

# ISO/IEC 15444-11:2007-04 (E)

## Information technology - JPEG 2000 image coding system: Wireless

---

### CONTENTS

	<i>Page</i>
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions .....	1
4 Symbols and abbreviated terms .....	3
4.1 Abbreviations .....	3
4.2 Symbols .....	3
5 JPWL general description .....	4
5.1 Introduction .....	4
5.2 JPWL system description .....	5
6 JPWL normative parts .....	7
7 JPWL informative parts .....	7
Annex A – Codestream syntax .....	8
A.1 Definitions of markers and marker segments .....	8
A.2 Marker code range defined in this Recommendation   International Standard .....	8
A.3 Marker and marker segment and codestream rules .....	8
A.4 Information in the marker segments .....	8
A.5 Construction of the codestream .....	9
A.6 JPWL marker segments .....	9
Annex B – Header error protection .....	17
B.1 Introduction .....	17
B.2 Predefined error-correction codes .....	18
B.3 Use of EPB for header protection .....	18
Annex C – Error protection capability .....	22
C.1 Usage of the EPC marker segment .....	22
C.2 $P_{CRC}$ .....	22
C.3 Data length (DL) .....	22
C.4 $P_{EPC}$ .....	23
C.5 Identification of tools (ID) .....	23
C.6 Parameters for tools ( $P_{ID}$ ) .....	23
Annex D – Error sensitivity descriptor .....	24
D.1 Introduction and applications .....	24
D.2 Marker definition and position in the codestream .....	24
D.3 Codestream subdivision into data units .....	25
D.4 Sensitivity information .....	25
D.5 Examples and guidelines .....	27
Annex E – Residual errors descriptor .....	29
E.1 Introduction .....	29
E.2 Signalling of residual errors .....	29
E.3 Examples .....	30
Annex F – Guidelines for encoding JPEG 2000 codestreams in the context of error-prone environments .....	31
F.1 Introduction .....	31
F.2 JPEG 2000 Part 1 error-resilience tools .....	31
F.3 JPEG 2000 encoder implementation guidelines .....	31
Annex G – Recommended decoder error handling behaviour .....	33
G.1 Introduction .....	33
G.2 JPEG 2000 Part 1 decoder recommended behaviour .....	33
G.3 JPWL decoder implementation guidelines .....	34

	<i>Page</i>
Annex H – Error-resilient entropy coding .....	36
H.1 Introduction .....	36
H.2 Syntax .....	36
H.3 Binary encoding with forbidden symbol .....	37
H.4 Error-resilience segmentation symbols .....	38
H.5 Error detection .....	39
H.6 Error correction .....	40
Annex I – Unequal error protection .....	45
I.1 Introduction .....	45
I.2 Use of error-sensitivity descriptor as input information to unequal error-protection systems.....	45
I.3 Use of Error Protection Block (EPB) for unequal error protection.....	45
Annex J – Interoperability with ISO/IEC 15444 .....	46
J.1 Interoperability with ISO/IEC 15444-1 .....	46
J.2 Interoperability with ISO/IEC 15444-3 .....	46
J.3 Interoperability with ISO/IEC 15444-8 (JPSEC) .....	46
Annex K – Registration authority .....	48
K.1 General introduction .....	48
K.2 Criteria for eligibility of applicants for registration .....	48
K.3 Applications for registration .....	48
K.4 Review and response to applications .....	49
K.5 Maintenance .....	50
K.6 Publication of the register .....	50
Annex L – Patent statement.....	51
BIBLIOGRAPHY .....	52