



**VIM Technologies, Inc.**  
**PADEP Revision 8 Supplier Qualifications**

**VIM** Technologies, Inc.

7464 New Ridge Rd., Suite 2  
Hanover, MD 21076  
Voice: (410) 859-5455 xt. 301  
Fax: (410) 859-5457  
E-Mail: [vimsales@vimtechnologies.com](mailto:vimsales@vimtechnologies.com)

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## Executive Summary

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VIM Technologies, Inc. is a premier supplier of air compliance Data Acquisition Systems (DAS) specializing in meeting the full service reporting needs of affected sources and operating plants. With over 16 years of comprehensive DAS experience, VIM Technologies, Inc. has been responsible for designing and building compliant software systems to meet Federal, State, and Local requirements, serving air regulated markets in the electric utility, waste to energy, pulp & paper, waste incineration, cement, fine chemicals, municipal sludge incineration and petrochemical & refining industries.

Our staff provides over 150 years of combined air compliance experience. The success of our company is grounded in our expertise and understanding of the prevailing air compliance models that impact affected sources and in our commitment to post installation support. All our products and services involve Air Compliance Data Acquisition Systems. It is all we do.

Our DAS Solutions are 100% designed, built and supported by VIM Technologies, Inc. We do not require the support of outside third parties to complete our projects. We offer flexible, state of the art solutions. Each DAS solution is built on the backbone of a mature, stable air compliance product custom configured to fit site specific needs. Through the use of standard modules and fixed software components, we are able to form fit each project to the specific application. Each project begins with a comprehensive Engineering & Design Package and ends with world class post-installation support services.

As part of our overall commitment to excellence, VIM Technologies, Inc. is an active participant in tracking and monitoring air compliance regulations. We have been a CAMD ECMPs Stakeholder participant since its inception and have been involved with round-table electronic reporting discussions with PADEP since 2004. In addition, we actively participate in meetings and venues related to CEMS Monitoring sponsored by, EPRI, EUEC, ICAC, CIBO, RGGI and other environmental service groups keeping our partners informed about new developments that may change the way they report.

*CEMLink* is a fifth generation air compliance data acquisition system. Our development process is user based with product enhancements resulting directly from the changing needs of our air compliance partners. New product releases are end user controlled with support from VIM Technologies, Inc. The key to success is open lines of communications and regular, compliance dialog with our end users. We are always open to suggestions on areas of improvement and make real time software modifications based on end user inputs. We are looking to develop compliance partners by providing the best products and services possible to meet their DAS needs.

The proposed DAS solution is based on our experience with similar applications, source types and the State of Pennsylvania Department of Environmental Protection reporting requirements. Our compliance partners include power producers and industrial clients such as, Duke Energy, Sunoco, International Paper, Weyerhaeuser, Conectiv and others. We support Acid Rain, NOx SIP and State Specific data validation and reporting. Standard features of our software include a full set of compliance reports, an ad-hoc report builder, data QA/QC tools and client configurable real time data screens.

*CEMLink* is the last DAS you will ever need.

## Company History

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### Company Background:

VIM Technologies, Inc. was founded in Maryland in February 1992 by engineers with extensive software development experience for programmable logic controls and host computers. Our mission is to provide reliable, user-friendly software solutions and support to the industry that we serve, through state of the art software, developed inside of a dynamic, solution oriented environment.

### Project Descriptions and Plant Profiles - Recent History:

VIM Technologies, Inc. serves all air compliance markets with expertise in Electric Generating Units (EGUs) and industrial non-EGU applications. We developed their expertise with simple cycle and combined cycle combustion turbine units through an exclusive supplier agreement with Duke-Fluor Daniel (DFD). From 1999 through 2001 VIM Technologies, Inc., worked hand in hand with Duke Flour Daniel – Charlotte, NC supporting the Acid Rain based Data Acquisition Systems needed to complete their permitted combustion turbine construction projects. During this time of peak construction, \$3 to \$5M in total DAS projects passed through our shop. *CEMLink 5*, the proposed software solution, was developed with input from these combustion turbine partners. The result is a product conceived with the end user in mind specifically tailored to the needs of the power generation industry.

Since that time we have continued our relationship with each DFD site and the parent company, through all its iterations and name changes associated with the sale of the business and their eventual re-emergence as what is now known as Duke Energy. The process and formula of success developed through our DFD experience translates directly to the solutions we offer today.

In addition to new installations and construction based projects, VIM Technologies, Inc. specializes in replacement and upgrade based DAS systems. We have replaced every major DAS system in a variety of applications throughout the continental United States. Some examples include: Dominion Gordonsville Energy – Gordonsville, VA (GE), Direct Energy – Paris, TX (ESC), Weyerhaeuser – New Bern, NC (Spectrum Systems), BP Chemical – Lima, OH (PAI). Our ability to support existing PLC based systems supported by superior customer service has helped establish VIM Technologies, Inc. as a leader in the DAS Replacement Market.

VIM Technologies, Inc. has been active in the PADEP CSMM Revision 8 electronic reporting development program since its inception. All of our PADEP affected sources will be receiving their Rev 8 upgrade over the next 3-6 months, depending on the final outcome of the CSMM Workshops and the official deadline from PADEP. We are participating in the Pilot Program supporting two (2) of the three (3) designated testing facilities with a VIM DAS Solution.

Some examples of DAS Replacement and Upgrade projects in Pennsylvania are as follows. References for Pennsylvania sources using a VIM Solution are available upon request.

### **UGI Development Co. - Hunlock Creek Energy Ventures – Hunlock Creek, PA**

#### ***CEMLink™ 4 to CEMLink™ 5 Upgrade***

Hunlock Creek Energy Ventures is a single source, coal fired, electric generating unit. This source is a single stack, monitoring SO<sub>2</sub>, NO<sub>x</sub>, CO<sub>2</sub>, Stack Flow and Opacity all in accordance with 40CFR Part 75, 40CFR Part 60 and the State of Pennsylvania Department of Environmental Protection (PADEP). Hunlock Creek had been successfully running *CEMLink™ 4* for years and wanted to upgrade to *CEMLink™ 5* in order to migrate to a Windows XP operating system. Historical data conversion was part of this scope of supply.

In addition to the Acid Rain Reporting requirements, the Hunlock source must comply with the stringent requirements of the Pennsylvania DEP (PADEP). The system is configured to build PADEP specific reports for critical measurements like Opacity and NO<sub>x</sub>. Although the older version of the software supported these requirements, Hunlock was able to take advantage of some new features of *CEMLink™* as part of the DAS upgrade.

## **Company History (continued)**

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### **Cogentrix Scrubgrass Generating – Kennerdell, PA** **New DAS Project & Various Upgrades**

Scrubgrass Generating Station operates two (2) coal fired CFB Boilers rated at 420klb/hour. They installed the initial *CEMLink™ 5* DAS in March 2002 in response to their need to install new CEMS to meet NOx SIP Call requirements and have followed with software upgrades in 2004. They are scheduled for PADEP Revision 8 upgrades in the 3<sup>rd</sup> quarter of 2007.

Scrubgrass use full CEMS to monitor the boilers. The CEMS are wet-basis dilution systems monitoring NOx/SO<sub>2</sub>/CO/CO<sub>2</sub>. They also monitor Opacity, Stack Flow, Stack Pressure and Stack Temperature. The DAS is configured to handle all calibrations and has customized fuel analysis entry screens to handle the input of fuel analysis data on a daily basis. In 2004 we did some modifications to the system to add automated Linearity Routines and System controls for CEMS Audits, at the request of the customer.

On a final note, Scrubgrass is an active participant in our COMPAS level service program.

### **Weyerhaeuser – Johnsonburg, PA**

#### **Replacement DAS Project**

Weyerhaeuser Johnsonburg had been running a custom DAS solution for years, supporting two (2) CEMS on two distinctly different air compliance applications. On the Recovery Boiler side of the system they had to meet all the requirements associated with 40CFR Part 60 and on the Power Boiler side they were required to submit an Ozone Season only EDR in accordance with the NOx SIP Call Program. At the end of FY2004, the environmental department at Weyerhaeuser evaluated the costs associated with upgrading their existing system to meet new air compliance guidelines set out in their Title V Air Permit. The cost of re-configuring the system to meet the new requirements proved to be cost prohibitive and Weyerhaeuser contacted VIM Technologies, Inc. on the recommendation of an outside consultant and from inputs from their New Bern, NC facility that was already running *CEMLink™ 5*.

VIM Technologies, Inc. offered Weyerhaeuser a cost effective, turn-key integrated DAS solution. The current *CEMLink™ 5* DAS supports two Power Boilers exhausting to a common stack monitoring NOx, SO<sub>2</sub>, CO<sub>2</sub> and Stack Flow. The Boilers burn coal as their primary fuel and are required to report in accordance to 40CFR Part 75 Subpart H – NOx SIP Call requirements. An Ozone season only EDR is submitted in accordance with the rule. The Power Boiler Common Stack CEMS is controlled by an Allen Bradley SLC 5/04 PLC, which was re-programmed by VIM Technologies, Inc.

The Recovery Boiler also burns coal and is monitored in accordance to 40CFR Part 60 and PADEP reporting requirements. The CEMS for this source monitors TRS, O<sub>2</sub>, NOx, SO<sub>2</sub>, CO, Stack Flow and Opacity. Support for the Recovery Boiler CEMS was integrated into the same *CEMLink™ 5* DAS as the Power Boiler. In addition to the centrally located DAS PC, VIM Technologies, Inc. supports a client license which is located on a network PC located in the Environmental office.

All of the unique requirements of the old system were carried over to the *CEMLink™* solution. As part of the integrated solution we had to support an existing Data Highway Plus connection to an existing Client PC located in the Control Room.

We have a number of other PA sources available for review and for reference purposes. We selected the ones we did because they present a good representative cross-section of the types of projects we handle on a regular basis (new installations, upgrades and replacement systems). Please let us know if references are required and we will provide contact names and numbers.

## Solution Methodology

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### Methodology & Approach:

VIM Technologies, Inc. takes a systematic approach to each DAS project we take on. There are six (6) essential elements that are applied. We see these as being keys to success providing the Buyer with a field tested formula and accountability chain not typically seen in the DAS software arena.

The essential elements of success for an integrated VIM Technologies, Inc. DAS Solution are as follows:

- Comprehensive Site Assessment
- Engineering & Design
- Build & Test
- Installation, Start Up and Commissioning
- Ongoing Support
- Ongoing Compliance

Each of these essential elements have been refined and improved over the past 15 years. By selecting VIM Technologies, Inc. for this DAS Replacement Project, you will be gaining the full benefit of this process and a technical result that will serve them now and in the future. The detailed overview of each step is as follows:

### Comprehensive Site Assessment

The purpose of this step is to allow VIM Technologies, Inc. to gain a full understanding of the site specific needs prior to submitting a bid and/or kicking off a new project. During this step we will review all applicable Specifications and Air Permits with the intent of providing the most cost-effective, technically sound solution possible. As we develop our solution methodology we consider existing CEMS control hardware, existing communication schemes, reporting needs and access to data, as all of these elements have a direct impact on the proposed scope of supply. Our mission during the assessment phase is to provide the best solution possible at a price point that makes sense for both parties.

### Engineering & Design

VIM Technologies, Inc. develops a site-specific Engineering & Design Packet for each DAS solution we implement. The task of building the Engineering & Design Packet is controlled by the Project Manager. The Project Manager builds these documents with support from a Project Engineer, Software Development personnel and our Air Compliance Manager. Each Packet is broken down into the following four (4) sections:

1. *Project Profile*  
Defines the Project Team and calls out all the DAS hardware associated with the scope of supply including but not limited to the CEMS Control Hardware (PLC), the I/O modules, the I/O map (point to point) and the DAS PC hardware.
2. *Equations Document*  
Defines all the equations that will be applied to the air compliance engine.
3. *DAS Notes*  
Defines all the data validations, emission limits, applicable air compliance methodologies for each measured stack constituent, averages, reports and all other compliance related information that will be used to configure the site-specific solution.
4. *Missing Data Logic*  
Defines the applicable missing data logic methodology that will be used to build that part of the compliance engine.

This Engineering & Design Packet evolves into the final design blueprint for the DAS. We use it as an approval process between us and our compliance partner. The packet is typically developed and

## **Solution Methodology (continued)**

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sent within 2-3 weeks of the Project Kick Off Meeting. You are then asked to review, approve or make changes to the documents through a red-line process. We incorporate or recommend based on the proposed changes until we come to an agreement in principle and methodology. Once the approval process is finalized, we stamp the document as a certified design and we begin configuration of your system. This process is unique to a VIM approach and ensures a high rate of installation success.

A sample packet matching your project profile from a recent project is available upon request.

### Build & Test

The system is configured using the certified Engineering & Design Packet as the guide. Once the programming and system configuration is complete the system goes to our lab for in-house bench testing. Upon completion of the bench test, the system then goes into a QA/QC process under the direction of the Project Manager. Once the system has passed our internal QA/QC procedure it is then ready for the Factory Acceptance Test (FAT). All compliance partners are encouraged to witness the Factory Acceptance Test. A typical FAT takes 1-2-days depending on the complexity of the configuration and the needs of the end user.

### Installation, Start Up & Commissioning

VIM Technologies, Inc. has a staff of experienced field personnel available to help with on-site start-up and commissioning of the DAS system. In most case, the Project Engineer will be on-site to complete this work personally. By making this the responsibility of the Project Engineer we give you the added benefit of accountability and direct results. We do not employ third party companies to install our DAS systems. You will not have to work through layers of communication to get things done during or following the installation. Project installations of replacement systems are carefully crafted to minimize monitor down-time.

### Ongoing Support

VIM Technologies, Inc. offers a full 12-month warranty on all equipment and software associated with each DAS installation. During this time you have 24/7 access to your Project Manager and our Customer Support Team. This includes access to us during normal business hours and after-hours access to our on-call system through our support hotline. We believe in and support an unlimited access system. During the warranty period, you will have unlimited access to us.

Our Customer Support Team is based in our Corporate Offices in Hanover, MD. In addition, we have field support and technical personnel located in Kentucky, Massachusetts, New Jersey, North Carolina and Pennsylvania. Everyone on our staff has a technical background in environmental monitoring, software design and/or plant operations. Every member of the VIM staff is also a key member of our Customer Support Team.

VIM Technologies, Inc. offers a full range of post-warranty support services managed under our Maintenance Agreement Program. Our most common approach is a Telephone Support Agreement which is managed remotely through our Customer Support Team. This has been a very successful program with our compliance partners participating in an annual or multi-year agreement, depending on individual budgets and commercial needs.

## **Solution Methodology (continued)**

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### Ongoing Compliance

As our compliance partner you have ready access to our Compliance Support Team. This group of air compliance experts is available to answer questions about your current system and act as a resource for developing requirements that may impact your future air compliance model. They oversee every compliance aspect of our DAS solutions and work hand in hand with our partners in finding the best possible reporting scenarios based on your source-based reporting requirements.

The concept of ongoing compliance support is another benefit of being a VIM Technologies, Inc. compliance partner. Under our compliance umbrella, we provide watchdog communications services, workshops, user groups and information updates based on our observations of the industry. Key members of the VIM Technologies, Inc. management team participate in all regulatory meetings/conferences that may affect our partners. As our compliance partner you will receive all these services for just joining our team.

In addition to the regular Maintenance Agreement Program we offer another, higher level of service that is managed by our Compliance Support Team. Compliance Optimization and Monitoring Performance Service (COMPAS) assigns a regulatory expert to your site with the sole purpose of assisting you in optimizing your data. This particular service is very useful in helping sources manage emission credits. COMPAS is a rider to a standard agreement custom fit to meet your needs.

Our Manager of Environmental Services is responsible for tracking air compliance at the national and local level. He works closely with the software development group ensuring that the compliance engines of our DAS solutions are current and accurate in their methods of handling data. In addition to these duties, he oversees all of the COMPAS contracts and manages the staff we have assigned to support them.

### Summary of Solution Methodology Key Points

1. We are experienced in providing site-specific DAS solutions to the electric power industry.
2. We are experienced in providing DAS solutions tailored to meet State specific requirements for all types of industries.
3. We review all pertinent information about a particular source and application prior to submitting a proposed DAS solution.
4. We make technical recommendations based on our experience.
5. We develop detailed engineering and design documentation through a two-way approval process prior to writing any project related code.
6. We have a robust test program prior to shipment.
7. We provide all the services required to commission the system.
8. We have a service oriented approach to support.
9. We operate support out of our corporate offices as well as from field locations around the country.
10. We provide a culture and staffing infrastructure that supports ongoing compliance.

## Common Questions & Answers

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*What do you see as the major elements and considerations for a DAS Replacement project?*

You have to proceed with the confidence that you have selected a vendor that will satisfy the fundamental technical elements of the project and provide the support they will need to see it through to its completion. A process based on status quo and hands off approach to compliance will not adequately meet the needs of any DAS replacement project. You need a vendor that is involved at the of Federal, State, and Local Environmental compliance levels. VIM Technologies, Inc. provides that compliance link and is involved every step of the way.

Beyond the general technical issues associated with a regular Acid Rain and NOx SIP affected sources, your project has a lot vested in future elements in order to meet regulatory compliance after the initial installation. Interstate transport rules, CAIR and CAMR compliance will impact how you comply down the road. This raises additional concerns for any end user regarding the integrity of the bid response and the possibility of hidden future costs. In evaluating possible vendors against references, you should be asking the hard questions about how secure they feel with the vendor they have and how easy the process of compliance is for them. Integrity is crucial in a situation like this one.

The major elements and considerations for any DAS Replacement project as noted by VIM Technologies, Inc. are as follows:

1. Air compliance requirements and Air Permits should be fully understood prior to the submittal of a DAS Replacement scope of supply.
2. Project phasing should be adjusted to ensure regulatory and site-specific deadlines are met.
3. Technical decisions regarding how best to handle multiple limits based on fuel type and operating mode need to be determined at the design phase of the project.
4. The need for a high level kick off meeting and open communications during the design phase to ensure that the project definitions are fully understood and that the proposed solution is agreed upon before writing code.
5. Acceptance and performance criteria for the replacement DAS system should be fully defined before proceeding with the project.

*What suggestions, advice or direction would you offer for assisting a source in guaranteeing a successful project?*

1. Start with a comprehensive bid specification.
2. Allow perspective partners to conduct a site walk-down before submitting a scope of supply bid.
3. Select a partner not a vendor.
4. Don't make a price-based decision; conduct a bid review meeting with the short list qualifiers.
5. Keep communication lines open.
6. Integrate milestones and checkpoints into the process to help ensure success.
7. Call the references and ask the hard questions about support, response times and overall performance.
8. Witness the Factory Test before shipment.
9. Make the necessary personnel available during the installation
10. Make sure key personnel participate in the training

*Briefly, how would you like us to remember your company?*

We believe that if you purchase a system from VIM Technologies, Inc. you are ensuring success on this project. Our track record proves that we are the best DAS system on the market, and the company poised to serve you in the future with whatever needs should arise.