Information technology - ASN.1 encoding rules - Part 8: Specification of JavaScript Object Notation Encoding Rules (JER)

Contents

Page

1 Scope ... 1

2 Normative references ... 1
2.1 Identical Recommendations | International Standards ... 1
2.2 Additional references ... 1

3 Definitions ... 2
3.1 Specification of Basic Notation ... 2
3.2 Information Object Specification ... 2
3.3 Constraint Specification ... 2
3.4 Parameterization of ASN.1 Specification ... 2
3.5 Basic Encoding Rules (BER) ... 2
3.6 Packed Encoding Rules (PER) ... 2
3.7 Additional definitions ... 2

4 Abbreviations ... 3

5 Encodings specified by this Recommendation | International Standard ... 3

6 Conformance ... 4

7 General provisions ... 4
7.1 Use of the type notation ... 4
7.2 Constraints ... 5
7.3 Type and value model used for encoding ... 6
7.4 Types to be encoded ... 6
7.5 Encoding instructions ... 6
7.6 Production of a complete JER encoding ... 7

8 Notation, lexical items and keywords used in JER encoding instructions ... 7

9 Specifying JER encoding instructions ... 8

10 Assigning a JER encoding instruction using a type prefix ... 9

11 Assigning a JER encoding instruction using a JER encoding control section ... 9

12 Identification of the targets for a JER encoding instruction ... 9
12.1 General rules ... 9
12.2 Types defined in the module ... 10
12.3 Built-in types ... 10
12.4 Types imported from another module ... 10

13 Multiple assignment of JER encoding instructions ... 10
13.1 Order in which multiple assignments are considered ... 10
13.2 Effect of assigning a negating encoding instruction ... 11
13.3 Multiple assignment of JER encoding instructions of the same category ... 11

14 The ARRAY encoding instruction ... 11
14.1 General ... 11

14.2 Restrictions 11

15 The BASE64 encoding instruction 11
15.1 General 11
15.2 Restrictions 12

16 The NAME encoding instruction 12
16.1 General 12
16.2 Restrictions 13

17 The OBJECT encoding instruction 13
17.1 General 13
17.2 Restrictions 13

18 The TEXT encoding instruction 13
18.1 General 13
18.2 Restrictions 14

19 The UNWRAPPED encoding instruction 14
19.1 General 14
19.2 Restrictions 14

20 Encoding of boolean values 14

21 Encoding of integer values 15

22 Encoding of enumerated values 15

23 Encoding of real values 15
23.1 General 15
23.2 Encoding of the special real values 15
23.3 Encoding as a JSON number 16
23.4 Encoding as a JSON object 16

24 Encoding of bitstring values 16
24.1 General 16
24.2 Encoding of bitstring types with a fixed size 16
24.3 Encoding of bitstring types with a variable size 16
24.4 Alternative encoding of bitstring types with a JER-visible contents constraint 16

25 Encoding of octetstring values 17
25.1 General 17
25.2 Encoding of an octetstring value as a JSON string containing a Base64 encoding 17
25.3 Encoding of an octetstring value as a JSON string containing a hexadecimal encoding 17
25.4 Alternative encoding of an octetstring type with a JER-visible contents constraint 17

26 Encoding of the null value 17

27 Encoding of sequence values 17
27.1 General 17
27.2 Array-based encoding 17
27.3 Object-based encoding 17

28 Encoding of sequence-of values 18
29 Encoding of set values 18
30 Encoding of set-of values 18
30.1 General 18
30.2 Array-based encoding 18
30.3 Object-based encoding 18
31 Encoding of choice values 19
31.1 General 19
31.2 Unwrapped encoding 19
31.3 Wrapped encoding 19
32 Encoding of object identifier values 19
33 Encoding of relative object identifier values 19
34 Encoding of values of the internationalized resource reference type 19
35 Encoding of values of the relative internationalized resource reference type 19
36 Encoding of values of the embedded-pdv type 19
37 Encoding of values of the external type 20
38 Encoding of values of the restricted character string types 20
39 Encoding of values of the unrestricted character string type 20
40 Encoding of values of the time types 20
41 Encoding of open type values 20
42 Object identifier values referencing the encoding rules 20
Annex A Examples of JER encodings 21
A.1 ASN.1 description of the record structure 21
A.2 ASN.1 description of a record value 21
A.3 Example JER representation of this record value 21
A.4 Additional examples of JER encodings 22
Annex B Examples of JER encoding instructions and their effect on the encodings 25
B.1 ASN.1 description of the record structure 25
B.2 ASN.1 description of a record value 25
B.3 JER representation of this record value 26
B.4 Additional examples of JER encodings 26
B.5 Examples of JER encodings of choice types 28