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TITLE: AFNOR Contribution on Compliance with
                          Language and Cross-Language Standards

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                          This document will be discussed at the next
                          Plenary meeting of SC22 (Sept/91).

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Cross Language Standards

REQUESTED ACTION : To be reviewed at the next SC 22 PLENARY

K/CLB/EPP

COMPLIANCE WITH
LANGUAGE AND CROSS-LANGUAGE STANDARDS

Language Standards

- provide means of writing programs for resolving certain classes of problems;

- define deliverable products.

Cross-Language Standards

- provide means of improving program/application portability;

- define additional rules applicable to deliverable products.

The tendency of Cross-Language Standards is to define a minimum set of features to be implemented (for example, a minimum set of datatypes and related operations), in order to achieve cross-language portability. This minimum set does not always coincide with (is not included in) the set specified by the Language Standards, which includes only those features necessary to write such or such type of application.

Let's take an example.

The COBOL Language Standard does not include the boolean datatype though it is required by the proposed document on "Common Language Independent Datatypes (CLID)"; nor does it include the floating datatype though it is required by the proposed documents on "Common Language Independent Datatypes (CLID)" and "Language Compatible Arithmetic (LCA)". There is a work item on mathematical procedures to be worked on, and no doubt that all the required functions will not be included in the COBOL Standard. Probably WG4 think that they know what is good for the purpose of their language.

Let's consider a fully COBOL Language Standard compliant COBOL implementation that claims it is also compliant with the CLID or the LCA documents.

1 - If the Cross-Language Standards require that a given set of features be implemented, then:

> features like boolean, floating, functions x or y, ... , that are not defined in the COBOL Standard, can only be implemented as implementor extensions to the Standard implementation, with the implication that programs using these extensions are no longer portable since the concrete form of the extensions is implementor-defined; thus, the portability goal is not achieved

2 - If the Cross-Language Standards require that those features defined in both the Language and the Cross-Language Standards be implemented according to the Cross-Language Standard, then:

> features like integer, scaled, character, record, ... , that are described in both standards, will be implemented according to the more stringent rules specified by the Cross-Language Standard, thus improving portability.

It is AFNOR viewpoint that the latter approach is the one that should be followed and stated by SC22. The following statement is a summary of the AFNOR position; it might be used as a kind of template for conformity rules for Cross-Language Standards

> *A Standard Language implementation conforms to a Cross-Language Standard:*
>
> > *if the Language Standard supports at least one of the features specified by the Cross-Language Standard, and*
> >
> > *if the implementation of the(se) feature(s) is provided in a way that satisfies all the requirements of the Cross-Language Standard to the extent supported by the Language Standard.*

A Language Committee mapping standard should exist that specifies which standard features (and to which extent) are amenable of such and such Cross-Language Standards and features thereof.