

Frequently Asked Questions

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Questions

1. ISO EXPRESS

1.1. What is ISO EXPRESS?

ISO EXPRESS is a structurally object-oriented information modelling language. It is roughly equivalent to a UML Static Class diagram. Formally, EXPRESS is standardized as ISO 10303-11:2004.

2. HDF5

2.1. What is HDF5?

HDF5 is Hierarchical Data Format Version 5. The Hierarchical Data Format ([HDF](http://hdf.ncsa.uiuc.edu/) (<http://hdf.ncsa.uiuc.edu/>)) is a product of the United States National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign. HDF5 is Version 5 of HDF (see [What is HDF5?](http://hdf.ncsa.uiuc.edu/whatishdf5.html) (<http://hdf.ncsa.uiuc.edu/whatishdf5.html>) and [Introduction to HDF5](http://hdf.ncsa.uiuc.edu/HDF5/papers/presentations/HDF5_overview/index.htm) (http://hdf.ncsa.uiuc.edu/HDF5/papers/presentations/HDF5_overview/index.htm) for an introduction).

2.2. Why was HDF5 chosen for the EXPRESS/Binary Project?

The EXPRESS/Binary Project did a Web survey of potential technology and gathered requirements from users. HDF5 was chosen for the initial work in the project as HDF5's focus on large volume, scientific datasets was more closely aligned with the project requirements and application domains needing support.

ASN.1 and some of the W3C Binary XML for Web Service work were also considered. It is not out-of-scope for the project to also standardize the use of those technologies for EXPRESS-driven data in the future should it be determined interesting to industry.

3. EXPRESS/Binary Project

3.1. Why does the EXPRESS/Binary Project exist?

Several industries use the EXPRESS language to define information models for application domains that utilise very large datasets. The only EXPRESS file representations standardized today are an ASCII and an XML file representation as ISO 10303-21 and ISO 10303-28

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respectively. These encodings are viewed as not sufficient and/or efficient for handling datasets containing arrays of millions of records. The EXPRESS/Binary Project was initiated to standardize a mapping into a more efficient (i.e. binary) file representation satisfying the requirements in those industries (e.g. Thermal Analysis and Finite Element Analysis).