Technical Evaluation Committee (TEC) Questionnaire Instructions

- The Technical Evaluation Committee (TEC) Questionnaire shall be used for professional services related to architecture, engineering, or survey projects.
- **The TEC Questionnaire should be completely filled out. Complete and attach ALL sections. Insert "N/A" or "None" if a section does not apply or if there is no information to provide.**
- Questionnaire must be dated and signed by an authorized representative of the Firm. Failure to sign the questionnaire shall result in disqualification of proposer pursuant to J.P. Code of Ordinances Sec. 2-928.
- All subcontractors must be listed in the appropriate section of the Questionnaire. Each subcontractor must provide a complete copy of the TEC Questionnaire, applicable licenses, and any other information required by the advertisement. Failure to provide the subcontractors' complete questionnaire(s), applicable licenses, and any other information required by the advertisment shall result in disqualification of proposer pursuant to J.P. Code of Ordianances Sec. 2-928.
- If additional pages are needed, attach them to the questionnaire and include all applicable information that is required by the questionnaire.

TEC Professional Services Questionnaire

A. Project Name and Advertisement Resolution Number:

Provide Professional Engineering & Supplemental Services AMI

B. Firm Name & Address where Project work will be performed:

M S Benbow & Associates
2450 Severn Ave.
Suite 400
Metairie, LA 70001

C. Name, title and contact information of Principal, as defined in Section 2-926 of the Jefferson Parish Code of Ordinances, who is a registered, licensed architect, professional engineer, or surveyor in the State of Louisiana:

Leo Holzenthal, PE - President
504-836-8902
lholzenthal@msbenbow.com

D. Name and contact information of employee who is a registered and licensed architect, professional engineer, or surveyor in the State of Louisiana in the applicable discipline. A subcontractor may be substituted here only if the advertised Project requires more than one discipline.

Kenneth Wright, PE - Director of Telecommunications & Technology
kwright@msbenbow.com
504-836-8918

E. Please provide the number of employees whose primary function corresponds with each category:

4 Administrative	1 Estimators	0 Specification Writers
0 Architects (Licensed)	0 Geologists	0 Structural Engineers
0 Chemical Engineers	0 Geotechnical Engineers	0 Graduate Engineers
0 Civil Engineers	0 Interior Designers	10 Project Managers
0 Construction Inspectors	0 Landscape Architects	50 Clerical /Technicians/Design/ Drafting
0 Ecologists	0 Land Surveyor	0 Grant/Fu
38 Electrical Engineers	3 Mechanical Engineers	0 Sanitary Engineers
0 Engineer Intern	0 Environmental Engineers	
0 Professional Land Surveyors		106 **TOTAL**

F. Is this submittal by a JOINT-VENTURE? Please check: YES [ ] **NO** [✔]

If marked "No" skip to Section I. If marked "yes" complete Sections G-H.

TEC Professional Services Questionnaire

G. If submittal is by JOINT-VENTURE, list the firms participating and outline specific areas of responsibility (including administrative, technical, and financial) for each firm. Please attach additional pages if necessary.

1.

2.

H. Has this JOINT-VENTURE previously worked together? Please check:
YES ☐ **NO** ☐

I. List all subcontractors anticipated for this Project. Please note that all subcontractors must submit a fully completed copy of this questionnaire, applicable licenses, and any other information required by the advertisement. See Jefferson Parish Code of Ordinances, Sec. 2-928(a)(3). Please attach additional pages if necessary.

Name & Address:	Specialty:	Worked with Firm Before (Yes or No):
1.		
2.		
3.		

J. Please specify the total number of support personnel that may assist in the completion of this Project:

_____

TEC Professional Services Questionnaire

K. List the professional in charge, key persons, specialists, and individual consultants anticipated for this Project and provide their relevant information below. If necessary, please attach additional documentation (i.e. resume) that demonstrates the employment history and experience of the Firm's key persons that may assist in the completion of this Project. Please attach additional pages if necessary.

PROFESSIONAL IN CHARGE OF PROJECT:

Name & Title:

Ronald Ledet, PE

Project Assignment:

SoQ 21-002 - Advanced Metering Infrastructure

Name of Firm with which associated:

M S Benbow & Associates

Years' experience with this Firm:

17 years

Education: Degree(s)/Year/Specialization:

BS Electrical Engineering, 1987, UNO
MS Electrical Engineering, 1988, Purdue

Active registration: Year first registered/discipline:

Professional Engineer (Electrical Engineering, Control Systems), first registered in July 1994

Other experience and qualifications relevant to the proposed Project:

See attached resume. Mr. Ledet has a wide range of experience in Electrical and Control systems engineering, and he has been dual-licensed in each of these disciplines. His roles have also been numerous, and these have included design engineer, project manager, department supervisor, and construction supervisor. Mr. Ledet has worked on and executed numerous projects in a variety of facility types, including municipal power generation, municipal flood control, petrochemical, law enforcement, and petrochemical. Mr. Ledet provides a rare combination of technical and leadership expertise, hence his selection as "Professional in Charge."

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Charles Hecker, PE, Senior Instrumentation & Controls Engineer
Project Assignment:
SoQ 21-002 - Advanced Metering Infrastructure
Name of Firm with which associated:
M S Benbow & Associates
Years' experience with this Firm:
24
Education: Degree(s)/Year/Specialization:
BS Mechanical Engineering, 2004, UNO
Active registration: Year first registered/discipline:
Professional Engineer (Instrumentation & Control Systems), first registered in December 2017
Other experience and qualifications relevant to the proposed Project:
See attached resume. Mr. Hecker has extensive experience with projects relating to instrumentation and measurement, including projects involving upgrade or replacement of flow measurement systems. Mr. Hecker has worked closely with technical representatives and field personnel through various stages of many projects, including scope development, cost estimation, front-end engineering and design (FEED), detailed engineering, factory acceptance testing (FAT), and site acceptance testing (SAT). Finally, Mr. Hecker has experience with coordinating communications between instrument systems and larger SCADA or DCS systems and providing support to ensure that data transmission is complete and accurate.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Salvatore Coco IV, PE, Senior Instrumentation & Controls Engineer
Project Assignment:
SoQ 21-002 - Advanced Metering Infrastructure
Name of Firm with which associated:
M S Benbow & Associates
Years' experience with this Firm:
25 years
Education: Degree(s)/Year/Specialization:
BS Electrical Engineering, 1996, UNO Associates Degree in Drafting, 1992, Delgado
Active registration: Year first registered/discipline:
Professional Engineer (Control Systems), first registered in January 2015
Other experience and qualifications relevant to the proposed Project:
See attached resume. Mr. Coco has extensive experience with projects relating to instrumentation and measurement, including projects involving upgrade or replacement of flow measurement systems. Mr. Coco has worked closely with technical representatives and field personnel through various stages of many projects, including scope development, cost estimation, front-end engineering and design (FEED), detailed engineering, factory acceptance testing (FAT), and site acceptance testing (SAT). Finally, Mr. Coco has experience with coordinating communications between instrument systems and larger SCADA or DCS systems and providing support to ensure that data transmission is complete and accurate.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Jon Denton, Senior Telecommunications Engineer
Project Assignment:
SoQ 21-002 - Advanced Metering Infrastructure
Name of Firm with which associated:
M S Benbow & Associates
Years' experience with this Firm:
25
Education: Degree(s)/Year/Specialization:
BS Electrical Engineering, 1994, University of Southwestern Louisiana
Active registration: Year first registered/discipline:
N/A
Other experience and qualifications relevant to the proposed Project:
Mr. Denton is a telecommunications engineer who is well-versed in wireless communications networks that interface with SCADA systems and related infrastructure. His communications experience includes Distributed Antenna Systems, cellular networks, and satellite networking infrastructure. Mr. Denton is also intimately familiar with designing and maintaining wired networking infrastructure, both fiber and copper, as well as the associated hardware and other infrastructure. His industry experience includes municipal facilities, large public venues, industrial and manufacturing facilities, and offshore oil and gas production facilities.

TEC Professional Services Questionnaire

KEY PERSON, SPECIALIST, OR INDIVIDUAL CONSULTANT:
Name & Title:
Michael Ward, Operations Manager (Field Services)
Project Assignment:
SoQ 21-002 - Advanced Metering Infrastructure
Name of Firm with which associated:
M S Benbow & Associates
Years' experience with this Firm:
10 years with Fisk Electric Co, local branch of which was acquired by M S Benbow and Associates in May 2020.
Education: Degree(s)/Year/Specialization:
N/A
Active registration: Year first registered/discipline:
N/A
Other experience and qualifications relevant to the proposed Project:
Mr. Ward has over 30 years of experience with telecommunications installations and field services, whose roles have included technician, job foreman, field supervisor, operations manager, project manager, estimator, and designer. Mr. Ward is an experienced technician and supervisor for installations involving network communications (wired and wireless), access control systems (e.g. RFID badge access), fiber optics, structured cabling, and security systems. His project history includes a variety of small and large projects for commercial, industrial, educational, and manufacturing facilities.

TEC Professional Services Questionnaire

L. Work by Firm or Joint-Venture members which best illustrates current qualifications relevant to this Project. Please include any and all work performed for Jefferson Parish. Please attach additional pages if necessary.

PROJECT NO. 1

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
Municipal Police Department Emergency 911 System Upgrade Gretna, LA Contact: Joey Goodwin 504-363-1587	MSB was the lead design firm for all telecom systems for a municipal Police Department's Emergency 911 dispatch center. The telecom design package included systems for voice, data, video, public safety radio, dispatch consoles, CATV, structured cabling, and uninterruptible power systems (UPS). MSB qualified the construction contractors, oversaw build-out, integration and testing, and provided As Built documentation.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
May 2016	Unknown (not disclosed to M S Benbow)	$325,000

PROJECT NO. 2

Project Name, Location and Owner's contact information:	Nature of Firm's Responsibility:	
Public Safety Radio Tower Project Port Fourchon, LA Contact: John Crochet 985-632-6701	A Port Commission in southern Louisiana needed to improve Public Safety communication coverage and support Port facility operations covering over 1,000 acres. MSB was selected as the lead engineering firm to develop the communications project, manage infrastructure construction, and deploy the wireless systems on the tower structures and accompanying communication shelters.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
December 2011	Unknown (not disclosed to M S Benbow)	$300,000

TEC Professional Services Questionnaire

PROJECT NO. 3		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility**	
Airport Cellular Distributed Antenna System (DAS) Buildout Dallas, TX Contact: Ali Nemati 972-973-5300 anemati@dfwairport.com	A large airport, as part of their overall Terminal Renovation and Improvement Program (TRIP), hired MSB to perform RF modeling and cellular system design, RF cable sweeps and cellular walk testing to improve the communication systems for visitors and internal operations. MSB also performed A&E design package development, oversaw construction, and managed the start-up and maintenance of the new cellular distributed antenna system (DAS).	
Completion Date (Actual or estimated)	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
Late 2017	$6.5 million	$6.5 million

PROJECT NO. 4		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Wireless Tank Gauging Chalmette, LA Contact: Steven Duck steven.duck@pbfenergy.com 504-281-6290	M S Benbow provided engineering services to design a communications system so a major refinery in Chalmette, LA could measure tank levels, pressures, flows, and temperatures, and wirelessly transmit this data to a centralized monitoring system. M S Benbow was responsible for selection of the measurement equipment, as well as for the design of the data collection system at each tank and the radio communications network that transmitted the data to a centralized location.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
March 2017	$2 million	$300,000

TEC Professional Services Questionnaire

PROJECT NO. 5		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Plant-Wide Radio System Support Chalmette, LA Contact: Steven Duck steven.duck@pbfenergy.com 504-281-6290	MSB provided ongoing technical support and maintenance services for a plant wide radio system. MSB performed FCC licensing, system management, maintenance and repair of the plant wide radio system utilized for day to day operations and turnarounds.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
July 2020	Unknown	$40,000 ongoing maintenance fee

PROJECT NO. 6		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Refinery Crude Unit Chlorine Water Metering and Injection System Chalmette, LA Contact: Steven Duck steven.duck@pbfenergy.com 504-281-6290	MSB provided engineering and design services for installation of a new chlorinated water injection system for a crude oil unit at a refinery in Chalmette, LA. For this effort, MSB specified the details of the instrumentation for the flow measurement, which included an orifice plate and differential flow transmitter. MSB also provided electrical load analyses for the new water pump. Deliverables included a full construction drawing package illustrating all of the wiring, tubing connections, piping connections, and other installation details necessary for successful project completion.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
April 2019	Unknown (was not disclosed to M S Benbow, who was a subcontractor on this effort)	$60,000

TEC Professional Services Questionnaire

PROJECT NO. 7		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Plant-Wide Evacuation Alarm System Chalmette, LA Contact: Steven Duck steven.duck@pbfenergy.com 504-281-6290	MSB designed and provided maintenance services for a Plant Wide Evacuation Alarm System. The system utilized wireless transmitters to broadcast audio from Central Dispatch to each unit in the refinery and simultaneously through the Two Way radio network and the VoIP phone system. The system provides Health and Safety information to the plant workers and contractors in the event of an emergency within the plant. MSB provided design engineering, construction oversight, network commissioning, testing and maintenance services for the overall system infrastructure.	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**
End of 2021	Unknown	$33,000

PROJECT NO. 8		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**

TEC Professional Services Questionnaire

PROJECT NO. 9		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**

PROJECT NO. 10		
Project Name, Location and Owner's contact information:	**Nature of Firm's Responsibility:**	
Completion Date (Actual or estimated):	**Estimated Cost:**	
	Entire Project:	**Work for which Firm was Responsible:**

TEC Professional Services Questionnaire

M. List all prior and/or on-going litigation between Firm and Jefferson Parish. Please attach additional pages if necessary.

Parties:		Status/Result of Case:
Plaintiff:	**Defendant:**	
1.		
2.		
3.		
4.		

N. Use this space to provide any additional information or description of resources supporting Firm's qualifications for the proposed project.

O. To the best of my knowledge, the foregoing is an accurate statement of facts.

Signature: _____ **Print Name:** Kelly A. Huber

Title: Director of Operations **Date:** 3/16/2021

M S BENBOW & ASSOCIATES
CONSULTING ENGINEERS

Salvatore Coco, P.E.

Senior Engineer, Instrumentation and Control Systems

OVERVIEW

Sal Coco, P.E. is a Senior Control Systems Engineer with more than 24 years of experience in a variety of technical fields including SCADA Systems, Process Instrumentation Controls, Analytical specifications, Heater Controls, Tank Gauging, Design Installation drawing packages, cost estimating, scheduling, budget tracking, and Management. His background includes Consulting, Project Management, and Technical Oversight for engineered design drawing packages for small and large-scale projects. Market segments include Process/Refining and Chemical plants. Mr. Coco is a Registered Professional Engineer in Control Systems Engineering and a member of ISA.

QUALIFICATIONS

24 years in Instrumentation and Controls developing and defining project scopes
Project Engineering of Industrial Control Systems
System design and specification of instruments per facility standards, NFPA, NEC, API, etc.
SAT and FAT test procedures and System Commissioning
Design of triplicated Control Systems and Safety Instrumented Systems
Engineering and construction FEL cost estimates
Startup Support
Instrumentation troubleshooting

AREAS OF EXPERTISE

- Process Analytical Instruments
- Distributed Control Systems
- Checkout and Commissioning
- Process Flow calculations and valve sizing
- Process Control
- SIS analysis
- Safety Instrumented Systems
- HAZOP
- PLC Specification, Wiring and Cabinet Layout
- PLC functional descriptions
- Cause and Effect Diagrams
- Project Engineering and Management
- Industrial Protocol Interfaces
- Modbus Serial and TCP/IP Communications
- Tank Gauging and SCADA Systems
- Cost Estimating

M S BENBOW & ASSOCIATES
CONSULTING ENGINEERS

PROJECT EXPERIENCE

Wireless Tank Gauging

Responsible for the design and implementation of a wireless tank gauging system on multiple tanks for a major petrochemical plant in Chalmette, LA. System consisted of redundant radar transmitters, temperature elements, PLC, 800MHZ spread spectrum radios, Redundant host radios, wireless backhaul, Ethernet/Fiber networking, and DCS programming. Project was executed in FEED and Detailed Design Phases, in addition to Startup and Commissioning.

- Cost Control and Project Management.
- Developed +/-10% Total Installed Cost Estimate as part of the FEED phase of the project.
- Developed documentation for the design and implementation of the control system:
  - Functional Description Document with Advanced Control Algorithms
  - Cause and Effect Matrices
- Developed Factory Acceptance Test (FAT) and Site Acceptance Test (SAT) Procedures
- Coordinated and executed FAT, SAT, and Startup/Commissioning activities.

Fault Tolerant PLC Replacement Project for Multiple Process Units

Responsible for the replacement of several old, obsolete PLC-based control systems with new Fault Tolerant TMR PLC-based control systems.

- Cost Control and Project Management.
- Developed +/-10% Total Installed Cost Estimate as part of the FEED phase of the project.
- Developed documentation for the design and implementation of the control system:
  - Functional Description Document with Advanced Control Algorithms
  - Cause and Effect Matrices
- Developed Factory Acceptance Test (FAT) and Site Acceptance Test (SAT) Procedures
- Coordinated and executed FAT, SAT, and Startup/Commissioning activities.

Crude Unit LORAT Project

Design a detail construction drawing and specification package for the installation of a liquid overfill protection system. Level measurement and monitoring were installed on three crude vessels. The purpose of monitoring the levels were to alarm and shutdown feed pumps on high levels, in order to prevent overspill. To accomplish this, a PLC was installed and connectivity to the client's DCS were made.

- Cost Control and Project Management.
- Developed +/-10% Total Installed Cost Estimate as part of the FEED phase of the project.

- Developed documentation for the design and implementation of the control system:
  - Functional Description Document with Advanced Control Algorithms
  - Cause and Effect Matrices
- Developed Factory Acceptance Test (FAT) and Site Acceptance Test (SAT) Procedures
- Coordinated and executed FAT, SAT, and Startup/Commissioning activities.

SOFTWARE

- Various PLC Programming Tools
- Fisher ProVox DCS
- SIL Solver (Safety Instrument Analysis)
- Conduit fill and Cable sizing
- Valve sizing
- Voltage Drop
- Flow Orifice Sizing
- Pressure drop Calculations

EDUCATION

- University of New Orleans – Bachelor of Science in Electrical Engineering
- Delgado – Associates of Science in Drafting Technology

PROFESSIONAL REGISTRATIONS

- Registered Professional Engineer in Control Systems Engineering, State of Louisiana, #39435

PROFESSIONAL ASSOCIATIONS

- International Society of Automation (ISA)

M S BENBOW & ASSOCIATES
CONSULTING ENGINEERS

Jon V. Denton

OVERVIEW

Broad Technical and Engineering background with 25 years of experience in technology development, product research, engineering design, engineering management / support, manufacturing and integration across multiple verticals. Principal lead working with executive management on global projects for service expansion, infrastructure enhancements and security initiatives. Engineering team leader providing mentoring and support for diverse levels of Engineering and Operations.

QUALIFICATIONS

25 years in Electrical Engineering
Management of large-scale Cellular, Satellite, Wi-Fi, and Radio System Engineering projects
Extensive engineering design and development, vendor negotiations, technical support.

AREAS OF EXPERTISE

- Satellite Communications
- Fixed and Stabilized VSAT Terminals
- Indoor/Outdoor Wi-Fi Networks
- Microwave Networks
- Subsea Fiber Optic Systems
- Cellular (GSM, CDMA)
- Two-Way Radio and Trunking Radio Systems
- SCADA comms integration
- Virtualization Solutions
- Network Monitoring and Control Engineering Design
- Core / Edge Networking Design
- Product Integration Design
- Firewall /IPS/IDS Design
- DDI Services Integration / Design
- Fiber Optic Networks
- FCC Network/Site Licensing
- Voice Over IP
- Terrestrial/ WAN Network Design
- Datacenter / POC Design

M S BENBOW & ASSOCIATES
CONSULTING ENGINEERS

PROJECT EXPERIENCE

Chase Center Arena Network Installation

MSB was the engineering and project management firm responsible for design and execution of a multi-million dollar Core to Edge LAN network and Facility Wi-Fi network providing Fan facing Wi-Fi service to up to 20,000 Guest and Employee secure Operational network access.

- Provided engineering design and vendor integration support for the installation and management of the LAN/Wi-Fi construction project.

American Airlines Arena Wi-Fi Installation

MSB was the engineering firm contracted to design and deploy the Arena's first Wi-Fi network providing Guest Wi-Fi service for 20,000 fans as well as VIP, Media and Employee enhanced access on the Wi-Fi network.

MSB provided engineering support for the network integration into the client existing Juniper Core / LAN network. American Airlines Arena was the first facility to provide ticketless entry through the use of the new Wi-Fi system that was tuned for the acceptance of International Visitors to the facility.

- Designed and managed installation of the construction of the Wi-Fi network throughput the facility and main Arena.
- Managed External Guest portal integration as well as in-house VIP/Media/Employee portal access to the local and Wi-Fi network.
- Provided engineering support for Security appliance upgrades and network segregation.

Mercedes Benz Superdome / New Orleans Arena Network Management/Support

MSB provided engineering support, expansion of the existing Cisco Core LAN and Wi-Fi network encompassing the Superdome / Arena Campus.

This included hardware and software maintenance for all equipment including dual Nexus 7K Cores, Six Redundant paired WLC controllers, Dual DHCP/DNS services and 30+ dual 10G uplink IDF Cisco Switching stacks.

ISP provider upgrades from dual 300 Mbps service to 1 Gbps service. Firewall upgrade from Cisco ASA 1G to Palo Alto 10G Firewall service.

- As senior lead, Jon provided LAN Core network support, upgrades and failure resolution.
- Designed the addition and integration of eight new IDF switch stacks to support the MSB design of new under-seat access points providing service in the Superdome upper concourse.
- Designed and Implemented wired and wireless services on a temporary basis for special events at the Superdome and New Orleans Arena, including NBA All-Stars and WWE as well as private events.

M S BENBOW & ASSOCIATES
CONSULTING ENGINEERS

SOFTWARE

- FCC Licensing
- RF Link Budget
- RF prediction
- Network flow and packet analysis
- Microsoft Office, Viso, Project
- Database Development and Management
- Embedded Linux development

EDUCATION

- University of Southwestern Louisiana – Bachelor's of Science Engineering w/ Computer Option, 1994
- Radio Communications and Computer Technician Training, Tech Area Vocational Technical School, New Iberia, La. 1985
- Aruba Certified ClearPass Professional, 2012

PROFESSIONAL ASSOCIATIONS

- EIT certification La. 1993

M S BENBOW & ASSOCIATES
CONSULTING ENGINEERS

Charles W. Hecker III, P.E.

Senior Instrumentation & Controls Engineer, Instrumentation and Control Systems

OVERVIEW

Charles W. Hecker III, P.E. is a Senior Control Systems Engineer with more than 24 years of experience in a variety of technical fields, including Control Systems, Safety Instrumented Systems, Piping Systems and Telecommunications. His background includes Consulting, Project Management, and Technical Oversight for development and execution of large-scale projects. Market segments include petrochemical, process/refining, marine terminals, flood control, and law enforcement. Mr. Hecker is a Registered Professional Engineer in Control Systems Engineering.

QUALIFICATIONS

24 years in Control System Engineering
Management and Engineering of Large-Scale Control System Projects
Significant Experience in the Design of Fault Tolerant and Redundant Control Systems
Significant Construction Management Experience in Petrochemical and Process/Refining Market Segments

AREAS OF EXPERTISE

- Front End Engineering and Cost Estimates
- Detailed Design Engineering
- Functional Test Development and Execution
- Programmable Logic Controllers
- Distributed Control Systems
- Human Machine Interface
- Control System Software Development
- Safety Instrumented Systems
- Control System Upgrades / Retrofits
- Fault Tolerant and TMR Control Systems
- Fault Tree Analysis
- Modbus TCP/IP Communications
- Tank Gauging Systems and Level Measurement
- P&ID Development

M S BENBOW & ASSOCIATES
CONSULTING ENGINEERS

PROJECT EXPERIENCE

Liquid Propane Gas Railcar Offloading Control System

Responsible for the grass roots design and implementation of an LPG by Rail Offloading control and protection system for a major petrochemical plant in Chalmette, LA. System consisted of a Triple Modular Redundant Control System, Local and Remote IO, Fiber Network Connectivity, DCS Interface, and HMI System. Project was executed in FEED and Detailed Design phases, in addition to Startup and Commissioning.

- Developed +/-10% Total Installed Cost Estimate as part of the FEED phase of the project.
- Coordinated multi discipline design team
- Developed documentation for the design and implementation of the control system:
  - Functional Description Document with Advanced Control Algorithms
  - Cause and Effect Matrices
- Specified instrumentation and developed construction drawing package for the control system.
- Developed Factory Acceptance Test (FAT) and Site Acceptance Test (SAT) procedures
- Coordinated and executed FAT, SAT, and Startup/Commissioning activities.

Fault Tolerant PLC Replacement Project for Multiple Process Units

Responsible for the replacement of several old, obsolete PLC-based control systems with new Fault Tolerant TMR PLC-based control systems.

- Developed +/-10% Total Installed Cost Estimate as part of the FEED phase of the project.
- Developed documentation for the design and implementation of the control system:
  - Functional Description Document with Advanced Control Algorithms
  - Cause and Effect Matrices
- Specified instrumentation and developed construction drawing package for the control system.
- Developed Factory Acceptance Test (FAT) and Site Acceptance Test (SAT) Procedures
- Coordinated and executed FAT, SAT, and Startup/Commissioning activities.

Offsites Blend Console Upgrade Project

Responsible for the upgrade of existing Honeywell DCS control system with new Honeywell Experion control system. Project responsibilities included the following:

- Coordinated efforts between site DCS Applications Engineering Department and Honeywell project team.
- Coordinated field verification effort to confirm existing I/O and connectivity.

- Developed construction drawing package to connect existing I/O to new system and to connect new Experion system to site control system network.
- Revised site documentation for all I/O showing connectivity to new control system.

SOFTWARE

- AutoCAD and Microstation CAD applications
- SIL Solver
- IEC 61131 Programming
- WonderWare HMI Configuration
- Various PLC Programming Development Tool Kits

EDUCATION

- University of New Orleans – Bachelor of Science in Mechanical Engineering
- ISA – ISA84 Fundamentals Specialist

PROFESSIONAL REGISTRATIONS

- Registered Professional Engineer in Control Systems Engineering, State of Louisiana, #42202

PROFESSIONAL ASSOCIATIONS

- International Society of Automation (ISA)

CURRICULUM VITAE

LEO L. HOLZENTHAL, JR., P.E., FELLOW ACFE
ENGINEER, MSE, BSEE

PROFESSIONAL EXPERTISE

Twenty-six years of diverse engineering experience.
Electrical / Telecommunications / Control Systems engineer experienced in all phases of engineering design, documentation, and project execution.
Teaches engineering courses at local universities, and lectures for professional organizations.
Author of engineering technical papers and articles pertaining to the practice of engineering.

PROJECT AREAS

General Practice of Engineering

- Electrical Engineering
- Power Systems Engineering
- Control System Engineering
- Telecommunications Engineering
- Forensic Engineering
- Analyzer Engineering
- Project Management
- Specification Preparation
- Project Planning
- Project Development and Estimating

PROJECT TYPES

Experience

- Electric Power System Design
- Telecommunications System Design
- QA/QC Management
- Process Safety Management
- Power System Design
- Specification Preparation
- Digital System Design
- Computer System Interface Design
- Computer Network Design
- Computer Applications and Interfacing
- Robotics Control Systems
- In-Building RF Coverage Systems
- Wireless Communication Systems
- Interfacing Design
- Analyzer Installation
- Distributed Control System Installation
- DCS/SLMC Programming
- Mathematics Modeling of Industrial Process Equipment
- Instrumentation Systems Design
- Analyzer Specification
- Control System Design
- Optimization

BACKGROUND

1984 - Present	M S Benbow and Associates, President and Supervising Engineer, 2014 – Present M S Benbow and Associates, President and Engineering Manager, 2007 – 2014 Vice President and Engineering Manager 1994- 2007 M S Benbow and Associates, Senior Project Manager 1984 - 1994 University of New Orleans, Adjunct Professor, College of Engineering 1984 - Present

1983 - 1984	Performance Engineering, Inc., Austin Texas, Research Consultant for Southwestern Public Service Company, Amarillo, Texas
1980 - 1981, Summer 1982	Walk Haydel and Associates, Electrical Engineer

PROFESSIONAL REGISTRATION AND CERTIFICATION

Registered Professional Electrical Engineer, State of Louisiana, #24047
Registered Professional Control Systems Engineer, State of Louisiana, #24047
Registered Professional Engineer, State of Mississippi, #10985
Registered Professional Engineer, State of Texas, #69051
Registered Professional Engineer, State of Arkansas, #8195
Registered Professional Engineer, State of Colorado, #29668
Registered Forensic Engineer, ACFE (National)
Registered Professional Engineer, State of Florida, #55601
Registered Professional Engineer, State of Ohio, #65860
Registered Professional Engineer, State of Illinois, #062-054781
Registered Professional Engineer, State of Indiana, #10100694
Registered Professional Engineer, Commonwealth of Pennsylvania, #PE062796
Registered Professional Engineer, State of Alabama, #025322
Registered Professional Engineer, Commonwealth of Virginia, #038752
Registered Diplomate of Forensic Engineering, American Society of Forensic Engineering and Technology, Member # 16051, Fellow Status
Registered Professional Engineer, State of Georgia, #PE34357
Registered Professional Engineer, State of Oklahoma #24671
Registered Professional Engineer, State of Washington #47983
Registered Professional Engineer, State of North Dakota #PE-7524
Registered Professional Engineer, State of Oregon #86720
Registered Professional Engineer, State of New Mexico #21548
Registered Professional Engineer, State of Wyoming #13920
Registered Professional Engineer, State of Nebraska #E-14797
Registered Professional Engineer, State of Tennessee # 116565
Registered Professional Engineer, Commonwealth of Kentucky # 29386
Registered Professional Engineer, State of Utah #(no numbers issued)
Registered Professional Engineer, State of Iowa, # 23077
Registered Professional Engineer, State of South Dakota, #12601
Registered Professional Engineer, State of California, # E21447
Registered Professional Engineer, State of West Virginia, #21331
Registered Professional Engineer, State of Maryland #50098
Registered Professional Engineer, State of Michigan #6201062611
Registered Professional Engineer, State of Minnesota #56998

EDUCATION

University of Texas, Austin, Texas, Master of Science in Engineering (EE & ME), 1984
University of New Orleans, New Orleans, Louisiana, BSEE, 1979

PROFESSIONAL ASSOCIATIONS

American Society of Engineering Educators (ASEE)
Institute of Electrical and Electronics Engineers (IEEE)
Instrument Society of America (ISA)
Louisiana Engineering Society (LES)
Texas Society of Professional Engineers (TSPE)
Arkansas Society of Professional Engineers (ASPE)
National Society of Professional Engineers (NSPE)
Louisiana Chemical Industry Alliance (LCIA)
Chamber of Commerce, New Orleans and the River Region
Association of Public Safety Communications Officers (APCO)
Diplomate of the American Board of Forensic Engineering and Technology
Fellow, American College of Forensic Examiners
Member American Association of Airport Executives

PUBLICATIONS

"A Study of the Feedwater System of a 235 Megawatt Electric Generating Power Plant," Leo L. Holzenthal Jr., Master's Thesis, E.E. Department, U.T. Austin, May, 1984.

"A Variable Speed Bi-directional Robotic Drive Unit and Controller," Leo L. Holzenthal Jr., M. Buchert, and E. Buras, Instrument Society of America, New Orleans Section, April, 1986.

"Energy Demand Metering Software Data Management System," Leo L. Holzenthal, Jr., Copyright 1986

"A Linearized Model of the Low Pressure Feedwater Systems of a 235 Megawatt Drum Boiler Power Plant," Leo L. Holzenthal, Jr. and Glenn Masada, Proceedings of the 6th Congresso Brasileiro de Automatica, Sociedade Brasileira de Automatica, UFMG, Brasil, November 1986.

"A Microprocessor-based Control System for Robotic Maneuvering," Leo L. Holzenthal, Jr. and Robert Mejia, The Current Pneusletter, Instrument Society of America, New Orleans Section, April 1987.

"Application of a Linearized Model for Improved Control of a 235 Megawatt Drum Boiler Power Plant," Leo L. Holzenthal, Jr. and Glenn Y. Masada, Proceedings of the IASTED International Conference on Applied Identification, Modelling, and Simulation (AIMS 87), New Orleans, Louisiana, November 1987.

"Utilization of a Linearized Model for Redesign of the Feedwater Control System of a Drum Boiler Power Plant," Leo L. Holzenthal, Jr. and Glenn Y. Masada, Proceedings of IEEE Southeastcon 1990, Session 10B3, pp. 914-918, New Orleans, Louisiana, 1990.

"A Petrochemical Industry Perspective on Electric Motor Systems", Leo L. Holzenthal, Jr., Proceedings of the First National Energy Efficient Electric Motor Systems Conference, Baltimore, Maryland, February 1993.

"Analysis and Design of a Subsea Pipeline Pressure Control System", Leo L. Holzenthal, Jr., Proceedings of IEEE Southeastern 1993, Session SEC93-T2C-2, pp. 323-326, Charlotte, North Carolina, April 1993.

"Analysis and Development of a Process Safety Management System", Leo L. Holzenthal, Jr., and Mark A. Johnson, Proceedings of IEEE Southeastcon 1993, Session SEC93-W1B-1, pp. 540-543, Charlotte, North Carolina, April 1993.

"Energy Savings Potential of Process Control Valve Replacement", Leo L. Holzenthal, Jr., Proceedings of the Sixteenth National **EPRI** Industrial Energy Technology Conference 1994, Houston, Texas.

LECTURES/SEMINARS PRESENTED

University of New Orleans

E.E. Advanced Circuit Design
Digital Logic and Microprocessor Design (ENEE 3585)
Automatic Control System Design (ENEE 4531)
Automatic Control System Laboratory (ENEE 4532)
Senior/Special Design Project – Robotics (ENEE 4097)

LECTURERS/SEMINARS PRESENTED (Continued)

University of New Orleans

Microcomputer Design (ENEE 3582)
Digital Process Control Systems (ENEE 4096)
Senior Design Project - Process Controls Laboratory (ENEE 3092)
Digital Control Systems Design (ENEE 4533)
Microcomputer Interfacing (ENEE 4582)
Process Control System Design (ENEE4534 / ENME4753)
Introduction to Robotics Control Systems (ENEE4096)
Special Topics in Telecommunications (ENEE4096)

University of New Orleans, Metro College

Professional Engineering Exam Review Course, Lecturer, Electrical Engineering Topics

Louisiana Engineering Society

The Evolution of Wireless Communications (Joint Engineering Societies Conference)
Communications in the Continuous Process Control Industry (JESC)

IEEE

Seminars on Networking PC's

ILTA

Modern Wireless Communications Techniques (ILTA Houston)
Wireless Communications Advances for Industry (ILTA Houston)

ISA/86

Seminar on MAP Protocol

6th Congresso Brasileiro de Automatica

3 Day Conference on Automation (Also presented a paper here)

ROBEX/86

3 Day Conference on Robotics and Expert Systems

IASTED

International Conference on Applied Identification, Modelling, and Simulation - Chairman of Control Systems and Identification Sessions and member of the International Program Committee (Also presented a paper here.)

IEEE Southeastcon

Chairman of Control Systems and Modeling Sessions (Also presented a paper here.)

ISA/90

Student Day Chairman

ISA/New Orleans

Lecturer - Distributed Control Systems, Process Controls

University of New Orleans

Center for the Industrial application of Electrical Power and Instrumentation (CIPI) Representative

First National Conference on Energy Efficient Electric Motor Systems (EPRI & DOE Sponsors),
Speaker in Chemical and Petroleum Industry Market Segment Case Study Session

East Baton Rouge Association of Industrial Managers

Presentation on Process Safety Management, P&ID Update & Documentation Requirements.

IEEE Southeastcon
Charlotte, NC, Presented two technical papers
EPRI Chemical and Refining Technical Committee
EPRI Steering Committee on Energy Efficient Motors and their Application
Louisiana Engineering Society – Joint Engineering Society Technical Conference 2005 – "WiMAX – Is this the Wireless Network Technology that we've been waiting for?"
Louisiana Engineering Society – Joint Engineering Society Technical Conference 2005 – "An Introduction to Robotic Control Systems Design"
IEEE and ISA New Orleans, Summer 2007 – "Control Systems Principles and Practices Exam Review Course", taught 15 three hour sessions.
UNO Metropolitan College, Fall 2007 – "Development of Construction Management Course Curriculum"
Louisiana Engineering Society – **Tri-State Annual Meeting 2008 –** "Technical Lecture Presentation"
IEEE Communications Society – GlobeCom 2008 New Orleans – "Design and Developers Forum Topic on Modern Fiber Optic Based Distributed Antenna System Design"
LES – Dual Engineering Society Conference 2010, Point Clear, Alabama – "Radio Frequency Human Exposure Hazards and Safety and Mitigation Measures"
LES – Tri-State Engineering Conference 2011, Destin, Florida – "Retrofitting Cellular Networks for 3G and 4G Technology"
LES – Tri-State Engineering Conference 2012, Orange Beach, Alabama – "Electrical Grounding Design Considerations for Pipeline and Pipeline Stations"
IEEE Petroleum and Chemical Industry Committee – Local Conference Organizing Committee; New Orleans 2012

HONORS AND AWARDS

University of New Orleans, Outstanding Part-Time Engineering Faculty (1991)
University of New Orleans, Teacher of the Year (1997-98)
Who's Who in the South and Southwest
Who's Who in Science and Engineering
University of New Orleans Alumni Association, College of Engineering Representative (2-two year terms)
University of New Orleans, College of Engineering, Distinguished Engineering Alumnus Award, 1998
University of New Orleans, Center for Transportation Automation and Research, Director of Automation and Identification Technologies (1998 – present)
UNO College of Engineering Distinguished Teaching Award - Adjunct Faculty, 1998-1999
Louisiana Technology Council, eWard –Outstanding Application of Technology – Region 1 Interoperable Communications Network Project – 2008
UNO College of Engineering – Outstanding Project of the Year - Region 1 Interoperable Communications Network Project – 2008
John Noll Crisp Award for Engineering Technical Excellence 2008
Dallas -Fort Worth International Airport – Passenger Amenities Outstanding Corporate Partner Employee of the Year 2010
2015 James M. Todd Technological Accomplishment Award from the Louisiana Engineering Society
Promoted to status of Fellow in the American College of Forensic Examiners Institute, 2007

RECENT PROJECT DESCRIPTIONS (AVAILABLE SEPARATELY)

M S BENBOW & ASSOCIATES
CONSULTING ENGINEERS

Ronald J. Ledet, P.E.

Manager, Instrumentation and Control Systems

OVERVIEW

Ronald J. Ledet, P.E. is a Senior Control Systems Engineer with more than 30 years of experience in a variety of technical fields, including Research and Development, Embedded Control Systems, Software Development, Real-Time Control Systems, and Airborne Video Broadcast. His background includes Consulting, Project Management, and Technical Oversight for product development and execution of large-scale projects. Market segments include petrochemical, process/refining, municipal power generation, flood control, and law enforcement. Mr. Ledet is a Registered Professional Engineer in Electrical and Computer Engineering, as well as Control Systems Engineering.

QUALIFICATIONS

32 years in Electrical Engineering
Management and Engineering of Large-Scale Computer-based Control System Projects
Management and Engineering of Process/Refining Upgrade and Retrofit Projects
Significant Experience in the Design of Fault Tolerant and Redundant Control Systems
Significant Construction Management Experience in Petrochemical and Process/Refining Market Segments

AREAS OF EXPERTISE

- Cost Estimating and FEED
- Programmable Logic Controllers
- Distributed Control Systems
- Human Machine Interface
- Rotating Machinery Control
- Control System Software Development
- Safety Instrumented Systems
- Control System Upgrades / Retrofits
- Fault Tolerant and TMR Control Systems
- Fault Tree Analysis
- Modbus TCP/IP Communications
- Wireless Tank Gauging Systems and Level Measurement
- 800 MHz Radio Systems
- Microwave Broadcast Systems and Airborne Communications

M S BENBOW & ASSOCIATES
CONSULTING ENGINEERS

PROJECT EXPERIENCE

Liquid Propane Gas Railcar Offloading Control System

Responsible for the grass roots design and implementation of an LPG by Rail Offloading control and protection system for a major petrochemical plant in Chalmette, LA. System consisted of a Triple Modular Redundant Control System, Local and Remote IO, Fiber Network Connectivity, DCS Interface, and HMI System. Project was executed in FEED and Detailed Design Phases, in addition to Startup and Commissioning.

- Cost Control and Project Management.
- Developed +/-10% Total Installed Cost Estimate as part of the FEED phase of the project.
- Developed documentation for the design and implementation of the control system:
  - Functional Description Document with Advanced Control Algorithms
  - Cause and Effect Matrices
- Developed Factory Acceptance Test (FAT) and Site Acceptance Test (SAT) Procedures
- Coordinated and executed FAT, SAT, and Startup/Commissioning activities.

Fault Tolerant PLC Replacement Project for Multiple Process Units

Responsible for the replacement of several old, obsolete PLC-based control systems with new Fault Tolerant TMR PLC-based control systems.

- Cost Control and Project Management.
- Developed +/-10% Total Installed Cost Estimate as part of the FEED phase of the project.
- Developed documentation for the design and implementation of the control system:
  - Functional Description Document with Advanced Control Algorithms
  - Cause and Effect Matrices
- Developed Factory Acceptance Test (FAT) and Site Acceptance Test (SAT) Procedures
- Coordinated and executed FAT, SAT, and Startup/Commissioning activities.

Natural Gas Processing Plant Control Room Relocation Project

Responsible for the project management and engineering for the relocation of a NG processing plant control room outside of a potential blast zone. Project responsibilities included the following:

- Engineering to remove utility power and place new control room on the plant power grid.
- Construction management and technical coordination of all field installation activities and buildout of new control room and associated offices.
- Engineering to relocate all Honeywell Consoles and connect to new fiber network while avoiding a plant outage.

M S BENBOW & ASSOCIATES
CONSULTING ENGINEERS

SOFTWARE

- C and C++ Programming Language (Embedded Control Systems)
- IEC 61131 Programming
- WonderWare HMI Configuration
- Various PLC Programming Development Tool Kits

EDUCATION

- Purdue University – Master of Science in Electrical Engineering
  - Area of Concentration – Control Systems
  - National Science Foundation Grant Recipient
- University of New Orleans – Bachelor of Science in Electrical Engineering

PROFESSIONAL REGISTRATIONS

- Registered Professional Engineer in Electrical Engineering, State of Louisiana, #25897
- Registered Professional Engineer in Control Systems Engineering, State of Louisiana, #25897

PROFESSIONAL ASSOCIATIONS

- Institute of Electrical and Electronics Engineers (IEEE)
- International Society of Automation (ISA)

M S BENBOW & ASSOCIATES
CONSULTING ENGINEERS

Michael D. Ward

OVERVIEW

Michael Ward, has worked in the Telecommunications & Security Industry for over 30 years. As a technician, job foreman, field supervisor, operations manager, project manager, estimator & designer. Michael has worked in diverse industries including large multi-story construction projects, private industry, government industry, refineries, petrochemical plants, hospitals, convention centers, and hospitality venues.

QUALIFICATIONS

30 years in the Telecommunications & Security Industry

Design & Management of small to large scale telecommunications projects

Design & Management of small to large scale security projects

AREAS OF EXPERTISE

- Access Control Systems
- CCTV Systems
- AV Systems / Sound Masking
- PAGA Systems
- RFID Systems
- Networking
- Structured Cabling
- Fiber Optic Cabling
- Outside Plant System
- Physical Security

M S BENBOW & ASSOCIATES
CONSULTING ENGINEERS

PROJECT EXPERIENCE

Loews Hotel – New Orleans

- Design & estimated the conversion of existing office building into a 21 story hotel with horizontal Cat 6 & Coax infrastructure, copper and fiber-optic backbone for voice, data, wireless access points, cameras & AV systems.
- Managed the installation of all systems, managed budgets & maintained project schedule.

Harrah's Casino and Hotel –New Orleans

- Managed the design & estimating of a casino and twenty five-story hotel with horizontal Cat 6 infrastructure, copper and fiber-optic for voice, data, wireless access points, & cameras systems.
- Managed overall project from an operations position & directly managed the installation of security cameras & related systems.

New Orleans Fairgrounds & Casino

- Designed one of the first all IP security systems, including CCTV, Access Control & Intrusion, within a Casino or Gaming environment.

Chevron PMF – Gray La

- Managed the design & installation in Chevron's industrial maintenance facility for horizontal Cat 6 infrastructure, copper and fiber-optic backbones for voice, data, wireless access points, cameras systems, sound masking & paging systems.
- Directly managed the installation of all cable, sound & security systems. Managed budget & installation schedule.

CSC Delivery Center – Bossier City, La

- Managed the design assist efforts for this Data Center & Flex Space in a SCIF environment for CSRA. Systems included horizontal Cat 6A infrastructure, copper and fiber-optic backbones for voice, data, wireless access points, cameras & access control systems.
- Directly managed the installation of all cable, design documents & as-built drawings. Managed budgets & installation schedule.

M S BENBOW & ASSOCIATES
CONSULTING ENGINEERS

Tulane University – New Orleans

- Managed the design, installation & service at Tulane's Uptown, Downtown & Research Facilities. Michael has partnered with Tulane for over 25yrs in the maintenance of their IT infrastructure & plays a key role in maintaining their OSP fiber & copper backbone. This includes the design of new installations & keeping as-built records of their current infrastructure.
- Manages the installation of all new security cameras on the uptown & downtown campus as well as access control systems in their downtown facilities.

Textron Marine & Land – New Orleans

- Managed the design, installation & service at Textron's New Orleans & Slidell Facilities. This includes the maintenance of their IT infrastructure, maintaining their OSP fiber & copper backbone. This includes the design of new installations & keeping as-built records of their current infrastructure.
- Manages the installation of all cabling, security cameras, RFID systems & access control systems in all facilities.

EDUCATION

- University of New Orleans
- Grace King High School

Training

- Corning Cable Systems
- Systimax / Commscope / Uniprise
- Belden
- Panduit
- Hubbell
- Bosch Security Systems
- Milestone
- Avigilon Security
- Bogen Communications
- Valcom
- Cambridge
- Aiphone
- Talk-A-Phone
- Autodesk
- Visio
- Microsoft Project
- Primavera

M S BENBOW & ASSOCIATES
CONSULTING ENGINEERS

Kenneth M. Wright, PE

OVERVIEW

Ken Wright, P.E., is Senior Telecommunications Engineer for M S Benbow and Associates, a professional consulting engineering corporation in Metairie, Louisiana. Ken has over 20 years' experience both as senior consultant and in operations, engineering and executive management capacities for a telecommunications carrier specializing in Cellular, Satellite and other wireless technologies. Ken has worked in diverse industries including domestic and international oil & gas, private industry, public safety, refineries, petrochemical plants, mining, hospitals, convention centers, and hospitality venues. He is a Registered Professional Engineer in Electrical Engineering

QUALIFICATIONS

20 years in Electrical Engineering

Management of large-scale DAS, Wi-Fi, and Radio System Engineering projects

Extensive budget and schedule development, vendor negotiations, technical support

AREAS OF EXPERTISE

- Satellite Communications
- Fixed and Stabilized VSAT Terminals
- Indoor/Outdoor Wi-Fi Networks
- Microwave Networks
- Subsea Fiber Optic Systems
- Cellular (GSM, CDMA, LTE)
- Two-Way Radio and Trunking Radio Systems
- 800 MHz Rebanding
- Structured Cabling Systems
- CCTV, TVRO, Cable TV Headend and Transmission System Design
- FCC Narrowbanding
- Radio System Engineering
- Fiber Optic Networks
- FAA/FCC Antenna Site Registration
- Voice Over IP
- Tower Specifications & Structural Analysis
- Terrestrial Connectivity

M S BENBOW & ASSOCIATES
CONSULTING ENGINEERS

PROJECT EXPERIENCE

Mercedes Benz Superdome/New Orleans Arena DAS Installation

MSB was the engineering and project management firm responsible for design and execution of a multi-million dollar open-architecture 4G LTE DAS network providing coverage to the 13-acre Mercedes Benz Superdome and New Orleans Arena sports entertainment complex in advance of Super Bowl XLVII. The system was designed to support the wireless needs of more than 100,000 fans simultaneously.

- Provided project management, and vendor and cellular carrier contract negotiations for development of neutral-host DAS system capable of supporting seamless wireless voice, data, and text services.
- Oversaw evaluation of DAS infrastructure and RF engineering plan review and spec development.
- Provide ongoing operational management and support of the system to maintain robust service.

Dallas Fort Worth International Airport DAS Installation

MSB was the engineering firm contracted to design and deploy the first commercially available 700 MHz LTE services and RF services supporting the 26-million-square-foot Dallas Fort Worth Airport campus. System consists or over 320 remotes, 1,920 antennas, 10 miles of high-density fiber cable, 25 miles of composite fiber cable and remote monitoring and alarm system.

- Designed and managed installation of upgrades to enhance service to five terminals, parking garages and adjacent Hyatt Hotel.
- Managed FAA permitting, asbestos testing, security testing, and badging requirements.
- Provide ongoing network maintenance, support, and expansion.

Hospital Narrowband Signal Booster with DAS

Oversaw design and installation of a dedicated Public Safety Radio Communications System that provides public safety coverage throughout all areas of four-story hospital, including elevators, stairwells, and units with sensitive equipment.

- As project manager, Ken oversaw network implementation over a two-month period to accommodate the hospital's 24/7 schedule, including coordinating department down time and adjusting to hospital capacity.
- MSB provided spectrum analysis and coordination, system design and engineering, and development of detailed scope of work.
- Designed and installed a 700/800 MHz in-building DAS system to ensure reliable, seamless service to outside RF Network.

M S BENBOW & ASSOCIATES
CONSULTING ENGINEERS

SOFTWARE

- Optical and RF Link Budget
- RF
- Microsoft Office, Viso, Project
- Database Development and Management

EDUCATION

University of New Orleans – Bachelor's of Science Engineering
University of New Orleans – Master of Business Administration

PROFESSIONAL ASSOCIATIONS

- Professional Engineer in Electrical Engineering, State of Louisiana
- Institute of Electrical and Electronics Engineers
- Board Member, University of New Orleans College of Electrical Engineering
- Member, Louisiana Technology Council