eXtensible Database (XDB)

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Kratos' eXtensible Database (XDB) software takes either a standards-based XML Telemetric and Command Exchange (XTCE) database files, a relational database management system (RDBMS), or Comma Separated Value (CSV) files and transforms it into run-time files that can be used by the EPOCH T&C Server software. The software can either be executed directly from a script or integrated with Kratos' Webic software to be run through a browser GUI.

Features

- Supports customers using XTCE databases files, JDBC-compatible relational databases including H2, MySQL/MariaDB, or Derby, or direct import from Comma Separated Value (CSV) files
- Includes import, export, and migration utilities using CSV files
- Supports definition of low fidelity simulation models, including: counter, constant, sine, cosine, FM and ramp.
- Supports definition of Telemetered, Ground, and Derived parameters
- Command Definitions are used to define the sequence of arguments that are stored together which are transmitted to the satellite
- Use of XTCE files reduces mission readiness schedule as there is no proprietary database scripting to be developed and tested
- Generates XTCE database-based starter data items, including Webic displays and TAO automation procedures
- Multi-part binary XTCE parameters can be defined in cases where large or variable length data streams are needed to be transmitted, thus allowing for satellite uploads and downloads to occur over several batches

What is XTCE?

XTCE is an international standard, managed by the Object Management Group (OMG) and approved by the Consultative Committee for Space Data Systems (CCSDS), for defining telemetry and command (T&C) data streams using XML. Telemetry and Command of satellite systems has been an ever-evolving industry that has seen the development of numerous space software products and schemas. This created the need to use multiple converters to exchange data between disparate database formats and editors. Use of the XTCE schema has provided a path forward to unify database formats across spacecraft and ground systems. This in turn has helped to reduce human error and ambiguities in developing spacecraft databases, avoid confusion between differing schemas, and save satellite operators time and money. The XDB software uses XML to tag information that is being exchanged while providing support for a namespace extension. This extension adds the use of many Kratos-specific capabilities, including annotation of telemetry points for simulation.