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Collaborative data analysis using large visual display screens

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This talk outlines investigations into the potential for videowall technology to enhance the scientific data analysis process. The talk is based on experiences gained at workshops focusing on a videowall in Harwell, England, supported by the International Space Innovation Centre.

The videowall is 7.2m wide, 2.3m tall and consists of 28 individual screens, each with a resolution of 30 mega pixels. The videowall is driven by a cluster of 28 servers, one for each screen, comprising 1 intel Xeon E5620 processor, 12GB RAM and an NVIDIA Quadro 5000 graphics card. This huge capacity for processing graphics and the high definition of the screens enables the ISIC videowall to display very large amounts of data with relative ease, making use of emerging bespoke visualisation software. The videowall is ideally suited to working with large geophysical datasets.

In this talk we discuss the capacity of the videowall as a collaborative data analysis tool. Collaborative data analysis is integral to the scientific process and often comes in the form of printed plots taken to meetings or impromptu gatherings around PC monitors. It is our suggestion that the videowall can better facilitate the types of discussions which happen in these settings by removing the barriers of non-interactive (printed) visualizations, or simply of physical space in an office.

In a recent workshop, we trialled the application of the videowall as a scientific collaborative tool. Attendees were “friendly” users from a variety of scientific backgrounds and the software used on the wall was still in development. Despite these limitations, there was a positive response to using the videowall in this way and a broad consensus that further development would be worthwhile. One feature of the videowall which was universally praised was the ability to show many high resolution visualizations of data side by side and to navigate through them simultaneously; thus allows the users to make quick comparisons between very large datasets.