

# SGI<sup>®</sup> Decision Support Center Solutions

A Reconfigurable Environment for Decision Makers





Cockpits have been optimized for human factors and ergonomics to optimize a pilot's ability to make split-second decisions. SGI Decision Support Center solutions similarly provide the command and control center—and any collaborative team—with the tools they need to make mission-critical, real-time decisions.

Visualization enables rapid insight into problems that involve large, complex data sets. When data is coming from multiple and diverse sources, however, visualization is not enough to enable effective and rapid decision-making. SGI Decision Support Center solutions address data complexity, data quantity, and the multiple platforms used to generate and display data. By letting teams focus on the tasks at hand instead of the complexities of data flow, experts can achieve new levels of collaboration on large-scale problems. The best decisions can be made for real-time mission-critical tasks relating to command and control (C2), oil and gas exploration and production, and a broad range of manufacturing scenarios. Scientists, educators, and other collaborative communities can also come together within an SGI Decision Support Center environment to accelerate breakthrough discovery and problem solving.

### Too Much Data—Not Enough Information

The sheer quantity and complexity of data has reached a point of overload for many virtual environments. Many tasks and challenges require teams of experts to arrive at the right decision or to discover insights. SGI Decision Support Center solutions combine the SGI pixel fusion server with the latest advances in image generation and display technology to enable breakthrough results in collaborative information review and decision making.

### Taking Visualization to the Next Level

Powerful middleware contained within SGI pixel fusion servers exploits the pixel—the base element for any visualization—to overcome the challenge of too much data. The SGI Decision Support Center solutions use this middleware to enable:

- Ingestion of pixel data from multiple, diverse sources
- Fusion of pixel streams into a common 3D environment
- Interaction with applications embedded within pixel streams

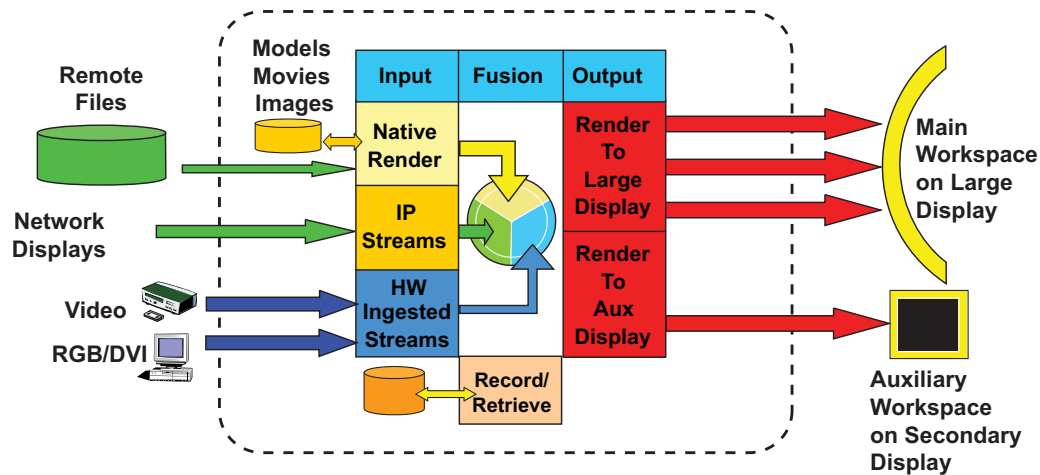
This unique technology streamlines workflows and dramatically improves collaborative interactions. Team members can come together within a decision room, conference room, or a large venue where the latest advances in visual display technology bring the data to life. SGI Decision Support Centers further advance the potential for data sharing with an operational infrastructure that enhances the way organizations function and communicate.

## A New Workflow for Critical Decision-Making Environments

The SGI Decision Support Center solution provides a next-generation collaborative visualization environment. The solution integrates multiple and diverse inputs into a cohesive framework. Decision makers can interact with each other using a common visual language, quickly iron out points of contention, and rapidly discover solutions.

### SGI Decision Support Center Solutions: Multiple Data Sources, Multiple Output Streams

In an Internet-powered world, data sources proliferate. The best decisions are those that are made by taking into account all of the information available. The SGI Decision Support Center solutions simplify data input, create an interactive common workspace, and drive multiple output displays. Teams within a mission control center equipped with an SGI Decision Support Center solution can focus on the tasks at hand instead of the complexities of data flow.



Powerful middleware on the SGI pixel fusion server provides data management and flow control for data ingestion, fusion, and distribution. It acts as a server, processor, image generator, and router of pixel data.

### The Ingestion of Large, Complex Data Streams in Real Time

The SGI Decision Support Center simplifies the task of bringing in large amounts of heterogeneous data from different applications, devices, and computer systems. Decision makers have access to diverse data streams from:

- PCs or Linux systems (over DVI), with multiple-channels of input from each computer
- Video/image or sources (MPEG1, MPEG2, AVI, DVD, JPEG, JPEG2000, TIFF, etc.) with resolutions of up to 1920 x 1080 per stream
- Multiple computer displays on the network

### Fusing Multiple Streams to Create an Interactive Workspace

The SGI Decision Support Center provides an intuitive workspace for efficient real-time data interactions. Not just another video wall, a 3D landscape of information displays each pixel stream and enables new ways to organize, compare, and correlate data. The unique fusion technology allows decision makers to interact with and move through the information landscape. Live applications can be reconfigured on the fly to change the user experience as needed.

## Cutting-Edge Collaborative Control for Industry and Government Teams

SGI Decision Support Centers continue the SGI tradition of providing leading-edge technologies to accelerate innovation and discovery for technical and scientific users.

### Government

Numerous government missions require cooperation and collaboration between agencies and governments. The war on terrorism, global trade policies, and environmental impact studies are just a few examples. SGI Decision Support Center

solutions provide a unique environment to accomplish mission-critical objectives:

- Command & Control, Communications, Computing, Intelligence, Surveillance & Reconnaissance (C4ISR) – The SGI pixel fusion server can be tailored for monitoring, surveillance, event detection, and rapid-response scenarios. Teams gain real-time situational awareness, quicker information flow, and rapid decision-making.
- Intelligence Analysis – High-speed computing and interactive visualization are combined in the SGI Decision Support Center to enable grand-scale problem analysis.

### Energy

Multiple forces within the energy industry make the SGI Decision Support Center an ideal solution for teams focused on exploration and production:

- Business model shift – Most companies have shifted focus from an organization approach to an asset approach, aimed at maximizing returns on asset. Today's inter-disciplinary teams benefit from the intuitive, visual collaboration environment powered by the SGI pixel fusion server.
- Workforce dynamics – 50 to 70 percent of engineers with asset knowledge will be retiring in the next ten years. Due to the industry downturn in the '80s, there is a gap in the workforce. SGI Decision Support Center solutions give centralized experts access to real-time data feeds from numerous remote assets, and allow highly efficient, real-time management of operations with minimal resources.
- Workflow preferences – The newest generation of engineers not only want, but demand, more visual, intuitive problem-solving environments such as the SGI Decision Support Center.

Today visualization is an important tool for oil and gas exploration and production. The ability to interact with complex data sets takes visualization to the next step within this industry.



The Sony SXRD projector with 4K resolution provides wide color range, exceptional image quality, and high reliability for mission-critical collaborative environments.

## Manufacturing

Today's manufacturing professionals include diverse teams, each focused on overcoming a part of a common, overall production challenge. The sooner the teams can collaborate and share insights, the shorter the time to market becomes, as iterative cycles are minimized. Costs are more effectively controlled as solutions are discovered sooner, and expensive redesign and rework are avoided. The SGI Decision Support Center solutions, including a range of price-performance points, give manufacturing teams an affordable environment for bringing together inter-disciplinary experts. The interactive, visual environment allows these teams to speak the same language as they attack multi-faceted problems.

## Sciences

For the sciences, SGI pixel fusion technology offers a number of unique advantages. Typically, scientific research and development efforts involve very complex information, and often require advanced communications and collaboration. "Access grids"—videoconferencing capabilities that tie organizations together over networks—have been widely adopted. By combining communication capabilities with pixel fusion technology, SGI Decision Support Center solutions enable advanced visualization to be utilized even by scientific teams that are globally dispersed. The ability to combine data from multiple sources enhances data sharing, brings to light patterns that go unnoticed in data silos, and speeds discovery.

## Advanced Display Technologies

Teams can choose the display technology suited to their unique workflow requirements, including a variety of desktop displays, low-cost video conferencing solutions, or advanced large-screen displays. The exceptional dynamic range, contrast, and image quality offered by today's large-screen displays, such as the Silicon Crystal Reflective Display (SXR) projectors make

them perfect complements to the large-venue capabilities of the SGI Decision Support Center. The Sony SXR<sup>TM</sup> imaging devices deliver:

- Ultra-high resolution images—4096 x 2160 pixels—for 4 times HDTV resolution
- 4K quality, specified by the Digital Cinema Initiative (DCI)
- High contrast ratio (1800:1), and high brightness (10,000 ANSI lumens)
- Deeper blacks, minimized artifacts, and other advancements for film-like quality
- Ultra-short response time (less than 5 milliseconds) for reduced motion blur

## Image Generation

SGI Decision Support Centers drive output to high-resolution display technologies such as the Sony SXR projectors and simultaneously allow real-time interaction with the data. Traditional clusters limit visualization capabilities, and cannot feed data to graphics processing units (GPU) fast enough. Similarly, intrinsic memory limitations force reductions in data set size or compromised display resolution. Other cluster limitations—cumbersome reconfigurations, programming complexities, and administrative burdens—make the SGI Decision Support Center a superior platform.

## Learn More

- To find out more about SGI Decision Support Solutions, visit: <http://www.sgi.com/industries/nco/dsc.html>
- To find out more about Sony SXR projection solutions, visit: <http://www.sony.com>
- To contact an SGI sales representative, visit: <http://www.sgi.com/sales>



Corporate Office  
1200 Crittenden Lane  
Mountain View, CA 94043  
(650) 960-1980  
[www.sgi.com](http://www.sgi.com)

North America +1 800.800.7441  
Latin America +55 11.5185.2860  
Europe +44 118.912.7500  
Japan +81 3.5488.1811  
Asia Pacific +1 650.933.3000