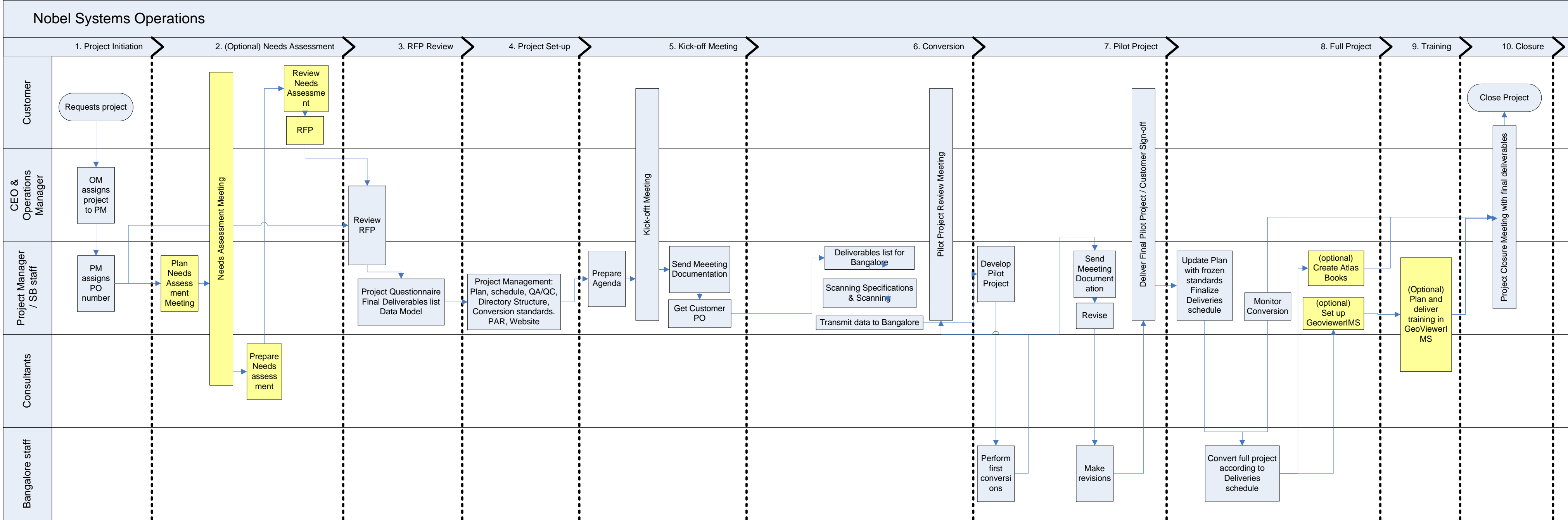


Operations Phase



Policies and Procedures



KEY: Optional tasks



Contents

Operations Policy	1
Disclaimer	1
1. Project Initiation	1
Policy	1
Procedures	1
1.1. Assigning Project to a Project Manager.....	1
1.2. Assigning internal PO number to the project.....	1
2. (Optional) Needs Assessment.....	1
Policy	1
Purpose	1
Procedures	1
2.1. Planning Needs Assessment meeting and inviting participants.....	1
2.2. Participating in Needs Assessment meeting.....	1
2.3. Preparing Needs Assessment report	1
2.4. Reviewing and evaluating Needs Assessment report.....	1
2.5. Preparing RFP to Nobel (or other firm) for the required services.....	1
3. RFP Review	1
Policy	1
Purpose	1
Procedures	1
3.1 Reviewing RFP and Proposal to understand the Scope of Work	1
3.2 Completing Project Questionnaire.....	1
3.3 Creating List of Final Deliverables to Customer.....	1
3.4 Creating or reviewing the Data Model.....	1
4. Project Setup	1
Policy	1
Purpose	1
Procedures	2
4.1 Creating the Project Management Plan and Schedule.....	2
4.2. Creating draft QA/QC procedures.....	2
4.3. Creating Directory Structure.....	2
4.4. Creating draft conversion standards	3
4.5. Creating Problem and Resolution (PAR) form	4
4.6. Setting up the Project Management Website	5
5. Kick-off Meeting.....	1
Policy	1
Purpose	1
Procedures	1

- 5.1 Preparing Agenda for Kick-off Meeting using template)..... 1
- 5.2 Participating in Project Kick-off meeting..... 1
- 5.3 Preparing and e-mailing documentation from the Kick-off meeting to the participants 1
- 5.4 Requesting Customer’s PO number for billing 1

- 6. Preparing source data for transmission..... 1
 - Procedures 1
 - 6.1 Completing a list of deliverables to Bangalore 1
 - 6.2 Setting up the Scanning Specifications 1
 - 6.3 Scanning Hardcopy Maps and Documents..... 1
 - 6.3 Transmitting the source materials to Bangalore 1

- 7. Pilot Project 1
 - Procedures 1
 - 7.1 Developing Pilot Project..... 1
 - 7.2 Participating in Pilot Project review meeting..... 1
 - 7.3 Preparing and emailing documentation of Pilot Project review meeting minutes 1
 - 7.4 Revising the Pilot Project..... 1
 - 7.5 Making Customer-required changes to project 1
 - 7.6 Delivering the Final Pilot Project to the Customer. 1
 - 7.7 Signing-off on frozen scope and format. 1

- 8. Full Project..... 1
 - Purpose 1
 - Procedures 1
 - 8.1 Updating Project Management Plan with frozen conversion standards 1
 - 8.2 Finalizing delivery schedule 1
 - 8.3 Converting all maps and data to GIS data according to the deliverables schedule 1
 - 8.4 Monitoring progress and updating the Project Management website..... 1
 - 8.5 *(Optional)* Create printed spiral bound Atlas books of the GIS maps as required..... 1
 - 8.6 *(Optional)* Setting up web-based GIS viewing service GeoViewerIMS. 1

- 9. Training 1
 - Policy 1
 - Purpose 1
 - Procedures 1
 - 9.1 Updating GeoViewerIMS Online help if necessary 1
 - 9.2 Planning and arranging the on-site training session 2
 - 9.3 Preparing Customer-specific training materials..... 2
 - 9.4 Preparing and printing materials 2
 - 9.5 Conducting Customer training according to the number and expertise of the trainees 2

- 10. Closure 1
 - Procedure 1
 - 10.0 Project closure meeting with final deliverables 1

- Appendix: Project Management Toolbox 1
 - 3.2 Project Questionnaire..... 1
 - 3.3 List of Final Deliverables to Customer 1
 - 4.1 Project Management Plan..... 1
 - 4.1.a MS Project Template..... 1

Contents

4.2 QA/QC Procedure templates	1
4.3 Directory Structure	1
4.4 Conversion Standards	1
4.5 Problem and Resolution (PAR) form	1
4.6 Guidelines for setting up Project Management Website	1
5.1 Agenda for Kick-off Meeting	1
6.1 List of Deliverables to Bangalore	1
9.3 Tutorial Cover template	1
9.4 Training Sign-up Sheets	1



Applies to: CEO, Operations Manager, Project Manager

External: Engineering Consultant, Customer

Page 1

Operations Policy

Nobel Systems ensures that the implemented geographical information service provides sufficient and satisfactory support to the users for their jobs.

- The Nobel Systems Project Manager works closely with the Customer to find the users' needs for GIS map information and the features needed for the particular service. These could be:
 - Scanned map materials in digital format
 - GIS Map books
 - Desktop based GeoViewer
 - Internet-based GeoViewerIMS service, with a variety of optional features
- An insufficient service can be worse than no service at all, if users expect to find data that does not exist in the service.
- We believe that satisfied Customers continue to be Customers and will draw new Customers to us.

Disclaimer

Due to continued product development our procedures may change without notice. The information and intellectual property contained herein is confidential between Nobel Systems and the client and remains the exclusive property of Nobel Systems. Nobel Systems does not warrant that this document is error-free.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior written permission of Nobel Systems.

GeoViewerIMS is a trademark of Nobel Systems.

Nobel Systems
1845 Business Center Dr Suite 130
San Bernardino, CA 92408
+1 909.890.5611
E-mail: info@nobel-systems.com
Website: <http://www.nobel-systems.com>



1. Project Initiation

Policy

Nobel assigns a Project Manager (PM) and an internal PO number to all projects that have received a Request for Proposal.

Procedures

1.1. Assigning Project to a Project Manager

Responsible: Operations Manager

Procedure

- Where possible, assign a PM who either already has worked with the customer or has experience with the type of project expected.

1.2. Assigning internal PO number to the project

Responsible: Project Manager

Procedure

- Assign an internal PO number to the project to affix all materials and files relating to this project.



Applies to: CEO, Operations Manager, Project Manager

External: Engineering Consultant, Customer

Page 2-1

2. (Optional) Needs Assessment

Policy

Nobel shows that it cares for Customer needs by formalizing the way its employees

- listen to the Customer to discover user needs, and
- prompt the Customer for needs they may not consider immediately
- record Customer requirements in a standardized format.

Purpose

The procedures for discovering and planning Customer needs ensure that all possible requirements and data sources are uncovered prior to actual data collection and conversion.

Procedures

2.1. Planning Needs Assessment meeting and inviting participants

Responsible: Project Manager

2.2. Participating in Needs Assessment meeting

Responsible: Nobel: CEO, Operations Manager, PM
External: Engineering Consultant and Customer representatives from various departments

2.3. Preparing Needs Assessment report

Responsible: Engineering Consultant

2.4. Reviewing and evaluating Needs Assessment report

Responsible: Customer

2.5. Preparing RFP to Nobel (or other firm) for the required services

Responsible: Customer



3. RFP Review

Policy

Nobel formalizes the proper review of the Customer's Request for Proposal to ensure that later phases run smoothly, without unexpected changes in scope or discovery of forgotten data.

A well-planned service ensures contented Customers, who receive the service they need within the expected time frame.

Purpose

To ensure that all requirements are captured within the scope of the project

Procedures

3.1 Reviewing RFP and Proposal to understand the Scope of Work

Responsible: Project Manager

3.2 Completing Project Questionnaire

Responsible: Project Manager

Procedure

- Appendix [3.2 Project Questionnaire](#)

3.3 Creating List of Final Deliverables to Customer

Responsible: Project Manager

Procedure

- Appendix [3.3 List of Final Deliverables to Customer](#)

3.4 Creating or reviewing the Data Model

Responsible: Project Manager



4. Project Setup

Policy

Nobel Systems uses efficient project management to ensure the success of each project, so that deliverables are as required and on time.

- The Project Manager (PM) uses templates from the *Project Management Toolkit* on the G-drive to create:
 - [4.1](#) Project Management Plan and Schedule
 - [4.2](#) Draft QA/QC procedures
 - [4.3](#) Directory Structure
 - [4.4](#) Draft conversion standards
 - [4.5](#) Problem and Resolution (PAR) form
 - [4.6](#) Project Management Website
- Some projects are so customized that the templates must be adjusted for the particular project

Purpose

To ensure that

- All data is collected, filed and converted according to the requirements.
- All deliverables are available to the Customer according to the agreed schedule.
- The Customer can follow the process of the project.

Procedures

4.1 Creating the Project Management Plan and Schedule

Responsible: Project Manager

- 1.** Create the PM Plan, including the following items at minimum (Appendix [4.1 Project Management Plan](#)):
 - a) Customer Contact
 - b) RFP
 - c) Proposal
 - d) Data Model
 - e) Procedures
 - f) List of Final Deliverables
 - g) Project Schedule
- 2.** Use the service-appropriate MS Project template (Appendix [4.1.a MS Project Template](#)) to break the project down into separate, billable deliverables, according to instructions received during training.

4.2. Creating draft QA/QC procedures

Responsible: Project Manager

- Make checklists of the types of attribute and spatial errors to look for during the QC process, using the templates for each type of data (Appendix [2 QA/QC Procedure templates](#)):
 - Sewer
 - Water
 - Electrical
 - Geographic
 - Social
- If the project encompasses data types not yet encountered:
 - 1.** prepare appropriate checklists based on existing checklists and Customer information
 - 2.** save the new checklists as templates in the Project Management Toolbox on the G-drive for future projects.

4.3. Creating Directory Structure

Responsible: Project Manager

Policy

- Nobel ensures systematic organization of data transmitted from the Customer, scanned by Nobel, or transmitted from and to Bangalore, to ensure that no data is lost or misplaced.
 - At the start of the project, the PM creates project folders according to a template, to store the data files.
 - Any data that is received, scanned or created is organized based on their types.

Background

- Various types of data are used in a conversion project. Data formats vary from hard copy to digital file types.
- Parcels, street centerlines and city/district boundary pertaining to basemap are normally received from the Customer in ArcInfo *coverage* format.
- Source maps are normally provided by the Customer as hard-copy paper maps ranging from Letter to E size and sometimes even larger.
 - **Asbuilts**, typically *D-Size* maps, contain *location of infrastructure* as it was built in reality. The asbuilts show both plan and profile of infrastructure, with elevations from mean-sea-level. The scale on the plan is normally 1" = 40'.
 - **Atlas**, larger scale maps (*D or E size*) contain information about *infrastructure*. Due to the amount of geographic area covered by an atlas map, they can show only plan view. Some Atlas maps have elevations annotated. The scale on the atlas is normally 1" = 100'.
 - **Valve/hydrant/blow-off/air-release/manhole maintenance** maps are normally *Letter-Size*.
 - **Easement** documents vary from *Letter to D-Size*. Letter Size usually contains the *Legal Description* and D-Size contains the *sketch* of the easement with distances and bearings.

Procedure

1. Prepare directory structure according to template (Appendix [4.3 Directory Structure](#)).
 - For unique projects prepare appropriate project-specific directories.
2. Add files to directory as they are received, scanned or created.

4.4. Creating draft conversion standards

Responsible: Project Manager

Policy

- Nobel uses conversion standards to define the construction rules, attributing the defaults and assumptions to be carried out throughout the project.
- Conversion standards are defined based on
 - previous experience, using a template, and
 - Customer requirements and input

Purpose

- To ensure that all data is converted consistently to the required standards.
- To have benchmark standards for the scope of the project.

Procedure

- 1.** Make necessary changes to the standards based on the information from RFP using the template *Conversion Standards* (Appendix [4.4 Conversion Standards](#)).
- 2.** Discussed the standards with the Customer during the project kick-off meeting or technical discussion meeting.
- 3.** Make iterations to the standards during the pilot conversion.
- 4.** Freeze the standards for the full project upon completion of the pilot.
- 5.** Submit a copy of the frozen standards to the Customer for written authorization.
- 6.** If the Customer asks to change the standard rules during the project,
 - assess changes and determine impact on the progress of the project.
 - make all efforts to secure the project and the planned billing.

Change resolution

- If the change requested can be accommodated, inform Bangalore about implementing the change.
- If the change causes significant impact on the project progress, requiring an up-scope,
 - 1.** meet with the Customer to discuss the change,
 - 2.** estimate the additional time to implement the change,
 - 3.** send a proposal to the Customer for approval,
 - 4.** upon approval, inform Bangalore about implementing the change,
 - 5.** amend the standards and send a copy to the Customer.

4.5. Creating Problem and Resolution (PAR) form

Responsible: Project Manager

Policy

All problems must be resolved to the best of our knowledge and past experience on other similar projects. By keeping a database of problem resolution, staff has easy access to past experience and lessons learned. If the problems are not resolvable through experience, they are escalated to the Customer.

Purpose

During the course of the project, the conversion team runs into various problems, which may be generic to many projects or unique to a Customer. They may pertain to inconsistencies in the source documents or things that are not part of Conversion standards. The procedure guides the team in documenting and solving these problems.

Procedure 4.5.1: Prepare PAR Form

1. Change the Customer name and other pertinent information on the standard *Problem and Resolution Form* (Appendix [4.4 Conversion Standards](#)
2. [4.5 Problem and Resolution \(PAR\) form](#)).
3. Present this document during the project kick-off meeting. This form is used until the Project Management website has been built. PARs are then maintained through the website.

Procedure 4.5.2: Use PARs

1. Complete *Problem and Resolution Form* or enter data in the PM website, including:
 - Information about the question
 - Screen captures of source documents.
 - Any suggestion of how the question should be answered to assist the Customer. This would demonstrate our knowledge to the Customer.
2. Update Project Standards on resolution, if necessary.

4.6. Setting up the Project Management Website

Responsible: Project Manager

- Prepare the Project Management Website according to guidelines (Appendix [4.6 Guidelines for setting up Project Management Website](#))
- Enter
 - Customer name
 - Project description
 - Customer logo
 - Scope details.
 - Contact information
- Connect to the Project Schedule from MS Project
- Instruct the Customer on the use of the website



Applies to: Project Manager, CEO, Operations Manager

External: Customer Representatives

Page 5-1

5. Kick-off Meeting

Policy

All projects start with Kick-off meeting to ensure that all Customer requirements and understood, that all parts are in agreement about the scope of the project and that Nobel has all necessary contact and PO information to continue the project.

Purpose

- If there has been no Needs Assessment meeting, the Kick-off meeting is used to ensure that the Customer and Nobel Systems are in agreement on the scope of the project.
- In any case Nobel and the Customer specify clearly
 - The scope of the project
 - which maps and other data are to be converted
 - when the Customer will send maps to Nobel Systems
 - how, in which format maps are converted
 - the Customer's billing PO number and contact data for the project.

Procedures

5.1 Preparing Agenda for Kick-off Meeting using template)

Responsible: Project Manager

- (Appendix [5.1 Agenda for Kick-off Meeting](#))

5.2 Participating in Project Kick-off meeting

Responsible: CEO, Operations Manager, PM and Customer representatives

5.3 Preparing and e-mailing documentation from the Kick-off meeting to the participants

Responsible: Project Manager

5.4 Requesting Customer's PO number for billing.

Responsible: Project Manager



Applies to: Project Manager, San Bernardino Staff

External: Customer

Page 6-1

6. Preparing source data for transmission

Procedures

6.1 Completing a list of deliverables to Bangalore

Responsible: Project Manager

- Use template (Appendix [6.1 List of Deliverables to Bangalore](#)) after reviewing the RFP and Proposal.

6.2 Setting up the Scanning Specifications

Responsible: Project Manager

Procedure

- Use Appendix [4.4 Conversion Standards](#) to determine Scanning Specifications
- Prepare template for scanned documents

6.3 Scanning Hardcopy Maps and Documents

Responsible: Customers and San Bernardino Staff

- Customers send both *scanned images* and *hard copy maps* for conversion.
- San Bernardino staff scans hard copy documents and maps, using the Scanning Specifications and template.
- Store scanned images in the prepared directory (Appendix [4.3 Directory Structure](#)).

6.3 Transmitting the source materials to Bangalore

Responsible: Project Manager

- Send materials to the Bangalore facility through FedEx or via FTP site.



Operations Phase

Applies to: Project Manager, CEO, Operations Manager, Staff

External: Customer

Page 7-1

7. Pilot Project

Procedures

7.1 Developing Pilot Project

Responsible: Project Manager

- The scope of the Pilot Project is agreed with the Customer (usually 2-3 representative geographic quadrants of data), so that the Customer can have a basis to determine the final scope and format of the project.

7.2 Participating in Pilot Project review meeting

Responsible: CEO, Operations Manager, PM and Customer representatives

- Nobel Systems presents the Pilot Project to the Customer. The results are discussed to determine the final scope and format.

7.3 Preparing and emailing documentation of Pilot Project review meeting minutes

Responsible: Project Manager

7.4 Revising the Pilot Project.

Responsible: Project Manager

7.5 Making Customer-required changes to project

Responsible: Staff

7.6 Delivering the Final Pilot Project to the Customer.

Responsible: Project Manager

7.7 Signing-off on frozen scope and format.

Responsible: Customer



8. Full Project

Purpose

The full project is converted in stages, which are agreed upon as billable deliverables

Procedures

- 8.1 Updating Project Management Plan with frozen conversion standards
Responsible: Project Manager
- 8.2 Finalizing delivery schedule
Responsible: Project Manager
- 8.3 Converting all maps and data to GIS data according to the deliverables schedule
Responsible: Bangalore staff
- 8.4 Monitoring progress and updating the Project Management website
Responsible: Project Manager
- 8.5 *(Optional)* Create printed spiral bound Atlas books of the GIS maps as required.
Responsible: San Bernardino Staff
- 8.6 *(Optional)* Setting up web-based GIS viewing service GeoViewerIMS.
Responsible: Project Manager and San Bernardino technical staff



Applies to: Project Manager

External: Trainer

Page 9-1

9. Training

Policy

Nobel systems provide sufficient training materials and other training to users so that they can immediately draw full benefit from their GeoViewerIMS service. These include appropriate and easy-to-use Online Help, Tutorials and on-site training before the service goes live.

Purpose

- The procedures for user training set out requirements for
 - Online help
 - Tutorials
 - On-site training
- Training fits the varying customer needs by being sufficiently flexible.
- The procedures provide a routine to provide customized training while minimizing the extent of new materials needed for each service.

Procedures

9.1 Updating GeoViewerIMS Online help if necessary

Responsible: Trainer, Project Manager, technical staff

Policy

- Online help contains the following sections to provide materials for all types of users:
 - Tutorial
 - Reference to all program functions
 - Trouble-shooting and FAQ
- Online help is updated in connection with major revisions of GeoViewerIMS.

Procedure

- 1.** Trainer updates Online help.
- 2.** Trainer sends updated version to PM and technical staff for review.

3. Staff reviews update.
4. Trainer prepares final version of update.
5. Staff uploads new version online.
6. Trainer generates Word version of updated Tutorial.

9.2 Planning and arranging the on-site training session

Responsible: Project Manager

1. Work with Customer to plan on-site training.
2. Gather the following information:
 - Date
 - Number of days
 - Number of sessions
 - Number of participants per session
 - Participants' computer skill level
 - Participants' experience with previous versions of GeoViewerIMS
 - Location
 - Physical set-up, including computers
 - Any technical limitations, such as fire-walls
3. Make hotel and car reservations for PM and Trainer if necessary.
4. Upload any necessary technical materials to laptop.

9.3 Preparing Customer-specific training materials

Responsible: Trainer

- Plan and prepare Customer specific training materials based on the participants' skill level and GeoViewerIMS experience.
- Prepare cover with the particular service map view.

9.4 Preparing and printing materials

Responsible: Project Manager

- Prepare Customer-specific cover for tutorial (Appendix [9.3 Tutorial Cover template](#)).
- Print the required number of tutorials.
- Print the required number of training materials.
- Prepare and print sign-up sheets (Appendix [9.4 Training Sign-up Sheets](#)) for each session.

9.5 Conducting Customer training according to the number and expertise of the trainees

Responsible: Project Manager, Trainer



Applies to: Project Manager, CEO, Operations Manager

External: Customer Representatives

Page 10-1

10. Closure

Procedure

10.0 Project closure meeting with final deliverables

Responsible: CEO, Operations Manager, PM and Customer representatives



Appendix: Project Management Toolbox

The following templates can be located in the Project Management Toolbox on the G-drive.

- 3.2 Project Questionnaire
- 3.3 List of Final Deliverables to Customer
- 4.1 Project Management Plan
 - 4.1.a MS Project Template
- 4.2 QA/QC Procedure templates
- 4.3 Directory Structure
- 4.4 Conversion Standards
- 4.5 Problem and Resolution (PAR) form
- 4.6 Guidelines for setting up Project Management Website
- 5.1 Agenda for Kick-off Meeting
- 6.1 List of Deliverables to Bangalore
- 9.3 Tutorial Cover template
- 9.4 Training Sign-up Sheets