Advanced Metering Infrastructure (AMI) Program Update

‘The Digital Foundation to Enhance the Customer Experience’

Public Utility Board
Study Session
January 23, 2019
1. Introduction
2. AMI Contract Framework
   1. Master Supplier Business and Services Agreement (MSA)
   2. Statements of Work (SOW)
3. AMI Contract Update
4. Meter Safety Review
5. Wrap Up
About the Master Supplier Agreement

What it is
- A relationship and compliance agreement
- A risk mitigation instrument
- Supports technology requirements
- Streamline negotiations
- Consistent terms across Suppliers

What it is not
- A spending/purchasing agreement
- An open-ended alternative to solicitation and Purchasing Policy requirements
- A cooperative or interlocal agreement
- A construction or public works contract
Master Supplier Agreement Model

Model

- Amendment
  - Amendment #ABC-1

Master Business and Services Agreement
- Contract #ABC

Attributes

- Perpetual/evergreen
- 3/5 year review
- One per supplier
- Highest level terms
- No budget
- No pricing

Statement of Work (SOW)

- Contains project Scope
- Contains budget
- Contains pricing, payment, schedule & terms
- Limited in time
- Under RFP/Quote/memo requirements
- Under Procurement & Signature policy
- Cooperative/Interlocal applied

Master Agreement

- Contains project Scope
- Contains budget
- Contains pricing, payment, schedule & terms
- Limited in time
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- Cooperative/Interlocal applied

Software End User License Agreement

Cooperative or Interlocal Agreement

SOW
- SOW #ABC-SOWs
Benefits

• Master terms are in place prior to any proposed work
• Strong language protections that do not change
  ‒ Indemnity
  ‒ Limitation of Liability
  ‒ Insurance
  ‒ Cloud Services
• Critical compliance language included upfront
  ‒ CIP - Data Protection - Cybersecurity
  ‒ Personally Identifiable Information (PII)
• Standardization of Supplier terms and conditions across City
• Relieve Project Lead responsibilities for Legal contract negotiations (Project Lead focus on SOW/Project deliverable terms only)
• Effectively addresses contract risk
• Ease legal and project lead’s burden for contract development
• Save resource time and costs (legal, business, supplier)
Benefits

Reduce the time to negotiate supplier contracts
  • Reduce Legal review time
  • Reduce Project Lead contract negotiations to SOWs only

Effectively address contract risk
  • Establish supplier accountabilities for their work/product
  • Fair/consistent indemnity, protections, guarantees, security, controls, and compliance

Effectively address compliance
  • Supplier conduct
  • CIP, City Policies, Laws, etc.
  • Data protection and cybersecurity requirements
Solution Providers
AMI meter & network vendor

- Power & Water Meters
- AMI Base Station(s)
- AMI head-end system
  - Power & Water Meter Supplier
  - Meter Communication Network Infrastructure
  - Head-end System (HES) data collector
  - Sandbox Deployment

SAP
Customer Information System

Integration

OMNITRACK
A Siemens Company
Meter Data Mgmt. System
## Sensus contract

<table>
<thead>
<tr>
<th>Contract Component</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Service Agreement (MSA)</td>
<td>General Terms and Conditions</td>
<td>NA</td>
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<tr>
<td>Sandbox Statement of Work</td>
<td>Implementation of a test/non production environment</td>
<td>$185,000</td>
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<tr>
<td>Hardware Statement of Work</td>
<td>Meter and network infrastructure</td>
<td>$33,000,000</td>
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<tr>
<td>Implementation Statement of Work</td>
<td>Professional services for implementing the AMI system</td>
<td>$642,500</td>
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<td>Software as a Service (Saas) Statement of Work</td>
<td>Network and system management</td>
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<td>Spectrum SOW</td>
<td>Network licensing agreement</td>
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<td><strong>Total Contract Value</strong></td>
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<td><strong>$35,153,500</strong></td>
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Sensus contract:
Hardware SOW

- **Power Hardware**
  - Approximately 180,000 electric meters

- **Water Hardware**
  - Approximately 110,000 water meters

- **Networking Devices**
  - Approximately 120 network devices
Sensus contract:

Implementation SOW

- **Implementation Statement of Work**
  - Project Management
  - Business and Technical Requirements Documentation
  - Field Network Design
  - Field Network Deployment Support
  - First Article Testing
  - Endpoint Installation
  - Network Planning

- Security Planning
- Design/Setup of Data Center
- Remote Network Infrastructure (RNI) Deployment
- Network Coverage Guarantees (100% coverage)
- System Acceptance Testing
- RNI Integration and Configuration Assistance
- Acceptance Testing
- Operations System Familiarization
Software as a Service (SaaS) SOW - $1,326,000

- Description of services
  - Regional Network Interface software
  - Automation Control

- Use of SaaS

- Supplier provided
  - Required hardware
  - Production and disaster recovery environments
  - Patches, updates, and upgrades
  - Configuration and management of equipment (server hardware, routers, switches, firewalls in data centers)

- Capacity and performance management
- Database management
- Incident and problem management
- Security Management (24x7x365) – NIST Security Standards
Meter Data Management System

Power & Water Meters

- System of record for meter data
- Collects and converts raw meter data into meaningful information of other systems
- Collects, processes, sends billing determinants
- Collects and analyzes meter events and alarms.
- Synchronizes with SAP and maintains synchronization of AMI
### Omne metric contract

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<td>Professional Service Agreement</td>
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<td>Software License</td>
<td>MDMS Licenses</td>
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<td><strong>Total Contract Value</strong></td>
<td><strong>$1,308,934</strong></td>
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Omnetric review

**Implementation SOW**
- Delivery and tested EnergyIP
- AMI Data Storage
- Meter Usage Data Repository
- Real-time data processing
- Data synchronization engine
- Service Requests
- Real-time validation, estimation and editing (VEE)
- System Administration console
- Operational dashboard
- BIRT Reporting Framework
- Device Tracking
- AMI System Monitoring
- AMI Exception Handling
- Event Notification Services
- Sensus RNI AMI Integration Adapter
- Register Billing Application
- Interval Billing Application
- On Demand Read
- Remote Connect/Disconnect Application
System Integration

Power & Water Meters → AMI Base Station(s) → AMI head-end system → Meter Data Management System

SAP

Customer Information System

OMNETRIC

A Siemens Company

Meter Data Management System
## Utegration contract

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<td>Master Service Agreement</td>
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<td>Implementation Statement of Work</td>
<td>Integration services</td>
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<td><strong>Total Contract Value</strong></td>
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<td><strong>$3,885,804</strong></td>
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Utegration review

- Implementation SOW
  - System configuration
    - Sandbox
    - Blueprinting
    - AMI System
  - Integration services
    - Project Management
    - Subject Matter experts for:
      - Architecture
      - Configuration
      - Functionality
      - Application Programming Interface (API)
  - Testing services
    - Correct all defects and deficiencies
RF Emissions

- The output of a Sensus water SmartPoint is about 660 times lower than the average use of a cell phone and the output of a Sensus electric SmartPoint is about 220 times lower than the average use of a cell phone.

- The output of a Sensus electric meter is about twelve times lower than a mesh electric meter.

- The SmartPoint is typically mounted away from human contact such as near the meter in a basement, outside on the wall of the house or in a pit outside the house. The field strength only 10 feet away from the SmartPoint will be reduced by a factor of 1000 or more.

- We can conclude then that the total energy presented to humans by this system is at least 50,000 times less than today’s cell phone.

- The Sensus Water and Electric meters produce approximately 12 times less than the Mesh Electric Meter.
Hot socket & Overvoltage Protection

- The Sensus electric meter has two temperature sensors within the meter module that provide alarms when an overheat situation is occurring.
  - Sensus is the only meter manufacturer that provides two temperature sensors.
  - The high temperature alarms are configurable which will allow Tacoma Public Utilities to set custom alarm points.

- The Sensus meter includes an automatic disconnect within the meter which disconnects the meter in emergency high temperature events
  - Sensus is the only meter manufacturer that provides this additional safety feature

- Sensus performs rigorous testing procedures to simulate lightning strikes, surges, and overvoltage scenarios to ensure a safe meter failure process
Questions