

## **ABSTRACT**

### **RECOVERY OPERATIONS IN STORAGE NETWORKS**

Exemplary storage network architectures, data architectures, and methods for creating and using snapdifference files in storage networks are described. One exemplary method may be implemented in a processor in a storage network. The method comprises detecting a failure in a source volume (1410), and in response to the failure: terminating communication with one or more applications that generate I/O requests to the source volume; refreshing the source volume; copying a backup data set to the source volume, and while the backup data set is being copied: activating a new snapdifference file (1430); restarting communication with one or more applications that generate I/O requests to the source volume; and recording I/O operations to the source volume (1410) in the snapdifference file (1430).

(Fig. 15)