

Collaboration as a Service?

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We propose a “Scalable Amplified Group Environment” to enable large-scale human and data interaction and collaboration on High-Resolution Display Walls. To enable effective critical thinking and brainstorming sessions within the room and between distributed sites, we need new technologies that can be described as “**Collaboration as a Service**” (CaaS).

CaaS features include:

- On demand collaboration with dynamic resource allocation to support collaborative visualization sessions first within the room and then between several sites,
- Enabling online large scale data analysis and visual analytics,
- Support for many visualization types: local rendering (web-based) and hardware remote rendering transmitted as high-quality video streams (GPU-rendering and video compression in the cloud).

Today’s community resources, from supercomputers to clouds, are beneficial, but can limit how effectively global science teams collaborate with colleagues and data over distance, and in how ultra-resolution (Big Data) visualizations, generated from sensors, instruments, and computer simulations, can be accessed, analyzed, and displayed. Disciplines that utilize large-scale visual data include archaeology, biology, atmospheric science, geoscience, neuroscience, oceanography, materials science, chemistry, and astrophysics, to name a few.

CaaS will benefit scientists and their collaborators by enabling long needed capabilities – low-latency, on-demand access to compute and visualization resources. These scientists have had to adapt to methods common for decades on traditional systems, such as job scheduling, batch processing, slow file transfers and viewing scaled-down images on laptop screens, which are neither time nor cost effective. The goal is to provide user-centric software services and new algorithms for computational scientists who require visualization, visual analytics, and collaboration.