

# URS

FEDERAL



# X-100™ Image Generator for Commercial and Civil Flight Training

## BRINGING REALITY TO THE VIRTUAL WORLD...

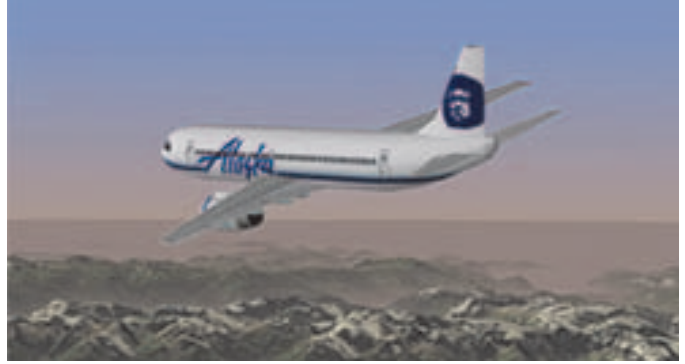
URS brings the same image generator technology to the civil and commercial training arena with X-100™ that it provides to the military with its X-IG™ image generator. X-100™ is designed to provide the civil and commercial training market with high end performance solutions at a significantly reduced initial investment and total cost of ownership.

The processing power of X-100™ renders realistic imagery based databases that meet FAA/JAA regulatory requirements (14 CFR Part 60/JAR STD 01A, Amendment 3) for realistic, accurate, and dynamic scene content. With X-100™, the user can control the flight conditions, airport scene, and runway environment. X-100™ provides the user with true to life atmospheric conditions including cloud cover, fog, haze, rain, wind, snow, and continuous time of day.

## Real-Time Rendering Engine

- Renderings of 400,000 fully-textured, shaded and anti-aliased polygons per channel, peak performance of over 1,500,000 polygons at 60 Hz
- Renderings of 100,000 light points in day/night/dusk at 60 Hz
- Synchronized multi-channel capability using hardware Genlock solutions
- Auto-alignment and channel edge blending for continuous multi-window applications without performance penalty
- Database paging and texture compression for uninterrupted training through high resolution geo-specific databases
- Full scene anti-aliasing for superior artifact control
- Anisotropic texture filtering increasing texture resolution
- Shader-based light point simulation increasing realism and preventing overlapping lights from bunching
- Pixel level procedural and texture based light sources
- Multiple light sources (ambient light, spotlights, steerable search lights, landing lights, etc.)
- Dynamic scene management
- Real-time texture animation
- Unlimited levels of occluding

- Integrated Boston Dynamics DI-Guy™ real-time human simulation
- FAA/JAA compliant display of density raster light points



### Special Effects

- Highly realistic activities & cultural effects
- Emissive and reflective surfaces
- Multi-layer order independent transparency
- Dynamic shadow rendering of scene entities
- Effect, color, and size characteristics are correlated to associated database material
- GUI based special effects (XFX) composer



### Standard Interfaces

- Distributed Interactive Simulation (DIS)
- High-Level Architecture (HLA)
- Common Image Generator Interface (CIGI)

### Databases

- Extensive libraries of world-wide, geo-specific, high resolution databases
- Support for geodetic exported terrain
- Rapid placement of databases features using the Environmental modeling Editor (EME™) for fast turnaround and reduced cost
- Stenciling of airfields
- Real-time tessellation



### Atmospheric and Weather Effects

- Comprehensive weather and atmospheric effects
- Multiple lighting and volumetric thunderstorm models
- Directional and dynamic snow/rain models
- Volumetric clouds and lighting and physically accurate fog and haze layer models
- Continuous and static time of day
- Ephemeris models

### Mission Functions

- Tactical terrain server processes up to 160,000 concurrent requests per second
- Surface material code feedback to host for ice, snow, rain, etc.
- 100,000 height-of-terrain calculations per second
- 11,000 collision detection calculations per second
- 20,000 laser range calculations per second

### Application Programming Interface

- API portable source provided
- After Action Review (AAR) record/replay capability
- 3D sound



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