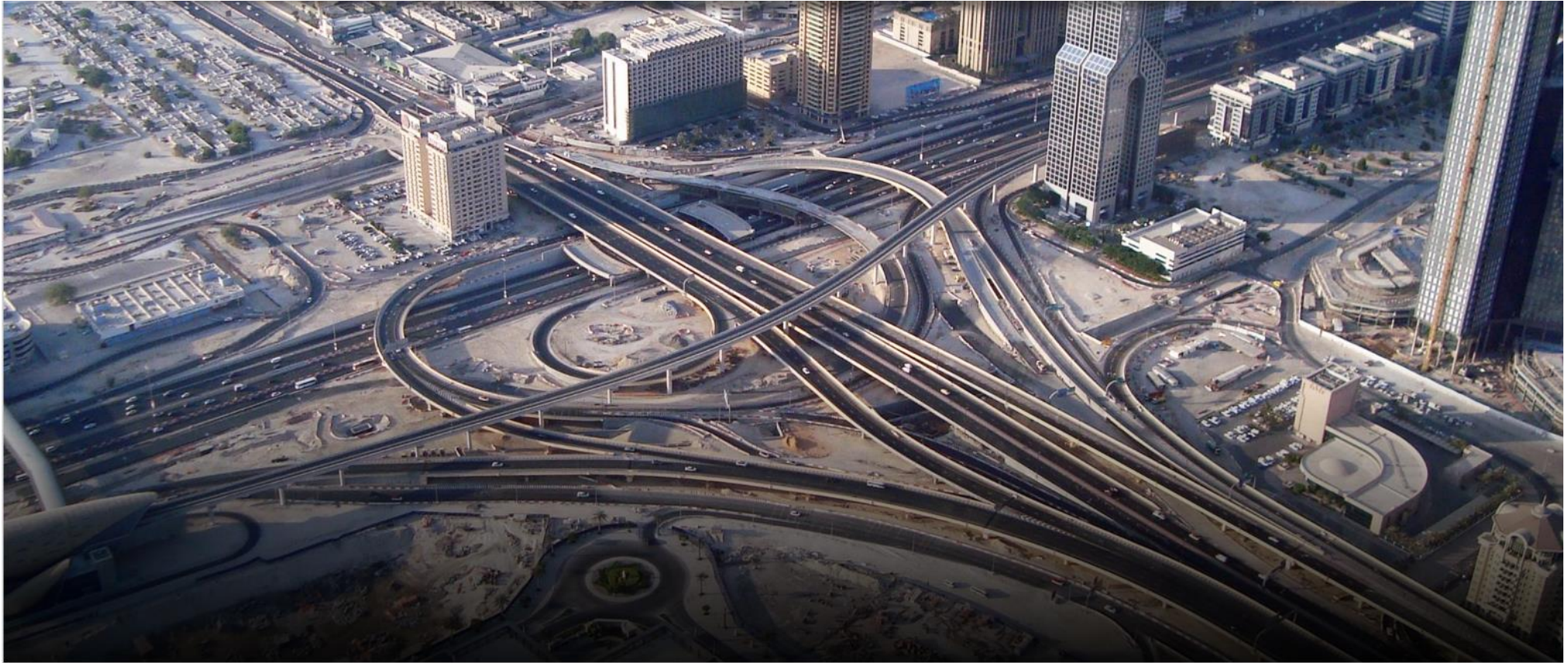


Dynamic Managed WorkSpace (1.7.1)



ProjectWise CONNECT Edition

Bentley[®]
— Project Delivery

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Dynamic Managed Workspace: Common Requirements



Simple CSB Configuration

Consistent, Common Configuration

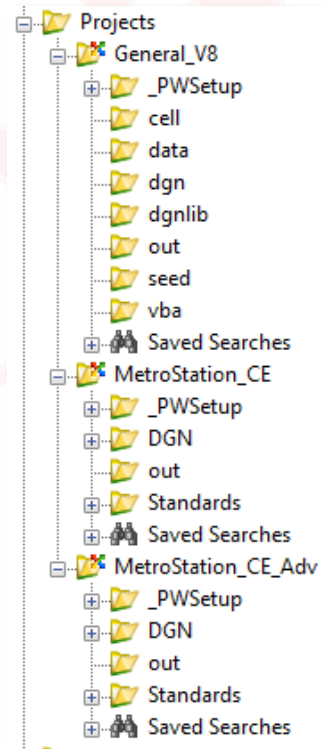
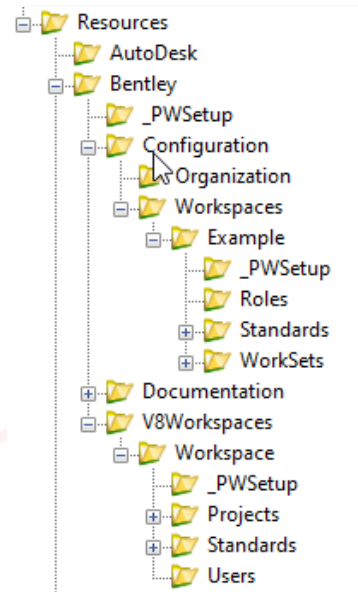
Adaptable to Organization

Work Area Cfg File Option

Supports V8 and CONNECT

Provide Error Checking

Adjustable to Client Workspaces



Common Requirements:

There are a number of common requirement that many have expressed as needs for a their managed workspace.

-Simple Configuration.

A configuration that is simple to implement

-Consistent, Common Configuration

A configuration that has a consistent structure and common variables that can be implement globally within their system.

-Adaptable to the Organization

A configuration that is adaptable to a organization specific needs. The configuration can be simple or advanced.

-Work Area Cfg File Options

A configuration that allow the editing of cfg file within the WorkArea to adjust which standards are included.

-Support V8 and Connect

A configuration that support both V8 and CONNECT Edition Applications

-Provide Error Checking

A configuration that saves time configuring by provide erroring checking to verify the existence of structure and files.

-Adjustable to Client Workspace

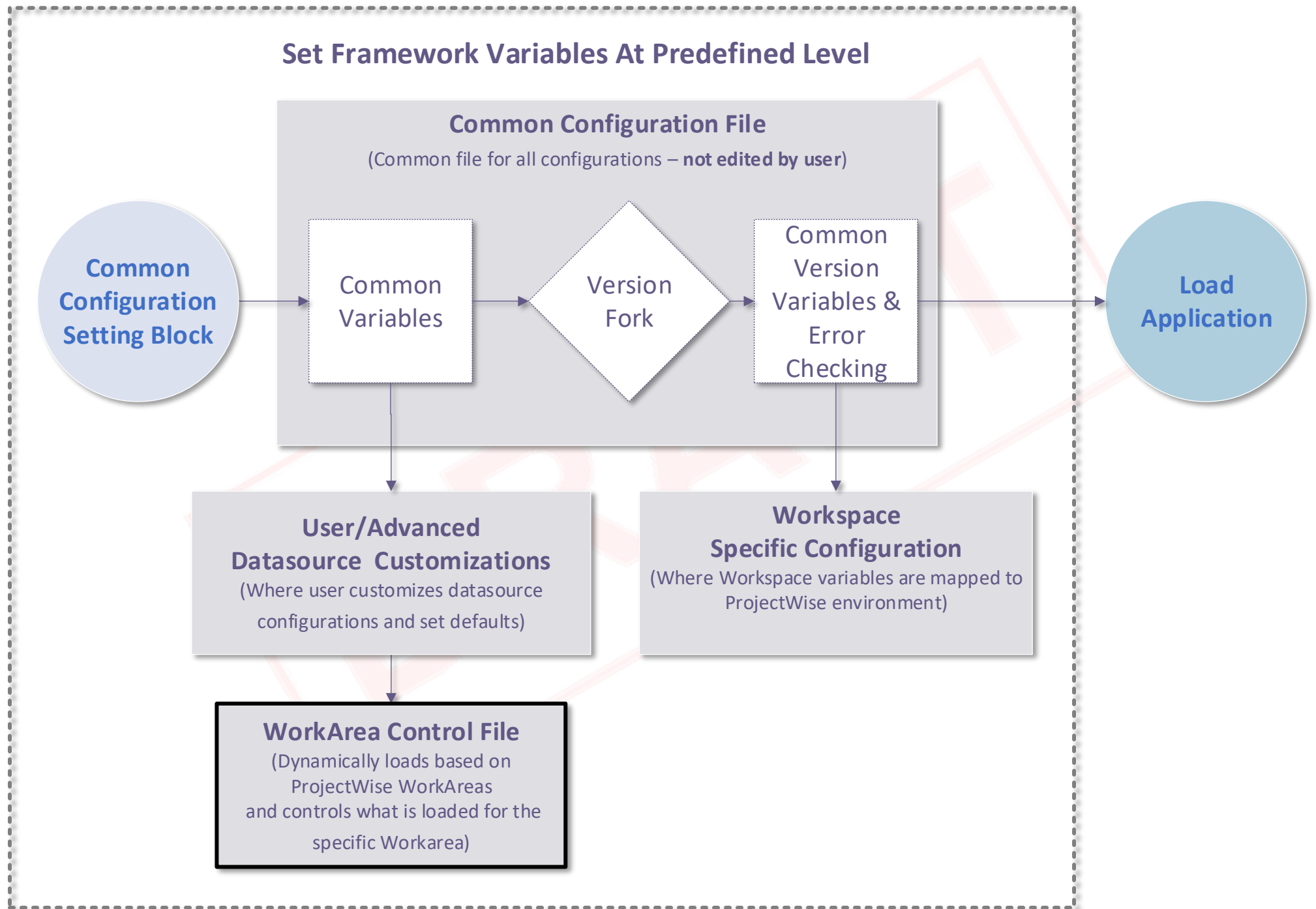
A configuration that can easily adapt to various client workspaces.

In addition to the above, the Dynamic Managed Workspace template is saves time in workspace development, is well documented, can be implemented by both owner/operators and consultants in the same manner. The functionality within the workspace can handle multiple workspaces and scenarios.

Since the workspace is design to take advanced of ProjectWise and some ability to be context sensitive, the workspace template is referred to a the "Dynamic Managed Workspace".

Note: to Owners/Operators/Agencies (OOA): This workspace is designed to allow multiple workspaces. While an OOA may not need such a robust workspace, implementing workspace with this template (or one like it) will allow Design Consultants to more easily utilized a delivered workspace along with other OOA that they may also perform Design Services.

Dynamic Managed Workspace: Concept Diagram



Dynamic Managed Workspace: Concept Notes

Workspace Philosophy: Framework Variable Redirection Only.

All well designed workspace should allow for the minimal redirection of the framework variables to achieve portability when workspace must be distributed to other organizations. As typically only a few variables are required to be redirected for V8 and CONNECT Edition workspaces to be placed in any environment.

For V8 these variables are:

- _USTN_WORKSPACEROOT
- _USTN_PROJECTNAME

For CONNECT Edition variable these are:

- _USTN_CONFIGURATION
- _USTN_WORKSPACENAME
- _USTN_WORKSETNAME

While these are the minimal variables, additional variables will probably be needed to match real world locations of the configurations and project. It must also be noted, V8 had limited options to deliver a workspace to a design consultant in standard manner. Hence, Owner/Operator had to resort to number of different methods to accomplish this. This template configuration has been developed to allow for just about any delivered configuration to be adopted into this workspace (as long as any customization has been design with ProjectWise capabilities in mind).

Single CSB Concept

This managed workspace is design to potentially only use a single CSB at the predefined level. This single CSB points to a common configuration file (Common_Predefined.cfg) that includes “dynamic” variables that can be used to build a basic workspace. The fundamental idea in this concept is that all framework variable can be set at the “Predefined” level and “locked” if needed. The name for this file is derived from its purpose. It is a common cfg file, used by all products and all versions, that runs at the Predefined configuration level in the ProjectWise Managed Workspace. This Common_Predefined.cfg file contains a version check which allows differentiation between variables required for V8 and CONNECT Edition. In addition, the supplied configuration files incorporate “error” checking to verify the appropriate folders and configuration files are in place.

Workspace specific configurations (framework variables) are defined in workspace specific “PW Setup” files. This may also contain Workspace (User) specific variables which can substitute for Environment Variables. Hence, rather than needing to set environment variable on the computer, these can be set for each workspace and allow multiple “Agency” workspace to co-exist within the same environment relatively easily.

Configuration File Naming Convention

The configuration files have a fairly consistent naming convention.

PWSetup: Files with PWSetup in the name are intended to be edited as needed. The content of these file is for the adaption of the configuration into ProjectWise. “User” (Operational) configuration variables (those the start with “MS_”) should most likely not be defined in these files.

Level Inclusion: Where appropriate, the PWSetup File Names contain the level in which they are processed by the ProjectWise Managed Workspace. (e.g. _Predefined, _Application, etc.)

Location: The configuration file name will include where the file resides. Typically in one of three locations: Common, Workspace or WorkArea. The first part of each cfg typically reflects this.

Examples:

- Common_Predefined.cfg
- Common_Application.cfg
- Common_SiteOrg.cfg
- Common_Predefined_PWSetup.cfg
- WorkspacePWSetup_Predefined_Name_Version.cfg
- WorkAreaPWSetup_Predefined_Name.cfg

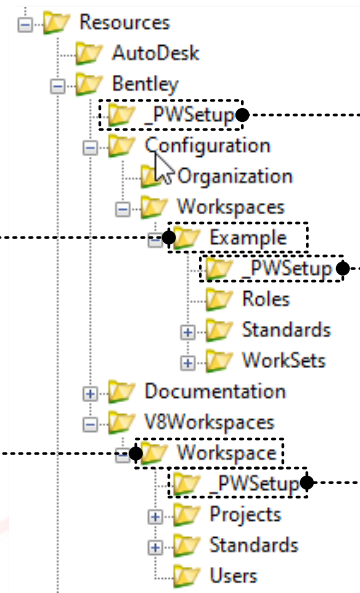
“Dynamic” Variable Naming

Framework variable created for this configuration begin with “_DYNAMIC_” to reflect the dynamic context capabilities with the configuration.

Dynamic Managed Workspace: Vocabulary

Workspace:

Standards shared by multiple projects.
Workspaces are identified by Names



PWSetup:

Locations where the configurations can be modified to suite ProjectWise Dynamic Workspace Environment

Common PWSetup:

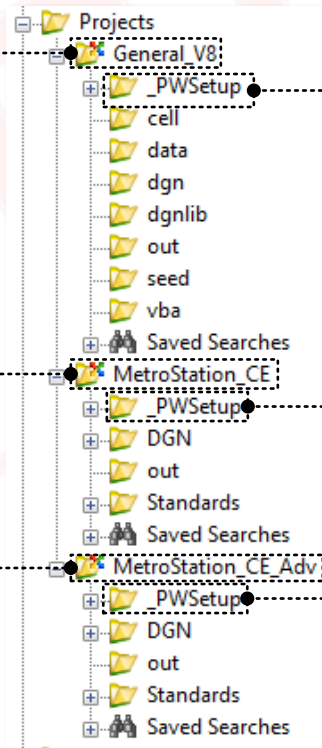
PW configuration common to all Workspaces

Workspace PWSetup:

PW configuration that is Workspace Specific

Work Area:

A ProjectWise WorkArea (previously known as a ProjectWise Project/Rich Project)



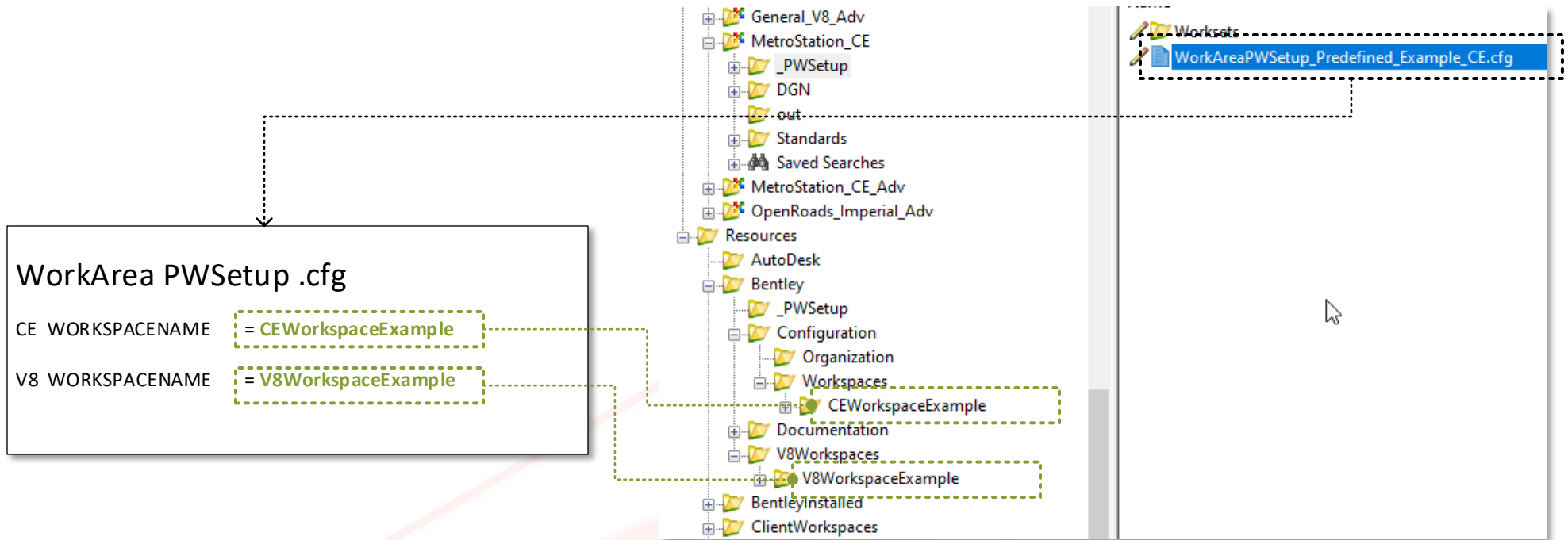
WorkArea PWSetup:

PW configuration that is WorkArea specific

SYMBOL LEGEND:

- CSB (Configuration Setting Block)
- Workspace Assignment
- Common CFG Files
- WorkArea Specific CFG Files
- Workspace Specific CFG Files

Dynamic Managed Workspace: Workspace Name Designation



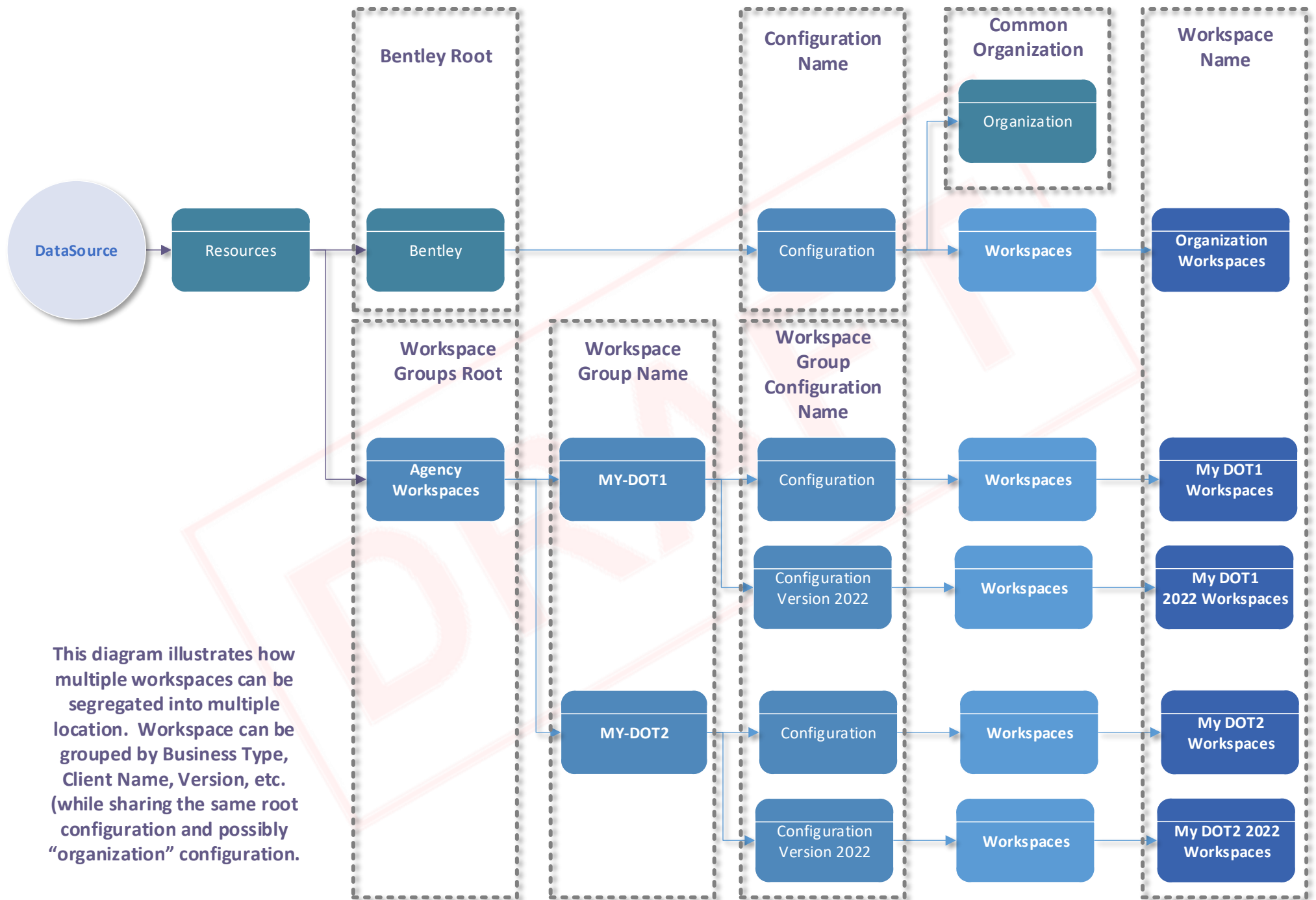
In its simplest form, the Dynamic Managed Workspace needs to designate a **workspace name** to be used by the application. The Dynamic Managed Workspace utilizes two variable to designation the V8 and CONNECT Edition workspaces. These are **_DYNAMIC_V8WORKSPACENAME** and **_DYNAMIC_CEWORKSPACENAME**. These variables are typically defined in a file called "WorkArea PWSetup*" and located within the WorkArea in folder called _PWSetup. These variable assignment should align with folder names in the ".\Bentley\V8Workspaces\" and ".\Bentley\Configuration\Workspaces\" folders for the V8 and CONNECT Edition applications respectively. Even though V8 does not use workspace names, the CONNECT Edition concept can be similarly utilized in a ProjectWise DI environment. Project Wise Explorer can read version variable at the time of launch and determine which workspace variable will be needed for the managed workspace. To accomplish this, the WorkArea PWSetup .cfg file may contain syntax similar to this:

```
%if defined (_VERSION_8_11)
  _DYNAMIC_V8WORKSPACENAME=V8WorkspaceExample
%elif defined (_VERSION_10_0)
  _DYNAMIC_CEWORKSPACENAME=CEWorkspaceExample
%endif
```

Alternate syntax can be used to prevent a file from being opened with the wrong version as well by using an **"error"** statement:

```
%if defined (_VERSION_8_11)
  %error This WorkArea not configured for V8i.
%elif defined (_VERSION_10_0)
  _DYNAMIC_CEWORKSPACENAME=CEWorkspaceExample
%endif
```

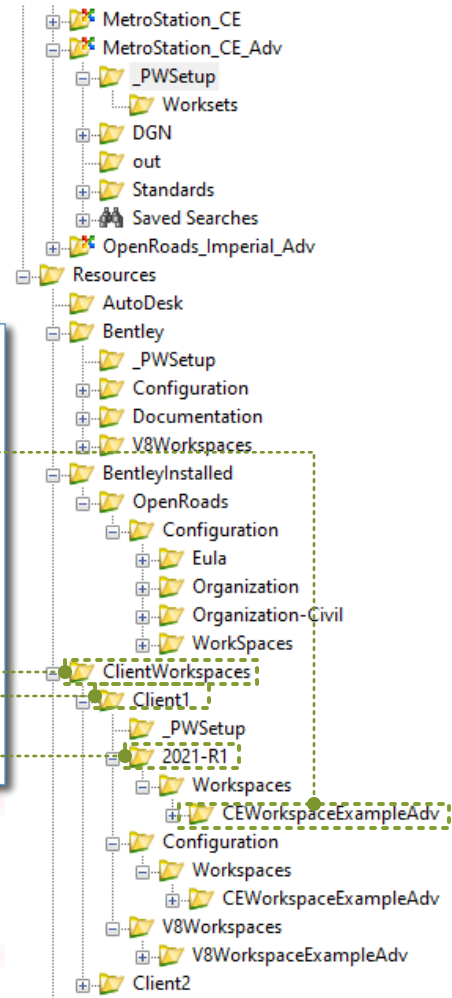
Dynamic Managed Workspace: Workspace Groups Concept Diagram



Dynamic Managed Workspace: Workspace Groups

WorkArea PWSetup Adv .cfg

`_DYNAMIC_CeworkspaceName` = CEWorkspaceExampleAdv
`_DYNAMIC_V8WorkspaceName` = V8WorkspaceExampleAdv
`_DYNAMIC_WorkspaceGroupsRoot` = @:/Resources/ClientWorkspaces/
`_DYNAMIC_WorkspaceGroupName` = Client1
`_DYNAMIC_WorkspaceGroup_ConfigurationName` = 2021-R1

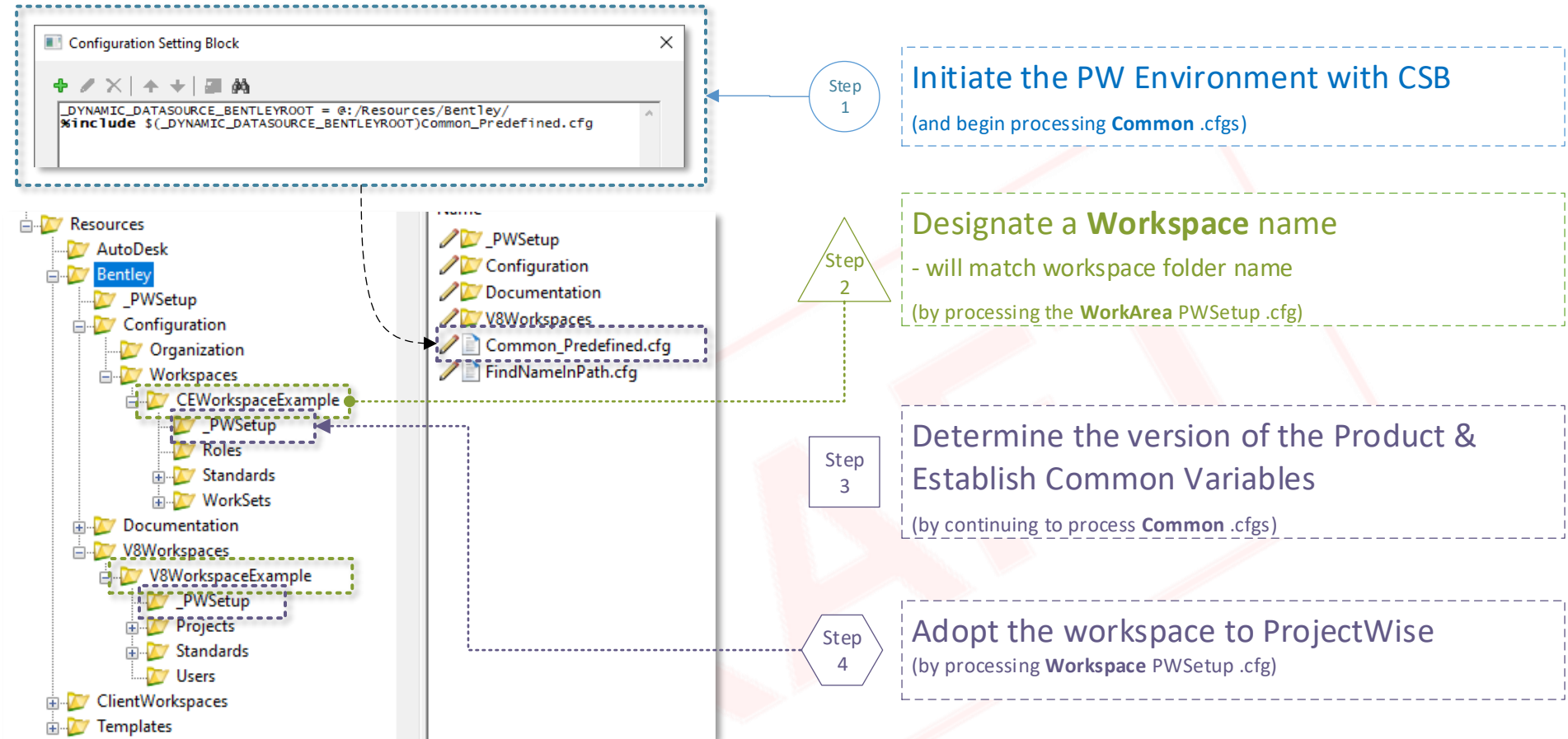


Many Design firms have a number of clients and therefore a number of workspace that may need to be separated to distinct locations. The Advanced options allows workspaces to be stored in other grouped location called “**Workspace Groups**”. There may also need to be multiple Workspace Groups location. The above image highlights “ClientWorkspaces” as a Workspace Groups location. Then, various “Client” workspaces can be grouped under this folder. The above highlights “Client1” as a **Workspace Group**. The Workspace Group is defined by the folder name. For CONNECT Edition, if multiple version of the workspace need to be accessed, the root “Configuration” folder name can be substituted for another name. The above image highlights “2020-R1” as an alternate “**Configuration Name**”. The following variable are used to define these parameters.

`_DYNAMIC_WorkspaceGroupsRoot` (must be full path, not require if using default path)
`_DYNAMIC_WorkspaceGroupName` (required to initiate Workspace Group)
`_DYNAMIC_WorkspaceGroup_ConfigurationName` (not required if using default name)

See the Advanced PWSetup page for how these variables are processed.

Dynamic Managed Workspace: Basic Steps to Initiate



While this configuration template attempts to achieve a number of common requirements, there are four (4) basic steps used to achieve the requirements.

Step 1

1) The first step is to initiate the managed workspace. This step, at minimum, requires on at least one variable be assigned to a ProjectWise through a CSB. In the case of this template the variable is `_DYNAMIC_DATASOURCE_BENTLEYROOT` and the CSB is typically called `Bentley Common Predefined 1.7`. Subsequent variables are then defined relative to this. (e.g. `_USTN_CONFIGURATION=$( _DYNAMIC_DATASOURCE_BENTLEYROOT)Configuration/`. The subsequent variable are assigned through the `Common_Predefined.cfg` file. This configuration will typically use `_DYNAMIC` to prepend associated variables.

Step 2

2) Once a root variable is created, the next essential step is to know the workspace to load. This can be done with passing the name of the workspace to the configuration. `_DYNAMIC_CEWORKSPACENAME` and `_DYNAMIC_V8WORKSPACENAME` and while be used to define the workspace names. These name will correspond to the name of the folder in the `.\Configuration\Workspace\` directory and `.\V8Workspaces\` for CONNECT and V8 respectively. There are 3 Options to assign these variables which are described on the next page.

Step 3

3) This next step is to determine the version of the application being launched. This can be done with a logic fork in the `Common_Predefined.cfg` file which checks two variable: `_VERSION_8_11` and `VERSION_10_0`. Depending on the these variables, appropriate version specific variable are set. As this is all initiated at the predefined level, the variable can be set/reset before they are actually used at the level needed.

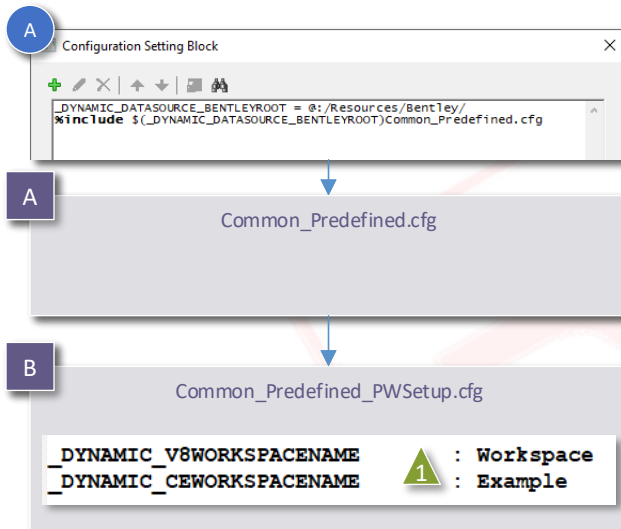
Step 4

4) The last essential step is to adapt the specific workspace to the ProjectWise environment. This is done by looking in the path, previously defined, for configuration files in the underlying folder `.\_PWSetup\` with a specific prepend `"WorkspacePWSetup"`.

Dynamic Managed Workspace: Workspace Designation Options

Option 1

Option 1 utilizes and single CSB. The **Bentley Common Predefined 1.7 CSB** includes a common config file named **Common_Predefined.cfg** to pre-configure ALL V8i workspaces and CONNECT Edition Configurations based on defaults and work area requirements. Defaults can be adjusted in the **Common Predefined PWSetup.cfg**. The **Bentley Common Predefined 1.7 CSB** can be applied to the whole Projects folder, if desired. This option is most often used an Organization with a single workspace

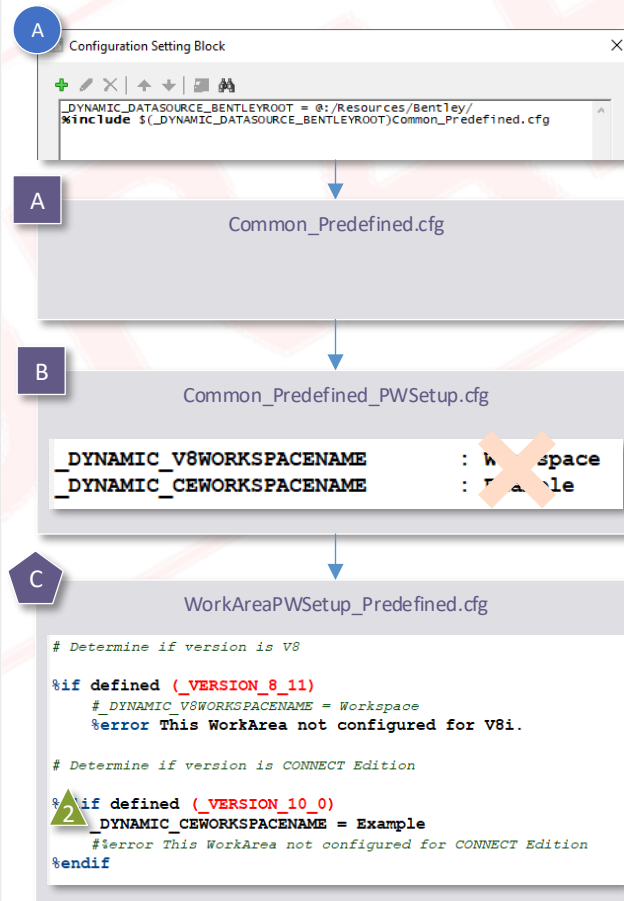


SYMBOL LEGEND:

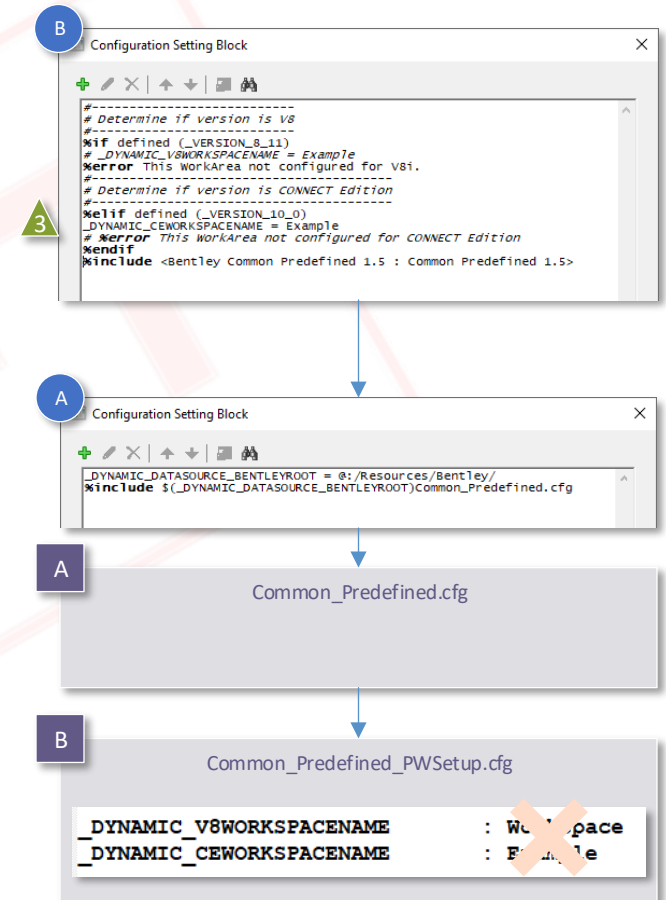
-  CSB (Configuration Setting Block)
-  Workspace Assignment
-  Common CFG Files
-  WorkArea Specific CFG Files
-  Workspace Specific CFG Files

Option 2

Option 2 is similar to Option 1, but allows for the inclusion of a text base cfg file called **WorkAreaPWSetup Predefined*.cfg**. Alternate workspaces can be set in this file as well as control which versions of applications can open files with the WorkArea.



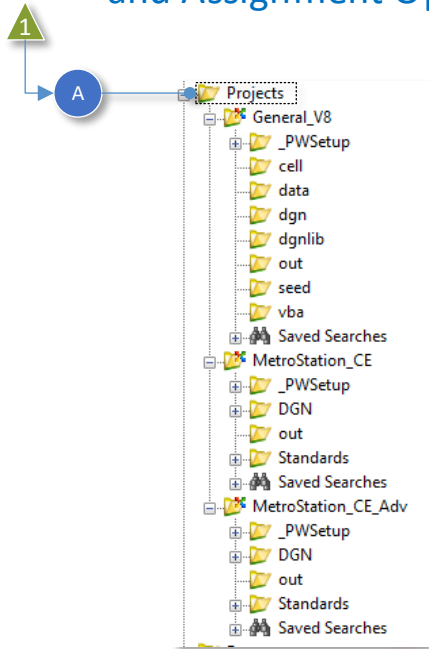
Option 3



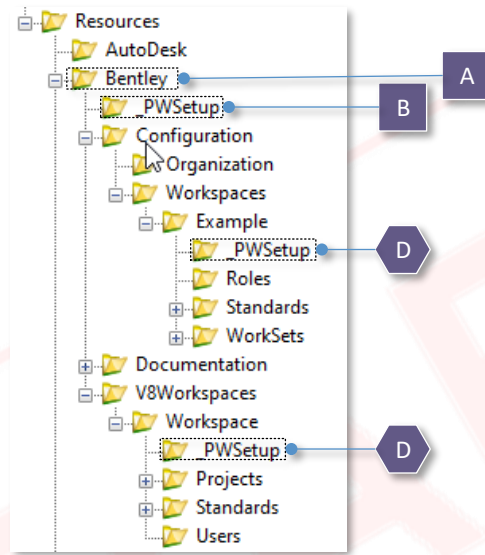
Option 3 is similar to Option 2, but syntax is contained within a CSB. The **Workspace specific CSB** also includes the **Bentley Common Predefined 1.7 CSB**.

Dynamic Managed Workspace: Designation Option 1 – Additional Details

WorkArea File Location and Assignment Options



Workspace File Locations



CSBs

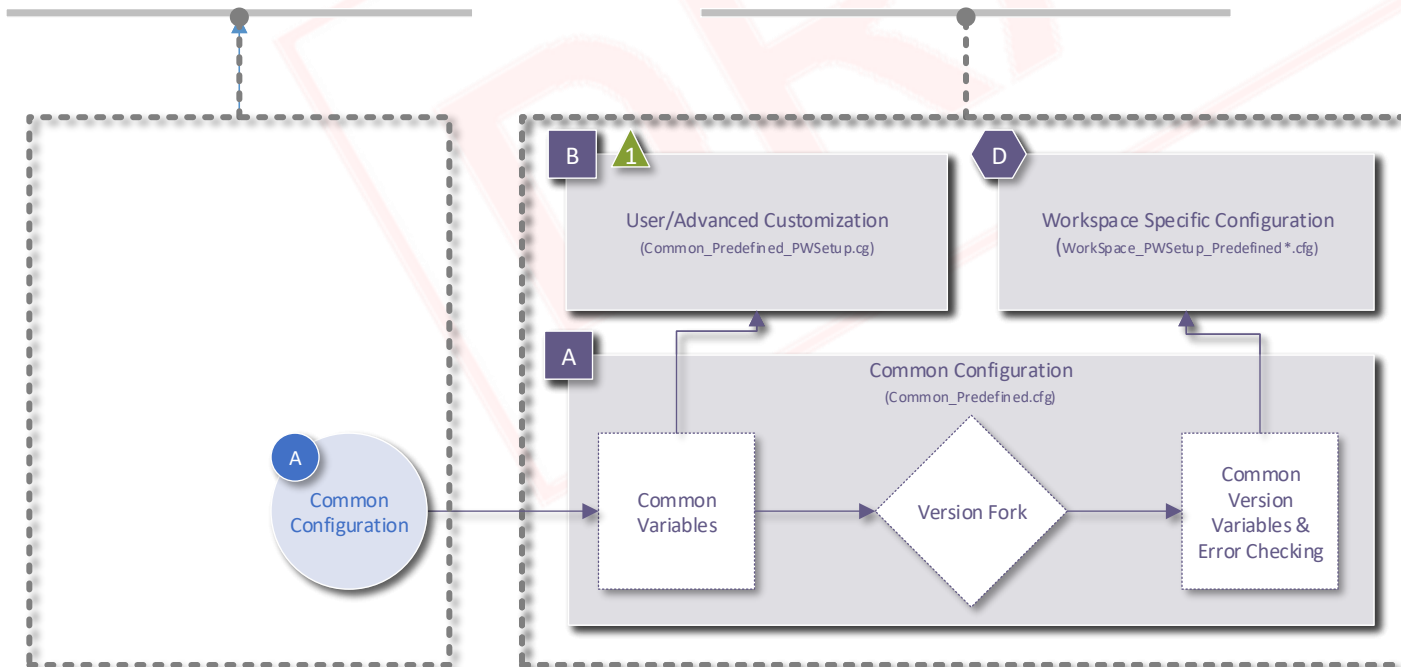
- A: Common CSB
-Used for Options 1 & 2.
- B: WorkSpace Specific CSBs
-User for option 3.

Workspace Assignment Options

- 1: Default
-defined in Common Predefined PWSetup.cfg
-single workspace installations
- 2: CFGs in WorkAreas
-can be adjusted per WorkArea
- 3: CSBs applied to specific WorkAreas
-central management of configuration

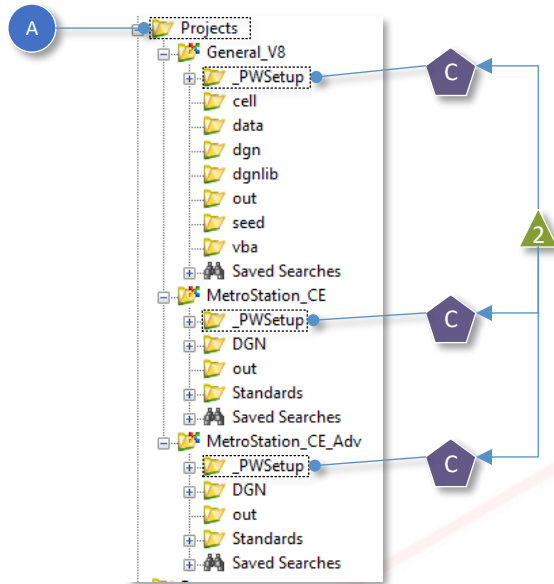
TEXT Based .cfg Files

- A. Common CFG Configuration:
 - Common Variables and Error Checking
 - Version Fork
 - Include for User/Advanced Configuration
 - Include for Workspace Specific Configuration
- B. User/Advanced Configuration :
 - User Adjustments to the common configuration
 - Set default Workspace Names
- C. WorkArea Specific Configuration:
 - Set Workspace Names at WorkArea
- D. Workspace Specific Configuration:
 - Adjust Specific Workspace to PW Configuration

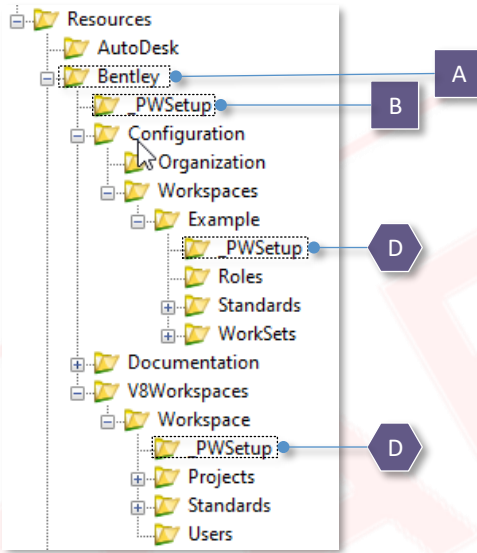


Dynamic Managed Workspace: Designation Option 2 – Additional Details

WorkArea File Location and Assignment Options



Workspace File Locations



CSBs

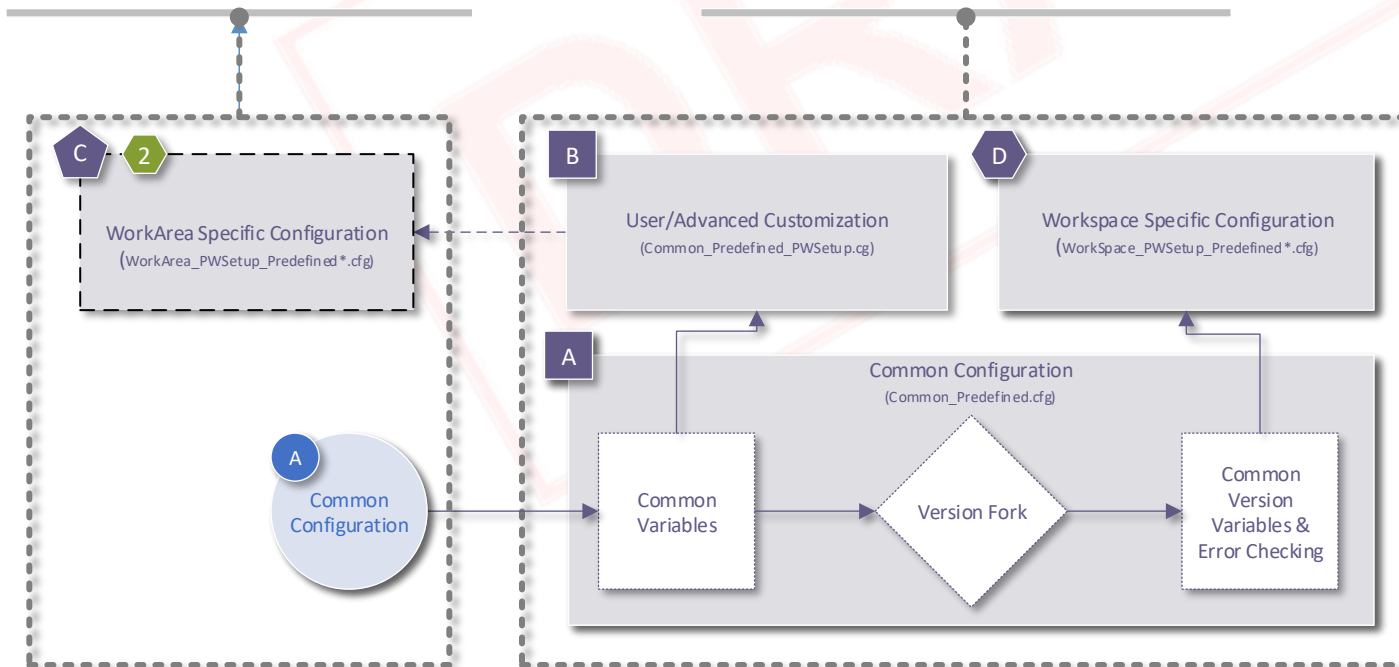
- A: Common CSB
-Used for Options 1 & 2.
- B: WorkSpace Specific CSBs
-User for option 3.

Workspace Assignment Options

- 1: Default
-defined in Common Predefined PWSetup.cfg
-single workspace installations
- 2: CFGs in WorkAreas
-can be adjusted per WorkArea
- 3: CSBs applied to specific WorkAreas
-central management of configuration

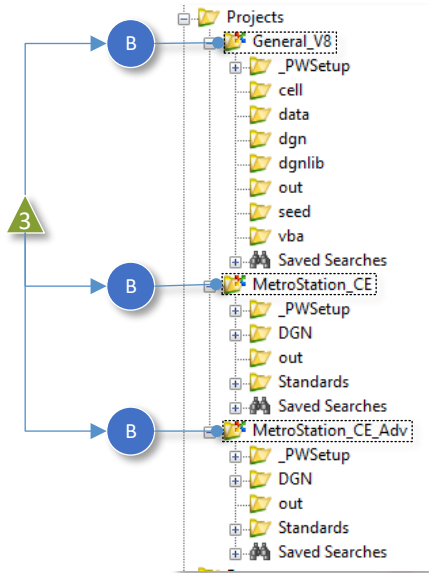
TEXT Based .cfg Files

- A. Common CFG Configuration:
 - Common Variables and Error Checking
 - Version Fork
 - Include for User/Advanced Configuration
 - Include for Workspace Specific Configuration
- B. User/Advanced Configuration :
 - User Adjustments to the common configuration
 - Set default Workspace Names
- C. WorkArea Specific Configuration:
 - Set Workspace Names at WorkArea
- D. Workspace Specific Configuration:
 - Adjust Specific Workspace to PW Configuration

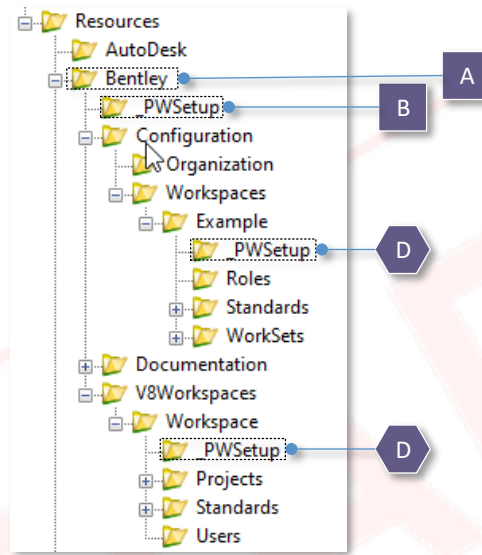


Dynamic Managed Workspace: Designation Option 3 – Additional Details

WorkArea File Location and Assignment Options



Workspace File Locations



CSBs

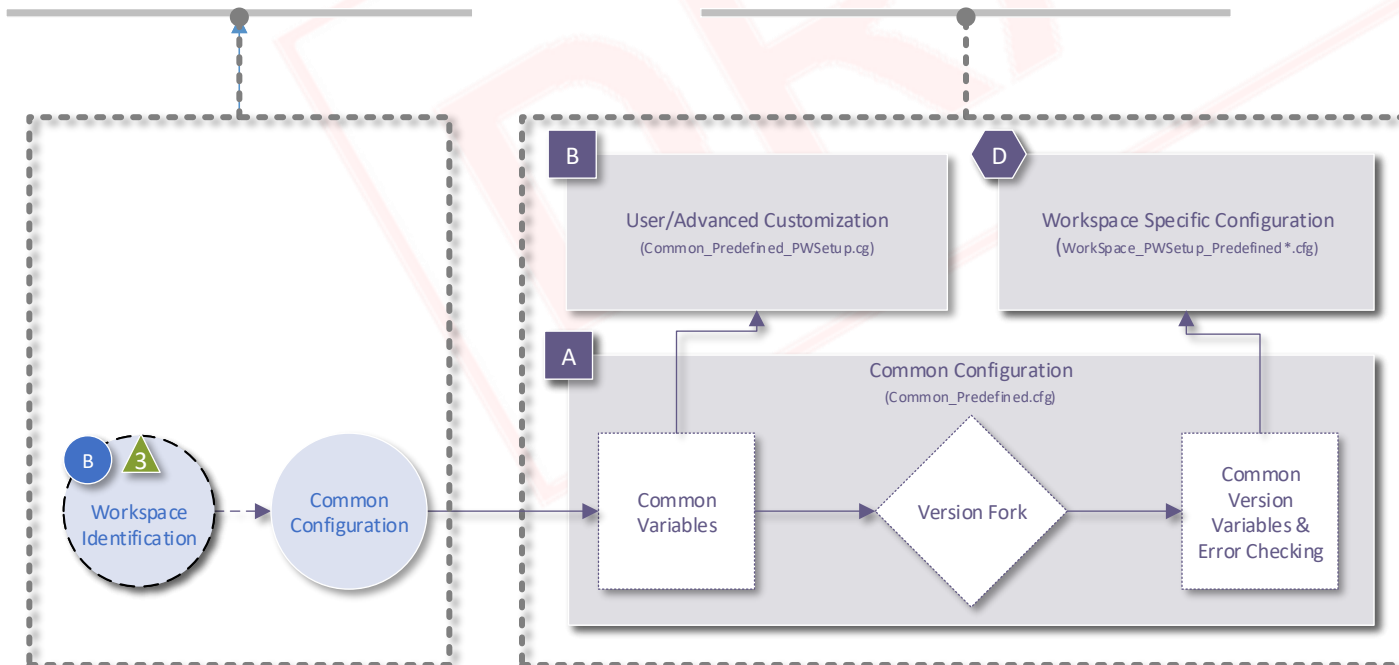
- A: Common CSB
-Used for Options 1 & 2.
- B: WorkSpace Specific CSBs
-User for option 3.

Workspace Assignment Options

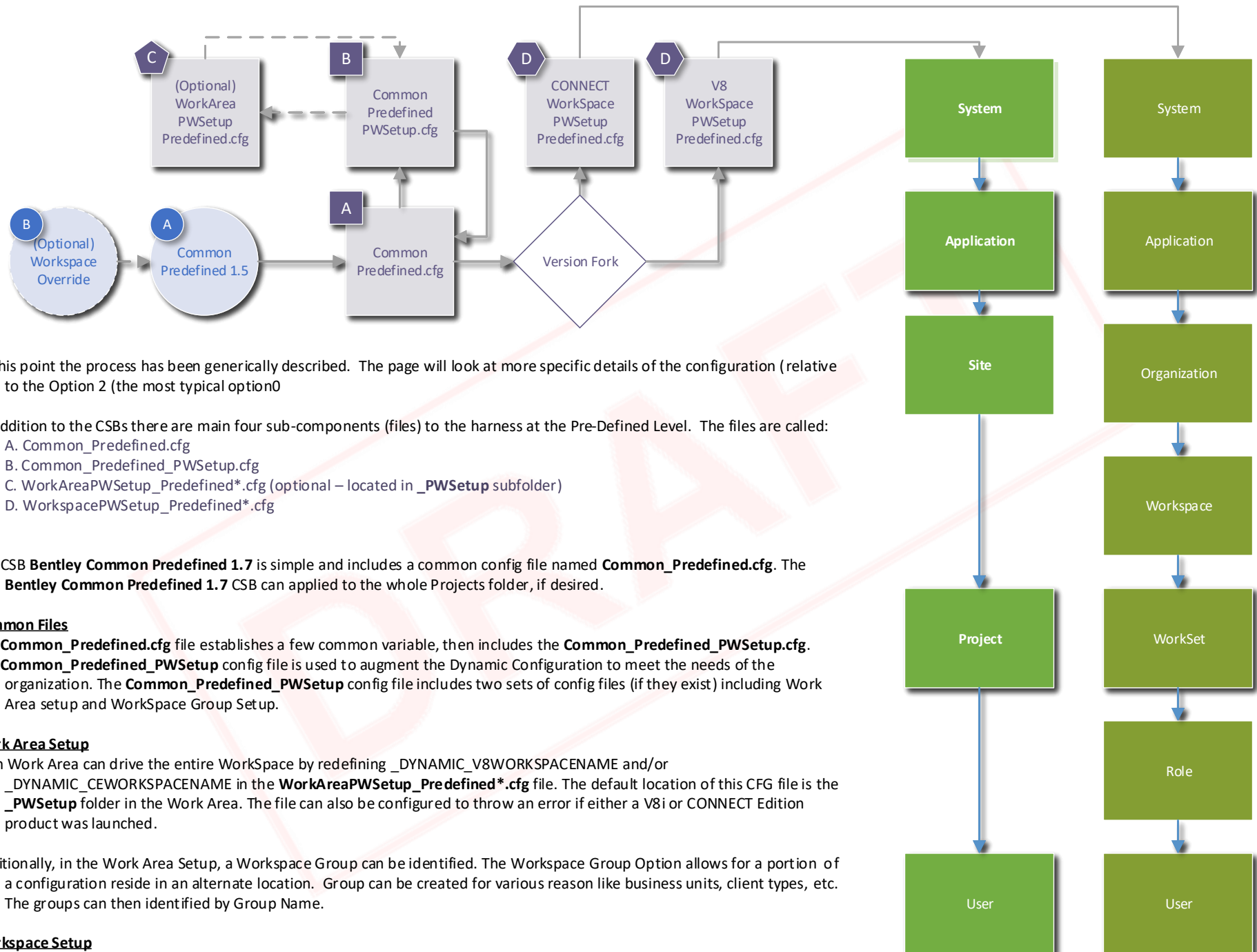
- 1: Default
-defined in Common Predefined PWSetup.cfg
-single workspace installations
- 2: CFGs in WorkAreas
-can be adjusted per WorkArea
- 3: CSBs applied to specific WorkAreas
-central management of configuration

TEXT Based .cfg Files

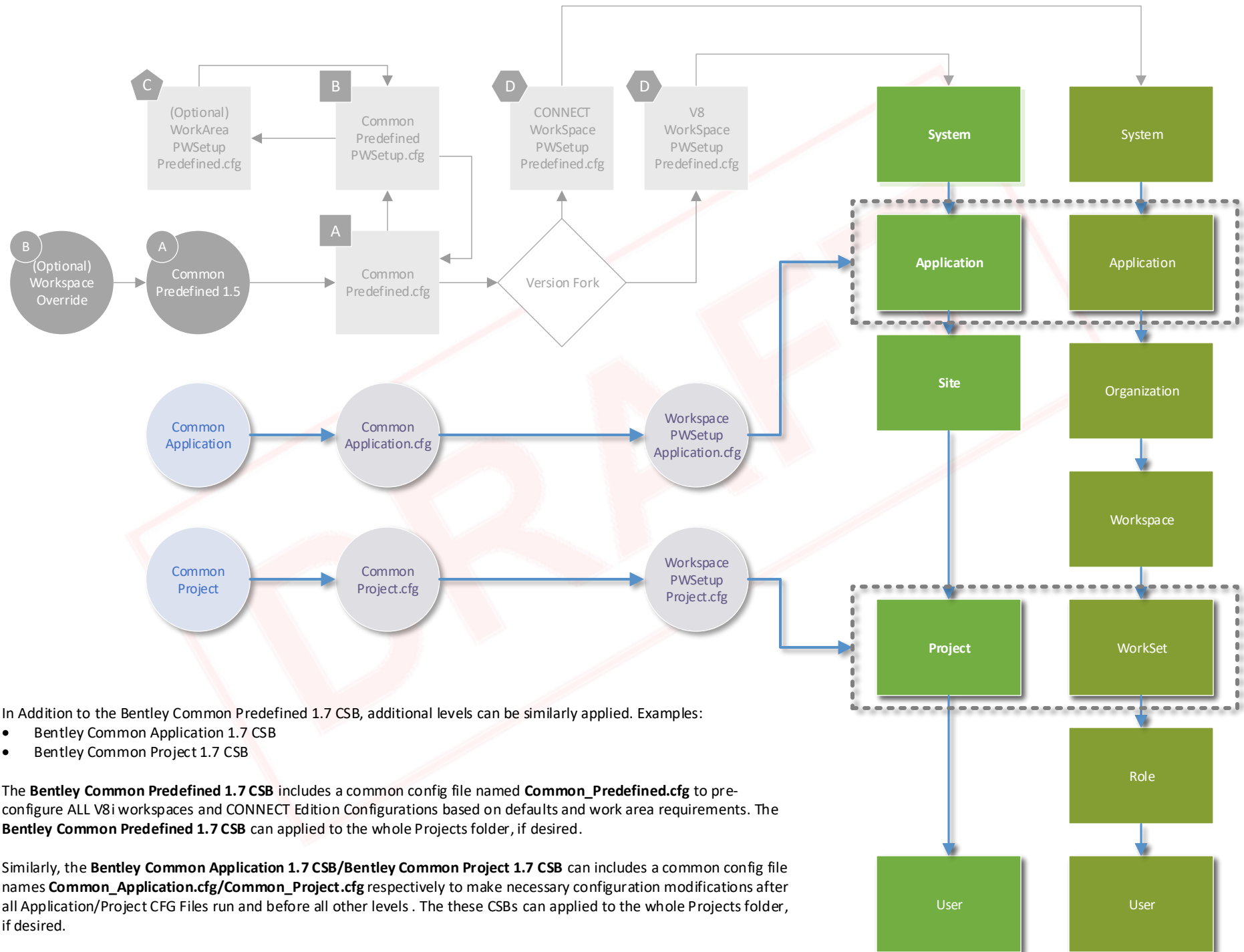
- A. Common CFG Configuration:
 - Common Variables and Error Checking
 - Version Fork
 - Include for User/Advanced Configuration
 - Include for Workspace Specific Configuration
- B. User/Advanced Configuration :
 - User Adjustments to the common configuration
 - Set default Workspace Names
- C. WorkArea Specific Configuration:
 - Set Workspace Names at WorkArea
- D. Workspace Specific Configuration:
 - Adjust Specific Workspace to PW Configuration



Dynamic Managed Workspace: Predefined Level Processing



Dynamic Managed Workspace: Additional Include Level Options



In Addition to the Bentley Common Predefined 1.7 CSB, additional levels can be similarly applied. Examples:

- Bentley Common Application 1.7 CSB
- Bentley Common Project 1.7 CSB

The **Bentley Common Predefined 1.7 CSB** includes a common config file named **Common_Predefined.cfg** to pre-configure ALL V8i workspaces and CONNECT Edition Configurations based on defaults and work area requirements. The **Bentley Common Predefined 1.7 CSB** can be applied to the whole Projects folder, if desired.

Similarly, the **Bentley Common Application 1.7 CSB/Bentley Common Project 1.7 CSB** can include a common config file names **Common_Application.cfg/Common_Project.cfg** respectively to make necessary configuration modifications after all Application/Project CFG Files run and before all other levels. These CSBs can be applied to the whole Projects folder, if desired.

Dynamic Managed Workspace: Common_Predefined.cfg Summary

This syntax shown on this page represents an abbreviated version of the Common_Predefined.cfg.

The primary purposes of this file are to:

- 1) provide a common hub for all configurations allow both V8 and CONNECT to start with the same configuration
- 2) Set common variables
- 3) Call Primary supplement configuration as needed
- 4) Serve as a initial minimum configuration.
- 5) Provide basic error checking for the existence of specific configuration files.

```
#-----
# _DYNAMIC_CONFIGS
#-----

_DYNAMIC_CONFIGS > Common Predefined 1.7.0

#-----
# _DYNAMIC_DATASOURCE
#-----

_DYNAMIC_DATASOURCE      = @:

#-----
# _DYNAMIC_WORKAREAS
#-----

# _DYNAMIC_WORKAREA AND _DYNAMIC_WORKAREA_NAME
%if exists ($(DMS_PROJECT(_DGNDIR)))
    _DYNAMIC_WORKAREA      : $(DMS_PROJECT(_DGNDIR))
    _DYNAMIC_WORKAREA_NAME : $(LASTDIRPIECE(_DYNAMIC_WORKAREA))
%endif

# _DYNAMIC_PARENTWORKAREA AND _DYNAMIC_PARENTWORKAREA_NAME
%if exists ($(DMS_PARENTPROJECT(_DGNDIR)))
    _DYNAMIC_PARENTWORKAREA : $(DMS_PARENTPROJECT(_DGNDIR))
    _DYNAMIC_PARENTWORKAREA_NAME : $(LASTDIRPIECE(_DYNAMIC_PARENTWORKAREA))
%endif

# CONNECTED PROJECT VARIABLES
%if exists ($(DMS_CONNECTEDPROJECT(_DGNDIR)))
    _DYNAMIC_CONNECTEDPROJECT : $(DMS_CONNECTEDPROJECT(_DGNDIR))
    _USTN_CONNECT_PROJECTGUID : $(DMS_CONNECTEDPROJECTGUID(_DGNDIR))
%endif

#-----
# USER CONFIGURATION OPTIONS
#-----

%if exists ($( _DYNAMIC_DATASOURCE_BENTLEYROOT)_PWSetup/Common_Predefined_PWSetup.cfg)
    %include $( _DYNAMIC_DATASOURCE_BENTLEYROOT)_PWSetup/Common_Predefined_PWSetup.cfg
%endif

#-----
# DEFINE PRIMARY FRAMEWORK VARIABLES
#-----

%if defined (_VERSION_8_11) # V8 SETUP SECTION
.....
    %include $( _DYNAMIC_V8WORKSPACEROOT)_PWSetup/WorkspacePWSetup_Predefined*.cfg

%elif defined (_VERSION_10_0) # CONNECT EDITION SETUP SECTION
.....
    %include $( _DYNAMIC_CEWORKSPACEROOT)_PWSetup/WorkspacePWSetup_Predefined*.cfg

%else
    %error Version Not Supported
%endif
```

Dynamic Managed Workspace: V8 Fork

This syntax shown on this page represents the V8 section of the Common_Predefined.cfg

```
%if defined ( _VERSION_8_11) # V8 SETUP SECTION

  _USTN_WORKSPACEROOT      : $( _USTN_INSTALLED_WORKSPACEROOT)

  _DYNAMIC_V8WORKSPACESROOTNAME : V8Workspaces

  _DYNAMIC_V8WORKSPACESROOT   : $( _DYNAMIC_DATASOURCE_BENTLEYROOT)$( _DYNAMIC_V8WORKSPACESROOTNAME)/
  _DYNAMIC_V8WORKSPACEROOT    : $( _DYNAMIC_V8WORKSPACESROOT)$( _DYNAMIC_V8WORKSPACENAME)/

  # Verify existence of directories
  %if !exists $( _DYNAMIC_V8WORKSPACESROOT)
    %error NOT FOUND _DYNAMIC_V8WORKSPACESROOT: $( _DYNAMIC_V8WORKSPACESROOT)
  %elif !exists $( _DYNAMIC_V8WORKSPACEROOT)
    %error NOT FOUND _DYNAMIC_V8WORKSPACEROOT: $( _DYNAMIC_V8WORKSPACEROOT)
  %endif

  # Sets Standard PowerPlatform Variables based on Dynamic Variables
  _USTN_SITE      : $( _DYNAMIC_V8WORKSPACEROOT)Standards/
  _USTN_PROJECTSROOT : $( _DYNAMIC_V8WORKSPACEROOT)Projects/

  %if defined ( _DYNAMIC_WORKAREA_NAME)
    _USTN_PROJECTNAME      : $( _DYNAMIC_WORKAREA_NAME)
    _USTN_PROJECTDATA      : $( _DYNAMIC_WORKAREA)/
  %endif

  #Includes Workspace specific setup files
  %include $( _DYNAMIC_V8WORKSPACEROOT)_PWSetup/WorkspacePWSetup_Predefined*.cfg

  %lock _USTN_WORKSPACEROOT
```

Dynamic Managed Workspace: CONNECT Edition Fork

This syntax shown on this page represents the CONNECT Edition section of the Common_Predefined.cfg

```
%elif defined (_VERSION_10_0) # CONNECT EDITION SETUP SECTION
```

```
# _DYNAMIC_CONFIGURATIONNAME allows versions of full CONNECT configurations under the Common Bentley root
```

```
_DYNAMIC_CONFIGURATIONNAME : Configuration
```

```
_DYNAMIC_CONFIGURATIONROOT :${_DYNAMIC_DATASOURCE_BENTLEYROOT}${_DYNAMIC_CONFIGURATIONNAME}/
```

```
# Verify existence of directory
```

```
%if !exists (${_DYNAMIC_CONFIGURATIONROOT})
```

```
    %error NOT FOUND _DYNAMIC_CONFIGURATIONROOT: ${_DYNAMIC_CONFIGURATIONROOT}
```

```
%endif
```

```
_USTN_CONFIGURATION : ${_DYNAMIC_CONFIGURATIONROOT}
```

```
_USTN_CUSTOM_CONFIGURATION : ${_DYNAMIC_CONFIGURATIONROOT}
```

```
# Includes Configuration specific PW setup files
```

```
# This Maybe needed to emulate WorkspaceSet.cfg syntax
```

```
%include ${_DYNAMIC_CONFIGURATIONROOT}_PWSetup/ConfigurationPWSetup_Predefined*.cfg
```

```
_DYNAMIC_CEORGANIZATIONROOTNAME : Organization
```

```
_DYNAMIC_CEORGANIZATIONROOT :${_DYNAMIC_CONFIGURATIONROOT}${_DYNAMIC_CEORGANIZATIONROOTNAME}/
```

```
_USTN_ORGANIZATION :${_DYNAMIC_CEORGANIZATIONROOT}
```

```
#Sets and Verify Dynamic Workspaces location
```

```
_DYNAMIC_CEWORKSPACESROOTNAME : WorkSpaces
```

```
_DYNAMIC_CEWORKSPACESROOT : ${_USTN_CONFIGURATION}${_DYNAMIC_CEWORKSPACESROOTNAME}/
```

```
%if !exists (${_DYNAMIC_CEWORKSPACESROOT})
```

```
    %error NOT FOUND _DYNAMIC_CEWORKSPACESROOT: ${_DYNAMIC_CEWORKSPACESROOT}
```

```
%endif
```

```
#Sets and Verify Dynamic Workspace location
```

```
_DYNAMIC_CEWORKSPACEROOT : ${_DYNAMIC_CEWORKSPACESROOT}${_DYNAMIC_CEWORKSPACENAME}/
```

```
%if !exists (${_DYNAMIC_CEWORKSPACEROOT})
```

```
    %error NOT FOUND _DYNAMIC_CEWORKSPACEROOT: ${_DYNAMIC_CEWORKSPACEROOT}
```

```
%endif
```

```
# Sets Standard PowerPlatform Variables base on defined Dynamic Variables
```

```
_USTN_WORKSPACENAME : ${_DYNAMIC_CEWORKSPACENAME}
```

```
_USTN_WORKSPACESROOT : ${_DYNAMIC_CEWORKSPACESROOT}
```

```
#Verify existence of named workspace cfg
```

```
%if !exists (${_DYNAMIC_CEWORKSPACESROOT}${_DYNAMIC_CEWORKSPACENAME}.cfg)
```

```
    %error NOT FOUND CONNECT WORKSPACE CFG FILE: ${_DYNAMIC_CEWORKSPACESROOT}${_DYNAMIC_CEWORKSPACENAME}.cfg
```

```
%endif
```

```
%if defined (_DYNAMIC_WORKAREA_NAME)
```

```
    _USTN_WORKSETNAME : ${_DYNAMIC_WORKAREA_NAME}
```

```
    _USTN_WORKSETROOT : ${_DYNAMIC_WORKAREA}
```

```
%endif
```

```
#Includes WorkSpace specific PW setup files
```

```
%include ${_DYNAMIC_CEWORKSPACEROOT}_PWSetup/WorkspacePWSetup_Predefined*.cfg
```

```
%lock _USTN_CONFIGURATION
```

```
%lock _USTN_CUSTOM_CONFIGURATION
```

Dynamic Managed Workspace: Common_Predefined_PWSetup.cfg (Simple)

This syntax shown on this page represents an abbreviated version of the Common_Predefined_PWSetp.cfg. The primary purposes of this file are to:

- 1) Set User specific default variables
- 2) Provide template for Advanced Configuration Options.

The syntax shown shows a potential minimal configuration where Option 2 is used to define alternate workspaces along with the option to used a CONNECT project to identify the project root.

```
#-----
# _DYNAMIC_V8WORKSPACENAME and _DYNAMIC_CEWORKSPACENAME
#-----
# Sets default workspace names used by organization.
# Maintain use of ":" so that this can be pre-established if utilizing this configuration for
# multiple clients/workspaces
#-----

_DYNAMIC_V8WORKSPACENAME : V8WorkspaceExample
_DYNAMIC_CEWORKSPACENAME : CEWorkspaceExample

#-----
# _DYNAMIC_V8WORKSPACESROOTNAME and _DYNAMIC_CONFIGURATIONNAME
#-----

_DYNAMIC_V8WORKSPACESROOTNAME : V8Workspaces
_DYNAMIC_CONFIGURATIONNAME : Configuration
_DYNAMIC_CEWORKSPACESROOTNAME : WorkSpaces

#-----
# The preferred method is to utilize a CSB, however a .cfg can optionally be loaded which contains similar syntax
#-----

_DYNAMIC_PWSETUP_PATH:_PWSetup

_DYNAMIC_WORKAREA_PWSETUP_PATH:${_DYNAMIC_PWSETUP_PATH}

%if defined(_DYNAMIC_WORKAREA) && exists (${_DYNAMIC_WORKAREA}${_DYNAMIC_WORKAREA_PWSETUP_PATH}/)
_DYNAMIC_WORKAREA_PWSETUP_FOUND:1
_DYNAMIC_WORKAREAROOT:${_DYNAMIC_WORKAREA}
_DYNAMIC_WORKAREA_PWSETUP:${_DYNAMIC_WORKAREA}${_DYNAMIC_WORKAREA_PWSETUP_PATH}/
%elif defined(_DYNAMIC_PARENTWORKAREA) && exists
(${_DYNAMIC_PARENTWORKAREA}${_DYNAMIC_WORKAREA_PWSETUP_PATH}/)
_DYNAMIC_WORKAREA_PWSETUP_FOUND:1
_DYNAMIC_WORKAREAROOT:${_DYNAMIC_PARENTWORKAREA}
_DYNAMIC_WORKAREA_PWSETUP:${_DYNAMIC_PARENTWORKAREA}${_DYNAMIC_WORKAREA_PWSETUP_PATH}/
### CONNECTED PROJECT
%elif defined(_DYNAMIC_CONNECTEDPROJECT) && exists
(${_DYNAMIC_CONNECTEDPROJECT}${_DYNAMIC_WORKAREA_PWSETUP_PATH}/)
_DYNAMIC_WORKAREA_PWSETUP_FOUND:1
_DYNAMIC_WORKAREAROOT:${_DYNAMIC_CONNECTEDPROJECT}
_DYNAMIC_WORKAREA_PWSETUP:${_DYNAMIC_CONNECTEDPROJECT}${_DYNAMIC_WORKAREA_PWSETUP_PATH}/
%else
_DYNAMIC_WORKAREA_PWSETUP_FOUND:0
%endif

#-----
#
#-----

%if ((_DYNAMIC_WORKAREA_PWSETUP_FOUND)==1)
#include ${_DYNAMIC_WORKAREA_PWSETUP}WorkAreaPWSetup_Predefined*.cfg
%endif
```

Dynamic Managed Workspace: Common_Predefined_PWSetup.cfg (Adv.)

This syntax shown on this page represents two section of the Common Predefine PW Setup.cfg

- 1) Possible option to determine loaded product version.
- 2) Possible option to detect and utilize ProjectWise Drive

```
#-----
# Read Registry to find product version
#-----
%if !defined (_USTN_PRODUCT_VERSION_GENERATION)
  %include $(_ROOTDIR)config/msdir.cfg
  %if defined (_VERSION_8_11) || defined (_VERSION_8_10)
    _DYNAMIC_PRODUCT_VERSION_REGISTRY = ${registryread{"HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Bentley\Installed_Products\$(MS_PRODUCTCODEGUID)\DisplayVersion"}}
  %else
    _DYNAMIC_PRODUCT_VERSION_REGISTRY = ${registryread{"HKEY_CLASSES_ROOT\Installer\Dependencies\$(MS_PRODUCTCODEGUID)\Version"}}
  %endif

  _DYNAMIC_PRODUCT_VERSION = lastdirpiece(C:\${_DYNAMIC_PRODUCT_VERSION_REGISTRY})
  _DYNAMIC_PRODUCT_VERSION_GEN_MAJ_MNR = basename(${_DYNAMIC_PRODUCT_VERSION})
  _DYNAMIC_PRODUCT_VERSION_GEN_MAJ = basename(${_DYNAMIC_PRODUCT_VERSION_GEN_MAJ_MNR})
%else
  _DYNAMIC_PRODUCT_VERSION_GEN_MAJ=${_USTN_PRODUCT_VERSION_GENERATION}.${_USTN_PRODUCT_VERSION_MAJOR}
  _DYNAMIC_PRODUCT_VERSION_GEN_MAJ_MNR=${_DYNAMIC_PRODUCT_VERSION_GEN_MAJ}.${_USTN_PRODUCT_VERSION_MINOR}
%endif

#-----
# EXAMPLE PWDRIVE SYNTAX: DELETE IF NOT USED
# ProjectWise Drive : Example PWDrive Variables
#-----
_PROJECTWISE_DRIVE_FOUND=0
_PROJECTWISE_DRIVE_ENABLED:0
%if ((_PROJECTWISE_DRIVE_ENABLED)==1)
  _PROJECTWISE_DRIVE_ORG : Bentley Systems Inc

  %if defined (_PROJECTWISE_DRIVE) && exists (${_PROJECTWISE_DRIVE})
    _PROJECTWISE_DRIVE : ${_PROJECTWISE_DRIVE}
    _PROJECTWISE_DRIVE_FOUND=1
  %elif exists (${USERPROFILE}/ProjectWise/${_PROJECTWISE_DRIVE_ORG}/)
    _PROJECTWISE_DRIVE : ${USERPROFILE}/ProjectWise/${_PROJECTWISE_DRIVE_ORG}/
    _PROJECTWISE_DRIVE_FOUND=1
  %else
    _PROJECTWISE_DRIVE : ${registryread{"HKEY_CURRENT_USER\SOFTWARE\Bentley\ProjectWise Drive\Organizations\${_PROJECTWISE_DRIVE_ORG}\OrganizationRootDirectory"}}
    %if exists (${_PROJECTWISE_DRIVE})
      _PROJECTWISE_DRIVE_FOUND=1
    %else
      %undef _PROJECTWISE_DRIVE
    %endif
  %endif
%endif

%endif
#-----
```

_DYNAMIC_PRODUCT_VERSION	System	10.16.01.024	_DYNAMIC_PRODUCT_VERSION
_DYNAMIC_PRODUCT_VERSION_GEN_MAJ	System	10.16	_DYNAMIC_PRODUCT_VERSION_GEN_MAJ
_DYNAMIC_PRODUCT_VERSION_GEN_MAJ_MNR	System	10.16.01	_DYNAMIC_PRODUCT_VERSION_GEN_MAJ_MNR
_DYNAMIC_PRODUCT_VERSION_REGISTRY	System	10.16.01.024\	_DYNAMIC_PRODUCT_VERSION_REGISTRY

Dynamic Managed Workspace: Common_Predefined_PWSetup.cfg (Adv.)

This syntax shown on this page represent that first part of the Workspace Groups section.

The line shown in red, should be edited to reflect the default location of Workspace Groups

```
%if defined (_DYNAMIC_WORKSPACEGROUPNAME)

# Set Default Location. This variable can be redirected in the WorkArea PWSetup cfg file or preemptive CSB.
# Over-rides can be initiated in the WorkArea PWSetup

# _DYNAMIC_WORKSPACEGROUPSROOT needs to be a full path
_DYNAMIC_WORKSPACEGROUPSROOT : $(parentdevdir(_DYNAMIC_DATASOURCE_BENTLEYROOT))ClientWorkspaces/

# Alternate Example: _DYNAMIC_WORKSPACEGROUPSROOT : @:SandBox\SandBoxWorkspaces\

#-----
# EXAMPLE PWDRIVE SYNTAX: DELETE IF NOT USED
# Redirect to ProjectWise Drive "Workspace GroupRoot" if _PROJECTWISE_DRIVE_ENABLED = 1
#-----

%if ((_PROJECTWISE_DRIVE_FOUND)==1) && defined (_PROJECTWISE_DRIVE_WORKSPACEGROUPNAME)
    _PROJECTWISE_DRIVE_WORKSPACEGROUPROOT : $_PROJECTWISE_DRIVE($_PROJECTWISE_DRIVE_WORKSPACEGROUPNAME)/
    %if exists ($_PROJECTWISE_DRIVE_WORKSPACEGROUPROOT)
        _DYNAMIC_WORKSPACEGROUPROOT : $_PROJECTWISE_DRIVE_WORKSPACEGROUPROOT
    %endif
%endif

#-----
#-----
_DYNAMIC_WORKSPACEGROUPROOT : $_DYNAMIC_WORKSPACEGROUPSROOT$_DYNAMIC_WORKSPACEGROUPNAME/

#-----
# Verify Workspace Group Locations
#-----

%if !exists ($_DYNAMIC_WORKSPACEGROUPSROOT) && ((_PROJECTWISE_DRIVE_FOUND)==0)
    %error NOT FOUND WORKSPACE GROUPS ROOT : $_DYNAMIC_WORKSPACEGROUPSROOT
%elif !exists ($_DYNAMIC_WORKSPACEGROUPROOT)
    %error NOT FOUND WORKSPACE GROUP ROOT : $_DYNAMIC_WORKSPACEGROUPROOT
%endif

#-----
# The following allows for Workspace Group specific PW Setup.
#-----

%if exists ($_DYNAMIC_WORKSPACEGROUPROOT)$_DYNAMIC_PWSETUP_PATH)/WorkSpaceGroupPWSetup_Predefined*.cfg)
    %include $_DYNAMIC_WORKSPACEGROUPROOT$_DYNAMIC_PWSETUP_PATH)/WorkSpaceGroupPWSetup_Predefined*.cfg
%endif
```

Dynamic Managed Workspace: Common_Predefined_PWSetup.cfg (Adv.)

```
%if defined (_DYNAMIC_WORKSPACEGROUPNAME)
...

#-----
# Version Specific Workspace Group Configuration Options
#-----
%if defined (_VERSION_8_11)

    _DYNAMIC_WORKSPACEGROUP_V8WORKSPACESROOTNAME : $_DYNAMIC_V8WORKSPACESROOTNAME)

    _DYNAMIC_V8WORKSPACESROOT : $_DYNAMIC_WORKSPACEGROUPROOT)$_DYNAMIC_WORKSPACEGROUP_V8WORKSPACESROOTNAME)/

    #Verify locations
    %if !exists ($_DYNAMIC_V8WORKSPACESROOT))
        %error NOT FOUND DYNAMIC V8 WORKSPACESROOT - IN GROUP ROOT : $_DYNAMIC_V8WORKSPACESROOT)
    %endif

%elif defined (_VERSION_10_0)
    _DYNAMIC_CEORGANIZATIONROOTNAME : Organization

    # _DYNAMIC_WORKSPACEGROUP_CONFIGURATIONNAME allows versions of full CONNECT configurations in the Workspace Group
    _DYNAMIC_WORKSPACEGROUP_CONFIGURATIONNAME : $_DYNAMIC_CONFIGURATIONNAME)
    _DYNAMIC_WORKSPACEGROUP_CONFIGURATIONROOT : $_DYNAMIC_WORKSPACEGROUPROOT)$_DYNAMIC_WORKSPACEGROUP_CONFIGURATIONNAME)/

    #Verify location
    %if !exists ($_DYNAMIC_WORKSPACEGROUP_CONFIGURATIONROOT))
        %error NOT FOUND DYNAMIC CONFIGURATIONROOT - IN GROUP ROOT : $_DYNAMIC_WORKSPACEGROUP_CONFIGURATIONROOT)
    %endif

    # Redirects _DYNAMIC_CONFIGURATIONROOT (_USTN_CONFIGURATION) to Workspace Group if WorkspaceSetup.cfg is found in Configuration Root.
    # Otherwise, only the "Workspace" is redirected
    %if exists ($_DYNAMIC_WORKSPACEGROUP_CONFIGURATIONROOT)WorkspaceSetup.cfg)
        _DYNAMIC_CONFIGURATIONROOT : $_DYNAMIC_WORKSPACEGROUP_CONFIGURATIONROOT)
        #If Organization folder not found, _USTN_ORGANIZATION is redirected by to "Bentley" common location.
        %if !exists ($_DYNAMIC_WORKSPACEGROUP_CONFIGURATIONROOT)$_DYNAMIC_CEORGANIZATIONROOTNAME)/)
            _DYNAMIC_CEORGANIZATIONROOT : $_DYNAMIC_DATASOURCE_BENTLEYROOT)$_DYNAMIC_CONFIGURATIONNAME)/$_DYNAMIC_CEORGANIZATIONROOTNAME)/
        %endif
    %else
        #Sets _USTN_CONFIGURATION to root location if not previously set
        _DYNAMIC_CONFIGURATIONROOT : $_DYNAMIC_DATASOURCE_BENTLEYROOT)$_DYNAMIC_CONFIGURATIONNAME)/
    %endif

    _DYNAMIC_WORKSPACEGROUP_CEWORKSPACESROOTNAME : $_DYNAMIC_CEWORKSPACESROOTNAME)
    _DYNAMIC_CEWORKSPACESROOT : $_DYNAMIC_WORKSPACEGROUP_CONFIGURATIONROOT)$_DYNAMIC_WORKSPACEGROUP_CEWORKSPACESROOTNAME)/

    #Verify location
    %if !exists ($_DYNAMIC_CEWORKSPACESROOT))
        %error NOT FOUND DYNAMIC CE WORKSPACESROOT - IN GROUP ROOT: $_DYNAMIC_CEWORKSPACESROOT)
    %endif
%endif
%endif
```

This syntax shown on this page represent that version specific parts of the Workspace Groups section

Dynamic Managed Workspace: WorkArea PWSetup

This syntax shown on this page represents the a typical Work Area PWSetup.cfg

```
# Determine if version is V8

%if defined (_VERSION_8_11)
    #_DYNAMIC_V8WORKSPACENAME = V8WorkspaceExample
    %error This WorkArea not configured for V8i.

# Determine if version is CONNECT Edition

%elif defined (_VERSION_10_0)
    _DYNAMIC_CWORKSPACENAME = CEWorkspaceExample1
    _DYNAMIC_WORKSPACEGROUP_CONFIGURATIONNAME : 2021-R1
    #%error This WorkArea not configured for CONNECT Edition
%endif

_DYNAMIC_WORKSPACEGROUPSROOT : $(parentdevdir(_DYNAMIC_DATASOURCE_BENTLEYROOT))ClientWorkspaces/
_DYNAMIC_WORKSPACEGROUPNAME : Client1
```

Dynamic Managed Workspace: Workspace PWSetup Predefined*.cfg

This syntax shown on this page represents the a typical WorkSpace PWSetup.cfg

Note: This file typically (at a minimum) define the location of the Workset/project configuration file.

For CONNECT it also defines the location of the .dgnws file.

```
#-----
# _DYNAMIC_CONFIGS
#-----

_DYNAMIC_CONFIGS > Example Workspace PWSetup Predefined Version 1.1

#-----
# WORKSETS AND DGNWS LOCATIONS
#-----

# Define path/folder to cfg file relative to _DYNAMIC_WORKAREA if not yet defined

# Set WorkSet location to the Work Area
_USTN_WORKSETROOT=$( _DYNAMIC_WORKAREA)

# Set WorkSets Root location inside Project (if found)
%if exists ($(_DYNAMIC_WORKAREA)_PWSetup\WorkSets\
    _USTN_WORKSETSROOT=$(_DYNAMIC_WORKAREA)_PWSetup\WorkSets\
# Otherwise, use default WorkSet
%else
    _USTN_WORKSETSROOT=$(_DYNAMIC_CWORKSPACEROOT)WorkSets/
%endif

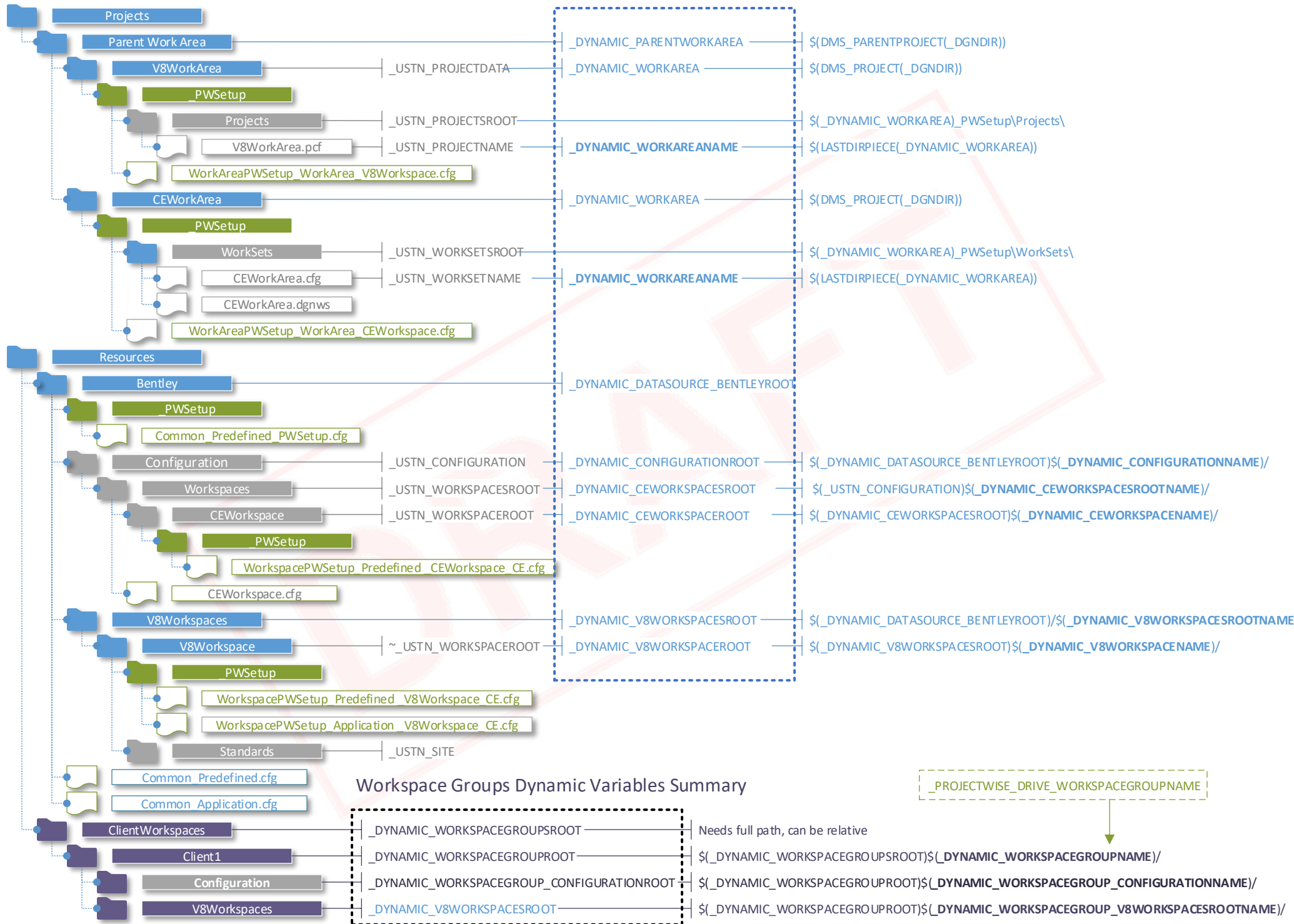
# Set WorkSet Name based on Dynamic Work Area Name
%if exists ($(_USTN_WORKSETSROOT)$(_DYNAMIC_WORKAREA_NAME).cfg)
    _USTN_WORKSETNAME=$(_DYNAMIC_WORKAREA_NAME)
%else
    # _USTN_WORKSETNAME=StandardProject #Use Default Project if specific project not found
    %error NOT FOUND WORKSET CFG: $(_USTN_WORKSETSROOT)$(_DYNAMIC_WORKAREA_NAME).cfg
%endif

# Set DGNWS Root to the same location as the WorkSets
_USTN_WORKSETSDGNWSROOT = $(_USTN_WORKSETSROOT)

# Lock key variables here
%lock _USTN_WORKSETSROOT
%lock _USTN_WORKSETNAME
%lock _USTN_WORKSETSDGNWSROOT
%lock _USTN_WORKSETROOT

#-----
# OTHER SPECIFIC CONFIGURATIONS
#-----
```

Dynamic Managed Workspace: Variables Summary



Dynamic Managed Workspace: Installation Instructions

Setup Instructions:

To install this template:

1). Copy Template:

In ProjectWise, create a Bentley root folder location for the Workspaces. For purposes of this document, the location will be `pw:Datasource\Documents\Resources\Bentley\`

Note: The Resource name is not important, however for consistency, it is advised to keep the Bentley name as the root folder for the installation. This name can be changed. Any folder under the Bentley cannot be change with affecting the configuration paths. Copy template a this location. Where Dev/Test/Prod process is used, repeat these steps for additional locations.

2). Create CSB called "Bentley Common Predefined 1.7" with the following syntax with points to the Common_Predefined.cfg file provided in the templated (see relative location highlighted above).

```
_DYNAMIC_DATASOURCE_BENTLEYROOT = pw:\mydatasource\Documents\Resources\Bentley\  
%include $( _DYNAMIC_DATASOURCE_BENTLEYROOT )Common_Predefined.cfg
```

Note: when creating the `_DYNAMIC_DATASOURCE_BENTLEYROOT` variable, use `ADD>ProjectWise Folder` and browse to the Bentley folder located under Resources (or other location as determine by installation) Repeat steps as needed if Dev/Test/Prod process is used.

3). For V8 workspace: create named root folder for each workspace to be incorporated. This roughly can represent the `_USTN_WORKSPACEROOT` folder and can be assigned as such.

4). Assign Workspace Names

Edit `Common_Predefined_PWSetup.cfg` to set default workspace names:

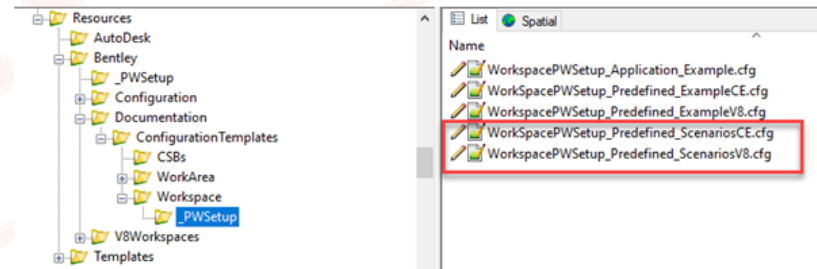
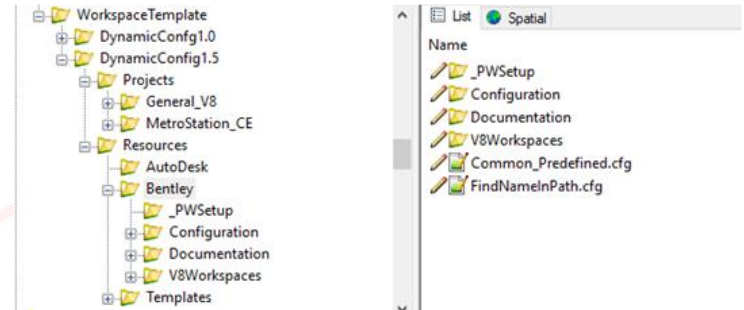
```
_DYNAMIC_V8WORKSPACENAME      : Workspace  
_DYNAMIC_CEWORSPACENAME       : Example
```

5) Copy `_PWSetup` folder and file. Working example V8 and CONNECT Edition workspaces are provided. The `_PWSetup` folder and files can be copied from these to the respective workspace root folders. Additional example can be found in the "Documentation" folder. Both simple and advanced examples are provided

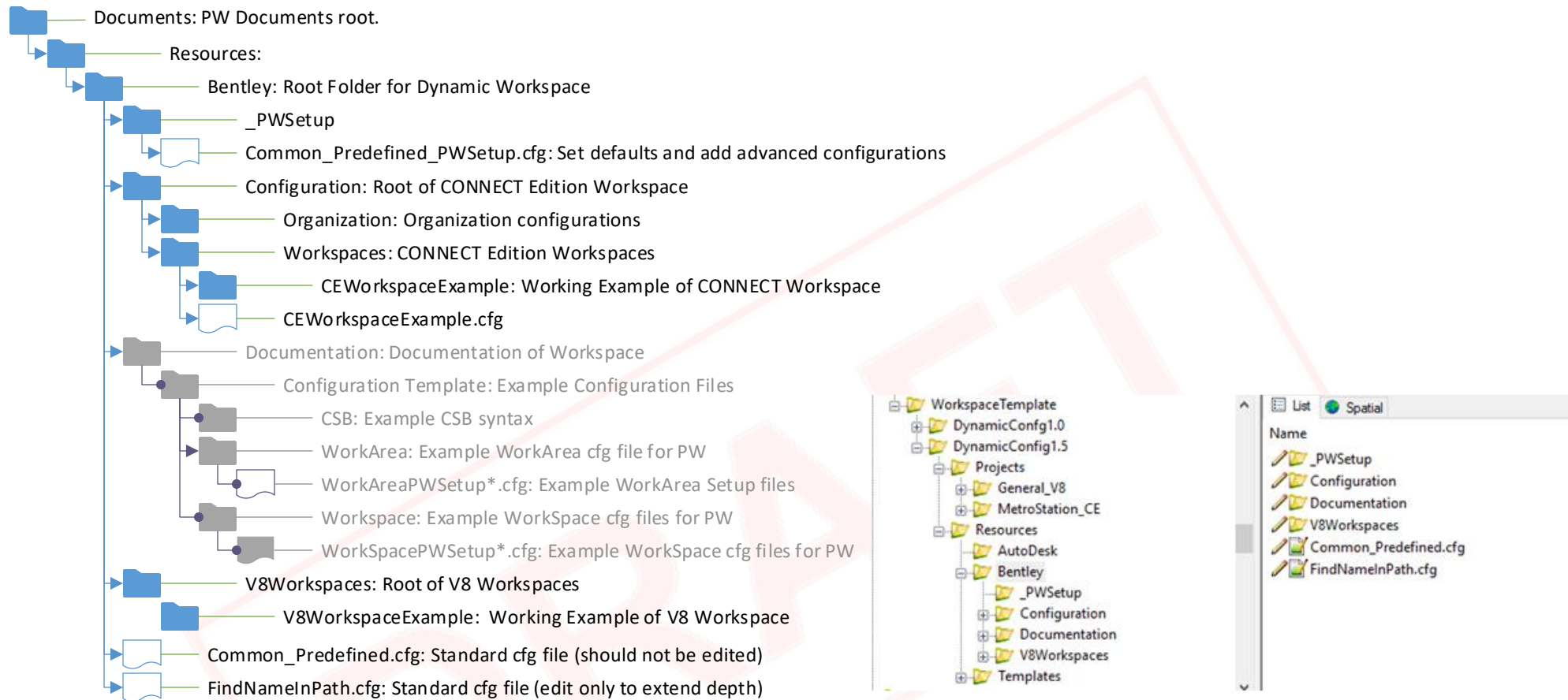
6) Edit the `WorkSpacePWSetup_Predefined*.cfg` file to define Framework variables as needed. For V8 workspace this will typically involve assigning location for the Projects Root, Project Root, Project Name and cfg file at a minimum. For CONNECT this will typically involve assigning location for the WorkSets Root, Workset Root, WorkSet Name and cfg file at a minimum. The `.dgnws` file may also need to be set. More often than not addition syntax will be need to set addition values required by the workspace. As noted in the previous step, example configuration syntax for various scenarios are provided in the documentation section of the template.

7). Add Ignore workspace reload variable syntax

8). Create WorkArea (from a template if available) and Assign CSB. Rename workset `cfg/project` pcg file in needed. Delete `.dgnws` if it exists. The `.dgnws` should be created from the template pointed to by the workspace configuration.



Dynamic Managed Workspace: Essential Template Contents



Additional Note: Example Projects and Workspace Groups are provided as well.