

EWOS  
European Workshop for Open Systems  
Expert Group - CAE  
Common Application Environments

**Title:** The Documentation Structure for OSE Profiles

**Source:** EG-OSE (formerly EG-CAE)

**Status:** For liaison with OIW (OSE-TC) and AOW (OSE Preparatory Group)

**Note:** This document is a development of the text in EG-CAE 92-20, and is targetted on assisting the planned evolution of TR 10000 as defined by SGFS in June 1992. This process is being carried out by editors who are linked with EWOS and OIW, and it is intended that they will make use of this material during the drafting of texts up to the end of October 1992. Depending on the speed of progress, and the extent of mutual acceptability of this material among the workshops, EG-OSE will consider the desirability of submitting it as a contribution to SGFS at its meeting in early October 1992.

## 1. Scope and Objectives

The scope of this contribution is the documentation of OSE Profiles. It is targeted primarily at the development of TR 10000 in SGFS, but it also forms a significant element of the description of the methodology for OSE Profiles, described in an EWOS Technical Guide.

The objectives of this contribution are to identify a structure for OSE Profiles for incorporation into TR 10000.

In addition, it is able to:

provide an early basis for use by the Regional Workshops in OSE Profile definition and development, thus accelerating and synchronising submissions to SGFS

act as a common tool which can be used by organisations active in OSE profiling, thus leading to results which are mutually comparable and reusable

be applicable to a broad range of externally defined architectures, frameworks and profile types

indicate how to handle situations where there are missing Standards (gaps).

## 2. Management Summary

### 2.1 Concept of OSE Profiles

OSE Profiles are a response to the growing confusion originating from the ever expanding inventory of non-related and overlapping individual standards.

OSE Profiles select coherent sets of standards to meet specific needs, specifying the relevant aspects of Open Systems such as interoperability, and portability of people, programs and data. OSE Profiles make use of ISPs and base standards.

OSE Profiles can select any set of Standards in the Open Systems Environment for any reasonable purpose. This could range from functional building blocks, via general purpose computing platforms, to industry specific solutions.

OSI Profiles are a specific case of OSE Profiles, and are focussed on communication.

OSE Profiles are mainly concerned with the interfaces between objects - how they operate internally is largely irrelevant, other than in terms of how such behaviour is perceived externally, and to the extent that it determines external behaviour (e.g. performance characteristics). Any attempt to profile internal behaviour would be an unwelcome constraint on suppliers' product design and would generally achieve little by way of additional user assurance. In some cases (such as security) this may be necessary.

[Note for clarification: the visible behaviour at external interfaces includes the interactions between systems required for interoperability; hence the functionality defined by such functional profiles as those for OSI is an integral part of the definition of an OSE Profile.]

However, not all externally-visible behaviour is necessarily described on a boundary with another defined object. There may also be autonomous action which is externally visible and

which may be significant in profiling terms to ensure the overall integrity and functional cohesion of the environment.

## 2.2 Outline of the Profile Development Method

{check correlation with Methodology paper; some introductory text would be helpful here}

Creation of a Profile Definition is not a mechanical process, rather, the method described in this Technical Guide facilitates the mapping between requirements and standards.

The method describes how to link User Requirements via a profile specific architecture of functional Building Blocks, to the set of critical interfaces between those Building Blocks. The definition of the services which these interfaces provide make up the Profile Specification. The use of a profile specific architecture allows for the use of externally defined architectures.

Generating a profile definition from User Requirements will lead in many cases to the detection of missing standards (gaps). In such cases, it may be possible to complete the Profile Specification by the use of Informative References. Also, because the gaps are in context with user requirements the development of missing standards can be prioritised.

OSE Profiles will be identified in appropriate taxonomies.

{Some reference here to coffepots? Generic vs App Specific}

## 2.3 Audience

This document is for use by the SGFS Editors in evolving TR 10000, and also complements the Methodology paper in EWOS/EG-CAE/92-49

## 3. The Document Structure for an OSE Profile

### 3.1 Overview of Contents

The document structure for OSE Profiles follows the generic rules defined in TR 10000-1 Annex A, and extensions and more specific descriptions are required in TR 10000-3.

In addition to specificatory material, an ISP for an OSE Profile should record the rationale for the technical choices made during the development of the Profile. Capturing this rationale facilitates the use, reuse and maintenance of OSE profiles.

An OSE Profile specification when published as an ISP, shall contain clauses and annexes as follows.

	Title
	Foreword
	Introduction
1	Scope
2	Normative References
3	Definitions
4	Abbreviations
5	Conformance

## 6 Profile Specification (as many clauses are needed)

Anx A Profile Requirements List

Anx B Profile Structure

Anx C Rationale

Anx D User Requirements (inc architectural constraints)

Anx E Identification of informative references

### 3.2 Title

The title of the OSE Profile, including its Identifier as derived from the OSE Taxonomy, the identifier should be stated here. See TR 10000-1 Anx 4.1

### 3.3 Foreword

As required by TR 10000-1 A.3.1

### 3.4 Introduction

As required by TR 10000-1 A.3.4

### 3.5 Scope

Follow the structure of TR 10000-1 A.4.2.

#### a) General

This clause documents in user terms the exact objectives for the Profile.

OSE Profiles should include an informative description of the purpose of the profile in general terms, its relation to other profiles and standards, and suitable explanations to facilitate the use of the profile.

This clause should point to Annex C for rationale of development from user requirements.

#### b) Position within Taxonomy

Reference to the Taxonomy for OSE Generic Profiles in TR 10000-3

#### c) Scenario

Illustrative representation of the scope of the Profile, including all specified external interfaces (including interoperability and distributed operation functions) and all specified internal interfaces between building blocks, defined either as functional profiles or as direct reference to base standards. The existence of "gaps" in the specification of the Profile, for which reference to Publicly Accessible Specifications may be appropriate, should also be noted.

### 3.6 Normative References

As required by TR 10000-1 A.4.3

### 3.7 Definitions

As required by TR 10000-1 A.5.1

### 3.8 Abbreviations

As required by TR 10000-1 A.5.2

### 3.9 Conformance

This clause identifies the major types of conformance by which implementations of the Profile can be assessed. A detailed Profile Requirements List in Annex A gives specific information about conformance to each referenced base standard or functional profile.

Publicly Accessible Specifications, though not a formal part of the definition of a Profile in an ISP, require similar indication of conformance requirements when they are invoked in the application of a Profile.

Conformance can be defined at different levels:

- a) conformance to the required external interfaces of the Profile
- b) conformance to the interfaces required between the Building Blocks of the Profile. This may imply conformance to the architecture of the Profile.

#### 3.9.1 Conformance Requirements

The OSE Profile shall identify the exact conformance requirements and indicate which of them must be subject to measurement by test technology, and which could be subject to validation by other means.

#### 3.9.3 Conformance Testing

Testing methodologies vary at least according to the five different interface types described in the subsequent clauses. Also, testing of conformance is better understood for services offered by Building Blocks than for services consumed by them.

#### 3.10 Profile Specification

The following sections are a complete list of the functionality the OSE profile specifies. This is detailed functionality as seen by the user of the Profile (provider or consumer).

In order to provide the required functionality of the Profile, individual Base Standards or ISPs and relevant options are identified.

If there is no suitable base standard or ISP available to satisfy a technical requirement, the need for new standardisation work can be identified. TR 10000-1 is to be developed to record the procedure when no such standard is, or is likely to be. The expected resolution is that an OSE Profile should specify the required functionality and indicate through references

in Annex E the source of possible specifications to meet this need.

If a Base Standard or ISP is slightly incompatible with the technical requirement a change request should be issued to the appropriate standards body. In no case shall a modified Base Standard or ISP be defined in an OSE Profile.

This specification documents the technical requirements for the interfaces between the building blocks identified in Annex B, as well as to the external environment.

Each interface requirement describes an interface between two building blocks within the Profile, or between a building block and an external entity. External entities are described only in terms of their interaction with the profile. For example, a protocol may provide connectivity to a different system which is not detailed, or an API may be exported for use by applications which are not named.

The interfaces are classified according to the main aspects of openness: Human Computer Interface, Format, Program Interfaces, Protocol.

This classification is further described below. It should be realised that the different categories of interfaces reflect the different levels of details in the interface.

The interface classes and associated requirements follow.

#### 3.10.1 Human Computer Interface

These are requirements on an interface between a BB and a human being. The requirement deals not only with e.g. the audio-visual and manual aspects of the interface, but also with semantics and drivability.

#### 3.10.2 Formats

These are requirements on BBs that they be able to exchange and process data in a certain representation. The exchange mechanism may be unspecified, or carried out using the following Interface Classes. Data interchange is the context for the Format definitions, including media based interchange.

#### 3.10.3 Building Block Interfaces

##### a) Source Program Interfaces

These are requirements for a language bindings of the interface (for example, APIs).

##### b) Binary Program Interfaces

These are requirements for a binary binding of the interface, (often called ABIs). Currently these are not generally the subject of formal standardisation.

##### c) Protocols

These are requirements on the mechanism for communication between Building Blocks.

#### 3.10.4 Attributes

Some additional requirements may be added to the Profile to fulfil its objectives. Some of the attributes which could be included in this section are:

- security characteristics
- degree of availability (e.g. non-stop computing)
- national adaptation (localisation)
- responsiveness (e.g. realtime or TP)
- languages and associated bindings
- type of information processed and presented to the user (e.g. windowing, 2D or 3D graphic, multi-media).

Note: Attributes will in most cases have a pervasive influence on a profile and should therefore not be handled as options or parameters to a profile. Rather, their existence should be suitably noted in the Profile title. The detailed treatment of attributes will be studied further during the development of pilot profiles.

### 3.11 Annex A Profile Requirements List

The nature of a PRL for an OSE Profile is to be the subject of further work. The general principles of such requirements lists have been well developed in ISO/IEC DIS 9646-6 for OSI Profiles, and it is expected that relevant material and terminology can be extracted to define a meaningful concept for OSE Profiles. However, as the nature of conformance statements in referenced base standards for OSE Profiles is not constrained by a document such as ISO/IEC 9646, there is unlikely to be as simple and neat a solution for defining precisely the conformance requirements of an OSE Profile.

### 3.12 Annex B Profile Structure

Lists the building blocks which together support the functionality of the Profile as described in the main text.

Each building block is a component of the profile definition; interfaces are the "points of stability" in the Profile, while the implementation of the building blocks may evolve independently.

### 3.13 Annex C Rationale

This annex includes the rationale for the breakdown of user requirements into elements of the Profile specification, and the points of stability identified by the interfaces, ideally by pointing to the user requirements/objectives Annex which follows.

### 3.14 Annex D User Requirements

This annex defines the detailed requirements as a list of functions and a list of attributes and architectural constraints.

This section is created at an early stage of the Profile's development, since it forms the rationale for the selection of standards and their options.

Some variations in requirements could be handled by the use of options on requirements, provided that they only affect well contained parts of the profile specification. Options must not seriously affect the openness of the profile. They may apply to functions, attributes or architectural constraints.

This Annex can also specify user required architectural aspects which go beyond the specification of functions and attributes, and can include (for instance):

- preference for certain standards or paradigms
- degree of distribution
- inclusion of existing OSE profiles
- coexistence with legacy environments
- visibility of certain internal interfaces.

### 3.15 Annex E Identification of Informative References.

TR 10000-1 requires all documents referenced within an ISP to be formally identified in an Annex. In the case of OSE Profiles, such references may include Publicly Accessible Specifications (depending on successful resolution of the "Gaps" Issue 17 (N624)).