CLAIMS:

The invention claimed is:

1. A system for data collection, integration, presentation, and data mapping, functioning with a plurality of geographically scattered physical assets, comprising:

    a data warehouse capable of handling large-scale data storage and accessibility,
    a data abstraction layer to enable efficient retrieval of data without requiring data duplication through data virtualization,
    a data integration layer to optimize query performance when accessing large and scattered datasets, and
    a graphical user interface, wherein a set of information is exchanged between said data warehouse and said data abstraction layer, and between said data abstraction layer and said data integration layer,

    means for storing time series and relational data points and capturing changes to the data collected from sensors belonging to physical assets wherein said physical assets are transmitted and stored in third-party data warehouses or source databases,

    means for configuring collected data points into digital twins each representing a physical asset;

    means for queries configuration to request a single bulk of data through the data abstraction layer that is integrated to a data consumer such that the data abstraction layer consolidates parameters per data source, fetches and streams the data back to said data consumer;

    means for combining queries into a query bulk to reduce the request frequency of an application programming interface;

    means for utilizing said query bulk to fetch and stream asynchronous records from said data abstraction layer to said data consumer;

    means for enabling the presentation of multiple asynchronous events and streaming of said events to the data consumer; and

means for displaying a graphical representation of said multiple asynchronous events using said graphical user interface.

2. The system of claim 1, wherein said data consumer further comprising means for:
   providing a set of read and write queries;
   generating a read query to collect data from an organizational data warehouse to provides analysis and reports;
   generating a write query to change the records obtained by said read query wherein such query is configured to change the records in the source application database;
   showing updated record through a new read query;
   re-routing said read query automatically to trigger the new read query to the source application's database instead of data warehouse; and
   returning corrected and updated record to the data consumer.

3. The system of claim 1, further comprising means for:
   verifying whether new tags correspond to the same function and role as existing tags stored in the data warehouse,
   configuring said new tags through a new attribute version identifier when new tags have same function and role as those stored in the data warehouse,
   binding all data from different attribute versions identifiers to report the complete dataset; and
   reporting changes to time-series data points for single attribute identifier.

4. The system of claim 1, wherein said digital twins comprising one functional element and several variable child elements that are configured within the digital twin templates, wherein one template is created for all elements which have the same function with optional attributes where applicable, analysis attribute configuration for motor performance is configured at least one time without considering other optional attributes, and different results based on the optional attributes are returned dynamically by using analysis formulas.

5. The system of claim 1, further comprising means for:
   creating a hierarchical structure of source tag attributes to organize and classify data,

configuring digital twin elements to associate with multiple source tag attributes, enabling detailed representation of physical assets, wherein

data consumer hierarchies include a dynamic sorting mechanism that applies customizable criteria to organize data from the data warehouse and external structured databases; and

the data integration layer maintains unified digital twin attributes within the database, ensuring consistent and synchronized information exchange for all search and read queries.

6. The system of claim 1, further comprising means for:

dynamically managing attribute version identifiers by generating data based dynamic tags;

aggregating and enabling the virtualization and digital replication of both historical data from old assets and new data from their replacements when physical assets are replaced over time, wherein the aggregation and enabling are achieved through automated query generation that incorporates unified attribute version identifiers, and leveraging various data types to establish links and tags across large datasets, enabling seamless data integration and retrieval.