

**AMENDMENT #1  
FOR  
RFP NUMBER 0A05012**

**DATE AMENDMENT ISSUED: October 15, 2004**

The state of Ohio, through the Office of Information Technology, Investment and Governance Division, for the Ohio Environmental Protection Agency is requesting proposals for the design, construction, and implementation (including documentation and limited training) of a web-enabled software application for the Division of Air Pollution Control.

**OPENING DATE:** November 2, 2004  
**OPENING TIME:** 11:00 A.M.  
**OPENING LOCATION:** Office of Information Technology  
IT Governance Division Bid Room  
30 East Broad Street, 40<sup>th</sup> Floor  
Columbus, Ohio 43215

The attached pages represent the amendment for the Request for Proposal (RFP) listed above. Please use the attached pages to replace the pages previously issued by the state.

Specifications and requirements that have been revised are indicated with asterisks and/or bold type.

**Cover Letter.** The cover letter must be in the form of a standard business letter and must be signed by an individual authorized to legally bind the offeror. The cover letter will provide an executive summary of the solution the offeror plans to provide. The letter must also have the following:

- a. A statement regarding the offeror's legal structure (e.g., an Ohio corporation), Federal tax identification number, and principal place of business;
- b. A list of the people who prepared the Proposal, including their titles;
- c. The name, phone number, and fax number of a contact person who has authority to answer questions regarding the Proposal;
- d. A list of all subcontractors, if any, that the offeror will use on the Project if the offeror is selected to do the work;
- e. For each proposed subcontractor, the offeror must attach a letter from the subcontractor, signed by someone authorized to legally bind the subcontractor, with the following included in the letter:
  1. The subcontractor's legal status, tax identification number, and principal place of business address;
  2. The name and phone number of someone who is authorized to legally bind the subcontractor to contractual obligations;
  3. A description of the work the subcontractor will do;
  4. A commitment to do the work if the offeror is selected;
  5. A statement that the subcontractor has read and understood the RFP and will comply with the requirements of the RFP; and
- f. A statement that the offeror's proposed solution for the Project meets all the requirements of this RFP
- g. A statement that the offeror has not taken any exceptions to the Terms and Conditions;
- h. A statement that the offeror does not assume there will be an opportunity to negotiate any aspect of the Proposal;
- i. A statement indicating the offeror will comply with all Federal and Ohio (Ohio Revised Code) Laws and Rules of the Ohio Administrative Code as those laws and rules are currently enacted and promulgated, and as they may subsequently be amended and adopted;
- j. A statement that the Contractor shall not substitute, at Project start-up, different personnel from those evaluated by the State except when a candidate's unavailability is no fault of the Contractor (e.g. Candidate is no longer employed by the Contractor, is deceased, etc.);
- k. A statement that the offeror is not now, and will not become subject to an "unresolved " finding for recovery under Revised Code Section 9.24, prior to the award of a Contract arising out of this RFP, without notifying DAS of such finding;
- ~~l. A statement that the Contractor shall keep the software current with the operating environment in which it is designed to function (and, if applicable, the subject matter covered by the software) and to correct material defects in the software in a timely fashion. The Contractor will also include a statement that it will obtain a commitment from the licensor to limit increases in the annual fee for maintenance to no more than 8% annually. See: Attachment Three: Part Five: Acceptance and Maintenance, Section 'Software Maintenance'; and~~
- m. A statement that the references provided to meet all requirements of the RFP are from clients for whom work was performed, not companies associated or affiliated with (i.e. subsidiaries, partnerships, joint ventures, or sister companies of a conglomerate) the prime contractor or subcontractor.

**All offerors who seek to be considered for a contract award must submit a response that contains an affirmative statement using language in paragraph(s) a through m above.**

## ATTACHMENT SIX

### PERSONNEL PROFILE SUMMARY

**NOTE:** The Personnel Profile Summary Forms contained in this Attachment are comprised of three (3) different types of forms. The form types are:

- Attachment ~~Nine~~ **Six**\*-- A Candidate References,
- Attachment ~~Nine~~ **Six**\*-- B Candidate Education & Training, and
- Attachment ~~Nine~~ **Six**\*-- C Candidate Requirements.

All or any combination of the form types may be requested for offeror key candidates. There are variations between form types and there may also be variations between the form types for different candidates. If an offeror elects to re-create the forms instead of typing in the forms using a typewriter, **please carefully review each form** to ensure that the forms have been re-created accurately.

ATTACHMENT EIGHT: STAFFING MATRIX FOR ~~DECISION SUPPORT SYSTEM~~ AIR  
POLLUTION\* PROJECT

<b>Mandatory Experience Requirements</b>	<b>Project Manager</b>	<b>Team Member A</b>	<b>Team Member B</b>	<b>Team Member C</b>
<b><i>Project Manager (Propose only 1 person)</i></b>				
Candidate must possess a minimum of 48 months project management experience on projects of similar scope and size to the DAPC				
Candidate must possess a minimum of 48 months experience using recognized information system design and development methods and techniques				
Candidate must possess nationally recognized training in project management techniques, as supported by PMBOK				
Candidate must possess a current PMI certification				
<u>Experience Requirements</u>				
<b><i>Team Members</i></b>				
Every person proposed as a technical writer must have 24 months experience writing technical documentation				
Every person proposed as a member of the system design team must have a minimum of 24 months experience in business analysis and business process modeling.				
Every person proposed as a member of the system design team must have a minimum of 36 months experience in logical data modeling and relational design				
At least one person proposed as a member of the system design team must have 48 months experience in complex logical data modeling. At least 12 of these months the candidate(s) must have used the ERWIN 4.0 (or greater) modeling software.				
At least one person proposed as a member of the project team must have a minimum of 12 months experience facilitating JAD sessions				
Every person proposed as a member of the system build/construction team must have a minimum of 60 months experience developing web-based application systems using JAVA/J2EE platform tools.				

ATTACHMENT TEN: THE BASIC SYSTEM REQUIREMENTS DOCUMENT  
(REPLACE ENTIRE DOCUMENT)

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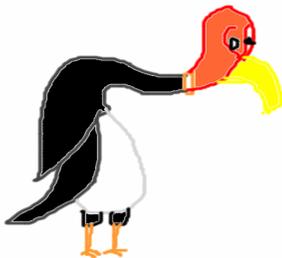


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# Basic System Requirements Document

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Version 0.21  
Date Effective: 1/12/04



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## INTRODUCTION

This section covers the background that led the Ohio Environmental Protection Agency (Ohio EPA) to search for the new system and the general implementation requirements for this System. It also briefly describes the goals that the Ohio EPA intends to achieve with the new system.

### 1.1 Layout of this Document

This document is organized into an introductory section that covers a description of the Division of Air Pollution Control (DAPC) and its business processes, the business purpose and objectives of the new system, the scope, a new system overview and diagram, and a review of the current system. The basic system requirements section includes an overview as well as the functional and technical requirements for the new system. The appendices section contains information that is important to reference for completion of the project but is not to be considered a complete listing of reference material.

### 1.2 DAPC and Business Process Descriptions

The mission of DAPC is: "To attain and maintain the air quality at a level that will protect the environment for the benefit of all." DAPC along with nine local air agencies (LAAs) are required under state and federal law to perform all of those functions designed to attain and maintain ambient air quality and protect public health. Some of these functions include the permitting and emissions reporting programs and compliance reporting. DAPC and the LAAs are partners in carrying out this mission. Through these functions, DAPC ensures that Ohio's air meets the national ambient air quality standards (NAAQS) which are standards adopted by the United States Environmental Protection Agency (U.S. EPA) to protect public health and welfare.

#### **Background**

The DAPC is an organization that writes permits for facilities (DAPC customers) which generate emissions and assists these facilities with maintaining compliance with regulations. DAPC regulates approximately 13,000 facilities. It has a Central Office (CO) and fourteen field offices (DO/LAAs). Operationally, the field office is the primary contact for their customers (facilities). The CO's role is for overall (DAPC) program control, statewide coordination of programs, central repository of data, primary contact to U.S. EPA, plus support and assistance of the field offices.

Computer support comes from three entities at the Ohio EPA. The Computer Automation Unit (CAU), the Office of Information Technology Services (ITS), and STARS System Administrator (SA). CAU is DAPC's own on-site resident computer support organization. ITS is the Ohio EPA computer support group and is the CO's corporate group. STARS SA is a DAPC resident expert who assists with application support. The STARS SA provides STARS/STARShip application support. Basic desktop (i.e., helpdesk) support comes from CAU, and network along with more technical support comes from ITS even though CAU or the STARS SA may initiate ITS involvement.

#### **Permit Process Reengineering**

DAPC is currently undergoing business process reengineering for the permitting process. This document has been written assuming the newly reengineered permitting system will

be in place by the time the new system is functional. There exists the possibility that all of the proposed changes to the permitting programs will not proceed as planned. However, any failure by DAPC to modify the existing rules to achieve the process improvements should not significantly affect system design. The major items to note when reading this document are as follows:

- Currently, all facilities permitted receive a PTI and separate PTO (or Registration) for each source of air pollution (i.e. E.U.),
- The new system will issue one combined PTI and PTO document, a PTIO permit, for each E.U. at Non-Title V facilities,
- Title V facilities only, will continue to receive a separate PTI and PTO,
- PTO Registration status currently gives qualified facilities a Registration notice instead of a PTO (a Registration never expires and thus doesn't need renewed),
- In the future, PTO Registration status will be discontinued. Emissions units (air contaminate source, i.e. E.U.) at facilities currently under this status will be grandfathered into the new program and will not be impacted by the permitting process changes,
- New E.U.'s at facilities that would have been subject to the old PTO Registration program will be required to apply for and obtain a PTIO.
- The current PTI Registration process will be renamed Express PTI/PTIO.
- Issuance of a new permit type; General Permits, will begin in approximately 2 months. General Permits will require several different tracking paths and different final documents.

Listed below is a brief overview of each major business process DAPC performs which should be included in the new system.

#### Compliance Reporting

Compliance reports are reports the regulated community are required to submit, based on permit requirements, to Ohio EPA to demonstrate compliance with various air pollution control requirements. Compliance reports are reviewed by DAPC personnel for timeliness, completeness and compliance.

#### Emissions Inventory System (EIS)

An emissions inventory is a compilation of data describing emissions from different sources of air pollution. The source may be a utility, refinery, automobile, train, etc. Each type of source can be placed into a point, area or mobile source category. It is the point source inventory that has been flowcharted and will be part of the STARS/STARShip replacement system. A point source is a stationary source that can best be described as a manufacturing plant or a similar entity having one or more E.U.'s discharging air pollutants into the atmosphere and located at one specific geographic area. Annual reports are requested from facilities subject to the requirements of EIS and the data contained in these reports are compiled and sent electronically, to U.S. EPA.

### Emissions Statement (ES)

If a facility is located in a county which has been designated nonattainment for the NAAQS for ozone and emits 25 tons or more of volatile organic compounds (VOC) or nitrogen oxide (NOx), an annual ES must be submitted to Ohio EPA by November 15 of each year. If a county is redesignated to attainment for the NAAQS for ozone, facilities within that county would be exempted from the ES requirements beginning with the next full calendar year after the redesignation by U.S. EPA. ES data must be summarized and submitted to U.S. EPA.

### Fee Emissions Reporting (FER)

In accordance with Ohio Revised Code (ORC) 3734.11 and Ohio Administrative Code (OAC) Chapter 3745-78, all facilities in Ohio that are required to apply for and obtain operating permits or registrations are required to submit a fee emissions report to Ohio EPA, DAPC. A facility's permitting status as of December 31, and its potential to emit will determine to what fee program it is subject. The three operating fee programs and their requirements, which are outlined in OAC 3745-78, are referred to as Title V, Synthetic Minor, and Non-Title V. The reported estimated facility-wide emissions of billable pollutants, in tons, are used to calculate an emissions fee for each facility.

### Permit to Install and Operate (PTIO)

Ohio's air pollution rules require companies not subject to the requirements of Title V (Title V companies are required to obtain a Permit to Install (PTI) prior to installation) to obtain a PTIO before beginning construction of any non-exempt stationary source of air pollution. Companies submit completed PTIO application forms to the appropriate DO/LAA via hardcopy forms or electronically. DAPC then reviews the application, develops, and issues the permit. There are processes in place to implement the required public notification of the application and permit, to process the appropriate fees, and to issue the associated PTIO documents. The permitting process includes both CO and the DO/LAAs and includes all of the actions which the Agency can take on the PTIO applications and any subsequent permit actions. Specifically, it involves determining completeness, approving and/or denying of applications for state PTIO's and Express PTIO's\* as well as modification and revocation of those permits after issuance. The PTIO process encompasses the majority of permits issued to E.U.'s.

\* See below section on Registrations

### Title V Permit to Install (PTI)

All E.U.'s installed at major facilities after 1974 are required to obtain a Title V PTI prior to installation. The PTIO is not a permitting option for facilities subject to Title V. Thus, companies subject to the requirements of Title V must obtain a PTI and then a subsequent Title V PTO (or Title V permit modification). Companies obtain the PTI application forms from the Ohio EPA, fill out the forms, and submit them to the appropriate DO/LAA. DAPC reviews the application, develops, and issues the permit. There are processes in place to implement the required public notification of the application and permit, to process the appropriate fees, and to issue the associated PTI documents. Title V facilities may request an Express PTI.

### Title V Permit to Operate (PTO)

Emissions units installed at major facilities are also subject to what is known as the Title V PTO requirements. Title V is an operating permit program established by the Clean Air Act Amendments of 1990 (CAA) that establishes a facility wide operating permit for all non-

insignificant E.U.'s at these facilities. The permitting process includes both CO and the DO/LAAs and includes all of the actions which the Agency can take on the permit application and any subsequent operating permit action. Specifically, it involves approving, denying or determining completeness of applications for Title V permits as well as modification and revocation of those permits after issuance.

### Registrations

There are currently approximately 25,000 E.U.'s on Registration status. DAPC intends to eliminate Registration status for E.U.'s. However, these 25,000 E.U.'s will need to remain in the new system under the current Registration rules. Only if an E.U. moves to a new facility or is modified will the E.U. need to obtain a PTIO. These grand-fathered E.U.'s (25,000 mentioned above) do not need to be renewed.

PTI Registration is an existing process which is different from a Registration. If a facility requests PTI Registration, the PTI or PTIO is issued by sending it directly to CO for issuance rather than through a CO review process. Also, the PTI Registration requires an additional letter sent to the facility as well as automatic approval of installation if Ohio EPA fails to issue the permit within a specific time frame. In the future and throughout this document, PTI Registrations will be referred to as **Express PTI/PTIO**.

### STARShip

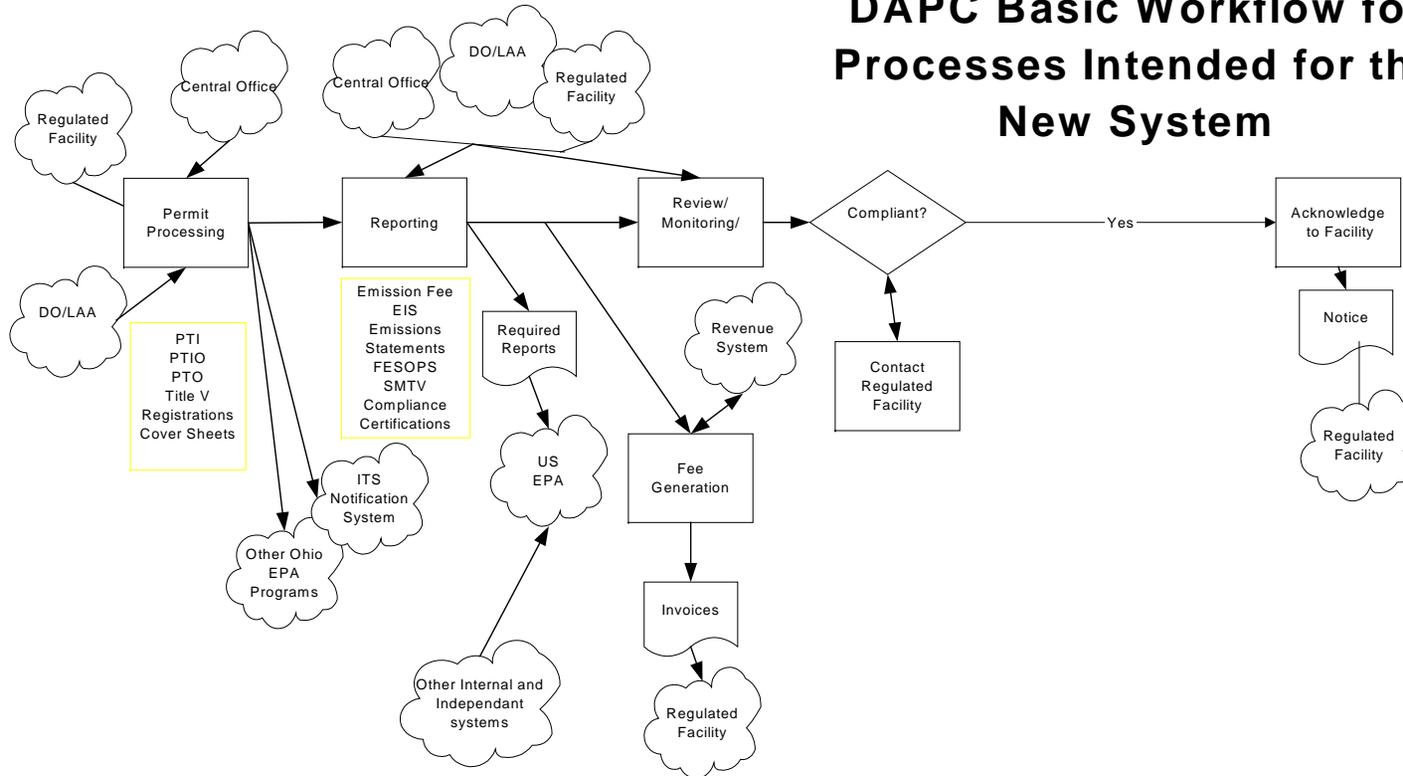
The current STARShip software is used by facilities and consultants to house data and submit files pertaining to Title V permit applications, state PTO applications, Title V FER's, SMTV FER's, ES reports and EIS reports. Facilities will create files from the STARShip software, submit the files electronically (except SMTV reports) and submit a hard copy signed receipt certifying accuracy. These STARShip files are imported into DAPC's internal permitting software, STARS, for processing.

The new STARShip software will provide the additional ability for facilities to submit PTIO, Express PTIO, Title V PTI and Express PTI applications as well as SMTV and Non-Title V FER's via a web-based data entry module. State PTO applications which are currently part of the STARShip functionality will become PTIO applications in the new system.

The following flowchart outlines the Basic Workflow for the DAPC.

Figure 1; DAPC Basic Workflow

## Ohio EPA "As Is" DAPC Basic Workflow for Processes Intended for the New System



### 1.3 Business Purpose and Objectives

In an effort to resolve many permit processing problems and improve efficiencies in business processes, DAPC intends to completely redesign its information management system. The new system will consist of two components; an internal review, tracking and issuance module and an external Data Entry Module (DEM) for the regulated community.

The objectives of the new system are as follows:

1. To improve the efficiency of the DAPC permitting system - While the current STARS/STARShip system includes only PTOs and PTIs2000 includes only PTI's, the new system will include both PTIs and PTOs, and allow for the seamless transition between these two permits types (in the case of Title V facilities). The new system will enable DAPC to also issue one combined permit for installation and operation for all Non-Title V facilities; the new PTIO permit. Critical to success of the new system is the ability to easily change a facility's permit status. For example, a facility must easily be able to change from having a PTIO to a Title V PTI and Title V PTO or the reverse if their operations change thus requiring a different permit type. The new system will include tracking and reporting features that will allow for the effective tracking of all permits. The system will also link the permit language with a notification system through which facilities will be notified when they must submit something to DAPC.
2. To take advantage of technology in order to improve the ease, speed and security for the regulated community in order to submit applications and reports to Ohio EPA -This will be achieved by utilizing the latest computer technology and by increasing the user friendliness of the system.
3. To improve the fee emissions reports/fee processing system by consolidating legacy systems and streamlining the reporting and invoicing capabilities of the system. - DAPC currently collects emissions data through STARShip and via hardcopy reports. DAPC relies on an intermediate software to allow for data to be transferred to U.S. EPA. DAPC also uses another external system to process fees and yet another intermediate software to transfer data to the Ohio EPA fee system. The new system should eliminate the use of most of these intermediate programs.
4. To improve the overall efficiency of DAPC by including in the new system additional business processes which are not currently included in the STARS/STARShip system - These identified processes currently use other applications (such as FoxPro programs) which are maintained by DAPC. The new system will improve these other business processes by reducing DAPC's reliance on most of the ad-hoc programs.
5. To better communicate with and transfer data between external entities - The DAPC currently communicates with external entities through several different mediums and correspondence is tracked in several different systems. The new system should efficiently transfer data to external entities, such as U.S. EPA and track and standardize correspondence with the public and the regulated community.
6. To build a flexible, scalable system which will enable the addition of new modules (future projects) with minimal cost and effort.
7. To build a robust mechanism for the tracking and summarization of permit data, reporting data, staff performance and metric measurements.

## 1.4 Executive Summary

The DAPC has initiated a project to replace three primary existing software systems as well as other smaller systems that do not satisfy its needs to the degree desired. STARS is an internal application used to review and construct PTO's. STARShip is used externally by the regulated community for remote entry of applications and reporting of emissions data. PTIs2000 is an internal application used to track and construct PTI's.

This report is the culmination of Phase 2 of the project (the DAPC project phases mentioned in the document are not the same phases defined in the RFP). DAPC completed the first phase during 2001, which developed business process maps for thirteen processes that were being considered for inclusion into the new system. Phase 2 was conducted jointly by Netwave Corporation and Cap Gemini Ernst and Young in the first quarter of 2001; it defined the major characteristics of applications needed to manage the data and support the business functions of the division. Phase 3 of the project will be an internal process improvement phase. Detailed design, construction and implementation are deliverables for Phases 4 and 5.

The purpose of Phase 2 was not to design systems, nor was it to develop a detailed requirements definition. The goal was to identify what applications are needed to manage data and provide information to people performing business functions. The high level business process flow diagrams were reviewed with the business experts from each area. This resulted in a high level listing of the various functional needs of the new system. Based on this information, the applications that will fulfill those needs were defined, ensuring that all "must" requirements were included. Following the definition of the application's architecture, the data and technical requirements which will comprise the future system were identified.

The existing application architecture is the culmination of separate systems initiatives, which occurred over several years. A portion of the regulated community must enter data into a standalone PC application and manually send data to DAPC via e-mail or diskette. Permits to Operate and Permits to Install are managed on different systems. Assigning and tracking of tasks is manual and cumbersome. Besides STARS and STARShip, there are numerous other systems and sub-systems that are used for importing and exporting data, web posting, word processing (via WordPerfect), reporting and analysis. Technically there exists a variety of platforms and development environments to maintain. Currently DAPC does not directly use or contribute to Ohio EPA's Core data repository.

The objective of the proposed applications architecture is to significantly improve the efficiency of the permitting system by combining similar functionality, providing business functions that don't exist today, utilizing shared data with other Ohio EPA programs, taking advantage of current technology and eliminating other applications outside of the main system. All user interactions will be via a web-based Internet browser, thus becoming the foundation for the agency-wide Data Entry Module (DEM). A manager will establish tasks, plans and staff assignments via the Tracking and Workflow application; this will provide permit application tracking throughout the life of the project. A single integrated application will process Permits to Install and Operate, Title V Permits to Install and Operate, General Permits and all associated permit related compliance reporting activities. This complex module must utilize the database, word processing for text manipulation and text search utilities to locate standard, re-usable text. Additional, integrated applications are needed for invoicing, notification and analysis. All applications will use the same database and reuse functionality when possible.

The proposed system utilizes a multi-tiered architecture with a web browser client interface and a simple application layer. The web-based client ensures easy access by the regulated community and conforms to State and Agency technical directions. Data is shared between applications and with the rest of the Ohio EPA.

## 1.5 Scope Statement

The following are the business processes that DAPC has defined as “musts” to include in the new system:

- Title V Permits to Operate
  - Title V (includes Title V Administrative Permit Amendments, Title V Minor Permit Modifications, Title V Significant Permit Modifications) processing - includes the ability for facilities to complete the applications electronically, for Ohio EPA to receive the applications (implies QA check), the ability to review and track permit status, ability to do general tracking and querying relevant to management and construction of permits and issuance of the permits.
  - The ability to handle other permitting actions, such as a denial, revocation or a completeness determination.
  - This also includes a system to notify the facility that the permit will or has expired, compliance reports are due and/or an application is due.
  - The ability to seamlessly transition from one permit regime to another (this scope statement applies to all of the permit types below and will be further defined in the Requirements section).
  - The ability to summarize permit data, and establish timelines for processing of all permits (this scope statement applies to all of the permit types below and will be further defined in the Requirements section).
  - The ability to perform robust receipting functions upon receipt of a permit application (this scope statement applies to all of the permit types below and will be further defined in the Requirements section).
- Title V Permits to Install
  - Includes the ability for Title V facilities to apply for a PTI, Express PTI, General Permit to Install, or PTI modification, electronically or hardcopy, for Ohio EPA to receive the application (implied QA check), the ability to review and track permit status, the ability to do general tracking and querying relevant to management, and construction and issuance of the permit.
  - The ability to handle other permitting actions, such as a denial, revocation, extension or a completeness determination.
  - Ability to incorporate the PTI terms into the Title V PTO (includes concurrent processing).
- Permits to Install and Operate
  - Include the ability for facilities to apply for a PTIO (State PTIO facilities, State PTIO Modifications, Express PTIO, General Permits and Federally Enforceable State Operating Permits) - includes the ability for facilities to complete the applications electronically or hardcopy, for Ohio EPA to receive the applications (implies QA check), the ability to review and track permit status, the ability to do general tracking and querying relevant to management and construction of permits and issuance of the permits.
  - The ability to handle other permitting actions, such as a denial, revocation or a completeness determination.
  - This also includes a system to notify the facility that the permit will or has expired, compliance reports are due and/or an application is due.

- Emissions Reporting
  - The ability for facilities to file electronic Title V Fee Emissions Reports (FER), SMTV FER's, Non-Title V FER's, Emissions Inventory System (EIS) annual reports and Emissions Statements (ES).
  - The ability for Ohio EPA to receive those annual reports (Implies QA check).
  - The ability for DO/LAA staff to review the annual reports 'online' using automatic reasonableness checks.
  - The ability for Ohio EPA to track the progress of these reports, to track, per facility, reporting history and to do general queries/tracking relevant to management.
  - The ability for Ohio EPA to pass the EIS data to Regional Air Pollutant Inventory Development System (RAPIDS) in an approved electronic format.
  - The ability to accept RAPIDS reference code tables and use them in all appropriate places.
  - The ability to automatically generate a FER invoice sent to the facility.
  - The ability to automatically generate a Revenue ID (receivable) in Revenues coupled with the ability for DAPC to receive the Revenue ID back into the system.
  - The ability to update the new system when a action is taken on the Revenue ID (fee paid, inactivated, adjusted, etc.).
  - The ability to perform robust receipting functions upon receipt of an emissions report.
- Compliance Notification/Reporting
  - A mechanism to notify facilities that compliance reports are due based on their permitting requirements, and a mechanism to record and track the receipt, or non-receipt, of compliance reports the subsequent and review of these reports.
- Core Database Alignment
  - All future DAPC applications must be aligned to the Core database, both A and B tables (aligned meaning the ability to query, create, update/edit and display Core data).
- Combined DEM/Cover Sheet\*\*
  - A first portal page or Cover Sheet has been designed by Ohio EPA and needs to be included in the rebuild of STARShip.
- Public Information Requests
  - Ability for Ohio citizens and the regulated community to easily, and primarily electronically, obtain general permitting information (Freedom of Information Act) with as little DAPC staff effort as possible.

\*\*The Cover Sheet contains information which the regulated community typically has to fill out across multiple DEMs. In the future, Ohio EPA would like to see all regulated entities enter their basic demographic (or shared information), only once at this 'first portal page' or on the shared "Cover Sheet". DAPC will make the information on the newly designed Cover Sheet the first page of their web-enabled system. In time, other Ohio EPA programs will have the ability to tie into this portal. Also, the information collected on this Cover Sheet, will feed the Core A tables. Ideally, our Core A tables will initially populate the Cover Sheet portal page for facilities once a facility identifies itself through a unique ID. Then, facilities will use this page to send updates to a reconciler in the Agency.

## 1.6 New System Overview and Diagram

The new system is built around seven primary functional areas:

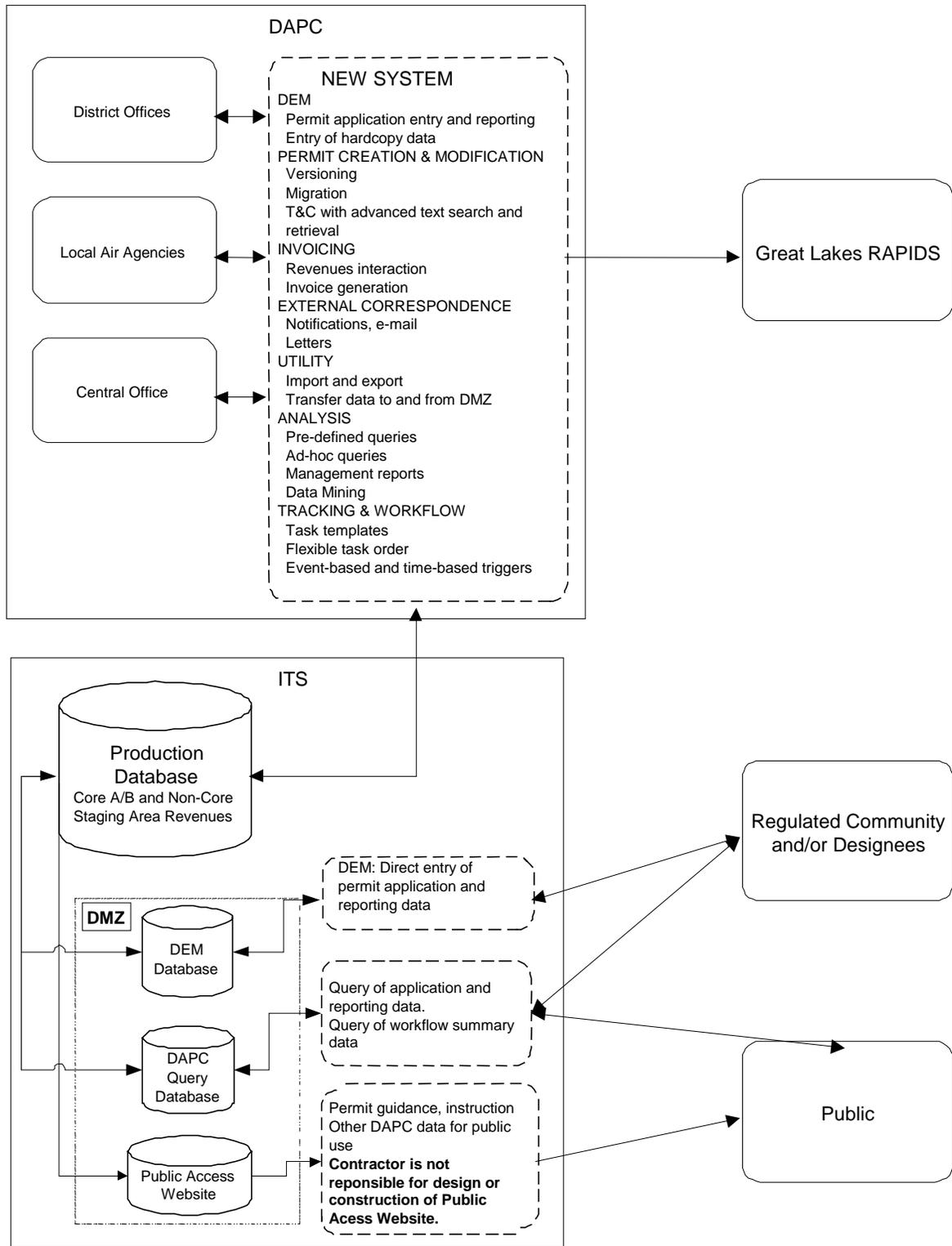
1. Data Entry Module (DEM) – this is used by external users to enter (and/or possibly re-enter) data such as permit applications, emissions reports while providing the users with automatic accuracy and completeness checks (permit applications and reports that are submitted hardcopy and entered internally will be entered through replicated DEM pages which might have different data entry requirements). The DEM is also used by the regulated community to retrieve current information about the progress of their permit(s) or emissions report(s).
2. Permit Creation and Modification – this area covers creating and modifying permits, including versioning, migration, and issuance of permits. It also includes assembly of Terms and Conditions (T&C's) with an advanced text search and retrieval tool.
3. Invoicing – this area interacts with the Revenues System to generate invoices and adjustments and track payments and adjustments.
4. External Correspondence – this area covers data sent out from DAPC, such as form letters, renewal notices, compliance report notices and the interface with the Notification System.
5. Utility – this area includes programs to move data in and out of the system and between databases.
6. Analysis – this is an application that performs database queries, provides management reports, and supports data research.
7. Tracking and Workflow – this is an application that establishes and keeps track of the tasks required to process permits, reports, reviews and all other business processes in the new system.

The following features characterize the system architecture:

1. The new system is Web-based for easy deployment; this is particularly important for the data entry application so that regulated community members and/or their designees can input their data directly through an Internet connection. DAPC can also provide data to the regulated community and/or its designees through the Internet.
2. Data provided by the regulated community through the Internet resides in a protected database (in the DMZ) until the regulated entity submits it. At that time it is copied to the production database.
3. All the data associated with the new system resides in the production database. The database design must conform to the Ohio EPA Core Data Model and Core Data business rules.
4. The users of the new system access its applications through the DAPC Intranet. The Intranet is connected to an application server that provides the processing logic. The application server is connected to the production database server so it may manipulate data.

Figure 2: STARS/STARShip Replacement System Overview

STARS Replacement System Overview



## 1.7 Review of Current Systems

This section lists all materials that were reviewed for the current STARS and STARShip Systems plus associated Business Processes. It also lists any analysis methods/techniques used, and provides an understanding of how the conclusions were reached for this activity.

### 1.7.1 Current Materials List

Contains a list of all documentation reviewed. This documentation is referenced in Appendix A.

### 1.7.2 Current System High-level Overview and Assessment of Data Model

Currently, data required of the new system resides in four distinct repositories. (See Figure 3). This situation did not come about by original design, but rather as a result of evolving needs and practical constraints. The initial STARS application did not cover all the functionality required by DAPC; therefore, DAPC developed many additional applications as needs became critical. Most of these additional applications are based in FoxPro. DAPC also recently developed an application specifically designed to process PTI's (PTIs2000), using web-based Intranet architecture. Word processing files, which are an integral part of permits, are not stored in a database structure but rather on a file server for PTI's. PTO's have much permit data stored in the STARS database structure. Much of the data required of the new system will come from STARS, but a significant minority will come from the FoxPro, PTIs2000, .NET, and word processing applications.

The first repository is an Oracle database (version 8i) serving the STARS application. The data originates from two sources: sites that use the STARShip application to submit data electronically, and state-only sites that submit paper forms. In either case, DAPC personnel clean and verify the data, gathering correct data from the submitting entity as needed. Through an import process or data entry, the data flows into the STARS application and is saved in the Oracle database. The user also builds task-tracking data. The Oracle data is available for reports and other queries for experienced users only. Finally, the Oracle database contains facility-specific permit Terms and Conditions (T&C's).

Word processing files make up the second data repository. These files provide general T&C's that are an integral part of the permits. The STARS application provides the user the option to retrieve permit related text submitted via STARShip and edit it to fit each particular permit. STARS also has limited ability to copy and paste data from external sources. As a result of this practice, and because the system does not provide a way to efficiently search T&C's already used in permits, the T&C's contain a wide variety of discrepancies, even for permits covering very similar E.U.'s. All of the word processing files in the current system are saved in WordPerfect format.

DAPC is in the process of developing a web site library, in HTML text, that will be a fourth data repository. The goal of this new library will be to create a primary resource of T&C's for permit writers which is thorough, complete and accurate. Once completed, this HTML text library could ultimately replace the word processing files which currently make up the second data repository.

The third data repository consists of Permit To Install (PTI) data residing in a SQL-Server database. DAPC developed the PTIs2000 application to solve year 2000 issues in the previous PTI application. DAPC chose to create a "thin client" application in which the client PC need only run a browser and WordPerfect. A Windows 2000 Server provides the Intranet web server, application logic (developed with InterDev), and SQL-Server database. The SQL-Server database houses the PTIs2000 data needed to build the foundation of the permit. The application exports PTIs2000 into a tab delimited text file, then downloads the file to the users PC and merge it with WordPerfect forms (resident on the LAN) via the use of FTP and WordPerfect macros. All of the word processing files in the current system are saved in WordPerfect format on the LAN server. There is no connectivity between PTI's2000 and the merged WP document once the merge is complete.

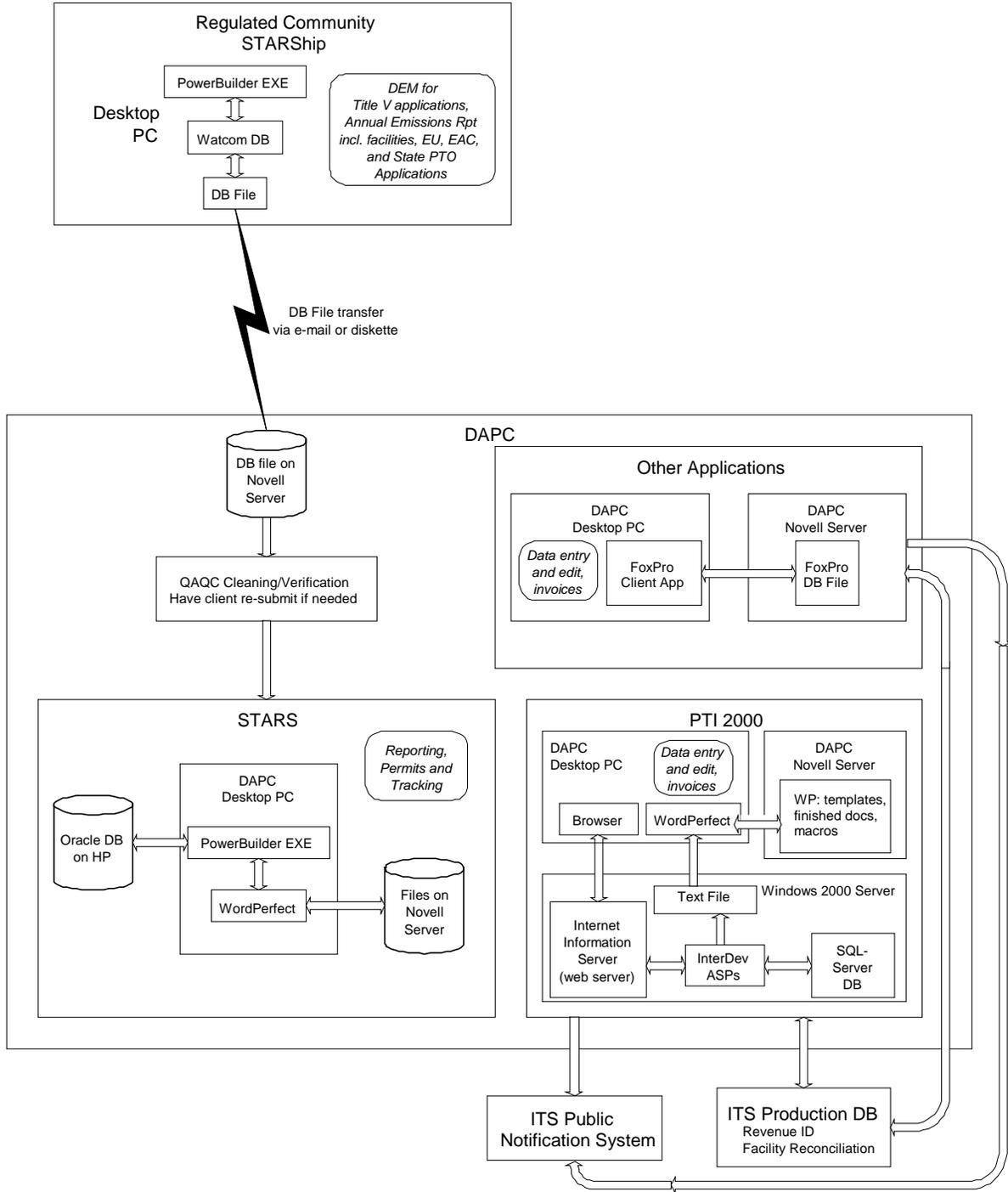
A number of FoxPro tables comprise the fourth data repository. Strictly speaking, the fourth is really a class of repositories, as the FoxPro files are independent of each other. Further analysis is required to determine precisely what data from which FoxPro tables must be included in the new system. These files reside on the DAPC LAN server.

DAPC has several data interactions with other systems. The data from STARS and the PTIs2000 application have interfaces with ITS for Notification, Revenues, and Facility Reconciliation. Some of the FoxPro applications also have indirect interactions with Revenues and Facility Reconciliation.

The challenge of the new system is to merge all required data into a single, readily accessible data repository. The current system suffers from classic disadvantages of isolated databases: great effort required to reconcile data, extreme difficulty to query across databases, redundant data, and instances of the same entity with different properties. The new system will eliminate these disadvantages and offer data integrity, availability, accessibility, and cross-functional integration.

Figure 3: DAPC Current System High-Level Overview Diagram

DAPC Current System High-Level Overview Diagram



### 1.7.3 Current System Scope

DAPC's Current System typically refers to only the STARS and STARShip applications. However, for the purpose of this section, the PTIs2000 application will also be described. The list below describes the scope and limitations of these systems only at the highest level.

#### STARShip:

- Allows the regulated community to file State PTO applications, Title V applications, EIS reports, ES reports, and Title V FER's electronically. Files are submitted via diskette or e-mail.
- SMTV FER's can be filled out using STARShip but must be printed and submitted hardcopy. Word processing forms are also available to be submitted hardcopy.
- There is no functionality that allows facilities to file a PTI application electronically. Word processing forms are available to be submitted hardcopy.
- Minimal Quality Assurance checks in STARShip.
- STARShip allows the client PC to house PTO permit applications and FER/EIS/ES data locally.
- STARShip allows for export from the client PC to another STARShip database.
- Once a permit application, FER, EIS, or ES is received at CO, the users obtain a receipt. Currently, only the permit application receipt is imported via STARShip.
- The receipting function in STARShip does not effectively track the receipting process (receipt of receipt and submittal of receipt).
- STARShip files are manually imported into the STARS application from STARShip export packages.
- Poor identification/filtering of confidentially claimed information.
- Indicative data changes to a facility's record must be updated in the client STARShip database otherwise, upon next submittal of a file, any changes Ohio EPA has made in the STARS database will be overwritten.

#### STARS:

- FER, EIS and ES reports are housed in the STARS database and are reviewed by DO/LAA staff through the STARS application.
- Staff tracking logs are manually created to track reviews of FER's, Permits, ES, and EIS's in the STARS application. 'To-Do' lists for staff to see items assigned to them are available in STARS.
- The STARS system does not allow for invoicing (Interface with Core and Revenues), as these processes are done through Ad Hoc programs outside of the system.

- EIS data housed in STARS must be submitted to U.S. EPA on an annual basis. STARS does not have an export function that allows for this transfer to U.S. EPA. This export and transfer are accomplished through Ad Hoc applications. (STARS had an export function to U.S. EPA, but the format was changed before DAPC's EIS section was formed).
- State PTO and Title V Permits are partially constructed in STARS. All T&C's are housed in the STARS database.
- Some State PTO applications and all Title V applications are reviewed in STARS.
- Staff are manually assigned to predefined application/permit review tasks in the STARS tracking log.
- STARS does not interface directly with the ITS Notification system.
- STARS does not allow for a wide range of internal queries. Almost all queries are done through an external application.
- STARS does not interface with Core for the purpose of Facility Reconciliation.
- STARS does not interface with the DAPC web page.
- STARS does not have a spell check for permit Terms and Conditions.
- STARS does not allow for formatting of permit T&C's.

PTIs2000:

- PTIs2000 requires manual input of hardcopy PTI applications.
- PTIs2000 tracks a PTI through an automated tracking sub-system.
- PTIs2000 houses limited data elements received on the PTI applications.
- PTIs2000 allows for export of these data elements to WordPerfect for permit development and issuance.
- PTIs2000 interfaces directly with Core Facility Reconciliation and indirectly with Revenues and the ITS Notification system.
- PTIs2000 interfaces with the DAPC web page to provide processing status and application data.

#### **1.7.4 Current System Sub-System Interfaces**

The major sub-systems that interface with the STARS application are the following:

- STARShip - data entry application used by the regulated community. This is a stand-alone executable written in PowerBuilder (from Sybase/PowerSoft) that uses Watcom local data store.
- Import/Export sub-system - This is a sub-system of the STARShip application that imports and exports STARShip data.

- Import utility - The STARS users load STARShip data into the STARS database.
- Web posting - Ohio EPA is required to send some permits to U.S.EPA. This is accomplished by converting the permits made in STARS to Adobe PDF files and posting them on the Ohio EPA public web site. The PFD files are also e-mailed to interested parties.
- WordPerfect interface - STARS calls WordPerfect (via the WordPerfect API) to provide word processing capabilities to the user. The user can manipulate letters in WordPerfect and save them in STARS. General T&C's for permits are created using this functionality.
- InfoMaker - (from Sybase/PowerSoft)/Visual FoxPro - DAPC staff use InfoMaker and Visual FoxPro as the primary query and reporting tool on the STARS database.

## 2. Basic System Requirements

This section covers the actual requirements needed for the new system. The breakdown of the requirements is explained next in the Overview subsection.

### 2.1 Overview of Requirements

Requirements are broken-down into two forms in this document. Functional and Technical. The detail to explain each of these requirement types is contained in the Explanation of Requirement Types and the respective Requirement Type subsections below.

#### 2.1.1 Requirements Purpose

The purpose of a requirement is to define or state a capability/need for the new system. It is important that these capabilities/needs are stated as specifically as possible for the new system but not so rigidly that the flexibility to satisfy these capabilities/needs, in multiple ways, is lost.

#### 2.1.2 Explanation of Requirement Types

Functional Requirements are associated with any new system user and the related business process. Technical Requirements are not associated with a specific user and/or can specify a particular technological need.

### 2.2 Functional Requirements

The Functional Requirements have been broken down into categories. These categories are:

<u>Category</u>	<u>Description</u>
• Basic Functional Requirements	Includes basic features/capabilities that are essential for the new system.
• Integrity Requirements	States how the new system will maintain data integrity.
• Volume Requirements	States any basic numbers for inputs and outputs that are available or can be estimated for the new system
• System Interface Requirements	Lists the entities that the new system must communicate with directly (electronically) or have manual input to.

These requirements represent the non-technical new system needs (e.g., for the users) but ones that are essential to have in the new system. Most of the requirements are contained in the Basic Functional Requirements (Section 2.2.1). The Basic Functional Requirements use

the existing system functionality as a baseline and then recommends enhancements, builds, and revisions to this baseline.

## 2.2.1 Basic Functional Requirements

These requirements include all of the features/capabilities that are essential for the new system. Whenever possible, requirements were combined together in order to show the maximum span of impact where they apply. This section has been broken down into Combined Requirements (e.g., Overall, PTIO, etc.), and Requirements that were captured for a specific business process that were the focus of our interview(s). If the requirements are for a business process, “**Business Process**” is in the section’s title. Each group of requirements below may have a qualifying explanation that precedes it, which is then followed by detailed requirements in a table form. When necessary, requirements are broken down into subsections because of the number of requirements that exist. The new system should have at least the same functionality (e.g., PTO permit application entry, etc.) as the present STARShip System (See Appendix A) provides for data entry, quality assurance checks and submission options (e.g., data entry/setup, maintenance, and reporting). It should have at least the same functionality (e.g., PTO permit review and construction) of the present STARS System (See Appendix A). The new system should have at least the same functionality as the present PTIs2000 System (See Appendix A) provides for PTI processing. It should also have at least the same functionality of the present Title V and SMTV invoicing systems provide for invoicing and tracking and the same functionality as the present Non-Title V .NET based system provides for tracking and maintaining Non-Title V fee emissions reports. Requirements listed below will build on and refine this functionality as specified.

### 2.2.1.1 Overall Basic Functional Requirements

Overall Basic Functional Requirements are ones that exist for the entire new system and are contained in this section. They have been organized into subsections of General, Tracking, Interface, Detail and Legacy Requirements because of the number of requirements contained in this section. Please reference the DAPC Master Acronym List (Appendix B) when reading these requirements. The specific descriptions for subsection grouping below are:

<u>Subsection Name</u>	<u>Descriptions</u>
• General	Overall requirements that are broad in nature and span the entire new system.
• Tracking	A significant requirement for the new system is to provide this capability. Within this subsection are both General and Detailed Requirements for Tracking only.
• Interface	Overall requirements that interface with another system.
• Detail	Overall requirements that are more specific in how they are stated but still apply to the entire new system.
• Legacy	Overall requirements for current legacy systems that will be replaced by the new system

**2.2.1.1.1 General**

General new system requirements are Overall ones that are broad in nature and span the entire new system.

1. Ability to accept Electronic Signature(s) via PKI, Digital Certificates and/or a PIN system wherever a signature is presently required (e.g., submittal of Emissions Reports, PTIO Applications, PTO Title V Applications, PTI Applications, etc.) plus the ability to generate a hard copy for a signature that will be used to override the Electronic Signature(s) if so desired.
2. Ability to provide the regulated community members with a confirmation/receipt of any transaction (e.g. submittal of permit application or annual fee emissions report, etc.) including the reason for the submittal (e.g. Minor Permit Modification, Significant Permit Modification, initial application, etc.) Also, the system must create and store a log of all submittals by the regulated community.
3. Robust auditing of the transactions taking place in the Demilitarized Zone (DMZ).
4. System users can save their work in case of system failure through frequent local saves, options for frequent commits to the database or any other viable option.
5. Generation of Facility Correspondence (electronic or hard copy) is explained in the Business Process Sections that follow. Make sure to look at each Business Process Section for these Facility Correspondences that are sometimes called "Notices" but do not interface with the ITS Notification System.
6. Any Director's Action performed by the new system must be created in a hard copy form (e.g., generation of a Title V permit, Directors Exemption letters, etc.) along with being available electronically.
7. Any input or actions taken will involve the easiest and most non-redundant way of entering or getting data into the new system.
8. Data that is created for the new system should only exist in one place unless controlled and known data redundancy is needed to optimize performance. Please refer to Section 2.3.7 for further details.
9. Printing can be done by whoever requests it and is authorized with the ability to be selective (e.g., page by page, Trade Secret, etc.) In addition, printing can be done at any printer designated by the user.
10. Any activity (e.g., Permit Application entry, Administrative change, etc.) performed by the new system must be archived with an audit trail specifying what the activity did, who did the activity, and date/time of the activity.
11. Ability to create/revise standard Terms & Conditions (T&C's), create T&C's for inclusion as Special T&C's in a Permit (PTI, PTO or PTIO), reference of the standard T&C's, and be able to easily cut and paste T&C's from any permit's T&C's. Additional text management capabilities will be a comparison feature to highlight differences between T&C's within one or between two documents. These T&C's will only be available internally as will the comparison functionality mentioned above.

<p>12. Ability to search multiple issued permit documents at the same time for keywords. The ability to cut T&amp;C's from the permit(s) found through the search and paste these T&amp;C's into a permit currently under development.</p>
<p>13. Ability to interface with existing standard Word Processor Software (e.g., Microsoft Word, Corel WordPerfect, etc.) to do basic text based manipulations of permit data (e.g., margins, page numbers, numbered lists, etc.), cutting/pasting from multiple sources, comparing two documents with highlighting of differences and text searches to find designated search strings. The permit document must be able to easily interface with standard Word Processor Software throughout its life cycle.</p>
<p>14. Ability to make changes to handle shutdowns for an Emissions Unit (E.U.) and/or Facility that handles all associated activities (e.g., shutdown Facility, shutdown all E.U.'s, handling of all fee data, interfacing with Core tables, all associated systems activities, communicate shutdowns, etc.) in an easy/user-friendly manner. Also, being able to do address changes, ownership changes, or any other Facility related data changes. Based on certain business rules that include appropriate controls, system would notify as appropriate. Also the ability to handle the restart of shutdown or previously exempted sources with the same (old) permit number.</p>
<p>15. Ability to do such data management tasks such as wholesale replacing of data values (e.g. update the address information of several Facilities at a time (e.g., all BP gas stations, etc.) or reassigning all tasks from an employee who left the Agency to another).</p>
<p>16. Any electronic submission should have built in Quality Assurance (QA) checks to highlight, provide descriptive messages to correct, and stop the respective incomplete/erroneous submission.</p>
<p>17. Any Facility data that changes as a result of any new system data submission will automatically trigger updating to any appropriate place within the new system and to the Core data that has changed via this new system data submission. For example Facility Name Changes, E.U. Withdrawals, Facility Withdrawal Dates, Contact Changes, Facility Type Code Changes, Ownership Changes would automatically trigger the update to occur within the new system as allowed.</p>
<p>18. Ability to update the system reference tables (e.g., system administrator can add or remove rows from the pollutants list reference table, etc.).</p>
<p>19. Ability to easily import data in standard formats into the new system (e.g., import pollutant lists, SIC, BACT, BAT and NAICS databases, etc.).</p>
<p>20. System users (e.g., Facilities, the public, DO/LAA, Central Office, or their designees) can easily export and manipulate selective data or publicly available data in usable limited forms (e.g., spreadsheet, text, word processing documents, Microsoft Access table, PDF, etc.). Also, can print out these forms and contents.</p>
<p>21. System users (e.g., Facilities, DO/LAA, Central Office, or their designees) can import data (in only one standard format, possibly same as export) as a stream of data to be processed. This stream of data will be processed the same way as data that is normally processed via keying (e.g., from a web page) so as <u>not</u> to create different processing logic (stream of imported data vs. keyed input,).</p>

22. Ability to review, update and use system reference tables (e.g., emissions factors, material codes, SCC codes, etc.) which are generated from Great Lakes Rapids.
23. Ability for a Facility to file Fee Emissions Reports either electronically (e.g., web-based) or hardcopy and to perform completion and accuracy checks on the reports that are filed.
24. Data modeling must account for linkages to additional modules that will be added into the system post this contract such as Emissions Testing, CEMS, Appendix K, Enforcement, Inspections, Title IV permitting, and additional Compliance Reporting functions.
25. System documentation must exist for every system function designed and developed.
26. Ability for a DAPC System Administrator (SA) to easily update/change Facility Reporting Requirements (electronic or hard copy) along with being able to easily manipulate/change the "Reporting Rules" in conjunction with ITS and all affected parties. SA should be able to affect both the layout of any hardcopy forms generated and modify reporting rules for all program areas (e.g., change the ton per year fee used to calculate emissions, update pollutant lists, modify a field requested in EIS/FER report, etc.).
27. Predefined queries will all be associated with a report form which must be able to be generated in hardcopy format as well as electronically. There are currently approximately 150 hardcopy report forms which must be designed into the system.
28. The new system must utilize the current data structures in the most efficient way possible.
29. All data fields will be clearly and unambiguously defined so that the meaning of the data is know by all users.
30. The new system should have the ability to provide appropriate and clear messages to users regarding system status (e.g. database is down, web server is going down, etc.). The messages should be situational and provide the user clear directions for any problem resolution.

**2.2.1.1.2 Tracking**

Be able to track a permit application, permit related reporting (e.g., FER, EIS, etc.), and any associated activity associated with a business process as follows:

1. Detailed tracking for a specific permit (PTI, PTO and PTIO) history and status of all activities (both internal and external) for any specific permit (PTI, PTO and PTIO).
2. Tracking will allow resource allocation (e.g., people) for task assignments and tracking of these resource allocations for a specific permit (PTI, PTO and PTIO) or report (e.g., EIS, FER) which includes a time variable.
3. Have the tracking ability to maintain multiple standard tracks of tasks, standard resource assignments, and the ability override a particular standard track of tasks and/or resource assignments creating a unique set of tracking tasks for a specific permit (PTI, PTO and PTIO) or report.

<p>4. Ability to override default timeframes which will exist for each task completion with a different timeframe.</p>
<p>5. Tracking has option to automatically advance to next tracking task with:</p> <ul style="list-style-type: none"> <li>• The ability to override this automatic advance telling it to <u>not</u> advance to the next task unless specifically confirmed to make this advance or</li> <li>• The ability to override this automatic advance by stating a specific task (not necessarily the next task) to go to based on agreed on policy/procedures or</li> <li>• The ability to easily and identifiably bypass any step in a business process (e.g., override invoicing, skip DO/LAA review for certain records, etc.).</li> </ul>
<p>6. Ability to provide a higher level summary of detailed tracking that is available to acceptable sites via a controlled/secured Web Access which follows Ohio EPA Information Technology Security Policies (see Section 2.3.3 Security Requirements).</p>
<p>7. Support the data query, maintenance, and “What If” analysis of detailed tracking data kept via an on-line and/or reported method that supports Ohio EPA defined access rules plus follows Ohio EPA Information Technology Security Policies (see Section 2.3.3 Security Requirements). These represent predefined queries that are parameter-driven and generates Structured Query Language (SQL) statements. For example, queries to:</p> <ul style="list-style-type: none"> <li>• Determine detailed tasks for all Permits (PTI’s, PTO’s, PTIO’s and reports), status information of tasks completed to date, detailed tasks remaining/outstanding, date/time, resource(s) involved, projected and actual task completion dates, etc.);</li> <li>• Ability to generate internal reminder of all tracking tasks that are outstanding;</li> <li>• A permit writer to query by facility type, facility location, E.U. type, keywords in facility description, keywords in E.U. description, applicable rules, issuance date, type of permit, processing office (DO/LAA), etc.; and</li> <li>• Supervisor or authorized personnel to query by facility type, facility location, permit writer, number of issued or reviewed permits by DO/LAA, types of permits issued or reviewed by DO/LAA, assigned permits/tasks by staff, type of backlog at each DO/LAA, and timeliness (e.g. number of days in process, number of permits meeting timeliness performance standards, etc.).</li> </ul>
<p>8. Ability to perform “What If” queries (electronic or hard copy) for the Revenues System to determine payment history data for a Facility including net payment history (i.e., summation of all debits and credits). These represent predefined queries that are parameter-driven with a Graphical User Interface (GUI) that generates Structured Query Language (SQL) statements. Access to the Revenues System will be done with a Core Revenue ID number (i.e., unique invoice number).</p>
<p>9. Tracking must be able to handle concurrent tasks.</p>
<p>10. Tracking will go back and re-execute previously completed tasks when appropriate. When certain tasks have been completed, the system will re-initialize these tasks in order to complete them again.</p>

<p>11. Tracking will automatically interface with steps in a business process that use the new system. Any steps in a business process not automatically interfaced for the new system will be able to be manually input so tracking can be maintained for the entire business process.</p>
<p>12. Tracking will be organized by many Key Fields (e.g. Facility, Permit, Person, E.U., etc.). Additionally, data will be available to be kept for tracking on resources, resource/task combinations used, pollutants, etc.</p>
<p>13. Ability to perform detailed tracking of Emissions Reports (FER/EIS/SMTV/NTV/ES) including review by CO and DO/LAA staff.</p>
<p>14. Ability to track whether or not a Facility has submitted the appropriate Report(s) (CEMS requirements, Appendix K, CDR, Annual Compliance Certification, FER's, user specified reports, etc.) plus generate Reporting Reminders of when current and future Report(s) are due. Also, the ability to track the dates associated with these reports.</p>
<p>15. Ability to perform detailed tracking of a facilities Emissions Reporting (FER/EIS/SMTV/NTV/ES) reporting history.</p>
<p>16. Permit (PTI, PTO and PTIO) tracking will allow special cases to be tracked without deleting them (e.g., revocation, denial, issued, etc.).</p>
<p>17. Ability to track if a Facility has been issued a Title V PTI but has not applied for a TV PTO.</p>
<p>18. Ability to track (by E.U. or facility-wide) if a facility has been issued a PTIO but has not submitted the Annual Compliance Certification report.</p>

**2.2.1.1.3 Interface**

Interface new system requirements are Overall ones that interface with another system.

<p>1. Ability to automatically interface notification data electronically to the ITS Notification System for any public notifications that are performed by the new system. Also, the ability to by-pass the Notification System for specific permit actions.</p>
<p>2. Ability to access Revenues System with Facility identifying information (e.g., Core Place ID, Core Organization ID, etc.) to generate a Core Revenue ID number (i.e., unique invoice number) prior to any invoicing that is performed. Access will occur via an interface with Revenues System using existing stored procedures.</p>
<p>3. Ability to lookup and reconcile with the Core System a Facility without a Core Place ID with a minimum of human intervention by:</p> <ul style="list-style-type: none"> <li>• Executing the Facility Reconciliation (FR) software to search for existing Place ID's then generating one from the FR Software, or Referring to Facility Reconciler for disposition/processing.</li> </ul>

<p>4. Ability to generate a correcting revenue accounting entry for the Revenues System and interface this entry for any Adjustment needed while following the Revenues policy for user roles and access. Also, the ability for the system to generate a standard Purchase Order form for any refund Adjustment created.</p>
<p>5. Ability to interface via established protocols and methods (e.g. XML) with U.S. EPA for standard data sharing such as giving U.S. EPA a draft and final copy of permit (PTI/PTO) data, EIS data, Emissions Reporting data, FESOPS, etc.</p>
<p>6. Have specific public data (not confidential) and limited queries available via the Internet. Data which will be made available is that data which is currently on the DAPC web site (EIS Summary Data, Permitted Facility Lists and associated documents, Issued Permits, and Permit Tracking Data, BAT database) in addition to a limited number of canned queries.</p>
<p>7. Have internal data (including confidential data within the Ohio EPA) available via an Intranet that has secured/limited/controlled access. See Section 2.3.3 Security Requirements.</p>

**2.2.1.1.4 Detailed**

Detailed new system requirements are Overall ones that are more specific in how they are stated.

<p>1. External reference tables will be used whenever they can be for editing and validation of entered data in the new system. For example, the usage of external SCC data to validate if the appropriate criteria and toxic pollutants have been included in a FER/EIS Emissions Report. When external reference tables are updated, the system will NOT apply the new reference table values to past reporting/data. Updates to reference tables will be for data received the day the update is made and forward. For example, an emissions factor reference table might be updated to include more up-to-date factors used to calculate emissions; new values will only impact future data submitted; and there will not be any effect on past reporting. Also, past reporting must stay static, be aligned with the values used to calculate that particular data and be accessible for use.</p>
<p>2. Different Permit versions need to be supported including versioning reflecting different effective date/time(s), history of the different versions, and the different type of Permit (e.g., Draft, Final, etc.). There will be only one currently active version of a permit being worked on at any given time. Also, the ability to make previous versions of a permit the currently active version.</p>
<p>3. The ability to add or remove E.U.'s from a specific permit independent of their operating status.</p>

<p>4. The new system needs to have a “SA Toolbox” which contains commonly used tools for maintaining the system such as the ability to add a new type of general permit or new reporting requirements and to be able to revise these revisions through the toolbox. The toolbox should allow the SA to add, remove or modify system users rights within the system. The “SA Toolbox” will also allow the SA to update, delete and import system reference tables. The toolbox must also allow the SA to modify reporting requirements and to change thresholds for reporting requirements (e.g. the threshold for EIS reporting has been increased by U.S. EPA).</p>
<p>5. Ability for authorized users to copy application data from one facility to another.</p>
<p>6. The new system must fully utilize the current data structures in the most efficient way possible to enable the users to search and retrieve data such as (but not limited to):</p> <ul style="list-style-type: none"> <li>• when Core A tables are queried for a facility name, the new system must be capable of searching both the current data fields and historical fields to return a robust data set ; and,</li> <li>• the new system must show the user a historical succession of facility owners; and,</li> <li>• the ability to distinguish between facilities contained wholly within another; and,</li> <li>• the ability to distinguish between multiple former facilities and existing facilities at the same location; and,</li> <li>• the ability to identify multiple owners and operators for the same facility; and,</li> <li>• the ability to search multiple address lines and type codes and multiple contact lines and type code to provide a robust data set to the user to choose from.</li> </ul>

**2.2.1.1.5 Legacy Systems**

There are several Legacy systems that need functional parity in the new system. Feature parity does not need to exist between the Legacy systems and the new system. Legacy systems identified below need functional parity in the new system, however 100% functional parity is not always required (100% functional parity is required unless improvements are made to the functionality in the new system which eliminates unnecessary or redundant current functions). The following Legacy systems will be replaced by the new system and the major functions of the systems are identified below:

1. Non-Title V .NET program

This system generates a hard copy reporting form, tracks fee data and workflow, calculates fee, maintains NTV facility populations, generates invoices and notices to Non-Title V facilities and enables DO/LAA review and acceptance of reports. (The Non-Title V FoxPro based program has been recently migrated to a .NET based program.)

<p>2. STARShip</p> <p>This software has the capability for the regulated community to submit Title V FER's, ES, and EIS reports, Title V applications and State PTO applications. They submit these files electronically and some quality assurance and completeness checks currently exist. Also, a SMTV fee report can be completed with the STARShip software, however these reports currently can not be submitted electronically.</p>
<p>3. STARS</p> <p>This software allows imports of STARShip files and data entry of hardcopy applications and emissions reporting forms. STARS is used to create and track state PTO's, Title V permits and permit modifications as well as tracking the review of Title V FER's, ES's and EIS reports. The issuance of permits in this system is done with an interaction between the database and Corel WordPerfect.</p>
<p>4. PTIs2000</p> <p>This web-based application tracks and processes PTI applications. It allows the entry of limited hardcopy PTI application data into the system as well as user chosen PTI attributes (e.g. fee amounts due). In addition, the system allows the user of the tracking system to build the skeleton of the permit from the data entered into the tracking system as well as make the data available for subsequent modification requests. Data entered into the system is designed to be incorporated into the Agency mission critical systems (Core database) and is also used as the basis for developing the permit. The issuance of permits in this system is done with an interaction between the PTIs2000 system and Corel WordPerfect.</p>
<p>5. OSTRICH</p> <p>Ability to extract EIS data from STARS, compile EIS data into RAPIDS format and transfer data to RAPIDS. This program also has the ability to log error files for records that do not convert properly to the RAPIDS format.</p>
<p>6. SMTV Fee Program</p> <p>This system generates a hard copy reporting form, allows the manual entry of SMTV fee report data and workflow tracking, calculates fees, generates notices to facilities, maintains SMTV populations and issues invoices.</p>
<p>7. Title V Invoicing Program</p> <p>This system imports TV fee data from STARS, compiles the data to generate an annual fee, does data comparisons of current and revised reports, calculates fees and transfers data to the Revenues systems for receivable generation, maintains TV facility populations and generates invoices.</p>
<p>8. Title V Tracker</p> <p>This is a Visual FoxPro application that tracks a variety of information related to Title V facilities, such as applicability, status, renewals and modifications, permit issuance dates and generates public notice and hearing information. Several other summary reports and forms are generated by this program.</p>

9. The FR Tool

This is a current client-server executable that will not necessarily need replaced by the new system, but will need to be included with 100% functional parity for the additions of new facilities to the database. The current executable may be upgraded to a web-enabled application.

See Appendices , 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.11, 3.1.12, 3.1.13, 3.1.14

**2.2.1.2 STARShip Business Process**

**Requirements**

1. Additional editing and data validation capabilities in addition to the ones provided in STARS/STARShip presently. For example, specific editing and data validation is needed for:

- For each new E.U. entered:
  - ⇒ Check to see if each reporting form submitted has consistent data from one unit to the next, and
  - ⇒ Check and reject (second and subsequent) duplicate E.U. Forms.
- For FER, ES and EIS reporting, check Total Emissions of VOC is less than or equal to Organic Compounds (OC). Also, comparisons of Total Emissions of Particulate Matter to reported emissions of Particulate Matter 10 micrometers in diameter or less (PM10) and reported emissions of Particulate Matter 2.5 micrometers or less (PM2.5) must be performed for SMTV, EIS and FER.
- For any data submitted by a Facility, checks for presence required and associated edit checks for all fields on all associated forms related to an E.U. Large and Small E.U.'s will have slightly different edit checks.

All editing and data validation will be relational data table driven for all fields/situations that are volatile or have a high frequency of changing the rules for performing editing and/or data validation (i.e. reference tables will be used for data validation where appropriate and beneficial to accommodate Ohio EPA data submittal requirements that change frequently).

2. Support the input of toxic and criteria pollutants data by Facility and/or E.U. by relating SCC codes to the appropriate criteria and toxic pollutants (via Great Lakes RAPIDS emissions estimator function).

3. Any electronic submission should have built in Quality Assurance (QA) checks to highlight, provide descriptive messages to correct, and stop the incorrect submission/entry.

4. In addition to the existing STARShip processing, Non-Title V Fee Reports, SMTV Fee Reports, General, PTIO and PTI Applications processing will be performed.

5. Provide ability to transfer relevant PTI application data to a PTO application (includes EAC forms) for a regulated facility.

<p>6. Ability to provide software support to the external users via limited secure access to their database or via standard procedures to access and correct any problems.</p>
<p>7. Ability for one facility to have multiple owners listed and differentiated in the new system.</p>
<p>8. Ability to have separate facility records (reporting requirements, permit applications, permits, etc) for multiple facilities while allowing the facilities to share a common facility identification number.</p>
<p>9. Ability to handle in a consistent and user friendly manner a permit (PTI, PTO &amp; PTIO) application's data entry/setup, data maintenance, and data reporting as noted below:</p> <ul style="list-style-type: none"> <li>• Will be for: <ul style="list-style-type: none"> <li>⇒ Regulated Industry (e.g. Facility, applicant), and</li> <li>⇒ Emissions Unit.</li> </ul> <p>that needs these services;</p> </li> <li>• Internal (e.g. DO/LAA, Central Office, etc.) or External (i.e. Regulated entities, Public) availability;</li> <li>• Any combination of Internal or External access can satisfy an Application's requirements;</li> <li>• Provide an acceptable/user friendly interface to do the above;</li> <li>• Provide limited access and limited updating for the above;</li> <li>• Provide consistent access to the software that does above for all internal and external access that is authorized for this software (e.g., centralized software usage);</li> <li>• Provide a secured and acceptable way (to companies providing it) for trade secret (confidential) company information to be electronically entered, accessed, and displayed that will not allow it to be compromised (i.e., keep confidential); and</li> <li>• Provide a means for company-claimed trade secret information to be accessible or not accessible based on confidential status and user security role; and</li> <li>• Maintain and provide in an easily accessible manner a facility's history and E.U. history (exempt, shutdown, reactivations, dates, etc.).</li> </ul>
<p>10. The ability for a Title V facility to create an EAC form for insignificant emissions units in the same manner they do for non-insignificant units.</p>
<p>11. Submitted data files should be maintained/archived intact so as not to be subject to editing/modification by users after submission.</p>

**2.2.1.3 Permit to Operate (PTO) and Permit to Install (PTI) Combined Business Process (PTIO)**

The requirements below are for PTI, PTO and PTIO permits. The section that follows titled Permit to Install Business Process contains requirements specific to only to PTI permits. Requirements which cover all permits types are listed in this section.

<b>Requirements</b>
1. Perform Permit Application, Report Entry and Issuance and all associated processing for PTI, PTO and PTIO's.
2. Must be able to maintain separate PTI's and PTO for permits which haven't been migrated to the new PTIO permit. Also, must have the ability to migrate an expiring PTO to the PTIO permitting process.
3. Replacement system will be able to service both PTIs and PTOs in the same system and have the same functionality as the current STARS, STARShip and PTIs2000.
4. Same functionality needed as described in STARShip requirement's above.
5. Be able to determine if a Facility (applicant) has asked for an Express PTIO and perform special processing for a Express PTIO if Facility meets criteria for Express PTIO status.
6. All PTI relevant data is interfaced to PTO processing once a predefined trigger has been performed.
7. Support different permit types (e.g., PTIO's, Chapter 31 Modifications, Express PTIO's, Administrative Modifications, General Permits, etc.) with different data contents (e.g., State PTIO, Federally Enforceable State Operating Permit (FESOP), Express PTIO's, etc.) by facility. Able to "transition" from one permit type to another and back again (e.g., we issue a FESOP, we then issue a State PTIO, we issue another PTIO for another operation at the facility that triggers the company to submit a Title V application, we issue a Title V permit, the company shuts a unit down which effectively takes them out of Title V, we issue another State PTIO).
8. Ability for Ohio EPA and LAA users to easily transfer selected data (including older versions of other Facilities data) from one permit to another.
9. Perform initial permit version (e.g., baseline) comparison to later versions based on selected Terms & Conditions (T&Cs) indicating changes made in T&Cs.
10. Ability to include T&C's from other Programs (e.g., DSW) into the T&C's for a specific PTI. The inclusion of these T&C's from other Programs (e.g., DSW) would <u>not</u> mean that their data content had been looked up electronically in the other Program via DAPC's new system. In essence the T&C's from other Programs (e.g., DSW) would have been manually entered (via copy/paste).
12. Denial and Revocation Notices (electronically or hard copy) can be generated for a specific Facility and associated PTI, PTO and/or PTIO. Revocation and Denials will: <ul style="list-style-type: none"> <li>• Generate a Director's Notice; and</li> <li>• Follow procedural requirements, and</li> <li>• Trigger all associated system functions such as updating the Tracking workflow, etc.</li> </ul>

<p>13. Collection of permit (PTI, PTO and/or PTIO) data and maintenance (e.g. withdrawal of E.U.) of entities for Facilities, E.U.'s, Egress Points, Control Equipment, and Emissions Activity Category(s) should be (but not limited to) what is presently being done by the STARShip System. Also, similar linkages/interrelationships as presently exist in STARShip System between these entities would exist but not be limited to only these existing linkages/interrelationships.</p>
<p>14. Provide the ability to support having predefined different task lists (e.g. templates of tasks with person(s) assigned to the task) to complete a specific permit (PTI, PTO or PTIO). These predefined task lists (e.g. templates of tasks with person(s) assigned to the task) will only be allowed to be created/modified by a very select /controlled group of authorized people. A specific permit can be modified to change its tasks but will only be allowed for authorized personnel.</p>
<p>15. Allow permit data (PTI, PTO or PTIO) to be organized by E.U. or Facility with the query ability for "What If" references of this data (e.g., workload/statistics/production by office or staff person) and full text searching ability on fields (e.g., Terms and Conditions, etc).</p>
<p>16. Allow the generation of multiple permits (either PTIs, PTO's or PTIO's) from a single permit application (PTI, PTO or PTIO) entry that contains the appropriate data.</p>
<p>17. Ability to enter, change or delete internally created (Ohio EPA/LAA) comments associated with a Permit (PTI, PTO or PTIO) that can be displayed by a query and/or on a report. Additionally, these comments (PTI, PTO or PTIO) would have limited/secured internal access.</p>
<p>18. Permit status changes (e.g., State PTIO to SMTV, to Title V, shutdown, ownership changes, in some cases when a PTI is issued, etc.) should trigger all appropriate fee category, EIS, Permit, and Core changes, without automatically altering outstanding or historic records.</p>
<p>19. Ability to send Facility notifications (either mail or electronically) when an action occurs such as:</p> <ul style="list-style-type: none"> <li>• Receipt of an application;</li> <li>• Generation of expiration notices;</li> <li>• "Complete" or "not complete" application; and/or</li> <li>• Don't qualify for an Express PTIO.</li> </ul>
<p>20. Data Modeling of this module needs to address emissions testing, enforcement, compliance reporting and inspections as related to permit data that will be in the system to enable easier expansion of the system in the future.</p>
<p>21. Ability to handle permit issuance and maintenance for non-traditional facilities such as:</p> <ul style="list-style-type: none"> <li>• multi-establishment facilities (i.e. those facilities with multiple permits and reporting requirements, but only one facility identification number (secondary ID));, and,</li> <li>• portable source facilities (i.e. those facilities that move from county to county and require unique identification and processing).</li> </ul>

<p>22. Ability to calculate the associated permit fee and interface with the Revenues system to create a receivable for the amount due. Also, the ability to print the invoice for the PTIO fee.</p>
<p>23. Ability to perform the following activities normally done at the end of a PTIO issuance cycle:</p> <ul style="list-style-type: none"> <li>• Construct tracking path for each PTIO and begin workflow for the annual Compliance Certification Report (CCR) business process, (i.e. each PTIO must submit annual CCR's which are generated on a set time frame by using the T&amp;C's in the PTIO).</li> <li>• Extension of permit through the generation of a Directors letter;</li> <li>• Ability to generate an invoice based on permit data and interface with the Revenues system to create a receivable.</li> <li>• Calculate an increase in fees based upon an approved Extension request and the ability to interface with Revenues to generate a new Revenue ID for the Extension fee;</li> <li>• Ability to generate a Public Notice by interfacing with the Agency's Notification system.</li> </ul>

**2.2.1.4 Permit to Install (PTI) Business Process**

The requirements below are specific to only the Permit to Install process. All non-Title V facilities will be issued a combined PTI and PTO permit (i.e. PTIO or single document) for each installation at the facility. All Title V facilities are issued a PTI for each installation and a separate Title V PTO for the facility.

<p><b><u>Requirements</u></b></p>
<p>1. Same functionality needed as STARShip requirements stated above.</p>
<p>2. Same functionality needed as described in STARShip requirement's above.</p>
<p>3. Ability to send notifications (either electronically or hardcopy) for:</p> <ul style="list-style-type: none"> <li>• Application received,</li> <li>• PTI issued draft,</li> <li>• Public hearing notice,</li> <li>• Director journal notice and/or,</li> <li>• Final PTI issued,</li> </ul> <p>for the current version of a specific PTI if it exists. These notifications would have the ability to be overridden by authorized staff.</p>

<p>4. Ability for DO/LAA staff to send Facility notification (either electronically or hardcopy ) for:</p> <ul style="list-style-type: none"> <li>• A Facility that has installed an E.U. without a PTI,</li> <li>• Completeness or Incompleteness letters.</li> </ul>
<p>5. Ability to include T&amp;C's from other Programs (e.g., DSW) into the T&amp;C's for a specific PTI. The inclusion of these T&amp;C's from other Programs (e.g., DSW) would <u>not</u> mean that their data content had been looked up electronically in the other Program via DAPC's new system. In essence the T&amp;C's from other Programs (e.g., DSW) would have been manually entered.</p>
<p>6. Ability to generate all forms of permits (e.g., corrected copy, draft, final, etc.) in an electronic and hard copy form.</p>
<p>7. Ability to calculate the associated permit fee and interface with the Revenues system to create a receivable for the amount due. Also, the ability to print the invoice for the PTI fee.</p>
<p>8. Ability to perform the following activities normally associated with a PTI:</p> <ul style="list-style-type: none"> <li>• Accept Install Certificate date and interface to PTO processing for follow-up, and/or</li> <li>• Ability to trigger, by E.U., PTO initiation based on the commencement of operation date.</li> <li>• Extension of PTI through the generation of a Directors letter.</li> <li>• Ability to calculate the appropriate Extension fee and interface with Revenues to generate a new Revenue ID.</li> <li>• Ability to generate a public notice by interfacing with the Agency's Notification system.</li> </ul>

### 2.2.1.5 Compliance Reporting Business Process

The Compliance Reporting business process consists of all of the different types of reports a facility is required to submit to Ohio EPA based on the specifications in the permit document. The requirements below are specific to these reporting requirements. The reports due may be an Annual Compliance Certification Report, Quarterly Compliance Reports, Annual Compliance Reports or other miscellaneous reports required by the permit.

<p><b>Requirements</b></p>
<p>1. Automatically generate a Reporting Reminder (electronic or hardcopy) for a Facility. The Reporting Reminder would contain a letter and a list of required data elements for that particular Facility which is generated based on frequencies of reporting specified in the T&amp;C's for a specific E.U. or group of E.U.'s. Additionally, the reminder would indicate the due date for submission of the report(s). Finally, the DO/LAA should have the ability to trigger this reminder or override its automatic generation.</p>

2. Issuance of the Reporting Reminder will be linked to the reporting requirements specified in a permit's T&C's and to dates associated with the T&C's. Reports are generally due quarterly or annually, however authorized Internal users must have the ability to modify the report due date.
3. Ability to send "warning letter" to the Facility indicating that no required report has been received.
4. Ability for DO/LAA staff to track if a report was received, reviewed and approved.

**2.2.1.6 Emissions Reporting – Emissions Inventory System (EIS), Emissions Statements (ES) Business Process, Emissions Fees (Title V, SMTV, and Non-Title V) Business Processes**

The Emissions Inventory System, Emissions Statements, and Fee Emissions Reporting requirements have been combined below. While there are five separate business processes which require different types of reporting, all of the reporting will be combined to the greatest extent possible in the new system. Non-Title V, SMTV and ES reporting will have the option of hardcopy reporting. ES, EIS, SMTV and TV FER electronic reporting should be combined into one electronic form, as much of the same information is required from the regulated entities.

The new system should have at least the same functionality as the present OSTRICH (see Appendix A) for transfer of data to the RAPIDS system. Also, for EIS Reporting, the new system should have at least the same functionality as the present STARS/STARShip system. Other requirements listed below will build upon and refine this functionality as specified.

The new system should have at least the same functionality as the present STARS/STARShip system with respect to Emissions Statements. Other requirements listed below will build upon and refine this functionality as specified.

The new system should have at least the same functionality as the present STARS/STARShip system with respect to Emissions Reporting (TV FER, SMTV\*). Other requirements listed below will build upon and refine this functionality as specified.

The new system should have at least the same functionality as the present SMTV and Title V FoxPro based fee programs. The new system should also have at least the same functionality as the present Non-Title V .NET based fee program. Other requirements below build upon and refine this functionality as specified.

\*STARShip currently doesn't have the option to file a SMTV Emissions Report, however, facilities subject to the SMTV program can fill out a TV FER in STARShip, print the report and mail it to DAPC as much of the data requested for SMTV reports is the same as TV FER's. See the sample SMTV hardcopy report (Appendix A) for exact data field requirements.

<b>Requirements</b>
1. Ability to generate Facility correspondence (electronic and hard copy) that reminds them to file an EIS and refers to an external location (e.g. website/newsletter) for detailed technical instructions on completing EIS Reporting.

<p>2. Ability to identify EIS facilities and to be able to distinguish Title V EIS facilities and Non-Title V EIS facilities as well as Type A and Type B EIS facilities.</p>
<p>3. Perform completeness/accuracy checks on EIS data based on business rules that exist to check this data.</p>
<p>4. Interface with RAPIDS (EIS information only), thereby removing the usage of OSTRICH (internal DAPC software). RAPIDS is an external database that is used by several states to get data into NEI. The new system must be able to transfer data to RAPIDS via standardized security and protocols.</p>
<p>5. Select the generation of EIS data to exported with the ability to group by predetermined selection criteria along with generating "What If" reporting/query (electronic and hard copy) of this selection. Examples of EIS data exported would be data sent in a spreadsheet or .dbf format to EIS modeling and/or DO/LAA).</p>
<p>6. Ability to modify EIS population data (adding or removing facilities requirement to file an EIS, thereby affecting all associate system activities such as modifying the Tracking path, notice letter generation, etc.).</p>
<p>7. Ability for staff to electronically approve a specific Facility's Emissions Report (EIS, FER, SMTV, ES and NTV as follows:</p> <ul style="list-style-type: none"> <li>• Reviewer is automatically notified of a Report needing reviewed</li> <li>• Review approval will occur electronically once reviewer confirms an acceptable review of the Report.</li> </ul>
<p>8. System administrator must have the ability to update lookup tables for converting data to RAPIDS/NEI formats.</p>
<p>9. EIS processing should preserve the relationship between facility, E.U.'s, control device, egress point, and pollutant that it generates while preserving the data and data structures in the permit and permit application.</p>
<p>10. EIS processing must have the ability to utilize the relationships that are preserved in requirement #9 above to expand linkages based on processes (SCC codes) to calculate the percentage of pollutants being emitted per E.U..</p>
<p>11. Same functionality needed as described in STARShip requirements above.</p>
<p>12. Ability to distinguish between large and small E.U.'s units and to maintain different reporting requirements and QA checks for these different categories of E.U.'s.</p>

<p>13. Ability to identify facilities required to file an ES and be able to modify this population on a county basis (e.g. change the requirement of submitting an ES based on what county a facility resides in).</p>
<p>14. Ability to generate ES specific notices (electronic or hardcopy) based on the ES specific deadline. Also, able to override the automatic generation of notices. Such notices are:</p> <ul style="list-style-type: none"> <li>• Reminder letters and/or forms to a Facility that hasn't filed an ES, and/or</li> <li>• Warning Letter for a Facility (and corresponding internal notices) where their ES is deficient or untimely.</li> </ul>
<p>15. Ability to easily identify a Facility's fee category, handle different fee categories (e.g., Title V and SMTV), generate fees based on the fee category, override a specific fee generation for specific Facility, and the ability to transfer a Facility between different categories (e.g., NTV =&gt; TV or SMTV). Any time a facility changes fee categories; all affected system functions must be updated.</p>
<p>16. Any Facility data that changes as a result of Emissions Reporting should automatically trigger updates to any DAPC data maintained system wide (e.g. data changes submitted through a Report triggers updates to DAPC specific tables as allowed).</p>
<p>17. Ability to do "What If" queries (electronic or hard copy) of any Emissions Fee Data (e.g., Blue Card sent Summary Report, DO/LAA Report Summary, etc.) along with being able to export the queried data for future reference. These represent predefined queries that are parameter-driven that generates Structured Query Language (SQL) statements.</p>
<p>18. Ability for a System Administrator to easily update/change Facility Reporting Requirements (electronic or hard copy) along with being able to easily manipulate/change the "Reporting Rules" (i.e., Business Rules for Reporting) some examples are:</p> <ul style="list-style-type: none"> <li>• Adding Reporting Category Options, and</li> <li>• Changing Reporting Fee Amounts Due Specific to the Reporting Period.</li> </ul>
<p>19. Ability to easily notify DO/LAA of an emissions report ready for review and make readily available all Facility emissions related data to a DO/LAA for their review.</p>
<p>20. Ability for system to highlight or otherwise identify a Facility's Report that have:</p> <ul style="list-style-type: none"> <li>• Emissions greater than predefined limits; and/or</li> <li>• Questionable data (e.g., significant difference between current report and previous reports, etc.).</li> </ul>

<p>21. Ability to generate notices (electronic or hard copy) based on Fee category (e.g., Title V, SMTV, etc.) that are:</p> <ul style="list-style-type: none"> <li>• Reminder letters and/or forms to a Facility that hasn't filed the appropriate Report; and/or</li> <li>• Warning Letters for a Facility (and corresponding internal notices) where their Report isn't within an acceptable standard (e.g., non-compliant based on permit, FER reasonableness checks fail, etc.), or for facilities that haven't file a Report.</li> </ul>
<p>22. Ability to retain a separate current billing cycle address/ownership data in order to bill the correct owner (because DAPC bills retroactively).</p>
<p>23. Ability to handle multiple revisions to a FER and invoice charged in the same year for the same Facility and adjust correctly a Facility's balance within our new system and in Revenues via an established interface.</p>
<p>24. Ability to generate a revised invoice (electronic or hardcopy) based upon a revised FER received (electronic or hard copy) from a Facility. The revised invoice will be used to create the associated automatic adjustment to the Revenues System and be stored in the new system. Also, the ability to override this revised invoice will exist.</p>
<p>25. Ability to handle emissions reporting, collection, maintenance, review and invoicing for multi-establishment facilities (i.e. those facilities with multiple permits and reporting requirements, but only one facility identification number (secondary ID)).</p>
<p>26. Ability for one company to file numerous FER's for multiple facilities at the same time electronically (e.g., BP, Sunoco, True North, Speedway).</p>
<p>27. The ability for the system to deal with split ownership over multiple reporting years (i.e. the ability to invoice previous owners while maintaining current data in the new system and Core). THIS REQUIREMENT FOR NON-TITLE V ONLY</p>

### 2.2.1.7 Cover Sheet Modification Business Process

<p><b>Requirements</b></p>
<p>1. Allow for electronic entry of any cover sheet data (e.g., potential Core data) by Facility, DO/LAA, or CO. This cover sheet data identifies other programs (e.g., DDAGW) that a facility is involved with.</p>
<p>2. Validate cover sheet entered data (e.g., basic content, range checks, reasonableness, existence checks, etc.). In addition, be able to notify, via hard copy report generation, other programs (e.g., DDAGW) of their potential involvement with the Facility completing the cover sheet on an E.U. level (i.e. print out a parameter driven report that will list the E.U. and facility ID).</p>
<p>3. Interface collected and validated data once reviewed to Core.</p>

4. Ability to display Core data on the Cover Sheet page of the DEM to eliminate user entry of data already in our system and to allow users to verify the accuracy of the data.

### 2.2.2 Integrity Requirements

The new system will maintain data integrity through several broad requirements. These are data validation, Core data manipulation requirements, relational database integrity, registered applications, user authentication, and the central repository. A brief description of each follows:

- Data Validation – Data validations occurs in both applications and the database. Every application that accepts data from an outside source must perform basic checks that validate the data. These checks cannot ensure that the data is correct, but can eliminate certain errors by making sure the format of the data is valid. The system should enforce as much as is known about each field and combinations of fields. For example, integer fields must only contain digits; a certain measurement value can only range from 1 to 250; all date fields must pass a date-validation check. Sometimes, checks on combinations of fields can be applied, such as the sum of several percentage values must equal 100. Data entry modules must have these field validity checks.

In the database, all Non-Core data structures must implement these checks wherever possible (Core tables already implement checks). For example, table columns must reflect the type of data (numbers go into number fields, not character fields; dates go into date fields, not character fields; scale and precision should match the requirements of numerical data, the length of character fields should match the data), fixed ranges and default values should be included in the column definition, pre-insert and pre-update triggers can enforce complex and multiple-field validation. Building validation checks into the database assures valid data no matter what application provides the data.

- Core data manipulation requirements – Every application inserting, updating, or “deleting” data in a Core A or B table must execute the transaction through existing stored procedures. These stored procedures are maintained by ITS. True deletion in these Core tables is not allowed, instead the date range for old data is updated (closed) and new data with an open ended date range is inserted.
- Relational database integrity – All Non-Core data tables must have relational constraints. Core A and B tables already have relational constraints, but the designers must put appropriate relational constraints in new tables to prevent orphaned rows and updates that do not cascade.
- Registered applications – Every application in the production database must register itself through a stored procedure maintained by ITS. Triggers on Core A and B tables prevent manipulation by any unregistered application.
- Central repository – the authoritative source for all data are the ITS production databases. Designers may not implement any other permanent data store unless it is read-only and reconciled frequently enough to meet business requirements.
- User authentication – only users authenticated by the network domain and authenticated separately by the database (through the application) may manipulate

data. DEM Users who access the DMZ database through the Internet will have a unique user name and password, and all communication must adhere to DAS security standards (including public/private key usage and encryption). The reader should reference section 2.3.3., Security Requirements, for a more complete description of user authentication and security.

### **2.2.3 Volume Requirements**

Volume Requirements describe the number of users that the system will be required to handle along with the number of requests that the system will be required to process within a given period of time. This documentation is referenced in Appendix C.

### **2.2.4 System Interface Requirements**

The following are entities outside of the new system with which the new system must communicate. The meaning of the column headings is as follows:

- Application – the primary application or processing sub-application that must execute the interface.
- Entity – the organization outside of DAPC that receives or sends data.
- Interface type – the technical nature of the communication link.
- Subject – a functional classification of what the data transfer is about.
- Direction – the direction of the data flow; “in” means from the entity to DAPC, “out” means from DAPC to the entity, “in/out” means both directions. This categorization ignores basic communication acknowledgments.
- Format requirements – any particular format in which the data must reside.

APPLICATION	ENTITY	INTERFACE TYPE	SUBJECT	DIRECTION	FORMAT REQUIREMENTS
External correspondence	U.S. EPA	e-mail and web	permit given	out	none
Invoicing	Ohio EPA Revenues system	DB stored procedures	Revenue ID	in/out	Ohio EPA proprietary
External correspondence	general public	web posting via ITS web server	permit draft or given	out	Adobe Acrobat
External correspondence	local public via local newspaper	DB procedure to ITS Notification	permit application receipt or given, permit extension	out	Ohio EPA proprietary
External correspondence	Regulated entity	web posting via ITS web server	status of permit in process	out	none
External correspondence	Regulated entity	TBD	receipt generated	out	TBD
Utility	GL RAPIDS	file transfer, import	reference tables	in	TBD
Utility	GL RAPIDS	file transfer, export	EIS reporting	out	per entity specs
Utility	DAPC internal	various, export	various user defined	out	Word Processing, Spreadsheet, Database, PDF, HTML
Utility	Regulated entity	file transfer, export	User owned data, files	out	TBD
Utility	Regulated entity	Web based submittal	Permit application or report submitted	in	TBD

## 2.3 High-Level Technical Requirements

Technical Requirements show the system capabilities needed to provide the functionality specified in the Functional Requirements. Technical Requirements address data, hardware, software, communications, and user interaction. They must take into account the needs of the new system and the existing technical infrastructure of the Ohio EPA. Taking these Technical Requirements into consideration, a design team will be able to estimate the type and amount of resources necessary to provide a solution.

### 2.3.1 Proposed Applications and System Architecture

#### Application Architecture

Based on functional requirements, the STARS replacement system divides into four primary applications: data entry, tracking and workflow, utility, and processing. Processing includes four sub-applications: permit creation and modification, invoicing, external correspondence, and analysis. A brief description of each application and sub-application follows.

- Data entry – current applications of this type in Ohio EPA are referred to as data entry modules, or DEMs. DEMs refer only to the regulated community’s portal for data entry. This application accepts and validates data required of the regulated community. Regulated community members and/or their designees may input this data themselves through an Internet connection. The regulated community may also submit a data entry file according to a standard format. The DEM will have two main sections: a module that collects data from the regulated community and module which allows regulated community members to query data (see Figure 4 Proposed System Architecture).

DAPC staff will use another data entry portal to input the required data from paper forms sent in by the regulated community as well as other DAPC data. Internal data entry for DAPC staff is inclusive of all functionality of the regulated community DEM module and has additional data entry functions to collect data entered by DAPC, including permit applications, task assignments, T&C’s and reports, etc. The design of the internal data entry module may require different data entry requirements than are imposed on the regulated community users.

The DEM should provide authentication of Regulated Community users and receipting procedures, should be for all types of data submissions and should generate a log of all submissions by each user.

- Tracking and Workflow – this application is the “control center” for the system. Once valid data has entered the system, Tracking and Workflow pulls the submitted data from the Staging Area of the database and places it into Core A/B and Non-Core areas. Tracking and Workflow uses a template (based on the type of permit or reports e.g. compliance/emissions) to create a proposed list of tasks required to produce a permit or process a report, complete with task order, dependencies and time periods. The user finalizes the task list by revising the order, dependencies, and schedule, and making personnel assignments. As tasks are completed (or postponed), the application revises the schedule. The application uses time and event based triggers to produce reports, correspondence, and reminders. Select summary workflow information is sent to the DMZ database by the replication utility application.

- Utility – this is a set of small applications required to transfer and/or convert data from one data store to another, either the source or destination being the production database. Some of these applications will be user-initiated, some will be timed events, some may be both. Two utility applications transfer and synchronize data between the database in the “demilitarized zone” (DMZ, a firewall-secured area within Ohio EPA that is open to the public Internet) and the production database server maintained by ITS. DEM data initially resides in the DMZ database. A submission application must transfer that data to the Staging Area of the production database on an event basis (e.g., upon submission) or on a time basis (e.g., twice a day). To provide the regulated community with information about its permits, a time-based replication application must replicate summary workflow data and other relevant permit data from the production database to the DMZ database. Robust import and export applications make up the remaining set of utility applications. An export application copies data from the production database and format it for transfer to other systems using pre-defined rules and formats and parameter-driven selection criteria. Another export application copies data from the production database and formats it for transfer back to the regulated community in various formats for import into their individual systems. An import system functions similarly for loading data into the production database from qualified sources. A System Administrators (SA) “toolbox” application must also exist. This application will allow a DAPC SA the ability to perform common data maintenance functions, system maintenance functions and allow the SA limited update abilities.
- Processing: Permit Creation and Modification – this is the application that creates State and Title V (federal) permits. It is the most complex application, as it must integrate with the database, a word processor (to format data, explanatory text, and T&C’s), and a text index and search utility (to locate existing text and standardized text that should be re-used), and it must support versioning of permits through a check-in/check-out method. Issued permits must be stored in such a manner as to allow keyword searching across several permits at a time. Permits are of multiple types (PTIO, PTI, PTO; state and federal levels, Express PTI/PTIO), and the application must be able to migrate a facility from one permit type to another. Permits may go through many versions regardless of their type. Users engage this application after Tracking and Workflow establishes the tasks for a permit. Typically, users review the application and formulate a draft permit. Then they determine and approve T&C’s to include in a permit. Often this step requires iterative revisions between the Central Office and the District Office or local air agency. Once T&C’s are approved, the proposed permit is often submitted to the regulated community member. Based on feedback from the member, the permit is revised and distributed with proper notifications. Throughout this process, the value of certain key data fields within the document must not change.
- Processing: Invoicing – based upon pre-defined rules this application takes into account the various characteristics of a permit and reporting requirements to calculate the proper charge to the regulated entity. The application interfaces with the Agency’s Revenues application via objects to generate an accounts receivable entry. The application generates an invoice to the regulated community member. A component of this application retrieves payment history on each regulated entity for display or reporting to the user; another component enables users to generate an adjusting entry in the Revenues system.
- Processing: External Correspondence – this application provides DAPC the capability to formally communicate to the regulated community and certain third parties that particular events related to them took place. Third parties include the U.S. EPA, local newspapers, and citizens. Formal communication ranges from a printed letter to e-mail to electronic file transfer. As with Permit Processing, this application must integrate with a word processor and a text index and search utility. The initialization of external correspondence may be from the Tracking and Workflow application, external events,

or internal decisions. This application must be able to use data sets generated by the Analysis application as a source for merging template text.

- **Processing: Analysis** – this application provides management reports, user queries, and data analysis. Management reports are pre-defined, parameter-driven reports that give managers a clear and concise picture of the state of the processes (active and/or completed) in the system. User queries answer questions that users often ask in the course of their duties. These may be pre-defined, using parameters to adjust them as needed, or they may be entirely spontaneous, (ad-hoc) requiring the user to build the query with an appropriate tool set. Data analysis involves more complex queries typically required on a project basis in order to solve a problem or shed light on a proposed strategy. Only properly trained analysts will perform data analysis, using the advanced features of an on line analytical processing (OLAP) tool. The Tracking and Workflow application and the other sub-applications provide their own standard reports commonly required of the user. This application provides reports on data that spans applications.

### **System Architecture**

In broad terms the proposed system architecture is a multi-tier architecture with a web browser client presentation and a simple application tier. Figure 4 shows the system architecture with the primary applications (Tracking and Workflow are combined with Processing).

### **System Architecture Explanation**

Arrows on the diagram in Figure 4 show the primary data flow for capturing and processing data. Data for reporting and display typically flows in the opposite direction. Databases are shown as cylinders connected to a server computer. Primary application components are shown to the right of server computers. Lightning bolts represent communication links between separate geographic locations.

The following numbered sections correspond to the circled numbers appearing on the diagram.

1. The DMZ area exists and conforms to Ohio EPA security intentions. Simply put – DEM data flows in, summary workflow data flows out. The regulated community accesses this area through its web browsers and Internet connections. ITS maintains this area for the benefit of all Ohio EPA divisions.
2. The production database conforms to ITS existing equipment and future intentions. ITS maintains this database for the benefit of all Ohio EPA divisions.
3. The submission application is a relatively simple, yet a restricted use application that copies data from the DMZ database to the staging area of the production database. The application design will determine whether the transfer occurs on an event-based trigger or a time-based trigger. This is the only way that DMZ data can transfer to the production database. This application could reside on the production database server or the application server, so the diagram shows it separated from any specific server.
4. The replication application is a relatively simple application that transfers summary workflow data and selected permit data from the production database to the DMZ database for access by the regulated community. It will also transfer selected DAPC data to a database for public access through the Internet. This application will likely reside on the database server although it may also reside on the application server, so the diagram shows it separated from any specific server. If replication is determined to be a timed

process rather than an event-driven one, a replication frequency of twice a day will be adequate.

5. The application server houses the bulk of the processing logic, encoded in self-contained software objects called components. Web pages submitted by the user call components on the application server, which in turn execute encoded business rules that manipulate data provided by the web page and/or stored in the database server. Database security mechanisms only allow users to change production data through the components on the application server. The primary processing components of any other server-based software also reside on this server, such as the text index and search software. The DEM components are repeated here so DAPC users can enter data themselves, and ITS only has to support one data entry application.

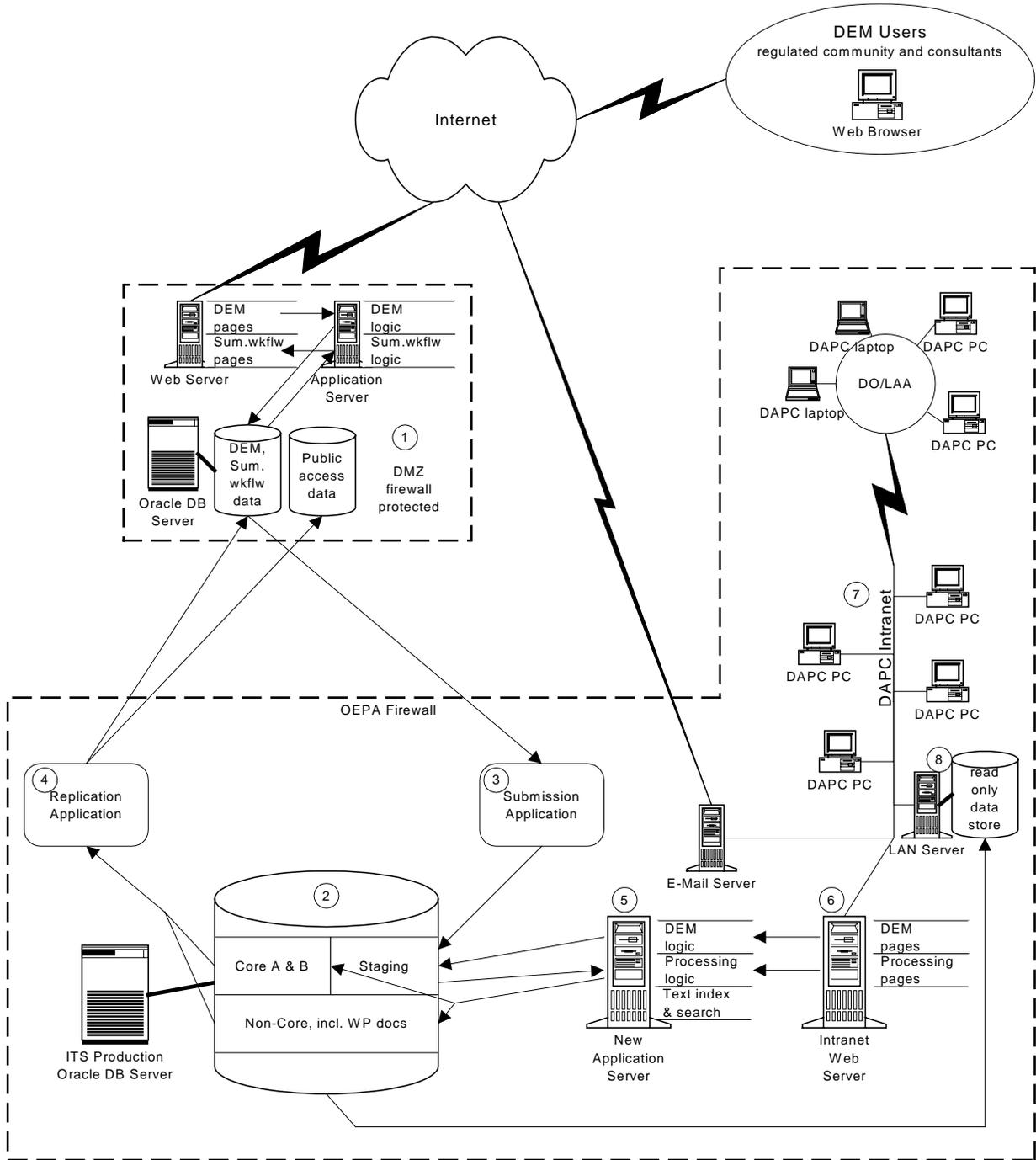
6. The Intranet web server delivers the presentation layer to web browsers running on users' PCs. The presentation layer is that part of the application that displays data to the user and accepts data from the user. The web server accepts submitted web pages, performs basic data validation and checking, and calls the components on the application server that are requested by a properly submitted web page. The DEM pages are repeated here for the same reasons given for the application server. Because the DEM pages run on this web server, the server should have the same operating system as the web server in the DMZ. If this is not possible with the current DAPC Windows 2000 server, DAPC must purchase another Intranet web server. This server may be relatively small and inexpensive since its processing load is light.

7. The DAPC LAN, including the bridges (T1 lines and an Agency Remote Access Server) to the DO and LAA LANs, form the communication link required for PCs to access the web server, and thereby the application and database servers. The LAN must provide adequate bandwidth although LAN network traffic will not be more with a multi-tier architecture than with a client/server architecture, and it likely will be less. PCs, of course, must have a web browser installed.

8. Optionally, DAPC may choose to maintain a read-only data store to promote performance for DAPC data analysis applications. This data store could reside on an existing DAPC server, either in the Oracle database on the HP (used by STARS currently), the SQL-Server database on the Windows 2000 server, or even on the Novell LAN server. Information for a definite choice is not available at this phase. Primary dependency factors include the particular data analysis software chosen, the available processing capacity and disk space, and the amount of expected use.

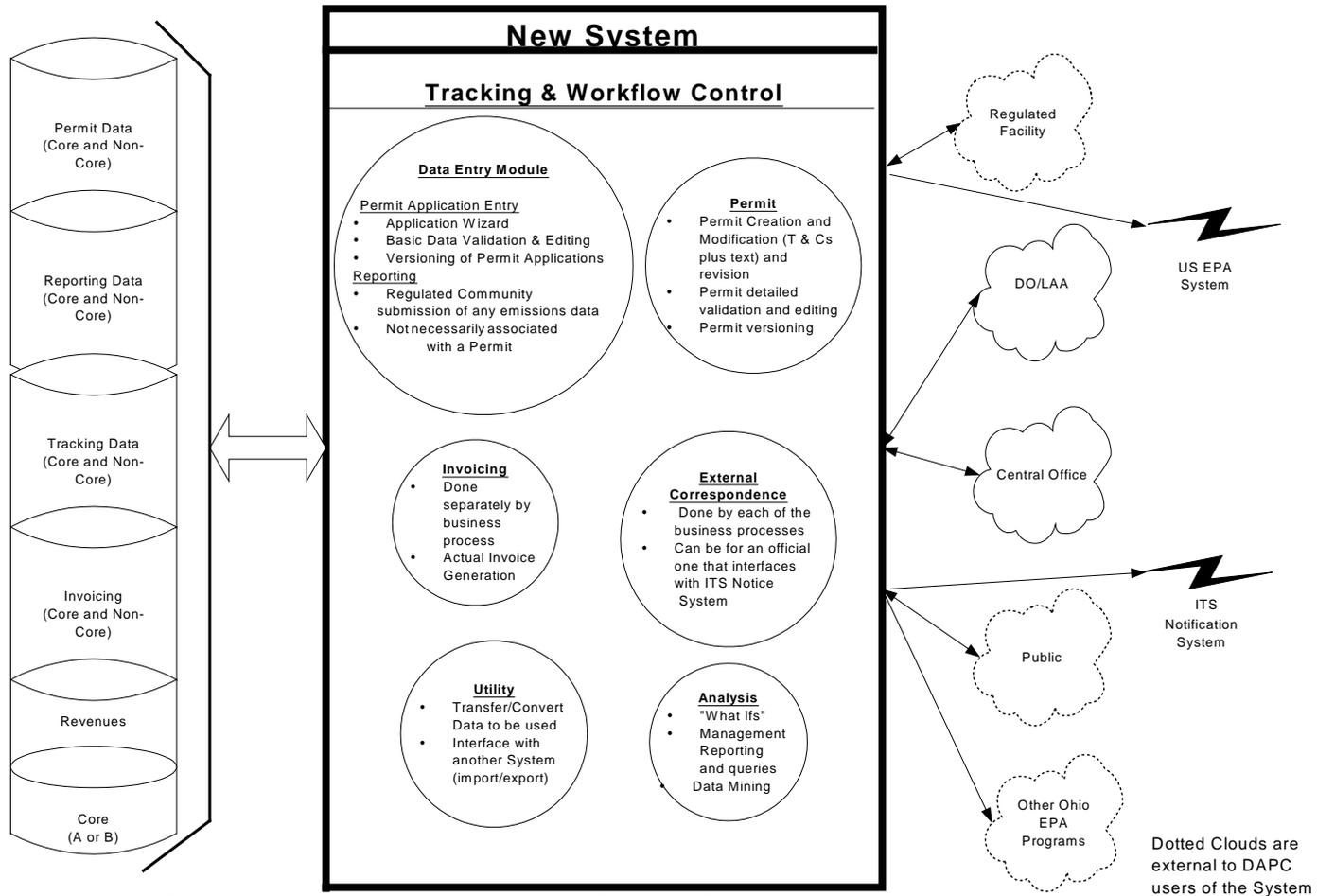
**Figure 4: Proposed System Architecture for DAPC STARS/STARShip Replacement**

Proposed System Architecture for DAPC  
STARS Replacement



March 15, 2001

Figure 5: Ohio EPA DAPC Applications  
**Ohio EPA**  
**DAPC Applications**



This represents a Functional View and is not intended to be a Technical Design

## 2.3.2 Application and System Requirements

### *Application Requirements*

1. Any applications that support transactions over the Internet must adhere to DAS security policy and the Ohio EPA information technology security policies. (Note: the current DAS security policy is still in draft mode and includes PKI and electronic signatures.) Applications receiving confidential information from the regulated community must be able to keep the information confidential through encryption or other satisfactory means. (Note: security and user access is addressed in more detail in sections 2.3.3, 2.3.9 and 2.3.10)
2. The regulated community and/or its designees will use a common Data Entry Module (DEM). DAPC will have unique extensions to this module (see Section 2.3.5, Data Requirements, paragraph 5, for treatment of this data).
3. Any web-based application must conform to DAS web standards (will be provided).
4. User security for the ITS production database is maintained by statically and dynamically allocated roles.
5. Applications must use the Ohio EPA database-specific registration process (via stored procedures) to modify data; they also must use fully qualified object names.
6. In General, any additions or modifications to a facility in the ITS production database require the use of the Facility Reconciliation Application (FR Tool). Exceptions to using the FR Tool will be negotiated during design. This application is currently is an executable built in PowerBuilder and may be web-enabled for the new system.
7. In General, users will not be allowed to perform deletions in the database, rather items will be marked as "inactive" (or as some other, to be determined, identifier for discontinued entities). Some deletions of Division specific data will be allowed based on business rules.
8. All updates to Core A and B data are performed with Oracle stored procedures. Any application which inserts or updates Core A or B data must call these procedures to do so.
9. All applications on the desktop will support 128-bit SSL encryption, the standard network operating system security of Windows XP and Novell, and meet the requirements of Ohio EPA information technology security policies.
10. Any application integration with e-mail and group productivity software must work with Novell GroupWise. Any word processing or spreadsheet software must have document conversion capability with Agency standard word processing and spreadsheet software.
11. All DAPC applications requiring a browser must support MS Internet Explorer and Netscape Navigator, including all browser versions released within 18 months of the application deployment date.
12. All errors generated by the system will be easy to interpret and stored in an "error log" for access by ITS or the DAPC SA.

13. The contractor must consider the Agency's likely bandwidth constraints in order to maximize performance and minimize potential problems (see Section 2.3.6 High Level Data Transmission Requirements).

### **System Requirements**

1. Network communications must comply with Netware 5.1 (or as upgraded by ITS) and support Internet Protocol. Desktop components must work with fast Ethernet.
2. DAPC Desktop applications must support Windows 9x, ME, 2000, XT and XP.

## **2.3.3 Security Requirements**

Security requirements for the new system come from two primary sources: The Ohio EPA Information Technology Draft Security Policies (edited version) provide the vast majority of requirements, and the Department of Administrative Services (DAS) Electronic Signature Rules provide requirements specifically for electronic signatures as allowed under the Ohio Uniform Electronic Transactions Act. Designers should obtain copies of these documents for themselves as these requirements are necessarily a high-level summary, and the source documents are subject to change. The DAS Electronic Signature Rules and the ITS Security Policy were only in draft form at the time of this writing. The remainder of this section summarizes these policies and rules in order to show a concise presentation of security requirements applicable to the new system.

The Data Security Committee leads the security efforts of the Ohio EPA. Any system within the Ohio EPA must conform to the policies of the Committee. The three primary aspects of the security policies are data integrity, data availability, and data confidentiality. For the replacement system, many security issues are already established by the system infrastructure on which the new applications will run. These areas are listed in the following sub-section. The next sub-section presents the security aspects that the new applications will have to address. The final sub-section addresses DEM user concerns. The reader may refer to the system architecture diagram (Figure 4) in section 2.3.1 to aid his/her understanding of these areas.

### **Ohio EPA Controlled Areas**

This list shows specific areas that are controlled by Ohio EPA, either through ITS or DAPC CAU, and the new system must conform to these security policies.

1. No information regarding IP addresses, network architecture and design, equipment and operating system configurations, database structures, server room layout and locations, administrative IDs, naming conventions, and operating procedures shall be shared outside of the Ohio EPA without IT Security Committee approval.
2. DMZ – This area contains the web server that interacts with the regulated community, the DMZ database server, and any application servers required to support applications running in this area. Because this area is not yet complete, exact details are not available. However, the following is known: all communication between the Internet and the DMZ must pass through a firewall, and all communication between the DMZ and the rest of the Ohio EPA must pass through another firewall. Transfers of data from or to the DMZ database must go through secure database links (Oracle implementation). Only applications limited to pre-defined transactions may transfer data in and out of the DMZ.
3. ITS Production Database – this central data store is managed entirely by ITS. All users belong to groups (roles) with common privileges. The ITS DBAs administer the users and

roles; DAPC managers must authorize individuals to have specified privileges. Changes in data structure of production data must go through the ITS change management process.

4. Passwords – throughout Ohio EPA, passwords contain a minimum of 8 characters, 2 of which are numerals or allowable special characters.
5. DAPC Network Domain – DAPC CAU administers the user names and privileges in its LAN. DAPC managers must authorize individuals to have specified privileges. Users are required to authenticate to the network by use of a personal ID and password.
6. DAPC Desktop – every authorized user receives a standard desktop configuration. Additional client software or other connectivity software is installed or enabled when the authorized user is associated with the appropriate group that grants access to the required services.
7. Modems – modems are not connected to network workstations unless authorized by the IT Security Committee.
8. External Ohio EPA Users – Ohio EPA users not directly connected to the DAPC LAN/WAN will be given secure remote access by a method approved by the IT Security Committee.

#### **Direct Concerns of the New System**

These are security policies that must be designed into the new system.

1. IT Security Committee policy requires a security review for each phase of application planning and development. Proposals to build new software must include the security issue. Security must be built into applications during the earliest development phases.
2. Database Access – The initial role(s) granted to a user contain the minimum privileges required for basic access. Applications dynamically enable more roles as appropriate to allow the user the privileges required of the application. Applications disable these roles when the user no longer requires them. Database access will be re-considered as part of the new system design.
3. Local Data Storage – the application data should not use local data stores for any system objects or data.
4. Passwords – All business applications (in addition to network log in) are protected with User IDs and passwords in conformance with the general password policy. Passwords must be stored in encrypted format. Passwords may not be shared, coded, or cached into programs.
5. Users in Regulated Community – members of the regulated community and/or its designees must access the DEM through protected user IDs and passwords.
6. Electronic Transactions – electronic transactions require digital certificates supported by the public key infrastructure for state agencies, created and maintained by the DAS Computer Services Division. All DAPC electronic transactions must conform to the Ohio EPA policy for provision of reasonable assurance of authenticity of signatures, the non-repudiation of the records by the signatories, and the integrity of the signed records. When requiring a signature, applications must require a separate and distinct action on the part of the person for each signature required. The separate and distinct transaction may include a series of keystrokes, a mouse click, or other similar action.

7. Files transferred to the Ohio EPA from external sources should be encrypted using a digital certificate and deposited into a file server in the DMX. All file transfers should use a two stage transfer mechanism to ensure data integrity prior to entering the Ohio EPA network.

### **DEM User Concerns**

1. DEM Users (regulated community members and their designees) have secure access to their application and reporting data through a unique user ID and password which are assigned and maintained by the DAS. In addition, electronic signatures (using public key infrastructure) validate submissions.
2. All application and reporting data provided by each DEM user is accessible only to the user until she/he chooses to submit it to Ohio EPA via the application submission process.

## **2.3.4 Performance Requirements**

Performance requirements are those systems capabilities associated with desired expectations. Based on the nature of this system and on the information gathered from user interviews, no extraordinary performance requirements are noted. Performance is expected to conform to all published standards or guidelines issued by the Ohio EPA Office of Information Technology Services (ITS) and the State of Ohio Department of Administrative Services (DAS). In addition, some observations are worth noting.

The new system is not expected to cause an increase in network traffic under normal operating conditions. The connections with the highest potential for traffic bottlenecks are the link between the database and application server and the link between the application and web server. Though the Agency currently operates in Token-Ring environment, the migration to an Ethernet architecture is very likely before completion of this system which should eliminate any network performance problems. The systems handling the DEM data must be capable of providing responsive service during peak periods such as April when annual reports are due (see Appendix C on Volume Requirements).

Ad hoc queries and online data analysis are requirements of the new system. These analytical processing requests can cause the database to perform much more work than transactional requests. It is given that response time for complex queries is much longer than response time for normal data entry and manipulation. Creating a local data store for query and data analysis may be considered to reduce impact on production servers and networks.

During the build phase and during the final system test phase, performance will be measured. While additional, specific standards for various functional units will be developed during the design phase of the project, there are general guidelines that must be met:

- 1) Response time within the new system can not exceed the performance time in the equivalent portion of the existing client-server applications.
- 2) Response time within the new system can not exceed the performance times in the equivalent portions of the existing web-based application.
- 3) Queries running in the new system should not exceed by more than 15% the performance time for the same query run directly in the database.

## **2.3.5 High-Level Data Requirements**

Data Requirements are those system capabilities directly associated with the system's data. Listed below is how these requirements are specified.

1. All permanent data in the new system, once validated and verified by production applications and moved from the DEM database, will reside in the Agency production database, which is currently Oracle 8i. All transactions take place in this database.
2. The data design of the new system must be Core compatible, i.e., use and relate to existing Core A and B entities whenever possible; do not replicate Core data in other data structures.
3. All data in the ITS production database must fall into one of the following four types of data:
  - 3.1. Core A: standard structure, standard field definitions, owned by Core Admin schema, shared across Ohio EPA divisions, updateable by qualified (trusted) users in each Ohio EPA division.
  - 3.2. Core B: standard structure, standard field definitions, owned by the schema of a particular division, of interest across Ohio EPA.
  - 3.3. Non-Core (NC): unique structure, owned by the schema of a particular division, designed specifically for a particular division. This classification accounts for 75% or more of the data structures and volume in the database.
  - 3.4. Staging Data: unique structure, owned by the schema of a particular division, designed as the holding area for work in progress data associated with divisional applications. If this data becomes complete according to divisional and Core business rules, a divisional application, written or approved by ITS, transfers the data to Core A/B or NC as appropriate.
4. The designers of the new system must take special care in determining how to classify the DAPC data. The primary differentiation is that of usage although the definitions of Core data structures will override usage (i.e., if a data element matches the definition of an existing Core A or B entity, it belongs in Core regardless of usage). Entities that are of interest across Ohio EPA divisions, and which multiple divisions may have a legitimate reason to modify, qualify as Core A entities. Entities of interest across Ohio EPA divisions, but which only a single division may legitimately modify, qualify as Core B entities. Entities in which only a single division has interest belong in the NC classification. The structure of Core A and B entities is available now and not subject to change; therefore, the design team will have to follow the current Core structure for entities whose usage qualifies them for Core A or B. However, the design team may create NC entities that are a logical extension of Core A and B entities; such extended attributes being only of interest to and under the exclusive control of DAPC. To aid designers in their understanding of the Core structure, this document includes an ERD of Core A and closely related Core B entities, and a listing of all Core A and B primary entities.
5. The data from DEM (data entry module) applications in the regulated community will reside in a separate database located on a separate server in the "demilitarized zone" (DMZ). This server is explicitly for DEM support and is isolated by firewalls. ITS manages this server and database and implements the necessary security in adherence to DAS security standards. Only a special submission application, written or approved by ITS, can access the DEM data from this place and transfer it to the staging area of the ITS production database. The design phase will determine the triggering mechanism for this transfer. DAPC will have a special application for limited management of its data

while located in the DMZ database. Designers may refer to the Data Classification Requirements Diagram to aid their understanding of DMZ and Production data classifications.

6. Storage estimates for the STARS replacement system are 80 GIG (production, test, and development instances as well as backup storage, etc.). The two existing database systems have the following storage/usage parameters:

STARS/STARdust    320 + database tables, maximum of 40 concurrent users

PTIs2000            49    database tables, maximum of 50 concurrent users

The following are related considerations that do not qualify as requirements, yet provide pertinent information most readily understood in context with the above requirements.

1. Data Classification: Ohio EPA recognizes the benefit of the extra effort required to fit DAPC data into the Core A and B classifications. The use of Core A and B data structures complies with the objectives of the Ohio EPA Enterprise Data Model (Project Alpha). Compliance brings several benefits: ease of integrating data from multiple Ohio EPA divisions for presentation to management and the public, efficiency and accuracy gained by eliminating storage and manipulation of multiple copies of the same data, and increased ability to measure the cost of services and identify customer service issues (accountability).
2. Data Analysis: For reasons of performance in intense data analysis, DAPC may choose to download portions of the ITS production database into a local DAPC read-only data store. Whether this is required or not cannot be known until realistic data query and analysis tests (proof of concept) are performed on the ITS production database. Disk space is also a consideration, as some data analysis tools require a temporary read-only data store on which they base their queries. The intensity of the data analysis (and therefore the performance requirements) also depends on the details of the functionality required by DAPC.

**Figure 6: High-level Data Requirements**

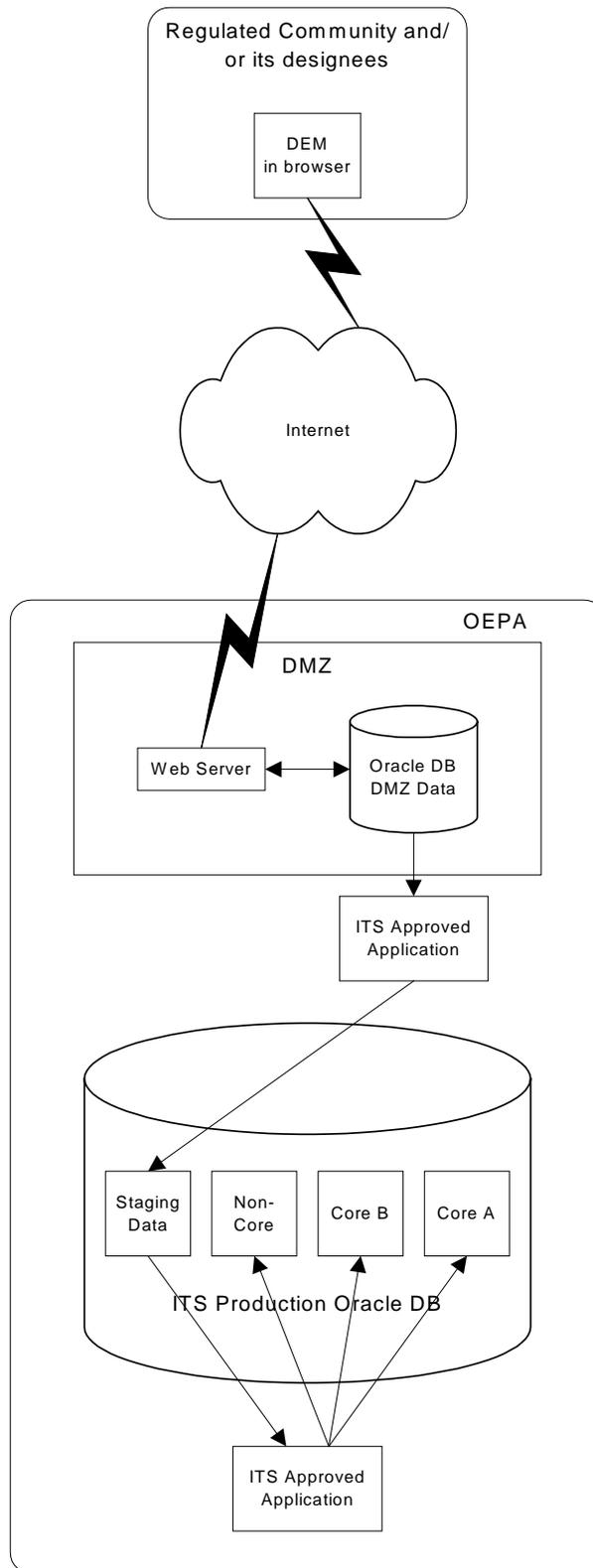
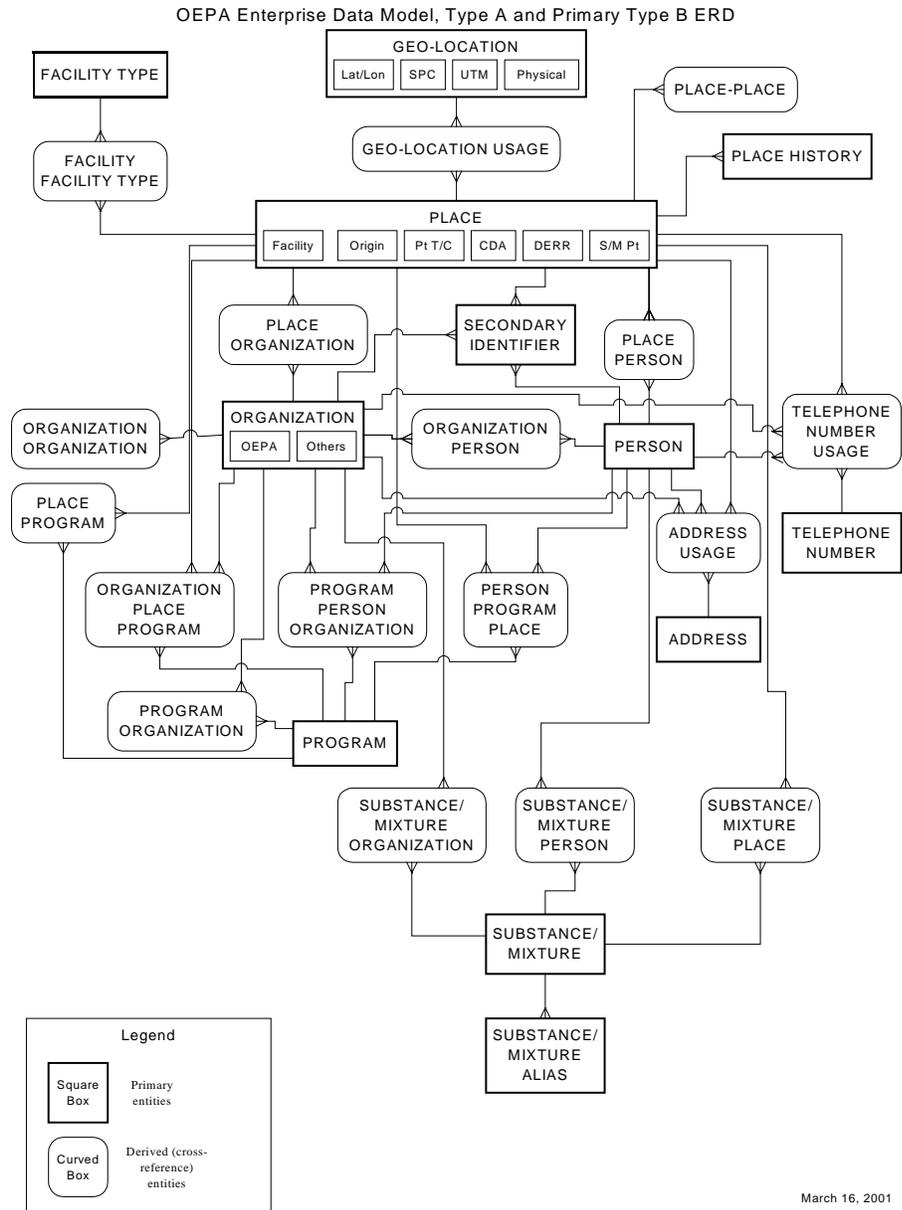


Figure 7: Ohio EPA Enterprise Data Model



### List of Ohio EPA Enterprise Database Primary Entities

This list only contains primary entities. It does not contain derived (cross-reference) tables (except for a single exception) or minor look-up tables. It is based on the Ohio EPA Enterprise Data Management Training Manual, version dated October, 2000.

There are approximately 227 Core tables (this does not include non-Core systems tables, i.e. those that are only related specifically to DAPC non-Core data) that will be used for the new system.

### Primarily Core Type A

#### PLACE (type A)

##### *Sub-entities*

- FACILITY (**type A**) (physical premise, example: factory or plant) Must have relationship to COUNTY, ORIGIN, GEO-LOCATION, ORGANIZATION or PERSON (owner), PROGRAM, FACILITY TYPE
- ORIGIN (**type A**) (place that is a source of pollution, example: boiler, wastewater treatment) Must have relationship to COUNTY, GEO-LOCATION, PROCESS or EVENT, SUBSTANCE/MIXTURE, PROGRAM
- POINT OF TRANSFER/CONVEYANCE (**type B**) (places at which a substance/mixture may be transferred or conveyed from place to place, example: smokestack, discharge pipe) Must have relationship to COUNTY, GEO-LOCATION
- CUSTOM DEFINED AREA (**type A**) (place defined for special event or purpose, example: watershed, sewer service area) Must have relationship to COUNTY, GEO-LOCATION
- DERR SITES (**type B**) (places in DERR sites list) Must have relationship to COUNTY, GEO-LOCATION, SUBSTANCE/MIXTURE, ORGANIZATION
- SAMPLING/MONITORING POINTS (**type A**) (places where sampling or monitoring occur, example: air monitoring station, groundwater monitoring well) Must have relationship to COUNTY, GEO-LOCATION, PROGRAM

Example of places: Amalgamated, Inc (an ORGANIZATION) owns the Amalgamated Plant #1 (a FACILITY) containing a boiler and a casting plant (ORIGINS) that is located adjacent to the Brown River and in the Brown River Basin (a CUSTOM DEFINED AREA). Both the boiler and casting plant have a stack (a POINT OF TRANSFER/CONVEYANCE). Also adjacent is the abandoned PCB landfill (a FACILITY and a DERR SITE) that has several groundwater monitoring wells (SAMPLING/MONITORING POINTS).

ORGANIZATION (**type A**) (a legal entity, example: ABC Corp, Test Water Inc.) Must have relationship to MAILING ADDRESS or TELEPHONE NUMBER

PERSON (**type A**) (an individual of interest to Ohio EPA, example: Mr John Jones, Ms Elaine Wilson) Must have a relationship to ADDRESS or TELEPHONE NUMBER

ADDRESS (**type A**) (identification for mail, courier, or e-mail services, example: 165 E Main, Columbus, OH 43145-3342 US)

*Sub-entities*

- PHYSICAL-MAILING ADDRESS (**type A**) Must have relationship to PLACE or ORGANIZATION or PERSON
- E-MAIL ADDRESS (**type A**) Must have relationship to PERSON

TELEPHONE NUMBER (**type A**) Must have relationship to PLACE or ORGANIZATION or PERSON

PROGRAM (**type A**) (definition of a set of Agency work activities aimed at achieving specific goals, example: water pollution control loan fund, pollution discharge elimination system permitting and monitoring process)

SUBSTANCE/MIXTURE (**type A**) (information pertaining to elements, compounds, or combinations thereof, which are or may be of interest to the Agency, example: iron, carbon dioxide)

## Type B Entity List

GEO-LOCATION (**type B**)

*Sub-entities*

- LATITUDE/LONGITUDE (**type B**) (spherical coordinates, example: 39 degrees 57 minutes 40.61 seconds North, 82 degrees 59 minutes 57.01 seconds West)
- STATE PLANE COORDINATES (**type B**) (Cartesian coordinates, example: 715,700N 1,860,000E, Ohio South Zone)
- UNIVESAL TRANSVERSE MERCATOR COORDINATES (**type B**) (Cartesian coordinates based on UTM system, example 329,240E 4,425,160N, Zone 17)

PHYSICAL DESCRIPTION (**type B**) (narrative describing a place, example: the rotunda of the Ohio State Capital is bordered by E Broad St, S Third St, E State St, and S High St)

PROCESS (activities that take place at an origin)

EVENT (information on occurrences for which a time and/or date is maintained. Events cross reference with many other entities.)

*Sub-entities*

- INCIDENT (events of a real or suspected environmental risk that are observed and reported to or by the Agency)
- WORK ACTIVITY (information on a discrete project or activity performed by a person or organization by or on the Agency's behalf)

MILESTONE (information on milestones used to track a work activity)

STAFF ASSIGNMENT (cross reference of events-milestones with persons)

METHOD (pre-defined, standard technique used to perform a specific task)

SAMPLE (small specimens taken to represent a larger media or matrix (land, water, air))

MEASUREMENT/OBSERVATION (values resulting from analysis or observation of a sample or place)

*Sub-entities*

- MEASUREMENT (numeric values)
- OBSERVATION (non-numeric values)

APPLIED CONDITION (information pertaining to the existence of requirements imposed upon members of the regulated community)

VIOLATION (information pertaining to a violation of an applied condition, possibly related to an event)

DOCUMENT (bibliographic information pertaining to reports, publications, data sets, images, or other assemblages of information, in paper, photographic, or electronic form. This entity helps keep track of documents not in the database, including permits and notices.)

EQUIPMENT UNIT (asset management information pertaining to mechanical or electronic machinery or software tools used for or on behalf of the Agency)

### 2.3.6 High-Level Data Transmission Requirements

The system designers must design the new system within the existing Agency Intranet bandwidth constraints. The current WAN bandwidth limit is 10 Megabits to 1 Gigabit Ethernet.

DAPC desktop workstations are currently networked with 100 Megabit Ethernet to the switch and 1 Gigabit Ethernet from the switch to the router for the physical layer.

### 2.3.7 High-Level Data Storage/Retention Requirements

Since all production data resides in the ITS production or DMZ databases, and no other updateable data stores are permitted, ITS has complete responsibility for data storage and retention. The designers need not be concerned with data storage, retention, and backup. However, ITS policies are presented here to provide understanding of the system.

Storage/Retention – records retention laws require Ohio EPA to keep certain kinds of information anywhere from seven to twenty years. The current database holds all historical data. In roughly two to four years, ITS will implement an archival policy.

Backup – database backups to tape are performed daily. A set of the previous week's backups are sent off site for fire proof storage. Oracle's built in "redo" system allows recovery of all committed transactions up to the moment of failure. Provisions for backing up the application server and web server will need to be made.

### **2.3.8 High-Level Data Usage Requirements**

The new system requires that all data reside in a central repository – the ITS production Oracle database. The only exceptions to this rule are the DMZ database, which serves as a "holding center" for data received over the Internet or data for presentation over the Internet, and optional read-only data stores on DAPC servers for performance of data analysis requests. The new system must synchronize the DMZ and production databases (see section 2.3.1, Application and System Architecture, Utility applications), and keep any local data stores up to date, so that all data usage will be accurate and complete. The absence of multiple sources of data assures that every data usage – transaction, display, report – accurately reflects DAPC data at the point in time of execution.

Generally, at any time qualified DAPC users may read any data pertaining to the new system. The new system must limit modification of data to only qualified users (users who, by management authorization, belong to a group responsible for a functionally related set of data) only through applications of the new system. Location is irrelevant to the qualifications of a user. As long as the user is properly authenticated (see section 2.3.3, Security), the user receives his/her standard minimal access privileges and those privileges granted through specific applications of the new system. This requirement promotes proper modification of data while eliminating the possibility of improper modification through other available software tools.

### 2.3.9 High-Level Data Access Requirements

Data Access Requirements are those system capabilities that specify who have what privileges regarding specific data in the system.

Data access requirements follow the five classifications of data explained in section 2.3.5. The following table shows the access requirements for each classification.

TYPE	ACCESS REQUIREMENTS
DMZ data	The regulated community and/or its designees accesses this data through the Ohio EPA data entry module (DEM) browser-based application. Each regulated entity must identify itself to the system through a user ID and password. All communication will be secured according to DAS security standards. Each regulated entity may only modify its own data. Only a ITS approved application, using ITS required technique to access DMZ data, may transfer DMZ data to the Staging Data area of the production database.
Staging data	Staging area data may be accessed by any qualified Ohio EPA user. Users may only modify data belonging to their division's schema.
Non-Core (NC)	Only ITS approved applications may insert, modify, or delete NC data. Qualified Ohio EPA users may modify data in their division's schema. Other division users may query NC data, but the data structures are not published; therefore, non-division users must obtain information on NC data structures from the division who owns the data of interest.
Core B	Only ITS approved applications may insert and modify (no delete) Core B data. Qualified Ohio EPA users may modify data in their division's schema. Other division users may query Core B data readily as the data structures are published within Ohio EPA. If a user discovers data errors that require a deletion of data, the user must work through their system administrator, who works through ITS to execute the deletion.
Core A	Only ITS approved applications may insert and modify (no delete) Core A data. All Core A data resides in the "Coreadmin" schema. Qualified Ohio EPA users may modify Core A data. All Ohio EPA users may query Core A data. If a user discovers data errors that require a deletion of data, the user must work through their system administrator, who works through ITS to execute the deletion.

### 2.3.10 High-Level System Access Requirements

The type of each user determines his/her access to the system. The types of users and their corresponding access requirements are given below. For more information on logging into the system and user privileges, see section 2.3.3, Security.

DEM users – users who are members of the regulated community and/or its designees have access to the system through the DEM (see section 2.3.1, Application and System

Architecture, DEM application). The DEM allows regulated community users to see and modify only data which they originate, and only data residing on the DMZ database.

DAPC – users who are employees or agents of the DAPC access the system through the DAPC LAN/WAN. After authenticating to the network, they may execute the presentation layer of the applications (which has its own user authentication). Each application allows users to modify only data for which the user is authorized and the application is designed. DAPC may give remote users a secure method of authenticating to the network, but this has no impact on the design of the new system.

Ohio EPA outside of DAPC – other Ohio EPA users may access the data residing in the ITS production database server according to requirements given in section 2.3.9, High-Level Data Access Requirements. Other Ohio EPA users do not have access to the applications of the new system without DAPC management approval.

General Public – general public access is limited to public data on the Ohio EPA public web server and possibly the DAPC Query database.

### **2.3.11 Conversion Requirements**

The design process includes plans for converting data and transferring it to the new database. This requires a cooperative effort between a data analyst and SMEs familiar with the data. Details of the data conversion process cannot be determined until a data model is created for the new system. However, the following requirements and issues are currently known.

Data for conversion originates from five separate sources: the current STARS database, the PTIs2000 database, several FoxPro tables, an SQL table and a NET table. The following paragraphs explain requirements and issues associated with each source.

#### **1. STARS**

The STARS database (Oracle) provides the bulk of the data, both in terms of volume and data structures. The database has over 200 tables and approximately 20GB of data (including indexes). DAPC has STARS application documentation and a data dictionary, but not an ERD. Several factors add to the complexity of the conversion effort:

- The database has no referential integrity constraints. This makes conversion more difficult in two ways – in the fact that related tables cannot be inferred from the constraints, and the existence of orphaned rows. Designers may have to reference STARS application code to verify some table relationships.
- Certain tables hold permit-specific, unformatted text. Upon conversion this text should be included with the text from the WordPerfect data, currently stored in BLOB fields.
- No pre-defined queries exist that pull all the data associated with a particular permit application.

Regulated community users and/or their designees enter data into STARShip, which is then imported into STARS. The user fills out "maintain entities" tables that have master lists of overall facility information (addresses, latitude/longitude), E.U.'s, egress points and control equipment. There are no associations made between these lists in the maintain entities tables; the associations are made in the applications and emissions reports. Applications and emissions reports are composed using a hierarchy of specific forms containing several tables. There are "facility forms" with data pertaining to the entire facility as it relates to an

application or emissions report, "emissions unit forms" with data specific to an E.U., and "emissions activity category (EAC) forms" to further describe the activity of that E.U. in the applications.

The following categorization of data aids in understanding the extent of the conversion effort.

**Must Convert**

- Emissions reports (EIS, ES, FER)
- Title V applications
- State PTO applications
- Maintain entities
- Title V permits (all four stages/versions)
- State operating permits (two stages/versions)
- WordPerfect documents (includes permits, issuance documents, letters)
- Registration data (from STARdust and STARS)
- Historical permit data from STARdust tables.
- Electronic attachments (used by about 10% of the facilities, these include PDF, CAD, Excel, Word, BMP, GIF, JPEG, and other formats that Oracle stores in a BLOB field). It is not necessary to convert these to another format, but they must transfer to the new system.

**Possibly Convert (To be decided at design time)**

- Activity logs
- Reference tables
- Historical permit applications no longer associated with an active permit. DAPC may consider archiving instead of converting.
- Notes (comments in plain text) associated with processing permits

**Not Likely To Convert**

- Compliance forms

**2. PTIs2000**

The database for PTIs2000 is relatively simple. It consists of 49 tables in a SQL-Server database. Code mapping and conversion routines will be relatively straightforward. Generally, all the data should be converted. DAPC has a data dictionary, ERD, PTI process flow chart, and a training manual on PTIs2000, but no other technical documentation.

### 3. FoxPro

Data in assorted FoxPro databases supplement the STARS application. Some of this data needs to be converted, especially data related to fees and permit issuance history. The volume is not heavy, but the data structures vary and documentation is sketchy.

#### Must Convert

- SMTV Fee data
- Title V Invoicing data
- BAT database

#### Possibly Convert (To be decided at design time)

- Non-Title V fee data (94/95)

### 4. STARShip Data

#### Possibly Convert (To be decided at design time)

- Confidential reports which are not stored in STARS, could be;
  1. STARShip export files that have been removed from or never imported into STARS. These files are password protected zip files containing delimited text, or
  2. Each regulated community user has their own STARShip database (Watcom) containing their working applications and emissions reports which could be converted.

### 5. ASP.Net

#### Must Convert

- Non-Title V fee data (96-current)

### 6. SQL table

**Data in the SQL table is straight forward and consists of many rows but few fields. Generally, this table stores the most current name and contact information for each facility regulated by DAPC.**

#### Must Convert

- Air Reconcile
7. WP Documents

Final PTIs are issued in Word Perfect and should be converted to the new system.

### 3. Appendices

#### 3.1 Appendix A – Current Materials List

Items within this Appendix that are noted as ‘Reference’ are available by contacting Linda Ours at Ohio EPA, DAPC.

##### 3.1.1 Interview Minutes

This is a ‘Reference’ document only.

##### 3.1.2 Process Flow Diagrams and Text

These documents are available for download at:

<http://www.epa.state.oh.us/dapc/flow/index.htm>

##### 3.1.3 STARShip Users Manual and software

These files are available for download at:

<http://www.epa.state.oh.us/dapc/starship/starinfo.html>

Title V and State PTO electronic applications are available for viewing through the use of STARShip.

##### 3.1.4 STARS/STARShip Data Dictionary

This is a ‘Reference’ document only.

##### 3.1.5 ITS Enterprise Data Model Training Manual

This is a ‘Reference’ document only.

##### 3.1.6 ITS Draft Security Statement (edited)

This is a ‘Reference’ document only.

##### 3.1.7 ITS Core Production ERD Excerpt

This is a ‘Reference’ document only.

##### 3.1.8 RAPIDS Users Manual and System Overview

This is a 'Reference' document only.

### **3.1.9 PTIs2000 Data Dictionary**

This is a 'Reference' document only.

### **3.1.10 PTIs2000 ERD**

This is a 'Reference' document only.

### **3.1.11 Ostrich Users Manual**

This is a 'Reference' document only.

### **3.1.12 Non-Title V system documentation**

This is a 'Reference' document only.

### **3.1.13 Sample EIS Submittal**

These documents will be provided as hard copy only.

### **3.1.14 Sample Title V FER**

These documents will be provided as hard copy only.

### **3.1.15 Sample Final Title V PTO**

These documents are available for viewing at:

[http://www.epa.state.oh.us/dapc/title\\_v/permits/tvpermit.html](http://www.epa.state.oh.us/dapc/title_v/permits/tvpermit.html)

### **3.1.16 Sample PTI Application**

This form is available for download at :

<http://www.epa.state.oh.us/dapc/files/files.html>

### **3.1.17 EAC Forms**

These forms are available for download at :

<http://www.epa.state.oh.us/dapc/files/files.html>

### **3.1.18 Agency Wide Cover Sheet**

Is incorporated into the PTI application and can be downloaded at:

<http://www.epa.state.oh.us/dapc/files/files.html>

### 3.2 Appendix B – Glossary

#### Acronyms and Abbreviations

This appendix contains meanings of acronyms and abbreviations contained in this document and the project that may otherwise lead to incomprehension, misunderstandings or ambiguities.

The section pertaining to EPA specific acronyms and abbreviations is a complete listing of DAPC acronyms and abbreviations and will identify more items than are included in the project but are listed here to also alleviate possible misunderstandings.

Acronym or Abbreviation	Meaning
AP	Application Architect
BA	Business Analyst
BSR	Basic System Requirements
CGE&Y	Cap Gemini Ernst & Young
CR	Change Request
DA	Data Architect
NA	Network Architect
PIR	Project Impact Report
PM	Project Manager
PQP	Project Quality Plan
SME	Subject Matter Expert
EPA Specific Acronym or Abbreviation	Meaning
ACTS	Asbestos Contractor Tracking System
ADMIN	DAPC's Administration Section
AG	Attorney General
AGO	Attorney General's Office
AO	Administrative Order

AP-42	U.S. EPA's Compilation of Air Pollution Emissions Factors
APA	Administrative Permit Amendment
APCMS	Air Permit Compliance Monitoring System
APP	Application (typically sued for PTI or PTO applications)
APS	Air Permit System
ARAQMD	Akron Regional Air Quality Management District
BAT	Best Available Technology
BBS	Bulletin Board System
BC	Blue Card (means by which Non-Title V facilities file emissions reports)
C.C.	Carbon Copy or Courtesy Copy
C/S	Client/Server
CAA	Clean Air Act (1955, 70, 77, 80)
CAAA	Clean Air Act Amendments (1990)
Canton LAA	Canton local air agency
CAS	Central Accounting System
CAU	DAPC's Computer Automation Unit
CBAPC	Cleveland Bureau of Air Pollution Control
CCR	Compliance Certification Report
CDO	Ohio EPA's Central District Office
CDR	Compliance and Deviation Report
CEMS	Continuous Emissions Monitoring
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act (1980)
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations

CO	Carbon Monoxide
CO	Central Office
CPU	Central Processing Unit
DAPC	Division of Air Pollution Control
DAS	Department of Administrative Services
DBA	Database Administrator
DEM	Data Entry module
DFFO	Director's Final Findings and Orders
DO/LAA	District Office/local air agency
DSIWM	Division of Solid & Infectious Waste Management
EAR	Enforcement Action Request
E-Check	Automobile Emissions Check (DAPC)
EIS	Emissions Inventory System
EO	Executive Order
EPA	Environmental Protection Agency
ERAC	Environmental Review Appeals Commission
ERD	Entity Relationship Diagram
EU	Emissions Unit (or Air Contaminant Source)
F&Os	Findings and Orders
FER	Fee Emissions Report (typically referring to TV facilities only)
FESOP	Federally Enforceable State Operating Permit
FFY	Federal Fiscal Year
FIRE	Factor Information Retrieval (FIRE) Data System is a database containing EPA's recommended emissions estimation factors for criteria and hazardous air pollutants.
FRM	Federal Reference Method

GIS	Geographic Information System
H/C	Hard Copy
HAPS	Hazardous Air Pollutants
HBS	Health-Bases Standard
HCDES	Hamilton County Department of Environmental Services
IAP	Indoor Air Pollution
IAQ	Indoor Air Quality
ID	Identification Number (typically referring to a facilities 10 digit ID number)
IT	Information Technology
ITS	Office of Information Technology Services (within Ohio EPA)
ITT	Intent to Test (usually refers to a hardcopy form)
JAD	Joint Application Development Session
LAKE	Lake County General Health District
LAN	Local Area Network
LGC	Lazarus Government Center
LLD	Lower Limit of Detection
LOD	Limit of Detection
MACT	Maximum Achievable Control Technology
mg/m <sup>3</sup>	Milligrams per cubic meter
MOA	Memorandum of Agreement
MOR	Monthly Operating Report
MPM	Minor Permit Modification
MTAPC	Mahoning Trumbull Air Pollution Control
NAAQS	National Ambient Air Quality Standards
NEDO	Ohio EPA's Northeast District Office

NEI	National Emissions Inventory
NEPA	National Environmental Policy Act
NESHAP	National Emission Standard for Hazardous Air Pollutants
NET	National Emissions Trends
NO <sup>2</sup>	Nitrogen Dioxide
NOI	Notice of Intent
NOT	Notice of Termination
NOV	Notice of Violation
NO <sub>x</sub>	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NPS	Non-point Source
NSPS	New Source Performance Standards
NSR	New Source Review
NTI	National Toxics Inventory
NTV	Non-Title V
NWDO	Ohio EPA's Northwest District Office
O <sup>3</sup>	Ozone
OAC	Ohio Administrative Code
OAQDA	Ohio Air Quality Development Authority
OAQPS	Office of Air Quality Planning and Standards
OC	Organic Compounds
OCL	Optional Courtesy Loop
Ohio EPA	Ohio Environmental Protection Agency
ORC	Ohio Revised Code
OTAG	The Ozone Transport Assessment Group
OTC	Ozone Transport Commission

P&E	Permitting and Enforcement Steering Committee
PAG	Public Advisory Group
Pb	Lead
Permitting	The permit review and engineering section (formally known as AQMPS)
pg/m <sup>3</sup>	Picograms per cubic meter
PIDMS	Permit Issuance and Data Management Section
PIFU	Permit and Fees Unit
PM	Particulate Matter
PM10	Particulate Matter of 10 micrometers in diameter or less
PM2.5	Particulate Matter of 2.5 micrometers in diameter or less
PP	Proposed Permit
PPB	Parts per Billion
PPM	Parts Per Million
PPP	Preliminary Proposed Permit
PSD	Prevention of Significant Deterioration
PSI	Pollution Standards Index
PTE	Potential to Emit
PTI	Permit to Install
PTI MOD	Permit to Install Modification
PTIO	Permit to Install and Operate
PTO	Permit to Operate
QA	Quality Assurance
QC	Quality Control
RAM	Random Access Memory
RAPCA	Regional Air Pollution Control Agency (Dayton area)

	area)
RAPIDS	Regional Air Pollutant Inventory Development System
RATA	Relative Accuracy Test Audit
RCRA	Resource Conservation and Recovery Act
RFP	Request for Proposals
RMP	Risk Management Plan
RTK	Right To Know
RTP	Research Triangle Park
SA	System Administrator
SBAP	Small Business Assistance Program
SEDO	Ohio EPA's Southeast District Office
SIP	State Implementation Plan
SLAMS	State and Local Air Monitoring Stations
SME	Subject Matter Experts
SMTV	A facility that falls under the category of Synthetic Minor. Either the facility was issued a Synthetic Minor PTI or a FESOP
SO <sub>2</sub>	Sulfur Dioxide
SOB	Statement of Basis
SOC	Synthetic Organic Chemicals
SO <sub>x</sub>	Sulfur Oxides
SQG	Small Quantity Generator
STARS	State Air Resource System
STARShip	State Air Resource System DEM
STC	State Term Contract
STP	Standard Temperature and Pressure
SWDO	Ohio EPA's Southwest District Office

T&Cs	Terms and Conditions (of a permit)
TAS	Time Accounting System
Title V	Facilities that are subject to Title V of the CAA amendments of 1990.
TMDL	Total Maximum Daily Load
TRI	Toxic Release Inventory
TSP	Total Suspended Particulate
TTN	Technology Transfer Network
TV	Title V
U.S. EPA	United States Environmental Protection Agency
Ug/m <sup>3</sup>	Micrograms Per Cubic Meter
UST	Underground Storage Tank
UTM	Universal Transverse Mercator
VAP	Voluntary Action Program
VC	Verified Complaint
VOC	Volatile Organic Compounds
VOCs	Volatile Organic Compounds
VSQG	Very Small Quantity Generator
WAN	Wide Area Network
WWW	World Wide Web

### 3.3 Appendix C – Volume Requirements

Volume Requirements describe the number of Users that the system will be required to handle along with the number of requests that the system will be required to process within a given period of time. The following matrix outlines current and future volume requirements for the system.

Descriptions	Average #/Day	Peak #/Day	Future Peak #/Day
1. System DEM Users	80	700	1000
2. System users (internal)	150	280	350
3. Permits to Install (PTI) applications (Title V & Non-Title V)			
• Received	4	100	100
• Draft	1	4	4
• Final	5	14	14
4. Permits to Operate (PTO) applications			
• Title V (electronic)	1	100	100
• Non-Title V (hard copy)	0.6	5	100
5. Fee emissions reporting			
• Title V (electronic) (1)	0.1	24	24
• Non-Title V (hard copy) (2)	11.6	232	232
• SMTV (hard copy) (3)	2	15	15
6. Emissions fee invoicing			
• Title V (4)	0.6	11	11
• Non-Title V (5)	16.5	66	70
• SMTV (6)	0.5	6	6
8. Compliance reports received (Emissions Units)	100	200	200
9. STARShip customer assistance requests (calls and e-mails)	9	27	60

- (1) There are 790 Title V FER's / year of which 750 are received in two months.
- (2) There are 11,600 Non-Title V FER's / two years of which 80% are received in two months.
- (3) There are 450 SMTV FER's / year.
- (4) There are 750 Title V invoices / year of which 85% are issued in three months.
- (5) There are 9,900 Non-Title V invoices / two years of which 80% are issued in six months.
- (6) There are 450 SMTV invoices / year of which 80% are issued in three months.

Other volume information not broken down by #'s / day:

- (1) STARShip – there are 11,6000 Non-Title V and 750 Title V facilities.
- (2) ITS:
  - o The production database contains 59,000 facilities of which 55,000 are valid, regulated facilities.
  - o The Non-Core classification accounts for 75% or more of the data structures and volume in the Core database.

Some of the above numbers were best estimates given by the Subject Matter Experts (SME), while others are actual. The design of the new system needs to allow for future volume increases. These increases will be best understood by discussing them with the SME's.