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RWS Series of Technical Reports

Guiding Principles for Regional Requirements in ISPs

Summary

This RWS Technical Report RWS-TR 001 specifies principles how to handle regional requirements in an ISP - if there are any. It contains recommendations to ISP producing organizations, typically the Regional OSI/OSE Workshops, to avoid regional enhancements to ISPs (regional enhancements to international profiles defined in ISPs) as far as possible and in case they are really needed, to retain interoperability as the primary goal of ISPs, and give any regional requirements a high degree of visibility.

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Statement of Approval

The contents of RWS-TR 001 were approved by the following:

- AOW Plenary on 16/04/1993;
- EWOS Technical Assembly on 10/11/1992;
- OIW Plenary on 18/12/1992.

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Introduction

The RWS-CC discussed at its meetings the issue of regional requirements in ISPs arising out of regional and/or cultural needs. It was decided to issue guidelines to the Regional Workshops for handling regional requirements in ISPs without causing interoperability or conformance testing problems.

It should be recognized that the term "regional" not necessarily applies only to the regions as created by the concept of the Regional Workshops.

Examples of such regional requirements are

- Handling of character sets in ODA;
- Introduction of European character sets in FTAM ISPs;

The effect of regional requirements may be twofold:

- a) Interoperability problems,
- b) Trade barriers due to different procurement environments and conformance testing requirements.

Examples of technical reasons for the need for regional variations are

- a) Upper Layers: Character sets (ODA, FTAM MHS, etc),
- b) Lower layers: Network facilities such as
 - Public networks, in particular call control;
 - Installed cables;
- c) Orthogonal aspects of Security and Network Management, especially where regulatory aspects are prominent in the regions).

Identification of technical reasons should be investigated and understood.

It is questionable whether or not either of above technical aspects will actually cause interoperability problems. Upper layer protocols should be designed such that they do not break due to use of regional character sets. At most, the information transfer may be meaningless to the receiver. Use of regional or national character sets in addressing fields or file names may be an issue for interoperability.

In case of lower layers, the physical layer specifics are not observable across regions, and the public network call control has local significance only.

The impact on free trade is perhaps a more serious concern, especially if regional variations are not easily identifiable by suppliers.

Regional Workshops Technical Report 001

Guiding Principles for Regional Requirements in ISPs

1 Scope

The most important objectives with ISPs are

- to have a world-wide approved set of functional standards (profiles);
- to realize world-wide interoperability based on these profiles, and
- to serve as the basis for the development of internationally recognized tests and test centres.

ISPs are produced not simply to "legitimize" a particular choice of base standards and options, but to promote real system interoperability. The development and widespread acceptance of tests based on this and other ISPs is crucial to the successful realization of this goal.

This Technical Report gives guidance to profile writers, especially the Regional OSI/OSE Workshops, how to handle regional requirements to a profile in a unified manner in order to preserve the interworking capability of related products and to facilitate conformance and interoperability testing.

2 References

ISO/IEC TR10000-1:1992, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 1 : Framework.*

ISO/IEC TR 10000-2:1992, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 2 : Taxonomy of Profiles.*

3 Abbreviations

ISP	International Standardized Profile
PRL	Profile Requirements List
RWS	Regional Workshop
RWS-CC	Regional Workshop Coordinating Committee
TR	Technical Report

4 Guiding principles

Three guiding principles for the development of ISPs are suggested, listed in their order of precedence. The non-principle in 4.4 is included only for completeness; its use is strongly discouraged.

4.1 Principle 1

Inter-regional harmonization shall be carried out such that subsequent regional additional requirements are not needed.

This can be done in such a way that all regional requirements - if any -

- are taken into account during the ISP development process, and
- included in the ISP as options,

so that procurers/users/implementors may make their choice out of these options depending on their requirements.

4.2 Principle 2

Unique regional requirements shall be written directly into the ISP text and harmonized as such.

This principle 2 shall be adopted, if subsequent regional requirements cannot be avoided for technical reasons.

This means to have a common core set of functions (mandatory and/or optional) in the ISP, and in addition, clearly identified regional additional requirements which

- should not affect world-wide interoperability of related products, and
- should be treated as optional for implementations.

Regional conformance requirements may include these regional requirements in addition to conformance to the core set.

Examples of specification of regional additions (no particular occurrence implied):

Item	AOW	EWOS	OIW
European language support	-	M	O
ISDN primary rate, 32 channels	O	M	X
ISDN primary rate, 24 channels	O	X	M

A PRL type of format is suggested in order to facilitate conformance testing. A generalized profile test report would then allow assessment of compliance to regional requirements.

4.3 Principle 3

It shall be noted in the ISP text where regional additional requirements will be applicable, in order to provide a 'health warning' for potential suppliers.

If it is not possible to state specifically the unique regional requirements at the time that the ISP is drafted, then principle 3 is suggested.

In this case, the same provisions apply as written in 4.2.

NOTE - As an example of this principle 3, see the ISO/IEC 10607-series for FTAM.

4.4 Non-principle 4

No mention is made in the ISP that additional requirements are made on a regional basis.

This is the least desirable situation, the application of which is strongly discouraged.

Later regional requirements should be proposed through RWS channels as an ISP maintenance item, rather than being introduced as an addition to the regional specification only.

Note - A further consideration to be noted is that the definition of "regional" may need some study; the three existing "Regional" Workshops do not necessarily cover the whole world in terms of regional regulatory controls.

Annex A

(informative)

An ODA ISP Case - Resolving Regional Requirements in a Generic Way

This annex describes as an example for information how regional requirements to ISPs are dealt with in a generic way in ODA ISPs.

A.1 Introduction

The goal of the development and harmonization of ODA ISPs has been "to realize worldwide document exchange" by an internationally agreed set of ODA ISPs. The biggest issue was how to handle language and culture dependent features (which correspond to regional requirements for documents) in ODA. With the policy of the "Revised Core Set Approach", the issue could be resolved in a generic way and the initial goal could be attained.

A.2 History

A.2.1 The goal of the development of ODA ISPs

The international co-operation for the development and harmonization of ODA functional standards started in late 1986 with the goal "to realize world-wide document exchange" by a set of internationally harmonized ODA functional standards. This initial goal was pursued through the process of international co-operation for the development of ODA ISPs.

A.2.2 Issue of the differences in regional requirements

From the outset, it was recognized that the biggest issue in developing internationally harmonized ODA functional standards was how to handle regional requirements for ODA profiles.

The office documents which are to be exchanged using ODA reflect respective regional languages and cultures. The differences in the requirements are in such characteristics of documents as:

- character sets;
- writing direction (horizontal vs vertical left-to-right vs right-to-left);
- character spacing and line spacing;
- font sizes;
- sheet sizes;
- emphasis methods;
- the role of space characters and the position of line breaks.

A.2.3 Initial proposals for solving the issue

Several approaches for solving the issue of the differences in the regional requirements were proposed and discussed. Some of them were:

- Selection of a basic function set which is agreeable as an internationally common function set (core set approach): Principle 3 of 4.3.
- To select a set which comprises all necessary functions of respective regions (large set approach): Principle 1 of 4.1;
- Interoperation using some regional profiles (multi-lingual approach): Non-principle of 4.4.

A.2.4 Core Set Approach as a basic guideline (see Principle 3)

At the first meeting of ODA-profile developing groups from three regions (NIST OIW ODA/ODIF SIG, POSI ODA/ODIF EG and SPAG EG ODA) in March 1988, the "core set approach" was selected as a basic guideline.

At this stage, two classes of ODA profiles were envisaged:

- a) (A set of) International profiles;
- b) Regional profiles.

International profiles were aimed for the international document exchange. They were to comprise internationally common function set, i.e. "core set". An initial proposal for "core set" from POSI ODA/ODIF EG included:

- ISO 646 IRV for character set;
- Horizontal writing from left to right;
- ISO A4 size sheet;
- Underlining for emphasis method.

Regional profiles (region specific profiles) were thought to be necessary at this stage. It was the common understanding at that time that regional profiles would be developed based on the corresponding international core set, adding regional enhancements which would vary region by region.

The meeting of ODA-profile developing groups from three regions was named "PAGODA (Profile Alignment Group on ODA)" meeting and the membership changed afterwards to AOW ODA SIG, EWOS EG ODA and OIW ODA SIG.

A.2.5 Revised Core Set Approach as an improved guideline (see Principle 1 and 2)

The discussion on conformance conditions of implementations in PAGODA meetings led to a more general solution for ODA profile development.

In ODA profile definition, the definition of permissible ODA data streams (which is called a Document Application Profile (DAP)) and the definition of conformance requirements for implementations can be separated. It was realized that

- a) A single set of DAPs can be applicable both to international usage and to regional usage (Principle 1);
- b) The definition of conformance requirements for implementations may be different between international ones and regional ones (Principle 2).

The new definition of DAPs includes:

- internationally common functions as a core set, and also
- region specific functions as extended features.

International definition of conformance requirements is that

- core set functions are always required for any implementations, but
- extended features are optional for implementations and may be re-defined as required depending on the specific regions.

This approach was accepted in September 1989 at the fifth PAGODA meeting. It was also accepted in CCITT SGVIII.

A . 3 Principles of Character Sets

Character sets was the most controversial issue in defining the core set function. During the discussion in AOW ODA SIG, principles for character sets were adopted. They were:

- a) Consistency among EDP, database management and OSI environments;
- b) Simplicity;
- c) Interoperability/interconnectivity/interchangeability;
- d) Multi-lingual support;
- e) All languages treated on an equal basis.

Based on these principles, ASCII character set (which is identical with ISO 646 IRV) was proposed as a core character set from AOW and accepted in PAGODA (and also in CCITT).

Other character sets which are registered under ISO 2375 scheme can be used as extended features. The mechanism for extension is similar to (but much more powerful than) Extended UNIX Code in EDP.

A . 4 Feedback to the Base Standard

During the discussion of a core set, several deficiencies of the base standard were found. Most of them were due to lack of clarity in the base standard specification. They were fed back through corresponding National Bodies to ISO and were fixed.

A . 5 Final Results in ISPs

Three ODA ISPs, namely ISP 10610-1 (FOD11 DAP), 11181-1 (FOD26 DAP) and 11182-1 (FOD36 DAP), were approved in 1992.

These DAPs are designed to cover both of international and regional requirements based on the "Revised Core Set Approach". That is,

- these DAPs define permissible data streams for document interchange both in the international environment and in regional environments, corresponding to an application level given by each DAP; and
- data-stream elements which are used only in specific regions are categorized as "non-basic" elements, as far as the ODA base standard allows. For instance, ISO 646 is basic and any other character sets are non-basic. Such non-basic elements may occur in data streams but must be declared at a heading part of data stream. This helps an implementation, which receives DAP conforming data streams, to be able to switch its process before handling actual contents of the data stream.

Implementations can avoid actual processes (such as editing, layout, printing) of nonsupporting non-basic elements though they can always accept any data stream conforming to the DAP. Requirements on such processes may be defined in each region.

On the other hand, it has also been recognized through PAGODA activity that internationally common requirement on such actual processes are to be defined more clearly to increase interoperability in the international environment. For this purpose, it was decided that each ISP consists of two parts. Part 1 includes the definition of DAP. Part 2 defines requirements on processes of implementations.

In part 1 of these ISPs, the requirements for implementations claiming conformance to these profiles are defined as follows:

- A conforming receiving implementation must be capable of receiving any data streams permitted by the DAP;
- Receiving usually, but not always, involves recognizing and further processing the data stream elements;
- The concrete meaning of "receiving" is planned to be defined in part 2 of each ISP.

A . 6 Summary

Following is a summary of handling regional requirements in ODA ISPs (see Principle 1 and 2):

- The goal is to realize world-wide document exchange;
- Internationally common functions are selected as core set functions (basic functions), which are required for each implementation;
- Regional requirements are included in ISPs as extended functions (non-basic functions), which are optional for implementations;
- Conformance conditions for extended functions can be redefined in each region reflecting regional requirements (Principle 2);
- As for data stream definition level, i.e. Document Application Profiles level, the necessity to have regional DAPs in addition to international DAPs is avoided (Principle 1).

