

WDF **a Wind Tunnel Data Format made to Measure**

1. What is a WDF?

Users of wind tunnels rely for the interpretation of test results on data provided by the wind tunnel operator. Typically, this data is arranged by computer software on a data carrier in a format that not only allows to find and interpret the measured data after sophisticated processing but also enables the allocation of the data to the tested aircraft model configuration. A systematic arrangement is of high importance as it facilitates the interpretation by the client considerably.

2. Why a Common WDF for DNW and ONERA?

Both companies operate a considerable number of test facilities serving mutual customers under the flag of ATA. Standardization of data formats creates the opportunity to provide these users with a common look-and-feel facilitating the comparison of databases between different facilities for aircraft models of comparable signature. Moreover, the result of this standardization for all participating ATA wind tunnels leads to considerable savings in time for both users and operators once the harmonization process has been concluded.



3. Whom does it concern?

DNW and ONERA serve many international customers like Airbus, EADS and Eurocopter. These multi-nationals are typically composed of former national industries each being familiar with data formats of their own national facilities. As the current practice within these concerns is to share databases for mutual design and development activities it is convenient to have common standards for interpretation of data from wind tunnels and other testing facilities as much as possible.

4. How does it look and work?

The new wind tunnel data format is netCDF based, fully platform independent and self-describing. The format is ready to adopt many known and also not yet known data sources. Well known limitations of the different existing current formats are overcome, e.g. the number of variables per record.

Customers of DNW and ONERA wind tunnels receive a medium (e.g. CD or DVD) containing always the same data structure: test results, documentation and software tools (fig. 1).

A series of software tools for WDF use are distributed on the medium. There is a WDF viewer for numerical data presentation and conversion of WDF results into files readable by spreadsheet software or Tecplot[®] or Matlab[®] software.

There is a WDF plotting application based on the Gsharp[®] commercial graphical product to plot graphs. The product is free of charge for customers since the license is embedded in the application and is available for different platforms.

The medium contains also software libraries and installation procedures for different platforms and for different languages. These libraries will permit clients to develop its own special reading software more easily.

As an extra service DNW and ONERA provide their customers with support, including the initial use of the necessary programs and libraries. All documentation, applications and examples are also contained on a public accessible website (url: <http://www.ata.aero/wdf/>)

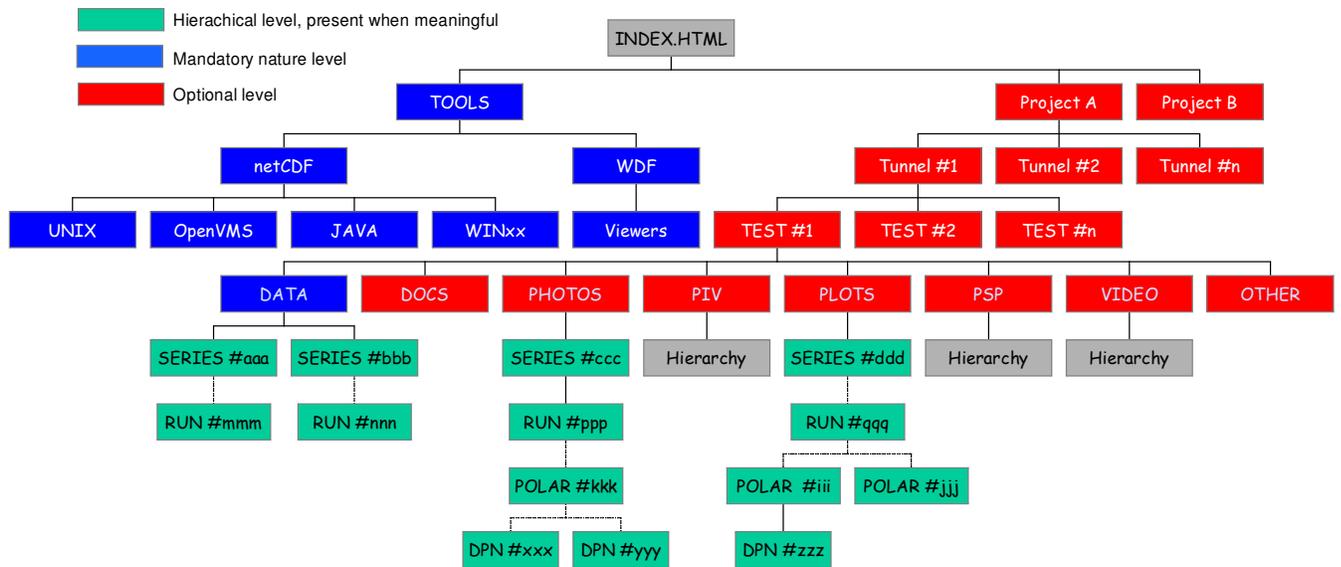


Fig 1 - Hierarchical Directory Structure