ORDER FOR SUPPLIES OR SERVICES

IMPORTANT: Mark all packages and papers with contract and/or order numbers. BPA NO.

1. DATE OF ORDER: NOV 24 2008
2. CONTRACT NO. (If any): NRC-03-08-085
3. ORDER NO.: NRC-T001 MODIFICATION NO.:
4. REQUISITION/REFERENCE NO.: 03-08-085 dated 07/01/2008
5. ISSUING OFFICE (Address correspondence to):
U.S. Nuclear Regulatory Commission
Division of Contracts
Attn: Nicole A. Pratt 301-492-3622
Mail Stop: TWB-01-B10M
Washington, DC 20555

6. SHIP TO:
a. NAME OF CONSIGNEE: U.S. Nuclear Regulatory Commission
b. STREET ADDRESS: Attn: Alesha Bellinger 301-415-0596
Mail Stop: O13 D5
11555 Rockville Pike
c. CITY: Rockville
d. STATE: MD
e. ZIP CODE: 20852
f. SHIP VIA:

7. TO:
a. NAME OF CONTRACTOR: XA SYSTEMS, LLC
b. COMPANY NAME: **ATTN: Bill Jones**
c. STREET ADDRESS: 1568 SPRING HILL RD
d. CITY: MCLEAN
e. STATE: VA
f. ZIP CODE: 221023016

8. TYPE OF ORDER
[ ] a. PURCHASE — REFERENCE YOUR _____ Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.
[X] b. DELIVERY — Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.

9. ACCOUNTING AND APPROPRIATION DATA
SEE BELOW IN BLOCK 17C.
Contractor Duns: 092854194

10. REQUISITIONING OFFICE: NRR
Alesha Bellinger - Alesha.Bellinger@nrc.gov

11. BUSINESS CLASSIFICATION (Check appropriate box(es))
[X] a. SMALL [ ] b. OTHER THAN SMALL [X] c. DISADVANTAGED [ ] g. SERVICE-DISABLED VETERAN-OWNED
[ ] d. WOMEN-OWNED [ ] e. HUBZone [ ] f. EMERGING SMALL BUSINESS

12. F.O.B. POINT: N/A

13. PLACE OF
a. INSPECTION
b. ACCEPTANCE

14. GOVERNMENT B/L NO.

15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date)

16. DISCOUNT TERMS: N/A

17. SCHEDULE (See reverse for Rejections)

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	ISSUANCE OF TASK ORDER NO. 001 TITLE: Infrastructure and Planning Support for Processing and Analysis: Project Engineering" TOTAL ESTIMATED COST CEILING: $521,102.20 PERIOD OF PERFORMANCE: 11/24/2008 - 11/23/2011 ACCOUNT AND APPROPRIATION DATA: **Note**: $138,300.00 previously obligated as a part of the minimum guarantee under the basic contract is to be allotted for Task Order No. 001. (Acct. to transfer the funds) 82015111112 J4150 252A 31X0200.820 **CONTRACTOR SIGNATURE REQUIRED ON PAGE 2 OF 19**					

18. SHIPPING POINT
19. GROSS SHIPPING WEIGHT
20. INVOICE NO.

17(h) TOTAL (Cont. pages): $521,102.20

17(i). GRAND TOTAL

SEE BILLING INSTRUCTIONS ON REVERSE

21. MAIL INVOICE TO:
a. NAME: Department of Interior / NBC
NRCPayments@nbc.gov
b. STREET ADDRESS (or P.O. Box): 7301 Mansfield Ave.
Attn: Fiscal Services Branch D2770
c. CITY: Denver
d. STATE: CO
e. ZIP CODE: 80325-2230

22. UNITED STATES OF AMERICA
BY (Signature)

23. NAME (Typed): Donald A. King
TITLE: CONTRACTING/ORDERING OFFICER

AUTHORIZED FOR LOCAL REPRODUCTION
PREVIOUS EDITION IS NOT USABLE

OPTIONAL FORM 347 (REV. 4/2006)
PRESCRIBED BY GSA/FAR (48 CFR) 53.213(f)

TEMPLATE ADM002

SUNSI REVIEW COMPLETE

DEC 11 2008

ADM002

In accordance with Section G.3, Task Order Procedures, of contract number NRC-03-08-085, this definitizes Task Order No. 001. The effort shall be performed in accordance with the enclosed Statement of Work.

Task Order No. 001 shall be in effect from date of award for 36 months, with an estimated cost ceiling of $521,102.20.

The following individuals are considered to be essential to the successful performance for work hereunder: Mr. Andrew Seymour. The Contractor agrees that such personnel shall not be removed from the effort under the task order without compliance with Contract Clause H.2, Key Personnel.

The issuance of this task order does not amend any terms or conditions of the subject contract.

Your contacts during the course of this task order are:

Technical Matters:	Alesha Bellinger Project Officer (301) 415-0596	Contractual Matters:	Nicole A. Pratt Contract Specialist (301) 492-3622
	Sophonia Simms Technical Monitor (301) 415-0601		

Acceptance of Task Order No. 001 should be made by having an official, authorized to bind your organization, execute three copies of this document in the space provided and return two copies to the Contract Specialist. You should retain the third copy for your records.

ACCEPTED: Task Order No. 001

William A Jones
NAME

CEO & Managing Member
TITLE

December 2, 2008
DATE

COST SCHEDULE

Labor Category	Fixed Rate	Totals	Totals
Task Leader	[redacted]	[redacted]	$ 186,087.30
Data Analyst	[redacted]	[redacted]	$ 154,133.00
SME	[redacted]	[redacted]	$ 154,133.00
Documentation Specialist	[redacted]	[redacted]	$ 8,590.50
QA/Project Advisor	[redacted]	[redacted]	$ 18,158.40
TOTAL ESTIMATED COST		[redacted]	**$ 521,102.20**

TASK ORDER BREAKDOWN

Office of Nuclear Reactor Regulation – Project Engineering

Task Order 1 - Office of Nuclear Reactor Regulation – Project Engineering , Pricing Summary			
Subtask No.	**Task Description**	**Est. Work Hours**	**NRC Discount Price**
C1	Development of NRR EPM Global Business Requirements and Implementation Approach	[redacted]	[redacted]
C2	Development of NRR Project Schedules	[redacted]	[redacted]
C3	Maintenance of Project Schedules	[redacted]	[redacted]
C4	Global Project Status Reporting to the CPA	[redacted]	[redacted]
C5	Establish NRR EPM Infrastructure	[redacted]	[redacted]
	Grand Total	[redacted]	$521, 102.20

Task Order 1 - NRR – Project Engineering, Pricing Detail					
Subtask No.	Task Description	Labor Category	Work Hours	Rate	Total Estimated NRC Price
C1	Development of NRR EPM Global Business Requirements and Implementation Approach				
		Task Leader	[redacted]	[redacted]	$45,572.40
		Data Analyst	[redacted]	[redacted]	$27,160.00
		SME	[redacted]	[redacted]	$27,160.00
		Documentation Specialist	[redacted]	[redacted]	$572.70
		QA / Project Advisor	[redacted]	[redacted]	$7,944.30
Totals:			[redacted]		$108,409.40
C2	Development of NRR Project Schedules				
		Task Leader	[redacted]	[redacted]	$63,295.00
		Data Analyst	[redacted]	[redacted]	$67,900.00
		SME	[redacted]	[redacted]	$67,900.00
		Documentation Specialist	[redacted]	[redacted]	$2,290.80
		QA / Project Advisor	[redacted]	[redacted]	$7,944.30
Totals:			[redacted]		$209,330.10
C3	Maintenance of Project Schedules				
		Task Leader	[redacted]	[redacted]	$40,508.80
		Data Analyst	[redacted]	[redacted]	$43,456.00
		SME	[redacted]	[redacted]	$43,456.00
		Documentation Specialist	[redacted]	[redacted]	$4,581.60
		QA / Project Advisor	[redacted]	[redacted]	$1,134.90
Totals:			[redacted]		$133,137.30
C4	Global Project Status Reporting to the CPA				
		Task Leader	[redacted]	[redacted]	$11,393.10

		Data Analyst	[redacted]	[redacted]	$679.00
		SME	[redacted]	[redacted]	$679.00
Totals:			[redacted]		$12,751.10
C5	Establish NRR EPM Infrastructure - Optional				
		Task Leader	[redacted]	[redacted]	$25,318.00
		Data Analyst	[redacted]	[redacted]	$14,938.00
		SME	[redacted]	[redacted]	$14,938.00
		Documentation Specialist	[redacted]	[redacted]	$1,145.40
		QA / Project Advisor	[redacted]	[redacted]	$1,134.90
Totals:			[redacted]		$57,474.30
		Grand Total	[redacted]		$521,094.69

ADDITIONAL TASK ORDER TERMS AND CONDITIONS

B.6 AUTHORITY TO USE GOVERNMENT PROVIDED SPACE AT NRC HEADQUARTERS (JUNE 2006)

Prior to occupying any government provided space at the NRC Headquarters in Rockville, Maryland, the Contractor shall obtain written authorization to occupy specifically designated government space via the NRC Project Officer from the Chief, Space Planning and Property Management Branch, Division of Facilities and Security. Failure to obtain this prior authorization may result in one or a combination of the following remedies as deemed appropriate by the Contracting Officer.

1. Rental charge for the space occupied to be deducted from invoice amount due the Contractor

2. Removal from the space occupied

3. Contract Termination

STATEMENT OF WORK

"Infrastructure and Planning Support for the Center of Processing and Analysis"

Task Oder 001: Project Engineering

A. Background

The Office of Nuclear Reactor Regulation (NRR), the Center for Planning & Analysis (CPA) requires Contractor support for project management and the implementation of Enterprise Project Management (EPM) for NRR business processes. These activities shall include the use of project management best practices and the Project Management Body of Knowledge (PMBOK). The current implementation of EPM consists of Microsoft Project, Microsoft Project Server, SharePoint, SQLServer, and Crystal Reports.

B. Objective

The contractor shall provide the necessary supervision, personnel, equipment and materials to accomplish the tasks in the order.

C. Scope

The Contractor shall develop formal deliverables related to the EPM tool within NRR. These deliverables shall be the final version of project schedules and documentation for each individual work product the contractor develops during the course of this contract. The scope of work is to provide continuous, accurate, and timely deliverables in support of NRR project management activities. To this end, the contractor shall perform the following.

1. **Development of NRR EPM Global Business Requirements and Implementation Approach**

   Using existing documentation provided by the CPA and stakeholder analysis, the contractor shall create a NRR EPM Global Business Requirements and Implementation Approach. This document shall contain NRR business requirements and the contractor's recommendations for improving the EPM implementation approach within NRR. The recommendations, results of stakeholder analysis, and business review shall be delivered in one comprehensive document called the NRR EPM Global Business Requirements and Implementation Approach. This document is designed to represent NRR's path forward in implementing EPM.

2. **Development of NRR Project Schedules.**

   Develop detailed project schedules for 10 processes within Centralized Work Planning. The schedules shall be developed from a work breakdown structure (WBS) and shall be developed in Microsoft Project 2007 or the latest version of Microsoft Project currently employed in NRR. The following processes have been identified as priority: License Renewal, License Amendments, NFPA 805,

and Power Uprates. Work shall begin on schedule development upon notification by the Government.

3. **Maintenance of Project Schedules.**

   The Contractor shall maintain project schedules and perform scheduling activities for processes within Centralized Work Planning and the NFPA 805 Program. Note: that all project scheduling shall be consistent across NRR and the scheduling approach shall be contained in the NRR EPM Global Business Requirements and Implementation Approach. A review of existing scheduling practices in the Office of New Reactors (NRO) shall be employed in order to recommend a consistent approach for NRR. Note that NRO is the business sponsor for EPM.

4. **Global Project Plan and Status Reporting for the CPA.**

   The contractor shall develop a project plan and project schedule to communicate the scope of work. The project schedule shall be updated to reflect work accomplished.

5. **Optional Task- Establish EPM Infrastructure**

   Develop implementation approach and proposal for establishing an EPM instance for use within NRR. (Refer to **APPENDIX B** for description of current EPM infrastructure)

The statement of requirements appears in Section C.

C. Statement of Work and Requirements.

Subtask C.0 – Project Kick-Off Meeting

Upon notification by the Government, the contractor shall participate in a Project Kick Off Meeting which provides an opportunity for both Government and Contract resources to discuss project expectations. Topics for the Project Kickoff include but are not limited the following.

- Introduction of Project Officials
- Review of Project Guidelines
- Review of High-level Timeline & Milestones, Roles
- Review of Deliverables
- Questions and Answers
- Next Steps

The Contractor shall present at a high level the vision for leading the project to a successful completion.

Subtask C.1 - NRR EPM Global Business Requirements and Implementation Approach

The contractor shall:

C.1.1 Review existing change management processes, risk/issue management and procedures for project schedule updates and management. Any new business processes developed based on contractor recommendations for improvements must be comprehensive, repeatable and sustainable within the current EPM environment. The contractor shall review the existing process for Centralized Work Planning and its transition to EPM shall be reflected in the Global Requirements. Recommendations can be based upon a review of documentation provided by CPA on the planning, development, execution and maintenance of project schedules.

C.1.2 Review approach and implementation method for updating the status of a project task or milestone based on activities completed to-date. Review recommendations for handling time and labor inputs (from the NRC's HRMS system) and the appropriate level of detail for tracking hourly expenditures to determine if there is a need to deviate from the processes currently in production (Note: *developing the automated interfaces is not within the scope of this SOW*; they will be the responsibility of the NRC's Maintenance and Operations Contractor, and are currently under development for NRO);

C.1.3 Define the process and approach for requesting/acquiring technical activity codes (TACs).

C.1.4. Participate in sessions with NRR stakeholders to define business requirements for EPM.

C.1.5. Document the final NRR business requirements, processes and workflow as agreed to by NRR stakeholders to produce the NRR EPM Global Business Requirements and Implementation Approach. The final requirements shall include reports, views, management controls, access rights and privileges as well as roles and responsibilities. Note that defining the NRR requirements and implementation approach is top priority.

Subtask C.2 Development of NRR Project Schedules.

The contractor shall perform the following:

C.2.1 Publish/deploy schedules to the EPM project server after concurrence from project stakeholders. The project schedules shall be integrated to include all tasks needed to satisfy NRR business requirements. The project schedules developed shall have as standard, but are not limited to project resources, dependencies, milestones, durations, sequencing, and the definition of any custom fields. The contractor shall utilize existing business process models and

historical documentation as provided by NRR subject matter experts. The business processes employed in developing and maintaining the schedules shall be consistent and reflected in the NRR EPM Global Business Requirements and Implementation Approach.

C.2.2. Assist Branch staff in identifying generic resource requirements (planned hours and staff skill sets) for all tasks/subtasks in the detailed project schedules;

C.2.3. Load the detailed schedules on the EPM infrastructure by process, once the schedule has been baseline.

C.2.4. Create additional custom fields in Microsoft Project 2007 that may be required for viewing, tracking and reporting project status within EPM.

C.2.5. Design and develop management reports (bi-weekly, monthly, quarterly, and forward-looking Planning Reporting) in EPM. Develop these project reports through the use of Microsoft Project 2007, EPM Data Analyzer, Crystal Reports and Crystal Reports Server to satisfy NRR business views and reporting requirements.

C.2.6. Determine how "other work" not scheduled in EPM will be tracked, such as creating placeholders to help staff to track their time and ensure that employees are accountable for all workload and managers can make adjustments when schedule conflicts arise; (See **APPENDIX A** for TRIM User Guide)

C.2.7. Retain a local copy of each project schedule in the event of a system malfunction and project data saved on the server is unrecoverable.

C.2.8. The contractor shall establish a SharePoint portal site for communicating project documentation.

Subtask C.3 Maintenance of Project Schedules.

The Contractor shall maintain project schedules and perform scheduling activities to include the following.

C.3.1. Identification of schedule conflicts, critical path analysis, and resource allocation as related to project constraints, i.e. time, scope. The resolution of schedule conflicts shall be communicated to project stakeholders.

C.3.2. Provide consistent approaches for estimating project activity times, sequencing those activities to optimize the guidance of a project through its life span.

C.3.3. Update the project schedule(s) for a specific NRR business process(es) as needed and re-publish the schedule to EPM Project Server.

C.3.4. Analyze validity of schedules submitted by outside parties contributing to the project.

C.3.5. Monitor actual progress, compare to baseline and report progress against schedule.

C.3.6. Analyze and report productivity and trends.

C.3.7. Forecast the impacts on schedule of proposed changes.

C.3.8. Recommend policy or procedural revisions that will improve schedule accomplishment.

C.3.9. Attend management, project team and customer meetings as requested by the project manager.

C.3.a. Archive actual schedule achievements for estimating future similar projects.

Note that all project scheduling shall be consistent across NRR and the scheduling approach shall be contained in the NRR EPM Global Business Requirements and Implementation Approach. A review of existing scheduling practices in the Office of New Reactors is required. This documentation will be provided by the CPA.

Subtask C.4. Global Project Status Reporting to the CPA.

To communicate project activity across NRR, the contractor shall:

C. 4.1 Provide Weekly and Monthly status reporting *on project status. All status reports must reference the WBS line item being worked on by the contractor and the resource.* The status reports shall include risks, issues, and mitigation strategies. A statement of accomplishments shall be reflected with resources, dates, and cost data.

C. 4.2 Develop an overall draft and final project plan and schedule for work assigned. This project schedule for the CPA shall be fully resources load at the task level.

Optional Task C.5- Establish NRR EPM Infrastructure

Should the government decide to exercise this option, the contractor shall:

C.5.1 Develop an implementation plan and approach for an NRR instance of EPM. This implementation plan and approach including a project schedule (based upon a WBS) shall be documented and shall include stakeholder resource requirements with associated roles and responsibilities.

C.5.2. Upon notification by the Government and consultation with EPM stakeholders, the contractor shall perform the necessary technical work to establish the EPM instance and environment for NRR. Note that the work to be performed shall be described in the Implementation Plan and approach. This work shall include testing and transition of any NRR project schedules to the new instance.

D. Deliverables Timeline.

Contract Award	Project Start (PS)
Subtask C.0 Project Kickoff Meeting	PS + 5 Days
Subtask C.4.2 Draft Contractor Project Plan and	PS + 15 Days

Schedule (representing Refined Project Approach)	
Subtask C.4.2 Final Contractor Project Plan (representing Refined Project Approach with NRC input)	PS + 20 Days
Subtask C.1 (Draft) - NRR EPM Global Business Requirements and Implementation Approach Draft	PS + 90 Days
Subtask C.1 (Final) - NRR EPM Global Business Requirements and Implementation Approach Final	PS + 150 Days
Subtask C.2 - Development of NRR Project Schedules. (This section applies to schedules 1 through 10). The CPA will provide notification when work on a particular schedule/process should commence. Note that x below represents the name of process or schedule to be developed.	
Schedule Kickoff Meeting.	Notification from PO + 3 days
Process/Schedule X.	Notification from PO + 25 days draft schedule delivered and SharePoint portal. Notification from PO + 45 days review with stakeholders and test of schedule including all workflow processes. Any needed modifications will be made at this time. Notification from PO + 60 days final schedule Notification from stakeholder – publication of schedule to EPM server.
Subtask C.3 – Maintenance of project schedules.	From publication in EPM through project life cycle and/or Task Order engagement as directed by CPA.
Subtask C.4 - Global Project Status Reporting to the CPA.	Frequency: weekly and monthly.
Optional Subtask C.5 - Establish NRR EPM Infrastructure Kickoff Meeting	

Implementation Plan, Project Schedule and Approach	Notification from PO + 3 days.
NRR EPM Infrastructure Testing and Transition of Schedules	Notification from PO + 15 days.
NRR Final Production EPM Infrastructure/Instance established and operational with Project Schedules	Notification from PO + 35 days.
	Notification from PO + 50 days.

F. Place of Performance

The work shall be performed at the NRC Offices located at 11545 and/or 11555 Rockville Pike, Rockville, Maryland.

H. Expertise/Skills

The contractor shall possess expertise in the following. Note that senior level resources shall possess the Project Management Professional (PMP) certification.

- MS-Project
- MS-Project Server
- SharePoint
- Project Web Access
- Crystal Reports
- Crystal Reports Server
- Project engineering
- Enterprise Project Management
- Business Process Modeling
- WBS Chart Pro

APPENDIX A
Background Information on Centralized Work Planning in NRR and TRIM User's Guide

Purpose: To provide background information on the NRR Centralized Work Planning Activity.

1. Background

In 1998, NRR initiated an assessment of the program activities of the office during which management and staff identified a number of concerns regarding the way workload was planned and managed. NRR management identified Centralized Work Planning (CWP) as a possible solution to the concerns and requested that Arthur Andersen conduct an efficiency review of workload management. As a result of this study, NRR initiated a benchmarking effort to visit organizations that have been recognized as applying best practices in workload management, with the intent of gaining knowledge and determining the appropriate changes to make within NRR to accomplish centralized workload management. The benchmarking effort was completed in 1999, and a team began designing the CWP program based on the recommendations of the report. This effort, which focused on creating an NRR-wide custom built software program to track all work and all available resources, lasted for approximately two years.

In June, 2002, NRR senior management participated in a retreat to affirm alignment of the critical work necessary to support the expectation of continuous improvement in performance in NRR. During the retreat, senior management voted CWP as one of the top 5 organizational improvement initiatives.

2. Description

Initially, CWP efforts focused on creating a paper-based information management system in lieu of a software system that was capable of tracking license amendments. The NRR Leadership team (LT) endorsed the new program design and in November 2002, the CWP program began processing and tracking license amendment applications. Once it became evident that the paper tracking system worked, a database was developed to contain all the programs' pertinent data. Exemption requests were added to the program and then license renewal applications were added. Incorporation of license renewal work identified the need to modify the CWP program in order for it to accommodate different types of NRR processes. Early this calendar year, the CWP process shifted to a new database capable of a wider variety of NRR work (i.e., beyond licensing actions).

CWP has expanded to cover about 45 percent of NRR's work. In addition to licensing actions, CWP now includes power uprates and license renewal reviews, and the construction inspection program was recently included. Additional processes are being added on a continuing basis. New Reactors workload will be another activity in CWP in the future.

In addition to streamlining information flow, work planning has helped to improve the predictability of completion of intermediate milestones involved with our work products. For instance, project managers receive requests for additional information and draft safety evaluation inputs on time more often when the work process is part of CWP.

The work planning center uses the data in the CWP system and from TRIM (Time, Resource and Inventory Management) to provide reports to managers that are used to monitor organization and process performance. For instance, monthly Operational Level Reports are provided to all NRR process owners to convey key data on the performance of their processes relative to NRR Operating Plan Objectives.

Another aspect is to provide better planning tools to managers to more readily plan work assigned to their organizations and to respond to emergent work. A major effort currently recently completed entailed developing workload planning reports for line managers to use toward this end.

3. Status

CWP processes license amendment applications, exemption requests, relief requests, power uprates, and license renewal applications, topic report reviews, construction inspections. In addition, TIAs and the SRP are about to be in. For the processes already supported by CWP, customer specific reports are regularly issued to project managers, section chiefs, and program owners.

4. Overview of the TRIM Process

When an individual is assigned work, the individual enters that work in TRIM. There are no exceptions.

For current workload, whenever someone is assigned a task, they enter that task in TRIM. All that is required is an Estimated Start Date, Estimated End Date, and Estimated Number of Hours to complete the task. Once familiar with TRIM, it will take only a few minutes to add a TAC to the individual's list of assignments and a few additional minutes to close or remove any assignment from the list.

For anticipated workload, TRIM has the capability for individuals to schedule future work that will soon be coming into NRR. In the future, if the anticipated work has not yet been assigned to particular individuals, then the work will be temporarily assigned to the Branch and we will be able to see if the Branch will be overloaded.

Appendix B
INFORMATION TECHNOLOGY INFRASTRUCTURE

Microsoft Project Server Enterprise Infrastructure

The EPM solution represents the integration of technologies already in use at NRC in the OIS Production Operations Environment (POE), and is based on the following standard three-tiered architecture:

- Client Tier (Presentation)
  - Microsoft Project Professional – Used to:
    - Publish project and resource information to the Project Server
    - Manage updates to project plans stored on the project server
  - Microsoft Project Web Access (PWA) – Provides access to:
    - Project Views
    - Status Reports
    - Project Server Administration
    - Risk Tracking
    - Issue Tracking

PWA provides access to the above via the use of Active X controls that are automatically downloaded to the end users workstation the first time PWA is opened in the end users web browser. PWA web pages are standard Hypertext Mark-up Language (HTML) provided through Active Server Pages (ASPs) from a Microsoft Internet Information Server (IIS) co-hosted on the Project Server.

- Middle Tier (Application/Logic)
  - Project Server – Provides:
    - Enterprise project management features and tools
    - Communicates with the client tier (clients) via:
    - IIS Project Server ASP pages
    - Project Data Services (PDS)

PDS is a component of the Project Server security architecture that oversees access to project data. Clients such as Project Professional and PWA access the PDS to obtain portfolio data. Requests to the PDS are made through an Extensible Markup Language (XML) interface and responses are returned to the client in XML.
The client application queries the PDS for connection information to the Project Server database. Using this information, the application connects to the Project Server database and queries the database to retrieve and update information for the projects and resources that the application is authorized to view.

- SharePoint Portal Server – Serves as:
  - Central repository for documents, issues, and risks.
- Database Tier
  - SQL Server 2005 Enterprise – Used to:
  - Store both non-enterprise and enterprise schedule data in tables within a database

The diagram on the following page represents the NRO version of the EPM implementation, which is the same infrastructure that will be used for Watts Bar 2:

EPM Architecture

A detailed diagram of the EPM architecture appears below: