Distributed Project Management System
User Guide Version 2017.1
5 May 2017

Before attempting to install and use GeoCue, please very carefully read the ***GeoCue Installation Guide***. This guide tells you how to install the product suite, how to add GeoCue Client and GeoCue Web users and how to migrate a previously created database. You will not be able to access GeoCue until you have *carefully* followed the steps in the ***Installation*** guide!

The default GeoCue Admin password is "geocueadmin" (case sensitive).

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Getting Help

We are sure that you will experience different problems with GeoCue that range from installation issues to defects that made it through our testing undetected. We hope that you will immediately contact us with any problems or questions and have the patience to work with us through a successful GeoCue deployment.

Please contact us via phone or email for assistance with or comments about GeoCue and DPMS.

email:

support@geocue.com

Phone:

1-256-461-8289

Just ask for GeoCue Support and you will get connected with someone who can assist you. There is usually someone in the office between the hours of 0600 and 1800 CDT, USA on weekdays. Weekends are sort of hit or miss.

Fax (always on):

1-256-461-8249

About this Document

Welcome to the GeoCue Distributed Project Management System (DPMS) User guide.

The information in this guide assumes that you have an intimate knowledge of the core functions of GeoCue. Therefore, basic principals such as adding to the Working Set, selecting, Checklist processing and so forth are not covered in this guide. If you are not familiar with these areas, please refer to the GeoCue User's Guide (it can be downloaded in pdf format from www.geocue.com).

Contents

1 DPMS Installation Requirements

Distributed Project Management System (DPMS) is designed to help control workflow processes between a single Prime Contractor (Prime) and a number of Subcontractors (Sub). Obviously the Prime can be an office of a company with the Sub(s) being some other office(s) of that same company. The Prime controls workflows via a Master Project. Subcontractors maintain their workflows in Sub Projects.

Software Requirements for the Prime (Master Project system):

- GeoCue Departmental Server or GeoCue Professional Server
- GeoCue Clients on all nodes where you intend to interactively interact with GeoCue and on all remote processing nodes (GeoCue Remote is installed by GeoCue Client)
- Project Manager CuePac
- GeoCue Web Server (Optional)

It is not strictly necessary that Subcontractors use GeoCue in order to provide updates to the Master Project or to send *managed* data deliveries to the Prime. Requirements for the Subcontractors are as follows:

Sub using GeoCue:

- Any level of GeoCue Server (included GeoCue Workstation)
- GeoCue Clients on all nodes where you intend to interactively interact with GeoCue and on all remote processing nodes (GeoCue Remote is installed by GeoCue Client)
- Project Manager CuePac
- Application-specific CuePacs as required for the production scenario (e.g. LIDAR 1 for LIDAR production, etc.)
- Microsoft Internet Explorer with external Internet access

Subs not using GeoCue:

- Microsoft Internet Explorer with external Internet access
- Custom code to generate GeoCue format delivery manifests (XML format). GeoCue will provide the specifications upon request.
- (Optionally) Custom code to generate status update files

2 An Overview of DPMS

The Distributed Project Management System (DPMS) is a collection of tools added to GeoCue Server and other GeoCue components that allow:

- Synchronization of checklist steps between different GeoCue projects
- Updating status of a Master Project via GeoCue tools and a web interface
- Packaging and transmission of project data elements from Subcontractor Projects (Sub) to the Prime Contractor's (Prime) Master Project.

The basic flow of a DPMS project is delineated in Table 2-1.

Table 2-1 DPMS Flow

Stage	***Prime Contractors***	***Subcontractor(s)***
Planning	Define project layouts in the Master Project (MP)	
	Define Checklist steps that are to be reports by the Subcontractors	Define processing checklists with reporting points
	Export layout	
		Import Layout
Processing	Perform prime sections of work (if applicable)	Process data
Status Reporting (iterative)		Select Entities for reporting Select Step to be reported Prepare report manifest (push button in Project Manager – PM)
		Upload status report via Master Project Web Interface using Internet Explorer.
	Review status queue that was delivered via the Web	
	Accept/Reject status on an entity by entity basis	
		Review project status view via the Web for rejections

Stage	*Prime Contractors*	*Subcontractor(s)*
Data Delivery		Select entities for deliver and prepare delivery package (push-button operation in Project Manager)
		Transmit delivery manifest to Prime via the web Ship delivery media to Prime
	Receive delivery manifest via web	
	Upon receipt of data, execute import function (push-button in Project Manager)	
	Report errors (if any) to sub	Review project via web for delivery status.
Post-Delivery	Process as required….	

The process flow is graphically depicted in Figure 2-1.

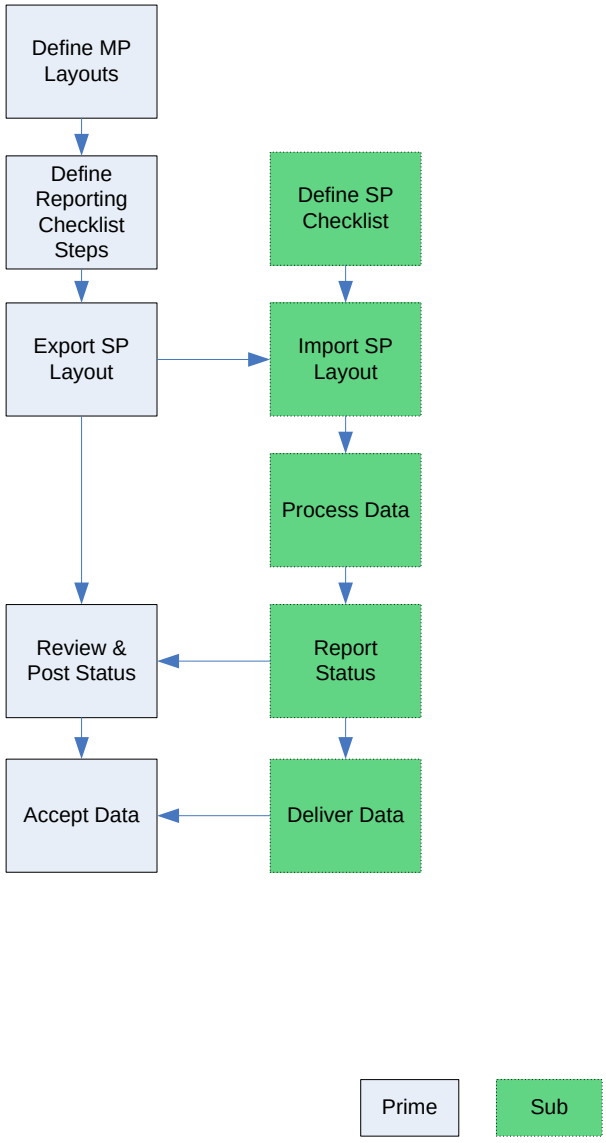


Figure 2-1 The basic DPMS flow

2.1 DPMS Capabilities

The primary purpose of DPMS is to automate, to the extent possible, the reporting of status and delivery of data between a collection of subcontractors and a prime contractor.

DPMS adds the following capabilities to a GeoCue processing system:

- The ability to define project processing *entities*[1] (called the Master Project or MP)
- The ability to define common *metadata* on the processing entities (i.e. attributes)
- The ability to define *synchronization checkpoints* on the entity Checklists
- The ability to export subcontractor work layout (called a Sub Project or SP)
- Tools that allow a Sub to import a SP definition into their GeoCue system
- The ability for a Sub to generate incremental status reports by simply selecting entities in their SP and pressing a *Generate Status Report* button in Project Manager CuePac
- The ability for the Sub to transmit the status report to the Prime via the Project Web interface (Project Portal) hosted by the Prime
- The ability for the Prime to systematically review the status reports received from Subs, accepting or rejecting update items at an individual entity level
- The ability for a Sub to package an incremental delivery of data, creating a delivery manifest and writing delivery data to a media
- The ability to transmit the deliver manifest to the Prime via the Project Portal, thus providing the Prime a notification of the impending delivery
- The ability of the Prime to receive the delivery media, import the data and reconnect to the originally defined Master Project Entities

[1] For example, a LIDAR tile, an orthophoto, a contour tile or any other project "object." Entities in GeoCue have no spatial restrictions on shape thus a processing entity could be a non-uniform segment of a corridor.

3 Planning a DPMS Project

The general arrangement of a DPMS project is to define a Master Project, the entities of that Project and checklists for the entities. Consideration of each of these is reviewed in this chapter.

Project Layouts

Checklist

DPMS allows a Prime contractor to define processing points within a Master Project that will be reported upon by Subcontractors. These status checkpoints are checklist steps in a standard GeoCue project. For example, the checklist of Figure 3-1 depicts a default LIDAR processing sequence for a typical TerraScan-centric workflow. Suppose that you have set up a large LIDAR project and are using this checklist. Further suppose that you have elected to subcontract an area of production. You are probably not interested in seeing the status of every single step of production carried out by your sub. Instead you will want to know only when major steps are complete. In Figure 3-1 you might want a status point when the sub has *Populated* tiles (indicating that the data have been collected), and when *Processing in TerraScan* has been completed.

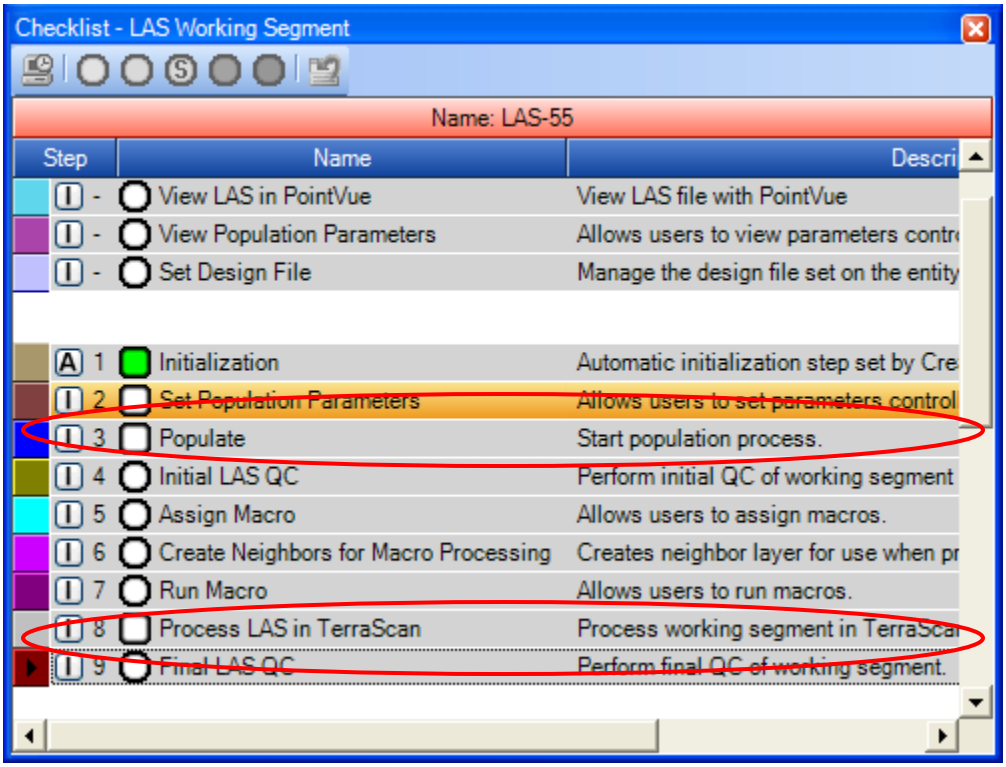


Figure 3-1 Reporting Checkpoints

4 Defining DPMS Checklist Steps

DPMS checklists are based on the Prime creating *Entities* in a Master Project, exporting the entities that are to be processed by a Sub, receiving status reports on steps of processing and finally receiving a transmission of the data associated with the entities.

DPMS does not require that the steps be the same in the Master and Sub projects. Indeed, the Sub does not even need to do production within a GeoCue environment[2].

Generally the Prime will want to have a status update of major events of processing whereas the Sub will probably be tracking status at a finer level of detail. DPMS allows you to set *synchronization* points in two checklists such that step A in a Sub list can be synchronized with step X in the Prime list. Table 4-1 is an example of a LIDAR tile processing list as it appears in the Prime and Sub projects. The green arrows represent points when the Sub transmits status updates to the Prime.

Table 4-1 Example Checklist Status Points

Prime Steps		***Sub Steps***
Initialized - Tile created using a GeoCue layout tool		
		Initialized - Entity created by importing geometry and attributes from Shape file provided by Prime
		Set Population Parameters – sets parameters for transferring data from LIDAR flight lines to tiles
Data Acquired – Status received from Sub indicating that the data have been acquired	◀	*Populate* – transfers data from LIDAR flight lines to tiles
		Initial QC – Check data prior to detailed processing
		…
Edit Complete – Status received indicates that tiles are complete with detailed editing (such as bare earth extraction)	◀	*Process in TerraScan* – When *complete* indicates that final edits are done
Data Shipped – This status indicates that the data receipt is imminent	◀	*Data Shipped* – Subcontractor has packaged data for shipment to Prime

[2] A Sub who does not use GeoCue reports status interactively via the GeoCue Web project interface (Project Portal)

Prime Steps		***Sub Steps***
Data Imported – Data imported from the Sub delivery package		
Final QA – Prime has completed the final QA process		
…		

4.1 Creating Status Points

Checklists are created using the Environment Builder tool of GeoCue. This tool is also used to mark steps within a Checklist as Status update points.

Start Environment Builder and switch to the ***Checklists*** tab. Select the first Checklist that will be used for the project[3]. It is necessary to enable the Checklist for DPMS use as shown in Figure 4-1.

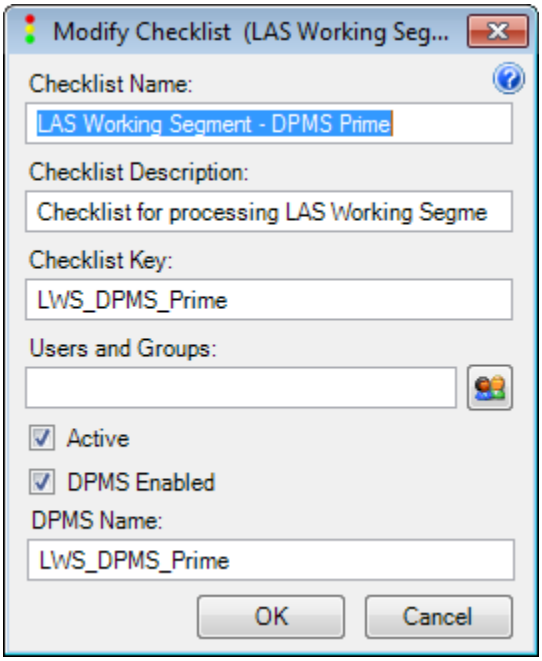


Figure 4-1: Enabling DMPS Integration

Next select the ***Modify Group*** button on the Checklist tab. This will invoke the dialog of Figure 4-2

[3] We recommend that you "clone" a standard checklist and modify this version for DPMS use.

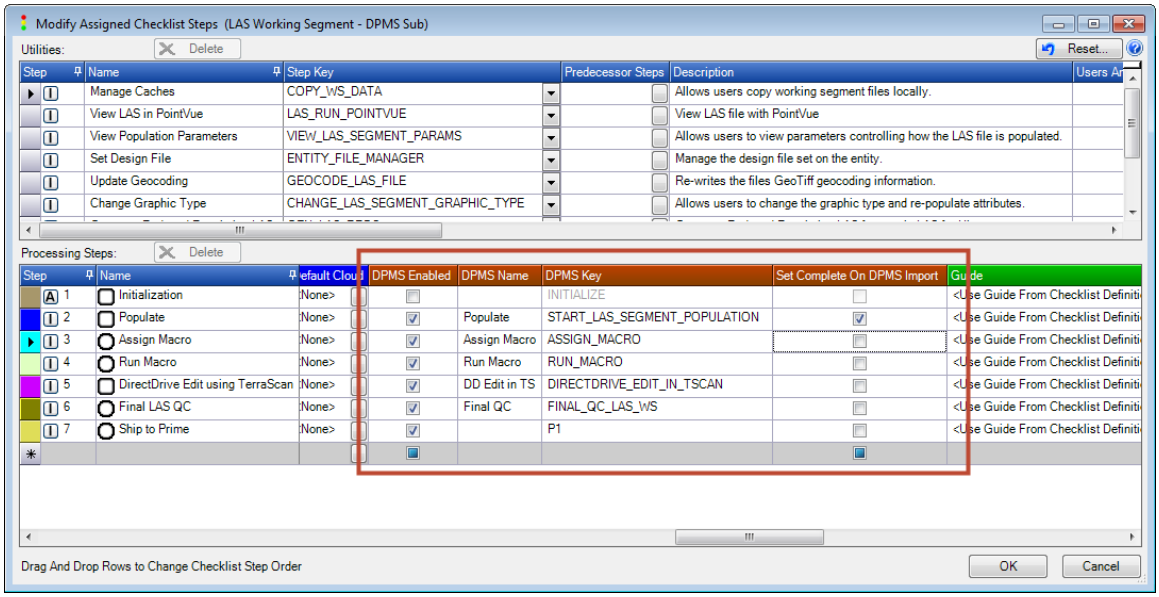


Figure 4-2: DPMS section of the Checklist

The DPMS settings of Figure 4-2 are listed in

Table 4-2: DPMS Settings for the Checklist

Field	***Meaning***
DPMS Enabled	This step can be used in DPMS operations. Generally it means that it will appear is DPMS lists such as Create Status Packet.
DPMS Name	The familiar name used in DPMS operations
DPMS Key	This key is used to map a step in one checklist to the associated step in a second checklist. For example, "Shipped to Sub" in a Prime checklist would need to have the same DPMS key as "Received from Prime" in a Sub checklist if the two are to match.
Set Complete on DPMS Import	These steps will be set to Complete if a DPMS import occurs that is associated with entities linked to this checklist.

Next select the first step that will be a synchronization point for this checklist and press the ***Modify*** button. In our example, we have selected the step *Populate*. This will invoke the dialog of Figure 4-3.

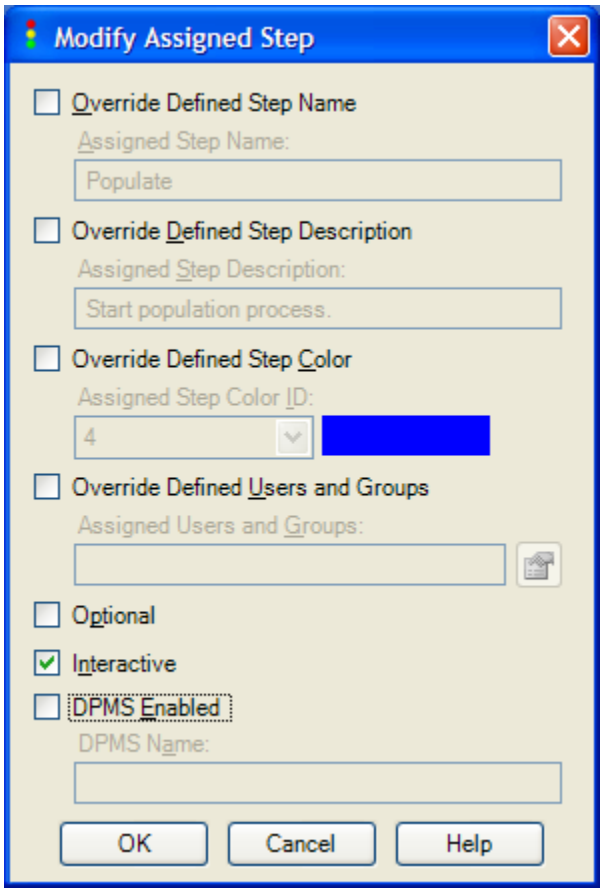


Figure 4-3 The Modify Assigned Step dialog

Check the ***DPMS Enabled*** option near the bottom of the dialog. This marks this step to be included if Entities using this Checklist are exported for DPMS operations (described in a subsequent chapter). Note that the DPMS Name field is now enabled. This name is used if the Sub will be updating the Master Project from the Project Portal interface rather than from within GeoCue (in other words, this field is used for non-GeoCue Subs). Typing a name in this field will override your checklist step name for web-based project status updates. For example, in Figure 4-4 we have overridden the *Populate* name with *Data Acquired*. If a Sub were to update our project via the web ("Project Portal") rather than from within GeoCue, the Sub, upon selecting entities with this checklist, would be presented the step Data Acquired. Note that it is not necessary to set this field if your Sub(s) will be updating using GeoCue.

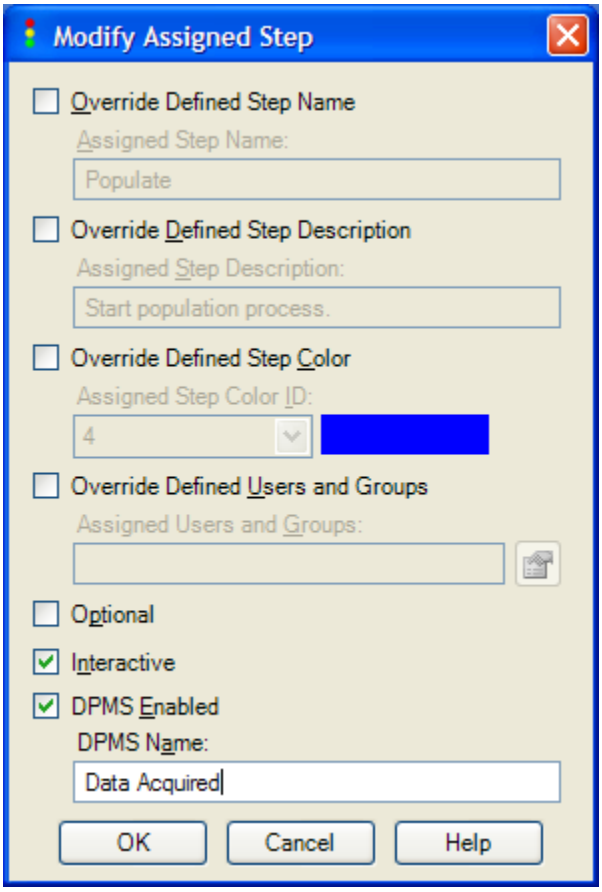


Figure 4-4 Overriding the Step name

NOTE: The DPMS name can be set or changed in the Master Project at any time, even after the system is in use.

4.2 Summary

Setting reporting points is very simple and can be applied to both new and existing checklists. The synchronization points are transparent to users of the prime project, allowing ad hoc mixing of work being performed by Subs and Prime.

5 Creating a Data Delivery Package

The Data Delivery Package provides a mechanism for moving physical data (LIDAR, Imagery and so forth) between GeoCue systems that are typically in separate office locations.

A data delivery package comprises a description of the package (an XML *Manifest)* and a set of associated data files. A data delivery package is typically written to either an File Transfer Protocol (FTP) site or to an external, portable drive (USB hard drive, flash memory drive, etc.) for transmission to another GeoCue Server.

5.1 Creating a Package

Creating a packager is very straight forward.

1. Add the entities that will be contained in the package to the Working Set Queue (WSQ). Note that this can be a heterogeneous set of entities.
2. Select the Create Data Delivery Package tool from the Tools menu (see Figure 5-1)

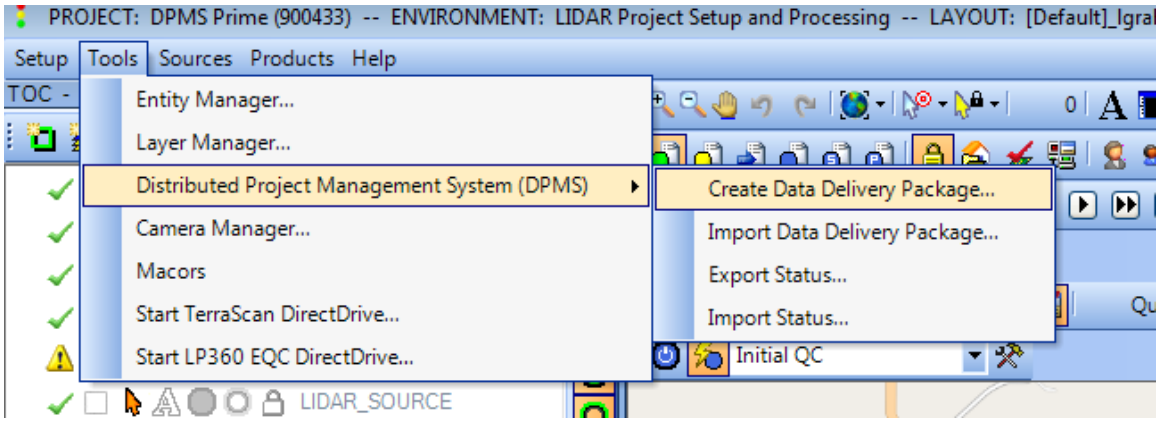


Figure 5-1: Invoking the Create Data Delivery Package dialog

3. Fill in the Create Data Delivery Package fields (Figure 5-2):
    a. Browse to the location where you would like the files and xml manifest stored (external drive, FTP location, etc.)

b. You can have the export operation set a checklist on the entities undergoing export. For example, we are setting a step called “Ship to Prime” on our LAS Working Segments. This is useful when you want to record in the GeoCue history tracking system the export event.
c. Check “Overwrite Existing Files” if you are doing a repeat export and you do not wish to preserve the prior files (this can occur when you are cycling back and forth on a QC operation or when you have simply made a mistake).
d. The remaining three fields are used for commentary. Any text that you fill in will be transferred to the entities *Propertieis* on the import side of the DPMS transfer.
e. The drop-down tool in the lower left of the dialog sets the processing mode. As with many GeoCue processes, you can run on the assigned Cloud, do a manual Command Dispatch System dispatch or simply run the command locally.
f. Press Start when you are ready to perform the export.

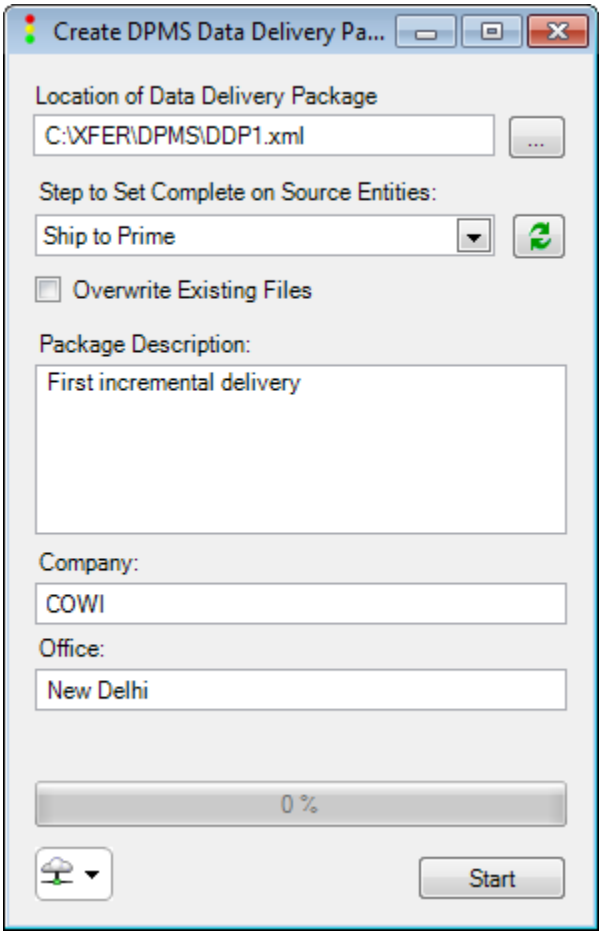


Figure 5-2: The Create Data Delivery Package dialog

The complete DPMS data delivery package will be stored at the location you specified on the dialog.

6 Importing a Data Delivery Package

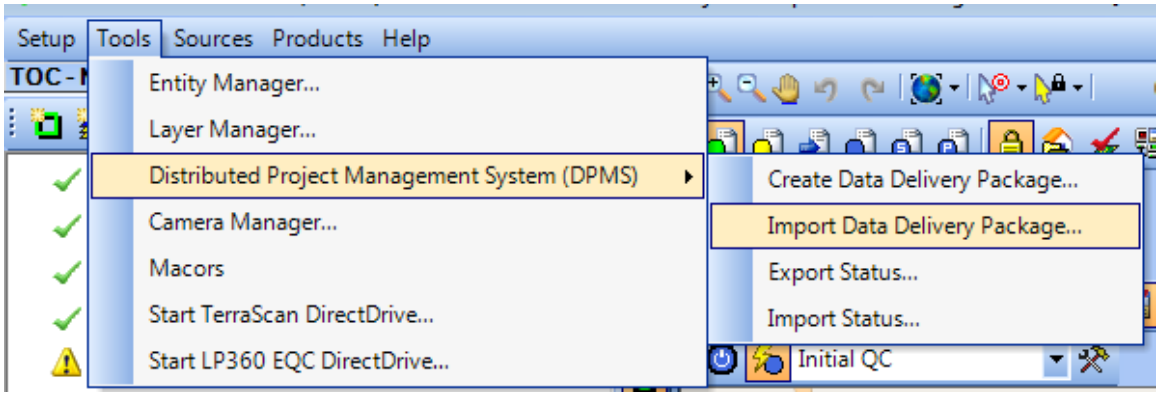
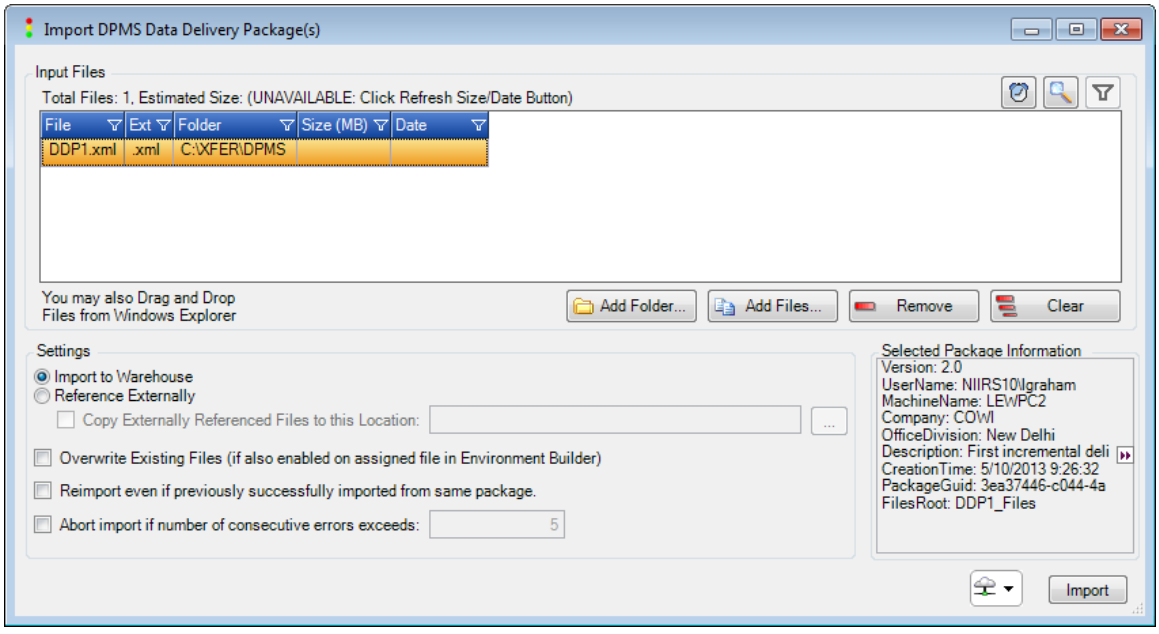


Figure 6-1: Invoking the Import Data Delivery Package dialog



7 Glossary

Term	Location(s)	Use/Meaning
DPMS Name	Checklists	

8 Change Requests & Trouble Reports

This sections is for internal use only. It documents some defects (TR) and contains a set of Change Requests (CR) aimed at improving the DPMS experience. Each subheading is marked as a Trouble Report (TR) or a Change Request (CR).

8.1 Export Geometry

We use the *Export Geometry* tool to move an entity definition from one project to another. We really ought to have a custom DPMS entry point for this. Short of that, we need a few fixes to this dialog (see Figure 8-1).

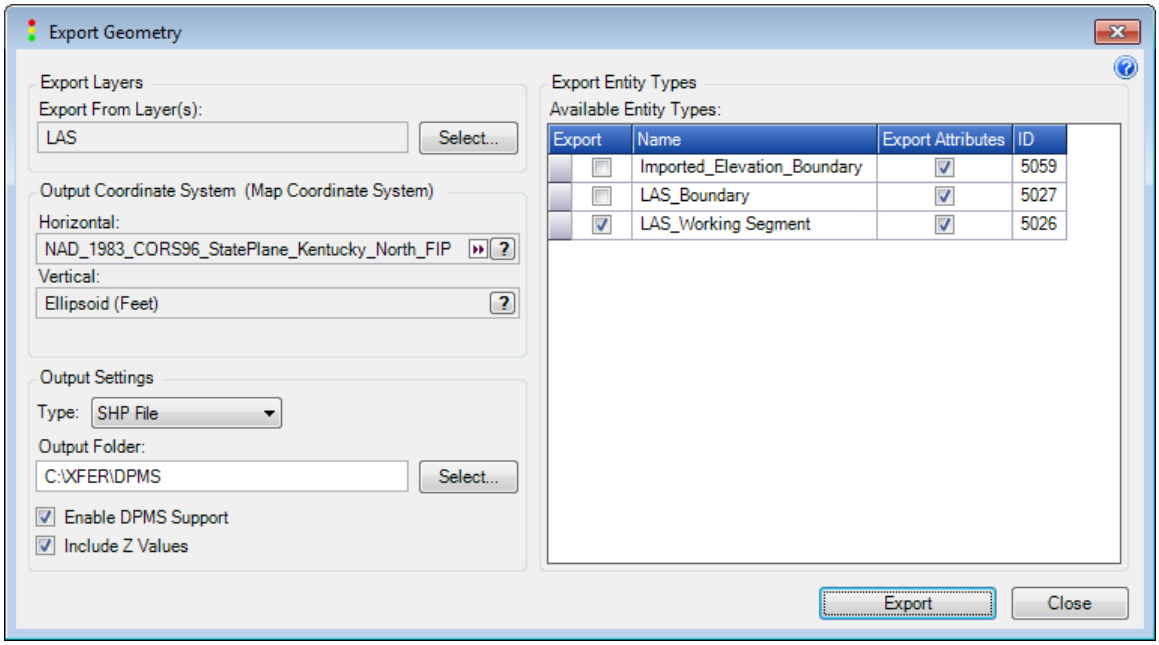


Figure 8-1: The Export Geometry dialog

8.1.1 Available Entity Types (CR)

This section of the dialog should be based on the selected layer (it is) and a *scan* of the layer. Right now it lists every entity type that can be assigned to the layer as opposed to those that actually exist on the layer.

8.1.2 Output Folder (TR)

The Output folder is remembering some old path and not resetting to the most recently used path. For example, mine is stuck on an old path that no longer exists. This causes the dialog to hang for 20 seconds or so while it figures this out. It lets me type in the new path but then the next time I use the dialog, it comes up with the old path once again.

8.1.3 Dialog Status Feedback (TR)

When one presses the *Export* button, the export occurs with no feedback. Thus you do not know when or if it completed. This causes you to thing nothing happened so you press Export again. This results in the error display of the next subtopic.

8.1.4 Cannot Overwrite an Existing Export (CR)

If you attempt to overwrite an existing export, we do not provide an option for "file exists, Overwrite?" Instead we get the dialog of Figure 8-2. We need to allow for overwrites.

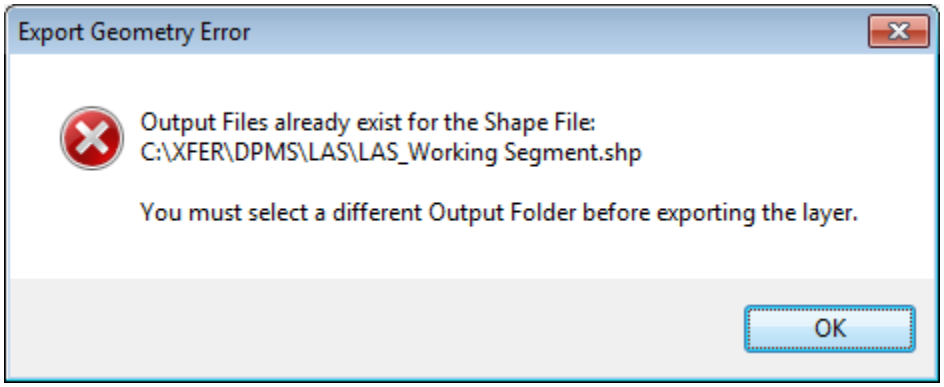


Figure 8-2: File Exists error

8.2 Creating DPMS Entities (CR)

I think this is one of the very weak areas of DPMS. The process for creating entities that can be involved in DPMS operations can be known only by reading some detailed and esoteric instructions (i.e. you have to create entities from a shape file that was previously exported with DMPS attributes…..).

We need to design both a DPMS Entity Export and a corresponding DPMS Import.

8.3 Create Entity via CAD/Shape Import (TR)

When using the Wizard to import a Shape file, the page after the *Select File Path* is completely disabled. This page should be skipped for a Shape file (

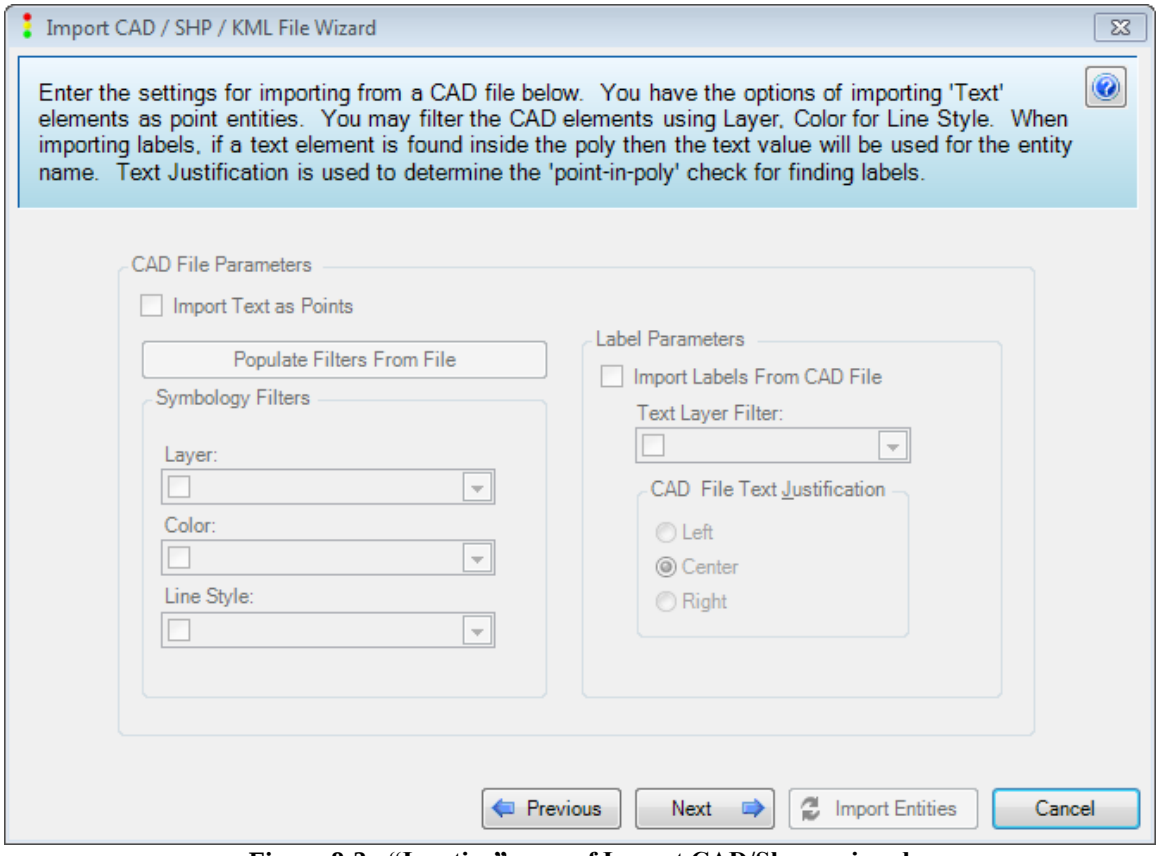


Figure 8-3: "Inactive" page of Import CAD/Shape wizard