# MEPNN Supplier Scouting Opportunity Synopsis

## **Section 1:** General Information

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| Scouting Number | 2026-160 |
| Item to be Scouted | BABA: Control System |
| Days to be scouted | 14 |
| Response Due By | 05/13/2026 |
| Description | A Door Entry Access Control System is a security and communication solution that manages who can enter a building, how they authenticate, and how the system logs and controls access. Think of it as the coordinated brain and |

## **Section 2:** Technical Information

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| Type of supplier being sought | Manufacturer<br>Minnesota |
| Reason | BABA |

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| Describe the manufacturing processes (elaborate to provide as much detail as possible) | 1-Fabricate the Enclosure and Faceplate<br>The enclosure protects electronics and defines the system's durability and weather resistance.<br>-Cut and form stainless steel, aluminum, or polycarbonate panels<br>-Machine openings for keypad, camera, speaker, mic, and display<br>-Apply surface finishing (powder coat, brushing, anodizing)<br>-Add gaskets and seals for IP-rated weatherproofing<br><br>2-Manufacture the Main PCB<br>The PCB hosts the controller, communication circuits, and power regulation.<br>-Fabricate FR-4 PCB with copper traces and solder mask<br>-Place components: MCU, memory, relays, regulators, surge protection<br>-Use SMT reflow for small components and wave soldering for connectors<br>-Perform AOI (Automated Optical Inspection)<br><br>3-Assemble Communication Modules<br>Communication hardware enables calling, networking, or remote unlocking.<br>-Install POTS, Ethernet/IP, or cellular LTE modules<br>-Add antennas (chip, PCB, or external)<br>-Integrate RJ45, SIM tray, or terminal blocks<br>-Test signal integrity and isolation<br><br>4-Build the User Interface Components<br>Keypads, displays, and audio hardware form the user-facing interface.<br>-Assemble keypad (metal keys or membrane)<br>-Install speaker, microphone, and acoustic chamber<br>-Mount LCD/OLED display or directory panel<br>-Add LED indicators and backlighting<br><br>5-Integrate Power Supply and Protection<br>Power circuitry ensures stable operation and protects against surges.<br>-Install AC/DC converter or DC input stage<br>-Add voltage regulators (12V, 5V, 3.3V)<br>-Integrate MOVs, TVS diodes, fuses, and lightning protection<br>-Add optional backup battery and charging circuit<br><br>6-Final Mechanical Assembly<br>Electronics and enclosure are combined into a complete unit.<br>-Mount PCB inside enclosure with standoffs<br>-Install keypad, camera, speaker, and display modules<br>-Route wiring harnesses and secure with strain reliefs<br>-Add tamper switches and close housing<br><br>7-Load Firmware and Configure System<br>Firmware enables access logic, communication, and security functions.<br>-Flash controller firmware and bootloader<br>-Load directory, access rules, and default settings<br>-Configure network, cellular, or telephony parameters<br>-Run self-test routines<br><br>8-Perform Functional and Compliance Testing<br>Testing ensures reliability, safety, and regulatory compliance.<br>-Test keypad, audio, video, relays, and communication<br>-Perform environmental tests (temperature, humidity)<br>-Conduct EMI/FCC/CE compliance checks<br>-Verify surge and ESD protection<br><br>9-Package and Prepare for Shipment<br>Proper packaging protects the system during transport and installation.<br>-Wrap unit in ESD bag and add desiccant<br>-Use foam inserts and double-wall box<br>-Include manuals, wiring diagrams, mounting template<br>-Apply labels: model, serial, certifications |

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| Provide dimensions / size / tolerances / performance specifications for the item | Typical Door Access for a three-story Multifamily Apartment project. Please respond with all available options. |
| List required materials needed to make the product, including materials of product components | 1. Entry device hardware (door/gate panel)<br>Faceplate & housing:<br>Materials: Stainless steel, aluminum, or UV-stable polycarbonate/ABS<br>Keypad:<br>Materials: Metal or polycarbonate keys, silicone rubber membrane, PCB with dome/tact switches<br>Card/fob reader:<br>Materials: RFID/NFC reader module, plastic reader housing, epoxy potting (optional)<br>Speaker & microphone:<br>Weather-resistant speaker, electret or MEMS microphone, protective mesh<br>Display / indicators:<br>LEDs, light pipes, small LCD/OLED/TFT, polycarbonate window<br><br>2. Control & logic electronics<br>Main PCB:<br>FR-4 board, copper traces, solder mask, silkscreen<br>Microcontroller / processor<br>Memory:<br>Flash, EEPROM for users, schedules, logs<br>I/O & interface components:<br>Optocouplers, level shifters, GPIO expanders, RS-485/RS-232/Ethernet transceivers<br>Relays / SSRs:<br>For door strikes, maglocks, gate operators<br>Input protection:<br>TVS diodes, fuses, resistors, transient protection on reader and door lines<br><br>3. Credential & reader interfaces<br>RFID/NFC modules:<br>125 kHz, 13.56 MHz, or secure smartcard readers<br>Biometric modules (if used):<br>Fingerprint sensor, camera module, or face recognition module<br>Keypad electronics:<br>Matrix keypad PCB, backlight LEDs<br><br>4. Communication modules<br>Network / IP:<br>Ethernet PHY, RJ45 with magnetics, Wi-Fi module, antennas<br>Bus interfaces:<br>Wiegand, OSDP (RS-485), CAN (if integrated)<br>Cloud/remote options:<br>Cellular LTE module, SIM holder, antenna (if remote connectivity is built-in)<br><br>5. Power supply & backup<br>AC/DC or DC/DC supply:<br>Transformer or SMPS, rectifier, filter capacitors, buck/linear regulators<br>Voltage rails:<br>12 V, 5 V, 3.3 V as required<br>Backup power (optional):<br>Small SLA or Li-ion pack, charge controller, protection ICs<br>Surge & lightning protection:<br>MOVs, gas discharge tubes, TVS diodes on power and long cable runs<br><br>6. Enclosure & mechanical components<br>Main enclosure / back box:<br>Stainless steel, aluminum, or powder-coated steel; sometimes vandal-resistant cast housing<br>Gaskets & seals:<br>EPDM or silicone for weather and dust protection<br>Mounting hardware:<br>Screws, wall anchors, brackets, tamper-resistant fasteners |

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| | Tamper detection:<br>Microswitches or magnetic sensors for door-open / cover-open detection<br><br>7. Security & door hardware interfaces<br>Terminal blocks / connectors:<br>For door strikes, maglocks, REX (request-to-exit), door contacts, readers<br>Door hardware (external, but interfaced):<br>Electric strikes, maglocks, gate operators (not always supplied with controller) |
| Are there applicable certification requirements? | No |
| Are there applicable regulations? | No |
| Are there any other stndards, requirements, etc.? | No |
| Additional Technical Comments | This is for a three story 48 Unit Multifamily apartment over a one-story parking garage. |

## **Section 4:** Business Information

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| Estimated potential business volume | 1 provide at Main Entry. |
| Estimated target price / unit cost information (if unavailable explain) | $700 |
| When is it needed by? | July 2027 |
| Describe packaging requirements | A door entry access control system requires packaging that protects sensitive electronics, prevents corrosion, supports regulatory compliance, and survives shipping impacts. Video units and large metal housings need heavier-duty packaging, while keypad-only units can use lighter materials. |
| Where will this item be shipped? | Blaine Minnesota |

## Additional Comments

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| Is there other information you would like to include? | |