Smart Home System Specification

Designed By:

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Designed For:

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Systems to be Integrated:

- Audio/Video
- Climate
- Lighting & Shades
- Irrigation
- Surveillance
- Security
- Door Locks & Garage Doors
- Intercom
- Gate
- Network & Wifi

Detail By System:

Audio/Video

In each room (zone), the user will be able to control power, volume, and source selection independently from any other zone.

The following audio sources will be available in each zone with speakers, regardless if there is a TV in the same zone. The following audio sources will be able to be played in any combination of rooms:

1. Any of the three streaming outputs from the Mirage MMS-2A, which includes streaming sources such as Pandora, SiriusXM, Tidal, Deezer, Google Play, and more. Each of the three streams support independent Airplay. Downloaded (purchased) content can be stored on it's local hard drive, and computers can run software to ensure sync.
2. Audio output from the living room Tivo (note there could possibly be audio delay).

3. Audio output of any of the other TV displays as desired.

Please note streaming services are third party and they are liable to discontinue their stream or make their service inaccessible to third party media servers at any time. New streaming services may be added through firmware updates, but this is not guaranteed.

The rooms included in the AV system are as followed:

- Living Room
  - 5.1 Surround Sound by Yamaha (RX-A1070)
    - Front left and right speakers are bookshelf format and will be placed on shelves, adequate space required, no elevation available to check.
      - Definitive Technology Studio Monitor 55 (Left and Right)
    - Center channel format is bookshelf and will be placed on the mantle below the display.
      - Definitive Technology Mythos 7 (Center)
    - Rear speakers will go into the columns that are just behind the seating area.
      - Speakercraft Profile AIM LCR5 Three
    - Two in floor subwoofers flanking the fireplace
      - Next Level Acoustics UTF 12LE
      - Origin Acoustics Sub Amp A500
  - TV Provided by Homeowner
    - Sources include Tivo & Apple TV
      - Tivo Bolt VOX to host all rooms with video
      - Additional sources may be easily added to this room
  - The living room will utilize a Elan HR30 remote control
    - See special note for HR30
  - The rear seating area will have 2 in-ceiling speakers that can either be used as a separate zone or can be set to play when main seating area is listening to the MMS-2A (Pandora, Spotify, Etc)
    - Mid grade speaker type Niles CM7PR
    - Option to upgrade to SpeakerCraft AIM7 Two Series II
- Kitchen/Dining
  - 4 In-Ceiling Speakers
    - Mid grade speaker type Niles CM7PR
    - Option to upgrade to SpeakerCraft AIM7 Two Series II
  - gTP7 touch panel for whole home control of all listed sub systems
    - Optional upgrade to 12" touch panel (gXP12) in place of 7", all for show 7" works fine
- Master Bedroom
  - 2 In-Ceiling Speakers
    - Mid grade speaker type Niles CM7PR

- ○ Homeowner provided TV mounted to TV lift in cabinetry
  - ■ Audio from the TV will play through the in-ceiling speakers
  - ■ Tivo Mini VOX to be installed within lift cabinetry
  - ■ Lift device TBD
    - ● Consultation with builder necessary to discuss maximum size furniture to house the TV, once maximum size furniture is determined we can calculate maximum size of television.
- ○ Elan HR30 remote included for TV control
  - ■ See special note for HR30
- Master Bathroom
  - ○ 2 In-Ceiling Speakers
    - ■ Mid grade speaker type Niles CM7PR
  - ○ TV Behind two-way mirror (product or price not included in proposal)
    - ■ Audio from TV will play through in-ceiling speakers
    - ■ Tivo Mini VOX will need to be installed within vanity cabinet
    - ■ Auxiliary input in cabinet for connection of additional HDMI Device
  - ○ Elan HR30 remote included for TV control
    - ■ See special note for HR30
- Side Porch, Aviary, Office
  - ○ 2 In-Ceiling speakers in each room
    - ■ Mid grade speaker type Niles CM7PR
- Airbar
  - ○ 4 In-Ceiling Speakers
    - ■ Upgraded speaker to SpeakerCraft AIM7 Two Series II
  - ○ Floor standing subwoofer under TV and to the left
    - ■ Sunfire HRS10
  - ○ Homeowner provided TV
    - ■ Audio from the TV will play through the in-ceiling speakers
    - ■ Tivo Mini VOX located behind display in recessed box
  - ○ gTP7 touch panel for whole home control
  - ○ Elan HR30 remote included for TV control
    - ■ See special note for HR30
- Garage
  - ○ 4 In-Ceiling speakers
    - ■ Mid grade speaker type Niles CM7PR
- Laundry
  - ○ 1 In-Ceiling speaker
    - ■ Mid grade speaker type Niles CM7PR, May change to CM7SI depending on amp configuration
- Exercise Room
  - ○ 2 In-Ceiling speakers
    - ■ Upgraded speaker to SpeakerCraft AIM7 Two Series II

- ○ Sunfire HRS10 Subwoofer on the west adjacent wall just clear of door swing
- ○ Homeowner provided TV
  - ■ Audio will play through in-ceiling speakers
  - ■ Tivo Mini VOX installed behind TV in recessed enclosure behind TV
- ○ Elan HR30 remote included for TV control
  - ■ See special note for HR30
- ● Three Bed Upstairs - Listing is per bedroom
  - ○ Homeowner provided TV
    - ■ Audio will play through the TV
    - ■ Tivo Mini VOX installed behind TV in recessed enclosure behind TV
  - ○ Control from Tivo Mini VOX factory remote control
- ● Pool area
  - ○ Spa area, 2 Surface Mount outdoor speakers, SpeakerCraft OE8
  - ○ Pool area, 6 Surface Mount outdoor speakers, SpeakerCraft OE8
  - ○ Outdoor subwoofer is optional

Special Note For HR30:

Elan HR30 Remotes will enable one touch source selection to watch and/or listen to a source device. The remotes will also be able to control the lighting in their default room. Whole home climate control will be enabled, and the default thermostat (the first thermostat that appears) will be set for the corresponding thermostat for the given room. Control and monitoring of the security system including door lock and garage door status will also be available on the remotes. Pool, Spa, Irrigation, and viewing of surveillance cameras will not be available.

User editable channel favorites are available as secondary pages for Tivo devices. Channel favorites cannot be different on different user interfaces, there is one favorites list that is common for the entire home.

TV's and mounts are not included in the bill of materials or this scope of work. All mounts are assumed to be flat unless otherwise specified.

Climate Control

Thermostats provided will be EL-TSTAT-8820. Thermostats will be able to control temperature, change mode between heat/cool/auto, change fan mode to on/auto/circulate, read and adjust humidity.

Each forced air climate control zone will have it's own thermostat. Thermostats will be provided to the HVAC contractor for compatibility check and installation. The thermostats will have the following capabilities:

- ● Scheduling through the home automation system

- Up to a 7 day schedule, w/ 4 daily time schedules
- Schedules for "Home," "Away," and "Vacation" Mode
  - "Home" and "Away" will be determined by the security panel status. While the panel is armed, it will run the "away" schedule.
  - "Vacation" Mode will be selected manually by the user
- Email or push notifications for dangerously cool/hot temperatures
- Adjustment at the thermostat itself
  - Any adjustments made at the thermostat will set an automatic 4 hour hold time for the adjustment made, after the 4 hours it will resume its normal schedule
  - For permanent hold, the automation system must be used

Thermostats are also suggested for some radiant heat controlled by water valves. This is not included until more information about the system can be obtained.

Lighting & Shades

All dimmers/switches that will be controlled by the automation system will be provided to the electrician for installation. All loads types and sizes must be known prior to dimmer installation for compatibility check. Neutral wiring will need be to be pulled to all boxes that will contain an automation system dimmer. Keypads replacing banks of dimmers will be standard line voltage.

No shades will be included in the system design. Shades cannot be priced until measurements are taken and the fabrics are selected. Measurements cannot be taken until the window is trimmed and finished. After measurements are taken, a proposal will be submitted.

The following dimmers/switches are to be included in the proposal:

- See lighting layout, Lutron Radio RA2 bill of materials, and device installation report for pricing and details related to the lighting system.

All included lighting loads can be added to the device scheduler. Lights can be schedule to turn on by sunrise/sunset or a fixed time before/after sunrise/sunset (example: 1 hour before sunrise turn exterior lights off). They can also be set be a fixed clock time. Two schedules will be available, one for home mode and one for away mode.

"Home Mode" will run when the alarm system is disarmed or armed to "stay" mode. There will be two time period selections available to add/remove lighting loads. This is intended for some lights to come on at a particular time and later be turned off again.

"Away Mode" will run when the alarm system is armed in "away" mode. There will be three time periods available as opposed to the two in "home mode."

Light schedules are adjustable by the end user, but adding/removing the number of time periods available can only be done by the system programmer.

Irrigation

The irrigation system controller will be provided by the irrigation contractor. The system controller will need to be a Hunter SRC, ICC, Pro-C, iCore, xCore. Rain sensors are supported. The contractor will run the normal testing procedure, but after testing the irrigation system controller the scheduling will need to be set to "off" for scheduling entirely by the automation system.

Watering frequency per irrigation zone will be available at the automation system. The number zones must be between 2 and 48. Multiple panels are not supported, the appropriate sized panel must be used for the number of zones that will be controlled.

A single irrigation brick is included in this proposal. Location of panel TBD.

Surveillance

Indoor/Outdoor dome style cameras will be installed to monitor and record some areas of the house. All cameras will be accessible for viewing through the automation system. Playback will also be available through some Elan g! Interfaces (gTP7, gXP12, smart phones, and tablets).

The following cameras will be included:

- 1 - Driveway
- 1 - West side of garage
- 1 - Dog Wash
- 1 - Side Porch
- 3 - Pool Deck
- 1 - South Yard

A 16 channel Elan NVR will be included (EL-NVR-1TB). Two 4TB hard drives are included for a total storage space of 9TB. Cameras will be set to record on motion only in order to save hard drive space.

Gate and door intercom stations will record to the NVR 24/7. This includes the front door, mudroom door, and front gate.

Security

A local, licensed security contractor must be used to install the security system. For best functionality, an Elk M1 or GE Concord 4 panel is recommended. The GE Concord 4 will require an automation cable,

for the part number will be supplied to the security contractor. Other panels are compatible, but functionality would be limited in some fashion.

If the recommended panels are used, the security system will be able to be armed/disarmed through the automation system. The system can also be armed/disarmed through security keypads and the automation system will react accordingly.

Security system arm in "away" mode will produce the following results:

- Power off all audio/video equipment
- Power off all connected lighting that is not scheduled
- Set the "away" lighting schedule for automated lighting events
- Set the "away" climate schedule
- Set doorbell pushes to call selected users phone's instead of touchpanels
- Close all shades - Unless scheduled

Security system arm in "stay" mode will produce the following results:

- Set the "home" lighting schedule
- Set the "home" climate schedule"
- Set doorbell pushes to call touchpanels
- Close all shades (depending on time of day) - Unless Scheduled

Security system disarm will produce the following results:

- Set the "home" lighting schedule
- Set the "home" climate schedule"
- Set doorbell pushes to call touchpanels
- Allow shades to run their normal schedule (if scheduled), or open shades depending on time of day

When the security system alarm is tripped it will produce the following results:

- Flashing of exterior lights to allow responders to locate the house
- Perform "All On" for all connected lights
- Generate an email or push notification to alert the homeowner

Door Locks & Garage Door Control

Yale Z-Wave door locks have been included for the mudroom door and for the exterior door leading down the crawl space in the north stairs.

PIN Codes will be synced with the Elan g! System and assigned per user so that they may be edited without using the locking device itself. All door locks will have common pin codes.

The Elan g! System interfaces (gTP7, gXP12, smart phones, and tablets) will show a history of when doors have been locked and unlocked manually or by the home automation system.

A Linear GD00Z-5 has been included for each of the 4 garage doors. The Elan g! System interfaces will show the status of each garage door and also offer control to open and close them. When opening or closing a garage door from the home automation system the Linear modules will issue loud beeps and flash a bright light to let people in the garage know that a door is about to start moving.

Intercom

All in-wall touchpanels will support 2-way intercom with both audio and video. They will have the ability to be put into "do not disturb mode" or "auto-answer" for audio and/or video. Touchpanel cameras will have the option to be viewed or not viewed as part surveillance, but cannot be recorded.

The front door intercom will support the following features.

- Push button to cause doorbell to chime through speakers
- In "home" mode will send an intercom call to all the touch panels, which will be able to display a video feed of the person at the door and enabled two way communication.
- In "away" mode will send a push notification to selected user's phones to enable two way communication and show a video feed of the person at the door.

Intercom calling is customizable through the automation interface.

Gate

The front gate will include a weatherproof enclosure to house an intercom unit that has a camera and keypad. This is not currently included and would be custom made for the project.

The gate will need to be able to operate on a dry contact closure. For control from the keypad and the automation system.

On the security tab, there will be an option to open and close the gate, as well as display the gate status. Sensors will be required, type is TBD.

Automation of the gate is available on trigger of burglar alarm to allow entry for emergency responders.

Phone, Network, Cable TV Jacks

Phone, network, and cable jacks will be pulled and terminated into wall plates. A home line and a fax line will be distributed to:

- The second floor office

Wifi

Five access points will be surface mounted to the ceilings at 6 different locations. A built-in wireless controller will manage and balance device connectivity, as well as manage migration of devices from one access point to another. Additional lines will be pulled to install additional access points in the event that the wireless coverage is not sufficient. All wireless will be dual band wireless AC (802.11ac).

Access points will be located:

- 2 In the West Hallway to cover exercise room up to kitchen
- 1 In the garage
- 1 In the master bathroom to cover the master bed and bath
- 1 in the Airbar to cover the dining area, bar, and aviary

All network equipment is included for audio/video and automation devices. Additional pre-wires to be pulled in case additional access points are necessary.

Notes About Exclusions/Omissions

All equipment and quantities are subject to change until the final wiring schematic is drawn.

The following items are yet TBD, or not included at this point

- Gate Intercom ($1,500-$2,500)
- Pre-Wire Material ($2,000-$4,000)
- Bathroom TV & Glass ($1,000-$6,000)

A second rack may be necessary depending on the layout, and will not be known until rack elevations are complete.