**Hardware Components**
- 2U Coffee lake platform
- 10 Gb data network
- High capacity 2U Server

**Software Components**
- VITAL Training Application (TAP)
- Addons
  - VITAL sensors
  - VITAL tracker
  - VITAL radar
- OS support: Windows 10 64 Bit

**Certifications**
- Exceeds Level-D qualification regulatory requirements
- CE certified

**Weather**
- Time of Day Modes
  - Day
  - Night
  - Dawn
  - Dusk
  - Morning
  - Evening
  - Continuous time of day
- NVG
- Accurate ephemeris
- MultiVis Weather Sim with up to 64,000 Atmospheric Layers
- Calibrated runway visual range and visibility controls
- Physics-based weather model including atmospheric scattering (Rayleigh and Mie)
- Five levels of precipitation intensity
- Clouds with lightning and rain shafts and correlated radar profiles
- Enhanced halo and blooming effects around lightpoints, especially in weather
- 3D water and ocean swells with whitecaps including all Beaufort sea states
  - Thirteen sea states
  - Two swell states
  - Ocean wave and spray effects
- Blowing snow and dust, dust storm
- Geo-specific contaminants (snow/ice/slush)
- Dynamic precipitation effects (rain/snow/hail)
- HVS glare effects

**Integrations**
- Deep integration possibilities:
  - Host interface: VITAL and CIGI 2.1, 4.0
  - Multi Host (simultaneous)
- Broad projector support
- Custom configured displays:
  - Lightweight glass mirror
  - Dome display systems
  - Augmented/Mixed Reality
  - Stereo 3D
- Motion platforms
- Support for auto-calibration and alignment systems such as FlightSafety’s DMS product
- DIS and HLA support (VITAL DMO Interface) (VDI)
- MACE extended support for scenario generation
- Di-Guy support for character animation

**Scene Management**
- Floating point depth buffer
- More than 256 levels of transparency
- Stochastic dithering
- 2,048 by 2,048 texture pattern resolution
- Up to 32 levels of detail (LODs)
- Texture paging
- Texture compression
- Anisotropic filtering
- Seven-terrain LODs (quadtree)
- Arbitrary number of model LODs
Displays
- Up to 360x135 field of view
- Cross-cockpit collimated
- Direct image
- Domes
- Chin windows
- 3D stereoscopic
- Augmented reality, mixed reality, virtual reality
- Deep projector support
  - LCoS
  - DLP
  - LCD
  - Laser phosphor
  - LED
- Resolutions:
  - HD, WUXGA, QXGA, WQXGA, 4K, 8K
- Pixel shift
- RGB+IR
- High frame rate 120 Hz
- DVI, HDMI, Display Port
- Run-time controls

Lighting, Shading and Special Effects
- Dynamic shadowing
- Enhanced shading to produce realistic highly detailed scenes
- High-quality light map projection for night textures
- Comprehensive aviation lighting systems
- Uniform airfield and surface contamination controls

Mission Functions
- Height of terrain
- Line of sight
- Laser range
- Up to 7,680 queries per second
- MACE extended support
- LVC support via VITAL DMO Interface (VDI)

Alignment System
- DMS (display management system)
- Spatial
- EOR
- Colorimetric
- Uniformity

Sensors
- SWIR
- MWIR
- LWIR
- EVS
- LLLTV
- CTV
- Weather radar
- Synthetic aperture radar
- Sensor fusion
- Custom video interfaces
- Symbology
- Extensive post-processing effects
- Target track
- Superior NVG capability
- Calibrated to real-world illumination levels
- Simultaneous aided/unaided

Databases
- VITAL EMR/AMR
- CDB 3.x
- OGC CDB 1.x
- NPSI
- Offline or run-time publishing
- Worldwide no break flyable database
- Extensive library
- Airports
- Moving models
- Summer and winter databases
- Packaged delivery and content management
- Database Content includes:
  - High detail areas — airfields, buildings, trees, power lines, etc. with density and controls
  - Custom content developed for specialized training needs or customer specifications
- Database Generation System (DBGS)

Security
- IA hardened per NIST SP 800-53
- Quarterly update service available

For more information, please contact Visual Systems – St. Louis
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