules to present only rules applicable to the Capital Asset Product Root to the user. For more information about setting persistent properties, see *BMIDE for Data Model Design* in the Teamcenter help.

2. Set the **CALM_PreferredViews** as **Native**. The **Native Viewer** tabs will be displayed in Active Workspace.

3. Set the **Pdm1ShowAllExternalAttributes** preference to designate which imported element properties are displayed for plant objects. Valid values are **True** or **False**. If set to **True**, all element attributes, including properties with empty values will be displayed.

6. Verifying plant data deployment

Load COMOS plant data into Teamcenter

COMOS plant data is a JSON file containing plant data obtained from COMOS. It is authored directly using COMOS Plant CAD authoring tools. You can import the COMOS plant process data for the first time and then incrementally using the Teamcenter CALM -COMOS direct integration

COMOS data is translated and loaded into the Teamcenter database. This imported COMOS data can then be visualized in 1D structure view in Active Workspace, and in 2D (logical and classical) views in Active Workspace Native Viewer, enabling various user actions to be performed on the displayed entities.

CALM Orchestrator

The **CALM Orchestrator** is a utility used to import COMOS data with respect to the context and project specified by a user from the command line. The *config.properties* file located in the *TC_ROOT/CALM_Utilities/Plantcad2Tc/config* folder contains the COMOS base URL, which is used to connect to COMOS and download the specified plant data.

The **CALM Orchestrator** allows for a one-time import of all physical, logical, geometric, and other relevant element types contained within the COMOS plant data. These elements are translated and loaded into Teamcenter as corresponding objects.

Configure Plantcad Importer

Before using the **Plantcad Importer**, you must perform some configuration steps.

1. Request a valid site ID by sending an email to customer support. Be sure to include the following information in your message:

   - Sold-To/Install
   - Contact Name
   - Customer Name
   - E-mail Address

2. Open the *installation_path\tcdata\csv2tcxml* folder and update the *csv2tcxml.ini* file with the site ID provided by customer support.

3. From a command prompt, navigate to the *installation_path\tcdata\csv2tcxml* folder and run the following command:

   tcperl csv2tcxml.perl install

4. Once installation is complete, navigate to the *installation_path\tcdata\csv2tcxml\model* folder and open the *datamodel.html* file. Verify that all the appropriate Teamcenter models are available in the template.

Import COMOS data

To import the COMOS plant data:

1. From a command prompt, navigate to the *TC_ROOT\CALM_Utilities\Plantcad2Tc* folder.

2. Run the following command:

   import:--operation=start_comos_import with the following arguments as required.

   -operation

   Operation to be performed. For initial COMOS import:**-operation=start_import**. For COMOS plant sync: **-operation=start_comos_inc_import**

   -u

   Teamcenter user name

   -p

   Teamcenter user password

   -g

   Teamcenter group name of the user

   -comosprj

   Project name of the COMOS plant

   -comosdb

   Database name of the COMOS plant

   -comosroot

   Root of the COMOS plant

   -comosuser

   User name of the COMOS plant user

   -comospwd

   Password for the COMOS user to access the plant

Example:

Frank wants to import COMOS data with the name **P002** and with the root ID of **U:8:A4F9P91CFU:U**. He enters the following text in a command line:

```
calm_utility.bat "--operation=start_comos_import" "-u=TC-admin-user" "-p=password"
"--comosprj=U:2:A3YFNPO8AR:"
```

```
        "--comosdb=db1" "--comosroot=U:8:A8BTYN2KJR:U" "--comosuser=PLM\comosuser"
"--comospwd=password@1234#"
```

After successful import, find the COMOS ID listed in the command window.

View plant data

Once the plant data is loaded into Active Workspace, you can visualize it in Native Viewer .

> Note:
>
> The **CALM_PreferredViews** preference needs to be set.

1. In the rich client, set the **CALM_PreferredViews** preference.
2. Log on to Active Workspace.
3. Click **Advanced Search**, search for Capital Asset Product Root, and open it.
4. In the results panel, change to the **Tree with Summary** view.

   The plant objects appear in 1D in the results panel, and the **Viewer** work area shows the 2D drawing view.
5. In the work area, click the **Native Viewer** tab.

   The **Native Viewer** work area shows the 2D view.

Data cross probing between 1D, 2D data

Cross probing allows you to locate the same object in different (1D and 2D) views of the plant. You can select the element from 1D to search and highlight the same element in the 2D plane.

1. Navigate to or search for the plant object of interest, and then select it in the hierarchy.
2. Click the **Viewer** tab, and then select the object in the 2D view or the left-hand navigation panel.

   The selected object is highlighted in each of the views as well as in the navigation panel. This capability is referred to as cross probing and allows you to identify the impact of changes or other work to various disciplines.

   If you filter or configure the displayed data in the navigation panel, the views are updated accordingly.

Incremental updates to plant data in Teamcenter

Incremental changes to COMOS plant data

You can load incremental changes in the files into the Teamcenter database using the **CALM Orchestrator** utility.

This utility gets the updated COMOS data, compares it to what has already been imported into Teamcenter, and then syncs the difference in information by processing change sets.

To import the changes made to plant data in COMOS into Teamcenter using the **CALM Orchestrator** utility:

1. From a Teamcenter command prompt, navigate to the *TC_ROOT**Siemens**Teamcenter<version>**Plantcad2Tc* folder.

2. Run the following command:

   "--operation=start_comos_inc_import"

   -operation

   Operation to be performed. For initial COMOS import:**-operation=start_comos_import** For COMOS plant sync: **-operation=start_comos_inc_import**

   -u

   Teamcenter user name

   -p

   Teamcenter user password

   -g

   Teamcenter group name of the user

   -comosdb

   Database name of the COMOS plant

   -comosroot

   Root of the COMOS plant

   -comosuser

   User name of the COMOS plant user

   -comospwd

   Password for the COMOS user

Example:

Sandy wants to import COMOS data with the name **P002** and with the root ID of **U:8:A4F9P91CFU:U**. She enters the following text in a command line:

```
calm_utility.bat "--operation=start_comos_inc_import" "-u=TC-admin-user" "-
p=password" "--comosprj=U:2:A3YFNPO8AR:"
        "--comosdb=db1" "--comosroot=U:8:A8BTYN2KJR:U" "--
comosuser=PLM\comosuser" "--comospwd=password@1234#"
```

3. To verify the data was imported correctly, **view the plant data** and confirm using the 2D view of the corresponding component.