Mechanical Design

Thermal Management
- Multi-patented, dual-loop thermal management system that keeps electronics and optics sealed from exposure to ambient air and contaminants
- Inseparably integrated into the mechanical architecture of the display
- Ensures full performance in ambient environments of temperatures between -40°C~50°C (-40°F~122°F)
- No air filters, no resulting periodic maintenance; preventative maintenance per Operations Manual is recommended

Outdoor Proofing
- Multi-layered, laminated cover glass with high transmission and vandal resistance
- Anti-Reflective (AR) treatment on both sides of glass minimizes mirror and haze reflection
- Designed and/or certified to IP66 standard
- No additional vandal-proofing or environmental enclosure necessary

Internal Integration
- Capacity inside display chassis to house, power, and cool peripheral devices
- Easy peripheral integration grants ability to ship as a turnkey solution with pre-configured media player and connectivity device, which may include:
  - OS license and Content Management Software (by others)
  - IP address configuration with end-to-end communications established to customer Network Operations Center

Service Access Module
- Modular design allows for in-field replacement of individual components (i.e. power supply, fan)
- Perform on-site service without removing the display from the installed position

Environmentally Conscious Design
- No CFCs or freon, no mercury in LED backlight
- No use of materials that require scheduled replacement - no waste
- Long system life for increased sustainability
- Power efficient design

Optical Design

Enduring Luminance
- Maintains specified luminance for 10 years, without fading over time
- Includes interface / controller modules and multiple temperature sensors
- Auto-brightness adjustment based on GeoVu™ embedded firmware

Image Optimization
- Ensures optimum image quality in all lighting conditions (full sun, cloud coverage, dusk, night, etc.)
- Correction and dynamic adjustments of black level, gamma values, and backlight luminance
- Tied to GeoVu™ for region / location

Future Proofing
- 10 year product life (2x industry standard)
- Modular architecture allows for upgrades of core components and integrated peripherals as new technology comes to market

Polarized Glasses Visible
- Ensures complete image visibility without visual obstructions when viewed through polarized sunglasses
- Ensures picture clarity when viewed from oblique angles
Operational Enhancement

Block Dimming
- Autonomous, dynamic block dimming of LED backlight
- Improves color saturation and contrast
- Reduces backlight power consumption and heat generation, extends backlight life

Location-Based Optimization
- GPS location and weather data algorithm used to modify BestVu™ parameters
- Uses historical and real-time data to modify decision parameters (weather, time of day, sun position, etc.)
- Eliminates false readings by physical light sensors that may see shadows from nearby objects (trees, buildings, vehicles, etc.)

Energy Monitoring
- Monitors line current, voltage, and wattage to report power consumption
- Dynamically sheds power load to prevent tripped circuit breakers when available power fluctuates

Remote Management

Video Verification
- Real-time hardware monitoring of every video frame to ensure:
  - The image is changing (not stalled)
  - The video is not black for longer than a specified duration
  - Video resolution is correct
  - Errant behavior is addressed via configured power cycle on media player

Data & Diagnostics
- System reporting of 150+ data / operational parameters accessible via secure web interface, including:
  - IP connectivity status
  - Backlight luminance (desired vs. actual)
  - PCB temperatures
  - Fan speeds
  - Video status
  - Power metrics

Remote Recovery
- Configurable automatic reboot of media player or modem to restore expected operation
- Remote disk / image recovery via BIOS-level tools (if enabled on media player)