

# ISO/IEC 9594-3:2008-12 (E)

## Information technology\_ - Open Systems Interconnection\_ - The Directory: Abstract service definition

---

### CONTENTS

|   | <i>Page</i> |
|---|-------------|
| Foreword .....  | v           |
| Introduction .....  | vi          |
| 1 Scope .....   | 1           |
| 2 Normative references .....                                  | 1           |
| 2.1 Identical Recommendations   International Standards ..... | 1           |
| 2.2 Other references .....                                    | 2           |
| 3 Definitions .....   | 2           |
| 3.1 Basic Directory definitions .....                         | 2           |
| 3.2 Directory model definitions .....                         | 2           |
| 3.3 Directory information base definitions .....              | 2           |
| 3.4 Directory entry definitions .....                         | 2           |
| 3.5 Name definitions .....                                    | 3           |
| 3.6 Distributed operations definitions .....                  | 3           |
| 3.7 Abstract service definitions .....                        | 3           |
| 4 Abbreviations .....   | 4           |
| 5 Conventions .....   | 4           |
| 6 Overview of the Directory service .....                     | 4           |
| 7 Information types and common procedures .....               | 5           |
| 7.1 Introduction .....  | 5           |
| 7.2 Information types defined elsewhere .....                 | 5           |
| 7.3 Common arguments .....                                    | 6           |
| 7.4 Common results .....                                      | 9           |
| 7.5 Service controls .....                                    | 9           |
| 7.6 Entry information selection .....                         | 12          |
| 7.7 Entry information .....                                   | 15          |
| 7.8 Filter .....  | 16          |
| 7.9 Paged results .....                                       | 19          |
| 7.10 Security parameters .....                                | 21          |
| 7.11 Common elements of procedure for access control .....    | 22          |
| 7.12 Managing the DSA Information Tree .....                  | 24          |
| 7.13 Procedures for families of entries .....                 | 25          |
| 8 Bind and Unbind operations .....                            | 26          |
| 8.1 Directory Bind .....                                      | 26          |
| 8.2 Directory Unbind .....                                    | 28          |
| 9 Directory Read operations .....                             | 28          |
| 9.1 Read .....  | 29          |
| 9.2 Compare .....   | 31          |
| 9.3 Abandon .....   | 33          |
| 10 Directory Search operations .....                          | 33          |
| 10.1 List .....   | 33          |
| 10.2 Search .....   | 37          |
| 11 Directory Modify operations .....                          | 47          |
| 11.1 Add Entry .....  | 47          |
| 11.2 Remove Entry .....                                       | 49          |
| 11.3 Modify Entry .....                                       | 51          |
| 11.4 Modify DN .....  | 54          |
| 12 Errors .....   | 56          |
| 12.1 Error precedence .....                                   | 56          |
| 12.2 Abandoned .....  | 57          |
| 12.3 Abandon Failed .....                                     | 57          |

|      |   |     |
|------|---|-----|
| 12.4 | Attribute Error.....  | 58  |
| 12.5 | Name Error.....   | 58  |
| 12.6 | Referral.....   | 59  |
| 12.7 | Security Error.....   | 60  |
| 12.8 | Service Error.....  | 60  |
| 12.9 | Update Error.....   | 62  |
| 13   | Analysis of search arguments.....                             | 63  |
| 13.1 | General check of search filter.....                           | 63  |
| 13.2 | Check of request-attribute-profiles.....                      | 65  |
| 13.3 | Check of controls and hierarchy selections.....               | 66  |
| 13.4 | Check of matching use.....                                    | 67  |
|      | Annex A – Abstract Service in ASN.1.....                      | 68  |
|      | Annex B – Operational semantics for Basic Access Control..... | 79  |
|      | Annex C – Examples of searching families of entries.....      | 92  |
|      | C.1 Single family example.....                                | 92  |
|      | C.2 Multiple families example.....                            | 93  |
|      | Annex D – External ASN.1 module.....                          | 96  |
|      | Annex E – Amendments and corrigenda.....                      | 100 |