CLAIMS

What is claimed is:

1. A method for synchronizing contents of a local database with contents of at least one remote database, the method comprising:

writing at least one data transaction received from a user terminal from the local database to a local transaction log file;

assigning a bin number to each of the at least one data transaction;

determining, by a local replicator service, if the assigned bin number has changed due to receipt of at least one subsequent data transaction;

determining if the at least one data transaction is applicable to each of the at least one remote database;

if the bin number has changed, and the at least one data transaction is applicable to each of the at least one remote database, inserting, by the local replicator service**,** the at least one subsequent data transaction into a local sequence log file and assigning the at least one subsequent data transaction a first sequence number;

in response to a request by a remote replicator service, determining that the at least one subsequent data transaction is applicable to the remote replicator service;

filtering out data transactions that are not applicable to the requesting remote replicator service;

applying a placeholder to those data transactions not applicable to the requesting remote replicator service;

providing, to the remote replicator service including remote replicator services to which the data transaction is not applicable, access to the first sequence

number, the remote replicator service having access to a second sequence number stored in the at least one remote database; and

if the first sequence number does not match the second sequence number, providing, to the requesting remote replicator service, access to the at least one subsequent data transaction associated with the first sequence number, the remote replicator service updating the at least one remote database to include the at least one subsequent data transaction if the at least one data transaction is applicable to each of the at least one remote database.

2. The method of claim 1, further comprising assigning a universal unique identifier (UUID) to each data record received from the user terminal.

3. The method of claim 1, further comprising monitoring changes in the transaction log file using the assigned bin number.

4. The method of claim 1, wherein the local database is located on a vessel and the at least one remote database is located on shore.

5. The method of claim 1, wherein the local replicator service and the remote replicator service communicate with each other via a satellite connection.

6. The method of claim 1, wherein the local replicator service and the remote replicator service are in operation at the same time.

7. The method of claim 1, further comprising compressing data that forms the request by the remote replicator service and compressing data that forms the response to the request by the remote replicator service.

8. A local database server configured to synchronize contents of a local database with contents of at least one remote database, the local database server comprising:

a local transaction log file;

processing circuitry including a memory and a processor, the memory in communication with the processor, the memory having instructions that, when executed by the processor, configure the processor to:

write at least one data transaction received from a user terminal from the local database to the local transaction log file;

assign a bin number to each of the at least one data transaction;

determine, by a local replicator service, if the assigned bin number has changed due to receipt of at least one subsequent data transaction;

determine if the at least one data transaction is applicable to each of the at least one remote database;

if the bin number has changed, insert, by the local replicator service, the at least one subsequent data transaction into a local sequence log file and assign the at least one subsequent data transaction a first sequence number; and

a communication interface configured to receive a request from a remote replicator service,

in response to the request from the remote replicator service, the processor is further configured to:

determine that the at least one subsequent data transaction is applicable to the remote replicator service;

filter out data transactions that are not applicable to the requesting remote replicator service;

apply a placeholder to those data transactions not applicable to the requesting remote replicator service;

provide, to the remote replicator service including remote replicator services to which the data transaction is not applicable, access to the first sequence number, the

remote replicator service having access to a second sequence number stored in the at least remote database; and

if the first sequence number does not match the second sequence number, provide, to the requesting remote replicator service, access to the at least one subsequent data transaction associated with the first sequence number, the remote replicator service updating the at least one remote database to include the at least one subsequent data transaction if the at least one data transaction is applicable to each of the at least one remote database.

9. The local database server of claim 8, wherein the processor is further configured to assign a universal unique identifier (UUID) to each data record received from the user terminal.

10. The local database server of claim 8, wherein the processor is further configured to monitor changes in the transaction log file using the assigned bin number.

11. The local database server of claim 8, wherein the local database is located on a vessel and the at least one remote database is located on shore.

12. The local database server of claim 8, wherein the local replicator service and the remote replicator service communicate with each other via a satellite connection.

13. The local database server of claim 8, wherein the local replicator service and the remote replicator service are in operation at the same time.

14. The local database server of claim 8, wherein the processor is further configured to compress data that forms the request by the remote replicator service and compress data that forms the response to the request by the remote replicator service.

15. A remote database server configured to synchronize contents of a local database with contents of at least one remote database, the remote database server comprising:

a communications interface configured to:

receive, from a local replicator service, communications, each communication including a first sequence number, the first sequence number associated with at least one data transaction, the local replicator service configured to assign the at least one data transaction the first sequence number upon determining if a bin number assigned to each of the at least one data transaction has changed due to receipt of at least one subsequent data transaction and upon determining that the at least one data transaction is applicable to the at least one remote database; and

processing circuitry including a memory and a processor, the memory in communication with the processor, the memory having instructions that, when executed by the processor, configure the processor to:

determine if at least one data transaction associated with the first sequence number of at least one of the received communications is applicable to the remote replicator service;

filter out data transactions that are not applicable to the remote replicator service for the received communications;

compare, by a remote replicator service, the first sequence number received from the local replicator service to a second sequence number, the second sequence number associated with a latest data transaction stored in the at least one remote database; and

if the first sequence number does not match the second sequence number,

obtain from the local replicator service, via the communications interface, the at least one data transaction associated with the first sequence number; and

the processor is further configured to write the at least one data transaction to the at least one remote database if the at least one data transaction is applicable to the at least one remote database.

16. The remote database server of claim 15, wherein the local database is located on a vessel and the at least one remote database is located on shore.

17. The remote database server of claim 15, wherein the local replicator service and the remote replicator service are in operation at the same time.

18. The remote database server of claim 15, wherein the processor is further configured to compress data comprising the communication received from the local replicator service.

19. A system for synchronizing contents of a local database with contents of at least one remote database, the system comprising the local database server of claim 8 and the remote database server of claim 15.