CLAIMS

1. A system for monitoring data elements comprising:

a data element monitor (DEM), monitoring a multiplicity of data elements, some of which having associated therewith a data representation, each of said multiplicity of data elements comprising data element content and data element information, and each of said data representations comprising data representation information corresponding to at least a subset of said data element information;

an event notification ascertainer (ENA), ascertaining which of said multiplicity of said data elements being monitored has an event notification associated therewith; and

a difference reporter, reporting a difference between said data representation information in a data representation associated with one of said multiplicity of data elements being monitored, which has an event notification associated therewith, and corresponding data element information of that one of said multiplicity of said data elements being monitored.

2. A system for monitoring data elements according to claim 1 and wherein:

said difference reporter is also operative for updating said data representation information associated with said one of said multiplicity of data elements being monitored, which has an event notification associated therewith, to reflect said difference.

3. A system for monitoring data elements according to claim 1 and wherein:

said data representation information associated with one of said multiplicity of data elements being monitored, which has an event notification associated therewith, is associated with said one of said multiplicity of data elements prior to said event notification.

4. A system for monitoring data elements according to claim 1 and wherein:

said data representation information associated with one of said multiplicity of data elements being monitored, which has an event notification associated

therewith, is associated with said one of said multiplicity of data elements subsequent to said event notification, and is generated based on at least one data representation associated with at least one analogous data element.

5. A system for monitoring data elements according to claim ~~4~~ and also comprising:

a data representation information generator (DRIG) receiving at least one stored data representation of at least one data element other than that one of said multiplicity of said data elements being monitored which has an event notification associated therewith and providing pre-event data representation information to said difference reporter.

6. A system for monitoring data elements according to claim 1 and wherein said difference reporter comprises a classification rule applicability determiner for ascertaining whether one or more classification rules are applicable to said content of said data element being monitored, which has an event notification associated therewith.

7. A system for monitoring data elements according to claim 1 and wherein said difference reporter comprises:

a comparator, comparing said data representation information stored in said data representation associated with that one of said multiplicity of data elements being monitored, which has an event notification associated therewith, and post-event data element information of said one of said multiplicity of said data elements being monitored; and

a comparison notifier, updating said data representation information associated with that one of said multiplicity of data elements being monitored, which has an event notification associated therewith, based on said comparing, to reflect said difference.

8. A system for monitoring data elements according to claim 1 and wherein said event notification is a notification of at least one of:

an actual access to that one of said multiplicity of said data elements being

monitored which has an event notification associated therewith;

a change in an access permission that one of said multiplicity of said data elements being monitored which has an event notification associated therewith, such as a change in at least one of a read permission, a write permission and a delete permission;

a change in said data element content of that one of said multiplicity of said data elements being monitored which has an event notification associated therewith; and

a change in data element information of that one of said multiplicity of said data elements being monitored which has an event notification associated therewith.

9. A system for monitoring data elements according to claim 1 and wherein:

said multiplicity of data elements comprises at least one billion data elements; and

said DEM, said ENA and said difference reporter are operative to update said multiplicity of data elements in less than one minute.

10. A system for monitoring data elements according to claim 1 and also comprising a utilization subsystem, employing information contained in updated data representations.

11. A method for monitoring data elements comprising:

monitoring a multiplicity of data elements, some of which having associated therewith a data representation, each of said multiplicity of data elements comprising data element content and data element information and each of said data representations comprising data representation information corresponding to at least a subset of said data element information;

ascertaining which of said multiplicity of said data elements being monitored has an event notification associated therewith; and

reporting a difference between said data representation information in a data representation associated with one of said multiplicity of data elements being monitored, which has an event notification associated therewith, and corresponding data element information of that one of said multiplicity of said data elements being monitored.

12. A method for monitoring data elements according to claim 11 and also comprising updating said data representation information associated with said one of said multiplicity of data elements being monitored, which has an event notification associated therewith, to reflect said difference.

13. A method for monitoring data elements according to claim 11 and also comprising associating said data representation information associated with one of said multiplicity of data elements being monitored, which has an event notification associated therewith, with said one of said multiplicity of data elements prior to said event notification.

14. A method for monitoring data elements according to claim 11 and also comprising:

generating said data representation information based on at least one data representation associated with at least one analogous data element; and

associating said data representation information, associated with one of said multiplicity of data elements being monitored, which has an event notification associated therewith, with said one of said multiplicity of data elements being monitored subsequent to said event notification.

15. A method for monitoring data elements according to claim 14 and also comprising:

receiving at least one stored data representation of at least one data element other than that one of said multiplicity of said data elements being monitored which has an event notification associated therewith and providing pre-event data representation information to be compared with post-event data element information of that one of said multiplicity of said data elements being monitored.

16. A method for monitoring data elements according to claim 11 and also comprising ascertaining whether one or more classification rules are applicable to said content of said data element being monitored which has an event notification associated

therewith.

17. A method for monitoring data elements according to claim 11 and also comprising:

comparing said data representation information stored in said data representation associated with that one of said multiplicity of data elements being monitored, which has an event notification associated therewith, and post-event data element information of said one of said multiplicity of said data elements being monitored; and

updating said data representation information associated with that one of said multiplicity of data elements being monitored, which has an event notification associated therewith, based on said comparing, to reflect said difference.

18. A method for monitoring data elements according to claim 11 and wherein said event notification is a notification of at least one of:

an actual access to that one of said multiplicity of said data elements being monitored which has an event notification associated therewith;

a change in an access permission to that one of said multiplicity of said data elements being monitored which has an event notification associated therewith, such as a change in at least one of a read permission, a write permission and a delete permission;

a change in said data element content of that one of said multiplicity of said data elements being monitored which has an event notification associated therewith; and

a change in data element information of that one of said multiplicity of said data elements being monitored which has an event notification associated therewith.

19. A method for monitoring data elements according to claim 11 and wherein:

said multiplicity of data elements comprises at least one billion data elements; and

said method is operative to update said multiplicity of data elements in less than one minute.

20. A method for monitoring data elements according to claim 11 and also comprising utilizing information contained in updated data representations.