ELECTRIC TRACTION ELEVATOR SPECIFICATIONS

- Section includes modernization of traction elevators as follows:
  - # of gearless or geared passenger elevator(s), Elevators #'s:
  - # of gearless or geared service elevator(s), Elevator #'s:
  - # of gearless or geared or freight elevator(s), Elevator #'s:

A. Subject to compliance with the requirements of the contract, provide products by one or more of the following Principal Manufacturers. Where specific product models are referenced, the standard components are approved:

1. Controllers:
   a. GAL Galaxy
   b. Elevator Controls
2. Motor Drives
   a. KEB
   b. Magnetek
3. Freight Vertical Bi-Parting Door:
   a. Courion
4. Passenger Elevator Door Equipment (Operators, Tracks, Hangers, and Closers):
   a. GAL
5. Elevator Car Enclosures:
   a. Quick Cab
6. Hoist Machines:
   a. Hollister Whitney.
7. Rope Brakes:
   a. Hollister Whitney
8. Governors:
   a. Hollister Whitney
9. Slings & Platforms
   a. Hollister Whitney
10. Safeties
    a. Hollister Whitney
11. Two-Way Communication Device
    a. ????

B. Passenger Door Operation:
   1. Automatically open doors when car arrives at a floor.
   2. Stop and reopen doors or hold doors in open position upon activation of “door open” button.
   3. At expiration of normal dwell time, or upon activation of “door close” button, close doors:
      a. Prevent doors from closing and reverse doors at normal opening speed if door reopening device beams are obstructed while doors are closing, except during nudging operation.
      b. In the event of door reopening device failure, provide for automatic shutdown of car at floor level with doors open.
      c. Close cycle does not begin upon activation of “door close” button until normal door dwell time for a car or hall call has expired, except firefighters’ operation.
   4. Nudging Operation:
      a. After beams of door reopening device are obstructed for a predetermined time interval (minimum 20.0-25.0 seconds), sound warning signal, and attempt to close doors with maximum of 2.5 foot-pounds kinetic energy.
      b. The activation of the door open button overrides nudging operation and reopens doors.
   5. Interrupted Beam Time:
      a. When beams are interrupted during initial door opening, hold door open a minimum of 3.0 seconds.
      b. When beams are interrupted after the initial 3.0 second hold open time, reduce time doors remain open to an adjustable time of approximately 1.0-1.5 seconds after beams are reestablished.
   6. Differential Door Time:
      a. Field adjustable time that doors remain open after stopping in response to calls.
      b. Car Call: Hold open time adjustable between 3.0 and 5.0 seconds.
      c. Hall Call:
         1) Hold open time adjustable between 5.0 and 8.0 seconds.
         2) Use hall call time when car responds to coincidental calls.
      d. Reopen doors when car is designated for loading.
      e. Car(s)..... Provide front or rear selective door operation.

C. Bi-Parting Freight Doors and Gates – Power Operated Freight Door and Gate:
   1. Door operation at landing initiated by operation of elevator call button for that floor.
   2. Obstruction of door reopening device beams during gate closing immediately stops and re-opens car gate and freight door.
   3. Door reopening device detects objects:
      a. Immediately adjacent to landing and car sides of door.
      b. Within path of door.
      c. Objects on the floor in the path of the door.
      d. Straddling bi-parting door.
   4. Adjustable timer holds doors open to 300 seconds.
   5. Door closing initiated upon:
      a. expiration of a timer.
      b. activation of door close button.
      c. activation of a floor button within car.

6. Synchronize door and gate operators as follows:
    a. Door and gate accelerate and decelerate smoothly.
    b. Car gate closes completely before the hoistway doors begin to close.
    c. Car gate does not open until hoistway doors are completely open.
7. Provide automatic closing of car doors after dwell time expires.
    a. A loud audible signal and highly visible signal actuates not less than 5.0 seconds prior to initiation of door sequence.
    b. Dwell time is easily adjustable between 20.0 and 300.0 second.
    c. Pressing the Door Close button cancels dwell time.
    d. Pressing the Door Open button restarts dwell time.
    e. Dwell time is set at 60.0 seconds.
8. Open door and gate automatically when car arrives at a floor.
9. Provide passenger sequence operation:
    a. After an adjustable time between, 30 to 300 seconds, provide audible and visible warning signal and automatically close door and gate.
    b. Provide dual reversing safety device for car gates.

D. Freight Manual Door Operation: Operator to open or close doors and car gate at floor when car is stopped in leveling zone.
1. Independent Service:
    a. When feature is activated from within the car allow control of car only from buttons and controls inside the car.
    b. Close doors by constant pressure on desired destination floor button or door close button.
2. Load Weighing:
    a. Provide cars with adjustable cable tension monitoring load weighing device.
    b. Devices are to be self-calibrating for the time-dependent effects of compression in any resilient materials in the assemblies, transducers, etc.
    c. Provide dispatching at main floor in advance of normal intervals when car fills to capacity.
    d. Provide hall call by-pass when car is filled to a field adjustable (10%-100%) range of percentage of rated capacity and traveling in down direction.
    e. Activate <>audible<>voice message and visual overload signaling device inside elevator cab activated when load weighing device senses carload has reached or exceeded a pre-determined percentage of capacity.
    f. Elevator does not close doors or run when Overload signaling device is active.

E. Single Automatic Operation, Freight Elevator(s) only
1. Operate car without attendant from pushbuttons in car and at each landing. When car is idle, automatically start car, and dispatch it to appropriate floor when call is registered by pressing car or hall pushbutton.
2. Illuminate, “in use” lights in each hall pushbutton station when car is responding to registered car or hall call. Prevent registration of another call until trip is complete including time for passenger transfer and registration of car call if car is responding to a hall call. Extinguish “in use” light to indicate system is available to respond to next call.

F. Selective Collective Operation – Single Car, Elevator #’s:
1. Elevators operate via momentary pressure buttons to:
    a. Place hall call by selecting direction of travel at each hall landing (up and down buttons at each intermediate landing, single buttons at each terminal landing).

b. Place car call by selecting destination floor from inside the car (individual buttons for each floor served).

2. Hall calls, other than calls placed at the landing at which car is standing, start car, and cause the car to stop at first landing for which a call is registered in the direction of travel.
3. Stops are made in order in which landings are reached, irrespective of the sequence in which calls are registered.
4. Parked Car (No Demand):
   a. When the feature is enabled, the elevator remains at landing of last assignment (if no further demand) with doors closed, for a predetermined amount of time (programmable for any amount of time). Upon expiration of time, the elevator returns to the main egress landing with the doors closed.
   b. If feature is disabled, if no further demand, the elevator remains at landing of last assignment with the doors closed until a hall call is registered.
5. Car and Hall Lanterns:
   a. Lanterns provide audio and visual signal upon each stop, regardless of responding to car or hall call.
   b. Visual signal remains active from commencement of door opening until doors are completely closed.

G. Selective Collective Operation – Two-Car Group, Elevator #'s:
1. Elevators operate via momentary pressure buttons to:
   a. place hall call by selecting direction of travel at each hall landing (up and down buttons at each intermediate landing, single buttons at each terminal landing).
   b. place car call by selecting destination floor from inside the car (individual buttons for each floor served).
2. Hall calls, other than calls placed at the landing at which car is standing, start car and cause the car to stop at first landing for which a call is registered in the direction of travel.
3. Car calls cause the car to stop at the floors registered in the order the car arrives at each selected floor in its current direction of travel.
4. Free Car:
   a. When there are no calls in the system, one car is automatically dispatched to the elevator discharge level (home car), park other car(s) (free car) at its last stop above elevator discharge level.
   b. An idle free car answers call above or below it, except calls at main or Basement landings (where applicable).
   c. When free car travels to main landing in response to a car call, it becomes home car and former home car travels to a middle floor above main landing and becomes the free car.
   d. When free car is responding to calls, home car shall respond to the following:
      1) Up calls below UP traveling free car.
      2) All Up and Down calls behind DOWN traveling free car.
      3) Any hall calls registered when free car is delayed in its normal operation for a predetermined period.
   e. When both cars are responding to registered car and hall calls, the first car to complete its calls becomes the assigned home car and is dispatched automatically to the Main Landing.
   f. Only one car responds to each hall call.
5. If either car is removed from service, the other car responds to all registered hall calls and

its own car calls.

6. Car and Hall Lanterns:
    a. Lanterns provide audio and visual signal upon each stop, regardless of responding to car or hall call.
    b. Visual signal remains active from commencement of door opening until doors are completely closed.

H. Group Operation – Two-Button, Elevator #'s:
1. Elevators operate via momentary pressure buttons to
    a. place hall call by selecting direction of travel at each hall landing (up and down buttons at each intermediate landing, single buttons at each terminal landing).
    b. place car call by selecting destination floor from inside the car (individual buttons for each floor served).
2. Operate cars as a group, capable of balancing service and providing continuity of group operation with one or more cars removed from the system.
3. Group control and supervisory system determines traffic levels and peak traffic conditions by continuously monitoring:
    a. Quantity, location, and duration of hall calls.
    b. Weight of current load in the elevator.
    c. Anticipated time to respond to previously assigned car and hall calls.
    d. Car speed and direction of travel.
4. Car assignments in response to hall calls are reviewed a minimum of ten times per second and revised while cars in the group are stationary or in motion to achieve the shortest possible:
    a. Estimated time for a car to arrive at a floor in response to hall calls.
    b. Estimated transit time for passengers inside each car in the group.
5. During peak traffic conditions priority is given to minimizing car arrival time in response to hall calls in the following order of priority:
    a. Main Landing Demands (of any type or duration).
    b. Long wait Down calls.
    c. Long wait Up calls.
    d. Up calls.
    e. Long wait calls are those that have been registered for over thirty seconds.
    f. Dynamic assignment of cars to serve specific floor zones is allowed to achieve required performance.
6. Car and Hall Lanterns:
    a. Lanterns provide audio and visual signal upon each stop, regardless of responding to car or hall call.
    b. Visual signal remains active from commencement of door opening until doors are completely closed.
    c. Hall lantern visual signal activates as soon as a car is assigned to respond to a hall call and remains active until car doors are completely closed.

I. New Geared or Gearless Traction Hoist Machine:
1. Provide new geared or gearless machine based on capacity, speed and duty designed to operate within specified machine room temperature range.
2. Provide motor, brake, and demountable drive sheave mounted in proper alignment on a common isolated bedplate. Provide bedplate blocking to elevate secondary or deflector sheave above machine room floor.
    a. Motor:

1) AC Motor or AC induction or P.M.S.M. ACV³F gearless traction type motor
2) Machine or motor mounted direct drive, digital, closed-loop velocity encoder.

b. Electromechanical Brake:
1) Spring applied and electrically released.
2) Drum or disc type.
3) Spring applied and electrically released with removable manual brake release.
4) Brake shoes applied to the braking surface simultaneously and with equal pressure.
5) Adjusted to minimize noise during lifting and setting of brake shoes.
6) Prevent ascending car over-speed and unintended car movement via dual-redundant braking system.

c. Drive Sheave:
1) Machined with grooves, providing maximum traction with a minimum of cable and sheave wear.
2) Sealed bearings.

d. Deflector Sheave:
1) Machine bedplate mounted deflector sheave.
2) Machined grooves and sealed bearings.
3) Maintainable from inside machine room.

3. Installation includes:
a. Anti-friction bearings with easy access for lubrication.
b. Means to access and maintain secondary and deflector sheave from machine room.
c. Sheave guards to prevent ropes from leaving sheave grooves.
d. Sound isolation pads shall be installed to reduce vibration and noise transmission to the building structure.

J. Solid State Power Motor Drive and Regulation Unit:

I. All motor control for traction elevators will have digital, closed loop, drive with the following features:
a. The solid-state motor drive will operate with high efficiency and low power consumption and will have sufficient capacity to handle peak currents of elevator service.
b. The regulator and control sections will operate at low voltages and will be fully isolated from the motor control unit.
c. The solid-state motor drive unit will contain a coordinated fault protection system, which will:
i. Protect power semiconductors from failure under short circuit conditions.
ii. Protect against ground faults.
iii. Protect the drive motor against sustained overloads.
iv. Provide semiconductor transient protection.
v. Provide phase sequence protection.
d. The drive unit will be provided with all required transformers to completely isolate the unit and the hoist motor from the elevator power supply.
e. The elevator contractor will be fully responsible for properly

isolating any electrical interference with building systems.

f. The drive unit will be designed to permit maximum 8.0% total harmonic distortion, induced into the mainline feeders or the emergency power generator by a single drive.
g. Drive system shall be regenerative for all units.
h. The drive power factor shall be 0.9 or better.

K. Controller: UL/CSA labeled.

I. Compartment: Securely mount all assemblies, power supplies, chassis switches, relays, etc., on a substantial, self-supporting steel frame. Completely enclosed equipment with covers. Provide means to prevent overheating.
II. Relay Design: Magnet operated with contacts of design and material to insure maximum conductivity, long life, and reliable operation without overheating or excessive wear. Provide wiping action and means to prevent sticking due to fusion. Contacts carrying high inductive currents shall be provided with arc deflectors or suppressors.
III. Microprocessor-Related Hardware:
IV. Provide built-in noise suppression devices providing a high level of noise immunity on all solid-state hardware and devices.
V. Provide power supplies with noise suppression devices.
VI. Isolate inputs from external devices (such as pushbuttons) with opto-isolation modules.
VII. Design control circuits with one leg of power supply grounded.
VIII. Safety circuits are not to be affected by accidental grounding of any part of the system.
IX. System automatically restarts when power is restored.
X. System memory is retained in the event of power failure or disturbance.
XI. Equipment is provided with Electro Magnetic Interference (EMI) shielding within FCC guidelines.

i. Wiring: CSA labeled copper for factory wiring. Neatly route all wiring interconnections and securely attach wiring connections to studs or terminals.
ii. Permanently mark components (relays, fuses, PC boards, etc.) with symbols shown on wiring diagrams.

L. New Governor

I. Car: Centrifugal-type, car driven with pull-through jaws and bi-directional shutdown switches. Calibrated and tested with manufacturers' certification data plate as required by code. Provide required bracketing and supports for attachment to building structure.

II. Counterweight: Centrifugal-type, Counterweight driven with pull-through jaws and bi- directional shutdown switches. Calibrated and tested with manufacturers' certification data plate as required by code. Provide required bracketing and supports for attachment to building structure.

M. Emergency Brake:

I. Provide Rope Brake to prevent ascending car over-speed and unintended car movement. Installation and operation to comply with Code requirements.

II. Acceptable emergency brake devices:
    a. Hollister-Whitney rope gripper.
III. Mount the auxiliary brake on suitable structural steel supports in the machine room.
IV. Provide control circuits to enable the device to function as required by Code.

N. New Buffers:
I. Car: Oil or Spring type with blocking and support channels. Provide switch on buffer to limit car speed if buffer is compressed. Provide sign in pit indicating designed counterweight runby.
II. Counterweight: Oil or Spring type with blocking and support channels. <>Provide switch on buffer to limit car speed if buffer is compressed.
III. Acceptable buffer manufacturers:
    a. Hollister-Whitney.

O. New Deflector Sheaves, Secondary and Compensating: Machined grooves and sealed bearings. Provide mounting means to machine beams, machine bedplate, car and counterweight structural members, or building structure.
I. Acceptable sheave manufacturers:
    a. Hollister-Whitney.

P. New Counterweight Frame: Steel frame with metal weight sections.
I. Hold weight sections within frame with at least two tie rods passing through holes in all sections.
II. Equip rods with locknuts, secured by washers and cotter pins at each end keeping the weight sections in place and preventing rattling.
III. {If occupied space below pit} Provide Type B flexible guide safety for counterweight.
IV. Include integral 2:1 roping sheave for smooth and quiet operation with operating noise undetectable from inside any car or outside of the hoistway.
V. Acceptable counterweight frame manufacturers:
    a. Hollister-Whitney.

Q. Counterweight Guide Shoes:
I. Spring dampened roller guide shoes.
II. Swivel guide shoes with oilless inserts.
III. Freight Solid guides with oilless inserts.
IV. Acceptable guide shoe manufacturers:
    a. Hollister-Whitney.

R. Passenger Horizontal Sliding Hoistway Entrance Equipment:
I. Door Hanger: New Two-point hanger roller with neoprene roller surface and suspension with eccentric upthrust roller adjustment.
II. Door Hanger Rollers: Replace.
III. Door Track: Replace. Bar or formed, cold-drawn removable steel tracks with smooth roller contact surface.
IV. Door Interlocks: New Operable without retiring cam.
V. Door Closers: New Spring-activated spirator. Jamb/strut-mounted or counterweight type. Install and adjust to insure smooth, quiet mechanical close of doors.

S. New Hoistway Door Unlocking Device: Provide unlocking device including new escutcheon with locking escutcheon in door panel at all floors. <>Finish to match adjacent surface.

T. Freight vertical bi-parting - Hoistway Entrance Equipment:

I. Door Guide Tracks: New Continuous steel angles or formed steel tracks fastened to hoistway door jamb.

II. Door Guide Shoes: New Machined iron shoes. Four shoes per door panel, with not less than 2½" lateral contact per shoe.

III. Door Interlocks: Operable without retiring cam.

a. New Power Freight Door Operators:

IV. Power door operator for each entrance.

V. Provide means to open doors from inside of car in the event of power failure.

VI. Closing speed minimum of 0.8 fps; maximum of 1.0 fps.

VII. New Sight Guards: 14-gauge of same material and finish as hoistway entrance door panels. Construct without sharp edges.

VIII. New Struts and Headers: Constructed for vertical support of entrances and related material. Provide door open bumpers on entrances equipped with vertical struts.

b. New Vertical Bi-Parting Freight Door Panels:

1. 12 gauge formed steel plates welded into frame angles.
2. Telescoping upper section or pass-type doors as required.

a. Installation includes:

i. Safety astragals.
ii. Vision panels.
iii. Truckable sills.
iv. Load transfer angles.

U. Safety Devices

i. New Safety Device: New Type “B,” flexible guide clamp. Install an additional marking plate of corrosion resistant metal stating the manufacturer's name and catalog safety system designation number.

V. New Platform:

I. Designed and constructed to accommodate load classification requirements:

a. Provide Class “A” construction for passenger elevators.
b. Provide Class ..... construction for service elevators.
c. Provide Class ..... construction for freight elevators.

II. Construction:

a. Steel frame with steel stringers securely welded together.
b. Two layers of 3/4" marine grade plywood on top of sheet steel securely mounted on top of frame.

III. Elastomer isolation pads between plywood and steel frame. Minimum 0.059" (1.5 mm) thick steel, or material of equivalent strength and stiffness.

IV. Reinforced and braced to car platform front and rear.

V. Black enamel Contractor’s standard finish.

W. New Guide Shoes: Roller type, with three or more spring dampened, sound-deadening rollers per shoe. Swivel type or Solid type or with renewable oilless inserts to accommodate freight

loading classification.

X. New Door Hangers: Two-point hanger roller with neoprene roller surface and suspension with eccentric upthrust roller adjustment.

Y. New Door Track: Bar or formed, cold-drawn removable steel track with smooth roller contact surface.

Z. New Door Header: Construct of minimum 12-gauge steel, shape with stiffening flanges.

AA. New Car Door Electric Contact: Prohibit car operation unless car door is closed.

BB. New Door Clutch:

I. Heavy-duty clutch, linkage arms, drive blocks and pickup rollers or cams to provide positive, smooth, quiet door operation.

II. Design clutch so car doors can be closed, while hoistway doors remain open.

CC. New Restricted Opening Device:

I. Restrict opening of car doors to Code required limit outside unlocking zone.

II. Adjust for smooth and quiet operation with operating noise undetectable from inside any car or outside of the hoistway.

DD. New Door Operator:

I. High-speed, linear drive, heavy-duty door operator capable of opening doors at no less than 2.5 fps.

II. Accomplish reversal in no more than 2½" of door movement.

III. Solid-state door control with closed loop circuitry to constantly monitor and automatically adjust door operation based upon velocity, position, and motor current.

IV. Maintain consistent, smooth, and quiet car door operation at all floors, regardless of door weight or varying air pressure.

EE. New Door Reopening Device:

I. Black fully enclosed infrared device with full screen infrared matrix or multiple beams extending vertically along leading edge of each door panel to minimum height of 7'-0" above finished floor. <>3D beam device to detect approach from elevator lobby.

II. <>Provide <>extension of housing and lens <>additional beams full height of door panels.

FF. New Bi-Parting Freight Doors and Gates - Power Freight Gate Operator: Power gate operation. Provide means to open gate from inside of car in the event of power failure. Closing Speed: Minimum of 1.6 fps; maximum of 2.0 fps.

GG. New Bi-Parting Freight Doors and Gates - Door and Gate Reopening Device:

I. Black, fully enclosed door reopening device with full screen infrared matrix or multiple beams extending vertically inside or along edge of each car gate guide track <>to a minimum height of 7'-0" above finished floor <>to a height of 10'-0" above finished floor
{maximum 10'-0" available} full height of opening.

II. Synchronized to stop and reverse car gate and hoistway door panels.

HH. New Bi-Parting Freight Doors and Gates - Car Gate: Power-operated, vertical rise, single or double-section minimum 6'-0" high, constructed of 12-gauge welded wire mesh welded into frame angles. Mount car gate lift chains on hoistway side of car gate.

II. COMMUNICATION

i. Car Communication System:

I. Hands-Free Phone System:

a. Two-way communication instrument in car with automatic dialing, tracking, and recall features, with shielded wiring to car controller in machine room equipment space.

b. Provide dialer with automatic rollover capability with minimum two numbers:

i. Actuate two-way communication via “Help” button.

ii. Adjacent light jewel shall illuminate and flash when call is acknowledged.

iii. Button shall match car operating panel pushbutton design.

iv. Provide “Help” button tactile symbol, engraved signage, and Tactile marking adjacent to button mounted integral with car front return panel.

II. Emergency Personnel Communication:

a. Communication system shall be provided allowing emergency personnel to establish communications with each elevator individually.

b. Emergency Personnel Communication shall override any existing connection outside of the building.

c. Adjacent light jewel shall illuminate and flash when call is acknowledged.

d. Provide operating instructions.

e. On the same car operating panel as the phone push button, provide capability to communicate with and obtain responses from passengers.

f. Provide display video capability for entrapment assessment.

JJ. New Freight Elevator Enclosure: Car weight to be verified prior to removal of interior cab finishes/cab enclosure. Remove existing interior finishes and enclosure components, weigh, and document. Provide complete as specified herein. New cab weight including all new finishes to be verified following completion of modernization. Post modernization weight not to exceed code allowable limits. Provide the following features:

I. Enclosure Walls: Reinforced 10-gauge furniture steel formed panels no more than 20" wide with light-proof joints.

a. Baked enamel finish as selected.

b. Clad panels with stainless steel textured finish as specified herein.

c. Reinforce and brace panels to provide rigid structure and securely fasten to car sling and platform.

d. Provide recess in car side wall for recessed mounting of car operating panel.

II. Enclosure Canopy:

a. Reinforced 12-gauge furniture steel formed panels no more than 20" wide with light-proof joints and Hinged emergency exit.

b. Interior finish white reflective baked enamel.

c. Lighting: Recessed 4-tube fluorescent fixtures with on/off switch in car operating panel. Recessed LED down lights with on/off switch in car operating panel. Recess mount fixture flush with inside surface of car top. Provide steel guard on car top over fixture.

d. Bumper Rails: Two rows of 2" x 12" oak or maple bumpers mounted on both sides and rear of the car.

i. Locate bottom rail at floor level and top rail at 36" above the car floor.
ii. Bolt rails through car walls with bolt and captive nuts on exterior of wall panel sections on 18" centers.
iii. Finish both upper and lower top edges with a 45-degree chamfered edge to eliminate collection of trash.
iv. {Side Opening} Finish ends of upper and lower bumpers on side wall adjacent to strike jamb to 45-degree chamfer to eliminate carts and people from hitting blunt ends.
v. {Vertical Bi-Parting} Finish ends of upper and lower bumpers on side walls to 45° chamfer to eliminate carts and people from hitting blunt ends.

KK. ELEVATOR MANAGEMENT SYSTEM

i. Provide a permanent system that includes reporting, monitoring, and elevator feature control options for all elevators for use by the Purchaser and/or Building Management.

ii. System shall allow user interface from within the building via one Contractor provided dedicated CPUs with minimum 17" LCD screens and keyboards with required software installed using Contractor provided hardware and software on dedicated computer. At client discretion, a laptop may be utilized with a minimum 15” screen.

I. Reporting:
a. Provide reports in both tabular and graphical format, both on-screen and in printed form capability.
b. System shall retain data to allow user to select reporting based on any time period during the previous 12 months.
c. Reports shall be generated and displayed by selecting a date and time range, unit or bank of equipment, and report type.
d. Available reports shall include Traffic Reports. Reports shall be available sorted by car, group, or floors served.
i. Hall and car call events.
ii. Per call Wait Time.
iii. Average Wait Time.
iv. Per call Time to Destination.
v. Average Time to Destination.
vi. Controller faults with playback.
vii. Unit up time.

II. Monitoring:
a. Provide real time text and graphical representation of all units and groups showing the status of the following parameters:
i. Car operating on normal/emergency power.
ii. Car position and direction of travel.
iii. Car calls.
iv. Hall calls.
v. Group and Car Operating Mode:
1. Automatic.
2. Independent Service.
3. Inspection/Hoistway enable.
4. Fire Service.
vi. Door status.

vii. Delayed car.
viii. Load weighing and by-pass.
ix. Car in/out of service.
x. Stop Switch Status:
1. In car.
2. Pit.
3. Car top.

III. Control: Allow user to initiate the following commands on a per unit and group level:

a. Card reader override.
b. Individual car on/off provisions.
c. Car to lobby.
d. Secured floor operation.

iii. Labor and materials for installation of any required conduit, wiring, or network cable outside of elevator machine rooms, elevator equipment spaces, elevator control spaces, or elevator hoistways required for Elevator Management System provided by Elevator Contractor.